November 2020 | Final Program Environmental Impact Report
State Clearinghouse No. 2020029087

SANTA ANA GENERAL PLAN UPDATE

City of Santa Ana

VOLUME II - APPENDICES

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Table of Contents

VOLUME II – APPENDICES

Appendix A – Environmental Justice Policies and Implementation Actions

Appendix B – Updated Traffic Impact Analysis

Appendix C – Exhibit for Letter O10A

Appendix D – Friant Ranch Case White Papers

Appendix E - Amicus Briefs Filed on the Friant Ranch Case

Appendix F - Changes Made to the Santa Ana General Plan Buildout Methodology

Table of Contents

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Appendix A – Environmental Justice Policies and Implementation Actions

Appendices

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Reducing exposure to pollution

Develop strategies and support regulations that will help reduce exposure to air pollution and hazardous materials.



A clear view of the mountains over Santa Ana
Photo courtesy of Lisandro Orozco

Reducing Exposure to Pollution

CONSERVATION ELEMENT (CN)

POLICIES

Policy CN-1.2 Climate Action Plan. Consistency with emission reduction goals highlighted in the Climate Action Plan shall be considered in all major decisions on land use and investments in public infrastructure.

Policy CN-1.5 Sensitive Receptor Decisions. Consider potential impacts of stationary and non-stationary emission sources on existing and proposed sensitive uses and opportunities to minimize health and safety risks. Mitigate or apply special considerations and regulations on the siting of facilities that might significantly increase pollution near sensitive receptors within environmental justice area boundaries.

Policy CN-1.8 Promote Alternative Transportation. Promote use of alternate modes of transportation in the City of Santa Ana, including pedestrian, bicycling, public transportation, car sharing programs, and emerging technologies.

Policy CN-1.9 Public Investment Alternative Transportation Infrastructure. Continue to invest in infrastructure projects that support public transportation and alternate modes of transportation in the City of Santa Ana, including pedestrian, bicycling, public transportation, car sharing programs, and emerging technologies.

Policy CN-1.15 Community Emissions Reduction. Collaborate with the South Coast Air Quality Management District and local stakeholders in advance of designation as a priority community for air monitoring and reduction, and implement measures and strategies identified in other air monitoring and emissions reduction plans that are applicable to and feasible for Santa Ana.

Policy CN-1.16 Indirect source rules. Support the development of regional legislation such as the drayage truck rule, advanced clean truck route, and heavy-duty low N0x rule by the South Coast Air Quality Management District.

Reducing Exposure to Pollution

CONSERVATION ELEMENT (CN)

IMPLEMENTATION ACTIONS

1.1 Air quality planning. Review existing and monitor the development of new air monitoring and emissions reduction plans prepared by the South Coast Air Quality Management District. Gather and evaluate measures and strategies in such plans for their applicability to and feasibility for Santa Ana

1.2 Community identification. Coordinate with the South Coast Air Quality Management District and local stakeholders to purse a priority community designation for eligible environmental justice areas of the city, with focus on areas with unique needs and pollution burden such as the Delhi Neighborhood area. If such designation is not awarded, seek grant funds for activities such as local air quality monitoring.

1.4 Health Risk Criteria. Establish criteria for requiring Health Risk Assessment for existing and new industries including the type of business, thresholds, and scope of assessment.

1.5 Agency Permits. Monitor South Coast Air Quality Management District permitting and inspection process and the Orange County Health Care Agency to identify businesses in Santa Ana with potential hazardous materials or by-products, with a special focus on environmental justice communities. Serve as a liaison for residents to identify potential emission violations. Share information and data with the community on the City's environmental quality web page.

1.6 Emissions monitoring. Coordinate with the South Coast Air Quality Management District to monitor existing air measurements and recommend new air measurements and locations.

1.7 Truck idling. Evaluate strategies to reduce truck idling found or reported in areas with sensitive receptors, with a priority placed on environmental justice areas.

Reducing Exposure to Pollution

CONSERVATION ELEMENT (CN)

IMPLEMENTATION ACTIONS (continued)

1.8 Improve older trucks. Promote the City's Vehicle Replacement Plan and explore the replacement of older trucks through City participation in regional incentive programs and education of Santa Ana private fleet owners of program opportunities.

1.9 Indirect source rules. Support the development of indirect source rules, drayage truck rules, advanced clean truck routes, and heavy-duty low NOx rules by the South Coast Air Quality Management District.

1.10 Interagency team. Establish an Environmental Quality interagency team to evaluate, monitor, and make recommendations to address air quality and environmental hazard issues, with special focus on environment justice areas. Publish results and information on the City's website through a dedicated Santa Ana Environmental Quality web page.

1.11 Public education. Augment existing programs to improve public awareness of State, regional and local agencies and resources to assist with air quality and other environmental quality concerns.

1.12 Data Collection for Emissions Plans. Coordinate with the South Coast Air Quality Management District to explore ways to initiate data collection efforts for a community emissions reduction and/or community air monitoring plan, including the identification of information needed (new or updated), potential data sources and needed resources, and strategies to engage residents and collect information.

1.16 City budget. Evaluate the City's Budget and Financial Policies to include direction for prioritizing public services and improvements within environmental justice area boundaries. Augment budget meeting presentations to include a section dedicated to the status of actions and improvements to address the needs of residents within environmental justice area boundaries.

Reducing Exposure to Pollution

OPEN SPACE ELEMENT (OS)

POLICIES

Policy OS-2.3 Hazardous Materials. Reduce or eliminate, as feasible, the use of pesticides and herbicides that negatively impact human health at park facilities and publicly accessible open spaces.

Reducing Exposure to Pollution

SAFETY ELEMENT (S)

POLICIES

Policy S-2.1 Regional Collaboration. Consult and collaborate with federal, state, and regional agencies to identify and regulate the disposal and storage of hazardous materials, prevent the illegal transportation and disposal of hazardous waste, and facilitate the cleanup of contaminated sites.

Policy S-2.2 Hazardous Waste Generators. Collaborate with appropriate agencies to identify and inventory all users and handlers of hazardous materials to proactively mitigate potential impacts.

Policy S-2.3 Transportation and Storage. Coordinate with the County of Orange, the California Department of Transportation, and other relevant parties to enforce state and local laws regulating the storage and transport of hazardous materials within the City of Santa Ana, and limit truck routes through the City to arterials streets away from natural habitats and sensitive land uses.

Policy S-2.4 Planning and Remediation. Determine the presence of hazardous materials and/or waste contamination prior to approval of new uses and require that appropriate measures be taken to protect the health and safety of site users and the community.

Policy S-2.5 Education and Best Practices. Promote public awareness of best practices for and participation in household hazardous waste management and disposal.

Policy S-2.6 Existing Sensitive Uses. Partner and collaborate with property owners, businesses, and community groups to develop strategies to protect and minimize risks from existing hazardous material sites to existing nearby sensitive uses, with priority given to discontinuing such uses within environmental justice area boundaries.

Reducing Exposure to Pollution

SAFETY ELEMENT (S)

IMPLEMENTATION ACTIONS

2.4 Lead contamination. Work with local and regional partners, such as Orange County Environmental Justice, Orange County Health Care Agency and University of California at Irvine Public Health, to understand the prevalence, sources, and implications of lead contamination across Santa Ana's soil. Collaborate with environmental justice stakeholders in proposing solutions to remove hazardous lead-contaminated soils in the city and with benchmarks to measure and track effectiveness of proposed programs.

2.5 Business education. Collaborate with state and county agencies and trade organizations to educate and inform industrial business owners on permit regulations required for safe facility operations and on best practices.

Improving Public Facilities

MOBILITY ELEMENT (M)

POLICIES

Policy M-1.7 Proactive Mitigation. Proactively mitigate potential air quality, noise, congestion, safety, and other impacts from the transportation network on residents and business.

Policy M-4.9 Air Pollution Mitigation. Consider land use, building, site planning, and technology solutions to mitigate exposure to transportation-related air pollution.

Policy M-5.6 Clean Fuels and Vehicles. Encourage the use of alternative fuel vehicles and mobility technologies through the installation of supporting infrastructure.

Reducing Exposure to Pollution

LAND USE ELEMENT (LU)

POLICIES

Policy LU-3.8 Sensitive Receptors. Avoid the development of sensitive receptors in close proximity to land uses that pose a hazard to human health and safety due to the quantity, concentration, or physical or chemical characteristics of the hazardous materials that they utilize or the hazardous waste that they generate or emit.

Policy LU-3.9 Noxious, hazardous, dangerous, and polluting uses. Improve the health of residents, students, and workers by limiting the operation of noxious, hazardous, dangerous, and polluting uses that are in close proximity to sensitive receptors, with priority given to discontinuing such uses within environmental justice area boundaries.

Policy LU-3.11 Air Pollution Buffers. Promote landscaping and other buffers to separate existing sensitive uses from rail lines, heavy industrial facilities, and other emissions sources. As feasible, apply more substantial buffers within environmental justice area boundaries.

Policy LU-3.12 Indoor Air Quality. Require new sensitive land uses proposed in areas with high levels of localized air pollution to achieve good indoor air quality through landscaping, ventilation systems, or other measures.

Reducing Exposure to Pollution

LAND USE ELEMENT (LU)

IMPLEMENTATION ACTIONS

3.2 Design guidelines and standards. Update the zoning code's development and operational standards for industrial zones to address incompatibility with adjacent uses, including minimum distance requirements to buffer heavy industrial uses from sensitive receptors. Conduct a study to evaluate and establish appropriate minimum distances and landscape buffers between polluting industrial uses from sensitive receptors such as residences, schools, day care, and public facilities.

3.3 Healthy Lifestyles. Collaborate with residents and industry stakeholders to create a program to incentivize and amortize the removal of existing heavy industrial uses adjacent to sensitive uses.

3.4 Funding for air filtration. Seek funding from South Coast Air Quality Management District and other regional sources for the installation of high efficiency air filtration systems in buildings, homes, and schools located in areas with high levels of localized air pollution, especially for those within environmental justice area boundaries.,

3.5 Business Incentive. Explore economic development incentives and grant funding to encourage existing or draw new business investments in the industrial zones to incorporate more environmentally sustainable practices.

3.6 Lead paint abatement. Coordinate with County of Orange Health Care Agency and community organizations to strengthen local programs to eliminate lead-based paint hazards, with priority given to residential buildings within environmental justice area boundaries.

3.16 Health in Corridors. Require a Health Risk Assessment to identify best practices to minimize air quality and noise impacts when considering new residential uses within 500 feet of a freeway.

3.17 Training for safe practice. Pursue the EPA Renovate Right Program to train local residential contractors for certification as lead renovators to promote safe work practices and prevent lead contamination.

Reducing Exposure to Pollution

LAND USE ELEMENT (LU)

IMPLEMENTATION ACTIONS (continued)

3.18 Renovations and lead prevention. Evaluate the feasibility of requiring contractor training and/or certification for safe work practices to conduct residential renovations for pre-1978 structures that may contain existing lead paint.

3.21 Prevention education. Collaborate with local organizations such as Orange County Health Care Agency and State Environmental Protection Agency and identify funds to create a Santa Ana Prevent Lead Poisoning Education Program, with special focus on disadvantaged communities and pre-1978 housing stock.

3.22 Public health outcomes. Support the Orange County Health Care Agency in their role in investigating public complaints regarding lead hazards, through enforcement of local housing standards to assure healthy outcomes.

3.23 Agency permits. Work with South Coast Air Quality Management District and Orange County Health Care Agency to evaluate existing special permit process and criteria for approval, and identify potential policy changes to minimize issuance of special permits with potential health impacts.

3.24 Public health. Partner with Orange County Health Care Agency and community serving organizations to evaluate best practices and benefits of preparing a Public Health Plan to address environmental hazards in Santa Ana, with special focus in environmental justice communities.

3.26 Health conditions. Work with Orange County Health Care Agency and local stakeholders like Orange County Environmental Justice and UC Irvine Pubic Health to identify baseline conditions for lead contamination in Santa Ana, monitor indicators of lead contamination, and measure positive outcomes.

3.27 Groundwater practice. Coordinate with the State Department of Toxic Substances Control (DTSC) to monitor the Santa Ana Southeast Groundwater Clean Up Project and identify measurable progress to remediate groundwater contamination. Share information with the community on the City's Environmental Quality web page.

Reducing Exposure to Pollution

ECONOMIC PROSPERITY ELEMENT (EP)

POLICIES

Policy EP-1.9 Avoid Conflict of Uses. Avoid potential land use conflicts by prohibiting the location of sensitive receptors and noxious land uses in close proximity.

Policy EP-3.3 Mitigate Impacts. Promote the development of sustainable and equitable new land use plans that proactively mitigates negative impacts on existing residents and businesses.

IMPLEMENTATION ACTIONS

3.5 Green business incentives. Continue to promote and market the Recycling Market Development Zone. Develop an incentive program to encourage nonpolluting industry and clean green technology companies that reduce environmental impacts and the carbon footprint to locate to the city. Encourage existing businesses to invest in technology and best practice to transition to sustainable business practices.

Improving public facilities

Increase access to community health facilities, parks, community centers, and other public services and facilities, particularly in underserved areas.



Improving Public Facilities

COMMUNITY ELEMENT (CM)

POLICIES

Policy CM-1.1 Access to Programs. Provide and maintain access to recreational and cultural programs within walking distance of residential areas. Prioritize the improvement of access for residents living within environmental justice area boundaries that are underserved or suffer from a lack of access.

Policy CM-1.3 Equitable Programs. Encourage cultural programs and activities of local interest that are inclusive and affordable to all.

Policy CM-1.4 Shared Use. Expand community activities and programs at City facilities and throughout the community through shared use or cooperative agreements.

Policy CM-1.5 Equitable Recreational Spaces. Promote the development and use of municipal buildings, indoor facilities, sports fields, and outdoor spaces for recreation that serve residents throughout the City, with priority given to areas that are underserved and/or within environmental justice area boundaries.

POLICY CM-3.5 Community Spaces. Encourage positive community interactions and neighborhood pride to create secure communities and promote safe public spaces.

Improving Public Facilities

COMMUNITY ELEMENT (CM)

POLICIES (continued)

Policy CM-2.1 Supporting Organizations. Collaborate with both private and public organizations that support early childhood education programs to optimize and expand service capacity.

Policy CM-2.2 Educational Facilities Capacity. Partner with local school districts, non-profit organizations, and other educational providers regarding land use and policy changes to ensure available educational facilities.

Policy CM-2.6 Educational Funding. Enhance educational opportunities in the community by expanding and maintaining access to libraries, learning centers, and technology through innovative funding sources.

Policy CM-3.1 Supporting Health Services. Collaborate with and provide support to organizations engaged in improving public health and wellness, expanding access to affordable quality health care, and providing medical services for all segments of the community. Encourage greater emphasis on expanding or improving health services to underserved areas and populations.

Improving Public Facilities

COMMUNITY ELEMENT (CM)

IMPLEMENTATION ACTIONS

1.5 Alternative facilities. For areas that are underserved by parks and recreation facilities and that are within environmental justice area boundaries, prepare an inventory of facilities that are viable alternatives to public parks and municipal facilities for recreational, cultural, and health and wellness programs, including but not limited to school facilities, facilities of faith-based and civic organizations, and privately owned recreation and entertainment facilities. Identify, inventory, and rank other resources for potential park system acquisition, expansion to existing parks, and/or parks development opportunity within the community.

1.6 Program accessibility. To ensure residents of environmental justice area boundaries have access to recreational, cultural, and health and wellness programs, establish accessibility corridors that provide attractive, comfortable, and safe pedestrian and bike access to public recreational facilities in the Parks Master Plan (an implementation action of the Open Space Element). Identify public realm improvements needed to create these accessibility corridors. Prioritize investments for accessibility corridors in the city's capital investment program; include investments for accessibility corridors when investments are made in new parks and recreation facilities within environmental justice area boundaries.

2.1 Facilities to support lifelong learning. For areas within environmental justice area boundaries, conduct, maintain, and publicize an inventory of public, nongovernmental, and private facilities that can be used by organizations to support early childhood education, after school activities, libraries and learning centers, and other meetings and educational opportunities.

2.2 Public realm. Identify areas in need of a public realm plan to provide attractive, comfortable and safe walking corridors.

Improving Public Facilities

COMMUNITY ELEMENT (CM)

IMPLEMENTATION ACTIONS (continued)

3.1 Community health care facilities. Evaluate options to support existing and potential community health care facilities in environmental justice focus areas through a variety of mechanisms such as reduced permit fees, reduced impact fees, and tax incentives.

3.2 Pedestrian access to health facilities. Ensure that new or redeveloped health care facilities include a pedestrian friendly site amenities. In areas where mobile clinics are stationed, ensure the location is safe and accessible for pedestrians, cyclist, and transit-users.

Improving Public Facilities

MOBILITY ELEMENT (M)

POLICIES

Policy M-1.2 Balanced Multimodal Network. Provide a balanced and equitable multimodal circulation network that reflects current and changing needs.

Improving Public Facilities

PUBLIC SERVICES ELEMENT (PS)

POLICIES

Policy PS-1.2 Equitable Distribution. Ensure public services and facilities reflect changing population needs and are equitably distributed and accessible, with priority assigned to improving areas that are underserved and/or within environmental justice area boundaries.

Policy PS-1.8 Access for All. Improve connectivity and ADA special needs accessibility at all public facilities.

Policy PS-1.11 Safety. Remove actual and perceived safety concerns that create barriers to physical activity by requiring adequate lighting, street visibility, and areas of clear connectivity, especially for new projects or improvements within environmental justice area boundaries..

IMPLEMENTATION ACTIONS

1.4 Fiscal priority for public improvements. Identify City fiscal and operational procedures and potential thresholds involved in the prioritization of general funds for public programming, service, or infrastructure improvements for residents living within environmental justice area boundaries.

Improving Public Facilities

OPEN SPACE ELEMENT (OS)

POLICIES

Policy OS-1.1 Park Master Plan. Create and maintain a Santa Ana parks master plan that incorporates data on need, demographics, and health outcomes.

Policy OS-1.2 Parks and Recreation Network. Support a comprehensive and integrated network of parks, open space, and recreational facilities that maintains and provides a variety of active and passive recreational opportunities and meets the needs of all Santa Ana residents, regardless of age, ability, or income.

Policy OS-1.10 Shared Use. Collaborate with school districts, faith-based communities, and community serving organizations to expand shared use facilities through cooperative agreements, as well as pursuing multiple use strategies of publicly owned land.

Policy OS-1.12 Neighborhood Needs. Consider unique neighborhood needs in the development of open spaces and programs.

Policy OS-1.13 Indoor Recreation. Encourage new development to provide indoor recreation space when located in areas with high levels of localized air pollution or if site is adjacent to freeways or heavy industrial uses.

Policy OS-2.6 Facility Maintenance. Ensure all park facilities and open spaces are well maintained.

IMPLEMENTATION ACTIONS

1.2 Indoor recreation. Explore best practices and options to incentivize or require the provision of indoor open space, particularly in environmental justice areas that experience high levels of exposure to air pollution.

Improving Public Facilities

LAND USE ELEMENT (LU)

POLICIES

Policy LU-4.9 Recreational Amenities. Encourage public and commercial recreational facilities in areas that are park and open space deficient.

Promoting healthy food



Improve the health and wellness of all residents through policies, regulations, and programs that foster healthier food options.

Promoting Healthy Food

COMMUNITY ELEMENT (CM)

POLICIES

Policy CM-3.6 Healthy Options. Promote access to affordable, fresh, and healthy food options citywide through efforts such as community gardens, culinary classes, and neighborhood farmers markets.

IMPLEMENTATION ACTIONS

3.6 Fresh and healthy foods. Pursue programs, incentives, and/or grants to encourage small grocery or convenience stores to sell fresh foods in the city, especially those within environmental justice area boundaries. Examples include grants or loans to purchase updated equipment, publicity, or directories of healthy food outlets, or connecting stores to wholesale sources of healthy, local, or organic food

Promoting Healthy Food

OPEN SPACE ELEMENT (OS)

POLICIES

Policy OS-2.5 Urban Agriculture. Expand urban agriculture opportunities in private development and public spaces, including home gardens, community gardens, and urban farms.

Creating safe and sanitary housing



Add to existing efforts to reduce health hazards associated with construction materials, building standards, and deferred maintenance.

89

Creating Safe and Sanitary Housing

COMMUNITY ELEMENT (CM)

POLICIES

Policy CM-3.2 Healthy Neighborhoods. Continue to support the creation of healthy neighborhoods by addressing public safety, mitigating incompatible uses, and maintaining building code standards.

IMPLEMENTATION ACTIONS

1.7 Rental property outreach. Augment Proactive Rental Enforcement Team and Residential Response Team programs with additional outreach geared toward absentee owners of rental properties. Create and periodically distribute outreach materials in order to educate absentee owners about legal obligations to maintain and upkeep rental properties. Distribute information to tenants about their rights and protection, so they are not penalized for reporting or living in a dwelling unit that does not meet health and safety standards. Translate outreach efforts into Spanish, Vietnamese, or other appropriate language. Prioritize such outreach for properties within environmental justice area boundaries.

1.8 Neighborhood rehabilitation. Continue to seek state and federal funding for neighborhood rehabilitation projects and collaborate with community-based organizations to identify housing issues and improvements, especially for housing within environmental justice area boundaries.

Creating Safe and Sanitary Housing

LAND USE ELEMENT (LU)

POLICIES

Policy LU-3.2 Empower Community. Facilitate community engagement and dialogue in policy decisions and outcomes affecting land use and development, with supplemental opportunities for proposed planning activities within environmental justice area boundaries.

Policy LU-4.6 Healthy Living Conditions. Support diverse and innovative housing types that improve living conditions and promote a healthy environment.

IMPLEMENTATION

3.20 Safe housing. Require all residential rehabilitation projects that use local, or HUD federal funds to comply with the Lead Safe Housing Rule, to remove lead paint hazards, depending on the nature of work and the dollar amount of federal investment in the property.

3.28 Tenant Protections. Provide information to residential tenants regarding Landlord Tenant Laws in the State, such as AB 1481, that provide protections against evictions for those who seek action to improve substandard housing and hazardous conditions.

3.29 Development site history. Update the City's Development Review application process to require developers to provide information regarding the prior use of the site and history of hazardous materials on the property, in order to identify potential for site contamination from hazardous materials or soil lead contamination to be remediated.

Creating Safe and Sanitary Housing

PUBLIC SERVICES ELEMENT (LU)

POLICIES

Policy PS-1.9 Supportive Housing. Collaborate with community stakeholders to identify and encourage the development of suitable sites for housing with support services.

Increasing physical activity

Establish new opportunities for outdoor and indoor recreation as part of a comprehensive and integrated network of spaces and facilities, with a focus on underserved areas.



Increasing Physical Activity

COMMUNITY ELEMENT (CM)

POLICIES

Policy CM-1.11 Program Incentives. Incentivize use of privately owned property to promote recreation, health, wellness, and art and culture programs.

Policy CM-3.3 Healthy Residential Programs. Invest in programs and public improvements that educate residents about opportunities to increase their physical activity and improve their health.

Policy CM-3.7 Active Lifestyles. Support programs that create safe routes to schools and other destinations to promote walking, biking and active lifestyles.

Policy CM-3.8 Underutilized Spaces. Promote access to affordable, fresh, and healthy food. Repurpose underutilized spaces and City-owned vacant land as a strategy to improve community health and increase the number and accessibility of opportunities for health and recreation activities. Prioritize the redevelopment of such sites within environmental justice area boundaries that are also underserved by parks and recreation opportunities.

Policy CM-3.9 Prevention. Coordinate with the County Health Care Agency to promote healthier communities through education, prevention, and intervention programs, and other activities that address the root causes of health disparities and inequities in Santa Ana.

Increasing Physical Activity

COMMUNITY ELEMENT (CM)

IMPLEMENTATION ACTIONS

1.3 Collaboration. Develop intentional, strategic partnerships with public, private, and nonprofit entities to improve health outcomes by leveraging capacity, resources, and programs around mutually beneficial initiatives that promote health, equity, and sustainability in neighborhoods within environmental justice area boundaries. Develop a comprehensive partnership policy providing guidelines that can be used throughout the City organization.

1.4 Community coordination on underutilized spaces. Coordinate with community residents, property owners, and other stakeholders to identify vacant and potentially underutilized properties and strategize how such properties could be repurposed into public parks or commercial recreation facilities.

3.4 Prevention activities. Coordinate with the County Health Care Agency to identify the root causes of health disparities and inequities in Santa Ana, with additional detail for residents living within environmental justice area boundaries. Identify potential programmatic changes and resources to better address the root causes.

Increasing Physical Activity

OPEN SPACE ELEMENT (OS)

POLICIES

Policy OS-1.2 Parks and Recreation Network. Support a comprehensive and integrated network of parks, open space, and recreational facilities that maintains and provides a variety of active and passive recreational opportunities that meets the needs of all Santa Ana residents, regardless of age, ability, or income.

Policy OS-1.3 Park Standard. Achieve a minimum citywide park ratio of two acres per 1,000 residents. For new residential development in Focus Areas, prioritize the creation and dedication of new public parkland over the collection of impact fees.

Policy OS-1.4 Park Connectivity. Establish and enhance options for residents to access existing and new park facilities through safe walking, bicycling, and transit routes.

Policy OS-1.7 Community Building. Ensure that park facilities and programs reflect the priorities of residents in the surrounding neighborhoods, with attention to place-making elements that foster social interaction and community pride such as art, landscape, monuments, murals, play equipment, seating, and community centers.

Policy OS-1.12 Neighborhood Needs. Consider unique neighborhood needs in the development of open spaces and programs.

Policy OS-1.13 Indoor Recreation. Encourage new development to provide indoor recreation space when located in areas with high levels of localized air pollution or if site is adjacent to freeways or heavy industrial uses.

Policy OS-3.1 Recreational Corridors. Establish and maintain an integrated recreational and multi-modal commuter corridor network linking open spaces, housing, community services, and employment centers.

Increasing Physical Activity

OPEN SPACE ELEMENT (OS)

POLICIES (continued)

Policy OS-3.2 Linking Development. Promote alternative modes of transportation and active lifestyles through pedestrian and bicycle linkages to new and existing development, greenway corridors, and open spaces.

Policy OS-3.3 Publicly Owned Land. Maintain and explore options for publicly owned land for the creation of open space pathways and corridors.

IMPLEMENTATION

1.15 Public parkland requirements for larger residential projects. Amend the Residential Development Fee in the Municipal Code (Chapter 35, Article IV) to reflect requirements for Larger Residential Projects (100+ units, residential only or mixed-use) to facilitate the creation two acres of new public parkland within a 10-minute walking radius of the new residential project. Establish provisions that allow the Larger Residential Projects to reduce all onsite private and common open space requirements by 50 percent if new public parkland is provided within a 10 minute walking radius and by 80 percent if the new public parkland is immediately adjacent to or on the residential project property. Work with property owners and new development projects within the Focus Areas to identify options (e.g., 100 percent reduction of onsite private and public open space requirements) that would incentivize the creation of public park areas that are more than the minimum and/or if a location can expand park access for an adjoining underserved neighborhood and/or environmental justice area. Establish incentives for coordination between two or more residential projects (of any size) to create larger and/or more centralized public park space.

Increasing Physical Activity

LAND USE ELEMENT (LU)

POLICIES

Policy LU-1.1 Compatible Uses. Foster compatibility between land uses to enhance livability and promote healthy lifestyles.

Policy LU-1.3 Equitable Distribution of Open Space. Promote the creation of new open space and community serving amenities in park deficient areas, with priority given to those that are also within environmental justice area boundaries.

Policy LU-1.7 Active Transportation Infrastructure. Invest in active transportation connectivity between activity centers and residential neighborhoods to encourage healthy lifestyles.

Policy LU-2.3 Supportive Spaces. Provide a diversity of land uses that support residents, visitors, and businesses, such as open space, areas for community gatherings, and outdoor entertainment venues.

Policy LU-2.9 Open Space Needs. Establish and maintain public open space and recreation requirements for new residential and nonresidential uses to provide sufficient open space and recreational opportunities for Santa Ana Residents and visitors.

IMPLEMENTATION ACTIONS

2.10 Open space requirements. Evaluate public open space and park requirements in the Zoning Code for residential and nonresidential uses. Consider requirements and/or incentives to aggregate public open space areas required by two or more uses to form larger and more usable areas and facilities.

Increasing Physical Activity

URBAN DESIGN ELEMENT (UD)

POLICIES

Policy UD-1.6 Active Transportation Infrastructure. Support the creation of citywide public street and site amenities that accommodate and promote an active transportation-friendly environment.

Policy UD-3.2 Activate Paths. Strengthen and activate the design of paths and adjacent development through enhanced and cohesive streetscapes, architectural themes, and landscaping.

Policy UD-3.3 Foster Community Building. Promote a safe environment that facilitates social interaction and improves active transportation along corridors.

Policy UD-3.6 Linear Park System. Support open space improvements along roadways and non-vehicular paths, such as bike or multi-use trails, to connect linear greenways leading to a network of parks and activity areas throughout the city.

Enhancing civil engagement

Increase the amount and quality of community engagement throughout the planning, development, and operation of our communities and City.



Enhancing Civil Engagement

COMMUNITY ELEMENT (CM)

POLICIES

Policy CM-1.2 Community Input. Engage residents and community facility users to provide input for facility improvements and programming.

Policy CM-2.1 Supporting Organizations. Collaborate with both private and public organizations that support early childhood education programs to optimize and expand service capacity.

Policy CM-2.2 Educational Facilities Capacity. Partner with local school districts, non-profit organizations, and other educational providers regarding land use and policy changes to ensure available educational facilities.

Policy CM-2.4 Parent Participation. Support education, recreation programs, and after school activities that involve parent participation to increase high school graduation and college attendance rates.

Enhancing Civic Engagement

COMMUNITY ELEMENT (CM)

IMPLEMENTATION ACTIONS

1.1 Engage EJ communities. Establish an Ad Hoc Committee of community stakeholders to guide preparation of an ongoing EJ Community Engagement Program.

1.2 Community conversation. Plan for and conduct a community survey every three years related to community health, air quality concerns, parks, and community service needs, with focused outreach to environmental justice priority areas.

1.3 Collaboration. Develop intentional, strategic partnerships with public, private, and nonprofit entities to improve health outcomes by leveraging capacity, resources, and programs around mutually beneficial initiatives that promote health, equity, and sustainability in neighborhoods within environmental justice area boundaries. Develop a comprehensive partnership policy providing guidelines that can be used throughout the City organization.

1.4 Community coordination on underutilized spaces. Coordinate with community residents, property owners, and other stakeholders to identify vacant and potentially underutilized properties and strategize how such properties could be repurposed into public parks or commercial recreation facilities.

3.3 Health Metrics. Engage with Orange County Health Care Agency and other stakeholders to monitor key health indicators to measure success and outcome of General Plan policies and implementation plan, including reduction in incidence in asthma.

3.5 Environmental Education. Encourage all education institutions in Santa Ana to include curriculum regarding environmental justice and local efforts to promote clean business operations, environmental quality, and the health in our community.

Enhancing Civic Engagement

COMMUNITY ELEMENT (CM)

IMPLEMENTATION ACTIONS (continued)

3.7 Public health and wellness collaboration summit. Collaborate with health care providers, health and wellness advocates, and other public health stakeholders to identify ways to improve the provision of and access to health and wellness services throughout the city. Include a discussion on areas within environmental justice area boundaries underserved by affordable health and wellness services.

Enhancing Civil Engagement

ECONOMIC PROSPERITY ELEMENT (EP)

POLICIES

Policy EP-2.4 Community-led Economic Development. Support community-based economic development initiatives, such as buy-local campaign, marketing strategies, and worker cooperatives.

Enhancing Civil Engagement

PUBLIC SERVICES ELEMENT (PS)

POLICIES

Policy PS-1.5 Community Benefit. Collaborate with community stakeholders to expand recreational, educational, and cultural opportunities; promote active lifestyles; and maximize community benefit.

Enhancing Public Engagement

CONSERVATION ELEMENT (CN)

POLICIES

POLICY CN-1.3 Education. Promote efforts to educate businesses and the general public about air quality standards, reducing the urban heat island effect, health effects from poor air quality and extreme heat, and best practices they can make to improve air quality and reduce greenhouse gas emissions.

IMPLEMENTATION ACTIONS

1.3 Proactive engagement. Collaborate with the South Coast Air Quality Management District and local stakeholders in environmental justice areas experiencing local air pollutions issues to outline objectives and strategies for monitoring air pollution in advance of the establishment of a community emissions reduction and/or air monitoring plan.

1.13 Community survey on healthy lifestyles. Plan for and conduct a Community Survey of residents related to community health, air quality, parks, and community services; with focused outreach for Environment Justices concerns and priority areas (tie into other City efforts like Strategic Plan, Park and Recreation Planning, Community Benefits, etc.).

1.14 Expanded interactions. Identify opportunities to expand regular attendance of City staff and decision-makers at meetings for neighborhoods within environmental justice area boundaries, so that residents and businesses can more easily communicate their unique issues and needs. Include a translator(s) at these meetings so that all residents can engage.

1.15 Expanded representation. Expand representation of residents from neighborhoods within environmental justice area boundaries by extending residents from such areas to become board, commission, and task force members as openings occur.

Enhancing Civic Engagement

OPEN SPACE ELEMENT (OS)

POLICIES

Policy OS-2.2 Neighborhood Engagement. Encourage residents, neighborhood groups, businesses, schools, organizations, and public agencies to partner in the creation and maintenance of safe and well maintained publicly-owned park and recreation facilities.

IMPLEMENTATION ACTIONS

2.4 Public notification. Prior to treating areas in the city with pesticides or herbicides, inform the public through signage posted in impacted areas, direct mailers, and announcements on the City website, cable channels, publications, and the City's social media platforms.

Enhancing Civil Engagement

LAND USE ELEMENT (LU)

POLICIES

Policy LU-3.2 Empower Community. Facilitate community engagement and dialogue in policy decisions and outcomes affecting land use and development, with supplemental opportunities for proposed planning activities within environmental justice area boundaries.

Policy LU-4.8 Community Partnerships. Collaborate with property owners, community organizations, and other local stakeholders to identify opportunities for additional open space and community services, such as community gardens and gathering places. Collaborate with property owners, community organizations, and other local stakeholders to identify opportunities for additional open space and community services, such as community gardens and gathering places.

IMPLEMENTATION ACTIONS

3.14 Sunshine Ordinance. Update City Sunshine Ordinance incorporating best practices for outreach in Environmental Justice areas in Santa Ana.

3.15 Communication tools. Explore tools for communication with residents and sensitive receptors when new industrial uses are proposed in their areas.

3.19 Promote health. Partner with local organizations (e.g., OC Health Care Agency, Latino Health Access, Santa Ana Unified School District, and the Coalition of Community Health Centers) to increase blood lead testing, outreach, education, and referral services through a 'promotora' or community peer outreach model that addresses the root causes of elevated blood lead levels impacting Santa Ana residents, with special focus in environmental justice communities and for children living in pre-1978 housing.

Enhancing Civil Engagement

LAND USE ELEMENT (LU)

IMPLEMENTATION ACTIONS (continued)

3.25 Engage EJ communities. Work with community serving organizations, neighborhood leaders, and residents to form an Ad Hoc Committee to develop ongoing EJ Community Engagement programs, including multilingual communication protocols.

Appendix B Updated Traffic Impact Analysis

Appendices

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Memorandum

To/Attention	Placeworks	**Date**	October 7, 2020
From	IBI Group	**Project No**	119772
cc			
Subject	Santa Ana General Plan Traffic Analysis Updates		

This memo summarizes changes made to the Traffic Analysis prepared in support of the Santa Ana General Plan DEIR. The traffic analysis was circulated among relevant stakeholders in order to solicit input regarding the proposed reclassifications and analysis methodology. The major changes incorporated into the traffic analysis based on the comments received are summarized below:

- Adjustment of volumes in northeast corner for select intersections along Grand Avenue and Tustin Avenue. Volume changes at the intersection of Tustin Avenue and Santa Clara Avenue were highlighted by the City of Tustin as being excessive. Volumes were adjusted at intersections 74-76 and 91-93 in order to improve trip balance.
- Language for LOS impacts and mitigations updated to better address improvements.
- Fair –share added for non-City of Santa Ana intersections.
- LOS worksheets for the 2045 WP AM were added; they were missing in original appendix.
- V/C and LOS updated for intersection #98 at Red Hill and Warner. An impact was caused as part of the update. Mitigation was developed.
- Additional roadway segments added to analysis.
- Mitigation measure for intersection #3 at Euclid Street and Edinger Avenue expanded.
- Mitigation measure for intersection #62 at Santa Ana Boulevard and Santiago Street modified.
- Mitigation at intersection #100 at Red Hill Avenue and Alton Parkway modified.
- Updates to Figure 2.1 through 2.7.

Santa Ana General Plan Update
Traffic Impact Study
FINAL Report

Prepared for:

City of Santa Ana
Public Works Agency
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By:

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October 2020

DOCUMENT HISTORY

Version	Date	Originator	Revisions By	Status
1	06/05/20	Y. Esquivel		Initial draft.
2	07/21/20	Y. Esquivel	Y. Esquivel	Draft revision.
3	08/24/20	Y. Esquivel	Y. Esquivel	Draft revision.
4	10/20/20	Y. Esquivel	Y. Esquivel	Final Draft.
5				
6				
7				
8				

Table of Contents

1.0 Introduction 1

1.1 Study Purpose 1
1.2 Report Organization 1

2.0 Project Description 4

2.1 Background 4
2.2 Study Area 4
2.3 Circulation Element Roadway Classifications 8
2.4 Scenario Summary 9
2.5 Existing Year (2020) 9
2.6 Future Year (2045) No Project 9
2.7 Future Year (2045) With Project 13

3.0 Analysis Methodology 17

3.1 Vehicle Miles traveled (VMT) Analysis 17
3.2 Roadway Level of Service Analysis 19
3.3 Intersection Level of Service Analysis 20
3.4 Intersection LOS and Significant Impact Criteria 23
3.5 Traffic Volumes 24

4.0 Existing Year (2020) Conditions 30

4.1 Existing Roadway Network 30
4.2 Study Intersection Geometry and Peak Hour Volumes 33
4.3 Existing Year (2020) Vehicle Miles Traveled (VMT) 42
4.4 Existing Year (2020) Roadway Segment Level of Service 42
4.5 Existing Year (2020) Intersection Level of Service 46

5.0 Future Year 2045 Forecast Modeling 50

5.1 Orange County Transportation Authority Model (OCTAM) 50
5.2 Peak Hour Forecasts 50

6.0 Future Year (2045) No Project 52

6.1 Future Year (2045) No Project Vehicle Miles Traveled (VMT) 61
6.2 Roadway Segment Level of Service 61
6.3 Intersection Level of Service 64

7.0 Future Year (2045) With Project 69

7.1 Future Year (2045) With Project Vehicle Miles Traveled (VMT) 78
7.2 Roadway Segment Level of Service 78
7.3 Intersection Level of Service 81

8.0 VMT and LOS Analysis 86

8.1 VMT Impact Analysis 86
8.2 Level of Service Assessment 87

9.0 Conclusions 107

9.1 VMT Impact Analysis 107
9.2 Intersection LOS Analysis 107
9.3 Roadway LOS 108

10.0 Appendices 109

- APPENDIX A – Lane Geometries 109
- APPENDIX B – Intersection Volumes 109
- APPENDIX C – OCTAM Volume Plots 109
- APPENDIX D – Analysis Worksheets 109
- APPENDIX E – Mitigation Worksheets 109
- APPENDIX F – VMT Calculations 109
- APPENDIX G – OCTAM 2045 Volume Comparison PlotS 109
- APPENDIX H - COUNTS 109

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1.0 Introduction

1.1 STUDY PURPOSE

This traffic analysis report has been prepared in support of the General Plan Update (GPU) Draft Program Environmental Impact Report (PEIR) for the City of Santa Ana and to assess requested changes to the Orange County Transportation Authority's (OCTA) Master Plan of Arterial Highways (MPAH) by the City of Santa Ana. This traffic analysis report reviews existing and future traffic conditions under the current General Plan and with the proposed Land Use Element and Circulation Element Updates.

This report is used as part of the Program EIR prepared for the General Plan Update. The Program EIR includes the results and findings of this traffic study report and identifies the significant impacts of the proposed project. The draft Program EIR will be available to the public for review and comment.

1.2 REPORT ORGANIZATION

This report consists of 11 sections.

1.0 Introduction
2.0 Project Description
3.0 Circulation Element Roadway Classifications
4.0 Analysis Methodology
5.0 Existing Year (2020) Conditions
6.0 Future Year 2045 Forecast Modeling
7.0 Future Year (2045) No Project
8.0 Future Year (2045) With Project
9.0 Significant Impacts and Mitigation Measures
10.0 Conclusions
11.0 Appendices

Section 1 provides a brief introduction to the study area and report organization. Section 2 provides a summary of the project description, background history, and project alternatives. Section 3 describes the various roadway classifications within the Circulation Element. Section 4 includes the methodology utilized in the analysis and the referenced standards. The study area roadways and Existing Year (2020) intersection geometry, turning movement volumes, and level of service are presented in Section 5. The Future Year (2045) forecast modeling methodology is provided in Section 6. Section 7 describes the Future Year (2045) No Project condition and provides the roadway segment and intersection level of service results. Section 8 describes the Future Year (2045) With Project Network Alternative condition and provides the roadway segment and intersection level of service results. Section 9 presents the mitigation measures to address facilities operating at an unacceptable level of service. Findings and conclusions from this study are presented in Section 10. Appendices are provided in Section 11.

The City boundaries/project study area is shown in Exhibits 1.1 and 1.2.

Exhibit 1.1 Project Location

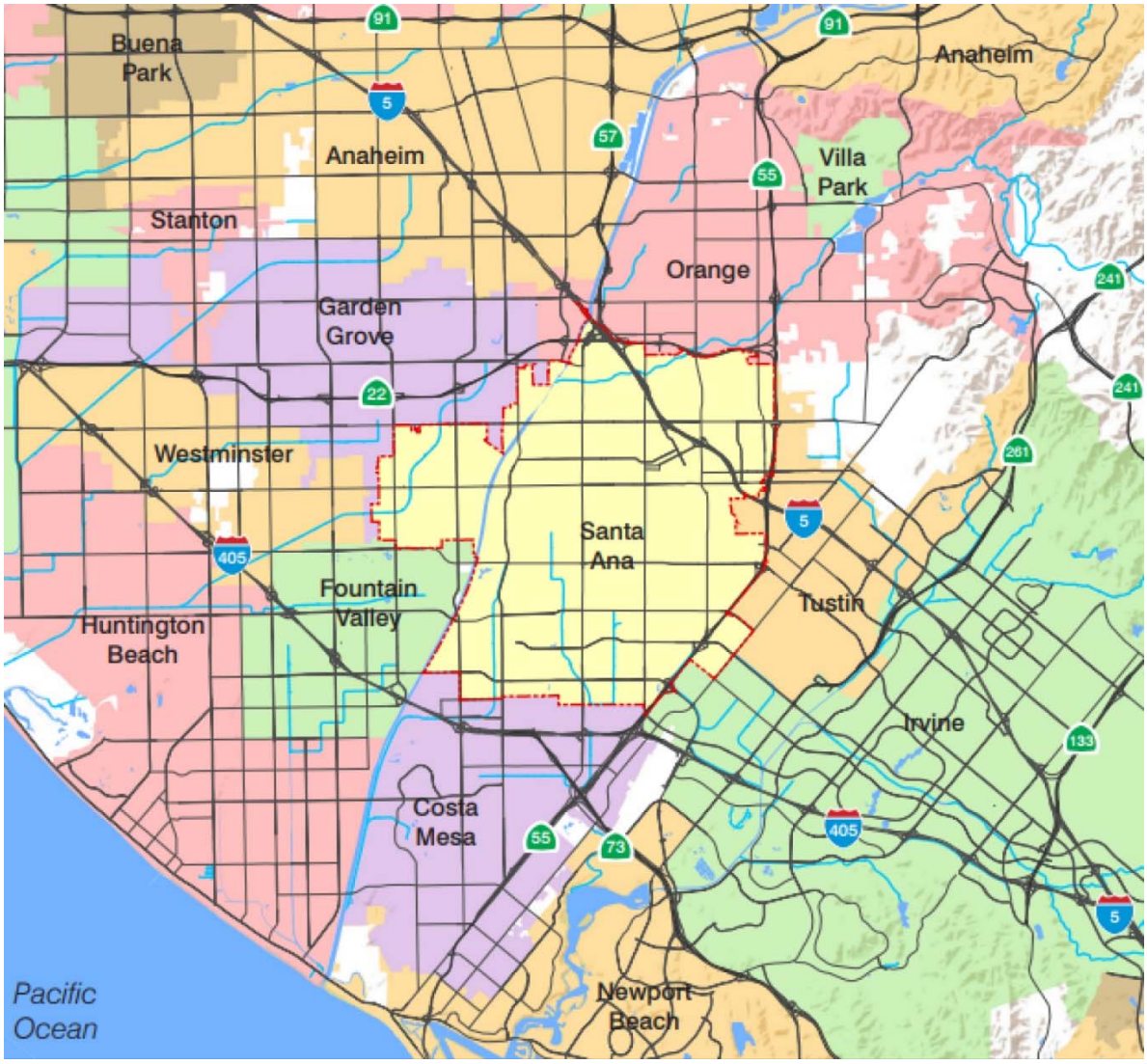
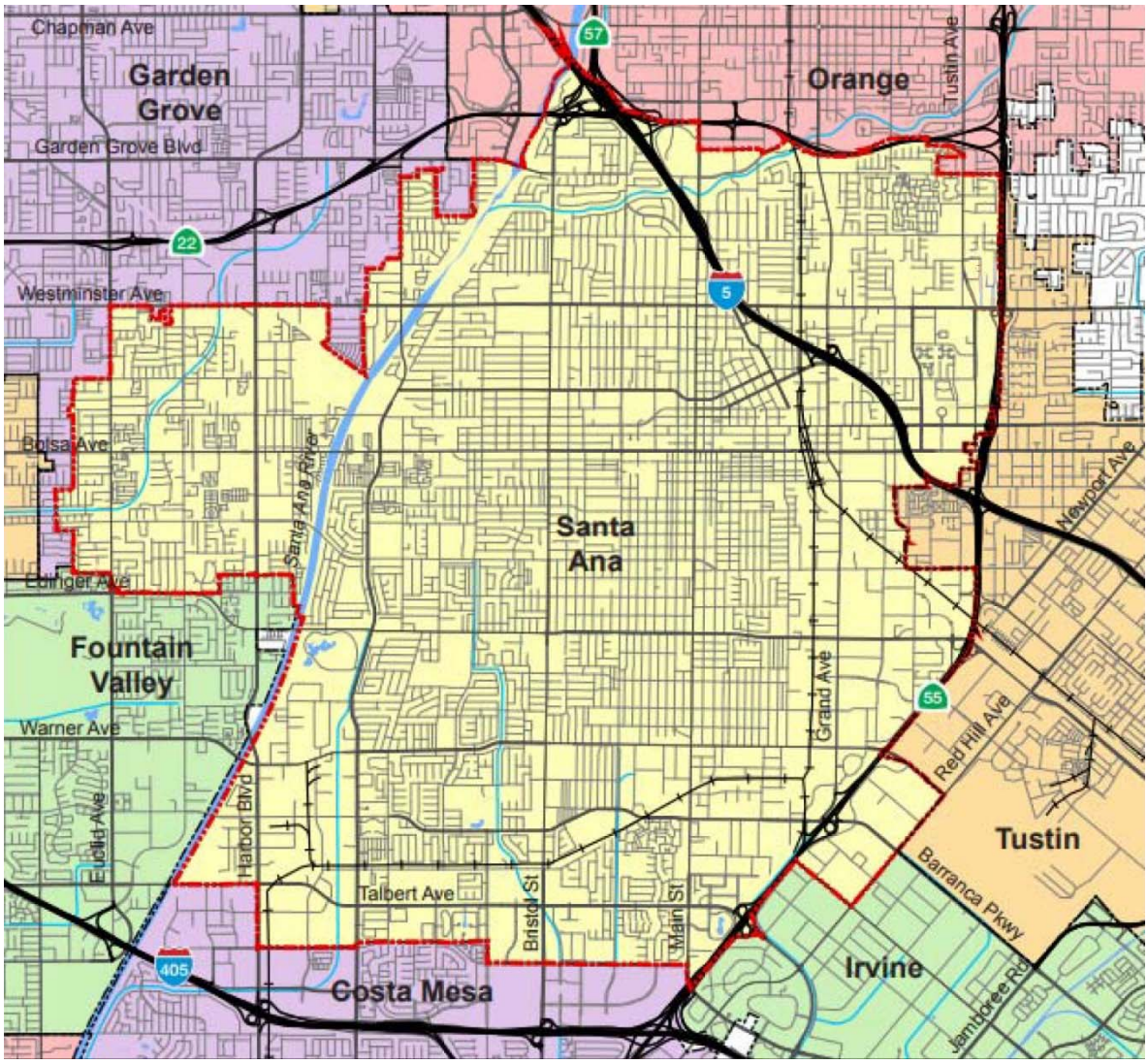


Exhibit 1.2 Project Study Area



2.0 Project Description

This section provides an overview of the project background and traffic study for the General Plan Update. This section also includes a description of the land use and Circulation Element network derived throughout the public outreach and planning process.

2.1 BACKGROUND

The City of Santa Ana's General Plan is comprised of 16 elements, serving as the principal long-range policy and planning document guiding the development, conservation, and enhancement of the City. Each element contains goals and policies related to the physical development of the City. The General Plan was adopted by City Council in 1998 and has been partially amended several times since then. For this analysis, the Land Use and Circulation Elements are of particular interest.

The Land Use Element serves as a long-range guide for land use and development within the City. The primary objective is to manage future growth, minimize land use conflicts, and facilitate growth and development as part of the City's overall vision.

The Circulation Element of the Santa Ana General Plan serves as the City's primary guide for transportation planning. The Circulation Element focuses on roadways and other transportation modes including public transit, railroads, pedestrian and bicycle paths that provide a full range of travel options.

The most recent update to the City of Santa Ana Circulation Element was authorized by City Council in 2011. The project was initiated to update the Circulation Element in its entirety to include the following key components:

- A Complete Streets Policy compliant with the requirements of Assembly Bill (AB) 1358
- OC Streetcar – a proposed streetcar service that would link the Santa Ana Regional Transportation Center (SARTC) with the Civic Center and Garden Grove. The project is currently under construction (at the time this report was written).

Over the last six years, the draft Circulation Element has gone through significant changes, including a new vision, completion of the Santa Ana Safe Mobility Plan, changes to the policy framework and roadway designations, OCTA modeling updates, work by the City on two separate Complete Street studies, advancement of a fixed-guideway/streetcar system and BRT routes, and incorporation of Complete Street Principals.

The updates to both the Circulation Element and the EIR are based on a proposed new roadway network scenario, updated OCTA modeling and new modal split, work on the Bikeway Master Plan and Pedestrian Opportunity Area Plan, regulatory changes (e.g., air quality/GHG requirements per 2015 Climate Action Plan, SB743, etc.), integrating related plans (Safe Mobility Santa Ana Plan, and complete street plans (Downtown and Central Santa Ana Transit Zone plans).

2.2 STUDY AREA

As noted, the project consists of changes to both land uses and the transportation network within the City of Santa Ana. The study area was chosen such that the direct and indirect effects of the project could be assessed, within the City of Santa Ana as well as in the adjacent cities. Study intersections were developed based on the locations of the proposed changes as well as in consideration of input provided by OCTA, Caltrans, and neighboring cities during outreach for the Circulation Element Update. Prior to merging with the GPU, the CEU was in the process of evaluating various transportation network

scenarios. The transportation network proposed in this study is a result of those efforts. Study roadway segments and intersections are shown in Exhibit 2.1 and 2.2, respectively.

Exhibit 2.1 Study Intersections

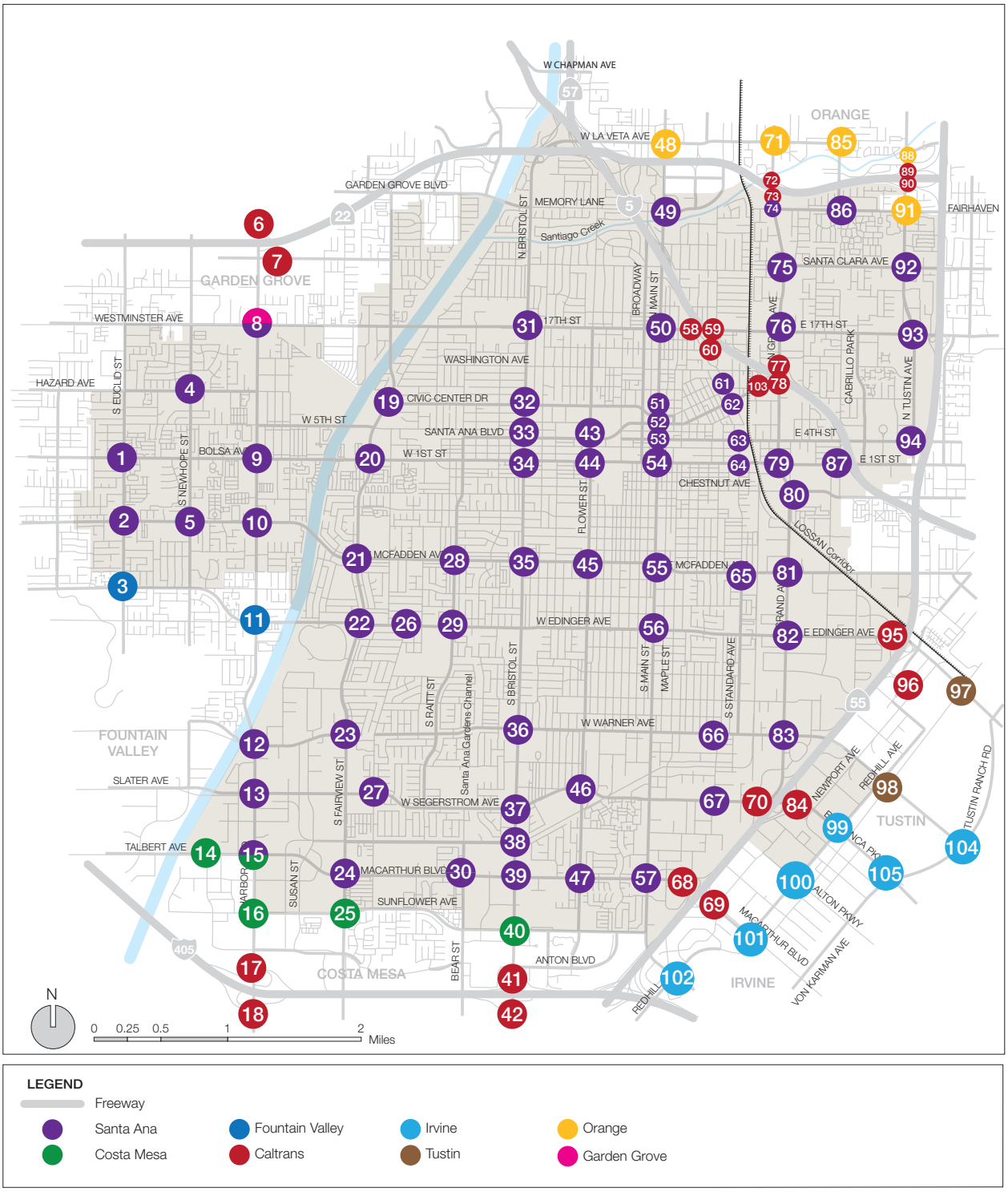
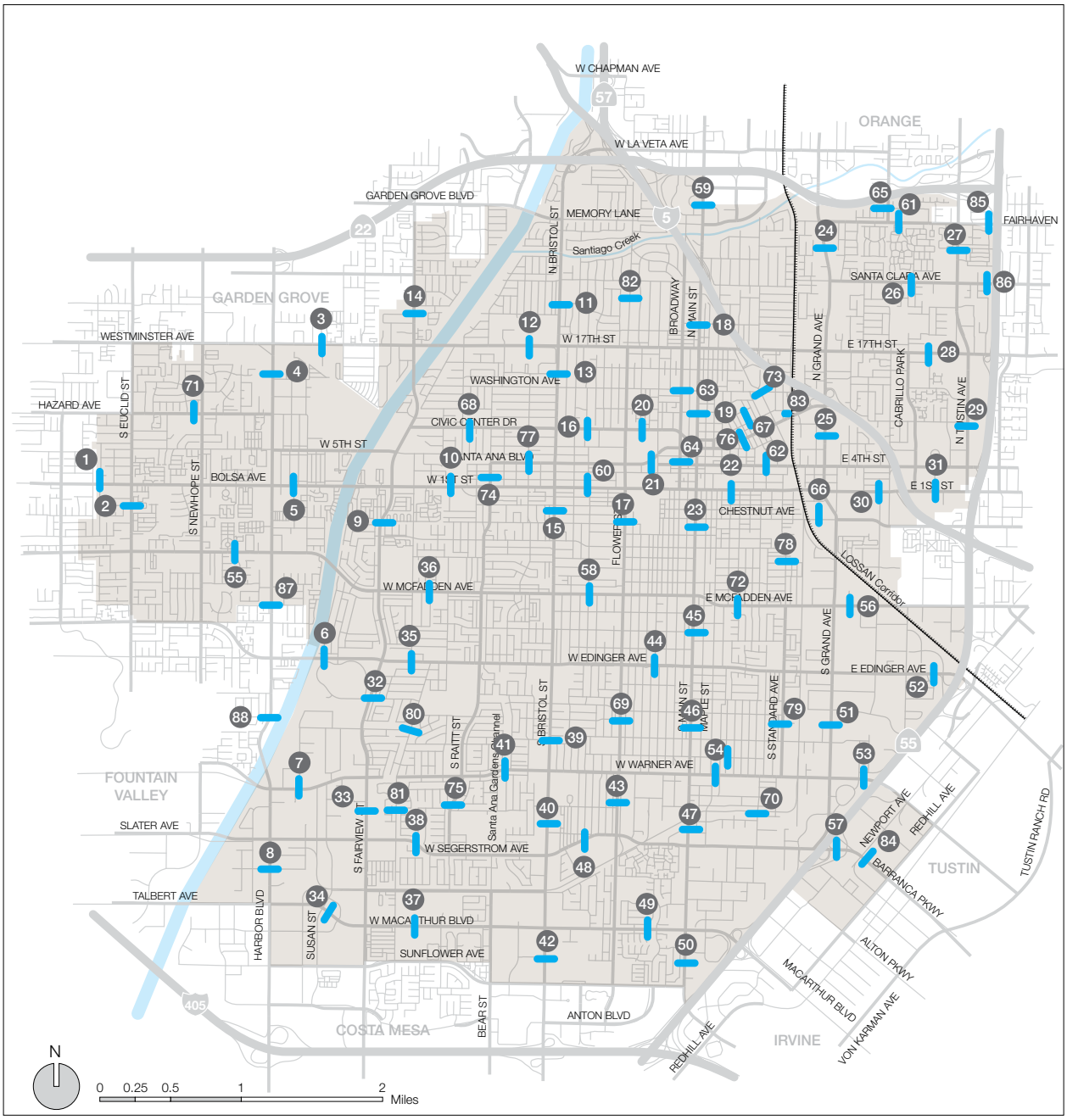


Exhibit 2.2 Study Roadway Segments



LEGEND

Study Segment

2.3 CIRCULATION ELEMENT ROADWAY CLASSIFICATIONS

The Circulation Element contains a Master Plan of Streets and Highways (MPSH) that uses a hierarchy of roadway classifications. Each roadway classification is described by size and function and has specific physical dimensions and characteristics. The MPSH contains regional arterials that connect to the countywide arterial network. OCTA's Master Plan of Arterial Highways (MPAH) is the County's planning document to ensure that the regional arterial highway network is maintained and developed in a coordinated manner between local jurisdictions to support mobility and future growth in the region. Consistency between the MPSH and MPAH is essential in order to maintain a functional regional arterial network and to receive funding from Measure M2 for street improvement projects.

Freeways

Freeways are multi-lane, limited-access, high-volume, high-speed roadways constructed for regional and interregional vehicular travel. Access to these facilities is restricted to interchange ramps at selected roadways along their route. Freeways are under the jurisdiction of the California Department of Transportation (Caltrans).

Principal Arterial

Typically, an eight-lane, divided roadway designed to accommodate between 45,000 to 67,500 vehicle trips daily. The typical right of way width is 144 feet.

Major Arterial

Generally consists of six-travel lanes, and is also divided. Typically, the right-of-way width for this type of roadway is 120 feet. A major arterial is designed to accommodate between 33,900 and 50,600 vehicle trips daily.

Primary Arterial

Generally consists of a four-lane, divided roadway. Typically, the right-of-way width is 100 feet. A primary arterial is designed to accommodate between 22,500 and 33,800 vehicle trips daily.

Secondary Arterial

Generally a four-lane, undivided roadway. The typical right-of-way width for this category of roadway is 80 feet. A secondary arterial is typically designed to accommodate between 15,000 and 22,500 vehicle trips daily.

Divided Collector Arterial

Generally a two-lane roadway with a continuous center two-way left-turn lane. The typical right-of-way width is 80 feet, for the purpose of allocating right-of-way to bicycle and pedestrian use. A divided collector arterial is designed to accommodate up to 22,000 vehicle trips per day.

Collector Street

A two-lane, undivided roadway. The right-of way width for this roadway classification is 60 feet. Collector Streets are also two-lane undivided roadways with a right-of-way width of 56 feet. A divided collector arterial is designed to accommodate up to 11,300 vehicle trips per day.

2.4 SCENARIO SUMMARY

This report presents the baseline analysis results for the existing year (2020) and future year (2045) baseline scenarios as well as future year (2045) project alternative scenario. These scenarios are listed below and described in the following sections:

- Existing Year (2020)
- Future Year (2045) No Project
- Future Year (2045) With Project – Proposed GPU

2.5 EXISTING YEAR (2020)

This scenario is representative of on-the-ground conditions for the transportation network and socio-economic makeup of the city for the year 2020. This scenario serves as a point of reference for future baseline and project alternative scenarios. The network and land use assumptions are as follows:

- The transportation network is reflective of configurations as of April 2020.
- Socio-economic data is representative of December 2019 conditions.

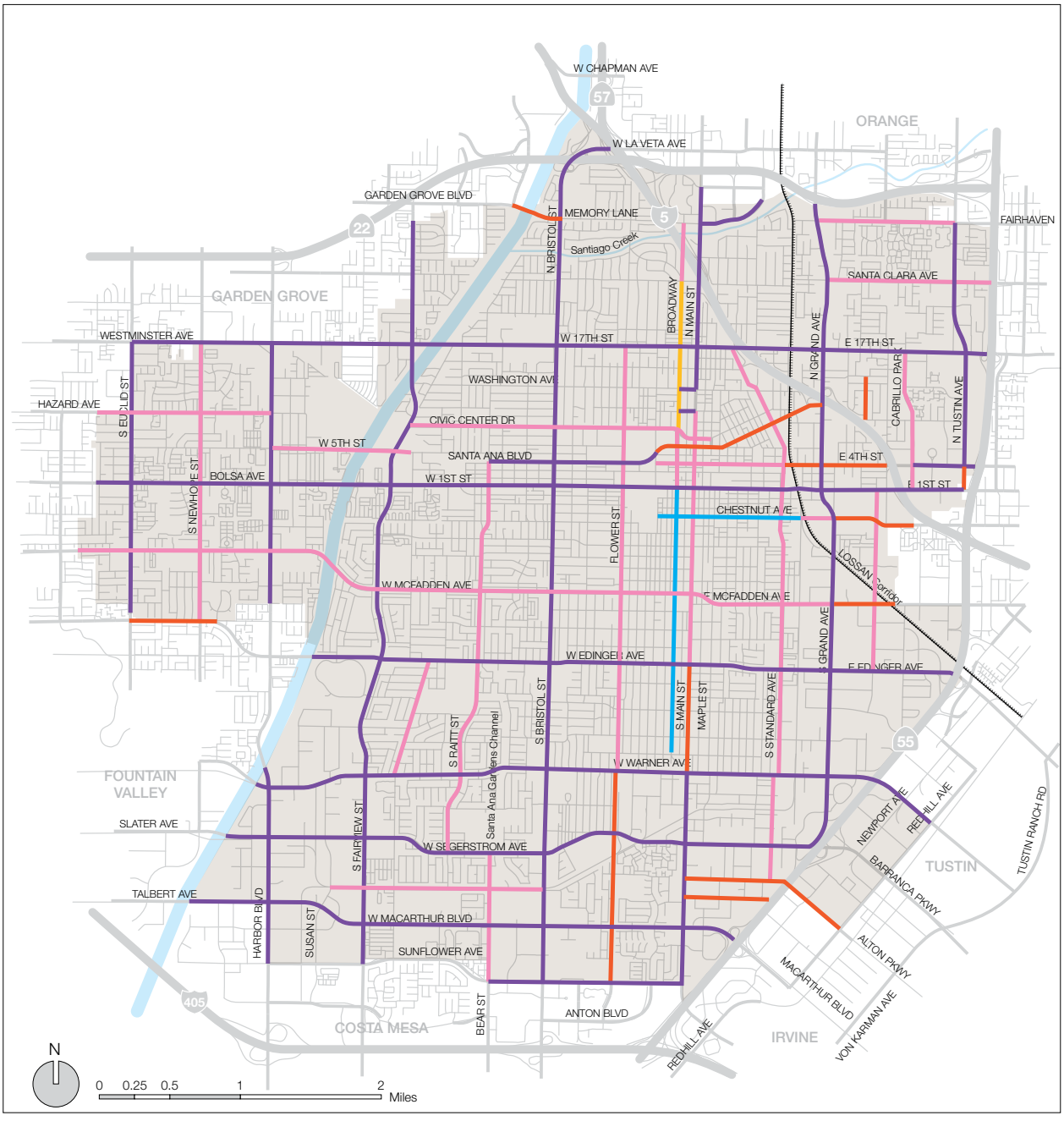
2.6 FUTURE YEAR (2045) NO PROJECT

This scenario serves as the baseline for future year (2045) analysis and consists of the following key assumptions:

- Transportation network and socio-economic data for OCTAM 5.0 Year 2045 Baseline scenario.
- Buildout of roadways consistent with the City of Santa Ana Master Plan of Streets and Highways map (MPSH) as shown in the Circulation Element (1998).
- Buildout of the Orange County Transportation Authority's (OCTA) Master Plan of Arterial Highways (MPAH)
- Freeway and transit improvements considered in the Preferred Alternative of OCTA's LRTP
    - OC Streetcar – The OC Streetcar Project is a proposed streetcar service that would travel between the Santa Ana Regional Transportation Center (SARTC) and Garden Grove. The streetcar is proposed to travel along an exclusive guideway or path on rails that are embedded in the pavement. The streetcar is proposed to travel primarily along Santa Ana Boulevard and along the Pacific Electric Right-of-Way.
    - Bus Rapid Transit (BRT) - These improvements include the Bus Rapid Transit projects along Harbor Boulevard, Bristol Street, and Westminster Avenue/17th Street.
- Modification of mode split for automobile, bicycle, and pedestrians to reflect new bicycle/pedestrian trips.

Exhibit 2.3 presents the current MPSH, which is consistent with the No Project Alternative. Exhibit 2.4 shows current MPAH designations. Exhibit 2.5 shows the Santa Ana Fixed Guideway (OC Streetcar) alignment.

Exhibit 2.3 Master Plan of Streets and Highways (MPSH)



LEGEND

- Freeway
- Principal
- Major Arterial
- Primary Arterial
- Secondary Arterial
- Commuter
- Local Commercial

Exhibit 2.4 OCTA Master Plan of Arterial Highways (MPAH)

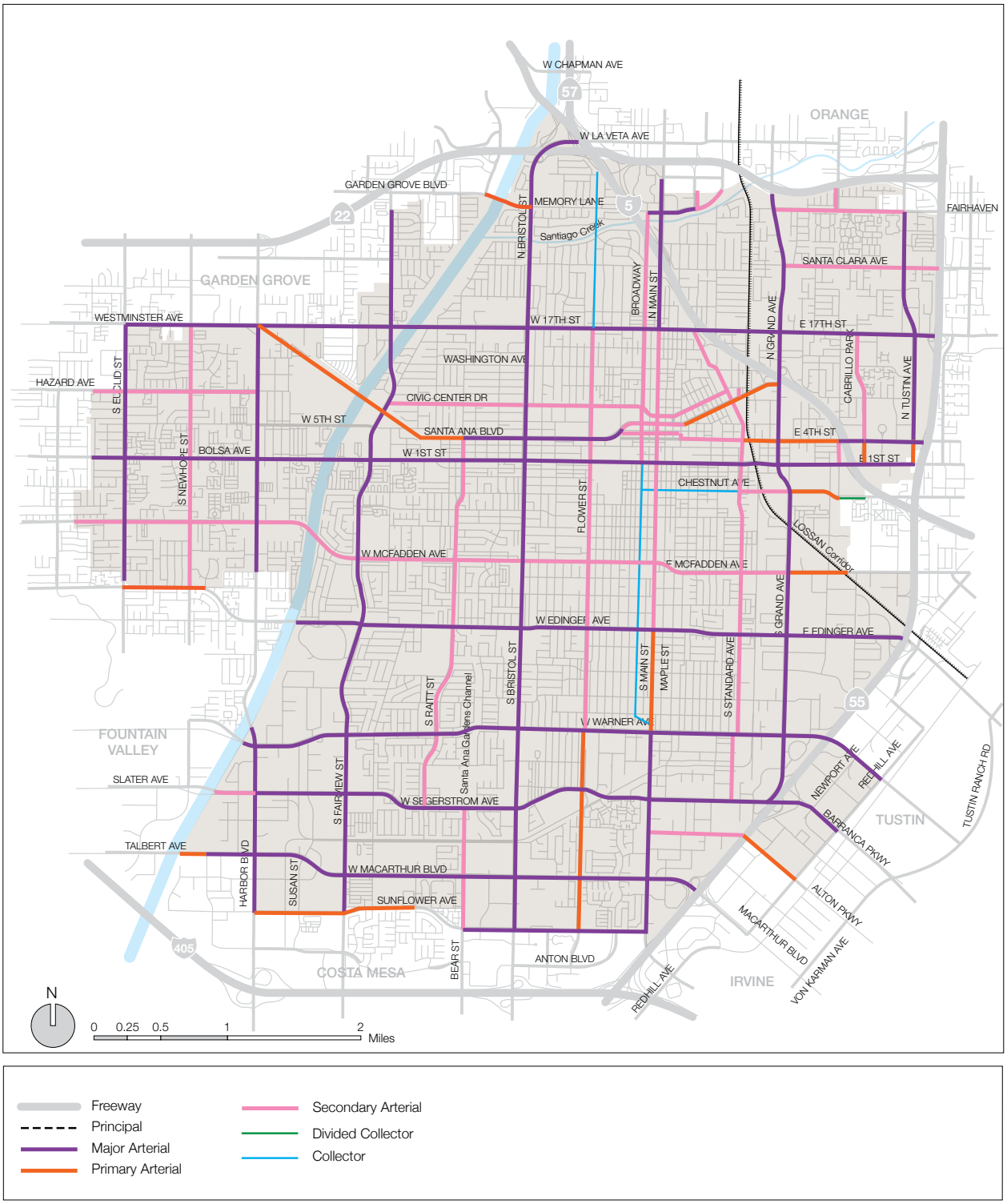


Exhibit 2.5 OC Streetcar Alignment



Source: Orange County Transportation Authority

2.7 FUTURE YEAR (2045) WITH PROJECT

This scenario is based on the Future Year (2045) No Project scenario, with modifications to both the transportation network and socio-economic data. Reclassifications to some roadways are proposed to facilitate the implementation of Complete Streets throughout the City as well as reconcile inconsistencies between the MPSH and MPAH. Additionally, this scenario considers the buildout of an updated Land Use Element for the General Plan.

The transportation network was developed through the evaluation of alternatives in the Circulation Element Update and in consideration of input provided by OCTA, Caltrans, and neighboring cities during outreach. This network is based on that of the No Project scenario, with the addition of the following modifications.

Classify the following streets as Divided Collector Arterials

- Santa Clara between Grand Avenue and SR-55 Freeway (currently Secondary)
- Flower Street between Warner Avenue and First Street (currently Secondary)
- Chestnut Avenue between Standard Avenue and East City Limit (currently Secondary/Primary)
- Raitt Street between Segerstrom and Santa Ana Boulevard (currently Secondary)
- Civic Center Drive between Fairview Street and Bristol Street (currently Secondary)
- Penn Way between I-5 on/off ramps and Washington Avenue (currently a secondary)
- Santiago Street between Washington Avenue and 6th Street (currently a secondary)
- Standard Avenue between 6th Street and Warner Avenue (currently a Secondary Arterial)
- Santa Ana Boulevard between French Street and Santiago Street (currently a Primary Arterial)
- Santa Ana Boulevard between Raitt and Flower (currently a Major)
- Cambridge Street between Fairhaven and SR-22 Freeway (currently Secondary)
- Hazard Avenue between Euclid and Harbor (currently Secondary)
- Halladay Avenue between Warner and Dyer (currently Secondary)
- McFadden Avenue between Harbor Blvd and Grand Ave (currently Secondary)
- Broadway between 1st and 17th (currently Secondary)
- 4th Street between French and Grand (currently Secondary/Primary)
- Fairhaven Avenue from Grand to Tustin (currently Secondary)

Classify the following streets as Primary Arterials

- Santa Ana Boulevard between Flower and Ross (currently a Major)
- 1st Street between Bristol Street and Tustin Avenue (currently Major)

Classify the following streets as Collector Arterials

- Civic Center Drive between French and Santiago (currently a Secondary Arterial)

Add the following streets to the MPAH as Divided Collector Arterials

- Greenville Street between Segerstrom Avenue and Warner Avenue

Add the following streets to the MPAH as Collector Streets

- Greenville Street between Edinger Avenue and Warner Avenue

Remove the following streets from the MPAH

- Flower Street between 17th Street and its northern terminus
- Logan Street between Civic Center Drive and Santa Ana Boulevard

Exhibit 2.6 presents the proposed street reclassifications. Exhibit 2.7 presents the With Project transportation network.

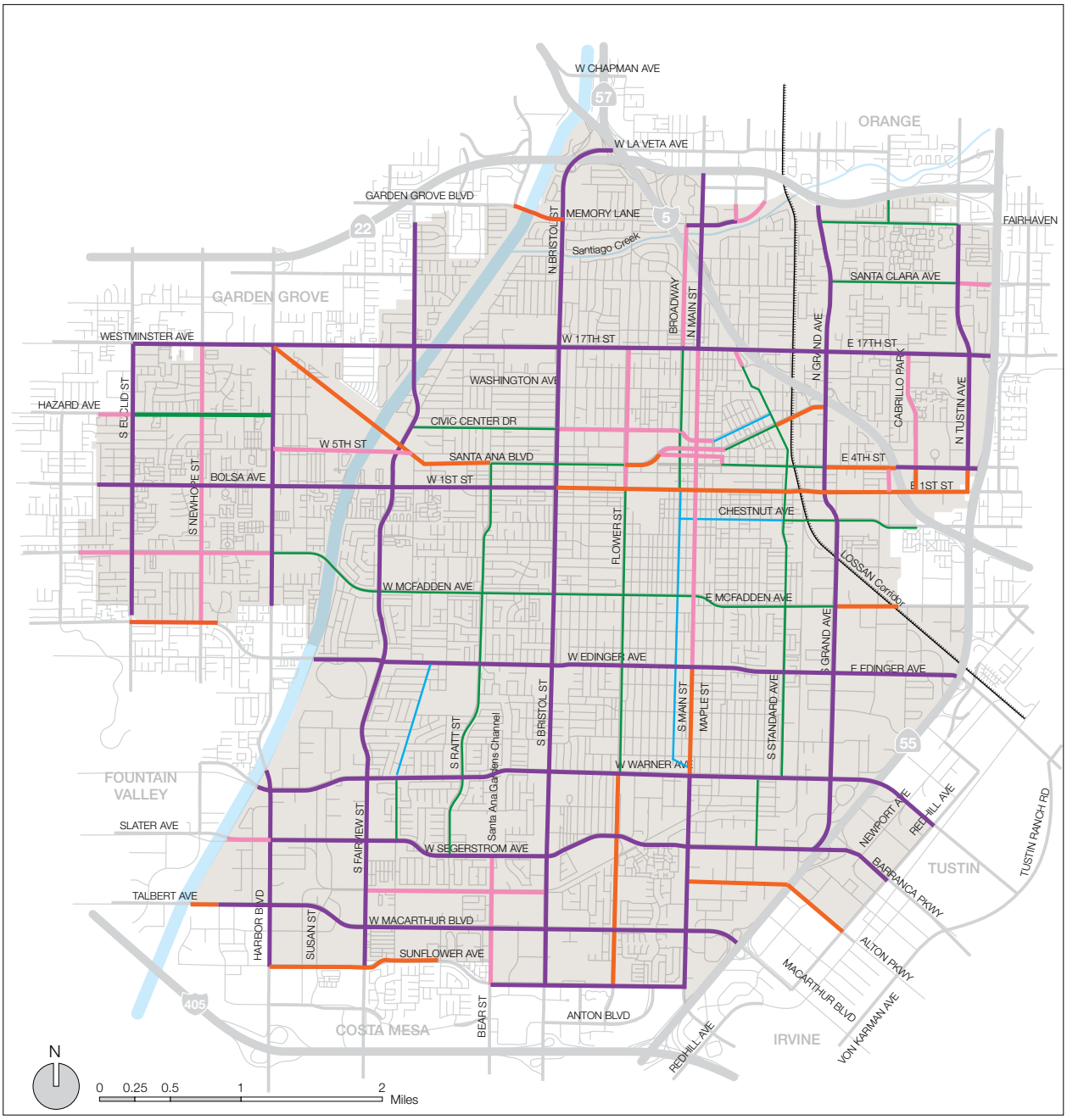
Exhibit 2.6 Proposed Arterial Roadway Reclassifications



LEGEND

- Freeway
- Classify as Primary Arterial
- Classify as Divided Collector Arterial
- Classify as Collector
- Classify as Local Street / Delete from MPAH Network

Exhibit 2.7 Proposed Santa Ana Circulation Element Transportation Network



3.0 Analysis Methodology

The analysis methodology and impact criteria used in this analysis conform to the California Environmental Quality Act (CEQA) guidelines for a traffic impact analysis. CEQA identifies VMT as the preferred metric for identifying environmental impacts. Although VMT governs CEQA impacts, vehicle LOS is also assessed in order to address local operational performance and impacts. Additionally, roadway performance is assessed in order to monitor conformance with the Orange County Transportation Authority's (OCTA) Master Plan of Arterial Highways (MPAH) operational requirements.

Study intersections and roadway segments were assessed using the method specified by the City Santa Ana, Orange County Congestion Management Program (CMP) guidelines, and other governing agency guidelines. As such, intersections under the jurisdiction of the Cities of Santa Ana, Costa Mesa, Irvine, Tustin, Garden Grove, Fountain Valley, and Orange were assessed using the Intersection Capacity Utilization (ICU) method. Intersections under the jurisdiction of Caltrans were assessed using the Highway Capacity Manual 2000 method (HCM 2000).

3.1 VEHICLE MILES TRAVELED (VMT) ANALYSIS

The VMT analysis was prepared in conformance with the City of Santa Ana VMT Analysis Guidelines (VMT Guidelines; September 2019). The City's VMT Guidelines are based on the Office of Planning and Research's (OPR) Technical Advisory on Evaluating Transportation Impacts in CEQA (December 2018). A VMT analysis is to be conducted for land use and transportation projects that have the potential to increase the average VMT per service population (VMT/SP).

VMT is defined as the total miles traveled by vehicles (within a transportation network). Service population is described as the population generating the VMT of interest. A VMT analysis may be conducted for large-scale projects such as land use plans or individual transportation/development projects. For large-scale projects, it is appropriate to assess VMT impacts based on total VMT/SP. For individual projects, the VMT analysis may consider VMT and VMT/SP based on specific trip types (e.g. work-based trips) and the corresponding population which generates said VMT (e.g. employees).

VMT was generated with data from OCTAM 5.0 using the full-accounting, origin-destination (OD) methodology. The full-accounting, origin-destination methodology considers the VMT generated by all internal-internal (I-I), internal-external (I-X), and external-internal (X-I) trips. These trip types refer to trips that include an origin and/or destination within the study areas (City of Santa Ana and Orange County). For example, an internal-internal trip refers to a trip which begins in the City and also ends in the City; an internal-external trip refers to a trip which begins in the City but ends outside of the City; an external-internal trip refers to a trip which begins outside of the City but ends in the City. It should be noted that while the majority of trips are captured in their entirety, a small portion are cut off at the OCTAM 5.0 boundaries. Thus, while the number of trips to and from the City of Santa Ana which cross the model boundary are known at various locations along major access points (highways, freeways, etc.) the trip length past the OCTAM 5.0 boundary is not.

In order to account for the VMT generated by the portions of trips outside the model boundaries, trip length assumptions were developed. These assumptions are based on the destinations/attractions near the model boundary as well as likely attractions/destinations beyond the immediate developments near the boundary limits. For example, northbound and southbound trips along I-5 at the San Diego County Line were assigned a trip length of 20 miles past the model's southern boundary (the San Diego County Line). This assumption is intended to provide a general account for VMT which considers trips to various locations such as Camp Pendleton, the US-Mexico Border, and various cities within San Diego County. Trip lengths of zero (0) miles are assigned to those trips which are not considered to extend further than 5 miles past the OCTAM boundary; due to the approximate boundary of the model, it would not be appropriate to pursue such a level of accuracy. A summary of the trip length assumptions to/from major OCTAM 5.0 boundary access points is provided below:

- SR-101 near Ventura (20 miles)
- SR-150 near Ojai (0 miles)
- SR-33 near Ventura (0 miles)
- I-5 near Santa Clarita (50 miles)
- SR-14 near Santa Clarita (20 miles)
- I-15 north of I-215 (50 miles)
- I-10 near Banning (30 miles)
- SR-243 south of Banning (10 miles)
- SR-74 east of Hemet (20 miles)
- SR-79 near Temecula (20 miles)
- I-15 near Temecula (0 miles)
- I-5 at San Diego County Line (20 miles)

Due to the nature and scale of the proposed project, the analysis considers the total VMT and service population which consists of the aggregate of total employees and population within the study area. When aggregating employees and residents, an employee reduction factor was applied to account for overlaps in the two (employees who are also residents). Reduction factors were applied to both the City of Santa Ana and County of Orange employees then aggregated to the resident population. Reduction factors are based on employment data within the Southern California Association of Governments (SCAG) Local Profiles Reports (2019) for the City of Santa Ana and Orange County. The SCAG reports show that 20.8% of employees within the City are also residents of the City and that 65.3% of employees within the County are also residents of the County.

VMT and VMT/SP is provided for all scenarios. Existing year (2020) VMT, SP, and VMT/SP values were developed through linear interpolation of 2016 and 2045 baseline OCTAM scenarios. This method was chosen due to the availability of consistent VMT and socio-economic data (SED) used to derive VMT/SP. Although existing year (2020) SED is available, it does not have an accompanying VMT dataset since there is no baseline OCTAM roadway/highway network for existing year (2020) conditions. Therefore, the traffic study uses both interpolated VMT and SED based on OCTAM 2016 baseline and the 2045 forecasts to develop the existing year (2020) values.

Per the City of Santa Ana Traffic Impact Study Guidelines (2019), the project should be screened to determine the need for a full VMT analysis based on the following screening criteria. Firstly, two conditions should be considered:

- Does the project have the potential to reduce VMT/SP?
- Is the project consistent with the Regional Transportation Plan (RTP) / Sustainable Communities Strategy's (SCS)?

If both conditions are met, then a project may be precluded from a full VMT analysis if any of the following criteria are met:

- Projects which serve the local community and have the potential to reduce VMT, such as neighborhood K-12 schools and local-serving retail less than 50,000 square feet (Charter schools are excluded from this criteria.
- Projects that generate less than 110 net daily trips.
- Projects located within Transit Priority Areas (TPAs)
- Projects located in a low-VMT generating Traffic Analysis Zone (TAZ).
    - Proposed land use shall be consistent with the existing land use generating the low VMT/SP.
    - Proposed land use shall be consistent with the RTP/SCS assumptions or decreases VMT/SP compared to RTP/SCS.

The criteria above are presented in a compact manner. Detailed criteria descriptions and supporting material are provided in the City of Santa Ana Traffic Impact Study Guidelines (2019).

VMT impacts are assessed for the Future Year (2045) With Project scenario, based on changes from both the Existing Year (2020) and Future Year (2045) No Project scenarios. VMT impact thresholds for land use plans (such as General Plans and Specific Plans) are listed below:

- Project Level Impact
    - A project is considered to have a significant impact if the project VMT/SP (for the land use plan) exceeds 15% below the existing total daily VMT/SP for the County; or
- Cumulative Impact
    - A project is considered to have a significant impact if the project results in a negative effect on VMT/SP at the citywide level (City VMT/SP is higher with the project than without it.

Where an impact is identified, the project's VMT/SP should be mitigated to be at or less than 15% below the existing Countywide VMT/SP. Mitigation measures may include changes to the project, implementation of transportation demand management (TDM) measures, impact fees, a mitigation exchange, or any other measure approved by the City's Traffic Engineering Division and Planning Department.

3.2 ROADWAY LEVEL OF SERVICE ANALYSIS

Roadway performance was assessed based on the volume-to-capacity (V/C) ratio, as specified in the Santa Ana Circulation Element (1998). The V/C ratio is calculated by dividing the roadway volume by the capacity of the roadway. Roadway capacities are presented in Table 3-1 and resemble those presented in the Santa Ana Circulation Element. The Santa Ana Circulation Element, however, does not provide roadway capacities for the Divided Collector and five-lane divided arterial roadway types. Capacities for the Divided Collector roadway were taken from the Orange County Master Plan of Arterial and Highways (OC MPAH); capacities for the five-lane divided arterial roadway were developed by averaging the capacities of the Major and Primary Arterial roadway types. The capacities shown

correspond to the maximum volume that can be experienced in order to achieve the corresponding level of service (LOS). Therefore, a volume greater than that listed in the column labeled "LOS E" will result in LOS F. The minimum level of service for roadways in the City of Santa Ana is LOS D, per the Circulation Element (1998). The OC MPAH suggests a minimum LOS of C be maintained for roadways, with the intent of maintaining LOS D through intersections. Descriptions of operation and the range of volume-to-capacity ratios for each LOS grade are presented in Table 3-2.

Table 3-1 Roadway Capacity and LOS

CLASSIFICATION	LANES	LOS A	LOS B	LOS C	LOS D	LOS E
Principal Arterial	8D	45,000	52,500	60,000	67,500	75,000
Major Arterial	6D	33,900	39,400	45,000	50,600	56,300
Major / Primary Arterial	5D	28,200	32,850	37,500	42,200	46,900
Primary Arterial	4D	22,500	26,300	30,000	33,800	37,500
Secondary Arterial	4U	15,000	17,500	20,000	22,500	25,000
Divided Collector	2D	9,000	12,000	15,000	20,000	22,000
Collector	2U	7,500	8,800	10,000	11,300	12,500

Sources: City of Santa Ana, General Plan – Circulation Element (1998); Orange County Master Plan of Arterials and Highways (2017).

3.3 INTERSECTION LEVEL OF SERVICE ANALYSIS

Study intersections were assessed using the methodology described in the governing agency's traffic impact analysis guidelines. As such, intersections were assessed using the Intersection Capacity Utilization (ICU) methodology or the Highway Capacity Manual 2000 method (HCM 2000). A description of each as well as the level of service criteria is provided in the following sections.

3.3.1 ICU Methodology

Signalized intersections under the jurisdiction of the Cities of Santa Ana, Costa Mesa, Orange, Irvine, Tustin, and Fountain Valley were assessed using the ICU methodology. The ICU methodology is based on intersection V/C ratio. The V/C ratio value for each movement is the observed volume divided by the saturation flow volume. The intersection ICU value is the sum of the V/C values for the critical movement on each leg, where critical movements are the pairs of conflicting movements with the highest combined V/C values. ICU is expressed as a decimal value (e.g. 0.74), where 1.00 represents the saturated condition where the volume of traffic flow is equal to the capacity. LOS descriptions and their corresponding ranges of V/C ratios are provided in Table 3-2.

This study uses maximum saturation volumes of 1,600 vehicles per hour per lane (VPHPL) for turn lanes and 1,700 VPHPL for through lanes. A 5% loss time per cycle length was applied.

Table 3-2 ADT / ICU Level of Service Descriptions

LOS	V/C	Definition
A	0.00 – 0.60	Free Flow. Individual users are virtually unaffected by the presence of others in the traffic stream. Freedom to select desired speeds and to maneuver within the traffic stream is extremely high. The general level of comfort and convenience provided to the motorist, passenger, or pedestrian is excellent.
B	0.61 – 0.70	Stable flow. The presence of other users in the traffic stream begins to be noticeable. Freedom to select desired speeds is relatively unaffected, but there is a slight decline in the freedom to maneuver within the traffic stream with LOS A. The general level of comfort and convenience provided is somewhat less than that of LOS A, because the presence of others in the traffic stream begins to affect individual behavior.
C	0.71 – 0.80	Stable flow. This LOS marks the beginning of the range of flow in which the operation of individual users becomes significantly affected by interactions with others in the traffic stream. The selection of speed is affected by the presence of others, and maneuvering within the traffic stream requires substantial vigilance on the part of the user. The general level of comfort and convenience declines noticeably at this level.
D	0.81 – 0.90	High density, but stable flow. Speed and freedom to maneuver are severely restricted, and the drive or pedestrian experiences a generally poor level of comfort and convenience. Small increases in traffic flow will generally cause operational problems at this level.
E	0.91 – 1.00	Operating conditions at or near the capacity level. All speeds are reduced to a slow but relatively uniform value. Freedom to maneuver within the traffic stream is extremely difficult, and generally accomplished by forcing a vehicle or pedestrian to "give way" to accommodate such maneuvers. Comfort and convenience levels are extremely poor, and drivers or pedestrian frustration is generally high. Operations at this level are usually unstable because small increases in flow or minor variations within the stream will cause a breakdown.
F	> 1.00	Forced or breakdown flow. This condition exists wherever the amount of traffic approaching a point exceeds the amount which can traverse that point. Queues form up behind such locations as arrival flow exceeds discharge flow.

Source: City of Santa Ana, General Plan – Circulation Element, 1998

3.3.2 Highway Capacity Manual (HCM) Methodology

Study intersections that are Caltrans operated intersections were evaluated using the Highway Capacity Manual 2000 (HCM 2000) Operations methodology consistent with Caltrans guidelines. Chapter 16 of the Highway Capacity Manual (HCM) 2000 contains the operations methodology for signalized intersections, which evaluates LOS based on controlled delay per vehicle. Controlled delay is defined as the portion of the total delay attributed to the traffic signal operation including deceleration delay, queue move-up time, stopped delay, and final acceleration delay. Consistent with HCM 2000 methodology the maximum saturation flow rate for intersections analyzed using HCM 2000 is 1,900 VPHPL. The relationship between controlled delay per vehicle and LOS for signalized intersections is summarized in Table 3-3.

Table 3-3 HCM 2000 Level of Service Descriptions

LOS	Description of Traffic Conditions	Delay (sec/veh)
A	Insignificant delays: no approach phase is fully utilized and no vehicle waits longer than one red indication.	≤ 10
B	Minimal delays: an occasional approach phase is fully utilized. Drivers begin to feel restricted.	> 10 – 20
C	Acceptable delays: major approach phase may become fully utilized. Most drivers feel somewhat restricted.	> 20 – 35
D	Tolerable delays: drivers may wait through more than one red indication. Queues may develop but dissipate rapidly, without excessive delays.	> 35 – 55
E	Significant delays: volumes approaching capacity. Vehicles may wait through several cycles and long vehicle queues form upstream.	> 55 – 80
F	Excessive delays: represents conditions at capacity, with extremely long delays. Queues may block upstream intersections.	> 80

Source: Highway Capacity Manual, Transportation Research Board, 2000.

Unsignalized intersections were evaluated using the methodology described in Chapter 17 of the HCM. The criteria for unsignalized intersections have different threshold values than do those for signalized intersections because drivers expect signalized intersections to carry higher traffic volumes, so higher levels of control delay are acceptable. The relationship between controlled delay per vehicle and LOS for unsignalized intersections is summarized in Table 3-4.

Table 3-4 Level of Service for Unsignalized Intersections

LOS	Control Delay (sec/veh)
A	≤ 10
B	> 10 – 15
C	> 15 – 25
D	> 25 – 35
E	> 35 – 50
F	> 50

Source: Highway Capacity Manual, Transportation Research Board, 2000. Exhibit 17-22

The intersection Level of Service analysis for this report was performed using TRAFFIX software. TRAFFIX is a network-based interactive computer program that enables calculation of levels of service at signalized and unsignalized intersections for multiple locations and scenarios. TRAFFIX also calculates signal timing (green times and cycle lengths) and maximum queue lengths to assist in evaluating signalized intersections.

3.4 INTERSECTION LOS AND SIGNIFICANT IMPACT CRITERIA

3.4.1 Cities of Santa Ana, Costa Mesa, Fountain Valley, and Orange

The minimum LOS for intersections in the Cities of Santa Ana, Costa Mesa, and Fountain Valley is LOS D. Impacts are considered significant if:

- An intersection degrades from an acceptable LOS (LOS D or better) to an unacceptable LOS (LOS E or F) during the peak hours; or
- The project increases traffic demand at the study intersection by 1% of capacity (0.01) if the intersection already operates at an unacceptable level (LOS E or F).

3.4.2 City of Tustin

The minimum LOS for intersections in the City of Tustin is LOS D. Significant impacts are not explicitly outlined, but the preservation of the minimum LOS with and without the project is required. Therefore, a significant impact can be assumed to occur if:

- An intersection is expected to operate at an unacceptable LOS (LOS E or F) in the With Project scenario; an effort to return the intersection LOS to an acceptable level is to be made.

3.4.3 City of Irvine

The minimum LOS for intersections in the City of Irvine is LOS D. Impacts are considered significant if:

- An intersection degrades from an acceptable LOS (LOS D or better) to an unacceptable LOS (LOS E or F) during the peak hours; or
- An intersection is operating at an unacceptable LOS (LOS E or F) and experiences an increase in V/C of 0.02 or more.

3.4.4 Orange County Congestion Management Program

The minimum LOS for intersections part of the Orange County Congestion Management Program (OC CMP) establishes LOS E as the minimum level of operation for CMP roadways (freeways and Smart Streets). Impacts are considered significant if:

- An intersection degrades from an acceptable LOS (LOS E or better) to an unacceptable LOS (LOS F) during the peak hours; or
- The project increases traffic demand at the study intersection by 10% of capacity (0.10) if the intersection already operates at an unacceptable level (LOS F)

OC CMP intersections included in this analysis are:

- INT 6 – Harbor Boulevard and SR-22 WB Off-Ramp / Banner Drive
- INT 9 – Harbor Boulevard and 1st Street
- INT 12 – Harbor Boulevard and Warner Avenue
- INT 17 – Harbor Boulevard and I-405 NB Off-Ramp
- INT 18 – Harbor Boulevard and I-405 SB Off-Ramp
- INT 87 – Mabury Street and 1st Street
- INT 95 – SR-55 SB Ramps / Auto Mall Drive and Edinger Avenue

3.4.5 Caltrans

The minimum LOS for Caltrans intersections is LOS C. Impacts are considered significant if:

- An intersection degrades from an acceptable LOS (LOS C or better) to an unacceptable LOS (LOS D or worse) during the peak hours; or
- Any increase in delay is expected at an intersection already operating at an unacceptable LOS.

3.5 TRAFFIC VOLUMES

This study assesses both roadway and intersection performance for all existing and future year scenarios. Roadway and intersection counts were utilized to determine existing year (2020) average daily traffic (ADT) on study roadway segments and peak hour turning movement counts at study intersections. To determine future year (2045) volumes, an annual growth rate applied to existing traffic volumes was developed through the Orange County Transportation Analysis Model (OCTAM). The traffic volume development procedure is further detailed in the following sections.

3.5.1 Traffic Count Data

Roadway ADT was taken from the City of Santa Ana count database, with counts conducted in September and October 2019. A compound annual growth rate of 1% was applied to the ADT volumes to bring them to levels consistent with those expected in the year 2020.

Intersection turning movement volumes are provided by recent count data and supplemented with historical count data. Updated traffic counts for the year 2020 were in the process of being scheduled and conducted when widespread closures of schools, businesses, and other facilities were ordered due to the onset of the COVID-19 pandemic, disrupting normal traffic patterns. As a result, updated counts were only partially conducted and were supplemented with historic count data. Where they were able to be conducted, updated counts were conducted during the morning peak period (6:00 AM to 9:00 AM) and the afternoon peak period (4:00 PM to 7:00 PM). The AM and PM peak hour analyses are based on the hour of highest total intersection volume during the morning and afternoon peak periods. A compound annual growth rate (CAGR) of 1% was applied to the volumes for traffic counts conducted prior to 2020 to bring them to levels consistent with those expected in the year 2020. The CAGR 1% was selected based on comparisons of historical ADT data for various locations throughout the City. An inventory of intersection count data is provided in Table 3-5.

3.5.2 Travel Demand Forecasting

The horizon year 2045 volumes were derived based on existing peak hour count data and forecast link volumes obtained from the Orange County Transportation Analysis Model (OCTAM) version 5.0. OCTAM 5.0 is the accepted sub-regional model for forecasting travel demand in Orange County, and is based on socioeconomic data from Orange County Projections 2018. Growth factors for each intersection approach and departure were interpolated from OCTAM forecast for the 2016 and 2045 baseline scenarios. These growth factors were then applied to existing counts to forecast future turning movement volumes. OCTAM 5.0 was recently updated by OCTA and this traffic analysis update utilizes this new TransCad version of the model.

Table 3-5 Intersection Count Inventory

ID	INTERSECTION	COUNT YEAR
1	Euclid Street and Bolsa Avenue	2019
2	Euclid Street and McFadden Avenue	2016
3	Euclid Street and Edinger Avenue	2019
4	Newhope Street and Hazard Avenue	2016
5	Newhope Street and McFadden Avenue	2016
6	Harbor Boulevard and SR-22 WB Off-Ramp / Banner Drive	2016
7	Trask Avenue and SR-22 EB On-Ramp	2013
8	Harbor Boulevard and Westminster Avenue	2019
9	Harbor Boulevard and 1st Street	2019
10	Harbor Boulevard and McFadden Avenue	2016
11	Harbor Boulevard and Edinger Avenue	2019
12	Harbor Boulevard and Warner Avenue	2019
13	Harbor Boulevard and Segerstrom Avenue	2016
14	Hyland Avenue / OCTA Bus Base and MacArthur Boulevard	2016
15	Harbor Boulevard and MacArthur Boulevard	2019
16	Harbor Boulevard and Sunflower Avenue	2016
17	Harbor Boulevard and I-405 NB Off-Ramp	2019
18	Harbor Boulevard and I-405 SB Off-Ramp	2019
19	Fairview Street and Civic Center Drive	2016
20	Fairview Street and 1st Street	2018
21	Fairview Street and McFadden Avenue	2016
22	Fairview Street and Edinger Avenue	2019
23	Fairview Street and Warner Avenue	2016
24	Fairview Street and MacArthur Boulevard	2019
25	Fairview Road and Sunflower Avenue	2016
26	Greenville Street and Edinger Avenue	2017
27	Greenville Street and Segerstrom Avenue	2017
28	Raitt Street and McFadden Avenue	2016
29	Raitt Street and Edinger Avenue	2016
30	Bear Street and MacArthur Boulevard	2017
31	Bristol Street and 17th Street	2019
32	Bristol Street and Civic Center Drive	2016

ID	INTERSECTION	COUNT YEAR
33	Bristol Street and Santa Ana Boulevard	2016
34	Bristol Street and 1st Street	2019
35	Bristol Street and McFadden Avenue	2017
36	Bristol Street and Warner Avenue	2019
37	Bristol Street and Segerstrom Avenue	2016
38	Bristol Street and Alton Avenue	2017
39	Bristol Street and MacArthur Boulevard	2017
40	Bristol Street and Sunflower Avenue	2016
41	Bristol Street and I-405 NB Ramps	2018
42	Bristol Street and I-405 SB Ramps	2018
43	Flower Street and Santa Ana Boulevard	2016
44	Flower Street and 1st Street	2017
45	Flower Street and McFadden Avenue	2016
46	Flower Street and Segerstrom Avenue	2016
47	Flower Street and MacArthur Boulevard	2016
48	Main Street and La Veta Avenue	2018
49	Main Street and Mainplace Drive / Memory Lane	2019
50	Main Street and 17th Street	2019
51	Main Street and Civic Center Drive	2016
52	Main Street and Santa Ana Boulevard	2016
53	Main Street and 4th Street	2016
54	Main Street and 1st Street	2019
55	Main Street and McFadden Avenue	2016
56	Main Street and Edinger Avenue	2019
57	Main Street and MacArthur Boulevard	2019
58	Penn Way and 17th Street	2017
59	Santiago Street / I-5 NB Ramps and 17th Street	2016
60	Penn Way and I-5 SB Ramps	2017
61	Santiago Street and Civic Center Drive	2017
62	Santiago Street and Santa Ana Boulevard	2016
63	Standard Avenue and 4th Street	-
64	Standard Avenue and 1st Street	2017
65	Standard Avenue and McFadden Avenue	2018

ID	INTERSECTION	COUNT YEAR
66	Halladay Street and Warner Avenue	2016
67	Halladay Street and Dyer Road	2019
68	SR-55 SB Ramps and MacArthur Boulevard	2019
69	SR-55 NB Ramps and MacArthur Boulevard	2019
70	SR-55 SB Ramps and Dyer Road	2019
71	Glassell Street and La Veta Avenue	2016
72	Glassell Street and SR-22 WB Ramps	2016
73	Glassell Street / Grand Avenue and SR-22 EB Ramps	2016
74	Grand Avenue and Fairhaven Avenue	2016
75	Grand Avenue and Santa Clara Avenue	2017
76	Grand Avenue and 17th Street	2019
77	Grand Avenue and I-5 NB Ramps	2017
78	Grand Avenue and Santa Ana Boulevard	2017
79	Grand Avenue and 1st Street	2019
80	Grand Avenue and Chestnut Avenue	2016
81	Grand Avenue and McFadden Avenue	2016
82	Grand Avenue and Edinger Avenue	2019
83	Grand Avenue and Warner Avenue	2019
84	SR-55 NB Ramps and Dyer Road	2019
85	Cambridge Street and La Veta Avenue	2016
86	Cambridge Street and Fairhaven Avenue	2020
87	Mabury Street and 1st Street	2020
88	Tustin Street and La Veta Avenue	2020
89	Tustin Street and SR-22 WB On-Ramp	2020
90	Tustin Street and SR-22 EB Off-Ramp / Seba Avenue	2020
91	Tustin Street and Fairhaven Avenue	2020
92	Tustin Avenue and Santa Clara Avenue	2020
93	Tustin Avenue and 17th Street	2020
94	Tustin Avenue and 4th Street	2020
95	SR-55 SB Ramps / Auto Mall Drive and Edinger Avenue	2020
96	SR-55 NB Ramps / Del Amo Avenue and Newport Avenue	2020
97	Red Hill Avenue and Edinger Avenue	2020
98	Red Hill Avenue and Warner Avenue	2020

ID	INTERSECTION	COUNT YEAR
99	Red Hill Avenue and Barranca Parkway	2020
100	Red Hill Avenue and Alton Parkway	2020
101	Red Hill Avenue and MacArthur Boulevard	2020
102	Red Hill Avenue and Main Street	2020
103	I-5 SB Ramps and Santa Ana Boulevard	2017
104	Tustin Ranch Road and Warner Avenue	2020
105	Von Karman Avenue and Barranca Parkway	2020

4.0 Existing Year (2020) Conditions

The project study area includes arterial roadways and signalized intersections in the vicinity of the project corridor. Descriptions of geometrical features and intersection level of service analysis results for the year 2020 are included in this section.

4.1 EXISTING ROADWAY NETWORK

Selected arterials that are located in the vicinity of the project corridor are described in this section. Items of note include existing geometry, pedestrian and bicycle facilities, and adjacent land uses.

Euclid Street is classified as a Major Arterial that travels north and south through the study area. Within the study area, there are three travel lanes in each direction with a striped center median functioning as a two-way left-turn lane. Euclid Street is five lanes (2 northbound and 3 southbound) south of Davit Avenue. The posted speed limit is 45 miles per hour. On-street parking is not permitted and no bike facilities are provided. OCTA provides service along this corridor via Route 37 at approximately 30 minute headways.

Newhope Street is classified as a Secondary Arterial that travels north and south on the west end of Santa Ana. Within the study area, there are two travel lanes in each direction with a striped center median functioning as a two-way left-turn lane. The posted speed limit is 40 miles per hour. On-street parking is generally not permitted north of McFadden Avenue, except between 1st Street and 5th Street. Class II bike lanes were recently implemented between Westminster Avenue and McFadden Avenue. There are currently no bus routes that serve this corridor.

Hazard Avenue is classified as a Secondary Arterial that travels east and west through the study area. Within the study area, there are two travel lanes in each direction with a striped center median functioning as a two-way left-turn lane. Hazard Avenue transitions to a Divided Collector west of Harbor Boulevard, and Undivided Collector east of Harbor Boulevard. Limited on-street parking is permitted adjacent to Rosita Park. The posted speed limit is 35 miles per hour and 25 miles per hour near the school zone. No bus routes or bike facilities are provided along this corridor.

McFadden Avenue is classified as a Secondary Arterial (between Euclid Street and Grand Avenue) and a Primary Arterial (east of Grand Avenue) that travels east and west through the study area. Within the study area, there are two travel lanes in each direction with a striped center median functioning as a two-way left-turn lane and a raised, landscaped median on occasion. McFadden Avenue narrows to a two-lane undivided roadway between Bristol Street and Standard Avenue. The posted speed limit is 30-45 miles per hour. On-street parking is permitted along parts of the corridor. Bike lanes are provided west of Harbor Boulevard. OCTA provides service along this corridor via Route 66 and Route 145 at approximately 15-45 minute headways.

Harbor Boulevard is classified as a Major Arterial that travels north and south through the study area. Within the study area, there are three travel lanes in each direction with a raised, landscaped median. The posted speed limit is 40-45 miles per hour. On-street parking is not permitted and limited bike facilities are provided. OCTA provides service along this corridor via Route 43 and Route 543 at approximately 15-20 minute headways.

Fairview Avenue is classified as a Major Arterial that travels north and south through the study area. Within the study area, there are three lanes in each direction with a raised, landscaped median. Fairview Avenue transitions to a five-lane divided roadway then a Primary Arterial north of Civic Center Drive. The posted speed limit is 45 miles per hour. On-street parking is not permitted and bike facilities are not provided. OCTA provides service along this corridor via Route 47 at approximately 15 minute headways.

Civic Center Drive is classified as a Secondary Arterial that travels east and west through the study area. Within the study area, Civic Center Drive is a four-lane undivided roadway; Civic Center Drive becomes a four-lane divided with bike facilities east of Bristol Street until Broadway. It is a four-lane

divided road until Minter Street and then becomes a two-lane undivided. The posted speed limit is 35 miles per hour, unless otherwise noted to be 25 miles per hour in a school zone. On-street parking is allowed along some sections of Civic Center Drive. On-street parking is permitted along certain segments. There are some bike lanes or bike routes provided along this roadway. OCTA provides service along this corridor via Routes 83, 145, and 862 with headways of approximately 30 minutes for each route.

MacArthur Boulevard is classified as a Major Arterial that travels east and west through the study area. Within the study area, there are three travel lanes in each direction with a raised, landscaped median. MacArthur Boulevard is classified as a Primary Arterial west of Hyland Avenue. The posted speed limit is 40 miles per hour. On-street parking is not permitted throughout the corridor and there are currently no bike facilities provided. OCTA operates four bus routes along this corridor via Routes 53, 55, 76 and 173. Headways range between every 10 minutes for Route 53, 30 minutes for Route 55, 60 minutes for Route 76, and 45 minutes for Route 173.

Raitt Street is classified as a Secondary Arterial that travels north and south through the study area. Between MacArthur Boulevard and Edinger Avenue, Raitt Street is a four-lane divided roadway. Between Edinger Avenue and Myrtle Street, Raitt Street is a four-lane undivided roadway. Then from Myrtle Street to 1st Street it is a two-lane divided roadway. Between First Street and Washington Avenue, Raitt Street narrows down to a two-lane undivided roadway. The speed limit is limited to 25 miles per hour in school zones and 35-40 miles per hour outside of the school zone. On-street parking is permitted along the west side of the street between McFadden Avenue and Edinger Avenue and on both sides of the street north of McFadden Avenue to Richland Avenue. Currently bike facilities are not provided along this roadway. OCTA operates Route 145 approximately every 45 minutes during peak operation.

1st Street is classified as a Major Arterial that travels east and west through the study area. Within the study area, there are three lanes in each direction with a raised, landscaped median. The posted speed limit is 40 miles per hour. On-street parking is not permitted along this corridor. There are currently no bike lanes or bike routes provided. OCTA provides service along this corridor via Route 64 at approximately 15 minute headways.

Bristol Street is classified as a Major Arterial that travels north and south through the study area. Within the study area, there are three travel lanes in each direction with a raised, landscaped median. The posted speed limit is 40 miles per hour. Bikeways exist between 17th Street and Edinger Avenue. On-street parking is not permitted along this corridor. OCTA provides service along this corridor via Route 57 at approximately 30 minute headways.

17th Street/ Westminster Avenue is classified as a Major Arterial traveling east and west through the northern region in Santa Ana. There are three lanes in each direction divided by a center median. The posted speed limit is 40 miles per hour. On-street parking is not permitted and there are currently no bike facilities provided along the corridor. Several OCTA bus routes serve this corridor, including Routes 51 and 60 with approximately 15-20 minute headways.

Santa Ana Boulevard is classified as a Major Arterial (between Raitt Street and Ross Street) and a Primary Arterial (between Ross Street and Grand Avenue). The roadway fluctuates between a four-lane undivided roadway (Raitt Street to Flower Street), six-lane divided roadway (Flower Street to Ross Street and Santiago Street to Grand Avenue), and a three-lane one-way roadway (Ross Street to French Street). On-street parking is permitted along certain segments of the corridor. There are currently no bike lanes or bike routes provided. The posted speed limit is 35 miles per hour. Several OCTA bus routes serve this corridor, including Routes 83, 145, and 206 with approximately 30-45 minute headways.

Segerstrom Avenue is classified as a Major Arterial that travels east and west through the study area. Segerstrom Avenue is a six-lane divided roadway between Susan Street and Harbor Boulevard and a four-lane divided roadway along the rest of the corridor. The posted speed limit is 40 miles per hour.

On-street parking is not permitted and there are currently no bike facilities provided along this corridor. There are currently no transit services that operate along Segerstrom Avenue within the study area.

Memory Lane is classified as a Major Arterial that travels east and west through the study area. There are three travel lanes in each direction with a raised, landscaped median. The posted speed limit is 40 miles per hour. On-street parking is not permitted along this roadway. Class II bike lanes are provided between Bristol Street and Flower Street. OCTA provides service along this corridor via Route 453 at approximately 30 minute headways.

Tustin Avenue is classified as a Major Arterial that travels north and south parallel to the SR-55 Freeway. There are three travel lanes in each direction with a striped center median. The posted speed limit is 40 miles per hour. On-street parking is not permitted and bike lanes are not available along Tustin Avenue. Two OCTA bus routes operate along Tustin Avenue. Routes 60 and 71 operate at frequencies of 45 minutes and 1 hour respectively.

Warner Avenue is classified as a Major Arterial that travels east and west through the study area. Within the study area, Warner Avenue is a four-lane undivided roadway. The posted speed limit is 40-45 miles per hour. On-street parking is not permitted and there are currently limited bike lanes provided along the corridor. There are two OCTA bus routes that serve Warner Avenue in the study area. Routes 72 and 463 operate with headways at approximately 20-60 minutes.

Edinger Avenue is classified as a Major Arterial that travels east and west through the study area. The roadway is a four-lane divided roadway between Euclid Street and Main Street and six-lane divided roadway between Main Street and SR-55 freeway. The posted speed limit is 40 miles per hour. On-street parking is not permitted throughout most of the corridor, with the exception of the eastbound direction between Main Street and Maple Street; and between Cedar Street and Evergreen Street. There are bike facilities provided along parts of the corridor. OCTA provides service along Edinger Avenue via Route 70 at approximately 30 minute headways.

Flower Street is classified as a Collector Street (north of 17th Street), Secondary Arterial (between 17th Street and Warner Avenue), and Primary Arterial (south of Warner Avenue) that travels north and south through the study area. The roadway fluctuates between a two-lane divided roadway (Warner Avenue to First Street and 17th Street to Memory Lane) and a four-lane divided roadway (Sunflower Avenue to Warner Avenue and First Street to 17th Street). On-street parking is permitted along residential areas. There are currently no bike facilities provided along the corridor. OCTA provides service along this corridor via Route 51 at approximately 30 minute headways.

Main Street is classified as a Major Arterial (north of Washington Avenue and south of Warner Avenue), Secondary Arterial (between Washington Avenue to Edinger Avenue), and a Primary Arterial (between Edinger Avenue and Warner Avenue) that travels north and south through the study area. There are two travel lanes in each direction, with a striped center median operating as a two-way left-turn lane. The posted speed limit is 35-40 miles per hour. Parking is permitted on the east side of the street between Goetz Avenue and Dyer Road, and prohibited on Main Street through the rest of the study area. South of Dyer Road, Main Street widens to a six-lane facility with a center two-way left-turn lane. OCTA provides service along this corridor via Route 53 at approximately 20 minute headways.

Grand Avenue is classified as a Major Arterial that travels north and south through the study area. From the SR-55 freeway to the northern study area boundary, Grand Avenue is a six-lane major arterial with a center two-way left-turn lane. Approximately 900 feet north of Warner Avenue, Grand Avenue narrows to two lanes in the southbound direction, and the third southbound lane is restored about 300 feet north of Warner Avenue. South of the SR-55 freeway, Grand Avenue has two northbound and three southbound lanes divided by a landscaped median. Parking is not permitted and there are currently no bike lanes or bike routes along Grand Avenue. The posted speed limit is 45 miles per hour. OCTA provides service along this corridor via Route 59 at approximately 30 minute headways.

4.2 STUDY INTERSECTION GEOMETRY AND PEAK HOUR VOLUMES

Intersections were selected in consultation with the City of Santa Ana based on expected traffic impacts and vehicle volumes. The existing study intersection lane geometries are provided in the Appendix. Year 2020 AM peak hour turning movement volumes are shown in Table 4-1, and the PM peak hour volumes are shown in Table 4-2.

Table 4-1 Existing Year 2020 Volumes – AM Peak Hour

ID	Intersection	Northbound			Southbound			Eastbound			Westbound		
		L	T	R	L	T	R	L	T	R	L	T	R
1	Euclid Street and Bolsa Avenue	124	1044	179	207	1844	104	218	811	153	184	586	188
2	Euclid Street and McFadden Avenue	145	1100	131	137	1906	158	227	463	287	166	368	140
3	Euclid Street and Edinger Avenue	134	845	72	127	1842	169	172	753	460	100	609	111
4	Newhope Street and Hazard Avenue	98	738	105	91	1341	123	78	199	147	51	170	68
5	Newhope Street and McFadden Avenue	110	491	173	119	1183	110	135	492	160	176	449	100
6	Harbor Boulevard and SR-22 WB Off-Ramp / Banner Drive	70	1274	0	0	1354	18	74	0	121	836	44	117
7	Trask Avenue and SR-22 EB On-Ramp	0	0	0	0	0	0	651	815	0	0	738	138
8	Harbor Boulevard and Westminster Avenue	178	1173	251	212	1663	95	176	927	33	212	574	156
9	Harbor Boulevard and 1st Street	117	935	202	227	1914	124	140	932	181	245	621	145
10	Harbor Boulevard and McFadden Avenue	104	1059	101	182	1919	64	167	435	130	190	430	123
11	Harbor Boulevard and Edinger Avenue	103	772	146	183	2105	61	107	644	323	221	491	204
12	Harbor Boulevard and Warner Avenue	115	701	178	457	2059	123	97	1385	364	151	792	134
13	Harbor Boulevard and Segerstrom Avenue	111	791	50	171	2299	86	88	737	297	117	362	82
14	Hyland Avenue / OCTA Bus Base and MacArthur Boulevard	69	3	19	8	2	19	7	1953	775	64	490	20
15	Harbor Boulevard and MacArthur Boulevard	128	898	92	316	1820	126	126	1141	344	133	443	132
16	Harbor Boulevard and Sunflower Avenue	217	1107	205	246	2324	57	9	109	42	130	166	94
17	Harbor Boulevard and I-405 NB Off-Ramp	0	1567	0	0	2327	0	0	0	0	508	0	894
18	Harbor Boulevard and I-405 SB Off-Ramp	0	1729	0	0	1504	0	385	0	429	0	0	0
19	Fairview Street and Civic Center Drive	6	1278	414	243	1402	6	6	23	23	300	9	155
20	Fairview Street and 1st Street	157	1206	227	241	1401	161	214	1233	191	163	732	245
21	Fairview Street and McFadden Avenue	121	1294	173	142	1727	125	221	522	120	194	500	40
22	Fairview Street and	188	831	116	215	1503	127	237	657	176	421	553	110

ID	Intersection	Northbound			Southbound			Eastbound			Westbound		
		L	T	R	L	T	R	L	T	R	L	T	R
	Edinger Avenue												
23	Fairview Street and Warner Avenue	215	952	125	205	1628	119	69	1010	301	307	926	300
24	Fairview Street and MacArthur Boulevard	248	771	89	307	1546	173	125	1019	150	235	494	140
25	Fairview Road and Sunflower Avenue	185	1071	163	204	1738	111	49	322	65	306	256	132
26	Greenville Street and Edinger Avenue	186	0	251	0	0	0	0	960	234	172	915	0
27	Greenville Street and Segerstrom Avenue	47	193	78	154	472	160	33	739	118	164	662	76
28	Raitt Street and McFadden Avenue	62	570	90	100	762	104	116	704	90	172	542	97
29	Raitt Street and Edinger Avenue	188	501	181	152	716	85	165	1008	145	117	916	54
30	Bear Street and MacArthur Boulevard	81	280	119	199	756	300	97	1663	114	70	1180	100
31	Bristol Street and 17th Street	192	988	167	335	1376	181	324	963	156	359	824	273
32	Bristol Street and Civic Center Drive	123	1087	96	318	1284	80	149	755	93	121	401	83
33	Bristol Street and Santa Ana Boulevard	65	1419	197	137	1507	41	83	403	35	96	240	41
34	Bristol Street and 1st Street	183	1278	162	275	1133	160	206	1268	128	108	813	119
35	Bristol Street and McFadden Avenue	118	1054	53	161	1571	162	275	472	232	155	432	50
36	Bristol Street and Warner Avenue	192	862	159	386	1307	148	206	1149	286	188	860	146
37	Bristol Street and Segerstrom Avenue	65	725	136	283	1011	119	189	913	84	122	554	71
38	Bristol Street and Alton Avenue	9	628	47	227	1571	36	190	117	244	41	87	31
39	Bristol Street and MacArthur Boulevard	92	478	120	326	1419	148	192	1394	283	191	910	132
40	Bristol Street and Sunflower Avenue	94	461	136	245	1388	104	114	942	381	246	400	138
41	Bristol Street and I-405 NB Ramps	0	1489	191	0	1967	8	0	0	34	121	73	665
42	Bristol Street and I-405 SB Ramps	113	1108	0	0	985	847	573	0	524	0	0	0
43	Flower Street and Santa Ana Boulevard	87	811	118	168	568	76	114	710	81	101	323	135
44	Flower Street and 1st Street	139	602	159	175	554	58	165	1514	60	209	861	123
45	Flower Street and McFadden Avenue	60	438	38	66	367	53	51	581	44	64	432	58
46	Flower Street and Segerstrom Avenue	63	331	73	98	544	120	155	1065	297	74	546	60
47	Flower Street and MacArthur Boulevard	22	142	73	163	352	264	165	1879	80	54	909	58
48	Main Street and La Veta Avenue	84	579	300	198	1034	173	350	495	215	316	276	230
49	Main Street and Mainplace Drive / Memory Lane	28	764	250	32	1244	260	148	233	16	198	226	15

ID	Intersection	Northbound			Southbound			Eastbound			Westbound		
		L	T	R	L	T	R	L	T	R	L	T	R
50	Main Street and 17th Street	128	760	163	195	1086	70	116	1225	61	325	1300	19
51	Main Street and Civic Center Drive	138	901	79	59	1042	159	90	545	99	43	566	34
52	Main Street and Santa Ana Boulevard	68	1083	0	0	1107	98	0	0	0	61	848	65
53	Main Street and 4th Street	0	977	23	0	1098	27	0	93	14	0	114	28
54	Main Street and 1st Street	116	596	60	88	882	65	119	1393	147	88	1097	61
55	Main Street and McFadden Avenue	89	838	42	175	1364	27	42	396	43	140	373	107
56	Main Street and Edinger Avenue	109	617	67	228	1052	55	75	971	131	122	709	87
57	Main Street and MacArthur Boulevard	54	311	264	645	848	192	240	1393	252	146	435	218
58	Penn Way and 17th Street	43	0	217	0	0	0	0	1238	631	214	1722	0
59	Santiago Street / I-5 NB Ramps and 17th Street	768	35	22	57	0	295	99	1040	376	0	1245	20
60	Penn Way and I-5 SB Ramps	0	158	140	799	165	0	0	0	0	179	0	100
61	Santiago Street and Civic Center Drive	206	143	20	5	303	74	121	46	246	72	66	13
62	Santiago Street and Santa Ana Boulevard	24	71	56	311	161	133	48	474	14	108	807	271
63	Standard Avenue and 4th Street	-	-	-	-	-	-	-	-	-	-	-	-
64	Standard Avenue and 1st Street	108	191	119	12	231	25	86	1317	214	64	1012	12
65	Standard Avenue and McFadden Avenue	74	284	128	220	531	37	17	589	71	138	366	82
66	Halladay Street and Warner Avenue	43	0	100	0	0	0	0	1283	145	160	607	0
67	Halladay Street and Dyer Road	11	18	49	183	37	39	41	1375	10	115	626	101
68	SR-55 SB Ramps and MacArthur Boulevard	0	0	0	961	0	870	0	1441	1027	0	1275	145
69	SR-55 NB Ramps and MacArthur Boulevard	908	0	976	0	0	0	0	1609	796	0	517	244
70	SR-55 SB Ramps and Dyer Road	221	26	505	50	242	60	35	1338	285	408	647	108
71	Glassell Street and La Veta Avenue	263	412	125	17	358	79	38	195	375	236	249	6
72	Glassell Street and SR-22 WB Ramps	500	561	0	0	743	346	0	0	0	285	5	426
73	Glassell Street / Grand Avenue and SR-22 EB Ramps	0	818	218	280	733	0	258	0	1012	0	0	0
74	Grand Avenue and Fairhaven Avenue	18	737	106	174	1444	32	99	60	59	254	28	229
75	Grand Avenue and Santa Clara Avenue	66	463	119	290	1418	319	143	233	48	120	231	211
76	Grand Avenue and 17th Street	163	476	327	286	1198	235	224	835	106	309	807	88
77	Grand Avenue and I-5 NB Ramps	0	831	480	58	1869	0	0	0	0	456	0	126
78	Grand Avenue and	71	1003	51	141	1166	1029	263	217	428	5	373	34

ID	Intersection	Northbound			Southbound			Eastbound			Westbound		
		L	T	R	L	T	R	L	T	R	L	T	R
	Santa Ana Boulevard												
79	Grand Avenue and 1st Street	213	751	35	99	1432	174	332	793	225	247	867	99
80	Grand Avenue and Chestnut Avenue	53	737	163	149	1788	49	60	419	110	118	347	216
81	Grand Avenue and McFadden Avenue	171	722	108	237	1590	155	186	601	182	117	420	106
82	Grand Avenue and Edinger Avenue	47	472	92	224	1146	224	319	1332	128	151	579	126
83	Grand Avenue and Warner Avenue	169	510	218	199	574	194	256	914	359	88	388	131
84	SR-55 NB Ramps and Dyer Road	557	0	456	0	0	0	0	1533	613	0	719	433
85	Cambridge Street and La Veta Avenue	160	204	0	0	480	245	117	0	187	0	0	0
86	Cambridge Street and Fairhaven Avenue	0	0	0	515	0	166	80	216	0	0	247	192
87	Mabury Street and 1st Street	10	0	244	238	141	533	0	1062	11	46	701	0
88	Tustin Street and La Veta Avenue	8	333	96	74	1452	4	9	11	35	447	2	69
89	Tustin Street and SR-22 WB On-Ramp	656	610	0	0	1395	833	0	0	0	0	0	0
90	Tustin Street and SR-22 EB Off-Ramp / Seba Avenue	0	996	5	22	1349	0	244	24	1051	6	0	43
91	Tustin Street and Fairhaven Avenue	89	514	90	235	2026	40	68	258	444	306	338	442
92	Tustin Avenue and Santa Clara Avenue	73	397	74	127	2600	82	101	255	186	118	244	122
93	Tustin Avenue and 17th Street	111	198	236	602	1737	19	187	738	126	488	770	188
94	Tustin Avenue and 4th Street	48	245	219	664	845	262	114	676	28	103	579	376
95	SR-55 SB Ramps / Auto Mall Drive and Edinger Avenue	421	63	498	50	30	8	28	1104	408	399	940	123
96	SR-55 NB Ramps / Del Amo Avenue and Newport Avenue	227	60	38	14	344	504	253	153	146	8	223	4
97	Red Hill Avenue and Edinger Avenue	81	299	85	226	960	450	190	611	130	224	1085	152
98	Red Hill Avenue and Warner Avenue	56	339	46	19	891	179	202	343	253	98	349	62
99	Red Hill Avenue and Barranca Parkway	127	316	104	199	876	115	118	710	281	578	645	126
100	Red Hill Avenue and Alton Parkway	174	512	321	251	1141	183	9	28	28	223	189	106
101	Red Hill Avenue and MacArthur Boulevard	64	569	10	208	537	492	1248	645	106	23	223	571
102	Red Hill Avenue and Main Street	162	556	361	67	313	108	139	1309	254	154	309	73
103	I-5 SB Ramps and Santa Ana Boulevard	0	0	0	367	0	36	323	554	0	0	1130	330
104	Tustin Ranch Road and Warner Avenue	0	0	0	265	0	33	18	238	0	0	1717	395

ID	Intersection	Northbound			Southbound			Eastbound			Westbound		
		L	T	R	L	T	R	L	T	R	L	T	R
105	Von Karman Avenue and Barranca Parkway	107	142	85	119	1164	509	130	488	163	769	1263	39

Table 4-2 Existing Year 2020 Volumes – PM Peak Hour

ID	Intersection	Northbound			Southbound			Eastbound			Westbound		
		L	T	R	L	T	R	L	T	R	L	T	R
1	Euclid Street and Bolsa Avenue	159	1477	119	185	1053	199	212	678	106	217	909	217
2	Euclid Street and McFadden Avenue	175	1426	92	110	1354	164	183	419	185	127	532	246
3	Euclid Street and Edinger Avenue	526	1572	112	122	803	204	161	622	186	91	840	136
4	Newhope Street and Hazard Avenue	116	1281	50	49	1038	124	108	214	131	32	202	58
5	Newhope Street and McFadden Avenue	202	1084	190	164	733	142	81	496	72	107	589	168
6	Harbor Boulevard and SR-22 WB Off-Ramp / Banner Drive	88	1992	0	0	1519	49	93	0	78	593	80	170
7	Trask Avenue and SR-22 EB On-Ramp	0	0	0	0	0	0	838	628	0	0	606	57
8	Harbor Boulevard and Westminster Avenue	276	1374	325	207	1430	165	187	667	32	230	797	181
9	Harbor Boulevard and 1st Street	287	1480	164	278	1218	164	188	766	145	230	1073	175
10	Harbor Boulevard and McFadden Avenue	167	1716	125	298	1273	115	214	520	65	211	506	146
11	Harbor Boulevard and Edinger Avenue	282	1773	214	283	822	75	134	564	100	140	813	271
12	Harbor Boulevard and Warner Avenue	774	3713	279	274	1525	182	241	1707	390	260	2700	862
13	Harbor Boulevard and Segerstrom Avenue	299	1881	60	91	1027	91	111	552	181	99	1074	390
14	Hyland Avenue / OCTA Bus Base and MacArthur Boulevard	1201	7	70	12	4	14	36	891	160	25	2350	12
15	Harbor Boulevard and MacArthur Boulevard	588	1519	88	213	1073	176	140	489	181	87	1467	276
16	Harbor Boulevard and Sunflower Avenue	178	1771	263	112	1393	42	67	182	189	254	533	199
17	Harbor Boulevard and I-405 NB Off-Ramp	0	1529	0	0	2475	0	0	0	0	701	0	1132
18	Harbor Boulevard and I-405 SB Off-Ramp	0	1861	0	0	2147	0	157	0	722	0	0	0
19	Fairview Street and Civic Center Drive	5	1430	402	144	1338	0	2	5	4	438	0	162
20	Fairview Street and 1st Street	149	1094	99	203	1264	251	215	870	151	159	1204	186
21	Fairview Street and McFadden Avenue	159	1462	127	155	1257	196	244	659	163	158	545	134
22	Fairview Street and Edinger Avenue	188	1793	110	198	616	151	230	703	188	373	789	173
23	Fairview Street and Warner Avenue	217	1728	161	188	951	96	197	955	148	188	1108	240
24	Fairview Street and MacArthur Boulevard	243	1672	91	171	955	88	280	731	246	179	1365	239
25	Fairview Road and Sunflower Avenue	201	1806	393	144	1196	83	203	430	95	265	664	173

ID	Intersection	Northbound			Southbound			Eastbound			Westbound		
		L	T	R	L	T	R	L	T	R	L	T	R
26	Greenville Street and Edinger Avenue	327	0	218	0	0	0	0	982	200	95	1128	0
27	Greenville Street and Segerstrom Avenue	57	476	36	61	200	61	108	823	47	27	1037	148
28	Raitt Street and McFadden Avenue	58	835	130	45	474	76	126	747	65	88	742	102
29	Raitt Street and Edinger Avenue	190	816	229	111	384	96	139	961	137	86	972	87
30	Bear Street and MacArthur Boulevard	200	962	251	112	271	82	97	910	94	93	1673	266
31	Bristol Street and 17th Street	236	1148	191	243	1293	220	336	750	136	284	1069	362
32	Bristol Street and Civic Center Drive	200	1399	73	136	1250	128	190	534	63	169	723	82
33	Bristol Street and Santa Ana Boulevard	75	1524	87	105	1402	53	59	163	38	233	371	100
34	Bristol Street and 1st Street	286	1235	182	206	1115	252	189	1062	136	217	1330	126
35	Bristol Street and McFadden Avenue	213	1566	85	84	1171	270	262	512	102	97	504	59
36	Bristol Street and Warner Avenue	309	1157	211	251	838	163	193	868	153	173	1021	299
37	Bristol Street and Segerstrom Avenue	179	1322	233	92	843	176	200	716	57	119	1074	54
38	Bristol Street and Alton Avenue	43	1681	158	119	896	56	75	105	195	91	150	29
39	Bristol Street and MacArthur Boulevard	335	1428	260	223	821	129	357	796	169	265	1536	290
40	Bristol Street and Sunflower Avenue	645	1363	220	201	750	215	293	573	222	263	1012	322
41	Bristol Street and I-405 NB Ramps	0	2094	183	0	2148	20	0	0	194	357	306	1184
42	Bristol Street and I-405 SB Ramps	127	1555	0	0	1506	880	740	0	331	0	0	0
43	Flower Street and Santa Ana Boulevard	124	754	62	104	530	48	134	386	63	146	510	151
44	Flower Street and 1st Street	132	625	149	170	466	135	139	1217	101	210	1415	147
45	Flower Street and McFadden Avenue	42	567	35	46	352	57	64	478	19	48	595	85
46	Flower Street and Segerstrom Avenue	120	843	80	66	369	106	158	786	83	75	1258	81
47	Flower Street and MacArthur Boulevard	133	634	74	85	205	197	209	994	63	62	1989	177
48	Main Street and La Veta Avenue	307	938	439	145	911	235	296	422	189	257	513	206
49	Main Street and Mainplace Drive / Memory Lane	90	945	179	51	1055	139	293	325	87	185	151	73
50	Main Street and 17th Street	197	1019	222	173	757	117	221	1237	73	178	1089	72
51	Main Street and Civic Center Drive	89	1126	94	61	995	63	159	881	105	38	384	39
52	Main Street and Santa Ana Boulevard	54	1229	0	0	1083	53	0	0	0	65	656	85
53	Main Street and 4th Street	0	1055	50	0	1037	47	0	98	55	0	181	46

ID	Intersection	Northbound			Southbound			Eastbound			Westbound		
		L	T	R	L	T	R	L	T	R	L	T	R
54	Main Street and 1st Street	169	826	72	175	671	143	120	1214	90	114	1275	89
55	Main Street and McFadden Avenue	146	1147	71	134	908	66	78	345	42	85	480	216
56	Main Street and Edinger Avenue	99	1050	48	122	609	83	127	752	84	97	1296	134
57	Main Street and MacArthur Boulevard	488	1169	321	283	368	278	298	613	59	198	1570	456
58	Penn Way and 17th Street	848	0	414	0	0	0	0	1590	513	123	1440	0
59	Santiago Street / I-5 NB Ramps and 17th Street	345	46	18	51	0	133	120	1099	722	0	1525	41
60	Penn Way and I-5 SB Ramps	0	363	238	550	127	0	0	0	0	175	0	150
61	Santiago Street and Civic Center Drive	97	299	30	13	187	48	266	76	269	14	19	18
62	Santiago Street and Santa Ana Boulevard	36	133	84	297	120	61	71	649	20	73	492	187
63	Standard Avenue and 4th Street	-	-	-	-	-	-	-	-	-	-	-	-
64	Standard Avenue and 1st Street	185	367	119	19	189	23	177	1218	129	91	1148	21
65	Standard Avenue and McFadden Avenue	169	667	82	137	300	52	53	351	60	117	712	206
66	Halladay Street and Warner Avenue	169	0	352	0	0	0	2	926	93	141	1121	0
67	Halladay Street and Dyer Road	41	180	208	114	15	32	150	1298	9	45	1451	116
68	SR-55 SB Ramps and MacArthur Boulevard	0	0	0	288	0	697	0	1167	1040	0	1532	602
69	SR-55 NB Ramps and MacArthur Boulevard	641	0	426	0	0	0	0	711	731	0	1501	1081
70	SR-55 SB Ramps and Dyer Road	319	10	240	103	226	110	65	1523	207	556	991	64
71	Glassell Street and La Veta Avenue	472	490	160	15	499	37	82	268	461	155	280	11
72	Glassell Street and SR-22 WB Ramps	557	910	0	0	878	255	0	0	0	201	7	357
73	Glassell Street / Grand Avenue and SR-22 EB Ramps	0	1202	307	381	681	0	229	4	503	0	0	0
74	Grand Avenue and Fairhaven Avenue	46	1214	243	222	894	82	79	45	33	255	48	181
75	Grand Avenue and Santa Clara Avenue	88	1185	246	220	868	220	159	194	36	136	244	260
76	Grand Avenue and 17th Street	246	877	221	270	582	128	346	886	149	300	1107	201
77	Grand Avenue and I-5 NB Ramps	0	1297	1001	48	1164	0	0	0	0	143	0	172
78	Grand Avenue and Santa Ana Boulevard	167	1888	31	34	750	532	328	200	316	20	134	97
79	Grand Avenue and 1st Street	165	1261	38	120	706	282	277	918	91	151	941	173
80	Grand Avenue and Chestnut Avenue	140	1050	182	149	664	112	93	285	62	107	333	194
81	Grand Avenue and McFadden Avenue	202	1150	198	138	626	168	128	476	83	86	686	151

ID	Intersection	Northbound			Southbound			Eastbound			Westbound		
		L	T	R	L	T	R	L	T	R	L	T	R
82	Grand Avenue and Edinger Avenue	242	1397	121	165	408	229	201	868	70	74	1333	173
83	Grand Avenue and Warner Avenue	242	873	193	146	471	217	342	656	142	151	964	316
84	SR-55 NB Ramps and Dyer Road	188	0	51	0	0	0	0	1339	681	0	1545	965
85	Cambridge Street and La Veta Avenue	191	266	0	0	196	181	219	0	144	0	0	0
86	Cambridge Street and Fairhaven Avenue	0	0	0	219	0	76	141	246	0	0	273	340
87	Mabury Street and 1st Street	25	0	256	207	88	390	0	1512	24	40	549	0
88	Tustin Street and La Veta Avenue	46	1033	245	90	801	15	13	5	20	183	5	112
89	Tustin Street and SR-22 WB On-Ramp	532	1529	0	0	711	365	0	0	0	0	0	0
90	Tustin Street and SR-22 EB Off-Ramp / Seba Avenue	0	1547	4	52	707	0	458	41	581	28	0	67
91	Tustin Street and Fairhaven Avenue	239	1275	113	327	862	99	80	180	147	94	208	196
92	Tustin Avenue and Santa Clara Avenue	163	789	121	183	1444	100	61	192	113	125	157	148
93	Tustin Avenue and 17th Street	216	926	476	346	371	37	444	872	118	229	753	419
94	Tustin Avenue and 4th Street	55	598	194	459	339	124	180	642	33	88	596	367
95	SR-55 SB Ramps / Auto Mall Drive and Edinger Avenue	377	30	398	110	50	37	35	1258	354	385	1003	120
96	SR-55 NB Ramps / Del Amo Avenue and Newport Avenue	583	174	34	8	97	373	104	36	21	23	348	16
97	Red Hill Avenue and Edinger Avenue	159	1146	182	145	289	234	327	838	102	62	803	392
98	Red Hill Avenue and Warner Avenue	382	1308	150	58	223	283	222	603	94	25	525	69
99	Red Hill Avenue and Barranca Parkway	356	1339	345	185	313	147	203	753	99	127	966	282
100	Red Hill Avenue and Alton Parkway	27	1499	217	124	528	4	132	324	166	433	74	267
101	Red Hill Avenue and MacArthur Boulevard	125	809	10	286	594	1042	597	275	42	39	818	574
102	Red Hill Avenue and Main Street	416	897	242	74	538	292	198	705	191	279	1589	89
103	I-5 SB Ramps and Santa Ana Boulevard	0	0	0	278	0	61	561	634	0	0	668	183
104	Tustin Ranch Road and Warner Avenue	0	0	0	653	0	45	54	1795	0	0	548	236
105	Von Karman Avenue and Barranca Parkway	224	1290	281	67	343	236	560	1023	143	204	646	220

4.3 EXISTING YEAR (2020) VEHICLE MILES TRAVELED (VMT)

Table 4-3 presents the VMT analysis results for the existing year (2020) scenario. VMT calculations are based on the scenario parameters and methodology as described in Sections 2.5 and 3.1, respectively.

Table 4-3 Existing Year (2020) VMT Summary

	I – I VMT	I – X VMT	X – I VMT	Total VMT	Service Population	VMT/SP
City	697,779	5,356,504	5,352,841	11,407,124	507,924	22.5
County	48,242,429	25,463,887	25,637,825	99,344,141	3,834,949	25.9

SP = Service Population = Total Employees + Total Population. Reduction factor applied to Total Employees as noted in Section 3.1 and shown in Appendix F. I-I = Internal-Internal; I-X = Internal-External; X-I = External-Internal.

4.4 EXISTING YEAR (2020) ROADWAY SEGMENT LEVEL OF SERVICE

Table 4-4 includes the 24-hour count locations, volumes, and corresponding roadway segment level of service. The following study roadway segments currently operate at a deficient LOS:

- Segment 4 – Harbor Boulevard from Westminster Avenue/17th Street to Hazard Avenue
- Segment 11 – Bristol Street from 17th Street to Santa Clara Avenue
- Segment 13 – Bristol Street from 17th Street to Washington Avenue
- Segment 14 – Fairview Street from Trask Avenue to 17th Street
- Segment 17 – Flower Street from 1st Street to Bishop Street
- Segment 23 – Main Street from 1st Street to Bishop Street
- Segment 25 – Grand Avenue from Santa Ana Boulevard to 4th Street
- Segment 39 – Bristol Street from Edinger Avenue to Warner Avenue
- Segment 44 – Edinger Avenue from Flower Street to Main Street
- Segment 45 – Main Street from McFadden Avenue to Edinger Avenue
- Segment 57 – Dyer Road from Grand Avenue to Pullman Street
- Segment 58 – McFadden Avenue from Bristol Street to Flower Street
- Segment 72 – McFadden Avenue from Main Street to Standard Avenue
- Segment 88 – Harbor Boulevard from Edinger Avenue to Warner Avenue

Table 4-4 Existing Year (2020) Roadway Segment LOS

ID	Street	Segment	Lanes	ADT	LOS
1	1st Street	Euclid Street to Ward Street	6D	25,233	A
2	Euclid Street	1st Street to McFadden Avenue	6D	40,731	C
3	Westminster Avenue	Harbor Boulevard to Fairview Street	6D	30,459	A
4	Harbor Boulevard	Westminster Avenue/17th Street to Hazard Avenue	6D	54,137	E
5	1st Street	Harbor Boulevard to Jackson	6D	32,736	A
6	Edinger Avenue	Harbor Boulevard to Fairview Street	4D	27,838	C
7	Warner Avenue	Harbor Boulevard to Fairview Street	6D	31,945	A
8	Harbor Boulevard	Segerstrom Avenue to MacArthur Boulevard	6D	15,622	A
9	Fairview Street	1st Street to Willits Street	6D	42,605	C
10	1st Street	Sullivan Street to Raitt Street	6D	36,377	B
11	Bristol Street	17th Street to Santa Clara Avenue	4D	45,676	F
12	17th Street	College Avenue to Bristol Street	6D	37,345	B
13	Bristol Street	17th Street to Washington Avenue	4D	42,005	F
14	Fairview Street	Trask Avenue to 17th Street	4D	40,432	F
15	Bristol Street	1st Street to Bishop Street	6D	42,663	C
16	Civic Center Drive	Bristol Street to Flower Street	4D	17,589	A
17	Flower Street	1st Street to Bishop Street	2U	15,622	F
18	Main Street	17th Street to 20th Street	4D	32,044	D
19	Main Street	Washington Street to Civic Center Drive	4D	33,489	D
20	Civic Center Drive	Flower Street to Ross Street	4D	17,427	A
21	Santa Ana Boulevard	Flower Street to Ross Street	6D	14,689	A
22	1st Street	Main Street to Standard Avenue	6D	42,699	C
23	Main Street	1st Street to Bishop Street	4U	30,125	F
24	Grand Avenue	Santa Clara Avenue to Fairhaven Street	4D	30,206	D
25	Grand Avenue	Santa Ana Boulevard to 4th Street	4D	36,678	E
26	Santa Clara Avenue	Grand Avenue to Tustin Avenue	2U	10,585	D
27	Tustin Avenue	Santa Clara Avenue to Fairhaven Street	6D	35,410	B
28	17th Street	Cabrillo Park Drive to Tustin Avenue	4D	32,080	D
29	Tustin Avenue	Fruit Street to 4th Street	6D	25,174	A
30	1st Street	Grand Avenue to Elk Lane	6D	28,638	A
31	1st Street	Cabrillo Park Drive to Tustin Avenue	6D	22,083	A
32	Fairview Street	Edinger Avenue to Harvard Street	6D	37,524	B
33	Fairview Street	Warner Avenue to Segerstrom Avenue	6D	39,878	C
34	MacArthur Boulevard	Harbor Boulevard to Fairview Street	6D	26,235	A
35	Edinger Avenue	Fairview Street to Greenville Street	4D	29,115	C
36	McFadden Avenue	Fairview Street to Raitt Street	4D	20,997	A
37	MacArthur Boulevard	Fairview Street to Raitt Street	6D	28,809	A
38	Segerstrom Avenue	Fairview Street to Raitt Street	4D	19,326	A
39	Bristol Street	Edinger Avenue to Warner Avenue	4D	37,238	E
40	Bristol Street	Warner Avenue to Segerstrom Avenue	6D	38,007	B

ID	Street	Segment	Lanes	ADT	LOS
41	Warner Avenue	Raitt Street to Bristol Street	5D	34,555	C
42	Bristol Street	MacArthur Boulevard to Sunflower Avenue	6D	34,731	B
43	Flower Street	Warner Avenue to Segerstrom Avenue	4D	15,378	A
44	Edinger Avenue	Flower Street to Main Street	4D	36,534	E
45	Main Street	McFadden Avenue to Edinger Avenue	4U	28,622	F
46	Main Street	Edinger Avenue to Warner Avenue	4D	27,972	C
47	Main Street	Warner Avenue to Dyer Road	5D	30,484	B
48	Segerstrom Avenue	Bristol Street to Flower Street	4D	22,959	B
49	MacArthur Boulevard	Flower Street to Main Street	6D	37,946	B
50	Main Street	MacArthur Boulevard to Sunflower Avenue	6D	23,692	A
51	Grand Avenue	Edinger Avenue to Warner Avenue	6D	17,735	A
52	Edinger Avenue	Richie Street to Newport Avenue	6D	40,435	C
53	Warner Avenue	Grand Avenue to Red Hill Avenue	6D	22,435	A
54	Warner Avenue	Main Street to Standard Avenue	6D	27,391	A
55	McFadden Avenue	Newhope Street to Harbor Boulevard	4D	18,495	A
56	McFadden Avenue	Standard Avenue to Grand Avenue	4D	20,188	A
57	Dyer Road	Grand Avenue to Pullman Street	6D	51,084	E
58	McFadden Avenue	Bristol Street to Flower Street	2U	14,951	F
59	Main Street	La Veta Avenue to Memory Lane	6D	31,004	A
60	1st Street	Bristol Street to Flower Street	6D	39,006	B
61	Fairhaven Avenue	Grand Avenue to Tustin Avenue	4D	10,218	A
62	4th Street	French Street to Standard Avenue	2D	14,855	C
63	Broadway	17th Street to Civic Center Drive	4D	20,630	A
64	Broadway	Civic Center Drive to 1st Street	4U	16,005	B
65	Cambridge Street	SR-22 to Fairhaven Avenue	2U	- *	-
66	Chestnut Avenue	Standard Avenue to Lyon Street	4U	2,587	A
67	Civic Center Drive	French Street to Santiago Street	2U	10,266	D
68	Civic Center Drive	Fairview Road to Bristol Street	4U	13,772	A
69	Flower Street	Edinger Avenue to Warner Avenue	2U	10,964	D
70	Halladay Avenue	Warner Avenue to Dyer Road	2D	- *	-
71	Hazard Avenue	Euclid Street to Harbor Boulevard	4U	9,546	A
72	McFadden Avenue	Main Street to Standard Avenue	2U	16,064	F
73	Penn Way/Santiago Street	I-5 SB Ramps to Santa Ana Boulevard	4U	- *	-
74	Raitt Street	Santa Ana Boulevard to 1st Street	2U	9,978	C
75	Raitt Street	Warner Avenue to Segerstrom Avenue	4D	14,746	A
76	Santa Ana Boulevard	French Street to Santiago Street	2D	6,616	A
77	Santa Ana Boulevard	Raitt Street to Bristol Street	4U	4,236	A
78	Standard Avenue	Chestnut Avenue to McFadden Avenue	4U	12,871	A
79	Standard Avenue	Edinger Avenue to Warner Avenue	4U	12,852	A
80	Greenville Street	Edinger Avenue to Warner Avenue	2U	7,090	A
81	Greenville Street	Warner Avenue to Segerstrom Avenue	4D	8,578	A
82	Flower Street	17th Street to Northern Terminus	2D	11,155	B

ID	Street	Segment	Lanes	ADT	LOS
83	Logan Street	Civic Center Drive to Santa Ana Boulevard	2U	- *	-
84	Dyer Road	Pullman Street to Red Hill Avenue	6D	31,248	A
85	Fairhaven Avenue	Tustin Street to Yorba Street	4U	16,381	B
86	Santa Clara Avenue	Tustin Street to Yorba Street	2U	8,568	B
87	Harbor Boulevard	McFadden Avenue to Edinger Avenue	6D	49,281	D
88	Harbor Boulevard	Edinger Avenue to Warner Avenue	6D	52,363	E

Notes:
* Not available.
(1) ADT – Average Daily Traffic Volumes
(2) LOS – Level of Service
(3) #D – total number of lanes in both directions divided by raised or striped median; #U – total number of undivided lanes in both directions
(4) Roadway capacities shown in Table 3-1.
(5) Yellow and red shading indicates an unacceptable level of service.

4.5 EXISTING YEAR (2020) INTERSECTION LEVEL OF SERVICE

A summary of the AM and PM peak hour level of service analysis results for the existing year (2020) existing condition are included in Table 4-5. Intersections are general considered unacceptable if the level of service (LOS) is “E” or “F”. It should be noted that Caltrans and CMP intersection have a minimum acceptable LOS of C and E, respectively. The following intersections are forecast to have unacceptable level of service in the existing year (2020) condition:

- INT 2 – Euclid street and McFadden Avenue (City of Santa Ana)
- INT 12 – Harbor Boulevard and Warner Avenue (City of Santa Ana – CMP)
- INT 13 – Harbor Boulevard and Segerstrom Avenue (City of Santa Ana)
- INT 14 – Hyland Avenue and MacArthur Boulevard (City of Costa Mesa / City of Santa Ana)
- INT 37 – Bristol Street and Segerstrom Avenue (City of Santa Ana)
- INT 45 – Flower Street and McFadden Avenue (City of Santa Ana)
- INT 47 – Flower Street and MacArthur Boulevard (City of Santa Ana)
- INT 82 – Grand Avenue and Edinger Avenue (City of Santa Ana)
- INT 91 – Tustin Street and Fairhaven Avenue (City of Orange)

Table 4-5: Existing Year (2020) LOS Summary

ID	INTERSECTION	AM		PM	
		V/C or Delay	LOS	V/C or Delay	LOS
1	Euclid Street and Bolsa Avenue	0.85	D	0.87	D
2	Euclid Street and McFadden Avenue	0.91	E	0.83	D
3	Euclid Street and Edinger Avenue	0.86	D	0.79	C
4	Newhope Street and Hazard Avenue	0.71	C	0.64	B
5	Newhope Street and McFadden Avenue	0.83	D	0.84	D
6	Harbor Boulevard and SR-22 WB Off-Ramp / Banner Drive	27.4	C	23.6	C
7	Trask Avenue and SR-22 EB On-Ramp	11.5	B	12.4	B
8	Harbor Boulevard and Westminster Avenue	0.82	D	0.79	C
9	Harbor Boulevard and 1st Street	0.81	D	0.83	D
10	Harbor Boulevard and McFadden Avenue	0.79	C	0.81	D
11	Harbor Boulevard and Edinger Avenue	0.77	C	0.70	B
12	Harbor Boulevard and Warner Avenue	0.81	D	1.58	F
13	Harbor Boulevard and Segerstrom Avenue	0.98	E	0.90	D
14	Hyland Avenue / OCTA Bus Base and MacArthur Boulevard	0.61	B	0.92	E
15	Harbor Boulevard and MacArthur Boulevard	0.75	C	0.82	D
16	Harbor Boulevard and Sunflower Avenue	0.70	B	0.78	C
17	Harbor Boulevard and I-405 NB Off-Ramp	19.7	B	23.7	C
18	Harbor Boulevard and I-405 SB Off-Ramp	13.2	B	19.4	B
19	Fairview Street and Civic Center Drive	0.67	B	0.66	B
20	Fairview Street and 1st Street	0.87	D	0.88	D
21	Fairview Street and McFadden Avenue	0.79	C	0.80	C
22	Fairview Street and Edinger Avenue	0.75	C	0.81	D
23	Fairview Street and Warner Avenue	0.85	D	0.85	D
24	Fairview Street and MacArthur Boulevard	0.70	B	0.83	D
25	Fairview Road and Sunflower Avenue	0.71	C	0.71	C
26	Greenville Street and Edinger Avenue	0.56	A	0.59	A
27	Greenville Street and Segerstrom Avenue	0.73	C	0.69	B
28	Raitt Street and McFadden Avenue	0.72	C	0.72	C
29	Raitt Street and Edinger Avenue	0.85	D	0.86	D
30	Bear Street and MacArthur Boulevard	0.74	C	0.87	D
31	Bristol Street and 17th Street	0.73	C	0.69	B
32	Bristol Street and Civic Center Drive	0.83	D	0.83	D
33	Bristol Street and Santa Ana Boulevard	0.67	B	0.66	B
34	Bristol Street and 1st Street	0.75	C	0.78	C
35	Bristol Street and McFadden Avenue	0.75	C	0.75	C
36	Bristol Street and Warner Avenue	0.77	C	0.79	C
37	Bristol Street and Segerstrom Avenue	0.79	C	0.91	E
38	Bristol Street and Alton Avenue	0.56	A	0.69	B
39	Bristol Street and MacArthur Boulevard	0.74	C	0.81	D

ID	INTERSECTION	AM		PM	
		V/C or Delay	LOS	V/C or Delay	LOS
40	Bristol Street and Sunflower Avenue	0.64	B	0.69	B
41	Bristol Street and I-405 NB Ramps	19.1	B	28.2	C
42	Bristol Street and I-405 SB Ramps	22.3	C	18.4	B
43	Flower Street and Santa Ana Boulevard	0.60	A	0.57	A
44	Flower Street and 1st Street	0.80	C	0.75	C
45	Flower Street and McFadden Avenue	0.82	D	0.92	E
46	Flower Street and Segerstrom Avenue	0.77	C	0.90	D
47	Flower Street and MacArthur Boulevard	0.70	B	0.91	E
48	Main Street and La Veta Avenue	0.57	A	0.63	B
49	Main Street and Mainplace Drive / Memory Lane	0.49	A	0.47	A
50	Main Street and 17th Street	0.82	D	0.73	C
51	Main Street and Civic Center Drive	0.76	C	0.80	C
52	Main Street and Santa Ana Boulevard	0.67	B	0.61	B
53	Main Street and 4th Street	0.49	A	0.54	A
54	Main Street and 1st Street	0.76	C	0.80	C
55	Main Street and McFadden Avenue	0.90	D	0.85	D
56	Main Street and Edinger Avenue	0.83	D	0.85	D
57	Main Street and MacArthur Boulevard	0.74	C	0.78	C
58	Penn Way and 17th Street	11.2	B	20.7	C
59	Santiago Street / I-5 NB Ramps and 17th Street	31.2	C	19.5	B
60	Penn Way and I-5 SB Ramps	19.0	B	22.0	C
61	Santiago Street and Civic Center Drive	16.9	C	17.1	C
62	Santiago Street and Santa Ana Boulevard	0.55	A	0.57	A
63*	Standard Avenue and 4th Street	-	-	-	-
64	Standard Avenue and 1st Street	0.80	C	0.84	D
65	Standard Avenue and McFadden Avenue	0.61	B	0.68	B
66	Halladay Street and Warner Avenue	0.66	B	0.68	B
67	Halladay Street and Dyer Road	0.57	A	0.78	C
68	SR-55 SB Ramps and MacArthur Boulevard	19.8	B	17.3	B
69	SR-55 NB Ramps and MacArthur Boulevard	19.2	B	14.8	B
70	SR-55 SB Ramps and Dyer Road	23.7	C	25.7	C
71	Glassell Street and La Veta Avenue	0.60	A	0.62	B
72	Glassell Street and SR-22 WB Ramps	28.5	C	24.8	C
73	Glassell Street / Grand Avenue and SR-22 EB Ramps	27.0	C	26.5	C
74	Grand Avenue and Fairhaven Avenue	0.68	B	0.68	B
75	Grand Avenue and Santa Clara Avenue	0.89	D	0.75	C
76	Grand Avenue and 17th Street	0.80	C	0.83	D
77	Grand Avenue and I-5 NB Ramps	12.9	B	10.0	A
78	Grand Avenue and Santa Ana Boulevard	23.8	C	21.1	C
79	Grand Avenue and 1st Street	0.80	C	0.79	C

ID	INTERSECTION	AM		PM	
		V/C or Delay	LOS	V/C or Delay	LOS
80	Grand Avenue and Chestnut Avenue	0.71	C	0.62	B
81	Grand Avenue and McFadden Avenue	0.83	D	0.76	C
82	Grand Avenue and Edinger Avenue	0.76	C	0.91	E
83	Grand Avenue and Warner Avenue	0.53	A	0.70	B
84	SR-55 NB Ramps and Dyer Road	16.3	B	5.7	A
85	Cambridge Street and La Veta Avenue	17.3	C	12.5	B
86	Cambridge Street and Fairhaven Avenue	0.56	A	0.58	A
87	Mabury Street and 1st Street	28.3	C	26.1	C
88	Tustin Street and La Veta Avenue	0.52	A	0.44	A
89	Tustin Street and SR-22 WB On-Ramp	12.9	B	12.1	B
90	Tustin Street and SR-22 EB Off-Ramp / Seba Avenue	24.2	C	23.7	C
91	Tustin Street and Fairhaven Avenue	0.98	E	0.61	B
92	Tustin Avenue and Santa Clara Avenue	0.87	D	0.65	B
93	Tustin Avenue and 17th Street	0.75	C	0.72	C
94	Tustin Avenue and 4th Street	0.70	B	0.69	B
95	SR-55 SB Ramps / Auto Mall Drive and Edinger Avenue	24.4	C	25.1	C
96	SR-55 NB Ramps / Del Amo Avenue and Newport Avenue	24.0	C	27.4	C
97	Red Hill Avenue and Edinger Avenue	0.57	A	0.67	B
98	Red Hill Avenue and Warner Avenue	0.49	A	0.59	A
99	Red Hill Avenue and Barranca Parkway	0.58	A	0.56	A
100	Red Hill Avenue and Alton Parkway	0.52	A	0.67	B
101	Red Hill Avenue and MacArthur Boulevard	0.66	B	0.66	B
102	Red Hill Avenue and Main Street	0.67	B	0.77	C
103	I-5 SB Ramps and Santa Ana Boulevard	17.4	B	18.9	B
104	Tustin Ranch Road and Warner Avenue	0.48	A	0.61	B
105	Von Karman Avenue and Barranca Parkway	0.76	C	0.87	D

Notes: (1) LOS – Level of Service; (2) V/C – Volume to Capacity
*Intersection does not currently exist; assessed in future scenarios only.

5.0 Future Year 2045 Forecast Modeling

5.1 ORANGE COUNTY TRANSPORTATION AUTHORITY MODEL (OCTAM)

The Orange County Transportation Authority (OCTA) is responsible for regional transportation planning in Orange County. OCTA's role as the regional planning agency is to plan for and evaluate multi-modal transportation alternatives to support regional planning activities. The Orange County Transportation Authority Model (OCTAM) is OCTA's regional model that is based on the traditional four-step sequential modeling methodology with "feedback loops" procedures to insure internal modeling consistency. The model incorporates multi-modal analytical capabilities to analyze the following modes of travel: local and express bus transit, urban rail, commuter rail, toll roads, carpools, truck traffic, as well as non-motorized transportation which includes pedestrian and bicycle trips. The model responds to changes in land use types, household characteristics, transportation infrastructure, and travel costs such as transit fares, parking costs, tolls, and auto operating costs.

5.2 PEAK HOUR FORECASTS

The future year 2040 volumes were derived based on existing peak hour count data and forecast link volumes obtained from the Orange County Transportation Analysis Model (OCTAM 5.0). OCTAM 5.0 (TransCad) is the accepted sub-regional model for forecasting travel demand for Orange County. Growth factors for each intersection approach and departure were interpolated from OCTAM 5.0 link plots for the baseline 2016 and 2045 scenarios. These growth factors were then applied to existing counts to forecast future turning movement volumes at each of the study intersections.

5.2.1 Turning Movement Development

It should be noted that Intersection #63 (Standard Avenue and 4th Street) does not currently exist, but is assumed to be constructed in the future year (2045) scenarios. Turning movement volumes for this intersection were developed through use of a post-processor. Because this intersection may affect local travel patterns, turning movement volumes for two adjacent intersections were also developed using this method. These intersections are #62 (Santiago Street and Santa Ana Boulevard) and #64 (Standard Avenue and 1st Street).

The process of converting link level traffic volumes to turning movement volumes is called "post processing." The fundamental theory behind the post-processor is the belief that with proper calibration, travel demand models provide good forecasts at the link level. Turning level forecasts are obtainable from the model, but the reliability of the forecast breaks down at this level of detail, and the abstraction of reality into numerical methods becomes apparent. The frictionless nature of left and right turns in the travel demand model allow them to occur as easily as through movements, which does not represent a realistic situation.

IBI Group has developed a spreadsheet-based postprocessor that uses existing turning movement volumes or split percentages along with forecast link-level data to determine future turn movement volumes at selected intersections. For intersections where existing data is not available (#63), assumed split percentages of 50% for the through movements, 25% for the right turn movements, and 25% for the left turn movements are used.

The postprocessor generates another solution to the possible combination of turning movements at a given intersection. There are numerous approaches to post processing. The IBI Group postprocessor utilizes a procedure documented in Chapter 8 of the National Cooperative Highway Research Program Report 255. It uses an iterative process to balance the intersection throughput volumes, which provides the best combination of reasonable turning movement volumes and traceability of results. Most importantly, the model link volumes (especially the approach intersection volumes) are maintained

when using this methodology. The "post processing" method can be summarized into the following steps:

1. If existing peak hour turning movement volumes are not available, calculate a base set of turning volumes from the known/assumed splits and the peak hour approach link volumes.
2. Calculate the inbound and outbound volumes for each leg of the intersection from the initial set of turning volumes.
3. Multiply the inbound volumes by the ratio of the forecast inbound volume to the calculated inbound volume for each leg. The calculated inbound volumes should now match the forecast inbound volumes.
4. Multiply the new volumes by the ratio of the forecast outbound volume to the calculated outbound volume for each leg. The calculated outbound volumes should now match the forecast outbound volumes for each leg, but the calculated inbound volumes may no longer be equal to the forecast inbound volumes.
5. Compare the calculated approach and departure volumes with the forecast approach and departure volumes.
6. If the deviation is within the tolerance level, the solution is obtained.
7. If the deviation is not within the tolerance level, repeat steps 3 and 4.
8. Repeat this process until the tolerance is met.

5.2.2 Roadway Segment Forecasts

Forecast roadway segment volumes were also derived based on existing average daily traffic (ADT) volumes and forecast ADT link volumes obtained from OCTAM 5.0. Growth factors for each study roadway segment were interpolated from OCTAM 5.0 link plots for the 2016 and 2045 baseline scenarios. The growth factors were then applied to existing ADT counts to forecast future roadway segment ADT.

5.2.3 Santa Ana Fixed Guideway (OC Streetcar)

As described in Section 2.0 of this report, the OC Streetcar is a proposed streetcar service that would travel primarily along Santa Ana Boulevard and the Pacific Electric Right-of-Way (PEROW) between the Santa Ana Regional Transportation Center (SARTC) and Garden Grove (4 miles long). The streetcar is proposed to travel along an exclusive guideway or path on rails that are embedded in the pavement. The streetcar would adhere to the same signal operations as on-street automobiles for most locations where Transit Signal Priority is not implemented. Santa Ana Boulevard is reclassified between Raitt Street and Shelton Street from a four lane undivided roadway to a two lane roadway (divided with a center left turn lane or raised median with left turn pockets. The project also proposes to reconfigure portions of Santa Ana Boulevard between Raitt Street and SARTC to accommodate a bike lane on the north side of the street throughout the alignment as well as 14-inch high platforms. The Fixed Guideway service is proposed to run every 10 to 15 minutes from approximately 6:00 AM to 11:00 PM. Within OCTAM, the Fixed Guideway is modeled as ‘bus transit,’ which would translate to six extra trips assigned during the peak hour in the direction of operations.

In 2016, the OCTA Board conditionally approved the following additional MPAH amendments:

- Fourth Street from French Street to Grand Avenue – Secondary to Divided Collector
- Santa Ana Boulevard from Flower Street to Ross – Major to Primary
- Santa Ana Boulevard from French Street to Santiago Street – Primary to Divided Collector
- Santa Ana Boulevard from Raitt Street to Flower Streer – Major to Divided Collector

6.0 Future Year (2045) No Project

This scenario is used as the point of comparison for the network alternatives and consists of the key elements presented in Section 2.6.

This scenario will serve as a base for comparison and establish impacts of the proposed With Project network. The Future Year 2045 No Project intersection geometries are the same as existing. The future year 2045 No Project volumes for the AM peak hour are shown in Table 6-1 and the PM peak hour volumes are shown in Table 6-2.

Table 6-1 Future Year (2045) No Project Volumes – AM Peak Hour

ID	Intersection	Northbound			Southbound			Eastbound			Westbound		
		L	T	R	L	T	R	L	T	R	L	T	R
1	Euclid Street and Bolsa Avenue	103	870	149	200	1785	101	252	937	177	190	606	194
2	Euclid Street and McFadden Avenue	162	1227	146	148	2062	171	255	521	323	151	335	127
3	Euclid Street and Edinger Avenue	127	801	68	168	2442	224	160	700	428	125	761	139
4	Newhope Street and Hazard Avenue	78	590	84	88	1302	119	108	276	204	119	397	159
5	Newhope Street and McFadden Avenue	77	342	120	122	1213	113	135	492	160	190	484	108
6	Harbor Boulevard and SR-22 WB Off-Ramp / Banner Drive	84	1534	0	0	1465	19	81	0	133	836	44	117
7	Trask Avenue and SR-22 EB On-Ramp	0	0	0	0	0	0	713	893	0	0	852	159
8	Harbor Boulevard and Westminster Avenue	178	1173	251	258	2021	115	192	1010	36	415	1124	306
9	Harbor Boulevard and 1st Street	95	756	163	236	1989	129	138	919	178	196	497	116
10	Harbor Boulevard and McFadden Avenue	104	1059	101	190	2004	67	177	462	138	138	311	89
11	Harbor Boulevard and Edinger Avenue	103	772	146	204	2349	68	123	743	373	191	424	176
12	Harbor Boulevard and Warner Avenue	109	665	169	429	1933	116	101	1440	379	138	723	122
13	Harbor Boulevard and Segerstrom Avenue	107	759	48	169	2274	85	82	689	278	140	434	98
14	Hyland Avenue / OCTA Bus Base and MacArthur Boulevard	86	4	24	8	2	19	7	1934	767	68	517	21
15	Harbor Boulevard and MacArthur Boulevard	131	920	94	295	1701	118	131	1183	357	128	427	127
16	Harbor Boulevard and Sunflower Avenue	221	1128	209	233	2204	54	13	153	59	139	178	101
17	Harbor Boulevard and I-405 NB Off-Ramp	0	1915	0	0	1978	0	0	0	0	399	0	702
18	Harbor Boulevard and I-405 SB Off-Ramp	0	1963	0	0	1253	0	475	0	529	0	0	0
19	Fairview Street and Civic Center Drive	7	1569	508	332	1915	8	7	25	25	100	3	52
20	Fairview Street and 1st Street	200	1538	289	245	1426	164	200	1153	179	120	539	181

ID	Intersection	Northbound			Southbound			Eastbound			Westbound		
		L	T	R	L	T	R	L	T	R	L	T	R
21	Fairview Street and McFadden Avenue	141	1510	202	154	1878	136	221	522	120	147	380	30
22	Fairview Street and Edinger Avenue	200	883	123	223	1558	132	361	1002	268	421	553	110
23	Fairview Street and Warner Avenue	222	981	129	194	1543	113	68	991	295	267	807	261
24	Fairview Street and MacArthur Boulevard	261	811	94	290	1460	163	121	984	145	235	494	140
25	Fairview Road and Sunflower Avenue	185	1071	163	191	1627	104	49	322	65	357	299	154
26	Greenville Street and Edinger Avenue	186	0	251	0	0	0	0	1821	444	153	813	0
27	Greenville Street and Segerstrom Avenue	47	193	78	154	472	160	46	1035	165	190	768	88
28	Raitt Street and McFadden Avenue	67	618	98	123	938	128	122	743	95	146	461	82
29	Raitt Street and Edinger Avenue	197	524	189	163	770	91	324	1980	285	122	954	56
30	Bear Street and MacArthur Boulevard	71	245	104	199	756	300	92	1581	108	62	1041	88
31	Bristol Street and 17th Street	251	1292	218	487	2001	263	324	963	156	368	845	280
32	Bristol Street and Civic Center Drive	133	1178	104	403	1628	101	165	836	103	127	421	87
33	Bristol Street and Santa Ana Boulevard	69	1502	209	153	1684	46	171	831	72	185	462	79
34	Bristol Street and 1st Street	205	1430	181	315	1298	183	200	1231	124	90	678	99
35	Bristol Street and McFadden Avenue	125	1117	56	204	1986	205	309	531	261	262	729	84
36	Bristol Street and Warner Avenue	221	993	183	600	2033	230	165	919	229	231	1058	180
37	Bristol Street and Segerstrom Avenue	70	778	146	283	1011	119	280	1354	125	134	607	78
38	Bristol Street and Alton Avenue	11	739	55	230	1591	36	164	101	211	41	87	31
39	Bristol Street and MacArthur Boulevard	102	531	133	329	1434	150	166	1203	244	159	758	110
40	Bristol Street and Sunflower Avenue	111	546	161	242	1370	103	112	926	375	295	480	166
41	Bristol Street and I-405 NB Ramps	0	1638	210	0	1918	8	0	0	36	145	87	796
42	Bristol Street and I-405 SB Ramps	125	1225	0	0	1030	886	696	0	636	0	0	0
43	Flower Street and Santa Ana Boulevard	100	936	136	214	723	97	211	1315	150	143	458	191
44	Flower Street and 1st Street	139	602	159	334	1058	111	148	1355	54	209	861	123
45	Flower Street and McFadden Avenue	70	511	44	118	655	95	112	1278	97	113	764	103
46	Flower Street and Segerstrom Avenue	86	451	100	98	544	120	223	1531	427	104	764	84
47	Flower Street and MacArthur Boulevard	26	170	88	167	361	270	151	1716	73	62	1049	67
48	Main Street and	105	724	375	198	1034	173	361	510	222	316	276	230

ID	Intersection	Northbound			Southbound			Eastbound			Westbound		
		L	T	R	L	T	R	L	T	R	L	T	R
	La Veta Avenue												
49	Main Street and Mainplace Drive / Memory Lane	34	920	301	36	1386	290	185	291	20	132	151	10
50	Main Street and 17th Street	133	788	169	237	1322	85	127	1336	67	356	1425	21
51	Main Street and Civic Center Drive	142	925	81	55	970	148	120	727	132	43	566	34
52	Main Street and Santa Ana Boulevard	66	1050	0	0	1135	100	0	0	0	90	1250	96
53	Main Street and 4th Street	0	939	22	0	961	24	0	70	11	0	140	34
54	Main Street and 1st Street	103	532	54	77	772	57	106	1241	131	86	1072	60
55	Main Street and McFadden Avenue	93	874	44	162	1259	25	86	815	89	164	438	126
56	Main Street and Edinger Avenue	99	561	61	211	975	51	96	1248	168	108	630	77
57	Main Street and MacArthur Boulevard	51	295	250	539	709	160	230	1336	242	138	411	206
58	Penn Way and 17th Street	52	0	260	0	0	0	0	1341	684	214	1722	0
59	Santiago Street / I-5 NB Ramps and 17th Street	720	33	21	54	0	279	89	932	337	0	1245	20
60	Penn Way and I-5 SB Ramps	0	260	230	951	196	0	0	0	0	196	0	110
61	Santiago Street and Civic Center Drive	487	338	47	10	590	144	182	69	369	108	99	20
62	Santiago Street and Santa Ana Boulevard	188	611	303	409	972	253	118	732	99	297	699	258
63	Standard Avenue and 4th Street	191	473	248	431	604	332	298	624	219	250	550	340
64	Standard Avenue and 1st Street	45	631	312	123	901	41	161	1,959	121	194	1,282	120
65	Standard Avenue and McFadden Avenue	94	360	162	226	547	38	34	1178	142	150	397	89
66	Halladay Street and Warner Avenue	95	0	220	0	0	0	0	1833	207	260	986	0
67	Halladay Street and Dyer Road	15	24	65	450	91	96	46	1537	11	104	566	91
68	SR-55 SB Ramps and MacArthur Boulevard	0	0	0	998	0	903	0	1349	961	0	1187	135
69	SR-55 NB Ramps and MacArthur Boulevard	946	0	1017	0	0	0	0	1468	726	0	517	244
70	SR-55 SB Ramps and Dyer Road	286	34	654	50	242	60	37	1422	303	348	552	92
71	Glassell Street and La Veta Avenue	263	412	125	14	295	65	57	293	563	367	387	9
72	Glassell Street and SR-22 WB Ramps	511	574	0	0	1017	473	0	0	0	323	6	483
73	Glassell Street / Grand Avenue and SR-22 EB Ramps	0	918	245	373	977	0	270	0	1058	0	0	0
74	Grand Avenue and Fairhaven Avenue	21	840	121	207	1,718	38	99	60	59	213	24	192
75	Grand Avenue and Santa Clara Avenue	75	528	136	345	1,687	380	143	233	48	200	385	352
76	Grand Avenue and 17th Street	186	543	373	340	1,426	280	198	739	94	342	894	98

ID	Intersection	Northbound			Southbound			Eastbound			Westbound		
		L	T	R	L	T	R	L	T	R	L	T	R
77	Grand Avenue and I-5 NB Ramps	0	1056	610	90	2893	0	0	0	0	507	0	140
78	Grand Avenue and Santa Ana Boulevard	49	694	35	202	1670	1473	268	221	436	6	475	43
79	Grand Avenue and 1st Street	208	732	34	99	1432	174	436	1041	295	216	759	87
80	Grand Avenue and Chestnut Avenue	53	737	163	161	1937	53	34	239	63	130	384	239
81	Grand Avenue and McFadden Avenue	181	764	114	249	1672	163	205	663	201	123	440	111
82	Grand Avenue and Edinger Avenue	47	472	92	243	1244	243	347	1447	139	189	724	158
83	Grand Avenue and Warner Avenue	142	429	184	183	528	178	333	1188	467	92	406	137
84	SR-55 NB Ramps and Dyer Road	610	0	499	0	0	0	0	1618	647	0	599	361
85	Cambridge Street and La Veta Avenue	185	235	0	0	480	245	273	0	436	0	0	0
86	Cambridge Street and Fairhaven Avenue	0	0	0	567	0	183	80	216	0	0	195	152
87	Mabury Street and 1st Street	6	0	157	248	147	554	0	1230	13	38	579	0
88	Tustin Street and La Veta Avenue	7	301	87	67	1307	4	9	11	35	307	1	47
89	Tustin Street and SR-22 WB On-Ramp	614	571	0	0	1171	699	0	0	0	0	0	0
90	Tustin Street and SR-22 EB Off-Ramp / Seba Avenue	0	953	5	17	1049	0	275	27	1182	6	0	43
91	Tustin Street and Fairhaven Avenue	101	586	103	280	2,411	48	84	317	546	416	460	601
92	Tustin Avenue and Santa Clara Avenue	83	453	84	151	3,094	98	335	847	618	160	332	166
93	Tustin Avenue and 17th Street	127	226	269	716	2,067	23	621	2,450	418	664	1,047	256
94	Tustin Avenue and 4th Street	80	408	365	601	765	237	126	748	31	125	704	457
95	SR-55 SB Ramps / Auto Mall Drive and Edinger Avenue	456	68	540	50	30	8	36	1426	527	510	1202	157
96	SR-55 NB Ramps / Del Amo Avenue and Newport Avenue	392	104	66	21	512	750	269	163	155	8	223	4
97	Red Hill Avenue and Edinger Avenue	101	374	106	195	828	388	397	1276	271	255	1234	173
98	Red Hill Avenue and Warner Avenue	68	414	56	20	935	188	273	464	342	120	427	76
99	Red Hill Avenue and Barranca Parkway	152	379	125	163	719	94	124	748	296	511	571	111
100	Red Hill Avenue and Alton Parkway	225	663	415	212	962	154	158	490	490	342	290	163
101	Red Hill Avenue and MacArthur Boulevard	83	742	13	186	481	441	1153	596	98	32	308	789
102	Red Hill Avenue and Main Street	201	691	449	56	261	90	139	1309	254	154	309	73
103	I-5 SB Ramps and Santa Ana Boulevard	0	0	0	382	0	38	332	569	0	0	1267	370

ID	Intersection	Northbound			Southbound			Eastbound			Westbound		
		L	T	R	L	T	R	L	T	R	L	T	R
104	Tustin Ranch Road and Warner Avenue	0	0	0	141	0	18	27	357	0	0	2130	490
105	Von Karman Avenue and Barranca Parkway	401	533	319	104	1021	446	219	823	275	902	1482	46

Table 6-2 Future Year (2045) No Project Volumes – PM Peak Hour

ID	Intersection	Northbound			Southbound			Eastbound			Westbound		
		L	T	R	L	T	R	L	T	R	L	T	R
1	Euclid Street and Bolsa Avenue	169	1569	126	152	866	164	212	678	106	209	877	209
2	Euclid Street and McFadden Avenue	242	1973	127	96	1179	143	207	475	210	114	479	221
3	Euclid Street and Edinger Avenue	539	1610	115	136	897	228	141	544	163	128	1181	191
4	Newhope Street and Hazard Avenue	105	1159	45	46	982	117	75	148	91	88	556	160
5	Newhope Street and McFadden Avenue	188	1009	177	140	625	121	61	372	54	104	574	164
6	Harbor Boulevard and SR-22 WB Off-Ramp / Banner Drive	109	2457	0	0	1801	58	102	0	86	576	78	165
7	Trask Avenue and SR-22 EB On-Ramp	0	0	0	0	0	0	927	695	0	0	786	74
8	Harbor Boulevard and Westminster Avenue	237	1178	279	254	1752	202	215	768	37	357	1238	281
9	Harbor Boulevard and 1st Street	290	1497	166	245	1073	145	179	730	138	199	929	151
10	Harbor Boulevard and McFadden Avenue	169	1737	127	256	1094	99	241	585	73	198	474	137
11	Harbor Boulevard and Edinger Avenue	254	1597	193	290	843	77	109	460	81	196	1138	379
12	Harbor Boulevard and Warner Avenue	762	3656	275	262	1457	174	217	1539	352	249	2589	827
13	Harbor Boulevard and Segerstrom Avenue	273	1717	55	87	986	87	118	585	192	117	1269	461
14	Hyland Avenue / OCTA Bus Base and MacArthur Boulevard	1201	7	70	12	4	14	36	891	160	25	2350	12
15	Harbor Boulevard and MacArthur Boulevard	558	1441	83	204	1028	169	140	489	181	81	1373	258
16	Harbor Boulevard and Sunflower Avenue	154	1532	228	114	1417	43	81	220	229	301	632	236
17	Harbor Boulevard and I-405 NB Off-Ramp	0	1529	0	0	2570	0	0	0	0	496	0	801
18	Harbor Boulevard and I-405 SB Off-Ramp	0	1881	0	0	2281	0	177	0	815	0	0	0
19	Fairview Street and Civic Center Drive	6	1690	475	192	1784	0	2	6	4	424	0	157
20	Fairview Street and 1st Street	169	1241	112	236	1468	291	193	781	136	140	1060	164
21	Fairview Street and McFadden Avenue	164	1507	131	191	1553	242	158	427	106	158	545	134
22	Fairview Street and Edinger Avenue	184	1759	108	204	635	156	205	628	168	650	1375	302
23	Fairview Street and Warner Avenue	213	1695	158	182	921	93	168	815	126	168	989	214
24	Fairview Street and MacArthur Boulevard	225	1550	84	171	955	88	240	627	211	167	1272	223
25	Fairview Road and Sunflower Avenue	192	1725	375	140	1162	81	262	555	123	227	569	148

ID	Intersection	Northbound			Southbound			Eastbound			Westbound		
		L	T	R	L	T	R	L	T	R	L	T	R
26	Greenville Street and Edinger Avenue	293	0	195	0	0	0	0	1061	216	153	1811	0
27	Greenville Street and Segerstrom Avenue	50	414	31	52	171	52	127	967	55	37	1414	202
28	Raitt Street and McFadden Avenue	61	872	136	51	533	86	108	640	56	98	827	114
29	Raitt Street and Edinger Avenue	171	736	206	114	396	99	125	862	123	192	2171	194
30	Bear Street and MacArthur Boulevard	273	1314	343	115	278	84	80	753	78	67	1211	193
31	Bristol Street and 17th Street	375	1823	303	337	1794	305	238	530	96	311	1170	396
32	Bristol Street and Civic Center Drive	222	1550	81	159	1458	149	195	549	65	184	789	89
33	Bristol Street and Santa Ana Boulevard	84	1702	97	117	1558	59	155	428	100	392	624	168
34	Bristol Street and 1st Street	392	1693	250	223	1209	273	160	900	115	196	1204	114
35	Bristol Street and McFadden Avenue	224	1649	90	111	1554	358	245	478	95	209	1088	127
36	Bristol Street and Warner Avenue	316	1182	216	338	1128	219	176	791	140	251	1481	434
37	Bristol Street and Segerstrom Avenue	182	1347	237	101	927	194	224	803	64	145	1313	66
38	Bristol Street and Alton Avenue	43	1681	158	116	870	54	25	35	65	91	150	29
39	Bristol Street and MacArthur Boulevard	321	1369	249	233	858	135	335	746	158	236	1370	259
40	Bristol Street and Sunflower Avenue	651	1376	222	215	804	230	301	588	228	247	952	303
41	Bristol Street and I-405 NB Ramps	0	2094	183	0	2375	22	0	0	204	350	300	1162
42	Bristol Street and I-405 SB Ramps	128	1570	0	0	1611	942	740	0	331	0	0	0
43	Flower Street and Santa Ana Boulevard	198	1206	99	87	442	40	357	1029	168	186	649	192
44	Flower Street and 1st Street	224	1063	253	200	549	159	102	895	74	210	1415	147
45	Flower Street and McFadden Avenue	91	1234	76	46	352	57	124	928	37	93	1159	166
46	Flower Street and Segerstrom Avenue	122	859	82	84	469	135	203	1011	107	92	1545	99
47	Flower Street and MacArthur Boulevard	130	621	72	93	224	215	199	947	60	62	1989	177
48	Main Street and La Veta Avenue	347	1059	496	164	1031	266	327	466	209	282	563	226
49	Main Street and Mainplace Drive / Memory Lane	113	1186	225	52	1083	143	391	433	116	278	227	110
50	Main Street and 17th Street	197	1019	222	222	969	150	224	1256	74	199	1220	81
51	Main Street and Civic Center Drive	92	1169	98	52	853	54	239	1322	158	38	384	39
52	Main Street and Santa Ana Boulevard	51	1152	0	0	1083	53	0	0	0	92	924	120
53	Main Street and 4th Street	0	950	45	0	864	39	0	70	39	0	229	58

ID	Intersection	Northbound			Southbound			Eastbound			Westbound		
		L	T	R	L	T	R	L	T	R	L	T	R
54	Main Street and 1st Street	152	745	65	146	559	119	116	1172	87	111	1244	87
55	Main Street and McFadden Avenue	132	1037	64	123	834	61	182	805	98	133	752	338
56	Main Street and Edinger Avenue	101	1069	49	129	646	88	118	698	78	102	1364	141
57	Main Street and MacArthur Boulevard	446	1067	293	265	345	260	313	643	62	193	1529	444
58	Penn Way and 17th Street	1113	0	543	0	0	0	0	1672	539	123	1440	0
59	Santiago Street / I-5 NB Ramps and 17th Street	330	44	17	50	0	130	114	1047	688	0	1564	42
60	Penn Way and I-5 SB Ramps	0	631	414	592	137	0	0	0	0	214	0	183
61	Santiago Street and Civic Center Drive	194	598	60	32	456	117	266	76	269	14	19	18
62	Santiago Street and Santa Ana Boulevard	135	833	236	378	639	103	164	673	87	255	546	347
63	Standard Avenue and 4th Street	251	543	214	254	428	297	302	477	201	233	648	351
64	Standard Avenue and 1st Street	109	724	259	142	679	47	168	1,279	65	264	1,888	116
65	Standard Avenue and McFadden Avenue	194	765	94	237	520	90	95	632	108	123	749	217
66	Halladay Street and Warner Avenue	338	0	704	0	0	0	2	868	87	272	2159	0
67	Halladay Street and Dyer Road	61	266	307	296	39	83	147	1271	9	51	1655	132
68	SR-55 SB Ramps and MacArthur Boulevard	0	0	0	299	0	724	0	1187	1058	0	1474	579
69	SR-55 NB Ramps and MacArthur Boulevard	620	0	412	0	0	0	0	711	731	0	1467	1056
70	SR-55 SB Ramps and Dyer Road	386	12	291	103	226	110	59	1379	187	566	1008	65
71	Glassell Street and La Veta Avenue	573	595	194	14	471	35	106	346	594	211	382	15
72	Glassell Street and SR-22 WB Ramps	660	1079	0	0	1007	293	0	0	0	251	9	446
73	Glassell Street / Grand Avenue and SR-22 EB Ramps	0	1450	370	461	824	0	229	4	503	0	0	0
74	Grand Avenue and Fairhaven Avenue	54	1,420	284	242	974	89	79	45	33	221	42	157
75	Grand Avenue and Santa Clara Avenue	103	1,386	288	240	946	240	114	139	26	157	282	300
76	Grand Avenue and 17th Street	288	1,026	259	294	634	140	321	823	138	279	1,031	187
77	Grand Avenue and I-5 NB Ramps	0	1855	1432	62	1501	0	0	0	0	151	0	182
78	Grand Avenue and Santa Ana Boulevard	185	2091	34	38	839	595	377	230	363	34	228	165
79	Grand Avenue and 1st Street	188	1435	43	113	667	266	326	1080	107	154	958	176
80	Grand Avenue and Chestnut Avenue	152	1142	198	161	716	121	70	214	47	139	433	252
81	Grand Avenue and McFadden Avenue	222	1264	218	153	696	187	122	454	79	96	762	168

ID	Intersection	Northbound			Southbound			Eastbound			Westbound		
		L	T	R	L	T	R	L	T	R	L	T	R
82	Grand Avenue and Edinger Avenue	244	1411	122	203	501	281	182	787	63	93	1673	217
83	Grand Avenue and Warner Avenue	183	660	146	140	452	208	306	587	127	241	1539	504
84	SR-55 NB Ramps and Dyer Road	181	0	49	0	0	0	0	1183	602	0	1488	929
85	Cambridge Street and La Veta Avenue	235	327	0	0	206	191	375	0	247	0	0	0
86	Cambridge Street and Fairhaven Avenue	0	0	0	219	0	76	132	230	0	0	237	295
87	Mabury Street and 1st Street	23	0	233	195	83	367	0	1334	21	40	549	0
88	Tustin Street and La Veta Avenue	38	863	205	79	701	13	13	5	20	146	4	90
89	Tustin Street and SR-22 WB On-Ramp	466	1340	0	0	573	294	0	0	0	0	0	0
90	Tustin Street and SR-22 EB Off-Ramp / Seba Avenue	0	1416	4	40	550	0	440	39	558	28	0	67
91	Tustin Street and Fairhaven Avenue	280	1,492	132	356	940	108	89	200	163	100	220	208
92	Tustin Avenue and Santa Clara Avenue	191	923	142	199	1,574	109	72	227	133	133	166	157
93	Tustin Avenue and 17th Street	253	1,083	557	377	404	40	524	1,029	139	243	798	444
94	Tustin Avenue and 4th Street	28	299	97	459	339	124	208	743	38	118	798	491
95	SR-55 SB Ramps / Auto Mall Drive and Edinger Avenue	401	32	423	110	50	37	47	1677	472	468	1220	146
96	SR-55 NB Ramps / Del Amo Avenue and Newport Avenue	879	262	51	17	209	803	156	54	32	23	348	16
97	Red Hill Avenue and Edinger Avenue	204	1469	233	105	209	169	410	1051	128	90	1161	567
98	Red Hill Avenue and Warner Avenue	374	1281	147	79	304	385	246	668	104	76	1598	210
99	Red Hill Avenue and Barranca Parkway	338	1270	327	241	408	192	172	637	84	110	839	245
100	Red Hill Avenue and Alton Parkway	26	1458	211	122	519	4	434	1065	545	1299	222	801
101	Red Hill Avenue and MacArthur Boulevard	175	1133	14	315	654	1148	499	230	35	39	810	568
102	Red Hill Avenue and Main Street	436	941	254	88	640	348	200	714	193	277	1575	88
103	I-5 SB Ramps and Santa Ana Boulevard	0	0	0	304	0	67	765	865	0	0	621	170
104	Tustin Ranch Road and Warner Avenue	0	0	0	553	0	38	65	2154	0	0	856	369
105	Von Karman Avenue and Barranca Parkway	346	1992	434	80	407	280	765	1397	195	232	734	250

6.1 FUTURE YEAR (2045) NO PROJECT VEHICLE MILES TRAVELED (VMT)

Table 7-6 presents the VMT analysis results for the Future Year (2045) No Project scenario. VMT calculations are based on the scenario parameters and methodology as described in Sections 2.6 and 3.1, respectively.

Table 6-3 Future Year (2045) VMT Summary

	I – I VMT	I – X VMT	X – I VMT	Total VMT	Service Population	VMT/SP
City	692,704	5,737,798	5,733,292	12,163,794	534,238	22.8
County	52,994,916	29,554,879	29,660,308	112,210,103	4,221,830	26.6

SP = Service Population = Total Employees + Total Population. Reduction factor applied to Total Employees as noted in Section 3.1 and shown in Appendix F. I-I = Internal-Internal; I-X = Internal-External; X-I = External-Internal.

6.2 ROADWAY SEGMENT LEVEL OF SERVICE

A summary of the forecast roadway segment volumes and corresponding level of service results for the future year 2045 No Project condition is shown in Table 6-4. The following roadway segments are forecast to operate at a deficient LOS:

- Segment 8 – Harbor Boulevard from Segerstrom Avenue to MacArthur Boulevard
- Segment 23 – Main Street from 1st Street to Bishop Street
- Segment 39 – Bristol Street from Edinger Avenue to Warner Avenue
- Segment 43 – Flower Street from Warner Avenue to Segerstrom Avenue
- Segment 45 – Main Street from McFadden Avenue to Edinger Avenue
- Segment 52 – Edinger Avenue from Richie Street to Newport Avenue
- Segment 57 – Dyer Road from Grand Avenue to Pullman Street
- Segment 58 – McFadden Avenue from Bristol Street to Flower Street
- Segment 62 – Fourth Street from French Street to Standard Avenue
- Segment 63 – Broadway from 17th Street to Civic Center Drive
- Segment 72 – McFadden Avenue from Main Street to Standard Avenue
- Segment 73 – Penn Way/Santiago Street from I-5 SB Ramps to Santa Ana Boulevard
- Segment 74 – Raitt Street from Santa Ana Boulevard to 1st Street
- Segment 84 – Dyer Road from Pullman Street to Red Hill Avenue

Table 6-4 Future Year (2045) No Project Roadway Segment LOS

ID	Street	Segment	Lanes	ADT	LOS
1	1st Street	Euclid Street to Ward Street	6D	21,700	A
2	Euclid Street	1st Street to McFadden Avenue	6D	35,900	B
3	Westminster Avenue	Harbor Boulevard to Fairview Street	6D	25,400	A
4	Harbor Boulevard	Westminster Avenue/17th Street to Hazard Avenue	6D	41,100	C
5	1st Street	Harbor Boulevard to Jackson	6D	23,700	A
6	Edinger Avenue	Harbor Boulevard to Fairview Street	6D	23,300	A
7	Warner Avenue	Harbor Boulevard to Fairview Street	6D	28,500	A
8	Harbor Boulevard	Segerstrom Avenue to MacArthur Boulevard	6D	59,600	F
9	Fairview Street	1st Street to Willits Street	6D	38,800	B
10	1st Street	Sullivan Street to Raitt Street	6D	24,400	A
11	Bristol Street	17th Street to Santa Clara Avenue	6D	43,200	C
12	17th Street	College Avenue to Bristol Street	6D	30,800	A
13	Bristol Street	17th Street to Washington Avenue	6D	47,300	D
14	Fairview Street	Trask Avenue to 17th Street	6D	47,400	D
15	Bristol Street	1st Street to Bishop Street	6D	45,500	D
16	Civic Center Drive	Bristol Street to Flower Street	4U	18,400	C
17	Flower Street	1st Street to Bishop Street	4U	9,400	A
18	Main Street	17th Street to 20th Street	6D	40,800	C
19	Main Street	Washington Street to Civic Center Drive	4U	16,600	B
20	Civic Center Drive	Flower Street to Ross Street	4U	10,200	A
21	Santa Ana Boulevard	Flower Street to Ross Street	6D	22,200	A
22	1st Street	Main Street to Standard Avenue	6D	38,200	B
23	Main Street	1st Street to Bishop Street	4U	29,400	F
24	Grand Avenue	Santa Clara Avenue to Fairhaven Street	6D	31,200	A
25	Grand Avenue	Santa Ana Boulevard to 4th Street	6D	24,600	A
26	Santa Clara Avenue	Grand Avenue to Tustin Avenue	4U	10,800	A
27	Tustin Avenue	Santa Clara Avenue to Fairhaven Street	6D	23,400	A
28	17th Street	Cabrillo Park Drive to Tustin Avenue	6D	32,700	A
29	Tustin Avenue	Fruit Street to 4th Street	6D	22,100	A
30	1st Street	Grand Avenue to Elk Lane	6D	29,300	A
31	1st Street	Cabrillo Park Drive to Tustin Avenue	6D	15,600	A
32	Fairview Street	Edinger Avenue to Harvard Street	6D	46,200	D
33	Fairview Street	Warner Avenue to Segerstrom Avenue	6D	43,200	C
34	MacArthur Boulevard	Harbor Boulevard to Fairview Street	6D	33,500	A
35	Edinger Avenue	Fairview Street to Greenville Street	6D	20,400	A
36	McFadden Avenue	Fairview Street to Raitt Street	4U	20,000	D
37	MacArthur Boulevard	Fairview Street to Raitt Street	6D	29,700	A
38	Segerstrom Avenue	Fairview Street to Raitt Street	6D	26,300	A
39	Bristol Street	Edinger Avenue to Warner Avenue	6D	53,500	E
40	Bristol Street	Warner Avenue to Segerstrom Avenue	6D	45,100	D

ID	Street	Segment	Lanes	ADT	LOS
41	Warner Avenue	Raitt Street to Bristol Street	6D	22,600	A
42	Bristol Street	MacArthur Boulevard to Sunflower Avenue	6D	49,100	D
43	Flower Street	Warner Avenue to Segerstrom Avenue	4D	36,200	E
44	Edinger Avenue	Flower Street to Main Street	6D	23,200	A
45	Main Street	McFadden Avenue to Edinger Avenue	4U	25,100	F
46	Main Street	Edinger Avenue to Warner Avenue	5D	34,400	C
47	Main Street	Warner Avenue to Dyer Road	6D	36,700	B
48	Segerstrom Avenue	Bristol Street to Flower Street	6D	24,400	A
49	MacArthur Boulevard	Flower Street to Main Street	6D	35,400	B
50	Main Street	MacArthur Boulevard to Sunflower Avenue	6D	26,300	A
51	Grand Avenue	Edinger Avenue to Warner Avenue	6D	34,100	B
52	Edinger Avenue	Richie Street to Newport Avenue	6D	52,800	E
53	Warner Avenue	Grand Avenue to Red Hill Avenue	6D	31,800	A
54	Warner Avenue	Main Street to Standard Avenue	6D	22,700	A
55	McFadden Avenue	Newhope Street to Harbor Boulevard	4U	13,800	A
56	McFadden Avenue	Standard Avenue to Grand Avenue	4U	16,100	B
57	Dyer Road	Grand Avenue to Pullman Street	6D	73,900	F
58	McFadden Avenue	Bristol Street to Flower Street	4U	23,300	E
59	Main Street	La Veta Avenue to Memory Lane	8D	48,800	B
60	1st Street	Bristol Street to Flower Street	6D	26,600	A
61	Fairhaven Avenue	Grand Avenue to Tustin Avenue	4D	13,500	A
62	4th Street	French Street to Standard Avenue	4U	22,800	E
63	Broadway	17th Street to Civic Center Drive	4U	29,600	F
64	Broadway	Civic Center Drive to 1st Street	4U	12,200	A
65	Cambridge Street	SR-22 to Fairhaven Avenue	4U	9,200	A
66	Chestnut Avenue	Standard Avenue to Lyon Street	4U	11,900	A
67	Civic Center Drive	French Street to Santiago Street	4U	2,100	A
68	Civic Center Drive	Fairview Road to Bristol Street	4U	20,300	D
69	Flower Street	Edinger Avenue to Warner Avenue	4U	13,300	A
70	Halladay Avenue	Warner Avenue to Dyer Road	4U	22,100	D
71	Hazard Avenue	Euclid Street to Harbor Boulevard	4U	15,400	B
72	McFadden Avenue	Main Street to Standard Avenue	4U	24,700	E
73	Penn Way/Santiago Street	I-5 SB Ramps to Santa Ana Boulevard	4U	26,300	F
74	Raitt Street	Santa Ana Boulevard to 1st Street	4U	23,100	E
75	Raitt Street	Warner Avenue to Segerstrom Avenue	4U	20,000	D
76	Santa Ana Boulevard	French Street to Santiago Street	4D	16,500	A
77	Santa Ana Boulevard	Raitt Street to Bristol Street	6D	27,000	A
78	Standard Avenue	Chestnut Avenue to McFadden Avenue	4U	19,600	C
79	Standard Avenue	Edinger Avenue to Warner Avenue	4U	18,200	C
80	Greenville Street	Edinger Avenue to Warner Avenue	2U	6,600	A
81	Greenville Street	Warner Avenue to Segerstrom Avenue	4D	8,400	A
82	Flower Street	17th Street to Northern Terminus	2D	5,900	A

ID	Street	Segment	Lanes	ADT	LOS
83	Logan Street	Civic Center Drive to Santa Ana Boulevard	2U	- *	-
84	Dyer Road	Pullman Street to Red Hill Avenue	6D	58,000	F
85	Fairhaven Avenue	Tustin Street to Yorba Street	4U	17,214	B
86	Santa Clara Avenue	Tustin Street to Yorba Street	4U	9,004	A
87	Harbor Boulevard	McFadden Avenue to Edinger Avenue	6D	36,400	B
88	Harbor Boulevard	Edinger Avenue to Warner Avenue	6D	44,900	C

Notes:
* Not available.
(1) ADT – Average Daily Traffic Volumes
(2) LOS – Level of Service
(3) #D – total number of lanes in both directions divided by raised or striped median; #U – total number of undivided lanes in both directions.
(4) Roadway capacities shown in Table 3-1.

6.3 INTERSECTION LEVEL OF SERVICE

A summary of the AM and PM peak hour level of service analysis results for the Future Year (2045) No Project condition is provided in Table 6-5. Intersections are considered unacceptable if the level of service (LOS) is "E" or "F". It should be noted that Caltrans and CMP intersection have a minimum LOS of C and E, respectively. The following intersections are forecast to have unacceptable level of service in the Future Year (2045) No Project condition:

- INT 2 – Euclid Street and McFadden Avenue (City of Santa Ana)
- INT 3 – Euclid Street and Edinger Avenue (City of Fountain Valley)
- INT 8 – Harbor Boulevard and Westminster Avenue (City of Garden Grove / City of Santa Ana)
- INT 12 – Harbor Boulevard and Warner Avenue (City of Santa Ana – CMP)
- INT 13 – Harbor Boulevard and Segerstrom Avenue (City of Santa Ana)
- INT 14 – Hyland Avenue and MacArthur Boulevard (City of Costa Mesa)
- INT 22 – Fairview Street and Edinger Avenue (City of Santa Ana)
- INT 29 – Raitt Street and Edinger Avenue (City of Santa Ana)
- INT 32 – Bristol Street and Civic Center Drive (City of Santa Ana)
- INT 35 – Bristol Street and McFadden Avenue (City of Santa Ana)
- INT 36 – Bristol Street and Warner Avenue (City of Santa Ana)
- INT 44 – Flower Street and 1st Street (City of Santa Ana)
- INT 45 – Flower Street and McFadden Avenue (City of Santa Ana)
- INT 51 – Main Street and Civic Center Drive (City of Santa Ana)
- INT 52 – Main Street and Santa Ana Boulevard (City of Santa Ana)
- INT 55 – Main Street and McFadden Avenue (City of Santa Ana)
- INT 61 – Santiago Street and Civic Center Drive (City of Santa Ana)
- INT 62 – Santiago Street and Santa Ana Boulevard (City of Santa Ana)

- INT 63 – Standard Avenue and 4th Street (City of Santa Ana)
- INT 64 – Standard Avenue and 1st Street (City of Santa Ana)
- INT 66 – Halladay Street and Warner Avenue (City of Santa Ana)
- INT 67 – Halladay Street and Dyer Road (City of Santa Ana)
- INT 82 – Grand Avenue and Edinger Avenue (City of Santa Ana)
- INT 91 – Tustin Street and Fairhaven Avenue (City of Orange)
- INT 92 – Tustin Avenue and Santa Clara Avenue (City of Santa Ana)
- INT 93 – Tustin Avenue and 17th Street (City of Santa Ana)
- INT 96 – SR-55 NB Ramps / Del Amo Avenue and Newport Avenue (Caltrans)
- INT 100 – Red Hill Avenue and Alton Parkway (City of Irvine)
- INT 105 – Von Karman Avenue and Barranca Parkway (City of Irvine)

Table 6-5: Future Year (2045) No Project Intersection LOS Summary

ID	INTERSECTION	AM		PM	
		V/C or Delay	LOS	V/C or Delay	LOS
1	Euclid Street and Bolsa Avenue	0.86	D	0.86	D
2	Euclid Street and McFadden Avenue	0.98	E	0.90	D
3	Euclid Street and Edinger Avenue	0.99	E	0.89	D
4	Newhope Street and Hazard Avenue	0.78	C	0.72	C
5	Newhope Street and McFadden Avenue	0.83	D	0.78	C
6	Harbor Boulevard and SR-22 WB Off-Ramp / Banner Drive	28.4	C	24.2	C
7	Trask Avenue and SR-22 EB On-Ramp	12.0	B	13.6	B
8	Harbor Boulevard and Westminster Avenue	0.99	E	0.88	D
9	Harbor Boulevard and 1st Street	0.79	C	0.78	C
10	Harbor Boulevard and McFadden Avenue	0.79	C	0.81	D
11	Harbor Boulevard and Edinger Avenue	0.84	D	0.73	C
12	Harbor Boulevard and Warner Avenue	0.79	C	1.54	F
13	Harbor Boulevard and Segerstrom Avenue	0.97	E	0.92	E
14	Hyland Avenue / OCTA Bus Base and MacArthur Boulevard	0.61	B	0.92	E
15	Harbor Boulevard and MacArthur Boulevard	0.74	C	0.78	C
16	Harbor Boulevard and Sunflower Avenue	0.70	B	0.72	C
17	Harbor Boulevard and I-405 NB Off-Ramp	18.0	B	18.3	B
18	Harbor Boulevard and I-405 SB Off-Ramp	15.0	B	17.9	B
19	Fairview Street and Civic Center Drive	0.74	C	0.76	C
20	Fairview Street and 1st Street	0.86	D	0.90	D
21	Fairview Street and McFadden Avenue	0.80	C	0.78	C
22	Fairview Street and Edinger Avenue	0.86	D	0.92	E
23	Fairview Street and Warner Avenue	0.82	D	0.80	C
24	Fairview Street and MacArthur Boulevard	0.68	B	0.77	C
25	Fairview Road and Sunflower Avenue	0.70	B	0.72	C
26	Greenville Street and Edinger Avenue	0.77	C	0.60	A
27	Greenville Street and Segerstrom Avenue	0.84	D	0.78	C
28	Raitt Street and McFadden Avenue	0.78	C	0.76	C
29	Raitt Street and Edinger Avenue	0.99	E	0.99	E
30	Bear Street and MacArthur Boulevard	0.71	C	0.85	D
31	Bristol Street and 17th Street	0.87	D	0.82	D
32	Bristol Street and Civic Center Drive	0.94	E	0.91	E
33	Bristol Street and Santa Ana Boulevard	0.81	D	0.85	D
34	Bristol Street and 1st Street	0.77	C	0.83	D
35	Bristol Street and McFadden Avenue	0.96	E	1.03	F
36	Bristol Street and Warner Avenue	0.92	E	0.85	D
37	Bristol Street and Segerstrom Avenue	0.81	D	0.87	D
38	Bristol Street and Alton Avenue	0.55	A	0.63	B
39	Bristol Street and MacArthur Boulevard	0.70	B	0.77	C

ID	INTERSECTION	AM		PM	
		V/C or Delay	LOS	V/C or Delay	LOS
40	Bristol Street and Sunflower Avenue	0.65	B	0.69	B
41	Bristol Street and I-405 NB Ramps	20.8	C	28.5	C
42	Bristol Street and I-405 SB Ramps	23.9	C	18.3	B
43	Flower Street and Santa Ana Boulevard	0.81	D	0.86	D
44	Flower Street and 1st Street	0.93	E	0.88	D
45	Flower Street and McFadden Avenue	0.90	D	1.04	F
46	Flower Street and Segerstrom Avenue	0.78	C	0.87	D
47	Flower Street and MacArthur Boulevard	0.68	B	0.90	D
48	Main Street and La Veta Avenue	0.59	A	0.70	B
49	Main Street and Mainplace Drive / Memory Lane	0.51	A	0.56	A
50	Main Street and 17th Street	0.88	D	0.76	C
51	Main Street and Civic Center Drive	0.78	C	0.97	E
52	Main Street and Santa Ana Boulevard	0.93	E	0.79	C
53	Main Street and 4th Street	0.41	A	0.45	A
54	Main Street and 1st Street	0.68	B	0.74	C
55	Main Street and McFadden Avenue	0.89	D	0.93	E
56	Main Street and Edinger Avenue	0.80	C	0.87	D
57	Main Street and MacArthur Boulevard	0.68	B	0.75	C
58	Penn Way and 17th Street	12.2	B	25.5	C
59	Santiago Street / I-5 NB Ramps and 17th Street	30.0	C	19.0	B
60	Penn Way and I-5 SB Ramps	21.2	C	23.0	C
61	Santiago Street and Civic Center Drive	159.2	F	110.0	F
62	Santiago Street and Santa Ana Boulevard	1.04	F	1.02	F
63*	Standard Avenue and 4th Street	0.94	E	0.89	D
64	Standard Avenue and 1st Street	0.98	E	0.97	E
65	Standard Avenue and McFadden Avenue	0.85	D	0.83	D
66	Halladay Street and Warner Avenue	0.78	C	0.97	E
67	Halladay Street and Dyer Road	0.77	C	1.06	F
68	SR-55 SB Ramps and MacArthur Boulevard	19.9	B	17.8	B
69	SR-55 NB Ramps and MacArthur Boulevard	19.3	B	14.6	B
70	SR-55 SB Ramps and Dyer Road	25.7	C	26.5	C
71	Glassell Street and La Veta Avenue	0.80	C	0.74	C
72	Glassell Street and SR-22 WB Ramps	32.6	C	30.5	C
73	Glassell Street / Grand Avenue and SR-22 EB Ramps	30.6	C	31.6	C
74	Grand Avenue and Fairhaven Avenue	0.61	B	0.72	C
75	Grand Avenue and Santa Clara Avenue	0.84	D	0.81	D
76	Grand Avenue and 17th Street	0.79	C	0.86	D
77	Grand Avenue and I-5 NB Ramps	13.2	B	10.1	B
78	Grand Avenue and Santa Ana Boulevard	26.0	C	25.3	C
79	Grand Avenue and 1st Street	0.74	C	0.73	C

ID	INTERSECTION	AM		PM	
		V/C or Delay	LOS	V/C or Delay	LOS
80	Grand Avenue and Chestnut Avenue	0.70	B	0.69	B
81	Grand Avenue and McFadden Avenue	0.89	D	0.82	D
82	Grand Avenue and Edinger Avenue	0.84	D	1.00	E
83	Grand Avenue and Warner Avenue	0.61	B	0.83	D
84	SR-55 NB Ramps and Dyer Road	17.1	B	5.7	A
85	Cambridge Street and La Veta Avenue	31.6	D	19.7	C
86	Cambridge Street and Fairhaven Avenue	0.56	A	0.45	A
87	Mabury Street and 1st Street	27.4	C	27.1	C
88	Tustin Street and La Veta Avenue	0.45	A	0.38	A
89	Tustin Street and SR-22 WB On-Ramp	12.2	B	11.1	B
90	Tustin Street and SR-22 EB Off-Ramp / Seba Avenue	25.0	C	23.1	C
91	Tustin Street and Fairhaven Avenue	1.20	F	0.69	B
92	Tustin Avenue and Santa Clara Avenue	1.04	F	0.71	C
93	Tustin Avenue and 17th Street	0.91	E	0.80	C
94	Tustin Avenue and 4th Street	0.83	D	0.71	C
95	SR-55 SB Ramps / Auto Mall Drive and Edinger Avenue	25.2	C	25.5	C
96	SR-55 NB Ramps / Del Amo Avenue and Newport Avenue	25.4	C	39.1	D
97	Red Hill Avenue and Edinger Avenue	0.61	B	0.85	D
98	Red Hill Avenue and Warner Avenue	0.56	A	0.88	D
99	Red Hill Avenue and Barranca Parkway	0.55	A	0.54	A
100	Red Hill Avenue and Alton Parkway	0.86	D	1.18	F
101	Red Hill Avenue and MacArthur Boulevard	0.69	B	0.70	B
102	Red Hill Avenue and Main Street	0.72	C	0.81	D
103	I-5 SB Ramps and Santa Ana Boulevard	17.4	B	18.4	B
104	Tustin Ranch Road and Warner Avenue	0.52	A	0.65	B
105	Von Karman Avenue and Barranca Parkway	0.93	E	1.23	F

Notes: (1) LOS – Level of Service; (2) V/C – Volume to Capacity

7.0 Future Year (2045) With Project

This network alternative includes all the improvements listed in the No Project alternative, in addition to the improvements presented in Section 2.7.

Separate OCTAM 5.0 forecasts were produced for the With Project condition in order to understand traffic changes resulting from the proposed roadway improvements listed above. The Future Year (2045) With Project – AM and PM peak hour intersection turning movement volumes are shown in Tables 7-1 and 7-2.

Table 7-1 Future Year (2045) With Project Volumes – AM Peak Hour

ID	Intersection	Northbound			Southbound			Eastbound			Westbound		
		L	T	R	L	T	R	L	T	R	L	T	R
1	Euclid Street and Bolsa Avenue	100	845	145	194	1725	97	194	721	136	190	606	194
2	Euclid Street and McFadden Avenue	156	1185	141	146	2031	168	227	463	287	106	234	89
3	Euclid Street and Edinger Avenue	127	801	68	180	2613	240	136	595	364	133	812	148
4	Newhope Street and Hazard Avenue	94	708	101	86	1262	116	17	44	33	17	57	23
5	Newhope Street and McFadden Avenue	77	342	120	116	1153	107	106	386	125	122	311	69
6	Harbor Boulevard and SR-22 WB Off-Ramp / Banner Drive	83	1508	0	0	1354	18	81	0	133	836	44	117
7	Trask Avenue and SR-22 EB On-Ramp	0	0	0	0	0	0	558	699	0	0	624	117
8	Harbor Boulevard and Westminster Avenue	159	1045	224	251	1970	113	173	910	32	406	1100	299
9	Harbor Boulevard and 1st Street	102	816	176	223	1876	122	118	788	153	229	580	135
10	Harbor Boulevard and McFadden Avenue	101	1026	98	179	1891	63	136	353	106	85	193	55
11	Harbor Boulevard and Edinger Avenue	95	713	135	212	2441	71	123	743	373	211	469	195
12	Harbor Boulevard and Warner Avenue	106	647	164	451	2034	122	100	1422	374	125	654	111
13	Harbor Boulevard and Segerstrom Avenue	107	759	48	173	2324	87	90	753	303	146	453	103
14	Hyland Avenue / OCTA Bus Base and MacArthur Boulevard	86	4	24	8	2	19	7	1915	760	82	626	26
15	Harbor Boulevard and MacArthur Boulevard	128	898	92	289	1662	115	133	1204	363	152	506	151
16	Harbor Boulevard and Sunflower Avenue	221	1128	209	242	2284	56	9	109	42	149	190	107
17	Harbor Boulevard and I-405 NB Off-Ramp	0	1915	0	0	2007	0	0	0	0	399	0	702
18	Harbor Boulevard and I-405 SB Off-Ramp	0	1993	0	0	1278	0	475	0	529	0	0	0
19	Fairview Street and Civic Center Drive	7	1435	465	314	1812	8	7	25	25	50	2	26
20	Fairview Street and 1st Street	196	1508	284	272	1579	181	170	977	151	180	809	271

ID	Intersection	Northbound			Southbound			Eastbound			Westbound		
		L	T	R	L	T	R	L	T	R	L	T	R
21	Fairview Street and McFadden Avenue	138	1479	198	184	2242	162	92	216	50	93	240	19
22	Fairview Street and Edinger Avenue	212	935	131	225	1576	133	361	1002	268	463	608	121
23	Fairview Street and Warner Avenue	235	1039	136	205	1628	119	69	1010	301	277	836	271
24	Fairview Street and MacArthur Boulevard	280	870	100	269	1357	152	121	984	145	298	627	178
25	Fairview Road and Sunflower Avenue	182	1051	160	191	1627	104	44	286	58	357	299	154
26	Greenville Street and Edinger Avenue	140	0	188	0	0	0	0	1788	436	178	949	0
27	Greenville Street and Segerstrom Avenue	47	193	78	154	472	160	50	1127	180	210	847	97
28	Raitt Street and McFadden Avenue	34	309	49	69	528	72	52	313	40	60	190	34
29	Raitt Street and Edinger Avenue	85	228	82	80	376	45	330	2016	290	127	992	59
30	Bear Street and MacArthur Boulevard	61	210	89	192	728	289	99	1690	116	103	1735	147
31	Bristol Street and 17th Street	241	1241	210	449	1845	243	341	1015	164	386	886	293
32	Bristol Street and Civic Center Drive	129	1141	101	396	1597	100	80	404	50	145	481	100
33	Bristol Street and Santa Ana Boulevard	68	1482	206	172	1891	51	54	264	23	52	129	22
34	Bristol Street and 1st Street	208	1451	184	315	1298	183	206	1268	128	126	949	139
35	Bristol Street and McFadden Avenue	130	1159	58	228	2223	229	155	266	131	145	405	47
36	Bristol Street and Warner Avenue	221	993	183	643	2178	247	172	958	238	231	1058	180
37	Bristol Street and Segerstrom Avenue	70	778	146	283	1011	119	306	1480	136	157	712	91
38	Bristol Street and Alton Avenue	10	702	53	224	1551	36	190	117	244	41	87	31
39	Bristol Street and MacArthur Boulevard	95	491	123	319	1389	145	211	1531	311	191	910	132
40	Bristol Street and Sunflower Avenue	119	583	172	232	1316	99	135	1115	451	295	480	166
41	Bristol Street and I-405 NB Ramps	0	1638	210	0	2088	8	0	0	36	147	89	807
42	Bristol Street and I-405 SB Ramps	122	1195	0	0	1097	943	675	0	618	0	0	0
43	Flower Street and Santa Ana Boulevard	64	593	86	275	929	124	63	394	45	118	377	158
44	Flower Street and 1st Street	89	387	102	366	1158	121	107	983	39	161	664	95
45	Flower Street and McFadden Avenue	30	219	19	66	367	53	58	658	50	54	366	49
46	Flower Street and Segerstrom Avenue	86	451	100	98	544	120	237	1631	455	115	846	93
47	Flower Street and MacArthur Boulevard	26	170	88	163	352	264	163	1852	79	79	1329	85
48	Main Street and	123	844	438	161	843	141	350	495	215	334	291	243

ID	Intersection	Northbound			Southbound			Eastbound			Westbound		
		L	T	R	L	T	R	L	T	R	L	T	R
	La Veta Avenue												
49	Main Street and Mainplace Drive / Memory Lane	35	955	313	27	1066	223	123	194	13	264	301	20
50	Main Street and 17th Street	156	929	199	225	1251	81	114	1203	60	369	1475	22
51	Main Street and Civic Center Drive	138	901	79	69	1222	186	75	454	83	52	679	41
52	Main Street and Santa Ana Boulevard	66	1050	0	0	1162	103	0	0	0	61	848	65
53	Main Street and 4th Street	0	1052	25	0	1098	27	0	93	14	0	105	26
54	Main Street and 1st Street	103	532	54	94	937	69	69	805	85	78	972	54
55	Main Street and McFadden Avenue	93	874	44	184	1434	28	44	419	46	97	259	74
56	Main Street and Edinger Avenue	104	589	64	239	1103	58	99	1288	174	149	867	106
57	Main Street and MacArthur Boulevard	60	344	292	539	709	160	230	1336	242	187	556	279
58	Penn Way and 17th Street	49	0	250	0	0	0	0	1279	652	236	1901	0
59	Santiago Street / I-5 NB Ramps and 17th Street	720	33	21	60	0	312	101	1062	384	0	1508	24
60	Penn Way and I-5 SB Ramps	0	192	170	837	173	0	0	0	0	170	0	95
61	Santiago Street and Civic Center Drive	318	221	31	6	335	82	212	81	431	126	116	23
62	Santiago Street and Santa Ana Boulevard	188	611	303	409	972	253	118	732	99	297	699	258
63	Standard Avenue and 4th Street	191	473	248	431	604	332	298	624	219	250	550	340
64	Standard Avenue and 1st Street	45	631	312	123	901	41	161	1959	121	194	1282	120
65	Standard Avenue and McFadden Avenue	44	170	77	123	297	21	21	736	89	81	214	48
66	Halladay Street and Warner Avenue	69	0	160	0	0	0	0	1772	200	210	797	0
67	Halladay Street and Dyer Road	16	26	71	155	31	33	54	1820	13	126	686	111
68	SR-55 SB Ramps and MacArthur Boulevard	0	0	0	998	0	903	0	1423	1014	0	1363	155
69	SR-55 NB Ramps and MacArthur Boulevard	965	0	1037	0	0	0	0	1503	744	0	591	279
70	SR-55 SB Ramps and Dyer Road	312	37	713	50	242	60	34	1282	273	418	663	111
71	Glassell Street and La Veta Avenue	292	458	139	13	274	60	57	293	563	380	401	10
72	Glassell Street and SR-22 WB Ramps	568	638	0	0	1017	473	0	0	0	247	4	369
73	Glassell Street / Grand Avenue and SR-22 EB Ramps	0	968	258	345	904	0	258	0	1012	0	0	0
74	Grand Avenue and Fairhaven Avenue	25	1,032	148	184	1,531	34	99	60	59	152	17	137
75	Grand Avenue and Santa Clara Avenue	92	648	167	307	1,503	338	179	291	60	140	270	246
76	Grand Avenue and 17th Street	228	666	458	303	1,270	249	246	915	116	401	1,047	114

ID	Intersection	Northbound			Southbound			Eastbound			Westbound		
		L	T	R	L	T	R	L	T	R	L	T	R
77	Grand Avenue and I-5 NB Ramps	0	1145	662	104	3338	0	0	0	0	557	0	154
78	Grand Avenue and Santa Ana Boulevard	79	1119	57	231	1908	1684	242	200	394	5	407	37
79	Grand Avenue and 1st Street	186	655	31	121	1753	213	318	760	216	268	939	107
80	Grand Avenue and Chestnut Avenue	53	737	163	174	2086	57	64	449	118	81	237	148
81	Grand Avenue and McFadden Avenue	262	1104	165	294	1974	192	109	352	107	95	340	86
82	Grand Avenue and Edinger Avenue	65	649	127	253	1293	253	396	1654	159	170	651	142
83	Grand Avenue and Warner Avenue	187	564	241	204	589	199	314	1120	440	140	617	208
84	SR-55 NB Ramps and Dyer Road	637	0	521	0	0	0	0	1550	620	0	859	517
85	Cambridge Street and La Veta Avenue	185	235	0	0	480	245	195	0	312	0	0	0
86	Cambridge Street and Fairhaven Avenue	0	0	0	618	0	199	69	185	0	0	130	101
87	Mabury Street and 1st Street	5	0	122	276	164	618	0	922	10	46	701	0
88	Tustin Street and La Veta Avenue	9	365	105	48	944	3	9	11	35	279	1	43
89	Tustin Street and SR-22 WB On-Ramp	762	708	0	0	897	536	0	0	0	0	0	0
90	Tustin Street and SR-22 EB Off-Ramp / Seba Avenue	0	1213	6	13	779	0	252	25	1084	6	0	43
91	Tustin Street and Fairhaven Avenue	125	720	126	249	2,148	42	78	297	511	306	338	442
92	Tustin Avenue and Santa Clara Avenue	102	556	104	135	2,756	87	267	673	491	118	244	122
93	Tustin Avenue and 17th Street	155	277	330	638	1,841	20	494	1,948	333	488	770	188
94	Tustin Avenue and 4th Street	40	204	183	743	946	293	159	942	39	129	727	472
95	SR-55 SB Ramps / Auto Mall Drive and Edinger Avenue	456	68	540	50	30	8	34	1334	493	510	1202	157
96	SR-55 NB Ramps / Del Amo Avenue and Newport Avenue	413	109	69	20	497	728	269	163	155	8	223	4
97	Red Hill Avenue and Edinger Avenue	122	449	128	203	861	403	397	1276	271	250	1213	170
98	Red Hill Avenue and Warner Avenue	118	716	97	20	949	191	239	407	300	152	543	96
99	Red Hill Avenue and Barranca Parkway	184	458	151	184	809	106	126	758	300	522	583	114
100	Red Hill Avenue and Alton Parkway	235	693	434	233	1059	170	185	574	574	335	284	159
101	Red Hill Avenue and MacArthur Boulevard	83	742	13	205	529	485	1194	617	101	34	329	843
102	Red Hill Avenue and Main Street	201	691	449	78	365	126	139	1309	254	167	335	79
103	I-5 SB Ramps and Santa Ana Boulevard	0	0	0	382	0	38	287	492	0	0	1027	300

ID	Intersection	Northbound			Southbound			Eastbound			Westbound		
		L	T	R	L	T	R	L	T	R	L	T	R
104	Tustin Ranch Road and Warner Avenue	0	0	0	174	0	22	27	357	0	0	2130	490
105	Von Karman Avenue and Barranca Parkway	375	497	298	98	960	420	247	928	310	917	1506	47

Table 7-2 Future Year (2045) With Project Volumes – PM Peak Hour

ID	Intersection	Northbound			Southbound			Eastbound			Westbound		
		L	T	R	L	T	R	L	T	R	L	T	R
1	Euclid Street and Bolsa Avenue	165	1532	123	137	781	148	201	641	100	168	702	168
2	Euclid Street and McFadden Avenue	248	2020	130	87	1070	130	134	307	136	86	359	166
3	Euclid Street and Edinger Avenue	551	1648	117	136	897	228	121	467	140	119	1103	179
4	Newhope Street and Hazard Avenue	102	1129	44	45	954	114	33	66	40	8	51	15
5	Newhope Street and McFadden Avenue	188	1009	177	121	539	104	45	273	40	72	398	113
6	Harbor Boulevard and SR-22 WB Off-Ramp / Banner Drive	103	2324	0	0	1823	59	102	0	86	558	75	160
7	Trask Avenue and SR-22 EB On-Ramp	0	0	0	0	0	0	785	588	0	0	449	42
8	Harbor Boulevard and Westminster Avenue	222	1106	262	254	1752	202	227	808	39	294	1018	231
9	Harbor Boulevard and 1st Street	280	1446	160	240	1053	142	192	784	148	185	865	141
10	Harbor Boulevard and McFadden Avenue	182	1866	136	261	1114	101	147	358	45	63	151	43
11	Harbor Boulevard and Edinger Avenue	262	1645	199	283	822	75	109	460	81	188	1089	363
12	Harbor Boulevard and Warner Avenue	768	3685	277	250	1389	166	198	1399	320	253	2626	838
13	Harbor Boulevard and Segerstrom Avenue	275	1732	55	86	973	86	118	585	192	121	1308	475
14	Hyland Avenue / OCTA Bus Base and MacArthur Boulevard	1139	7	66	12	4	14	35	869	156	25	2320	12
15	Harbor Boulevard and MacArthur Boulevard	527	1362	79	206	1039	170	143	501	185	85	1429	269
16	Harbor Boulevard and Sunflower Avenue	156	1552	230	118	1464	44	85	230	239	282	592	221
17	Harbor Boulevard and I-405 NB Off-Ramp	0	1488	0	0	2570	0	0	0	0	513	0	828
18	Harbor Boulevard and I-405 SB Off-Ramp	0	1881	0	0	2254	0	181	0	833	0	0	0
19	Fairview Street and Civic Center Drive	6	1777	499	205	1903	0	2	6	4	164	0	61
20	Fairview Street and 1st Street	182	1339	121	236	1468	291	215	870	151	126	952	147
21	Fairview Street and McFadden Avenue	174	1596	139	195	1577	246	79	214	53	51	177	43
22	Fairview Street and Edinger Avenue	190	1810	111	198	616	151	205	628	168	639	1353	297
23	Fairview Street and Warner Avenue	211	1679	156	179	906	92	163	792	123	178	1049	227
24	Fairview Street and MacArthur Boulevard	228	1568	85	162	902	83	253	661	223	159	1210	212
25	Fairview Road and Sunflower Avenue	190	1705	371	138	1145	79	245	520	115	208	522	136

ID	Intersection	Northbound			Southbound			Eastbound			Westbound		
		L	T	R	L	T	R	L	T	R	L	T	R
26	Greenville Street and Edinger Avenue	327	0	218	0	0	0	0	1178	240	155	1840	0
27	Greenville Street and Segerstrom Avenue	50	414	31	44	143	44	138	1049	60	39	1490	213
28	Raitt Street and McFadden Avenue	34	482	75	24	252	40	59	347	30	38	318	44
29	Raitt Street and Edinger Avenue	84	361	101	61	209	52	177	1226	175	195	2203	197
30	Bear Street and MacArthur Boulevard	262	1258	328	115	278	84	90	847	88	82	1475	235
31	Bristol Street and 17th Street	370	1801	300	347	1847	314	243	543	98	280	1055	357
32	Bristol Street and Civic Center Drive	214	1494	78	173	1589	163	130	366	43	149	635	72
33	Bristol Street and Santa Ana Boulevard	85	1722	98	120	1597	60	70	194	45	125	199	54
34	Bristol Street and 1st Street	434	1872	276	216	1169	264	259	1454	186	155	953	90
35	Bristol Street and McFadden Avenue	249	1833	99	116	1618	373	114	222	44	82	424	50
36	Bristol Street and Warner Avenue	312	1170	213	343	1144	223	159	715	126	282	1662	487
37	Bristol Street and Segerstrom Avenue	177	1309	231	98	894	187	279	998	79	156	1408	71
38	Bristol Street and Alton Avenue	43	1667	157	114	858	54	50	70	130	0	0	0
39	Bristol Street and MacArthur Boulevard	335	1428	260	237	871	137	357	796	169	247	1432	270
40	Bristol Street and Sunflower Avenue	687	1452	234	226	844	242	391	764	296	254	976	311
41	Bristol Street and I-405 NB Ramps	0	2235	195	0	2458	23	0	0	204	357	306	1184
42	Bristol Street and I-405 SB Ramps	135	1647	0	0	1657	968	740	0	331	0	0	0
43	Flower Street and Santa Ana Boulevard	215	1307	107	95	486	44	104	300	49	106	371	110
44	Flower Street and 1st Street	211	1000	238	140	383	111	135	1181	98	144	969	101
45	Flower Street and McFadden Avenue	54	734	45	26	201	33	56	422	17	43	532	76
46	Flower Street and Segerstrom Avenue	120	843	80	80	449	129	241	1198	126	101	1699	109
47	Flower Street and MacArthur Boulevard	116	553	65	97	233	224	264	1254	80	61	1967	175
48	Main Street and La Veta Avenue	310	948	444	191	1199	309	347	495	222	332	662	266
49	Main Street and Mainplace Drive / Memory Lane	102	1075	204	48	999	132	195	217	58	370	302	146
50	Main Street and 17th Street	239	1237	270	243	1062	164	174	975	58	187	1147	76
51	Main Street and Civic Center Drive	98	1234	103	63	1031	65	168	930	111	38	384	39
52	Main Street and Santa Ana Boulevard	56	1280	0	0	1108	54	0	0	0	65	656	85
53	Main Street and 4th Street	0	1108	53	0	951	43	0	112	63	0	157	40

ID	Intersection	Northbound			Southbound			Eastbound			Westbound		
		L	T	R	L	T	R	L	T	R	L	T	R
54	Main Street and 1st Street	179	875	76	160	615	131	91	921	68	75	834	58
55	Main Street and McFadden Avenue	149	1169	72	138	933	68	78	345	42	71	400	180
56	Main Street and Edinger Avenue	111	1181	54	129	646	88	159	940	105	117	1569	162
57	Main Street and MacArthur Boulevard	488	1169	321	271	352	266	385	792	76	188	1488	432
58	Penn Way and 17th Street	795	0	388	0	0	0	0	1712	552	126	1480	0
59	Santiago Street / I-5 NB Ramps and 17th Street	375	50	20	55	0	142	128	1168	767	0	1622	44
60	Penn Way and I-5 SB Ramps	0	363	238	508	117	0	0	0	0	214	0	183
61	Santiago Street and Civic Center Drive	133	411	41	20	281	72	266	76	269	14	19	18
62	Santiago Street and Santa Ana Boulevard	135	833	236	378	639	103	164	673	87	255	546	347
63	Standard Avenue and 4th Street	251	543	214	254	428	297	302	477	201	233	648	351
64	Standard Avenue and 1st Street	109	724	259	142	679	47	168	1279	65	264	1888	116
65	Standard Avenue and McFadden Avenue	103	407	50	110	240	42	53	351	60	68	412	119
66	Halladay Street and Warner Avenue	200	0	417	0	0	0	2	955	96	287	2284	0
67	Halladay Street and Dyer Road	57	249	287	125	17	35	166	1433	10	52	1680	134
68	SR-55 SB Ramps and MacArthur Boulevard	0	0	0	321	0	777	0	1305	1163	0	1547	608
69	SR-55 NB Ramps and MacArthur Boulevard	726	0	483	0	0	0	0	764	785	0	1444	1040
70	SR-55 SB Ramps and Dyer Road	386	12	291	103	226	110	66	1544	210	507	904	58
71	Glassell Street and La Veta Avenue	573	595	194	15	499	37	112	367	631	225	407	16
72	Glassell Street and SR-22 WB Ramps	640	1045	0	0	1110	323	0	0	0	268	9	476
73	Glassell Street / Grand Avenue and SR-22 EB Ramps	0	1316	336	505	903	0	238	4	522	0	0	0
74	Grand Avenue and Fairhaven Avenue	50	1,311	262	242	974	89	79	45	33	153	29	109
75	Grand Avenue and Santa Clara Avenue	95	1,280	266	240	946	240	114	139	26	115	206	220
76	Grand Avenue and 17th Street	266	947	239	294	634	140	371	949	160	284	1,046	190
77	Grand Avenue and I-5 NB Ramps	0	2036	1571	67	1623	0	0	0	0	168	0	202
78	Grand Avenue and Santa Ana Boulevard	213	2411	40	44	964	684	370	226	356	44	295	213
79	Grand Avenue and 1st Street	195	1493	45	133	784	313	272	900	89	121	753	138
80	Grand Avenue and Chestnut Avenue	180	1352	234	149	664	112	47	143	31	91	283	165
81	Grand Avenue and McFadden Avenue	232	1320	227	176	800	215	64	238	42	96	762	168

ID	Intersection	Northbound			Southbound			Eastbound			Westbound		
		L	T	R	L	T	R	L	T	R	L	T	R
82	Grand Avenue and Edinger Avenue	259	1494	129	236	583	327	207	895	72	98	1758	228
83	Grand Avenue and Warner Avenue	218	788	174	178	575	265	342	656	142	244	1556	510
84	SR-55 NB Ramps and Dyer Road	188	0	51	0	0	0	0	1355	689	0	1411	882
85	Cambridge Street and La Veta Avenue	176	246	0	0	206	191	469	0	309	0	0	0
86	Cambridge Street and Fairhaven Avenue	0	0	0	195	0	68	85	148	0	0	218	272
87	Mabury Street and 1st Street	25	0	256	164	70	310	0	1275	20	31	423	0
88	Tustin Street and La Veta Avenue	31	693	164	96	851	16	13	5	20	134	4	82
89	Tustin Street and SR-22 WB On-Ramp	383	1100	0	0	642	330	0	0	0	0	0	0
90	Tustin Street and SR-22 EB Off-Ramp / Seba Avenue	0	1155	3	43	589	0	440	39	558	28	0	67
91	Tustin Street and Fairhaven Avenue	258	1,377	122	356	940	108	82	185	151	86	191	180
92	Tustin Avenue and Santa Clara Avenue	176	852	131	199	1,574	109	48	150	88	115	144	136
93	Tustin Avenue and 17th Street	233	1,000	514	377	404	40	346	680	92	211	693	385
94	Tustin Avenue and 4th Street	35	381	123	536	396	145	226	806	41	123	833	513
95	SR-55 SB Ramps / Auto Mall Drive and Edinger Avenue	401	32	423	110	50	37	46	1649	464	437	1139	136
96	SR-55 NB Ramps / Del Amo Avenue and Newport Avenue	879	262	51	19	231	889	165	57	33	23	348	16
97	Red Hill Avenue and Edinger Avenue	208	1501	238	108	214	173	410	1051	128	91	1176	574
98	Red Hill Avenue and Warner Avenue	343	1175	135	89	341	432	324	880	137	78	1643	216
99	Red Hill Avenue and Barranca Parkway	344	1293	333	314	531	249	178	662	87	129	979	286
100	Red Hill Avenue and Alton Parkway	27	1513	219	148	628	5	453	1111	569	2003	342	1235
101	Red Hill Avenue and MacArthur Boulevard	179	1160	14	340	707	1240	515	237	36	39	818	574
102	Red Hill Avenue and Main Street	467	1006	272	88	640	348	212	757	205	284	1617	91
103	I-5 SB Ramps and Santa Ana Boulevard	0	0	0	357	0	78	595	672	0	0	590	162
104	Tustin Ranch Road and Warner Avenue	0	0	0	653	0	45	64	2124	0	0	925	398
105	Von Karman Avenue and Barranca Parkway	362	2082	454	80	407	280	785	1435	201	254	805	274

7.1 FUTURE YEAR (2045) WITH PROJECT VEHICLE MILES TRAVELED (VMT)

Table 7-3 presents the VMT analysis results for the Future Year (2045) With Project scenario. VMT calculations are based on the scenario parameters and methodology as described in Sections 2.7 and 3.1, respectively.

Table 7-3 Future Year (2045) VMT Summary

	I – I VMT	I – X VMT	X – I VMT	Total VMT	Service Population	VMT/SP
City	637,655	5,432,337	5,448,967	11,518,959	566,616	20.3
County	52,931,787	29,642,498	29,748,229	112,322,514	4,262,124	26.4

SP = Service Population = Total Employees + Total Population. Reduction factor applied to Total Employees as noted in Section 3.1 and shown in Appendix F. I-I = Internal-Internal; I-X = Internal-External; X-I = External-Internal.

7.2 ROADWAY SEGMENT LEVEL OF SERVICE

A summary of the forecast roadway segment volumes and corresponding level of service results for the Future Year (2045) With Project condition is shown in Table 7-4. The following roadway segments are forecast to operate at a deficient LOS:

- Segment 8 – Harbor Boulevard from Segerstrom Avenue to MacArthur Boulevard
- Segment 23 – Main Street from 1st Street to Bishop Street
- Segment 39 – Bristol Street from Edinger Avenue to Warner Avenue
- Segment 42 – Bristol Street from MacArthur Boulevard to Sunflower Avenue
- Segment 45 – Main Street from McFadden Avenue to Edinger Avenue
- Segment 46 – Main Street from Edinger Avenue to Warner Avenue
- Segment 57 – Dyer Road from Grand Avenue to Pullman Street
- Segment 63 – Broadway from 17th Street to Civic Center Drive
- Segment 84 – Dyer Road from Pullman Street to Red Hill Avenue

Table 7-4 Future Year (2045) With Project Roadway Segment LOS

ID	Street	Segment	Lanes	ADT	LOS
1	1st Street	Euclid Street to Ward Street	6D	18,700	A
2	Euclid Street	1st Street to McFadden Avenue	6D	34,000	B
3	Westminster Avenue	Harbor Boulevard to Fairview Street	6D	17,400	A
4	Harbor Boulevard	Westminster Avenue/17th Street to Hazard Avenue	6D	36,200	B
5	1st Street	Harbor Boulevard to Jackson	6D	23,100	A
6	Edinger Avenue	Harbor Boulevard to Fairview Street	6D	23,300	A
7	Warner Avenue	Harbor Boulevard to Fairview Street	6D	26,300	A
8	Harbor Boulevard	Segerstrom Avenue to MacArthur Boulevard	6D	56,900	F
9	Fairview Street	1st Street to Willits Street	6D	38,600	B
10	1st Street	Sullivan Street to Raitt Street	6D	26,600	A
11	Bristol Street	17th Street to Santa Clara Avenue	6D	41,500	C
12	17th Street	College Avenue to Bristol Street	6D	29,500	A
13	Bristol Street	17th Street to Washington Avenue	6D	45,100	D
14	Fairview Street	Trask Avenue to 17th Street	6D	48,100	D
15	Bristol Street	1st Street to Bishop Street	6D	49,000	D
16	Civic Center Drive	Bristol Street to Flower Street	4U	18,600	C
17	Flower Street	1st Street to Bishop Street	2D	6,900	A
18	Main Street	17th Street to 20th Street	6D	43,000	C
19	Main Street	Washington Street to Civic Center Drive	4U	19,000	C
20	Civic Center Drive	Flower Street to Ross Street	4U	10,200	A
21	Santa Ana Boulevard	Flower Street to Ross Street	4D	15,800	A
22	1st Street	Main Street to Standard Avenue	4D	32,900	D
23	Main Street	1st Street to Bishop Street	4U	30,500	F
24	Grand Avenue	Santa Clara Avenue to Fairhaven Street	6D	31,100	A
25	Grand Avenue	Santa Ana Boulevard to 4th Street	6D	35,000	B
26	Santa Clara Avenue	Grand Avenue to Tustin Avenue	2D	8,700	A
27	Tustin Avenue	Santa Clara Avenue to Fairhaven Street	6D	20,400	A
28	17th Street	Cabrillo Park Drive to Tustin Avenue	6D	34,600	B
29	Tustin Avenue	Fruit Street to 4th Street	6D	28,100	A
30	1st Street	Grand Avenue to Elk Lane	4D	30,800	D
31	1st Street	Cabrillo Park Drive to Tustin Avenue	4D	14,600	A
32	Fairview Street	Edinger Avenue to Harvard Street	6D	45,100	D
33	Fairview Street	Warner Avenue to Segerstrom Avenue	6D	41,800	C
34	MacArthur Boulevard	Harbor Boulevard to Fairview Street	6D	32,600	A
35	Edinger Avenue	Fairview Street to Greenville Street	6D	22,200	A
36	McFadden Avenue	Fairview Street to Raitt Street	2D	8,200	A
37	MacArthur Boulevard	Fairview Street to Raitt Street	6D	28,900	A
38	Segerstrom Avenue	Fairview Street to Raitt Street	6D	29,600	A
39	Bristol Street	Edinger Avenue to Warner Avenue	6D	54,500	E
40	Bristol Street	Warner Avenue to Segerstrom Avenue	6D	44,800	C

ID	Street	Segment	Lanes	ADT	LOS
41	Warner Avenue	Raitt Street to Bristol Street	6D	22,300	A
42	Bristol Street	MacArthur Boulevard to Sunflower Avenue	6D	50,800	E
43	Flower Street	Warner Avenue to Segerstrom Avenue	4D	33,300	D
44	Edinger Avenue	Flower Street to Main Street	6D	25,200	A
45	Main Street	McFadden Avenue to Edinger Avenue	4U	27,500	F
46	Main Street	Edinger Avenue to Warner Avenue	4D	38,200	F
47	Main Street	Warner Avenue to Dyer Road	6D	38,600	B
48	Segerstrom Avenue	Bristol Street to Flower Street	6D	25,900	A
49	MacArthur Boulevard	Flower Street to Main Street	6D	39,800	C
50	Main Street	MacArthur Boulevard to Sunflower Avenue	6D	29,000	A
51	Grand Avenue	Edinger Avenue to Warner Avenue	6D	37,300	B
52	Edinger Avenue	Richie Street to Newport Avenue	6D	49,700	D
53	Warner Avenue	Grand Avenue to Red Hill Avenue	6D	34,600	B
54	Warner Avenue	Main Street to Standard Avenue	6D	23,900	A
55	McFadden Avenue	Newhope Street to Harbor Boulevard	4U	8,700	A
56	McFadden Avenue	Standard Avenue to Grand Avenue	2D	8,600	A
57	Dyer Road	Grand Avenue to Pullman Street	6D	80,700	F
58	McFadden Avenue	Bristol Street to Flower Street	2D	11,800	B
59	Main Street	La Veta Avenue to Memory Lane	8D	50,200	B
60	1st Street	Bristol Street to Flower Street	4D	25,700	B
61	Fairhaven Avenue	Grand Avenue to Tustin Avenue	2D	11,100	B
62	4th Street	French Street to Standard Avenue	2D	16,500	D
63	Broadway	17th Street to Civic Center Drive	2D	22,700	F
64	Broadway	Civic Center Drive to 1st Street	2D	13,800	C
65	Cambridge Street	SR-22 to Fairhaven Avenue	2D	8,800	A
66	Chestnut Avenue	Standard Avenue to Lyon Street	2D	7,700	A
67	Civic Center Drive	French Street to Santiago Street	2U	1,900	A
68	Civic Center Drive	Fairview Road to Bristol Street	2D	12,200	C
69	Flower Street	Edinger Avenue to Warner Avenue	2D	6,300	A
70	Halladay Avenue	Warner Avenue to Dyer Road	2D	16,100	D
71	Hazard Avenue	Euclid Street to Harbor Boulevard	2D	7,900	A
72	McFadden Avenue	Main Street to Standard Avenue	2D	14,300	C
73	Penn Way/Santiago Street	I-5 SB Ramps to Santa Ana Boulevard	2D	19,400	D
74	Raitt Street	Santa Ana Boulevard to 1st Street	2D	15,500	D
75	Raitt Street	Warner Avenue to Segerstrom Avenue	2D	11,600	B
76	Santa Ana Boulevard	French Street to Santiago Street	2D	13,500	C
77	Santa Ana Boulevard	Raitt Street to Bristol Street	2D	13,000	C
78	Standard Avenue	Chestnut Avenue to McFadden Avenue	2D	11,000	B
79	Standard Avenue	Edinger Avenue to Warner Avenue	2D	10,000	B
80	Greenville Street	Edinger Avenue to Warner Avenue	2U	8,000	B
81	Greenville Street	Warner Avenue to Segerstrom Avenue	2D	8,000	A
82	Flower Street	17th Street to Northern Terminus	2D	4,700	A

ID	Street	Segment	Lanes	ADT	LOS
83	Logan Street	Civic Center Drive to Santa Ana Boulevard	2U	- *	-
84	Dyer Road	Pullman Street to Red Hill Avenue	6D	57,500	F
85	Fairhaven Avenue	Tustin Street to Yorba Street	4U	14,947	A
86	Santa Clara Avenue	Tustin Street to Yorba Street	4U	7,818	A
87	Harbor Boulevard	McFadden Avenue to Edinger Avenue	6D	35,100	B
88	Harbor Boulevard	Edinger Avenue to Warner Avenue	6D	43,100	C

Notes:
* Not available.
(1) ADT – Average Daily Traffic Volumes
(2) LOS – Level of Service
(3) #D – total number of lanes in both directions divided by raised or striped median; #U – total number of undivided lanes in both directions.
(4) Roadway capacities shown in Table 3-1.
(5) Yellow and red shading indicates an unacceptable level of service

7.3 INTERSECTION LEVEL OF SERVICE

A summary of the AM and PM peak hour intersection level of service analysis results for the Future Year (2045) With Project condition is included in Table 7-5. The following intersections are expected to operate at an unacceptable level of service:

- INT 2 – Euclid street and McFadden Avenue (City of Santa Ana)
- INT 3 – Euclid Street and Edinger Avenue (City of Fountain Valley)
- INT 8 – Harbor Boulevard and Westminster Avenue (City of Santa Ana)
- INT 12 – Harbor Boulevard and Warner Avenue (City of Santa Ana – CMP)
- INT 13 – Harbor Boulevard and Segerstrom Avenue (City of Santa Ana)
- INT 22 – Fairview Street and Edinger Avenue (City of Santa Ana)
- INT 29 – Raitt Street and Edinger Avenue (City of Santa Ana)
- INT 32 – Bristol Street and Civic Center Drive (City of Santa Ana)
- INT 34 – Bristol Street and 1st Street (City of Santa Ana)
- INT 35 – Bristol Street and McFadden Avenue (City of Santa Ana)
- INT 36 – Bristol Street and Warner Avenue (City of Santa Ana)
- INT 37 – Bristol Street and Segerstrom Avenue (City of Santa Ana)
- INT 44 – Flower Street and 1st Street (City of Santa Ana)
- INT 45 – Flower Street and McFadden Avenue (City of Santa Ana)
- INT 46 – Flower Street and Segerstrom Avenue (City of Santa Ana)
- INT 47 – Flower Street and MacArthur Boulevard (City of Santa Ana)
- INT 55 – Main Street and McFadden Avenue (City of Santa Ana)
- INT 56 – Main Street and Edinger Avenue (City of Santa Ana)
- INT 61 – Santiago Street and Civic Center Drive (City of Santa Ana)

- INT 62 – Santiago Street and Santa Ana Boulevard (City of Santa Ana)
- INT 63 – Standard Avenue and 4th Street (City of Santa Ana)
- INT 64 – Standard Avenue and 1st Street (City of Santa Ana)
- INT 67 – Halladay Street and Dyer Road (City of Santa Ana)
- INT 80 – Grand Avenue and Chestnut Avenue (City of Santa Ana)
- INT 81 – Grand Avenue and McFadden Avenue (City of Santa Ana)
- INT 82 – Grand Avenue and Edinger Avenue (City of Santa Ana)
- INT 91 – Tustin Street and Fairhaven Avenue (City of Santa Ana)
- INT 92 – Tustin Avenue and Santa Clara Avenue (City of Santa Ana)
- INT 96 – SR-55 NB Ramps / Del Amo Avenue and Newport Avenue (Caltrans)
- INT 98 – Red Hill Avenue and Warner Avenue (City of Tustin)
- INT 100 – Red Hill Avenue and Alton Parkway (City of Irvine)
- INT 105 – Von Karman Avenue and Barranca Parkway (City of Irvine)

Table 7-5: Future Year (2045) With Project Intersection LOS Summary

ID	INTERSECTION	AM		PM	
		V/C or Delay	LOS	V/C or Delay	LOS
1	Euclid Street and Bolsa Avenue	0.79	C	0.79	C
2	Euclid Street and McFadden Avenue	0.91	E	0.79	C
3	Euclid Street and Edinger Avenue	1.01	F	0.86	D
4	Newhope Street and Hazard Avenue	0.60	A	0.52	A
5	Newhope Street and McFadden Avenue	0.73	C	0.68	B
6	Harbor Boulevard and SR-22 WB Off-Ramp / Banner Drive	28.5	C	23.8	C
7	Trask Avenue and SR-22 EB On-Ramp	11.0	B	11.0	B
8	Harbor Boulevard and Westminster Avenue	0.94	E	0.84	D
9	Harbor Boulevard and 1st Street	0.75	C	0.75	C
10	Harbor Boulevard and McFadden Avenue	0.73	C	0.71	C
11	Harbor Boulevard and Edinger Avenue	0.86	D	0.72	C
12	Harbor Boulevard and Warner Avenue	0.80	C	1.54	F
13	Harbor Boulevard and Segerstrom Avenue	1.01	F	0.93	E
14	Hyland Avenue / OCTA Bus Base and MacArthur Boulevard	0.62	B	0.89	D
15	Harbor Boulevard and MacArthur Boulevard	0.75	C	0.79	C
16	Harbor Boulevard and Sunflower Avenue	0.71	C	0.71	C
17	Harbor Boulevard and I-405 NB Off-Ramp	17.9	B	18.8	B
18	Harbor Boulevard and I-405 SB Off-Ramp	15.0	B	18.1	B
19	Fairview Street and Civic Center Drive	0.68	B	0.71	C
20	Fairview Street and 1st Street	0.89	D	0.89	D
21	Fairview Street and McFadden Avenue	0.80	C	0.68	B
22	Fairview Street and Edinger Avenue	0.88	D	0.92	E
23	Fairview Street and Warner Avenue	0.85	D	0.81	D
24	Fairview Street and MacArthur Boulevard	0.69	B	0.76	C
25	Fairview Road and Sunflower Avenue	0.69	B	0.69	B
26	Greenville Street and Edinger Avenue	0.74	C	0.65	B
27	Greenville Street and Segerstrom Avenue	0.88	D	0.80	C
28	Raitt Street and McFadden Avenue	0.70	B	0.68	B
29	Raitt Street and Edinger Avenue	0.93	E	0.99	E
30	Bear Street and MacArthur Boulevard	0.76	C	0.90	D
31	Bristol Street and 17th Street	0.85	D	0.81	D
32	Bristol Street and Civic Center Drive	0.93	E	0.90	D
33	Bristol Street and Santa Ana Boulevard	0.72	C	0.73	C
34	Bristol Street and 1st Street	0.90	D	0.97	E
35	Bristol Street and McFadden Avenue	0.95	E	0.89	D
36	Bristol Street and Warner Avenue	0.96	E	0.87	D
37	Bristol Street and Segerstrom Avenue	0.85	D	0.92	E
38	Bristol Street and Alton Avenue	0.55	A	0.58	A
39	Bristol Street and MacArthur Boulevard	0.76	C	0.80	C

ID	INTERSECTION	AM		PM	
		V/C or Delay	LOS	V/C or Delay	LOS
40	Bristol Street and Sunflower Avenue	0.68	B	0.74	C
41	Bristol Street and I-405 NB Ramps	20.9	C	29.0	C
42	Bristol Street and I-405 SB Ramps	23.6	C	18.2	B
43	Flower Street and Santa Ana Boulevard	0.59	A	0.67	B
44	Flower Street and 1st Street	0.93	E	1.22	F
45	Flower Street and McFadden Avenue	0.81	D	0.97	E
46	Flower Street and Segerstrom Avenue	0.82	D	0.92	E
47	Flower Street and MacArthur Boulevard	0.71	C	0.91	E
48	Main Street and La Veta Avenue	0.54	A	0.76	C
49	Main Street and Mainplace Drive / Memory Lane	0.46	A	0.50	A
50	Main Street and 17th Street	0.85	D	0.80	C
51	Main Street and Civic Center Drive	0.85	D	0.86	D
52	Main Street and Santa Ana Boulevard	0.79	C	0.70	B
53	Main Street and 4th Street	0.44	A	0.47	A
54	Main Street and 1st Street	0.75	C	0.80	C
55	Main Street and McFadden Avenue	0.92	E	0.94	E
56	Main Street and Edinger Avenue	0.88	D	0.98	E
57	Main Street and MacArthur Boulevard	0.72	C	0.78	C
58	Penn Way and 17th Street	12.1	B	20.3	C
59	Santiago Street / I-5 NB Ramps and 17th Street	31.4	C	20.3	C
60	Penn Way and I-5 SB Ramps	19.5	B	22.8	C
61	Santiago Street and Civic Center Drive	62.6	F	27.6	D
62	Santiago Street and Santa Ana Boulevard	1.44	F	1.41	F
63*	Standard Avenue and 4th Street	1.340	F	1.340	F
64	Standard Avenue and 1st Street	1.52	F	1.48	F
65	Standard Avenue and McFadden Avenue	0.84	D	0.77	C
66	Halladay Street and Warner Avenue	0.69	B	0.82	D
67	Halladay Street and Dyer Road	0.67	B	0.95	E
68	SR-55 SB Ramps and MacArthur Boulevard	20.2	C	18.4	B
69	SR-55 NB Ramps and MacArthur Boulevard	19.5	B	16.2	B
70	SR-55 SB Ramps and Dyer Road	25.9	C	26.5	C
71	Glassell Street and La Veta Avenue	0.83	D	0.77	C
72	Glassell Street and SR-22 WB Ramps	30.1	C	33.4	C
73	Glassell Street / Grand Avenue and SR-22 EB Ramps	29.6	C	31.8	C
74	Grand Avenue and Fairhaven Avenue	0.57	A	0.67	B
75	Grand Avenue and Santa Clara Avenue	0.80	C	0.73	C
76	Grand Avenue and 17th Street	0.86	D	0.85	D
77	Grand Avenue and I-5 NB Ramps	15.3	B	11.3	B
78	Grand Avenue and Santa Ana Boulevard	26.3	C	28.5	C
79	Grand Avenue and 1st Street	0.83	D	0.72	C

ID	INTERSECTION	AM		PM	
		V/C or Delay	LOS	V/C or Delay	LOS
80	Grand Avenue and Chestnut Avenue	0.94	E	0.78	C
81	Grand Avenue and McFadden Avenue	1.01	F	0.81	D
82	Grand Avenue and Edinger Avenue	0.90	D	1.08	F
83	Grand Avenue and Warner Avenue	0.66	B	0.90	D
84	SR-55 NB Ramps and Dyer Road	17.3	B	6.0	A
85	Cambridge Street and La Veta Avenue	23.4	C	26.1	D
86	Cambridge Street and Fairhaven Avenue	0.62	B	0.53	A
87	Mabury Street and 1st Street	27.4	C	27.2	C
88	Tustin Street and La Veta Avenue	0.36	A	0.34	A
89	Tustin Street and SR-22 WB On-Ramp	13.2	B	7.7	A
90	Tustin Street and SR-22 EB Off-Ramp / Seba Avenue	23.8	C	23.3	C
91	Tustin Street and Fairhaven Avenue	1.24	F	0.76	C
92	Tustin Avenue and Santa Clara Avenue	1.10	F	0.78	C
93	Tustin Avenue and 17th Street	0.81	D	0.74	C
94	Tustin Avenue and 4th Street	0.79	C	0.78	C
95	SR-55 SB Ramps / Auto Mall Drive and Edinger Avenue	25.1	C	25.4	C
96	SR-55 NB Ramps / Del Amo Avenue and Newport Avenue	25.6	C	46.2	D
97	Red Hill Avenue and Edinger Avenue	0.62	B	0.87	D
98	Red Hill Avenue and Warner Avenue	0.58	A	0.95	E
99	Red Hill Avenue and Barranca Parkway	0.58	A	0.59	A
100	Red Hill Avenue and Alton Parkway	0.93	E	1.49	F
101	Red Hill Avenue and MacArthur Boulevard	0.71	C	0.72	C
102	Red Hill Avenue and Main Street	0.73	C	0.84	D
103	I-5 SB Ramps and Santa Ana Boulevard	17.8	B	19.9	B
104	Tustin Ranch Road and Warner Avenue	0.53	A	0.67	B
105	Von Karman Avenue and Barranca Parkway	0.93	E	1.28	F

Notes: (1) LOS – Level of Service; (2) V/C – Volume to Capacity

8.0 VMT and LOS Analysis

This section presents the significant impact analysis for the Future Year (2045) With Project scenario. Significant impacts are identified based on the criteria established in Section 3.1.

8.1 VMT IMPACT ANALYSIS

Per the City's VMT Guidelines, VMT impacts are to be identified for the Future Year (2045) With Project scenario. VMT impacts were assessed using the methodology described in Section 3.1. The following presents the screening and impact analysis process. First, the two general conditions are considered:

- **Does the project have the potential to reduce VMT/SP?**
    - It should be noted that the project consists of land use and the transportation network changes. Due to the scale of land use changes not all land uses are high-density and/or transit-oriented, thus the land use changes cannot be assumed to have the same VMT-reducing effect as, for example, a TOD Specific Plan. The proposed transportation network, however, has the potential to reduce VMT/SP since it proposes to reclassify streets in order to implement transit, Complete Streets, and active transportation improvements.
- **Is the project consistent with the Regional Transportation Plan (RTP) / Sustainable Communities Strategy's (SCS)?**
    - While the proposed General Plan does forecast growth beyond the RTP/SCS, it is occurring in a manner consistent with the goals of the RTP/SCS in that growth occurs in high density in/near high-quality transit corridors (HQTC). Additionally, the proposed transportation network supports active transportation and the reduction of VMT.

Since it is not clear that the land use changes will reduce VMT/SP, the project is not eligible to be screened from a full VMT analysis. Project and cumulative impacts are assessed below.

Project Level Impact

A project is considered to have a significant impact if the project VMT/SP (for the land use plan) exceeds 15% below the existing total daily VMT/SP for the County. Table 8-1 provides a summary of the VMT impact analysis for project level impacts. A significant impact at the project level is not expected due to the implementation of the project.

Table 8-1: Future Year (2045) VMT Impact Analysis – Project Impact

Metric	2045 – With Project City VMT/SP	2020 – No Project County VMT/SP	VMT Threshold 15% below 2020 – No Project County VMT/SP	Impact?
VMT/SP	20.3	25.9	22.0	NO

Cumulative Impact

A project is considered to have a significant cumulative impact if the project results in a negative effect on VMT/SP at the citywide level (City VMT/SP is higher with the project than without it). Table 8-2 provides a summary of the VMT impact analysis for project level impacts. A significant cumulative impact is not expected due to the implementation of the project.

Table 8-2: Future Year (2045) VMT Impact Analysis – Cumulative Impact

Metric	2045 – No Project City VMT/SP	2045 – With Project City VMT/SP	Impact?
VMT/SP	22.8	20.3	NO

The VMT impact analysis results show that the project is not expected to cause a significant project level or cumulative impact.

8.2 LEVEL OF SERVICE ASSESSMENT

If an intersection is expected to be significantly impacted due to the implementation of the proposed project, mitigation measures are to be identified such that the project impact is mitigated. This is generally accomplished by returning the V/C or Delay to pre-project levels and/or the resulting LOS to an acceptable LOS. This analysis for intersection LOS is provided here only for analysis with regard to MPAH reclassifications and consistency with OCTA's MPAH guidelines. Intersection LOS analysis is no longer required under CEQA, and the deficient LOS values identified here are not considered to be significant environmental impacts.

The cities of Santa Ana, Costa Mesa, Irvine, Fountain Valley, Tustin, and Orange have established LOS D as their minimum acceptable LOS. Caltrans and the OC CMP established LOS C and E as their minimum acceptable LOS, respectively.

Strategies and improvements to provide acceptable intersection LOS are developed in a manner which first considers lower intensity modifications, such as striping modifications, before considering more complex modifications such as signal controls or physical improvements. All strategies and improvements are subject to the approval of the presiding public authority, including funding and implementation. The City of Santa Ana will pursue the development of a Transportation System Improvement Assessment (TSIA) in order to provide funding for the implementation of the full transportation network buildout, including the strategies and improvements identified in this report.

The Future Year (2045) significant impact summary is provided in Table 8-3. Improvements are identified in Table 8-4. Table 8-5 provides a summary of the intersection performance with the implementation of the mitigation measures.

Unacceptable LOS and traffic impacts are expected at the intersections listed below (peak hour / jurisdiction). The intersection impacts were investigated to determine a probable cause for the impact (land use, transportation network, or both). In order to do this, link volumes and intersection LOS were compared for two scenarios: 1) a year 2045 scenario which includes the proposed General Plan land use updates and utilizes the 2045 baseline (No Project) network described in Section 2.6; and 2) the 2045 With Project scenario which includes all proposed General Plan land use updates and transportation network modifications described in Section 2.7. OCTAM volume comparison plots and a LOS comparison table are provided in Appendix G.

- **INT 3 – Euclid Street and Edinger Avenue (AM peak hour / Fountain Valley)**
    - The impact at this intersection is expected to occur as a result of the proposed reclassifications. Specific improvements to this intersection to address this identified impact are presented in Table 8.4 later in this report. As this impact is in part caused by the proposed MPAH reclassifications, OCTA and the City of Santa Ana will enter into a memorandum of understanding (MOU) that describes the timing and triggers for implementation of the improvements identified in Table 8.4. Additionally, the City of Santa will contribute to improvements based on the calculated fair-share percentage presented in Table 8-4.
- **INT 13 – Harbor Boulevard and Segerstrom Avenue (AM peak hour / Santa Ana)**
    - The impact at this intersection is expected to occur as a result of the proposed land use changes. Specific improvements to this intersection to address this identified impact are presented in Table 8.4 later in this report.
- **INT 34 – Bristol Street and 1st Street (AM and PM peak hour / City of Santa Ana)**
    - The impact at this intersection is expected to occur as a result of the proposed reclassifications. Specific improvements to this intersection to address this identified impact are presented in Table 8.4 later in this report. As this impact is in part caused by the proposed MPAH reclassifications, OCTA and the City of Santa Ana will enter into a memorandum of understanding (MOU) that describes the timing and triggers for implementation of the improvements identified in Table 8.4.
- **INT 36 – Bristol Street and Warner Avenue (AM peak hour / City of Santa Ana)**
    - The impact at this intersection is expected to occur as a result of the proposed reclassifications. Specific improvements to this intersection to address this identified impact are presented in Table 8.4 later in this report. As this impact is in part caused by the proposed MPAH reclassifications, OCTA and the City of Santa Ana will enter into a memorandum of understanding (MOU) that describes the timing and triggers for implementation of the improvements identified in Table 8.4.
- **INT 37 – Bristol Street and Segerstrom Avenue (PM peak hour / City of Santa Ana)**
    - The impact at this intersection is expected to occur as a result of both the proposed land use changes and reclassifications. Specific improvements to this intersection to address this identified impact are presented in Table 8.4 later in this report. As this impact is in part caused by the proposed MPAH reclassifications, OCTA and the City

of Santa Ana will enter into a memorandum of understanding (MOU) that describes the timing and triggers for implementation of the improvements identified in Table 8.4.

- **INT 44 – Flower Street 1st Street (PM peak hour / City of Santa Ana)**
    - The impact at this intersection is expected to occur as a result of both the proposed land use changes and reclassifications. Specific improvements to this intersection to address this identified impact are presented in Table 8.4 later in this report. As this impact is in part caused by the proposed MPAH reclassifications, OCTA and the City of Santa Ana will enter into a memorandum of understanding (MOU) that describes the timing and triggers for implementation of the improvements identified in Table 8.4.
- **INT 46 – Flower Street and Segerstrom Avenue (PM peak hour / City of Santa Ana)**
    - The impact at this intersection is expected to occur as a result of both the proposed land use changes and reclassifications. Specific improvements to this intersection to address this identified impact are presented in Table 8.4 later in this report. As this impact is in part caused by the proposed MPAH reclassifications, OCTA and the City of Santa Ana will enter into a memorandum of understanding (MOU) that describes the timing and triggers for implementation of the improvements identified in Table 8.4.
- **INT 47 – Flower Street and MacArthur Boulevard (PM peak hour / City of Santa Ana)**
    - The impact at this intersection is expected to occur as a result of the proposed land use changes. Specific improvements to this intersection to address this identified impact are presented in Table 8.4 later in this report.
- **INT 55 – Main Street and McFadden Avenue (AM peak hour / City of Santa Ana)**
    - The impact at this intersection is expected to occur as a result of both the proposed land use changes and reclassifications. Specific improvements to this intersection to address this identified impact are presented in Table 8.4 later in this report. As this impact is in part caused by the proposed MPAH reclassifications, OCTA and the City of Santa Ana will enter into a memorandum of understanding (MOU) that describes the timing and triggers for implementation of the improvements identified in Table 8.4.
- **INT 56 – Main Street and Edinger Avenue (PM peak hour / City of Santa Ana)**
    - The impact at this intersection is expected to occur as a result of the proposed reclassifications. Specific improvements to this intersection to address this identified impact are presented in Table 8.4 later in this report. As this impact is in part caused by the proposed MPAH reclassifications, OCTA and the City of Santa Ana will enter into a memorandum of understanding (MOU) that describes the timing and triggers for implementation of the improvements identified in Table 8.4.

- **INT 62 – Santiago Street & Santa Ana Boulevard (AM & PM peak hour / City of Santa Ana)**
    - The impact at this intersection is expected to occur as a result of the proposed reclassifications. Specific improvements to this intersection to address this identified impact are presented in Table 8.4 later in this report. As this impact is in part caused by the proposed MPAH reclassifications, OCTA and the City of Santa Ana will enter into a memorandum of understanding (MOU) that describes the timing and triggers for implementation of the improvements identified in Table 8.4.
- **INT 63 – Standard Avenue and 4th Street (AM and PM peak hour / City of Santa Ana)**
    - The impact at this intersection is expected to occur as a result of the proposed reclassifications. Specific improvements to this intersection to address this identified impact are presented in Table 8.4 later in this report. As this impact is in part caused by the proposed MPAH reclassifications, OCTA and the City of Santa Ana will enter into a memorandum of understanding (MOU) that describes the timing and triggers for implementation of the improvements identified in Table 8.4.
- **INT 64 – Standard Avenue and 1st Street (AM and PM peak hour / City of Santa Ana)**
    - The impact at this intersection is expected to occur as a result of the proposed reclassifications. Specific improvements to this intersection to address this identified impact are presented in Table 8.4 later in this report. As this impact is in part caused by the proposed MPAH reclassifications, OCTA and the City of Santa Ana will enter into a memorandum of understanding (MOU) that describes the timing and triggers for implementation of the improvements identified in Table 8.4.
- **INT 80 – Grand Avenue and Chestnut Avenue (AM peak hour / City of Santa Ana)**
    - The impact at this intersection is expected to occur as a result of the proposed reclassifications. Specific improvements to this intersection to address this identified impact are presented in Table 8.4 later in this report. As this impact is in part caused by the proposed MPAH reclassifications, OCTA and the City of Santa Ana will enter into a memorandum of understanding (MOU) that describes the timing and triggers for implementation of the improvements identified in Table 8.4.
- **INT 81 – Grand Avenue and McFadden Avenue (AM peak hour / City of Santa Ana)**
    - The impact at this intersection is expected to occur as a result of the proposed reclassifications. Specific improvements to this intersection to address this identified impact are presented in Table 8.4 later in this report. As this impact is in part caused by the proposed MPAH reclassifications, OCTA and the City of Santa Ana will enter

into a memorandum of understanding (MOU) that describes the timing and triggers for implementation of the improvements identified in Table 8.4.

- **INT 82 – Grand Avenue and Edinger Avenue (PM peak hour / City of Santa Ana)**
    - The impact at this intersection is expected to occur as a result of the proposed reclassifications. Specific improvements to this intersection to address this identified impact are presented in Table 8.4 later in this report. As this impact is in part caused by the proposed MPAH reclassifications, OCTA and the City of Santa Ana will enter into a memorandum of understanding (MOU) that describes the timing and triggers for implementation of the improvements identified in Table 8.4.
- **INT 91 – Tustin Street and Fairhaven Avenue (AM peak hour / City of Santa Ana)**
    - The impact at this intersection is expected to occur as a result of the proposed reclassifications. Specific improvements to this intersection to address this identified impact are presented in Table 8.4 later in this report. As this impact is in part caused by the proposed MPAH reclassifications, OCTA and the City of Santa Ana will enter into a memorandum of understanding (MOU) that describes the timing and triggers for implementation of the improvements identified in Table 8.4.
- **INT 92 – Tustin Avenue and Santa Clara Avenue (AM peak hour / City of Santa Ana)**
    - The impact at this intersection is expected to occur as a result of the proposed reclassifications. Specific improvements to this intersection to address this identified impact are presented in Table 8.4 later in this report. As this impact is in part caused by the proposed MPAH reclassifications, OCTA and the City of Santa Ana will enter into a memorandum of understanding (MOU) that describes the timing and triggers for implementation of the improvements identified in Table 8.4.
- **INT 96 – SR-55 NB Ramps/Del Amo Avenue & Newport Avenue (PM peak hour / Caltrans)**
    - The impact at this intersection is expected to occur as a result of the proposed land use changes. Specific improvements to this intersection to address this identified impact are presented in Table 8.4 later in this report. Additionally, the City of Santa will contribute to improvements based on the calculated fair-share percentage presented in Table 8-4. Additionally, the City of Santa will contribute to improvements based on the calculated fair-share percentage presented in Table 8-4.
- **INT 98 – Red Hill Avenue and Warner Avenue (PM peak hour / City of Tustin)**
    - The impact at this intersection is expected to occur as a result of the proposed land use changes. Specific improvements to this intersection to address this identified impact are presented in Table 8.4 later in this report. Additionally, the City of Santa will

contribute to improvements based on the calculated fair-share percentage presented in Table 8-4.

- **INT 100 – Red Hill Avenue and Alton Parkway (AM and PM peak hour / City of Irvine)**
    - The impact at this intersection is expected to occur as a result of the proposed land use changes. Specific improvements to this intersection to address this identified impact are presented in Table 8.4 later in this report. Additionally, the City of Santa will contribute to improvements based on the calculated fair-share percentage presented in Table 8-4.
- **INT 105 – Von Karman Avenue and Barranca Parkway (PM peak hour / City of Irvine)**
    - The impact at this intersection is expected to occur as a result of the proposed land use changes. Specific improvements to this intersection to address this identified impact are presented in Table 8.4 later in this report. Additionally, the City of Santa will contribute to improvements based on the calculated fair-share percentage presented in Table 8-4.

In addition to assessing intersection impacts, a performance assessment of study roadway segments was conducted in order to determine the potential adverse effects of the project. Although not considered an environmental impact, changes in roadway performance monitored for congestion management and fair-share contribution purposes. Highlighted below is a roadway segment expected to operate beyond capacity in the future 2045 scenarios; improvements are thus required to accomodate forecasted volumes.

- **Segment #84 – Dyer Road from Pullman Street to Red Hill Avenue (City of Santa Ana)**
    - This segment is expected to operate at LOS F in both the 2045 No Project and 2045 With Project scenarios. Planned improvements include a widening of this section of Dyer Road in order to accommodate forecasted traffic volumes. As of the time this report is written, the City of Irvine is expected to be fully responsible for the improvements. However, considering the project's contribution to traffic volumes the City of Santa Ana will provide a fair-share contribution of 23% for future improvements.

Fair-Share Calculation

As noted, the City of Santa Ana will contribute to intersection improvements based on the fair-share contribution to intersection volumes due to the proposed MPAH reclassifications. The fair-share for a given intersection is calculated using the formula shown below and is presented in Table 8-4 for each intersection which is not, or only partially, under the jurisdiction of the City of Santa Ana. Fair-share is the portion of new traffic generated by the project as a percentage of the total change in traffic from the existing year analysis.

$$Fair - Share\ (\%) = \left(\frac{Future\ With\ Project\ Volume - Future\ No\ Project\ Volume}{Future\ With\ Project\ Volume - Existing\ No\ Project\ Volume}\right) \times 100\%$$

Table 8-3: Future Year (2045) LOS Impact Summary

ID	INTERSECTION	PEAK HOUR	2045 No Project		2045 With Project		DELTA	LOS IMPACT?
			V/C or Delay	LOS	V/C or Delay	LOS		
1	Euclid Street and Bolsa Avenue	AM	0.86	D	0.79	C	-0.07	NO
		PM	0.86	D	0.79	C	-0.07	NO
2	Euclid Street and McFadden Avenue	AM	0.98	E	0.91	E	-0.07	NO
		PM	0.90	D	0.79	C	-0.11	NO
3	Euclid Street and Edinger Avenue	AM	0.99	E	1.01	F	0.02	YES
		PM	0.89	D	0.86	D	-0.03	NO
4	Newhope Street and Hazard Avenue	AM	0.78	C	0.60	A	-0.18	NO
		PM	0.72	C	0.52	A	-0.20	NO
5	Newhope Street and McFadden Avenue	AM	0.83	D	0.73	C	-0.10	NO
		PM	0.78	C	0.68	B	-0.10	NO
6	Harbor Boulevard and SR-22 WB Off-Ramp / Banner Drive	AM	28.4	C	28.5	C	0.1	NO / NO *
		PM	24.2	C	23.8	C	-0.4	NO / NO *
7	Trask Avenue and SR-22 EB On-Ramp	AM	12.0	B	11.0	B	-1.0	NO
		PM	13.6	B	11.0	B	-2.6	NO
8	Harbor Boulevard and Westminster Avenue	AM	0.99	E	0.94	E	-0.05	NO
		PM	0.88	D	0.84	D	-0.04	NO
9	Harbor Boulevard and 1st Street	AM	0.79	C	0.75	C	-0.04	NO
		PM	0.78	C	0.75	C	-0.03	NO
10	Harbor Boulevard and McFadden Avenue	AM	0.79	C	0.73	C	-0.06	NO
		PM	0.81	D	0.71	C	-0.10	NO
11	Harbor Boulevard and Edinger Avenue	AM	0.84	D	0.86	D	0.02	NO
		PM	0.73	C	0.72	C	-0.01	NO
12	Harbor Boulevard and Warner Avenue	AM	0.79	C	0.80	C	0.01	NO
		PM	1.54	F	1.54	F	0.00	NO
13	Harbor Boulevard and Segerstrom Avenue	AM	0.97	E	1.01	F	0.04	YES

ID	INTERSECTION	PEAK HOUR	2045 No Project		2045 With Project		DELTA	LOS IMPACT?
			V/C or Delay	LOS	V/C or Delay	LOS		
		PM	0.92	E	0.93	E	0.01	NO
14	Hyland Avenue / OCTA Bus Base and MacArthur Boulevard	AM	0.61	B	0.62	B	0.01	NO
		PM	0.92	E	0.89	D	-0.03	NO
15	Harbor Boulevard and MacArthur Boulevard	AM	0.74	C	0.75	C	0.01	NO
		PM	0.78	C	0.79	C	0.01	NO
16	Harbor Boulevard and Sunflower Avenue	AM	0.70	B	0.71	C	0.01	NO
		PM	0.72	C	0.71	C	-0.01	NO
17	Harbor Boulevard and I-405 NB Off-Ramp	AM	18.0	B	17.9	B	-0.1	NO / NO *
		PM	18.3	B	18.8	B	0.5	NO / NO *
18	Harbor Boulevard and I-405 SB Off-Ramp	AM	15.0	B	15.0	B	0.0	NO / NO *
		PM	17.9	B	18.1	B	0.2	NO / NO *
19	Fairview Street and Civic Center Drive	AM	0.74	C	0.68	B	-0.06	NO
		PM	0.76	C	0.71	C	-0.05	NO
20	Fairview Street and 1st Street	AM	0.86	D	0.89	D	0.03	NO
		PM	0.90	D	0.89	D	-0.01	NO
21	Fairview Street and McFadden Avenue	AM	0.80	C	0.80	C	0.00	NO
		PM	0.78	C	0.68	B	-0.10	NO
22	Fairview Street and Edinger Avenue	AM	0.86	D	0.88	D	0.02	NO
		PM	0.92	E	0.92	E	0.00	NO
23	Fairview Street and Warner Avenue	AM	0.82	D	0.85	D	0.03	NO
		PM	0.80	C	0.81	D	0.01	NO
24	Fairview Street and MacArthur Boulevard	AM	0.68	B	0.69	B	0.01	NO
		PM	0.77	C	0.76	C	-0.01	NO
25	Fairview Road and Sunflower Avenue	AM	0.70	B	0.69	B	-0.01	NO
		PM	0.72	C	0.69	B	-0.03	NO
26	Greenville Street and Edinger Avenue	AM	0.77	C	0.74	C	-0.03	NO
		PM	0.60	A	0.65	B	0.05	NO

ID	INTERSECTION	PEAK HOUR	2045 No Project		2045 With Project		DELTA	LOS IMPACT?
			V/C or Delay	LOS	V/C or Delay	LOS		
27	Greenville Street and Segerstrom Avenue	AM	0.84	D	0.88	D	0.04	NO
		PM	0.78	C	0.80	C	0.02	NO
28	Raitt Street and McFadden Avenue	AM	0.78	C	0.70	B	-0.08	NO
		PM	0.76	C	0.68	B	-0.08	NO
29	Raitt Street and Edinger Avenue	AM	0.99	E	0.93	E	-0.06	NO
		PM	0.99	E	0.99	E	0.00	NO
30	Bear Street and MacArthur Boulevard	AM	0.71	C	0.76	C	0.05	NO
		PM	0.85	D	0.90	D	0.05	NO
31	Bristol Street and 17th Street	AM	0.87	D	0.85	D	-0.02	NO
		PM	0.82	D	0.81	D	-0.01	NO
32	Bristol Street and Civic Center Drive	AM	0.94	E	0.93	E	-0.01	NO
		PM	0.91	E	0.90	D	-0.01	NO
33	Bristol Street and Santa Ana Boulevard	AM	0.81	D	0.72	C	-0.09	NO
		PM	0.85	D	0.73	C	-0.12	NO
34	Bristol Street and 1st Street	AM	0.77	C	0.90	D	0.13	NO
		PM	0.83	D	0.97	E	0.14	YES
35	Bristol Street and McFadden Avenue	AM	0.96	E	0.95	E	-0.01	NO
		PM	1.03	F	0.89	D	-0.14	NO
36	Bristol Street and Warner Avenue	AM	0.92	E	0.96	E	0.04	YES
		PM	0.85	D	0.87	D	0.02	NO
37	Bristol Street and Segerstrom Avenue	AM	0.81	D	0.85	D	0.04	NO
		PM	0.87	D	0.92	E	0.05	YES
38	Bristol Street and Alton Avenue	AM	0.55	A	0.55	A	0.00	NO
		PM	0.63	B	0.58	A	-0.05	NO
39	Bristol Street and MacArthur Boulevard	AM	0.70	B	0.76	C	0.06	NO
		PM	0.77	C	0.80	C	0.03	NO
40	Bristol Street and Sunflower Avenue	AM	0.65	B	0.68	B	0.03	NO

ID	INTERSECTION	PEAK HOUR	2045 No Project		2045 With Project		DELTA	LOS IMPACT?
			V/C or Delay	LOS	V/C or Delay	LOS		
		PM	0.69	B	0.74	C	0.05	NO
41	Bristol Street and I-405 NB Ramps	AM	20.8	C	20.9	C	0.1	NO
		PM	28.5	C	29.0	C	0.5	NO
42	Bristol Street and I-405 SB Ramps	AM	23.9	C	23.6	C	-0.3	NO
		PM	18.3	B	18.2	B	-0.1	NO
43	Flower Street and Santa Ana Boulevard	AM	0.81	D	0.59	A	-0.22	NO
		PM	0.86	D	0.67	B	-0.19	NO
44	Flower Street and 1st Street	AM	0.93	E	0.93	E	0.00	NO
		PM	0.88	D	1.22	F	0.34	YES
45	Flower Street and McFadden Avenue	AM	0.90	D	0.81	D	-0.09	NO
		PM	1.04	F	0.97	E	-0.07	NO
46	Flower Street and Segerstrom Avenue	AM	0.78	C	0.82	D	0.04	NO
		PM	0.87	D	0.92	E	0.05	YES
47	Flower Street and MacArthur Boulevard	AM	0.68	B	0.71	C	0.03	NO
		PM	0.90	D	0.91	E	0.01	YES
48	Main Street and La Veta Avenue	AM	0.59	A	0.54	A	-0.05	NO
		PM	0.70	B	0.76	C	0.06	NO
49	Main Street and Mainplace Drive / Memory Lane	AM	0.51	A	0.46	A	-0.05	NO
		PM	0.56	A	0.50	A	-0.06	NO
50	Main Street and 17th Street	AM	0.88	D	0.85	D	-0.03	NO
		PM	0.76	C	0.80	C	0.04	NO
51	Main Street and Civic Center Drive	AM	0.78	C	0.85	D	0.07	NO
		PM	0.97	E	0.86	D	-0.11	NO
52	Main Street and Santa Ana Boulevard	AM	0.93	E	0.79	C	-0.14	NO
		PM	0.79	C	0.70	B	-0.09	NO
53	Main Street and 4th Street	AM	0.41	A	0.44	A	0.03	NO
		PM	0.45	A	0.47	A	0.02	NO

ID	INTERSECTION	PEAK HOUR	2045 No Project		2045 With Project		DELTA	LOS IMPACT?
			V/C or Delay	LOS	V/C or Delay	LOS		
54	Main Street and 1st Street	AM	0.68	B	0.75	C	0.07	NO
		PM	0.74	C	0.80	C	0.06	NO
55	Main Street and McFadden Avenue	AM	0.89	D	0.92	E	0.03	YES
		PM	0.93	E	0.94	E	0.01	NO
56	Main Street and Edinger Avenue	AM	0.80	C	0.88	D	0.08	NO
		PM	0.87	D	0.98	E	0.11	YES
57	Main Street and MacArthur Boulevard	AM	0.68	B	0.72	C	0.04	NO
		PM	0.75	C	0.78	C	0.03	NO
58	Penn Way and 17th Street	AM	12.2	B	12.1	B	-0.1	NO
		PM	25.5	C	20.3	C	-5.2	NO
59	Santiago Street / I-5 NB Ramps and 17th Street	AM	30.0	C	31.4	C	1.4	NO
		PM	19.0	B	20.3	C	1.3	NO
60	Penn Way and I-5 SB Ramps	AM	21.2	C	19.5	B	-1.7	NO
		PM	23.0	C	22.8	C	-0.2	NO
61	Santiago Street and Civic Center Drive	AM	159.2	F	62.6	F	-96.6	NO
		PM	110.0	F	27.6	D	-82.4	NO
62	Santiago Street and Santa Ana Boulevard	AM	1.04	F	1.44	F	0.40	YES
		PM	1.02	F	1.41	F	0.39	YES
63	Standard Avenue and 4th Street	AM	0.94	E	1.34	F	0.40	YES
		PM	0.89	D	1.34	F	0.45	YES
64	Standard Avenue and 1st Street	AM	0.98	E	1.52	F	0.54	YES
		PM	0.97	E	1.48	F	0.51	YES
65	Standard Avenue and McFadden Avenue	AM	0.85	D	0.84	D	-0.01	NO
		PM	0.83	D	0.77	C	-0.06	NO
66	Halladay Street and Warner Avenue	AM	0.78	C	0.69	B	-0.09	NO
		PM	0.97	E	0.82	D	-0.16	NO
67	Halladay Street and Dyer Road	AM	0.77	C	0.67	B	-0.10	NO

ID	INTERSECTION	PEAK HOUR	2045 No Project		2045 With Project		DELTA	LOS IMPACT?
			V/C or Delay	LOS	V/C or Delay	LOS		
		PM	1.06	F	0.95	E	-0.11	NO
68	SR-55 SB Ramps and MacArthur Boulevard	AM	19.9	B	20.2	C	0.3	NO
		PM	17.8	B	18.4	B	0.6	NO
69	SR-55 NB Ramps and MacArthur Boulevard	AM	19.3	B	19.5	B	0.2	NO
		PM	14.6	B	16.2	B	1.6	NO
70	SR-55 SB Ramps and Dyer Road	AM	25.7	C	25.9	C	0.2	NO
		PM	26.5	C	26.5	C	0.0	NO
71	Glassell Street and La Veta Avenue	AM	0.80	C	0.83	D	0.03	NO
		PM	0.74	C	0.77	C	0.03	NO
72	Glassell Street and SR-22 WB Ramps	AM	32.6	C	30.1	C	-2.5	NO
		PM	30.5	C	33.4	C	2.9	NO
73	Glassell Street / Grand Avenue and SR-22 EB Ramps	AM	30.6	C	29.6	C	-1.0	NO
		PM	31.6	C	31.8	C	0.2	NO
74	Grand Avenue and Fairhaven Avenue	AM	0.61	B	0.57	A	-0.04	NO
		PM	0.72	C	0.67	B	-0.05	NO
75	Grand Avenue and Santa Clara Avenue	AM	0.84	D	0.80	C	-0.04	NO
		PM	0.81	D	0.73	C	-0.08	NO
76	Grand Avenue and 17th Street	AM	0.79	C	0.86	D	0.07	NO
		PM	0.86	D	0.85	D	-0.01	NO
77	Grand Avenue and I-5 NB Ramps	AM	13.2	B	15.3	B	2.1	NO
		PM	10.1	B	11.3	B	1.2	NO
78	Grand Avenue and Santa Ana Boulevard	AM	26.0	C	26.3	C	0.3	NO
		PM	25.3	C	28.5	C	3.2	NO
79	Grand Avenue and 1st Street	AM	0.74	C	0.83	D	0.09	NO
		PM	0.73	C	0.72	C	-0.01	NO
80	Grand Avenue and Chestnut Avenue	AM	0.70	B	0.94	E	0.24	YES
		PM	0.69	B	0.78	C	0.09	NO

ID	INTERSECTION	PEAK HOUR	2045 No Project		2045 With Project		DELTA	LOS IMPACT?
			V/C or Delay	LOS	V/C or Delay	LOS		
81	Grand Avenue and McFadden Avenue	AM	0.89	D	1.01	F	0.12	YES
		PM	0.82	D	0.81	D	-0.01	NO
82	Grand Avenue and Edinger Avenue	AM	0.84	D	0.90	D	0.06	NO
		PM	1.00	E	1.08	F	0.08	YES
83	Grand Avenue and Warner Avenue	AM	0.61	B	0.66	B	0.05	NO
		PM	0.83	D	0.90	D	0.07	NO
84	SR-55 NB Ramps and Dyer Road	AM	17.1	B	17.3	B	0.2	NO
		PM	5.7	A	6.0	A	0.3	NO
85	Cambridge Street and La Veta Avenue	AM	31.6	D	23.4	C	-8.2	NO
		PM	19.7	C	26.1	D	6.4	NO
86	Cambridge Street and Fairhaven Avenue	AM	0.56	A	0.62	B	0.06	NO
		PM	0.45	A	0.53	A	0.08	NO
87	Mabury Street and 1st Street	AM	27.4	C	27.4	C	0.0	NO / NO *
		PM	27.1	C	27.2	C	0.1	NO / NO *
88	Tustin Street and La Veta Avenue	AM	0.45	A	0.36	A	-0.09	NO
		PM	0.38	A	0.34	A	-0.04	NO
89	Tustin Street and SR-22 WB On-Ramp	AM	12.2	B	13.2	B	1.0	NO
		PM	11.1	B	7.7	A	-3.4	NO
90	Tustin Street and SR-22 EB Off-Ramp / Seba Avenue	AM	25.0	C	23.8	C	-1.2	NO
		PM	23.1	C	23.3	C	0.2	NO
91	Tustin Street and Fairhaven Avenue	AM	1.20	F	1.24	F	0.04	YES
		PM	0.69	B	0.76	C	0.07	NO
92	Tustin Avenue and Santa Clara Avenue	AM	1.04	F	1.10	F	0.06	YES
		PM	0.71	C	0.78	C	0.07	NO
93	Tustin Avenue and 17th Street	AM	0.91	E	0.81	D	-0.10	NO
		PM	0.80	C	0.74	C	-0.06	NO
94	Tustin Avenue and 4th Street	AM	0.83	D	0.79	C	-0.04	NO

ID	INTERSECTION	PEAK HOUR	2045 No Project		2045 With Project		DELTA	LOS IMPACT?
			V/C or Delay	LOS	V/C or Delay	LOS		
		PM	0.71	C	0.78	C	0.07	NO
95	SR-55 SB Ramps / Auto Mall Drive and Edinger Avenue	AM	25.2	C	25.1	C	-0.1	NO / NO *
		PM	25.5	C	25.4	C	-0.1	NO / NO *
96	SR-55 NB Ramps / Del Amo Avenue and Newport Avenue	AM	25.4	C	25.6	C	0.2	NO
		PM	39.1	D	46.2	D	7.1	YES
97	Red Hill Avenue and Edinger Avenue	AM	0.61	B	0.62	B	0.01	NO
		PM	0.85	D	0.87	D	0.02	NO
98	Red Hill Avenue and Warner Avenue	AM	0.56	A	0.58	A	0.02	NO
		PM	0.88	D	0.95	E	0.07	YES
99	Red Hill Avenue and Barranca Parkway	AM	0.55	A	0.58	A	0.03	NO
		PM	0.54	A	0.59	A	0.05	NO
100	Red Hill Avenue and Alton Parkway	AM	0.86	D	0.93	E	0.07	YES
		PM	1.18	F	1.49	F	0.31	YES
101	Red Hill Avenue and MacArthur Boulevard	AM	0.69	B	0.71	C	0.02	NO
		PM	0.70	B	0.72	C	0.02	NO
102	Red Hill Avenue and Main Street	AM	0.72	C	0.73	C	0.01	NO
		PM	0.81	D	0.84	D	0.03	NO
103	I-5 SB Ramps and Santa Ana Boulevard	AM	17.4	B	17.8	B	0.4	NO
		PM	18.4	B	19.9	B	1.5	NO
104	Tustin Ranch Road and Warner Avenue	AM	0.52	A	0.53	A	0.01	NO
		PM	0.65	B	0.67	B	0.02	NO
105	Von Karman Avenue and Barranca Parkway	AM	0.93	E	0.93	E	0.00	NO
		PM	1.23	F	1.28	F	0.05	YES

**Intersection is a Caltrans intersection and also part of OC CMP; XX/YY denotes LOS impacts per Caltrans/CMP impact criteria, respectively.*

Table 8-4: LOS Improvement Measures

ID	INTERSECTION	IMPROVEMENT
3	Euclid Street and Edinger Avenue	• Alternative 1 o Convert the WB right-turn lane into a shared thru-right. • Alternative 2 o Add EB-LT lane. • Alternative 3 o Add LT lane for EB and WB directions. • Fair-Share: 9.0% (AM)
13	Harbor Boulevard and Segerstrom Avenue	• Add a second WB left-turn lane. • Change WB and EB left-turn control to protected.
34	Bristol Street and 1st Street	• Maintain 2045 NP configuration for WB approach. o WB approach to be: 1L, 2T, 1TR • Add EB right-turn pocket.
36	Bristol Street and Warner Avenue	• Feasible improvements could not be identified.
37	Bristol Street and Segerstrom Avenue	• Maintain 2045 NP configurations for EB/WB approaches. o EB/WB approaches to be: 1LT, 2T, 1TR • Add NB right-turn pocket.
44	Flower Street and 1st Street	• Maintain 2045 NP configurations for NB approach. o NB approach to be: 1L, 2T, 1R
46	Flower Street and Segerstrom Avenue	• Feasible improvements could not be identified.
47	Flower Street and MacArthur Boulevard	• Feasible improvements could not be identified.
55	Main Street and McFadden Avenue	• Feasible improvements could not be identified.
56	Main Street and Edinger Avenue	• Feasible improvements could not be identified.
62	Santiago Street and Santa Ana Boulevard	• Feasible improvements could not be identified.

ID	INTERSECTION	IMPROVEMENT
63	Standard Avenue and 4th Street	• Maintain 2045 NP conditions. o NB / SB to be: 1L, 1T, 1R o EB / WB to be: 1L, 1T, 1TR
64	Standard Avenue and 1st Street	• Feasible improvements could not be identified.
80	Grand Avenue and Chestnut Avenue	• Feasible improvements could not be identified.
81	Grand Avenue and McFadden Avenue	• Maintain 2045 NP configuration for EB approach o EB approach to be: 1L, 1T, 1TR
82	Grand Avenue and Edinger Avenue	• Feasible improvements could not be identified.
91	Tustin Street and Fairhaven Avenue	• Maintain 2045 NP lane configurations for EB and WB approaches o EB approach to be: 1L, 1T, 1TR o WB approach to be: 1L, 1T, 1R
92	Tustin Avenue and Santa Clara Avenue	• Maintain 2045 NP lane configurations for EB and WB approaches. o EB and WB approaches to be: 1L, 1T, 1TR
96	SR-55 NB Ramps / Del Amo Avenue and Newport Avenue	• Add a second SB right-turn lane. • Fair-Share: 10.6% (PM)
98	Red Hill Avenue and Warner Avenue	• Add a left-turn lane to the EB approach. • Fair-Share: 17.3% (PM)
100	Red Hill Avenue and Alton Parkway	• Add a NB thru lane. • Add a left-turn lane and a shared thru-right to the EB approach. • Convert the WB right-turn lane into a shared thru-right. • Fair-Share: 21.0% (AM) / 34.7% (PM)
105	Von Karman Avenue and Barranca Parkway	• Convert one (1) WB thru lane into a shared thru-right. • Fair-Share: 14.1% (PM)

Table 8-5: Future Year (2045) With Project – Mitigated Impact Summary

ID	INTERSECTION	PEAK HOUR	2045 No Project		2045 With Project		DELTA	IMPACT?	2045 With Project – Mit.		DELTA	IMPACT?
			V/C or Delay	LOS	V/C or Delay	LOS			V/C or Delay	LOS		
3	Euclid Street and Edinger Avenue (with Alternative 1 measure)	AM	0.99	E	1.01	F	0.02	YES	1.00	E	0.01	NO
		PM	0.89	D	0.86	D	-0.03	NO	0.80	D	-0.09	NO
3	Euclid Street and Edinger Avenue (with Alternative 2 measure)	AM	0.99	E	1.01	F	0.02	YES	1.00	E	0.01	NO
		PM	0.89	D	0.86	D	-0.03	NO	0.82	D	-0.07	NO
3	Euclid Street and Edinger Avenue (with Alternative 3 measure)	AM	0.99	E	1.01	F	0.02	YES	0.97	E	-0.02	NO
		PM	0.89	D	0.86	D	-0.03	NO	0.82	D	-0.07	NO
13	Harbor Boulevard and Segerstrom Avenue	AM	0.97	E	1.01	F	0.04	YES	0.96	E	-0.01	NO
		PM	0.92	E	0.93	E	0.01	NO	0.93	E	0.01	NO
34	Bristol Street and 1st Street	AM	0.77	C	0.90	D	0.13	NO	0.79	C	0.02	NO
		PM	0.83	D	0.97	E	0.14	YES	0.87	D	0.04	NO
36	Bristol Street and Warner Avenue	AM	0.92	E	0.96	E	0.04	YES	0.96	E	0.04	YES
		PM	0.85	D	0.87	D	0.02	NO	0.87	D	0.02	NO
37	Bristol Street and Segerstrom Avenue	AM	0.81	D	0.85	D	0.04	NO	0.81	D	0.00	NO
		PM	0.87	D	0.92	E	0.05	YES	0.87	D	0.00	NO
44	Flower Street and 1st Street	AM	0.93	E	0.93	E	0.00	NO	0.93	E	0.00	NO
		PM	0.88	D	1.22	F	0.34	YES	0.92	E	0.04	YES
46	Flower Street and Segerstrom Avenue	AM	0.78	C	0.82	D	0.04	NO	0.82	D	0.04	NO
		PM	0.87	D	0.92	E	0.05	YES	0.92	E	0.05	YES
47	Flower Street and Macarthur Boulevard	AM	0.68	B	0.71	C	0.03	NO	0.71	C	0.03	NO
		PM	0.90	D	0.91	E	0.01	YES	0.91	E	0.01	YES
55	Main Street and McFadden Avenue	AM	0.89	D	0.92	E	0.03	YES	0.92	E	0.03	YES
		PM	0.93	E	0.94	E	0.01	NO	0.94	E	0.01	NO
56	Main Street and Edinger Avenue	AM	0.80	C	0.88	D	0.08	NO	0.88	D	0.08	NO
		PM	0.87	D	0.98	E	0.11	YES	0.98	E	0.11	YES

ID	INTERSECTION	PEAK HOUR	2045 No Project		2045 With Project		DELTA	IMPACT?	2045 With Project – Mit.		DELTA	IMPACT?
			V/C or Delay	LOS	V/C or Delay	LOS			V/C or Delay	LOS		
62	Santiago Street and Santa Ana Boulevard	AM	1.04	F	1.44	F	0.40	YES	1.44	F	0.40	YES
		PM	1.02	F	1.41	F	0.39	YES	1.41	F	0.39	YES
63	Standard Avenue and 4th Street	AM	0.94	E	1.34	F	0.40	YES	1.06	F	0.12	YES
		PM	0.89	D	1.34	F	0.45	YES	1.03	F	0.14	YES
64	Standard Avenue and 1st Street	AM	0.98	E	1.52	F	0.54	YES	1.52	F	0.54	YES
		PM	0.97	E	1.48	F	0.51	YES	1.48	F	0.51	YES
80	Grand Avenue and Chestnut Avenue	AM	0.70	B	0.94	E	0.24	YES	0.94	E	0.24	YES
		PM	0.69	B	0.78	C	0.09	NO	0.78	C	0.09	NO
81	Grand Avenue and McFadden Avenue	AM	0.89	D	1.01	F	0.12	YES	0.86	D	-0.03	NO
		PM	0.82	D	0.81	D	-0.01	NO	0.81	D	-0.01	NO
82	Grand Avenue and Edinger Avenue	AM	0.84	D	0.90	D	0.06	NO	0.90	D	0.06	NO
		PM	1.00	E	1.08	F	0.08	YES	1.08	F	0.08	YES
91	Tustin Street and Fairhaven Avenue	AM	1.20	F	1.24	F	0.04	YES	1.06	F	-0.14	NO
		PM	0.69	B	0.76	C	0.07	NO	0.64	B	-0.05	NO
92	Tustin Avenue and Santa Clara Avenue	AM	1.04	F	1.10	F	0.06	YES	0.94	E	-0.10	NO
		PM	0.71	C	0.78	C	0.07	NO	0.68	B	-0.03	NO
96	SR-55 NB Ramps / Del Amo Avenue and Newport Avenue	AM	25.4	C	25.6	C	0.2	NO	24.4	C	-1.0	NO
		PM	39.1	D	46.2	D	7.1	YES	28.5	C	-10.6	NO
98	Red Hill Avenue and Warner Avenue	AM	0.56	A	0.58	A	0.02	NO	0.56	A	0.00	NO
		PM	0.88	D	0.95	E	0.07	YES	0.80	D	-0.08	NO
100	Red Hill Avenue and Alton Parkway	AM	0.86	D	0.93	E	0.07	YES	0.68	B	-0.18	NO
		PM	1.18	F	1.49	F	0.31	YES	1.28	F	0.10	YES
105	Von Karman Avenue and Barranca Parkway	AM	0.93	E	0.93	E	0.00	NO	0.93	E	0.00	NO
		PM	1.23	F	1.28	F	0.05	YES	1.24	F	0.01	NO

As shown in Table 8-5, impacts are expected to remain at the following intersections:

- **INT 36 – Bristol Street and Warner Avenue (City of Santa Ana)**
    - Due to limited right-of-way, feasible improvements could not be developed. The LOS cannot be returned to an acceptable LOS; the impact is to remain in the AM peak hour.
- **INT 44 – Flower Street and 1st Street (City of Santa Ana)**
    - A mitigation measure was developed but only resulted in partial mitigation of the impact. The LOS cannot be returned to an acceptable LOS; the impact is to remain in the PM peak hour.
- **INT 46 – Flower Street and Segerstrom Avenue (City of Santa Ana)**
    - Due to limited right-of-way, feasible improvements could not be developed. The LOS cannot be returned to an acceptable LOS; the impact is to remain in the PM peak hour.
- **INT 47 – Flower Street and Segerstrom Avenue (City of Santa Ana)**
    - Due to limited right-of-way, feasible improvements could not be developed. The LOS cannot be returned to an acceptable LOS; the impact is to remain in the PM peak hour.
- **INT 55 – Main Street and McFadden Avenue (City of Santa Ana)**
    - Due to limited right-of-way, feasible improvements could not be developed. The LOS cannot be returned to an acceptable LOS; the impact is to remain in the AM peak hour.
- **INT 56 – Main Street and Edinger Avenue (City of Santa Ana)**
    - Due to limited right-of-way, feasible improvements could not be developed. The LOS cannot be returned to an acceptable LOS; the impact is to remain in the PM peak hour.
- **INT 62 – Santiago Street and Santa Ana Boulevard (City of Santa Ana)**
    - Due to limited right-of-way and the implementation of the OC Streetcar, a mitigation measure was developed but only resulted in partial mitigation of the impact. The LOS cannot be returned to an acceptable LOS; the impact is to remain in the AM and PM peak hours.
- **INT 63 – Standard Avenue and 4th Street (City of Santa Ana)**
    - A mitigation measure was developed but only resulted in partial mitigation of the impact. The LOS cannot be returned to an acceptable LOS; the impact is to remain in the AM and PM peak hours.

- **INT 64 – Standard Avenue and 1st Street (City of Santa Ana)**
    - Due to limited right-of-way and the planned implementation of the bike lanes along both Standard Avenue and First Street, no feasible improvements were identified.The LOS cannot be returned to an acceptable LOS; the impact is to remain in the AM and PM peak hours.
- **INT 80 – Grand Avenue and Chestnut Avenue (City of Santa Ana)**
    - Due to limited right-of-way and the planned implementation of the bike lanes along Chestnut Avenue, no feasible improvements were identified. The LOS cannot be returned to an acceptable LOS; the impact is to remain in the AM peak hour.
- **INT 82 – Grand Avenue and Edinger Avenue (City of Santa Ana)**
    - Due to limited right-of-way, feasible improvements could not be developed. The LOS cannot be returned to an acceptable LOS; the impact is to remain in the PM peak hour.
- **INT 100 – Red Hill Avenue and Alton Parkway (City of Irvine)**
    - Due to limited right-of-way, a mitigation measure was developed and resulted in mitigating the impacts in the AM peak hour only. The LOS cannot be returned to an acceptable LOS in the PM peak hour; additionally, the impact is to remain in the PM peak hour.

9.0 Conclusions

This traffic analysis report has been prepared in support of the General Plan Update (GPU) Draft Program Environmental Impact Report (PEIR) for the City of Santa Ana and to assess requested changes to the Orange County Transportation Authority's (OCTA) Master Plan of Arterial Highways (MPAH) by the City of Santa Ana. The purpose of this study is to identify traffic impacts due to the implementation of the proposed project (General Plan update). This study was prepared in conformance with CEQA guidelines and in consultation with the OPR Technical Advisory as well as the traffic impact analysis guidelines for the City of Santa Ana and local jurisdictions. CEQA identifies VMT as the preferred metric for identifying environmental impacts. However, intersection impacts and roadway LOS are also evaluated in order to address local network performance. A summary of the analysis is provided below.

9.1 VMT IMPACT ANALYSIS

A VMT analysis was conducted to determine impacts due to the implementation of the project. The project was evaluated to determine the potential project level and cumulative impacts.

A project is considered to have a significant impact at the project level if the project VMT/SP (for the land use plan) exceeds 15% below the existing total daily VMT/SP for the County. The VMT impact threshold (15% below the 2020 – No Project County VMT/SP) is 22.0 VMT/SP. The project resulted in a 2045 – With Project City VMT/SP of 20.3 VMT/SP. Thus, the project does not result in a project level VMT impact.

A project is considered to have a significant cumulative impact if the project results in a negative effect on VMT/SP at the citywide level (City VMT/SP is higher with the project than without it). The VMT impact threshold (2045 – No Project City VMT/SP) is 22.8 VMT/SP. The project resulted in a 2045 – With Project City VMT/SP of 20.3 VMT/SP. The project does not result in a negative impact on citywide VMT, therefore does not result in a cumulative impact.

9.2 INTERSECTION LOS ANALYSIS

An intersection impact analysis was conducted in order to determine projects impacts related to the OCTA MPAH and City-level LOS guidelines at study intersections. It should be noted that intersection impacts may be identified but are not indicative of an environmental impact, per CEQA. Significant impacts are expected at twenty-four (24) study intersections for the Future year (2045) With Project scenario. Mitigation of the impacts is not required for CEQA conformance, but measures were developed to address local network performance. All mitigation measures are subject to the approval of the presiding public authority, including funding and implementation. The City of Santa Ana will update its Transportation System Improvement Assessment (TSIA) in order to provide funding for the implementation of the City of Santa Ana Circulation Element Transportation Network buildout. For mitigation measures in adjoining jurisdictions, the City of Santa Ana will contribute to the fairshare of the corresponding mitigation measures.

All identified impacts are expected to be mitigated with the exception of:

- INT 36 – Bristol Street and Warner Avenue (City of Santa Ana)
- INT 44 – Flower Street and 1st Street (City of Santa Ana)
- INT 46 – Flower Street and Segerstrom Avenue (City of Santa Ana)
- INT 47 – Flower Street and Segerstrom Avenue (City of Santa Ana)
- INT 55 – Main Street and McFadden Avenue (City of Santa Ana)

- INT 56 – Main Street and Edinger Avenued (City of Santa Ana)
- INT 62 – Santiago Street and Santa Ana Boulevard (City of Santa Ana)
- INT 63 – Standard Avenue and 4th Street (City of Santa Ana)
- INT 64 – Standard Avenue and 1st Street (City of Santa Ana)
- INT 80 – Grand Avenue and Chestnut Avenue (City of Santa Ana)
- INT 82 – Grand Avenued and Alton Parkway (City of Santa Ana)
- INT 100 – Red Hill Avenue and Alton Parkway (City of Irvine)

9.3 ROADWAY LOS

Roadway LOS was assessed to determine conformance with the City of Santa Ana MPSH minimum level of service requirements. Eleven study roadways currently operate at an unacceptable LOS. Thirteen study roadways are expected to operate at an unacceptable LOS in the Future Year (2045) No Project scenario. Eight roadways are expected to operate at an unacceptable LOS in the Future Year (2045) With Project scenario. Although the LOS exceeds the standard established in the Circulation Element, physical improvements are not feasible due to right-of-way constraints.

10.0 Appendices

- APPENDIX A – LANE GEOMETRIES
- APPENDIX B – INTERSECTION VOLUMES
- APPENDIX C – OCTAM VOLUME PLOTS
- APPENDIX D – ANALYSIS WORKSHEETS
- APPENDIX E – MITIGATION WORKSHEETS
- APPENDIX F – VMT CALCULATIONS
- APPENDIX G – OCTAM 2045 VOLUME COMPARISON PLOTS
- APPENDIX H - COUNTS

APPENDIX A
LANE GEOMETRIES

APPENDIX A.1
LANE GEOMETRIES – 2020 NP

Santa Ana Circulation Element

Scenario Report

Scenario:	2020 NP AM Peak Hour
Command:	Default Command
Volume:	2020 NP AM
Geometry:	NP
Impact Fee:	Default Impact Fee
Trip Generation:	Default Trip Generation
Trip Distribution:	Default Trip Distribution
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

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Santa Ana Circulation Element

Lane Geometry Report

Number of approach lanes: (L) (LT) (T) (RT) (R) (LTR)

Node	Intersection	NB	SB	EB	WB
1	Euclid St and 1st St	102100	102100	102100	102100
2	Euclid St and McFadden Ave	102100	102100	101100	101100
3	Euclid St and Edinger Ave	202100	202100	102010	102010
4	Newhope St and Hazard Ave	101100	101100	101100	101100
5	Newhope St and McFadden Ave	101100	101100	101100	101100
6	Harbor Blvd and SR-22 WB Off-Ramp /	103000	002100	000001	110010
7	Trask Avenue and SR-22 EB On-Ramp	000000	000000	201000	001100
8	Harbor Blvd and Westminster Ave	103010	103010	102100	103010
9	Harbor Blvd and 1st St	103010	103010	202100	202100
10	Harbor Blvd and McFadden Ave	203010	202100	101100	101100
11	Harbor Blvd and Edinger Ave	203010	203010	202100	203010
12	Harbor Blvd and Warner Ave	202100	203010	203010	203010
13	Harbor Blvd and Segerstrom Ave	202100	102100	101100	102010
14	MacArthur Blvd and Hyland Ave	200100	101010	103010	103010
15	MacArthur Blvd and Harbor Blvd	203010	203010	103010	103010
16	Harbor Blvd and Sunflower Ave	203010	203010	101100	110100
17	Harbor Blvd and I-405 WB Off-Ramp	004000	004000	000000	100011
18	Harbor Blvd and I-405 EB Off-Ramp	003010	004000	100011	000000
19	Fairview St and Civic Center Dr	102100	102100	010100	110010
20	Fairview St and 1st St	103010	102100	102100	102100
21	Fairview St and McFadden Ave	103010	103010	101100	101100
22	Fairview St and Edinger Ave	202100	202100	202100	202100
23	Fairview St and Warner Ave	202100	202100	202100	202100
24	Fairview St and MacArthur Blvd	202100	203010	203010	203010
25	Fairview Rd and Sunflower Ave	203010	202100	201100	202010
26	Greenville St and Edinger Ave	100010	000000	002100	102000
27	Greenville St and Segerstrom Ave	101100	101010	101100	101100
28	Raitt St and McFadden Ave	101100	101100	101100	101100
29	Raitt St and Edinger Ave	101100	101100	101100	101100
30	Bear St and MacArthur Blvd	102010	102010	102100	102100
31	Bristol St and 17th St	203010	203010	202100	203010
32	Bristol St and Civic Center Dr	102100	102100	101100	101100
33	Bristol St and Santa Ana Blvd	102100	102100	101100	101100
34	Bristol St and 1st St	203010	203010	102100	102100
35	Bristol St and McFadden Ave	103010	103010	101100	101100
36	Bristol St and Warner Ave	202010	202100	103010	103010
37	Bristol St and Segerstrom Ave	102100	102100	101100	101100
38	Bristol St and Alton Ave	102100	103010	101100	100100
39	Bristol St and MacArthur Blvd	203010	202100	203010	203010
40	Bristol St and Sunflower Ave	202110	203010	202110	203010
41	Bristol St and I-405 WB Ramps	004010	004100	000020	111020
42	Bristol St and I-405 EB Ramps	104000	002110	300010	000000
43	Flower St and Santa Ana Blvd	102010	102010	103010	102010
44	Flower St and 1st St	102010	101100	102100	102100
45	Flower St and McFadden Ave	100100	100100	100100	100100
46	Flower St and Segerstrom Ave	101100	101100	101100	101100
47	Flower St and MacArthur Blvd	101100	101100	102100	102100

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Santa Ana Circulation Element

Number of approach lanes: (L) (LT) (T) (RT) (R) (LTR)

Node	Intersection	NB	SB	EB	WB
48	Main St and La Veta Ave	203010	202100	202100	202010
49	Main St and Mainplace Dr / Memory L	202100	202100	202100	202010
50	Main St and 17th St	202010	201100	202100	202100
51	Main St and Civic Center Dr	101100	101100	101100	101100
52	Main St and Santa Ana Blvd	102000	001100	000000	011100
53	Main St and 4th St	001100	001100	000100	000100
54	Main St and 1st St	101100	102010	102100	102100
55	Main St and McFadden Ave	101100	101100	100100	101010
56	Main St and Edinger Ave	101100	101100	102010	102100
57	Main St and MacArthur Blvd	203010	203010	203010	203010
58	Penn Wy and 17th St	200020	000000	002100	103000
59	I-5 NB Off Ramps/17th Street	110010	100010	103010	002100
60	Penn Wy and I-5 SB Ramps	002010	202000	000000	100020
61	Santiago St and Civic Center Dr	100100	100100	010010	000001
62	Santiago St and Santa Ana Blvd	101010	101010	101100	102010
64	Standard Ave and 1st St	100100	000001	101100	101100
65	Standard Ave and Mcfadden Ave	101100	101100	101100	101100
66	Halladay St and Warner Ave	100010	000000	001100	011000
67	Halladay St and Dyer Rd	100100	100100	102100	102100
68	SR-55 SB Ramps and MacArthur Blvd	000000	200020	002110	003010
69	SR-55 NB Ramps and MacArthur Blvd	200010	000000	002020	003010
70	SR-55 SB Ramps and Dyer Rd	110020	011010	103010	203010
71	Glassell St and La Veta Ave	201010	101100	101010	101100
72	Glassell St and SR-22 WB Ramps	102000	002010	000000	100011
73	Grand Ave / Glassell St and SR-22 E	002010	102000	100011	000000
74	Grand Ave and Fairhaven Ave	102100	102010	101100	101010
75	Grand Ave and Santa Clara Ave	102100	101100	100100	101010
76	Grand Ave and 17th St	102100	102010	202100	202100
77	Grand Ave and I-5 NB Ramps	002010	103000	000000	200010
78	Grand Ave and Santa Ana Blvd	102100	102020	201020	010100
79	Grand Ave and 1st St	202100	203010	202100	201100
80	Grand Ave and Chestnut Ave	102100	102100	101100	101100
81	Grand Ave and McFadden Ave	102100	102100	101100	101100
82	Grand Ave and Edinger Ave	102100	102100	102100	102100
83	Grand Ave and Warner Ave	102100	102100	203010	202010
84	SR-55 NB Ramps and Dyer Rd	100011	000000	003010	002100
85	Cambridge St and La Veta Ave	101000	001010	100010	000000
86	Cambridge St and Fairhaven Ave	000000	100010	102000	001100
87	Mabury St and 1st Street	100010	100011	002100	102100
88	Tustin St and La Veta Ave	102100	102100	101100	110010
89	Tustin St and SR-22 WB On-Ramp	202000	002100	000000	000000
90	Tustin St and SR-22 EB Off-Ramp / S	002100	103000	100011	000001
91	Tustin Ave and Fairhaven Ave	202100	202100	101100	101010
92	Tustin Ave and Santa Clara Ave	102100	202100	101100	101100
93	Tustin Ave and 17th St	202010	202100	203010	203010
94	Tustin Ave and 4th St	102100	202010	102100	102100
95	SR-55 SB Ramps / Auto Mall Dr and E	110020	101010	103010	202100
96	SR-55 NB Ramps / Del Amo Ave and Ne	202100	103010	201100	101100
97	Red Hill Ave and Edinger Ave	203010	203010	203010	203010
98	Red Hill Ave and Warner Ave	203100	202100	102100	203010

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Santa Ana Circulation Element

Number of approach lanes: (L) (LT) (T) (RT) (R) (LTR)

Node	Intersection	NB	SB	EB	WB
99	Red Hill Ave and Dyer Rd / barranca	204010	204010	203100	204010
100	Red Hill Ave and Alton Pkwy	103010	103010	102010	201010
101	Red Hill Ave and MacArthur Blvd	202100	203010	203010	103010
102	Red Hill Ave and Main St	202010	202010	202100	202100
103	I-5 SB Ramps and Santa Ana Blvd	000000	200010	203000	002100
104	Tustin Ranch Rd and Warner Ave	000000	200010	203000	003010
105	Von Karman Ave and Barranca Pkwy	201100	202020	203010	204010
106	Red Hill Avenue and El Camino Real	203010	102100	101010	100100
107	Red Hill Avenue and I-5 NB Ramps	103000	003010	000000	200010
108	Red Hill Avenue and I-5 SB Ramps	004010	103000	010010	000000
109	Red Hill Avenue and Nisson Road	103100	102100	100100	100100
110	Red Hill Avenue and Walnut Avenue	102100	102100	101100	201100
111	Red Hill Avenue and Valencia Avenue	103100	102100	101010	201010
112	Tustin Ranch Road and Warner Avenue	003010	203000	000000	300020
113	Tustin Ranch Road and Walnut Avenue	203010	203010	201100	202010
114	SR-55 SB Ramps and Irvine Boulevard	000000	100011	002100	103000
115	SR-55 NB Ramps and Irvine Boulevard	100011	000000	103000	002100

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APPENDIX A.2
LANE GEOMETRIES – 2045 NP

Santa Ana Circulation Element

Scenario Report

Scenario:	2045 NP AM Peak Hour
Command:	Default Command
Volume:	2045 NP AM
Geometry:	MPAH
Impact Fee:	Default Impact Fee
Trip Generation:	Default Trip Generation
Trip Distribution:	Default Trip Distribution
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

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Santa Ana Circulation Element

Lane Geometry Report

Number of approach lanes: (L) (LT) (T) (RT) (R) (LTR)

Node	Intersection	NB	SB	EB	WB
1	Euclid St and 1st St	102100	102100	102100	102100
2	Euclid St and McFadden Ave	102100	102100	101100	101100
3	Euclid St and Edinger Ave	202100	202100	102010	102010
4	Newhope St and Hazard Ave	101100	101100	101100	101100
5	Newhope St and McFadden Ave	101100	101100	101100	101100
6	Harbor Blvd and SR-22 WB Off-Ramp /	103000	002100	000001	110010
7	Trask Avenue and SR-22 EB On-Ramp	000000	000000	201000	001100
8	Harbor Blvd and Westminster Ave	103010	103010	102100	103010
9	Harbor Blvd and 1st St	103010	103010	202100	202100
10	Harbor Blvd and McFadden Ave	203010	202100	101100	101100
11	Harbor Blvd and Edinger Ave	203010	203010	202100	203010
12	Harbor Blvd and Warner Ave	202100	203010	203010	203010
13	Harbor Blvd and Segerstrom Ave	202100	102100	101100	102010
14	MacArthur Blvd and Hyland Ave	200100	101010	103010	103010
15	MacArthur Blvd and Harbor Blvd	203010	203010	103010	103010
16	Harbor Blvd and Sunflower Ave	203010	203010	101100	110100
17	Harbor Blvd and I-405 NB Off-Ramp	004000	004000	000000	100011
18	Harbor Blvd and I-405 SB Off-Ramp	003010	004000	100011	000000
19	Fairview St and Civic Center Dr	102100	102100	010100	110010
20	Fairview St and 1st St	103010	102100	102100	102100
21	Fairview St and McFadden Ave	103010	103010	101100	101100
22	Fairview St and Edinger Ave	202100	202100	202100	202100
23	Fairview St and Warner Ave	202100	202100	202100	202100
24	Fairview St and MacArthur Blvd	202100	203010	203010	203010
25	Fairview Rd and Sunflower Ave	203010	202100	201100	202010
26	Greenville St and Edinger Ave	100010	000000	002100	103000
27	Greenville St and Segerstrom Ave	100100	100100	102100	102100
28	Raitt St and McFadden Ave	101100	101100	101100	101100
29	Raitt St and Edinger Ave	101100	101100	102100	102100
30	Bear St and MacArthur Blvd	102010	102010	102100	102100
31	Bristol St and 17th St	203010	203010	202100	203010
32	Bristol St and Civic Center Dr	102100	102100	101100	101100
33	Bristol St and Santa Ana Blvd	102100	102100	102100	102100
34	Bristol St and 1st St	203010	203010	102100	102100
35	Bristol St and McFadden Ave	103010	103010	101100	101100
36	Bristol St and Warner Ave	202100	202100	103010	103010
37	Bristol St and Segerstrom Ave	102100	102100	102100	102100
38	Bristol St and Alton Ave	102100	103010	101100	100100
39	Bristol St and MacArthur Blvd	203010	202100	203010	203010
40	Bristol St and Sunflower Ave	202110	203010	202110	203010
41	Bristol St and I-405 NB Ramps	004010	004100	000020	111020
42	Bristol St and I-405 SB Ramps	104000	002110	300010	000000
43	Flower St and Santa Ana Blvd	102010	102010	103010	102100
44	Flower St and 1st St	102010	101100	102100	102100
45	Flower St and McFadden Ave	010100	010100	010100	010100
46	Flower St and Segerstrom Ave	101100	101100	102100	102100
47	Flower St and MacArthur Blvd	101100	101100	102100	102100

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Santa Ana Circulation Element

Number of approach lanes: (L) (LT) (T) (RT) (R) (LTR)

Node	Intersection	NB	SB	EB	WB
48	Main St and La Veta Ave	203010	202100	202100	202010
49	Main St and Mainplace Dr / Memory L	202100	202100	202100	202010
50	Main St and 17th St	202010	202010	202100	202100
51	Main St and Civic Center Dr	101100	101100	101100	101100
52	Main St and Santa Ana Blvd	102000	001100	000000	010100
53	Main St and 4th St	001100	001100	001100	001100
54	Main St and 1st St	101100	102010	102100	102100
55	Main St and McFadden Ave	101100	101100	101100	101100
56	Main St and Edinger Ave	101100	101100	102100	102100
57	Main St and MacArthur Blvd	203010	203010	203010	203010
58	Penn Wy and 17th St	200020	000000	002100	103000
59	I-5 NB Off Ramps/17th Street	110010	100010	103010	002100
60	Penn Wy and I-5 SB Ramps	002010	202000	000000	100020
61	Santiago St and Civic Center Dr	100100	100100	010010	000001
62	Santiago St and Santa Ana Blvd	101100	101100	101100	102010
63	Standard Ave and 4th St	102010	102010	101100	101100
64	Standard Ave and 1st St	101100	101100	102100	102100
65	Standard Ave and Mcfadden Ave	101100	101100	101100	101100
66	Halladay St and Warner Ave	100010	000000	002100	012000
67	Halladay St and Dyer Rd	100100	100100	102100	102100
68	SR-55 SB Ramps and MacArthur Blvd	000000	200020	002110	003010
69	SR-55 NB Ramps and MacArthur Blvd	200010	000000	002020	003010
70	SR-55 SB Ramps and Dyer Rd	110020	011010	103010	203010
71	Glassell St and La Veta Ave	201010	101100	101010	101100
72	Glassell St and SR-22 WB Ramps	102000	002010	000000	100011
73	Grand Ave / Glassell St and SR-22 E	002010	102000	100011	000000
74	Grand Ave and Fairhaven Ave	102100	102100	101100	101010
75	Grand Ave and Santa Clara Ave	102100	102100	100100	101010
76	Grand Ave and 17th St	102100	102100	202100	202100
77	Grand Ave and I-5 NB Ramps	002010	103000	000000	200010
78	Grand Ave and Santa Ana Blvd	102100	102020	201020	010100
79	Grand Ave and 1st St	202100	203010	202100	202100
80	Grand Ave and Chestnut Ave	102100	102100	101100	101100
81	Grand Ave and McFadden Ave	102100	102100	101100	101100
82	Grand Ave and Edinger Ave	102100	102100	102100	102100
83	Grand Ave and Warner Ave	102100	102100	203010	202100
84	SR-55 NB Ramps and Dyer Rd	100011	000000	003010	002100
85	Cambridge St and La Veta Ave	101000	001010	100010	000000
86	Cambridge St and Fairhaven Ave	000000	100010	102000	001100
87	Mabury St and 1st Street	100010	100011	002100	102100
88	Tustin St and La Veta Ave	102100	102100	101100	110010
89	Tustin St and SR-22 WB On-Ramp	202000	002100	000000	000000
90	Tustin St and SR-22 EB Off-Ramp / S	002100	103000	100011	000001
91	Tustin Ave and Fairhaven Ave	202100	202100	101100	101010
92	Tustin Ave and Santa Clara Ave	102100	202100	101100	101100
93	Tustin Ave and 17th St	202010	202100	203010	203010
94	Tustin Ave and 4th St	102100	202010	102110	102100
95	SR-55 SB Ramps / Auto Mall Dr and E	110020	101010	103010	202100
96	SR-55 NB Ramps / Del Amo Ave and Ne	202100	103010	201100	101100
97	Red Hill Ave and Edinger Ave	203010	203010	203010	203010

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Santa Ana Circulation Element

Number of approach lanes: (L) (LT) (T) (RT) (R) (LTR)

Node	Intersection	NB	SB	EB	WB
98	Red Hill Ave and Warner Ave	203100	202100	102100	203010
99	Red Hill Ave and Dyer Rd / barranca	204010	204010	203100	204010
100	Red Hill Ave and Alton Pkwy	103010	103010	102010	201010
101	Red Hill Ave and MacArthur Blvd	202100	203010	203010	103010
102	Red Hill Ave and Main St	202010	202010	202100	202100
103	I-5 SB Ramps and Santa Ana Blvd	000000	200010	203000	002100
104	Tustin Ranch Rd and Warner Ave	000000	200010	203000	003010
105	Von Karman Ave and Barranca Pkwy	201100	202020	203010	204010
106	Red Hill Avenue and El Camino Real	203010	102100	101010	100100
107	Red Hill Avenue and I-5 NB Ramps	103000	003010	000000	200010
108	Red Hill Avenue and I-5 SB Ramps	004010	103000	010010	000000
109	Red Hill Avenue and Nisson Road	103100	102100	100100	100100
110	Red Hill Avenue and Walnut Avenue	102100	102100	101100	201100
111	Red Hill Avenue and Valencia Avenue	103100	102100	101010	201010
112	Tustin Ranch Road and Warner Avenue	003010	203000	000000	300020
113	Tustin Ranch Road and Walnut Avenue	203010	203010	201100	202010
114	SR-55 SB Ramps and Irvine Boulevard	000000	100011	002100	103000
115	SR-55 NB Ramps and Irvine Boulevard	100011	000000	103000	002100

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APPENDIX A.3

LANE GEOMETRIES – 2045 WP

Santa Ana Circulation Element

Scenario Report

Scenario:	2045 WP AM Peak Hour
Command:	Default Command
Volume:	2045 AM
Geometry:	SACE
Impact Fee:	Default Impact Fee
Trip Generation:	Default Trip Generation
Trip Distribution:	Default Trip Distribution
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

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Santa Ana Circulation Element

Lane Geometry Report

Number of approach lanes: (L) (LT) (T) (RT) (R) (LTR)

Node	Intersection	NB	SB	EB	WB
1	Euclid St and 1st St	102100	102100	102100	102100
2	Euclid St and McFadden Ave	102100	102100	101100	101100
3	Euclid St and Edinger Ave	202100	202100	102010	102010
4	Newhope St and Hazard Ave	101100	101100	100100	100100
5	Newhope St and McFadden Ave	101100	101100	101100	101100
6	Harbor Blvd and SR-22 WB Off-Ramp /	103000	002100	000001	110010
7	Trask Avenue and SR-22 EB On-Ramp	000000	000000	201000	001100
8	Harbor Blvd and Westminster Ave	103010	103010	102100	103010
9	Harbor Blvd and 1st St	103010	103010	202100	202100
10	Harbor Blvd and McFadden Ave	203010	202100	101100	100100
11	Harbor Blvd and Edinger Ave	203010	203010	202100	203010
12	Harbor Blvd and Warner Ave	202100	203010	203010	203010
13	Harbor Blvd and Segerstrom Ave	202100	102100	101100	102010
14	MacArthur Blvd and Hyland Ave	200100	101010	103010	103010
15	MacArthur Blvd and Harbor Blvd	203010	203010	103010	103010
16	Harbor Blvd and Sunflower Ave	203010	203010	101100	110100
17	Harbor Blvd and I-405 NB Off-Ramp	004000	004000	000000	100011
18	Harbor Blvd and I-405 SB Off-Ramp	003010	004000	100011	000000
19	Fairview St and Civic Center Dr	102100	102100	010100	110010
20	Fairview St and 1st St	103010	102100	102100	102100
21	Fairview St and McFadden Ave	103010	103010	100100	100100
22	Fairview St and Edinger Ave	202100	202100	202100	202100
23	Fairview St and Warner Ave	202100	202100	202100	202100
24	Fairview St and MacArthur Blvd	202100	203010	203010	203010
25	Fairview Rd and Sunflower Ave	203010	202100	201100	202010
26	Greenville St and Edinger Ave	100010	000000	002100	103000
27	Greenville St and Segerstrom Ave	100100	100100	102100	102100
28	Raitt St and McFadden Ave	100100	100100	100100	100100
29	Raitt St and Edinger Ave	100100	100100	102100	102100
30	Bear St and MacArthur Blvd	102010	102010	102100	102100
31	Bristol St and 17th St	203010	203010	202100	203010
32	Bristol St and Civic Center Dr	102100	102100	100100	101100
33	Bristol St and Santa Ana Blvd	102100	102100	100100	100100
34	Bristol St and 1st St	203010	203010	102100	101100
35	Bristol St and McFadden Ave	103010	103010	100100	100100
36	Bristol St and Warner Ave	202100	202100	103010	103010
37	Bristol St and Segerstrom Ave	102100	102100	102100	102100
38	Bristol St and Alton Ave	102100	103010	101100	100100
39	Bristol St and MacArthur Blvd	203010	202100	203010	203010
40	Bristol St and Sunflower Ave	202110	203010	202110	203010
41	Bristol St and I-405 NB Ramps	004010	004100	000020	111020
42	Bristol St and I-405 SB Ramps	104000	002110	300010	000000
43	Flower St and Santa Ana Blvd	102010	102010	102010	102010
44	Flower St and 1st St	101010	101100	101100	101100
45	Flower St and McFadden Ave	100100	100100	100100	100100
46	Flower St and Segerstrom Ave	101100	101100	102100	102100
47	Flower St and MacArthur Blvd	101100	101100	102100	102100

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Santa Ana Circulation Element

Number of approach lanes: (L) (LT) (T) (RT) (R) (LTR)

Node	Intersection	NB	SB	EB	WB
48	Main St and La Veta Ave	203010	202100	202100	202010
49	Main St and Mainplace Dr / Memory L	202100	202100	202100	202010
50	Main St and 17th St	202010	202010	202100	202100
51	Main St and Civic Center Dr	101100	101100	101100	101100
52	Main St and Santa Ana Blvd	102000	001100	000000	010100
53	Main St and 4th St	001100	001100	001100	001100
54	Main St and 1st St	101100	102010	101100	101100
55	Main St and McFadden Ave	101100	101100	100100	100100
56	Main St and Edinger Ave	101100	101100	102100	102100
57	Main St and MacArthur Blvd	203010	203010	203010	203010
58	Penn Wy and 17th St	200020	000000	002100	103000
59	I-5 NB Off Ramps/17th Street	110010	100010	103010	002100
60	Penn Wy and I-5 SB Ramps	002010	202000	000000	100020
61	Santiago St and Civic Center Dr	100100	100100	100100	000001
62	Santiago St and Santa Ana Blvd	101010	101010	100100	102010
63	Standard Ave and 4th St	101010	101010	100100	100100
64	Standard Ave and 1st St	100100	000001	101100	101100
65	Standard Ave and Mcfadden Ave	100100	100100	100100	100100
66	Halladay St and Warner Ave	100010	000000	002100	012000
67	Halladay St and Dyer Rd	100100	100100	102100	102100
68	SR-55 SB Ramps and MacArthur Blvd	000000	200020	002110	003010
69	SR-55 NB Ramps and MacArthur Blvd	200010	000000	002020	003010
70	SR-55 SB Ramps and Dyer Rd	110020	011010	103010	203010
71	Glassell St and La Veta Ave	201010	101100	101010	101100
72	Glassell St and SR-22 WB Ramps	102000	002010	000000	100011
73	Grand Ave / Glassell St and SR-22 E	002010	102000	100011	000000
74	Grand Ave and Fairhaven Ave	102100	102100	101100	100100
75	Grand Ave and Santa Clara Ave	102100	102100	100100	101010
76	Grand Ave and 17th St	102100	102100	202100	202100
77	Grand Ave and I-5 NB Ramps	002010	103000	000000	200010
78	Grand Ave and Santa Ana Blvd	102100	102020	201020	010100
79	Grand Ave and 1st St	202100	203010	202010	202010
80	Grand Ave and Chestnut Ave	102100	102100	100100	100100
81	Grand Ave and McFadden Ave	102100	102100	100100	101100
82	Grand Ave and Edinger Ave	102100	102100	102100	102100
83	Grand Ave and Warner Ave	102100	102100	203010	202100
84	SR-55 NB Ramps and Dyer Rd	100011	000000	003010	002100
85	Cambridge St and La Veta Ave	101000	001010	100010	000000
86	Cambridge St and Fairhaven Ave	000000	100010	101000	000100
87	Mabury St and 1st Street	100010	100011	001100	101100
88	Tustin St and La Veta Ave	102100	102100	101100	110010
89	Tustin St and SR-22 WB On-Ramp	202000	002100	000000	000000
90	Tustin St and SR-22 EB Off-Ramp / S	002100	103000	100011	000001
91	Tustin Ave and Fairhaven Ave	202100	202100	100100	100100
92	Tustin Ave and Santa Clara Ave	102100	202100	100100	100100
93	Tustin Ave and 17th St	202010	202100	203010	203010
94	Tustin Ave and 4th St	102100	202010	102110	102100
95	SR-55 SB Ramps / Auto Mall Dr and E	110020	101010	103010	202100
96	SR-55 NB Ramps / Del Amo Ave and Ne	202100	103010	201100	101100
97	Red Hill Ave and Edinger Ave	203010	203010	203010	203010

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Santa Ana Circulation Element

Number of approach lanes: (L) (LT) (T) (RT) (R) (LTR)

Node	Intersection	NB	SB	EB	WB
98	Red Hill Ave and Warner Ave	203100	202100	102100	203010
99	Red Hill Ave and Dyer Rd / barranca	204010	204010	203100	204010
100	Red Hill Ave and Alton Pkwy	103010	103010	102010	201010
101	Red Hill Ave and MacArthur Blvd	202100	203010	203010	103010
102	Red Hill Ave and Main St	202010	202010	202100	202100
103	I-5 SB Ramps and Santa Ana Blvd	000000	200010	203000	002100
104	Tustin Ranch Rd and Warner Ave	000000	200010	203000	003010
105	Von Karman Ave and Barranca Pkwy	201100	202020	203010	204010
106	Red Hill Avenue and El Camino Real	203010	102100	101010	100100
107	Red Hill Avenue and I-5 NB Ramps	103000	003010	000000	200010
108	Red Hill Avenue and I-5 SB Ramps	004010	103000	010010	000000
109	Red Hill Avenue and Nisson Road	103100	102100	100100	100100
110	Red Hill Avenue and Walnut Avenue	102100	102100	101100	201100
111	Red Hill Avenue and Valencia Avenue	103100	102100	101010	201010
112	Tustin Ranch Road and Warner Avenue	003010	203000	000000	300020
113	Tustin Ranch Road and Walnut Avenue	203010	203010	201100	202010
114	SR-55 SB Ramps and Irvine Boulevard	000000	100011	002100	103000
115	SR-55 NB Ramps and Irvine Boulevard	100011	000000	103000	002100

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APPENDIX B
INTERSECTION VOLUMES

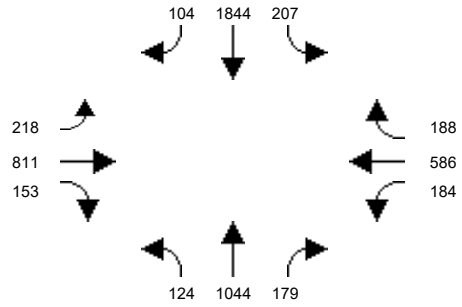
APPENDIX B.1

INTERSECTION VOLUMES –
2020 NP (AM PEAK HOUR)

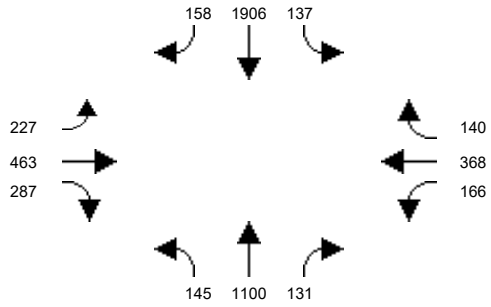
Santa Ana Circulation Element

Intersection Graphic Report
Entered Volume (Base Alternative)
2020 NP AM Peak Hour

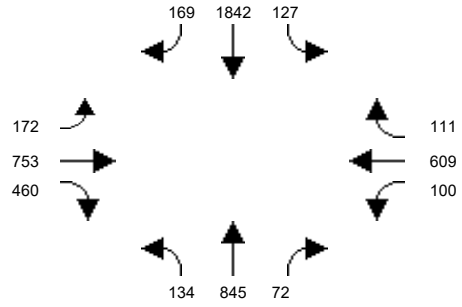
Intersection #1: Euclid St and 1st St



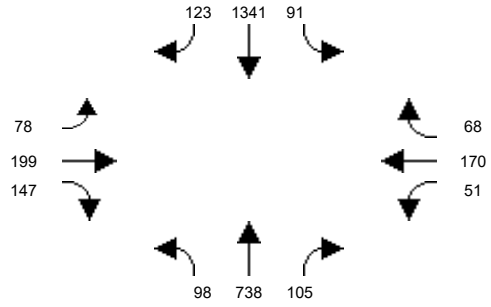
Intersection #2: Euclid St and McFadden Ave



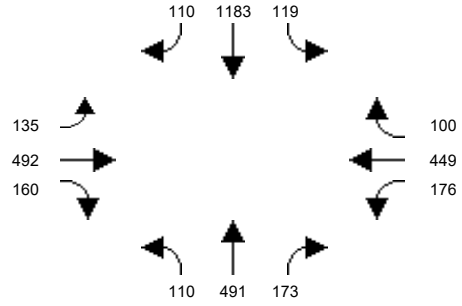
Intersection #3: Euclid St and Edinger Ave



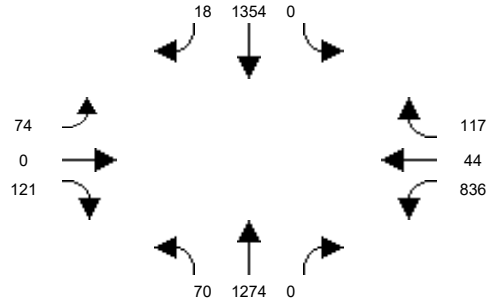
Intersection #4: Newhope St and Hazard Ave



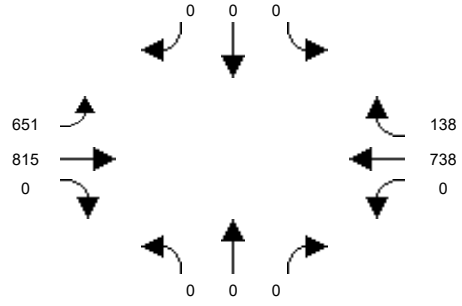
Intersection #5: Newhope St and McFadden Ave



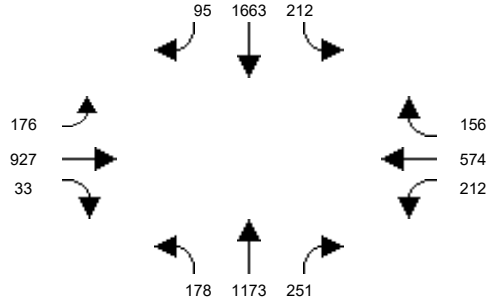
Intersection #6: Harbor Blvd and SR-22 WB Off-Ramp / Banner Dr



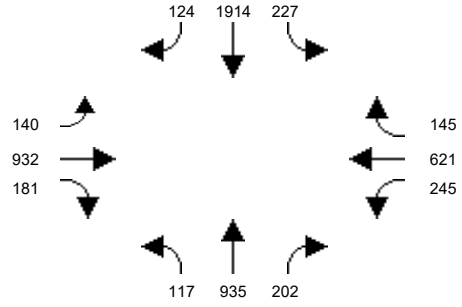
Intersection #7: Trask Avenue and SR-22 EB On-Ramp



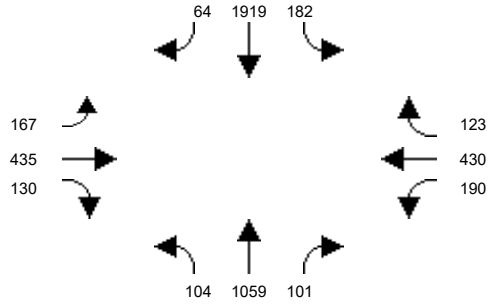
Intersection #8: Harbor Blvd and Westminster Ave



Intersection #9: Harbor Blvd and 1st St



Intersection #10: Harbor Blvd and McFadden Ave



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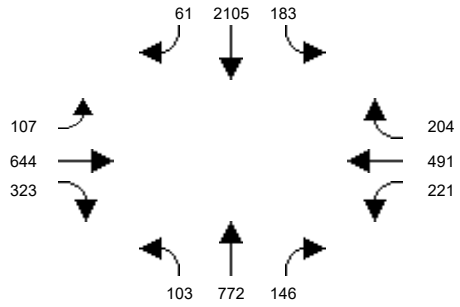
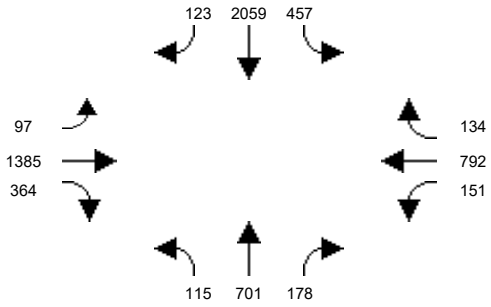
Santa Ana Circulation Element

Intersection Graphic Report
Entered Volume (Base Alternative)
2020 NP AM Peak Hour

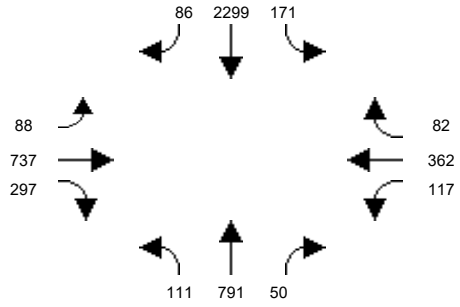
Intersection #11: Harbor Blvd and Edinger Ave



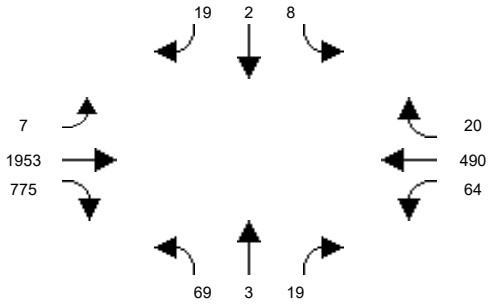
Intersection #12: Harbor Blvd and Warner Ave



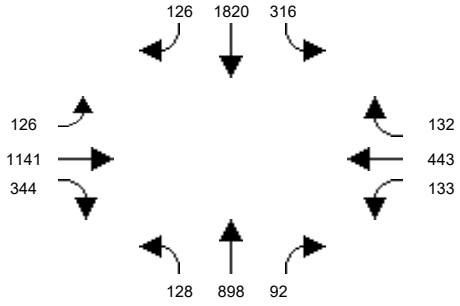
Intersection #13: Harbor Blvd and Segerstrom Ave



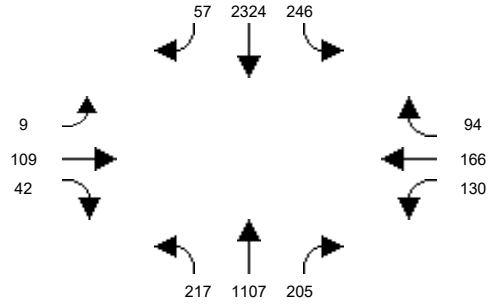
Intersection #14: MacArthur Blvd and Hyland Ave



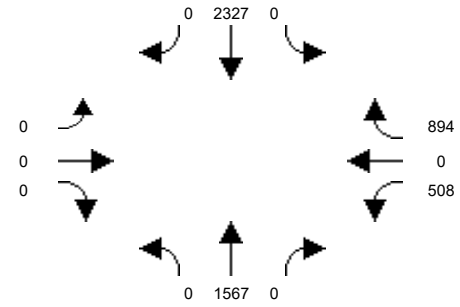
Intersection #15: MacArthur Blvd and Harbor Blvd



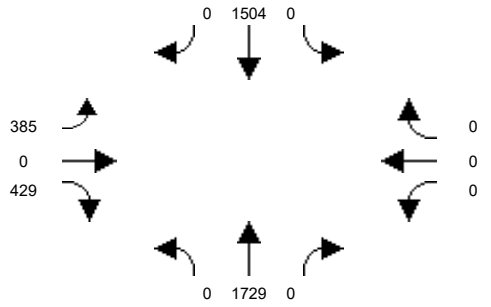
Intersection #16: Harbor Blvd and Sunflower Ave



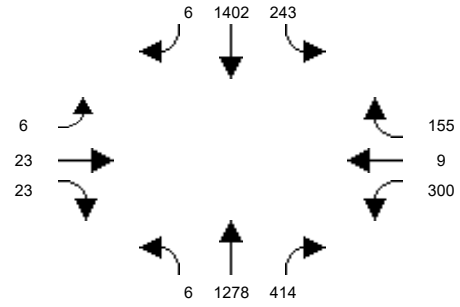
Intersection #17: Harbor Blvd and I-405 WB Off-Ramp



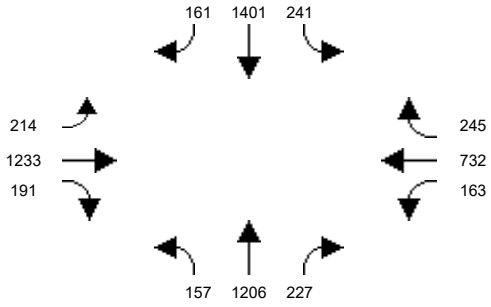
Intersection #18: Harbor Blvd and I-405 EB Off-Ramp



Intersection #19: Fairview St and Civic Center Dr



Intersection #20: Fairview St and 1st St



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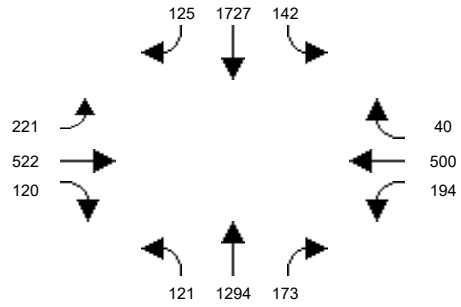
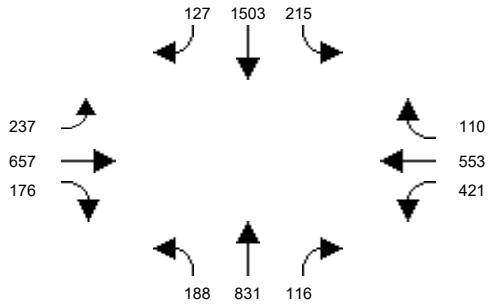
Santa Ana Circulation Element

Intersection Graphic Report
Entered Volume (Base Alternative)
2020 NP AM Peak Hour

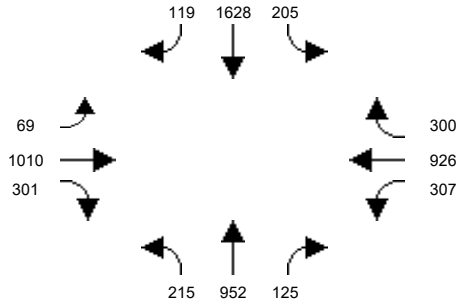
Intersection #21: Fairview St and McFadden Ave



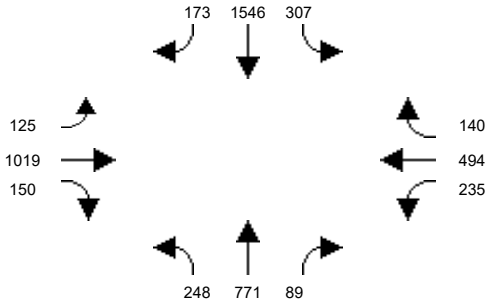
Intersection #22: Fairview St and Edinger Ave



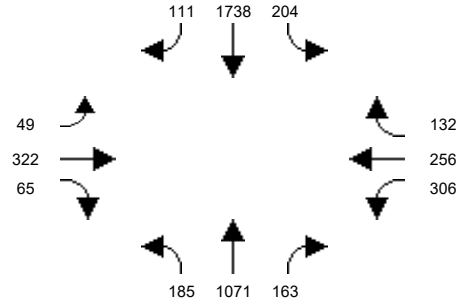
Intersection #23: Fairview St and Warner Ave



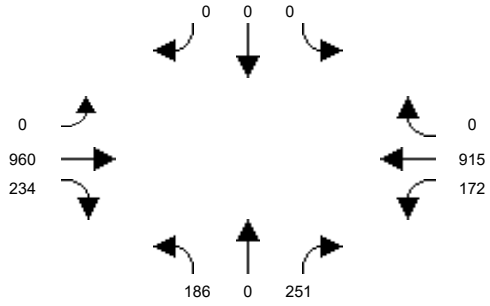
Intersection #24: Fairview St and MacArthur Blvd



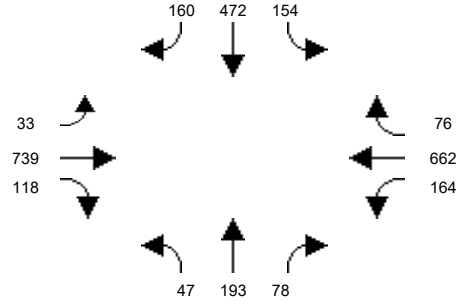
Intersection #25: Fairview Rd and Sunflower Ave



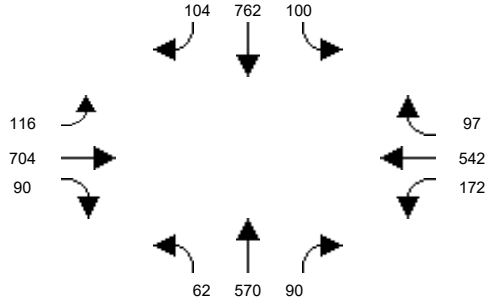
Intersection #26: Greenville St and Edinger Ave



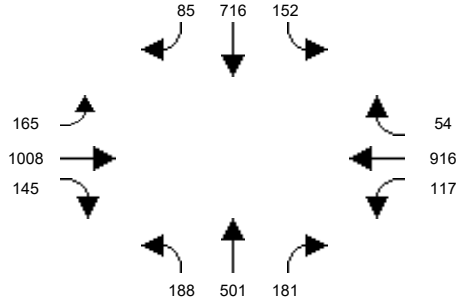
Intersection #27: Greenville St and Segerstrom Ave



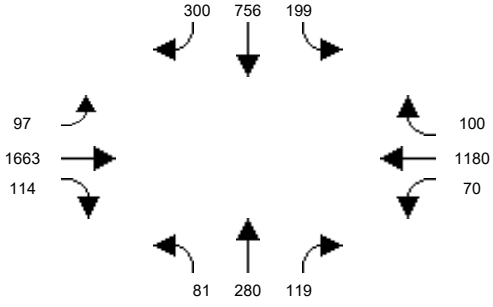
Intersection #28: Raitt St and McFadden Ave



Intersection #29: Raitt St and Edinger Ave



Intersection #30: Bear St and MacArthur Blvd



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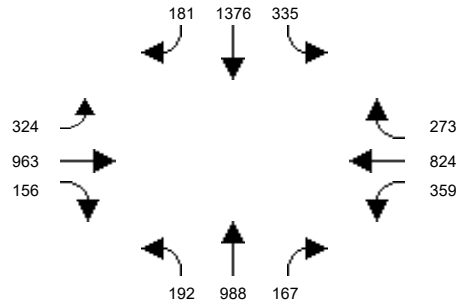
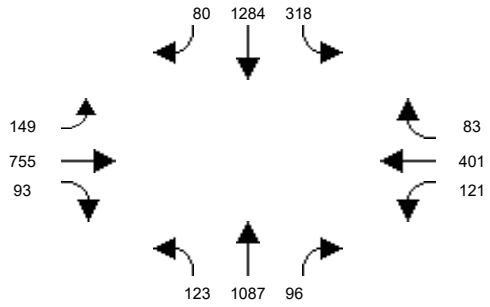
Santa Ana Circulation Element

Intersection Graphic Report
Entered Volume (Base Alternative)
2020 NP AM Peak Hour

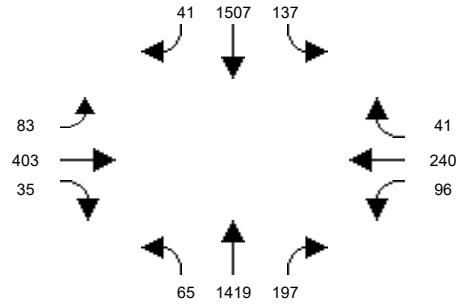
Intersection #31: Bristol St and 17th St



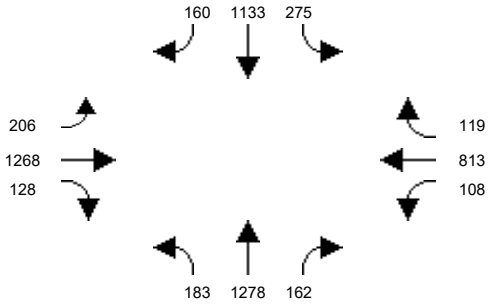
Intersection #32: Bristol St and Civic Center Dr



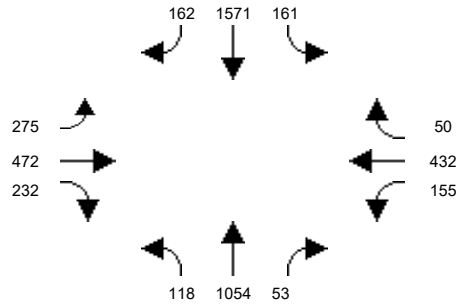
Intersection #33: Bristol St and Santa Ana Blvd



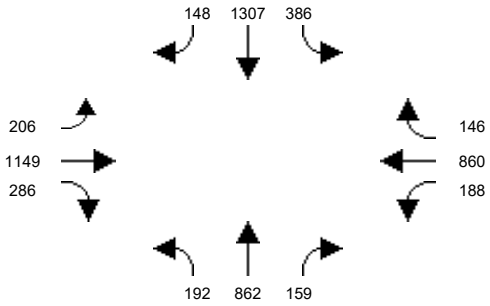
Intersection #34: Bristol St and 1st St



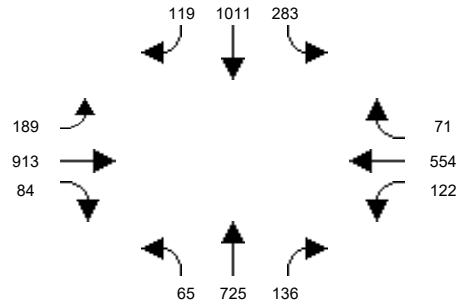
Intersection #35: Bristol St and McFadden Ave



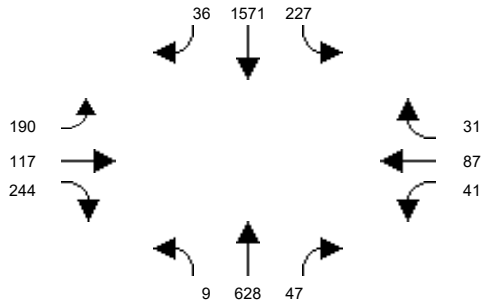
Intersection #36: Bristol St and Warner Ave



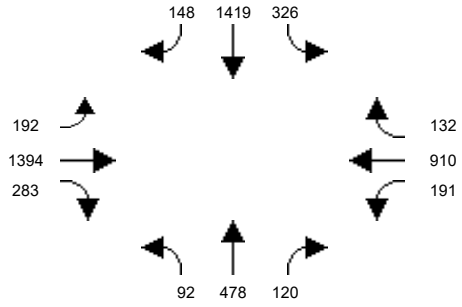
Intersection #37: Bristol St and Segerstrom Ave



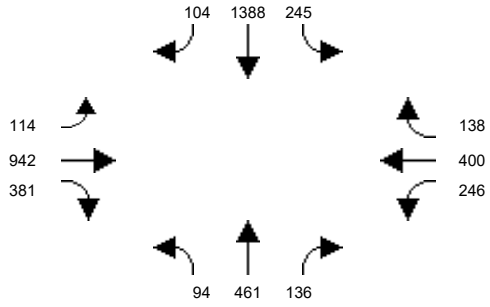
Intersection #38: Bristol St and Alton Ave



Intersection #39: Bristol St and MacArthur Blvd



Intersection #40: Bristol St and Sunflower Ave



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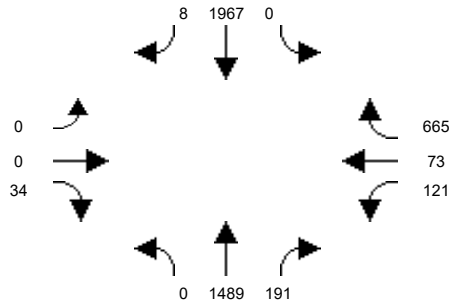
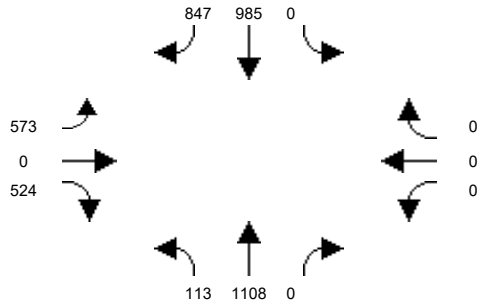
Santa Ana Circulation Element

Intersection Graphic Report
Entered Volume (Base Alternative)
2020 NP AM Peak Hour

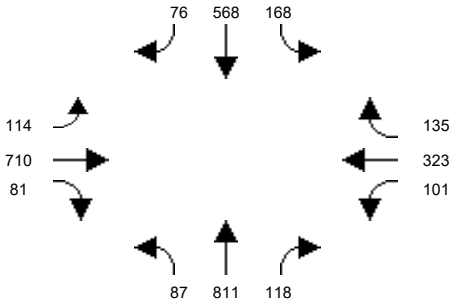
Intersection #41: Bristol St and I-405 WB Ramps



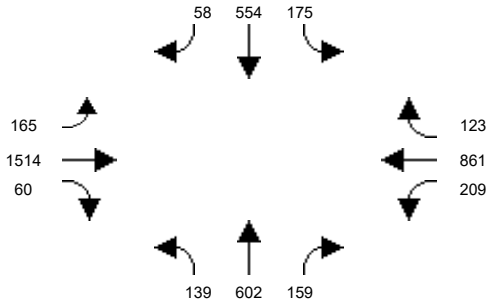
Intersection #42: Bristol St and I-405 EB Ramps



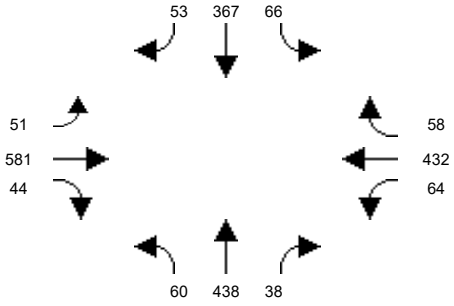
Intersection #43: Flower St and Santa Ana Blvd



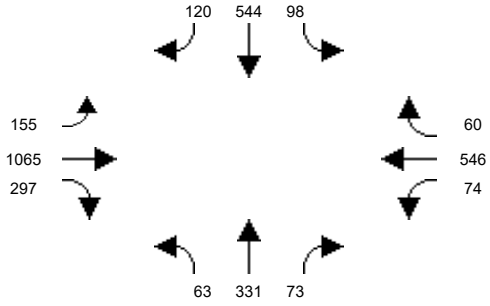
Intersection #44: Flower St and 1st St



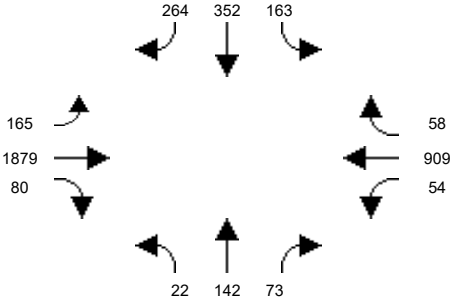
Intersection #45: Flower St and McFadden Ave



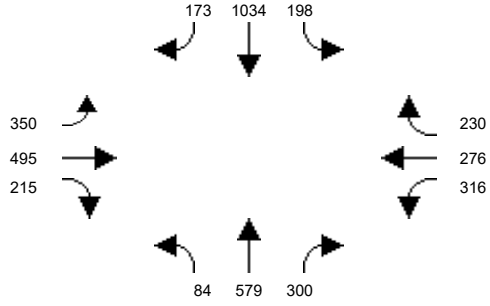
Intersection #46: Flower St and Segerstrom Ave



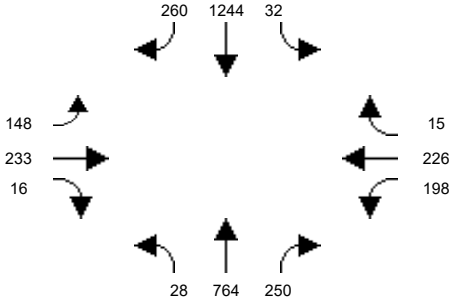
Intersection #47: Flower St and MacArthur Blvd



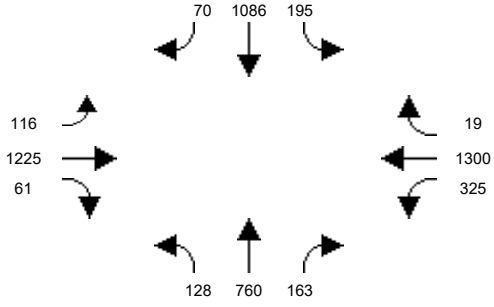
Intersection #48: Main St and La Veta Ave



Intersection #49: Main St and Mainplace Dr / Memory Ln



Intersection #50: Main St and 17th St



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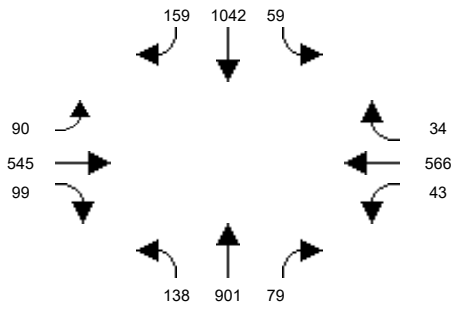
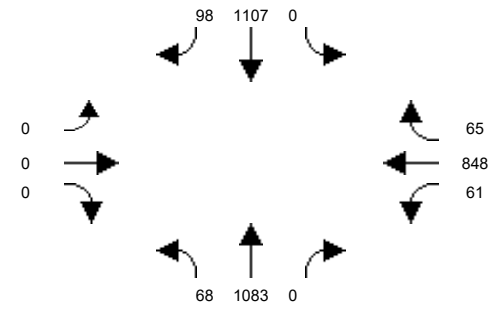
Santa Ana Circulation Element

Intersection Graphic Report
Entered Volume (Base Alternative)
2020 NP AM Peak Hour

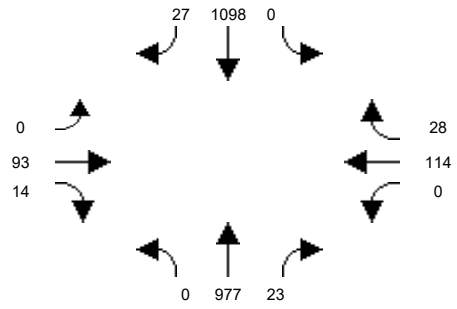
Intersection #51: Main St and Civic Center Dr



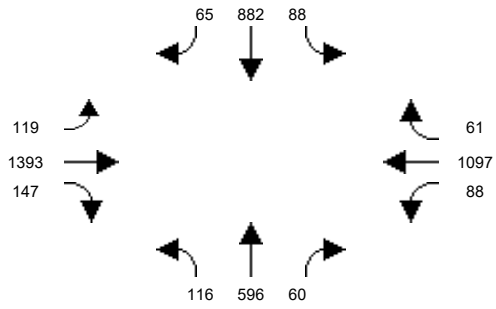
Intersection #52: Main St and Santa Ana Blvd



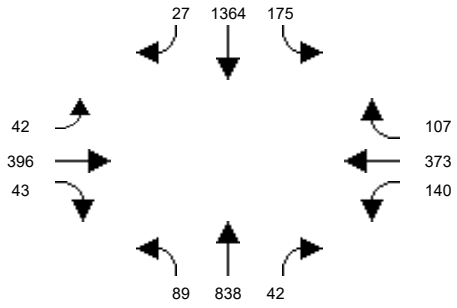
Intersection #53: Main St and 4th St



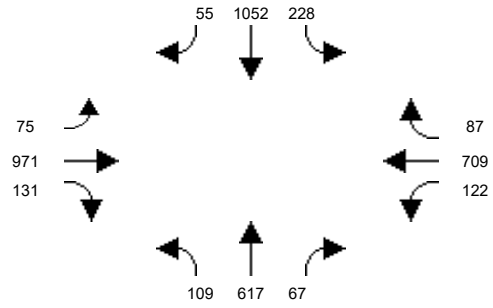
Intersection #54: Main St and 1st St



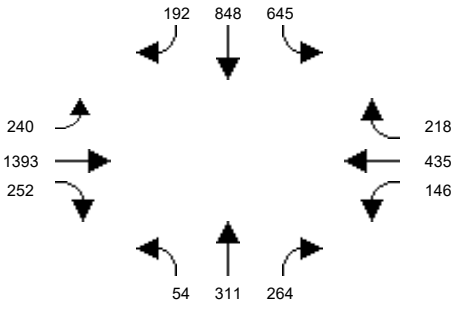
Intersection #55: Main St and McFadden Ave



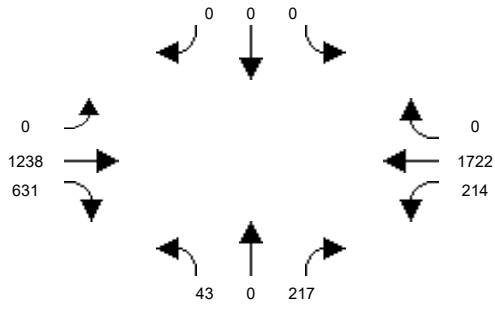
Intersection #56: Main St and Edinger Ave



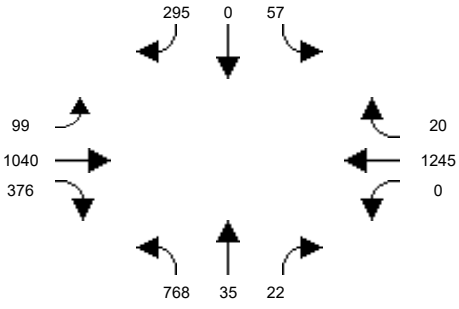
Intersection #57: Main St and MacArthur Blvd



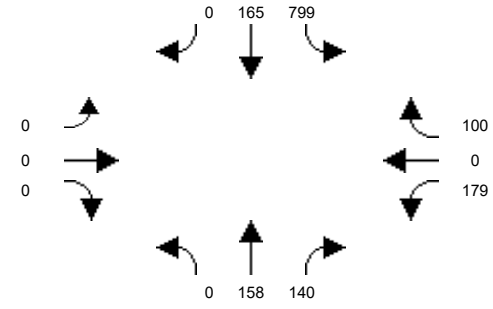
Intersection #58: Penn Wy and 17th St



Intersection #59: I-5 NB Off Ramps/17th Street



Intersection #60: Penn Wy and I-5 SB Ramps



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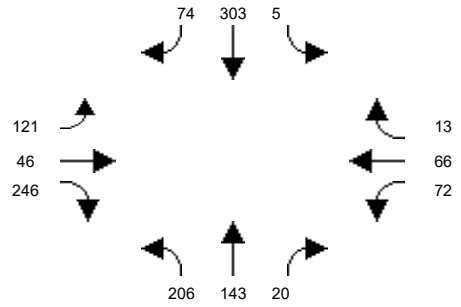
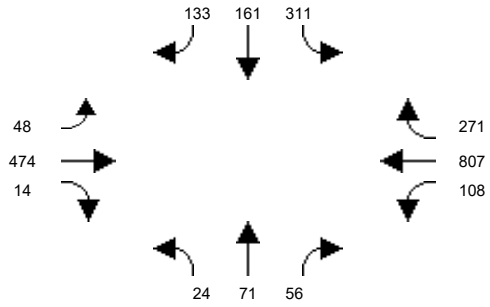
Santa Ana Circulation Element

Intersection Graphic Report
Entered Volume (Base Alternative)
2020 NP AM Peak Hour

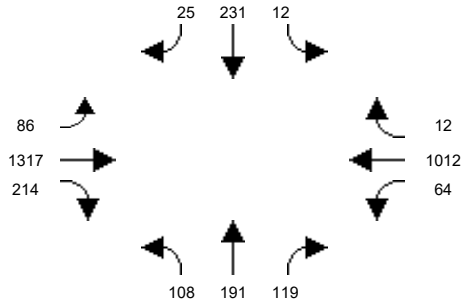
Intersection #61: Santiago St and Civic Center Dr



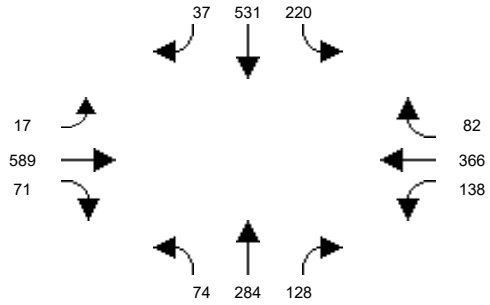
Intersection #62: Santiago St and Santa Ana Blvd



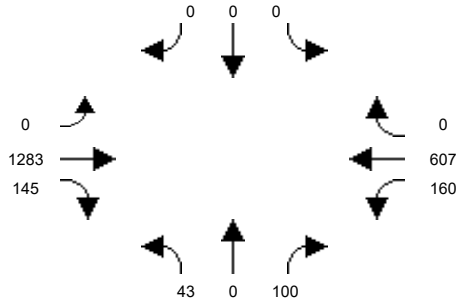
Intersection #64: Standard Ave and 1st St



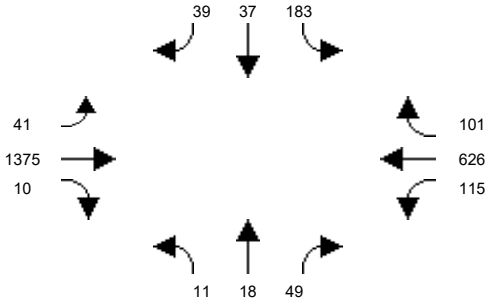
Intersection #65: Standard Ave and Mcfadden Ave



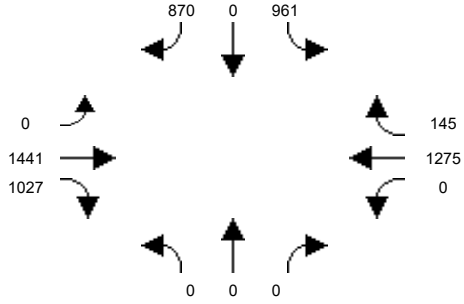
Intersection #66: Halladay St and Warner Ave



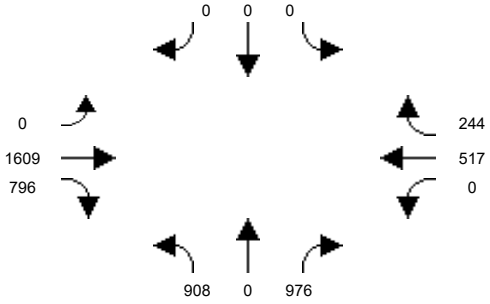
Intersection #67: Halladay St and Dyer Rd



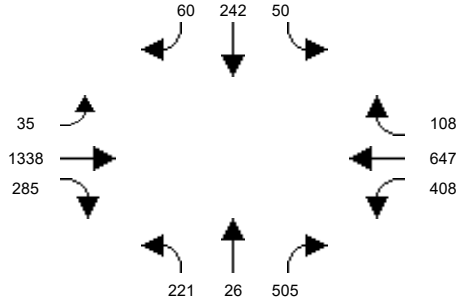
Intersection #68: SR-55 SB Ramps and MacArthur Blvd



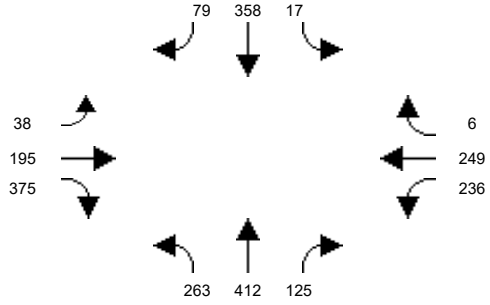
Intersection #69: SR-55 NB Ramps and MacArthur Blvd



Intersection #70: SR-55 SB Ramps and Dyer Rd



Intersection #71: Glassell St and La Veta Ave



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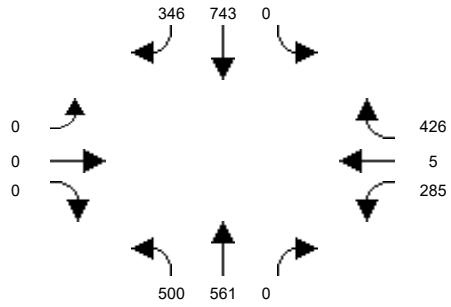
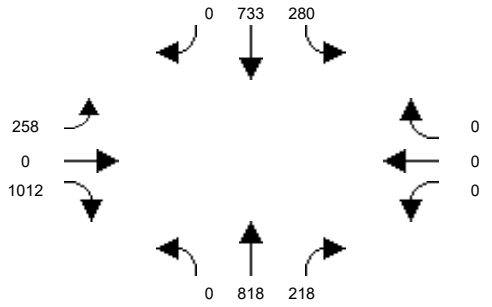
Santa Ana Circulation Element

Intersection Graphic Report
Entered Volume (Base Alternative)
2020 NP AM Peak Hour

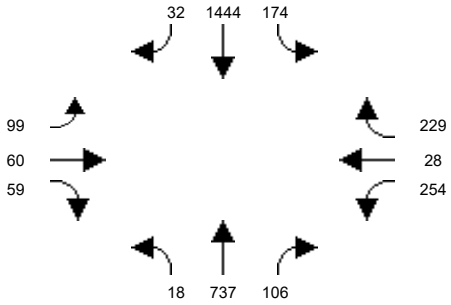
Intersection #72: Glassell St and SR-22 WB Ramps



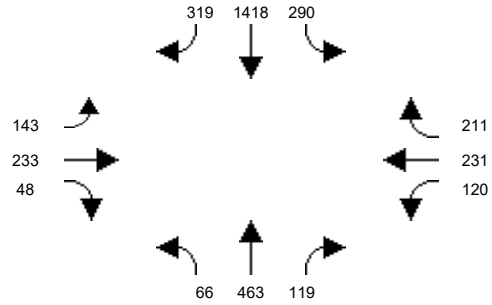
Intersection #73: Grand Ave / Glassell St and SR-22 EB Ramps



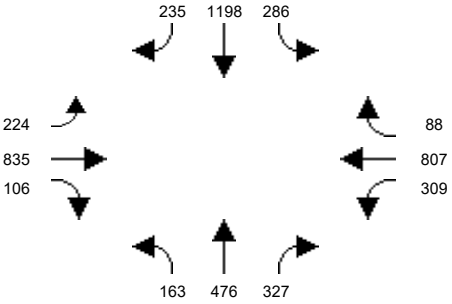
Intersection #74: Grand Ave and Fairhaven Ave



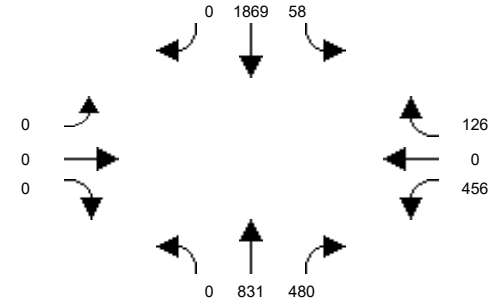
Intersection #75: Grand Ave and Santa Clara Ave



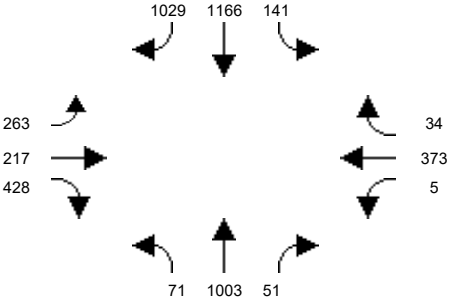
Intersection #76: Grand Ave and 17th St



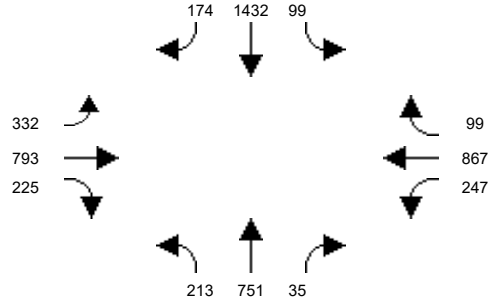
Intersection #77: Grand Ave and I-5 NB Ramps



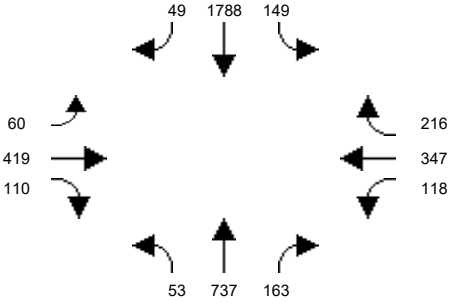
Intersection #78: Grand Ave and Santa Ana Blvd



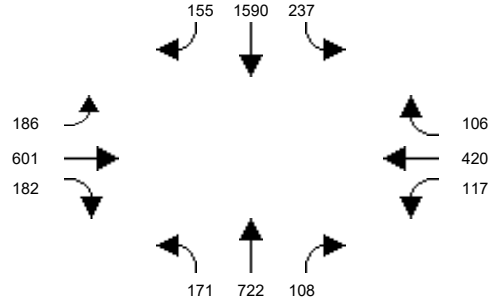
Intersection #79: Grand Ave and 1st St



Intersection #80: Grand Ave and Chestnut Ave



Intersection #81: Grand Ave and McFadden Ave



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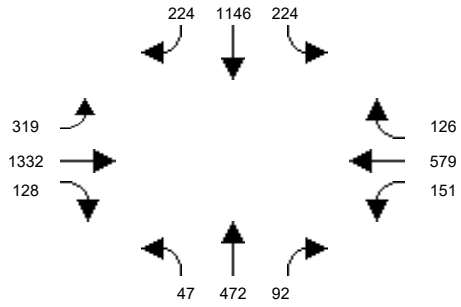
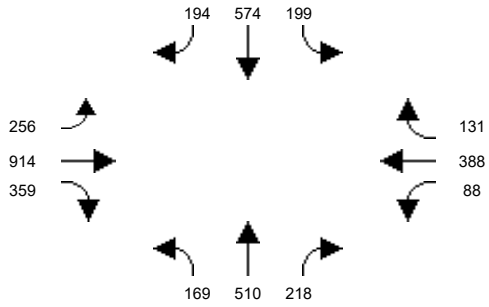
Santa Ana Circulation Element

Intersection Graphic Report
Entered Volume (Base Alternative)
2020 NP AM Peak Hour

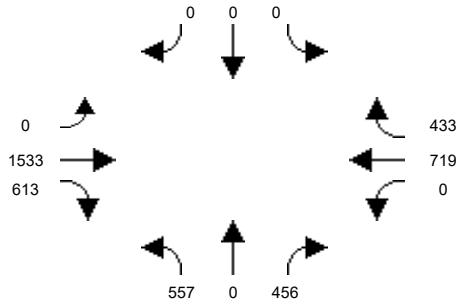
Intersection #82: Grand Ave and Edinger Ave



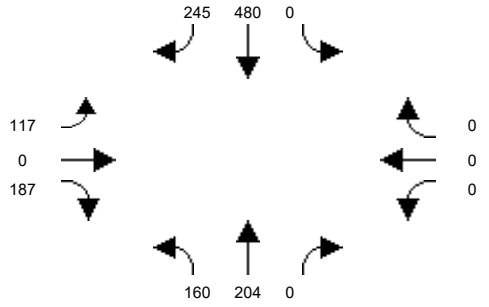
Intersection #83: Grand Ave and Warner Ave



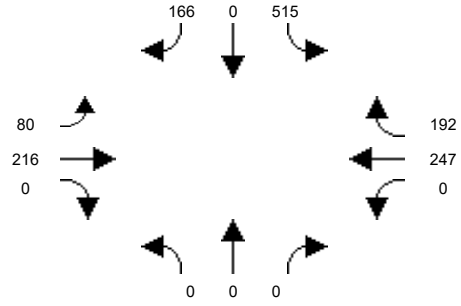
Intersection #84: SR-55 NB Ramps and Dyer Rd



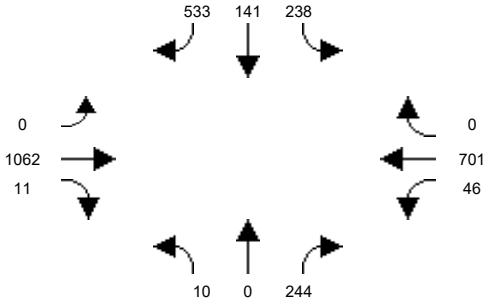
Intersection #85: Cambridge St and La Veta Ave



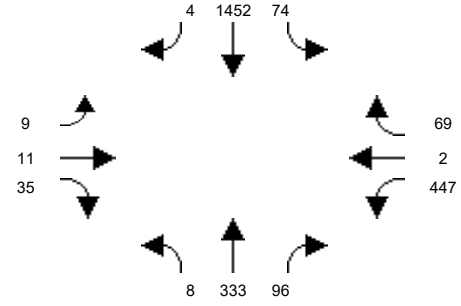
Intersection #86: Cambridge St and Fairhaven Ave



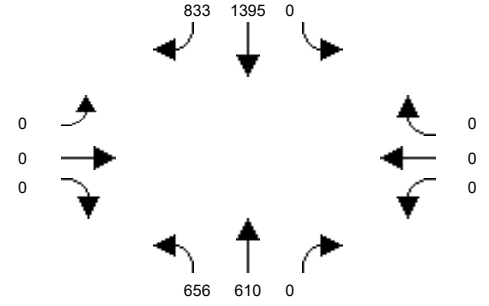
Intersection #87: Mabury St and 1st Street



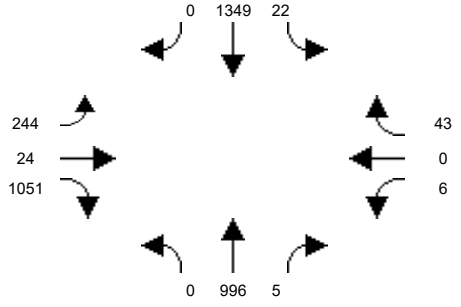
Intersection #88: Tustin St and La Veta Ave



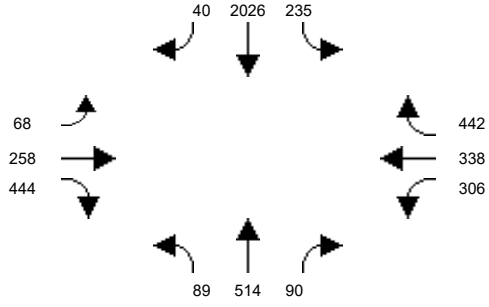
Intersection #89: Tustin St and SR-22 WB On-Ramp



Intersection #90: Tustin St and SR-22 EB Off-Ramp / Seba Ave



Intersection #91: Tustin Ave and Fairhaven Ave



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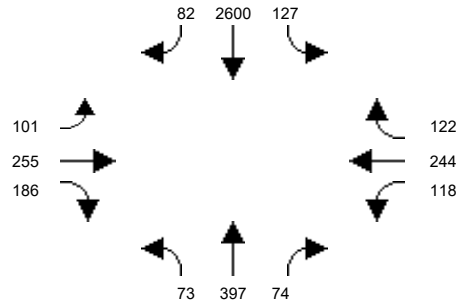
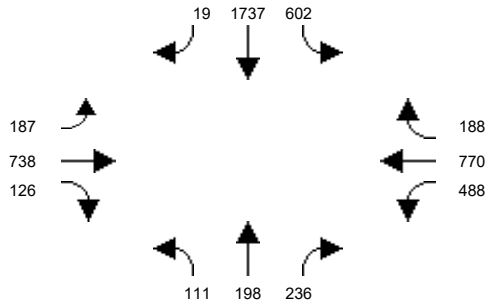
Santa Ana Circulation Element

Intersection Graphic Report
Entered Volume (Base Alternative)
2020 NP AM Peak Hour

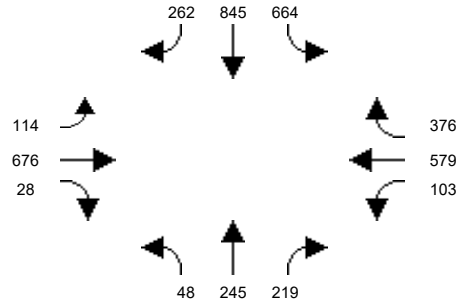
Intersection #92: Tustin Ave and Santa Clara Ave



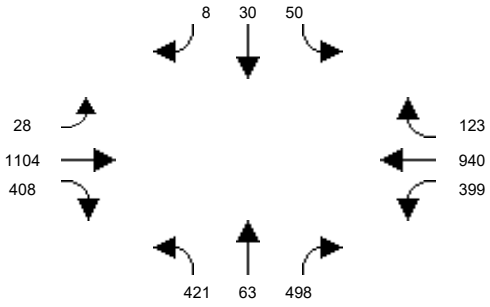
Intersection #93: Tustin Ave and 17th St



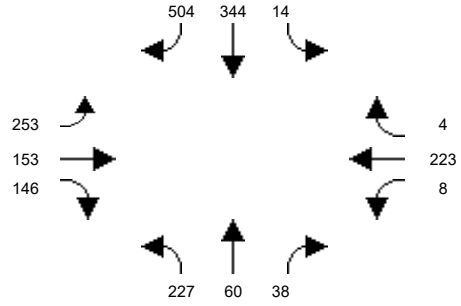
Intersection #94: Tustin Ave and 4th St



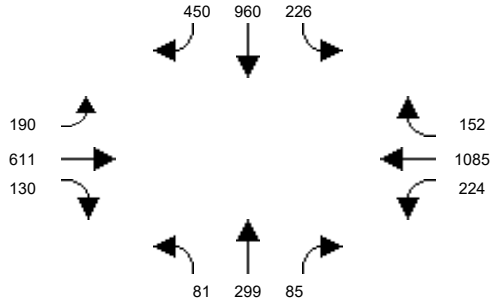
Intersection #95: SR-55 SB Ramps / Auto Mall Dr and Edinger Ave



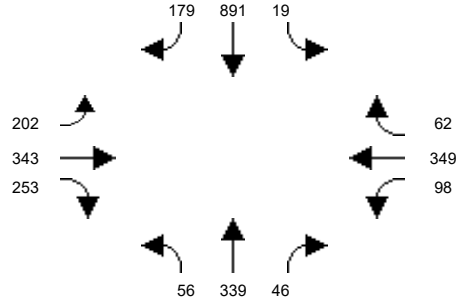
Intersection #96: SR-55 NB Ramps / Del Amo Ave and Newport



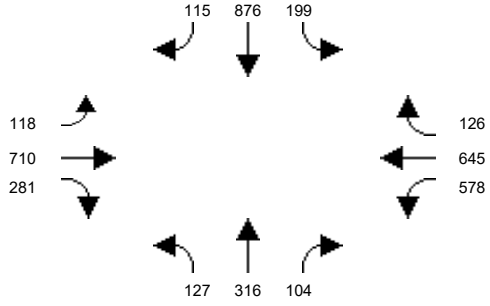
Intersection #97: Red Hill Ave and Edinger Ave



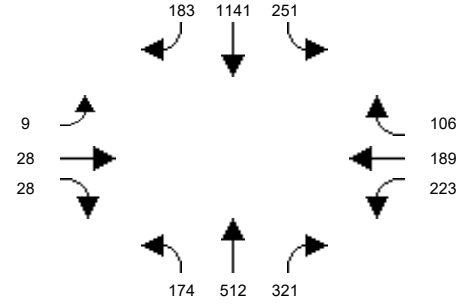
Intersection #98: Red Hill Ave and Warner Ave



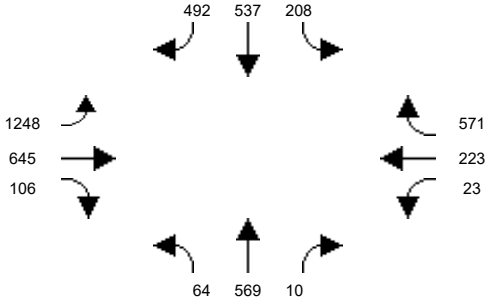
Intersection #99: Red Hill Ave and Dyer Rd / barranca Pkwy



Intersection #100: Red Hill Ave and Alton Pkwy



Intersection #101: Red Hill Ave and MacArthur Blvd



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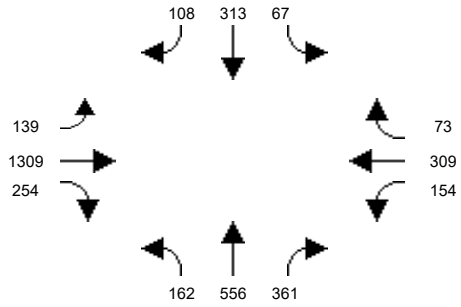
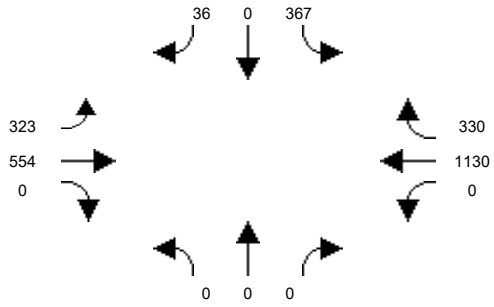
Santa Ana Circulation Element

Intersection Graphic Report
Entered Volume (Base Alternative)
2020 NP AM Peak Hour

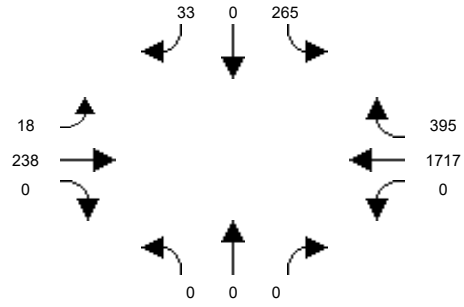
Intersection #102: Red Hill Ave and Main St



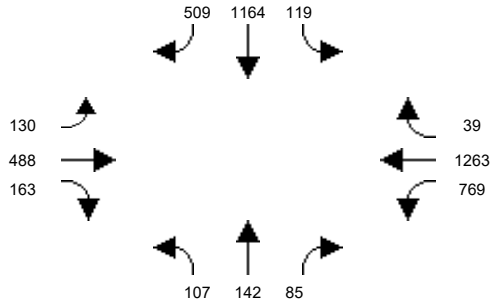
Intersection #103: I-5 SB Ramps and Santa Ana Blvd



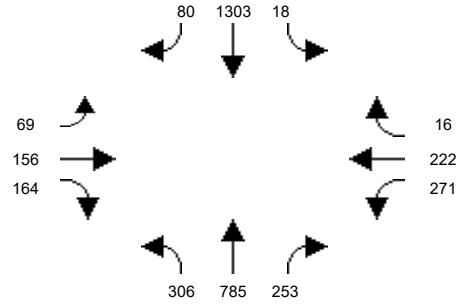
Intersection #104: Tustin Ranch Rd and Warner Ave



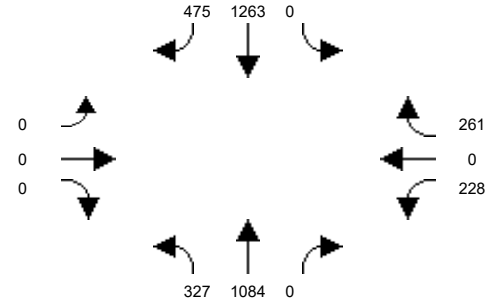
Intersection #105: Von Karman Ave and Barranca Pkwy



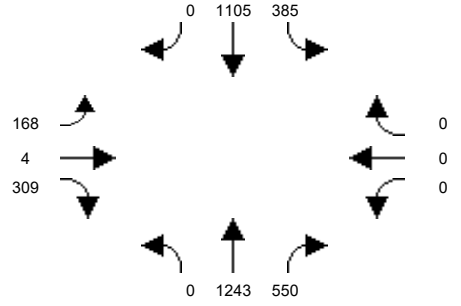
Intersection #106: Red Hill Avenue and El Camino Real



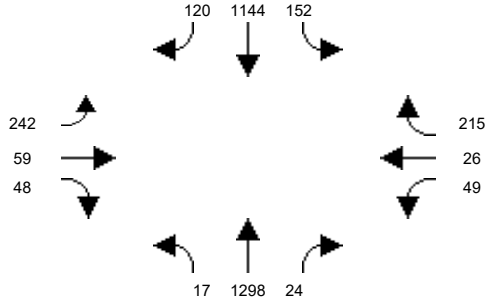
Intersection #107: Red Hill Avenue and I-5 NB Ramps



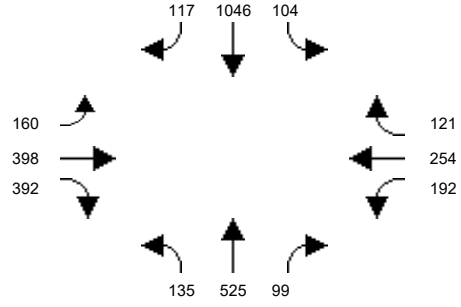
Intersection #108: Red Hill Avenue and I-5 SB Ramps



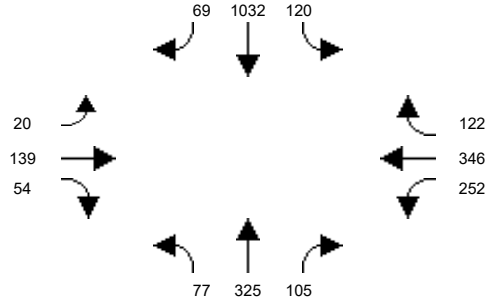
Intersection #109: Red Hill Avenue and Nisson Road



Intersection #110: Red Hill Avenue and Walnut Avenue



Intersection #111: Red Hill Avenue and Valencia Avenue



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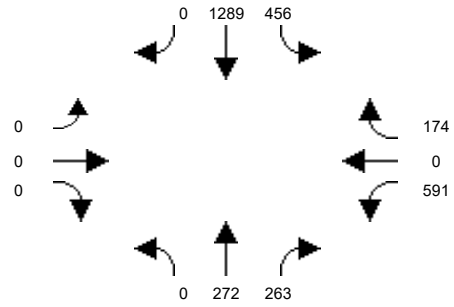
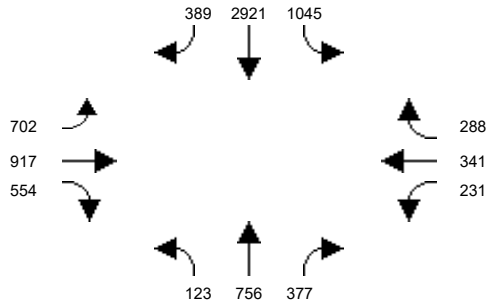
Santa Ana Circulation Element

Intersection Graphic Report
Entered Volume (Base Alternative)
2020 NP AM Peak Hour

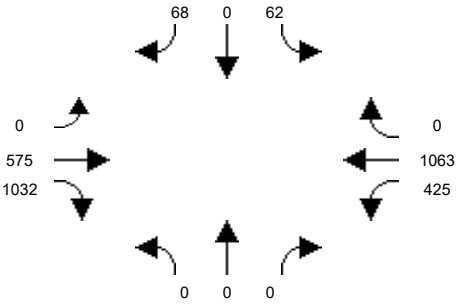
Intersection #112: Tustin Ranch Road and Warner Avenue North



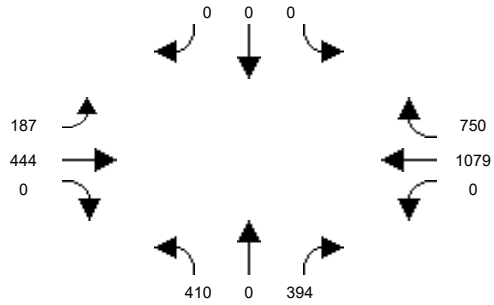
Intersection #113: Tustin Ranch Road and Walnut Avenue



Intersection #114: SR-55 SB Ramps and Irvine Boulevard



Intersection #115: SR-55 NB Ramps and Irvine Boulevard



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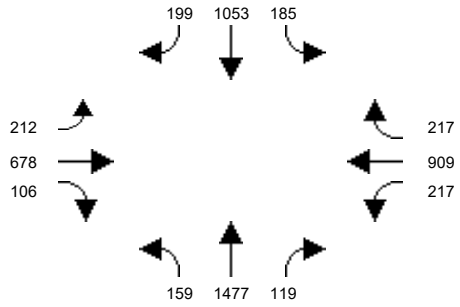
APPENDIX B.2

INTERSECTION VOLUMES –
2020 NP (PM PEAK HOUR)

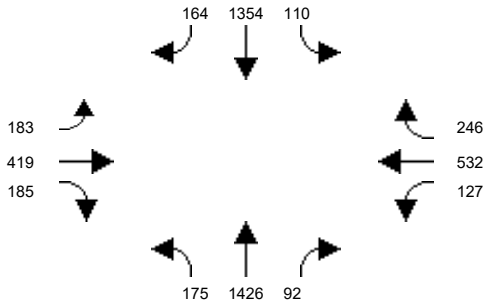
Santa Ana Circulation Element

Intersection Graphic Report
Entered Volume (Base Alternative)
2020 NP PM Peak Hour

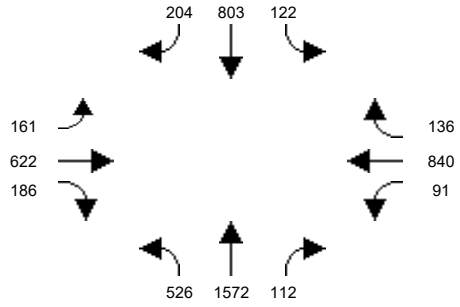
Intersection #1: Euclid St and 1st St



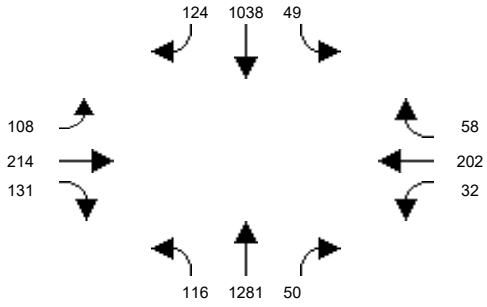
Intersection #2: Euclid St and McFadden Ave



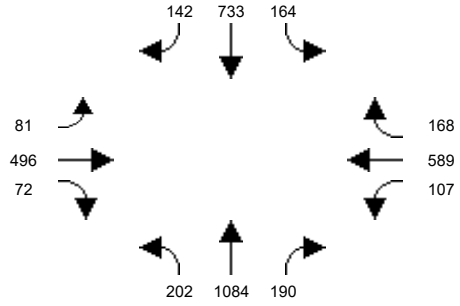
Intersection #3: Euclid St and Edinger Ave



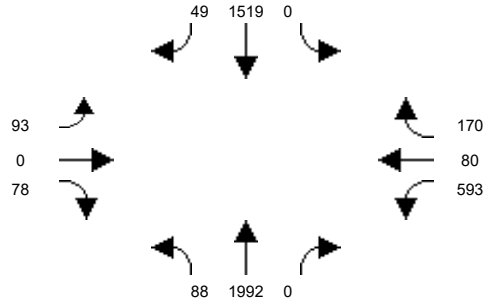
Intersection #4: Newhope St and Hazard Ave



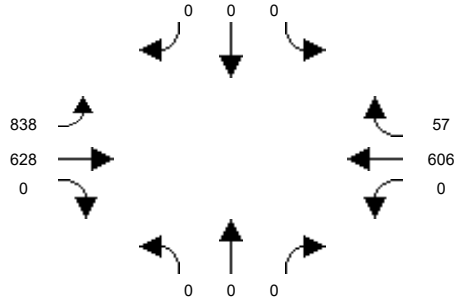
Intersection #5: Newhope St and McFadden Ave



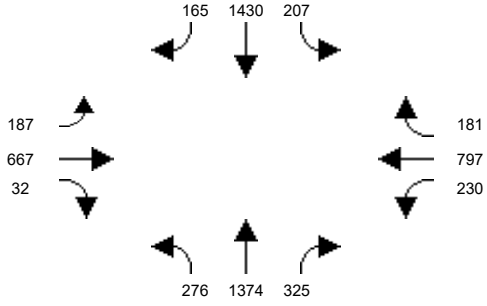
Intersection #6: Harbor Blvd and SR-22 WB Off-Ramp / Banner Dr



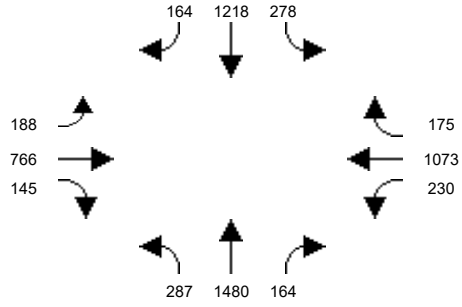
Intersection #7: Trask Avenue and SR-22 EB On-Ramp



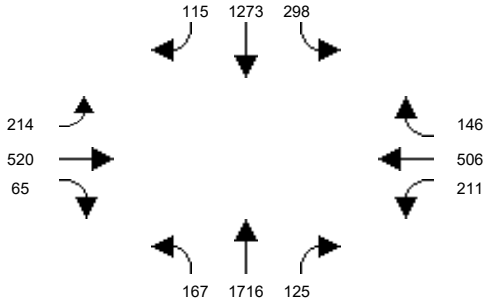
Intersection #8: Harbor Blvd and Westminster Ave



Intersection #9: Harbor Blvd and 1st St



Intersection #10: Harbor Blvd and McFadden Ave



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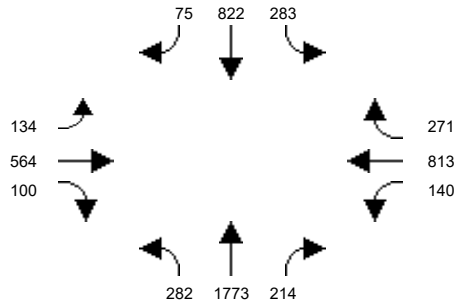
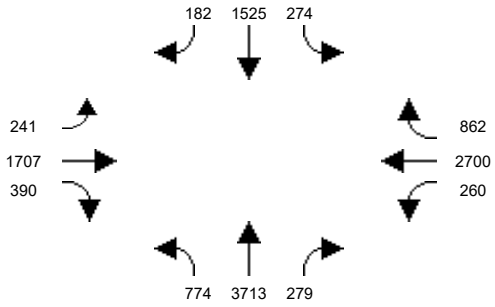
Santa Ana Circulation Element

Intersection Graphic Report
Entered Volume (Base Alternative)
2020 NP PM Peak Hour

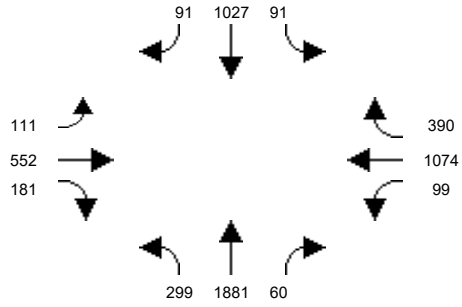
Intersection #11: Harbor Blvd and Edinger Ave



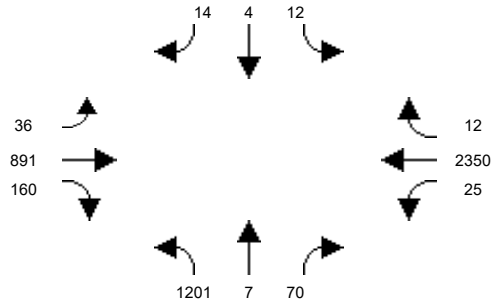
Intersection #12: Harbor Blvd and Warner Ave



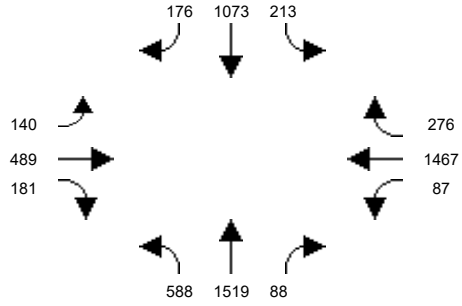
Intersection #13: Harbor Blvd and Segerstrom Ave



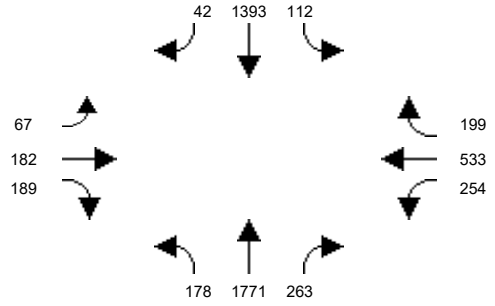
Intersection #14: MacArthur Blvd and Hyland Ave



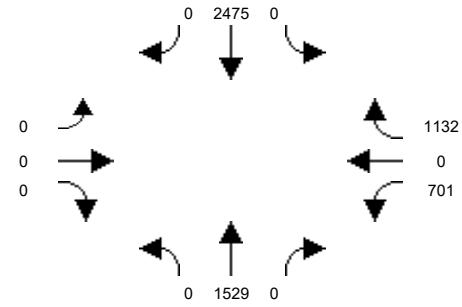
Intersection #15: MacArthur Blvd and Harbor Blvd



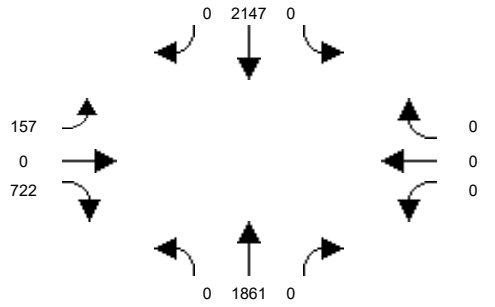
Intersection #16: Harbor Blvd and Sunflower Ave



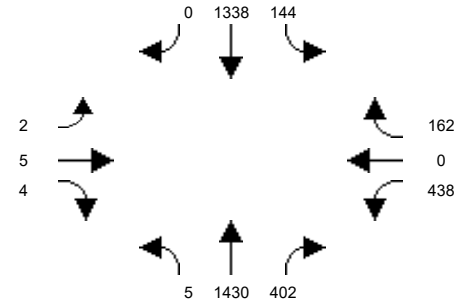
Intersection #17: Harbor Blvd and I-405 WB Off-Ramp



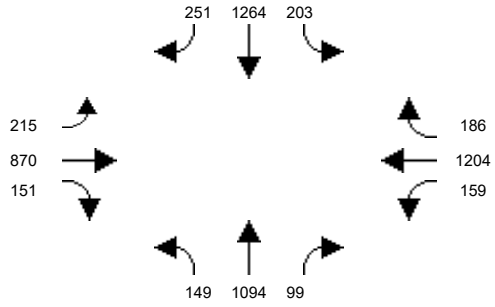
Intersection #18: Harbor Blvd and I-405 EB Off-Ramp



Intersection #19: Fairview St and Civic Center Dr



Intersection #20: Fairview St and 1st St



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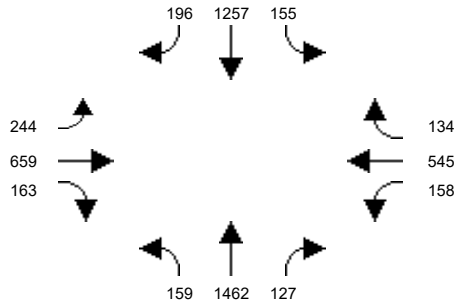
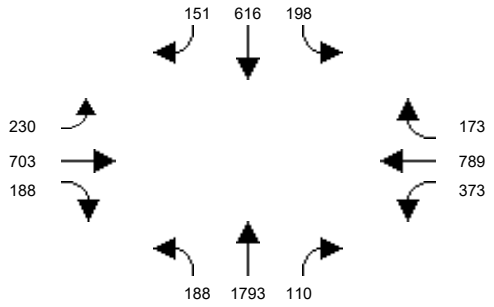
Santa Ana Circulation Element

Intersection Graphic Report
Entered Volume (Base Alternative)
2020 NP PM Peak Hour

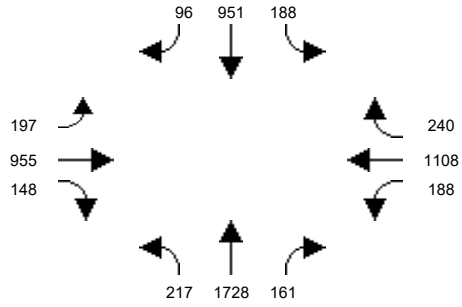
Intersection #21: Fairview St and McFadden Ave



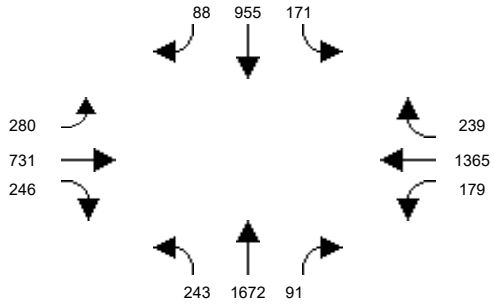
Intersection #22: Fairview St and Edinger Ave



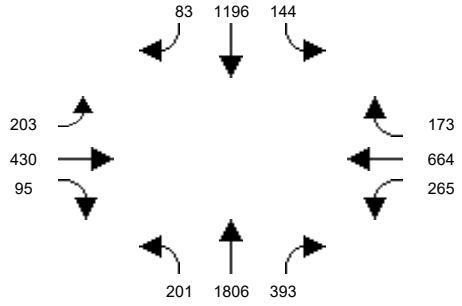
Intersection #23: Fairview St and Warner Ave



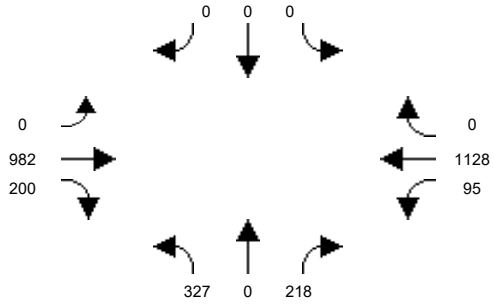
Intersection #24: Fairview St and MacArthur Blvd



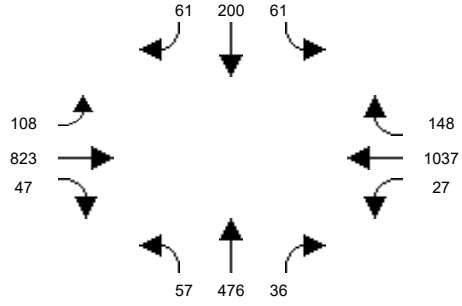
Intersection #25: Fairview Rd and Sunflower Ave



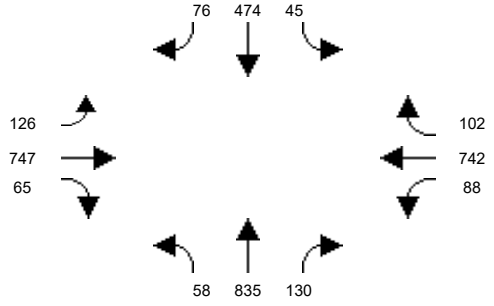
Intersection #26: Greenville St and Edinger Ave



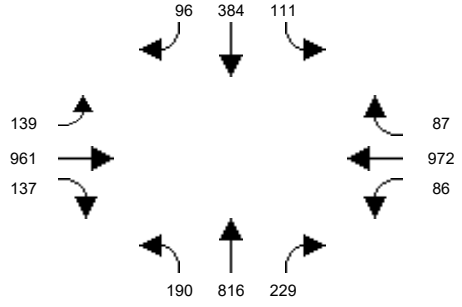
Intersection #27: Greenville St and Segerstrom Ave



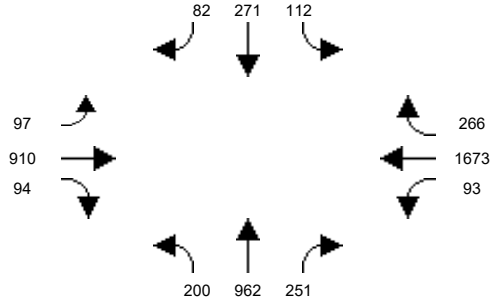
Intersection #28: Raitt St and McFadden Ave



Intersection #29: Raitt St and Edinger Ave



Intersection #30: Bear St and MacArthur Blvd



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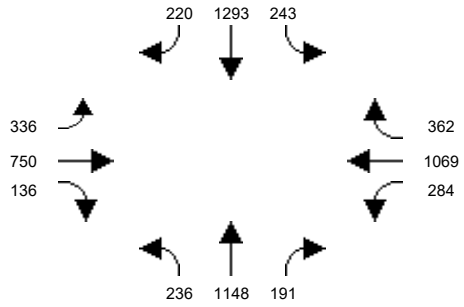
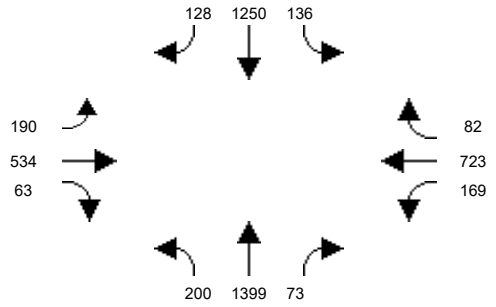
Santa Ana Circulation Element

Intersection Graphic Report
Entered Volume (Base Alternative)
2020 NP PM Peak Hour

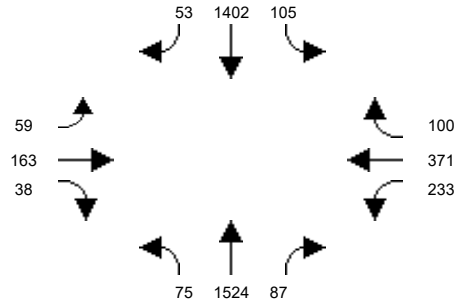
Intersection #31: Bristol St and 17th St



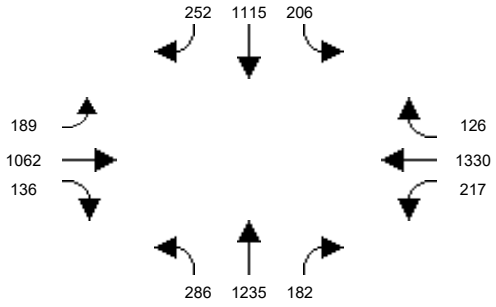
Intersection #32: Bristol St and Civic Center Dr



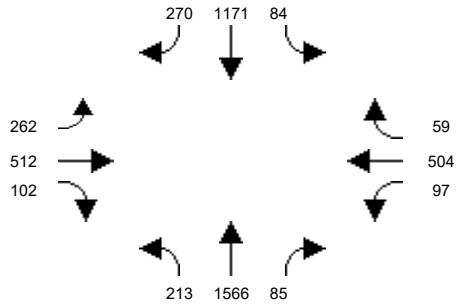
Intersection #33: Bristol St and Santa Ana Blvd



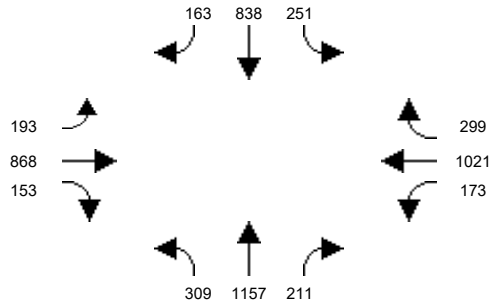
Intersection #34: Bristol St and 1st St



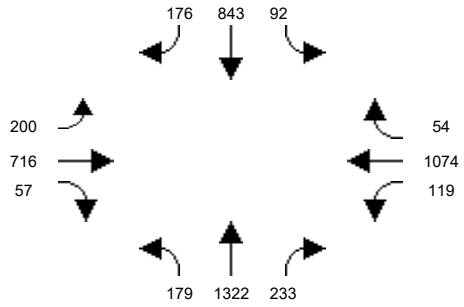
Intersection #35: Bristol St and McFadden Ave



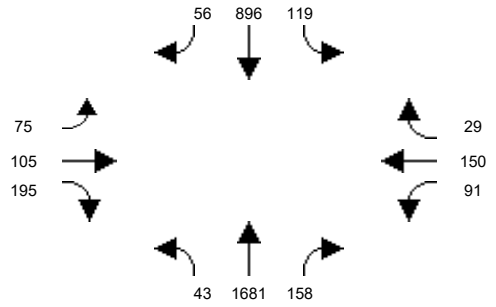
Intersection #36: Bristol St and Warner Ave



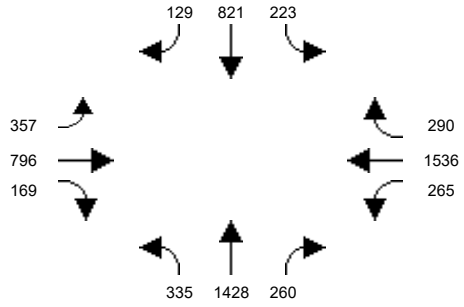
Intersection #37: Bristol St and Segerstrom Ave



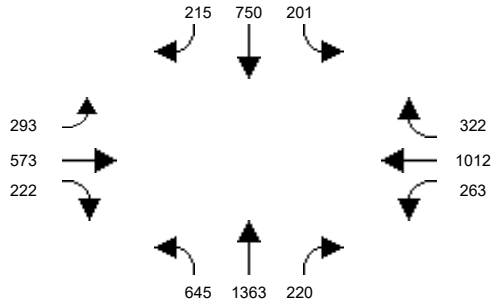
Intersection #38: Bristol St and Alton Ave



Intersection #39: Bristol St and MacArthur Blvd



Intersection #40: Bristol St and Sunflower Ave



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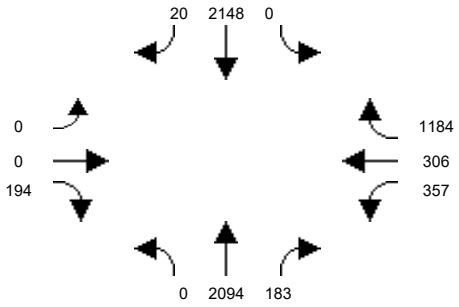
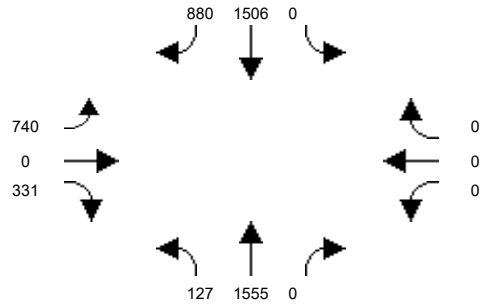
Santa Ana Circulation Element

Intersection Graphic Report
Entered Volume (Base Alternative)
2020 NP PM Peak Hour

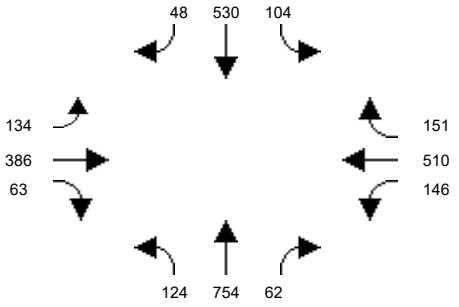
Intersection #41: Bristol St and I-405 WB Ramps



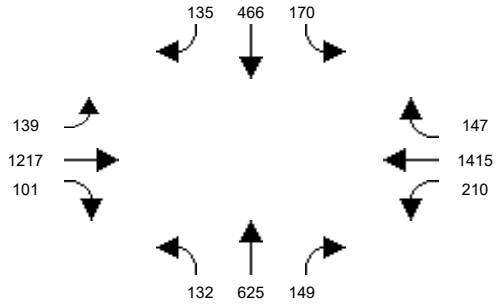
Intersection #42: Bristol St and I-405 EB Ramps



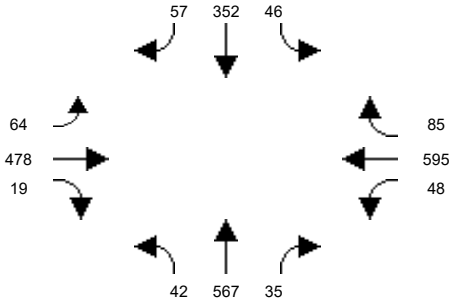
Intersection #43: Flower St and Santa Ana Blvd



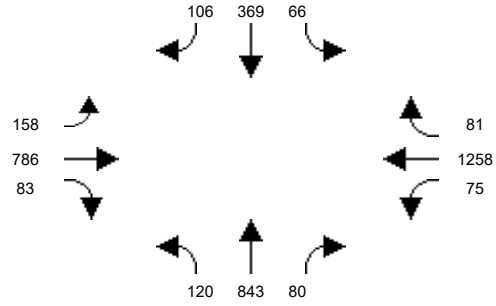
Intersection #44: Flower St and 1st St



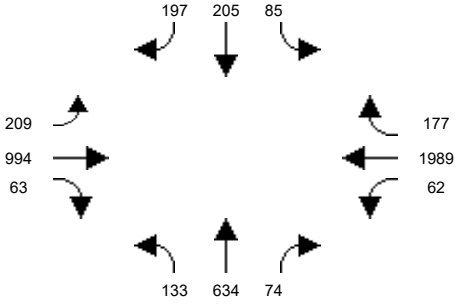
Intersection #45: Flower St and McFadden Ave



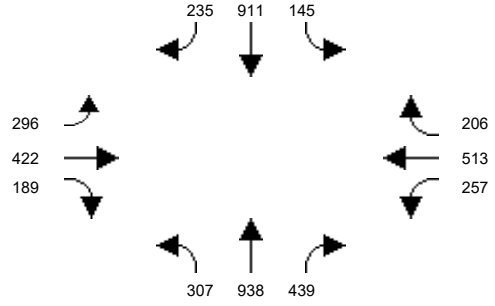
Intersection #46: Flower St and Segerstrom Ave



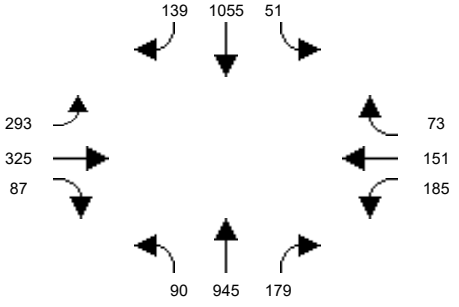
Intersection #47: Flower St and MacArthur Blvd



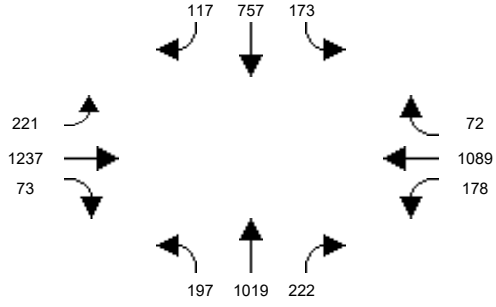
Intersection #48: Main St and La Veta Ave



Intersection #49: Main St and Mainplace Dr / Memory Ln



Intersection #50: Main St and 17th St



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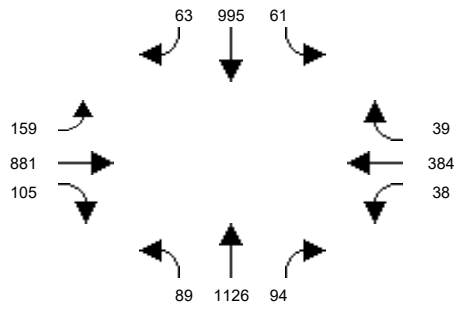
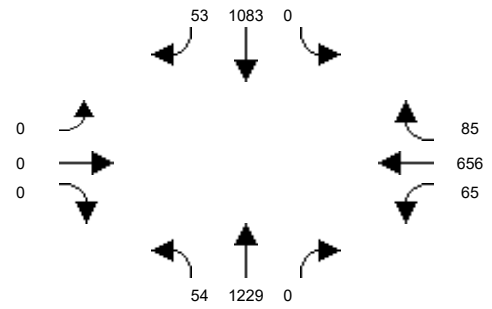
Santa Ana Circulation Element

Intersection Graphic Report
Entered Volume (Base Alternative)
2020 NP PM Peak Hour

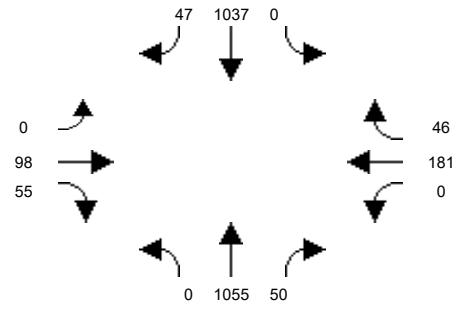
Intersection #51: Main St and Civic Center Dr



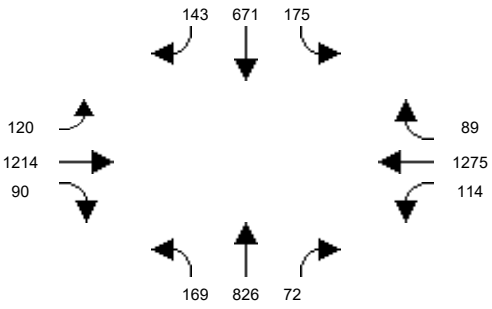
Intersection #52: Main St and Santa Ana Blvd



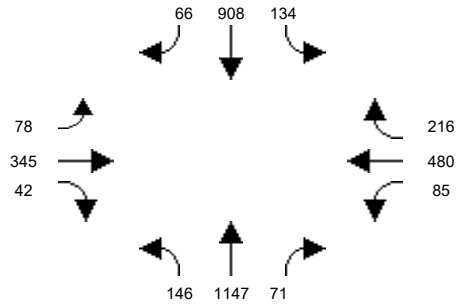
Intersection #53: Main St and 4th St



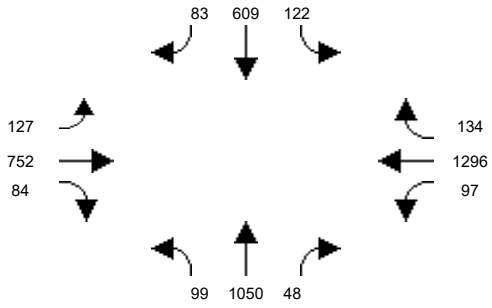
Intersection #54: Main St and 1st St



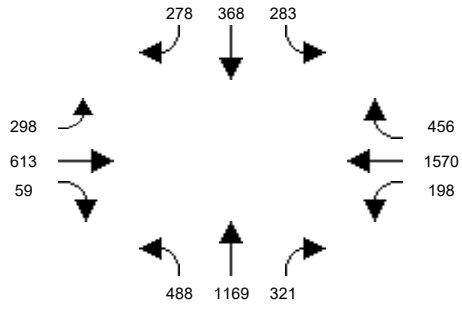
Intersection #55: Main St and McFadden Ave



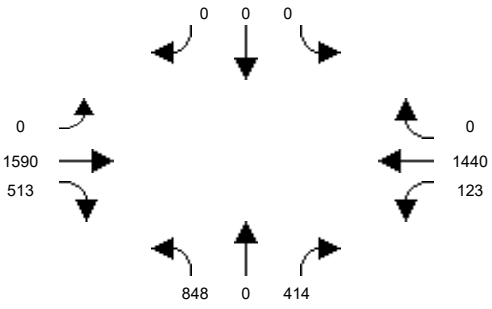
Intersection #56: Main St and Edinger Ave



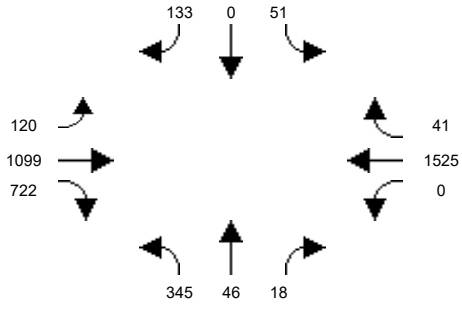
Intersection #57: Main St and MacArthur Blvd



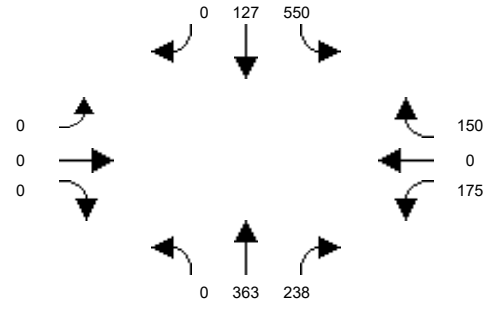
Intersection #58: Penn Wy and 17th St



Intersection #59: I-5 NB Off Ramps/17th Street



Intersection #60: Penn Wy and I-5 SB Ramps



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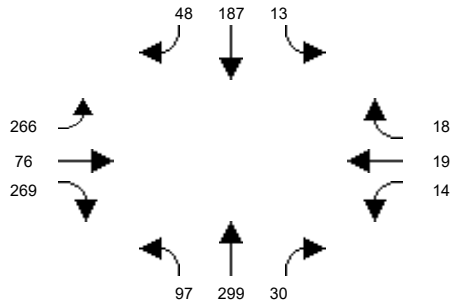
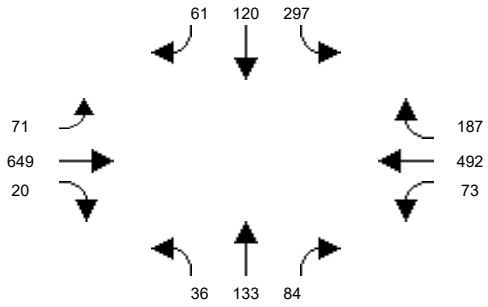
Santa Ana Circulation Element

Intersection Graphic Report
Entered Volume (Base Alternative)
2020 NP PM Peak Hour

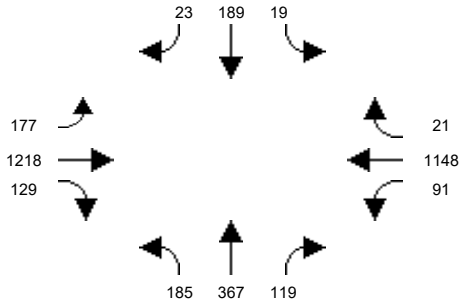
Intersection #61: Santiago St and Civic Center Dr



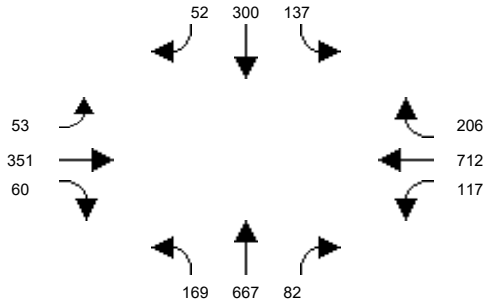
Intersection #62: Santiago St and Santa Ana Blvd



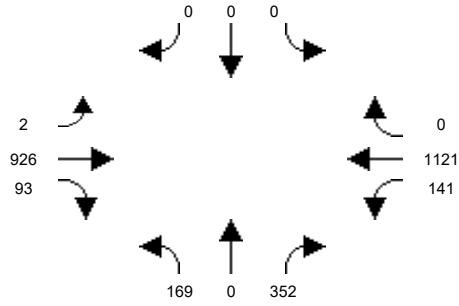
Intersection #64: Standard Ave and 1st St



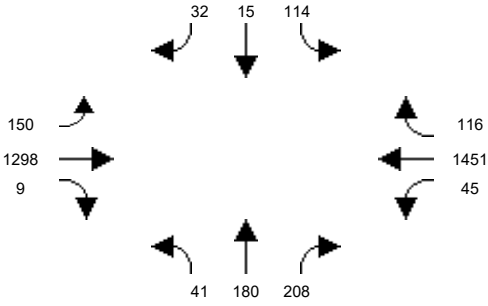
Intersection #65: Standard Ave and Mcfadden Ave



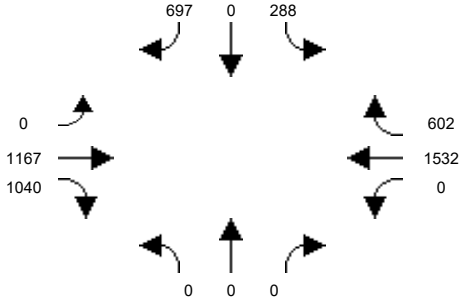
Intersection #66: Halladay St and Warner Ave



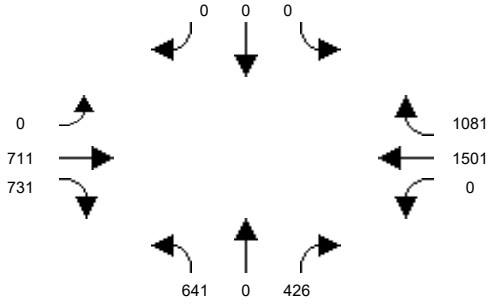
Intersection #67: Halladay St and Dyer Rd



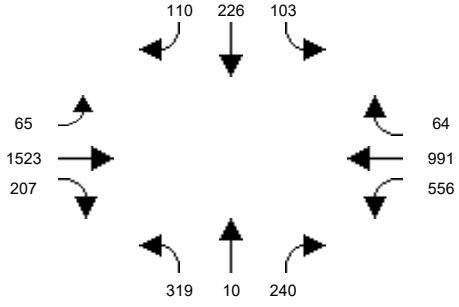
Intersection #68: SR-55 SB Ramps and MacArthur Blvd



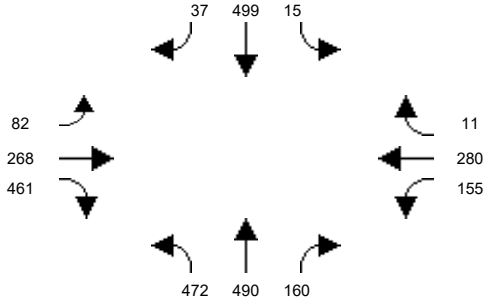
Intersection #69: SR-55 NB Ramps and MacArthur Blvd



Intersection #70: SR-55 SB Ramps and Dyer Rd



Intersection #71: Glassell St and La Veta Ave



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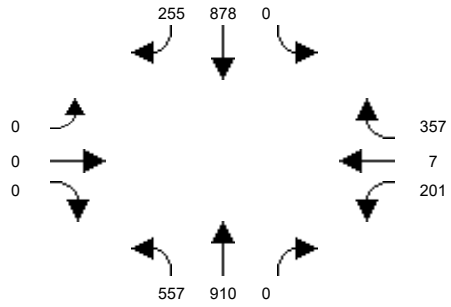
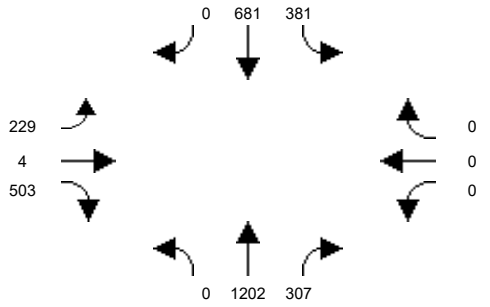
Santa Ana Circulation Element

Intersection Graphic Report
Entered Volume (Base Alternative)
2020 NP PM Peak Hour

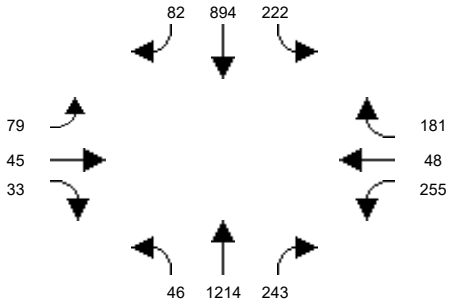
Intersection #72: Glassell St and SR-22 WB Ramps



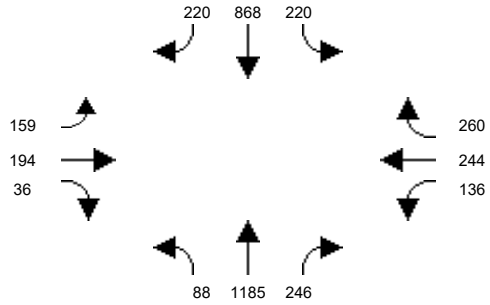
Intersection #73: Grand Ave / Glassell St and SR-22 EB Ramps



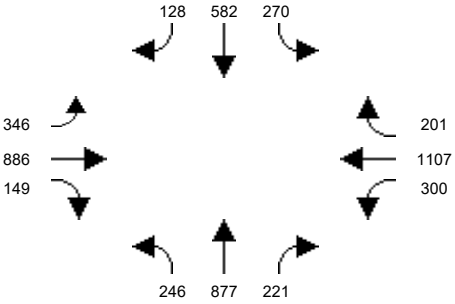
Intersection #74: Grand Ave and Fairhaven Ave



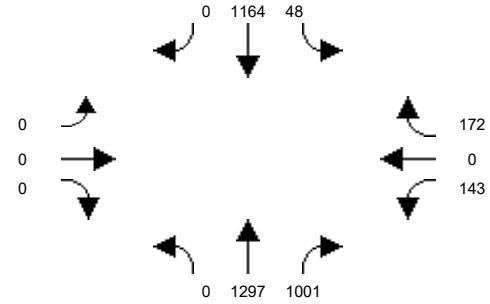
Intersection #75: Grand Ave and Santa Clara Ave



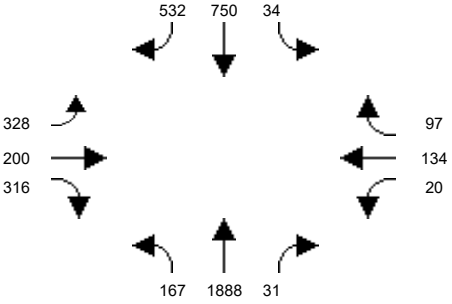
Intersection #76: Grand Ave and 17th St



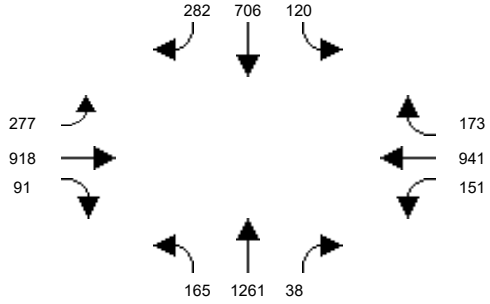
Intersection #77: Grand Ave and I-5 NB Ramps



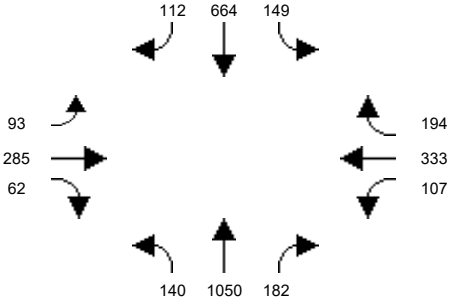
Intersection #78: Grand Ave and Santa Ana Blvd



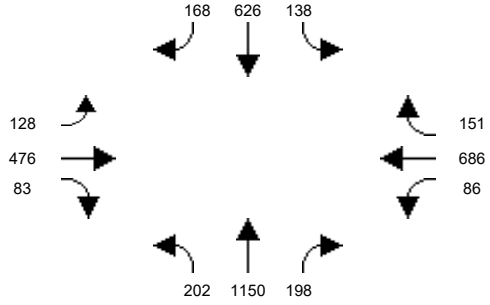
Intersection #79: Grand Ave and 1st St



Intersection #80: Grand Ave and Chestnut Ave



Intersection #81: Grand Ave and McFadden Ave



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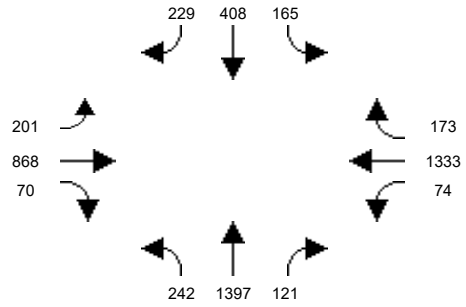
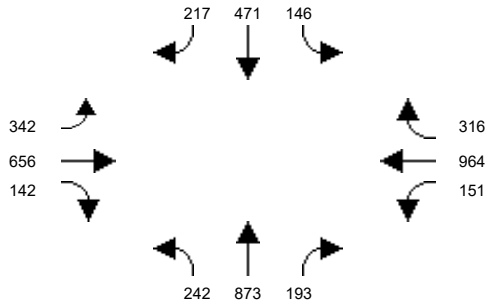
Santa Ana Circulation Element

Intersection Graphic Report
Entered Volume (Base Alternative)
2020 NP PM Peak Hour

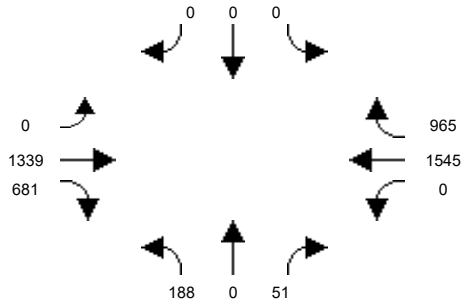
Intersection #82: Grand Ave and Edinger Ave



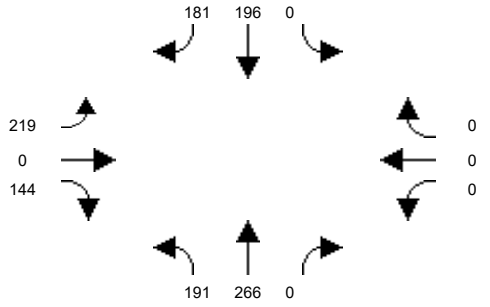
Intersection #83: Grand Ave and Warner Ave



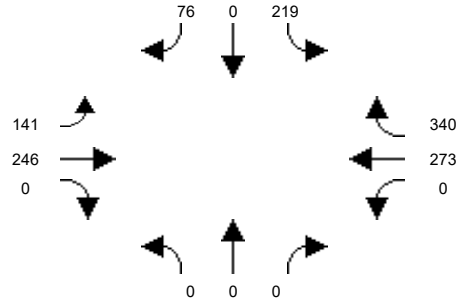
Intersection #84: SR-55 NB Ramps and Dyer Rd



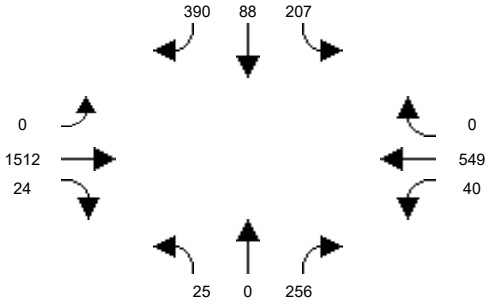
Intersection #85: Cambridge St and La Veta Ave



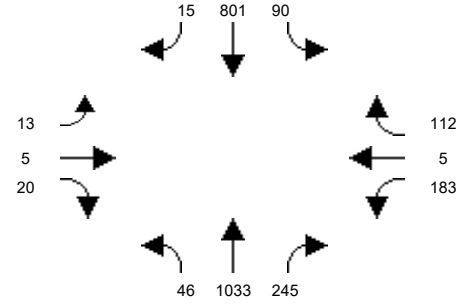
Intersection #86: Cambridge St and Fairhaven Ave



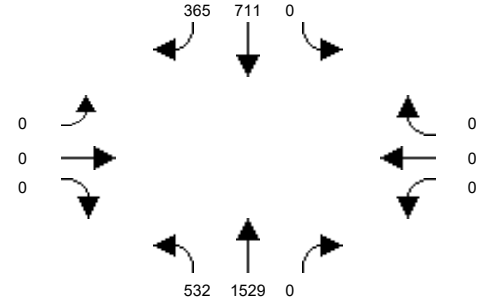
Intersection #87: Mabury St and 1st Street



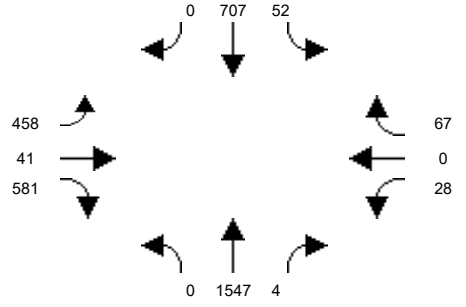
Intersection #88: Tustin St and La Veta Ave



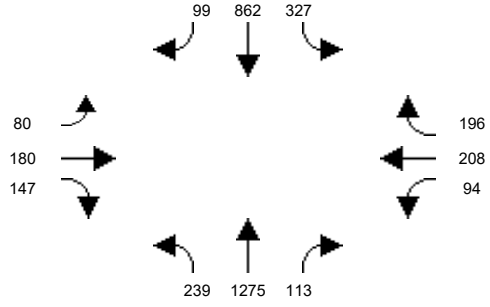
Intersection #89: Tustin St and SR-22 WB On-Ramp



Intersection #90: Tustin St and SR-22 EB Off-Ramp / Seba Ave



Intersection #91: Tustin Ave and Fairhaven Ave



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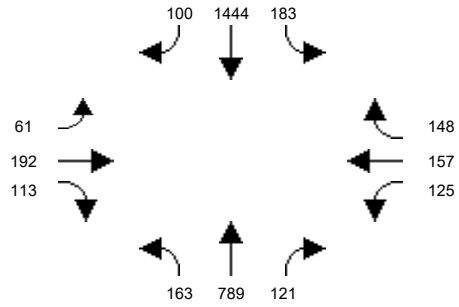
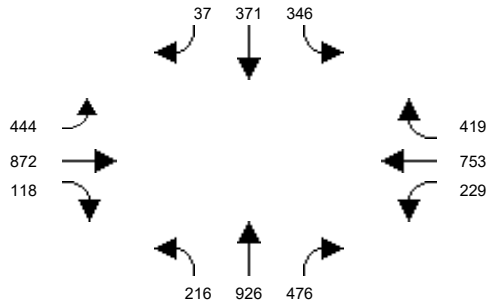
Santa Ana Circulation Element

Intersection Graphic Report
Entered Volume (Base Alternative)
2020 NP PM Peak Hour

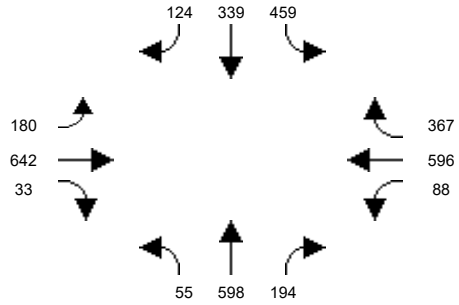
Intersection #92: Tustin Ave and Santa Clara Ave



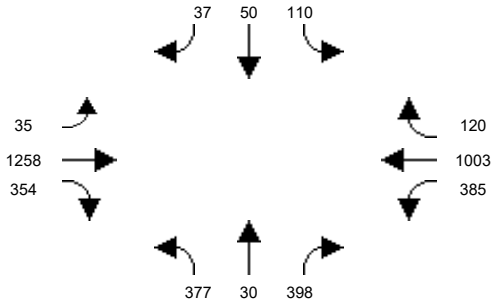
Intersection #93: Tustin Ave and 17th St



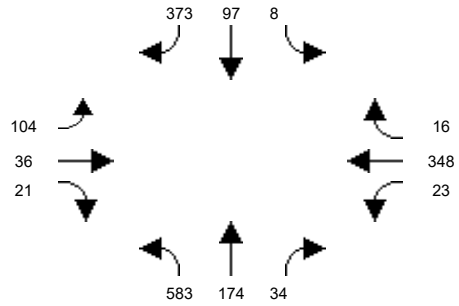
Intersection #94: Tustin Ave and 4th St



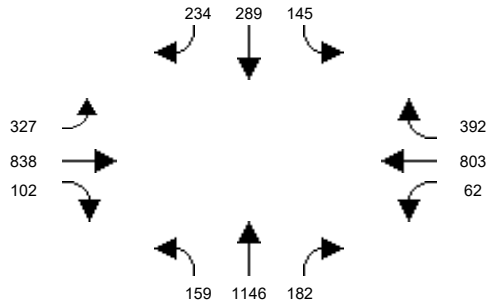
Intersection #95: SR-55 SB Ramps / Auto Mall Dr and Edinger Ave



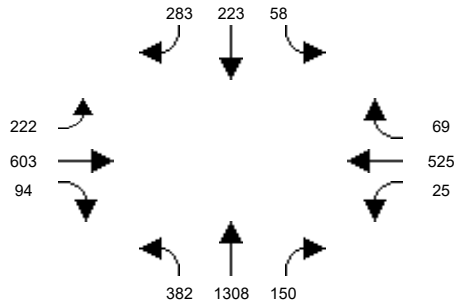
Intersection #96: SR-55 NB Ramps / Del Amo Ave and Newport



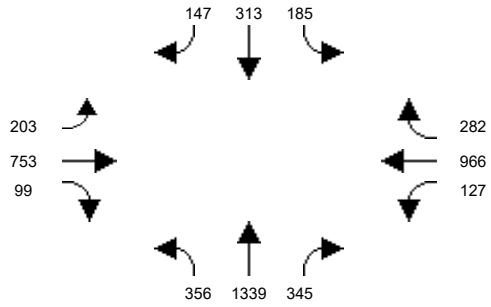
Intersection #97: Red Hill Ave and Edinger Ave



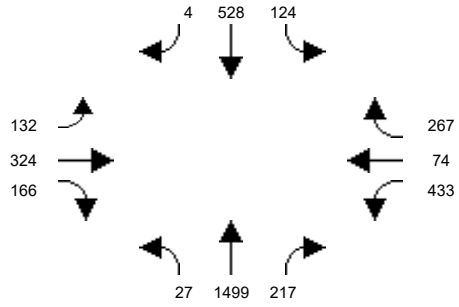
Intersection #98: Red Hill Ave and Warner Ave



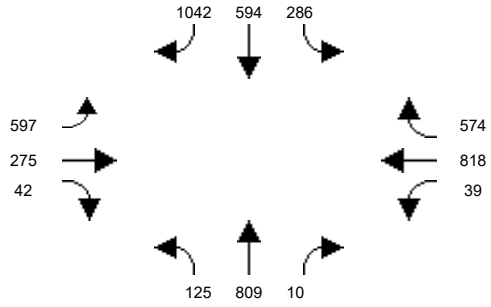
Intersection #99: Red Hill Ave and Dyer Rd / barranca Pkwy



Intersection #100: Red Hill Ave and Alton Pkwy



Intersection #101: Red Hill Ave and MacArthur Blvd



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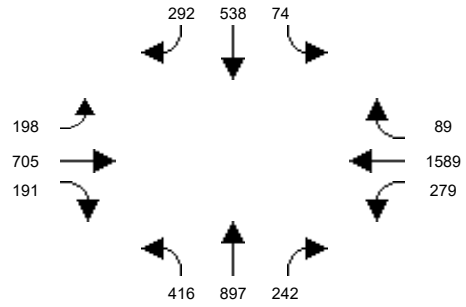
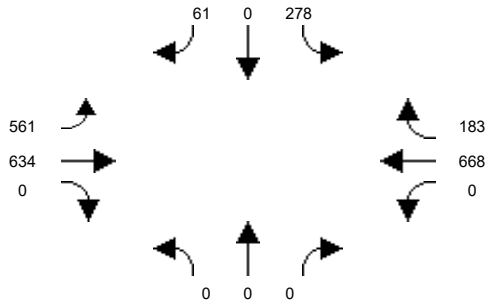
Santa Ana Circulation Element

Intersection Graphic Report
Entered Volume (Base Alternative)
2020 NP PM Peak Hour

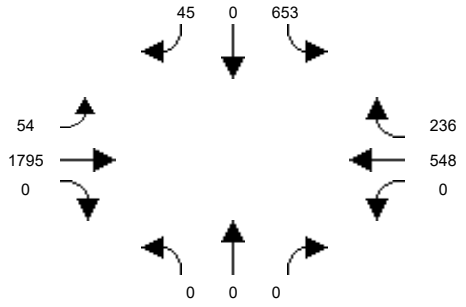
Intersection #102: Red Hill Ave and Main St



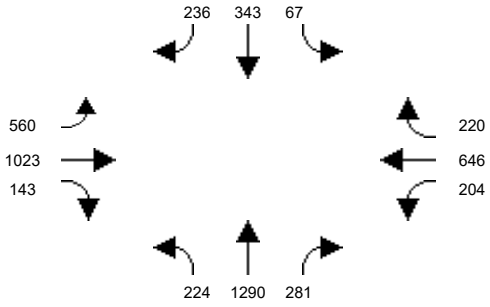
Intersection #103: I-5 SB Ramps and Santa Ana Blvd



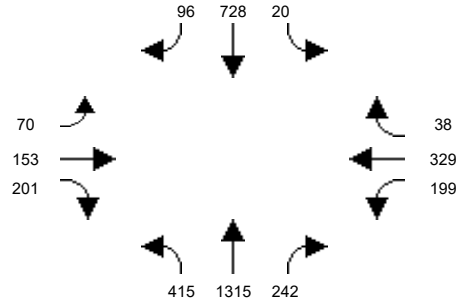
Intersection #104: Tustin Ranch Rd and Warner Ave



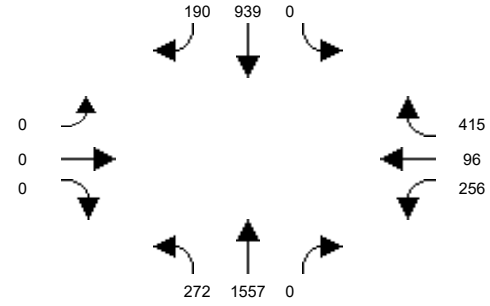
Intersection #105: Von Karman Ave and Barranca Pkwy



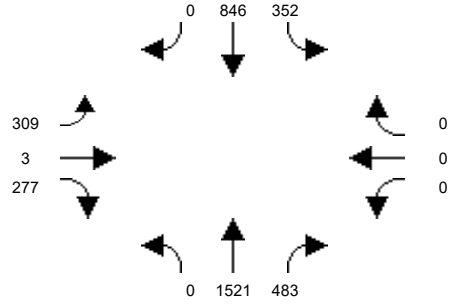
Intersection #106: Red Hill Avenue and El Camino Real



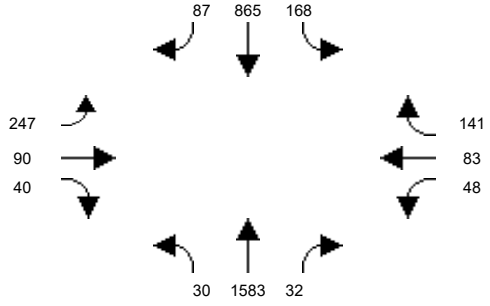
Intersection #107: Red Hill Avenue and I-5 NB Ramps



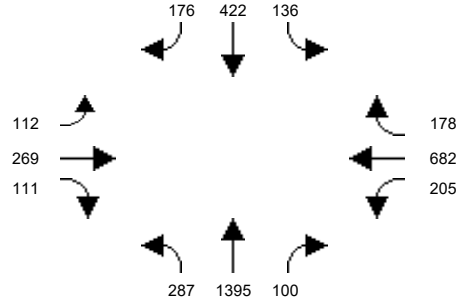
Intersection #108: Red Hill Avenue and I-5 SB Ramps



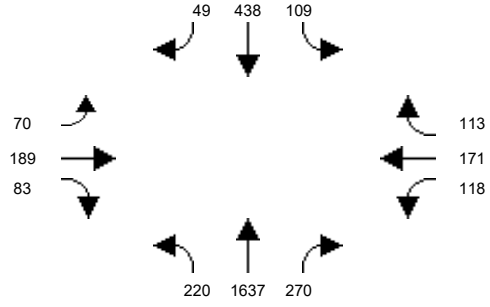
Intersection #109: Red Hill Avenue and Nisson Road



Intersection #110: Red Hill Avenue and Walnut Avenue



Intersection #111: Red Hill Avenue and Valencia Avenue



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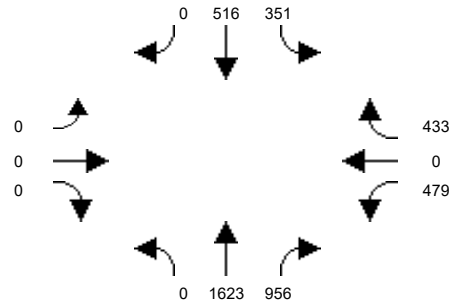
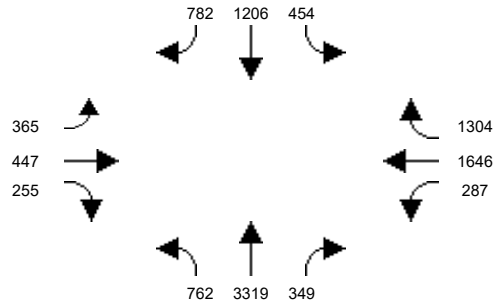
Santa Ana Circulation Element

Intersection Graphic Report
Entered Volume (Base Alternative)
2020 NP PM Peak Hour

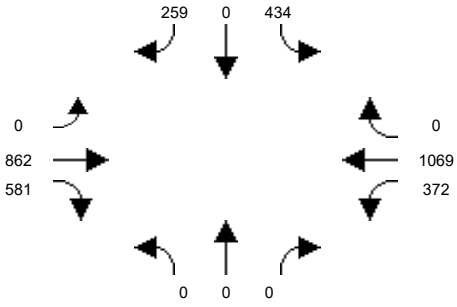
Intersection #112: Tustin Ranch Road and Warner Avenue North



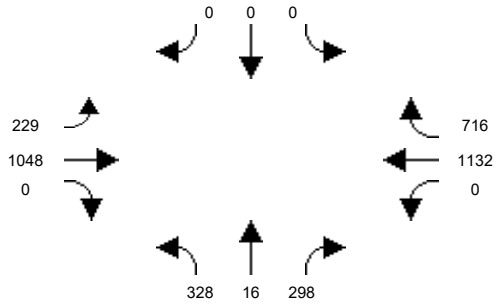
Intersection #113: Tustin Ranch Road and Walnut Avenue



Intersection #114: SR-55 SB Ramps and Irvine Boulevard



Intersection #115: SR-55 NB Ramps and Irvine Boulevard



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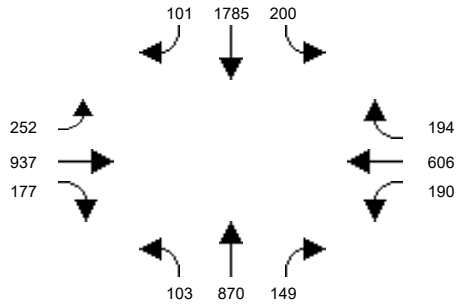
APPENDIX B.3

INTERSECTION VOLUMES –
2045 NP (AM PEAK HOUR)

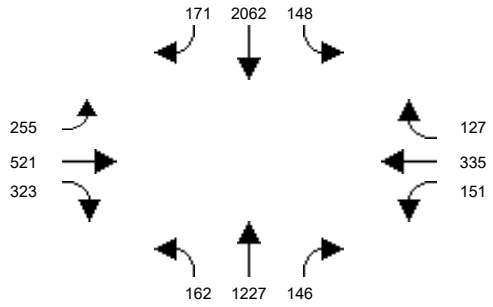
Santa Ana Circulation Element

Intersection Graphic Report
Entered Volume (Base Alternative)
2045 NP AM Peak Hour

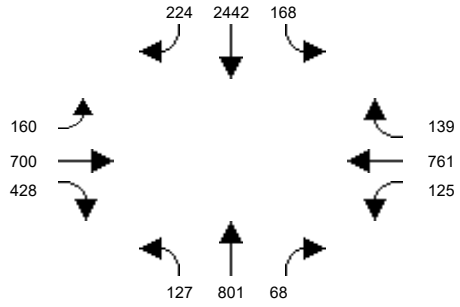
Intersection #1: Euclid St and 1st St



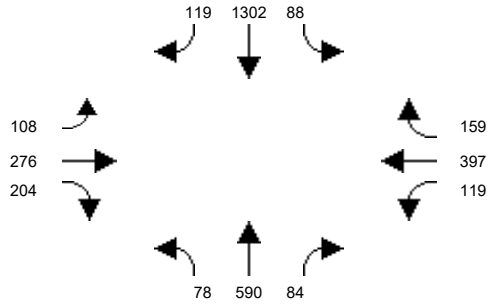
Intersection #2: Euclid St and McFadden Ave



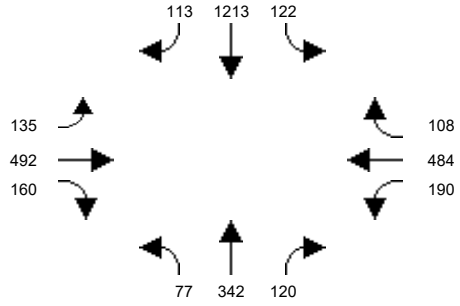
Intersection #3: Euclid St and Edinger Ave



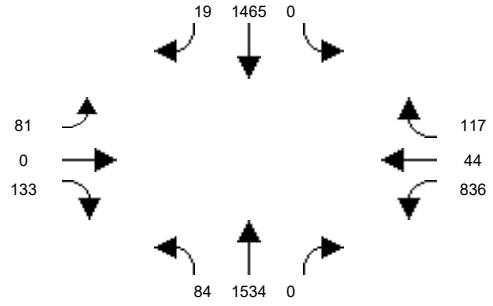
Intersection #4: Newhope St and Hazard Ave



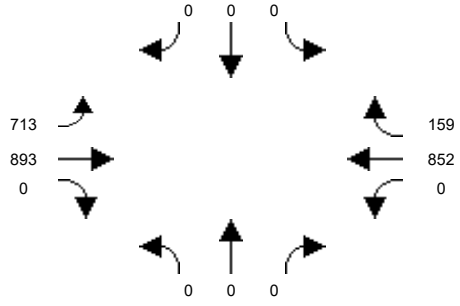
Intersection #5: Newhope St and McFadden Ave



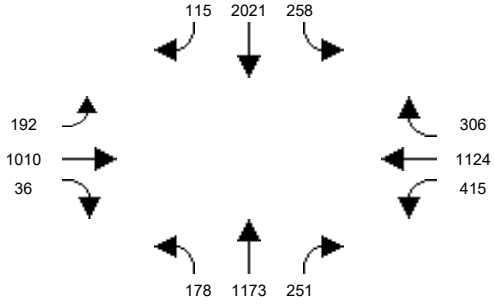
Intersection #6: Harbor Blvd and SR-22 WB Off-Ramp / Banner Dr



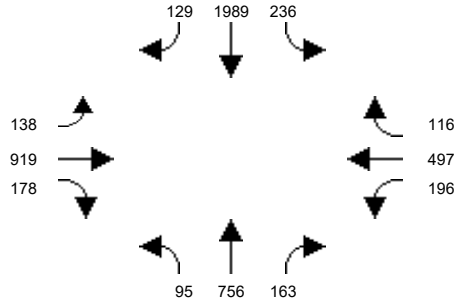
Intersection #7: Trask Avenue and SR-22 EB On-Ramp



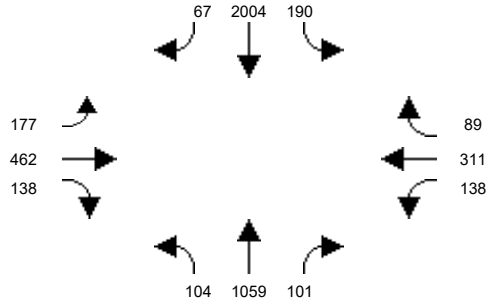
Intersection #8: Harbor Blvd and Westminster Ave



Intersection #9: Harbor Blvd and 1st St



Intersection #10: Harbor Blvd and McFadden Ave



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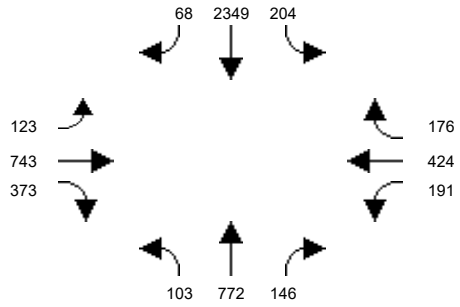
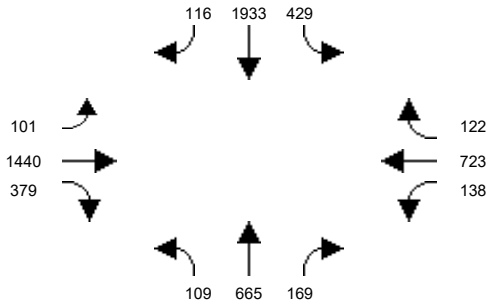
Santa Ana Circulation Element

Intersection Graphic Report
Entered Volume (Base Alternative)
2045 NP AM Peak Hour

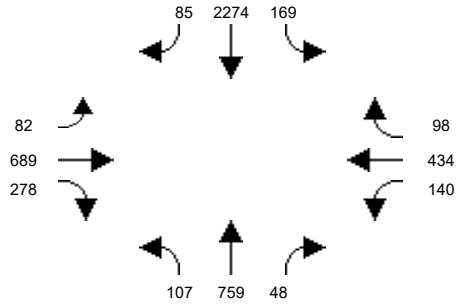
Intersection #11: Harbor Blvd and Edinger Ave



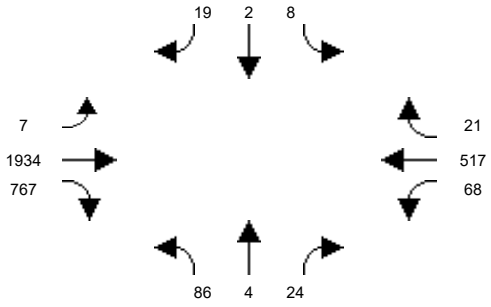
Intersection #12: Harbor Blvd and Warner Ave



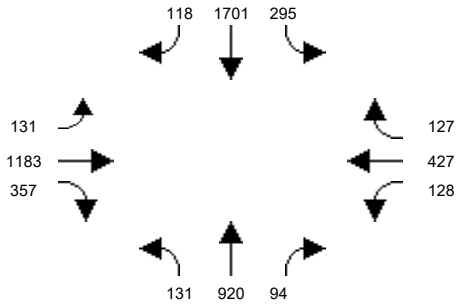
Intersection #13: Harbor Blvd and Segerstrom Ave



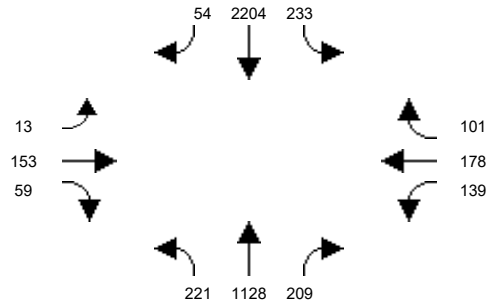
Intersection #14: MacArthur Blvd and Hyland Ave



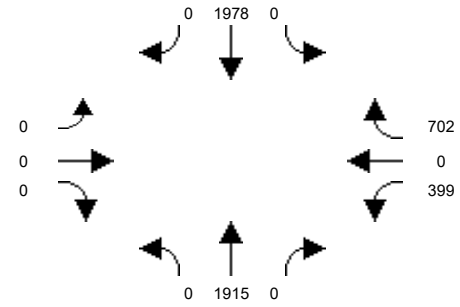
Intersection #15: MacArthur Blvd and Harbor Blvd



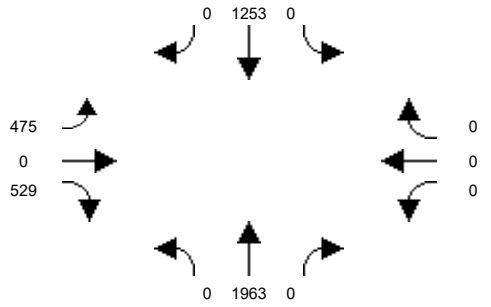
Intersection #16: Harbor Blvd and Sunflower Ave



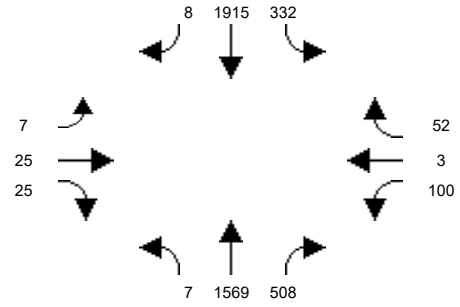
Intersection #17: Harbor Blvd and I-405 NB Off-Ramp



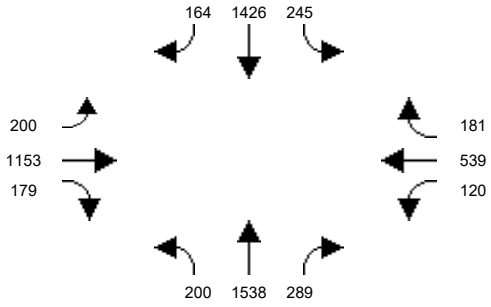
Intersection #18: Harbor Blvd and I-405 SB Off-Ramp



Intersection #19: Fairview St and Civic Center Dr



Intersection #20: Fairview St and 1st St



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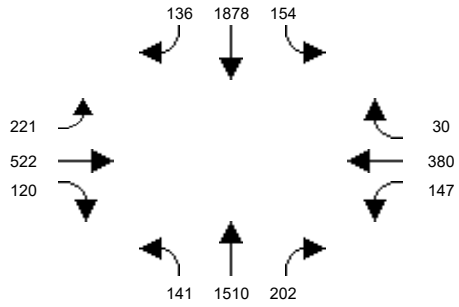
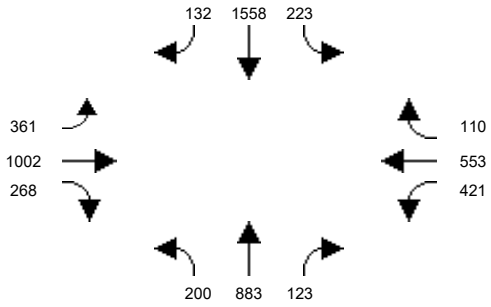
Santa Ana Circulation Element

Intersection Graphic Report
Entered Volume (Base Alternative)
2045 NP AM Peak Hour

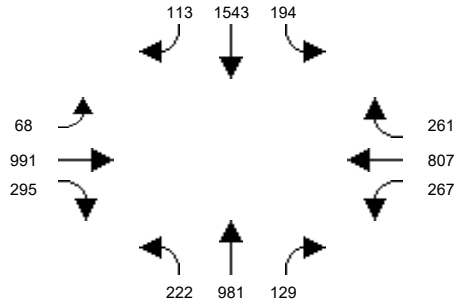
Intersection #21: Fairview St and McFadden Ave



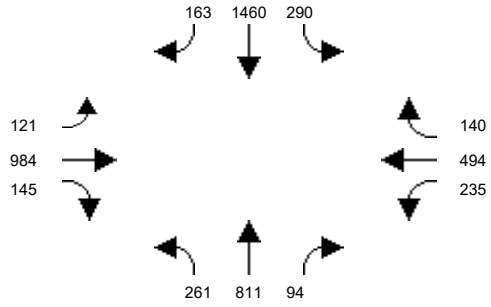
Intersection #22: Fairview St and Edinger Ave



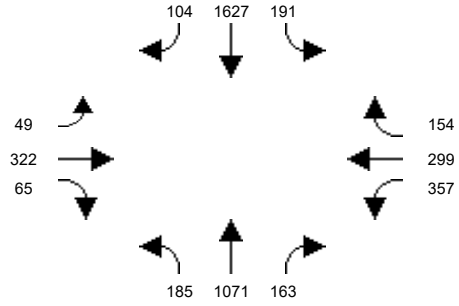
Intersection #23: Fairview St and Warner Ave



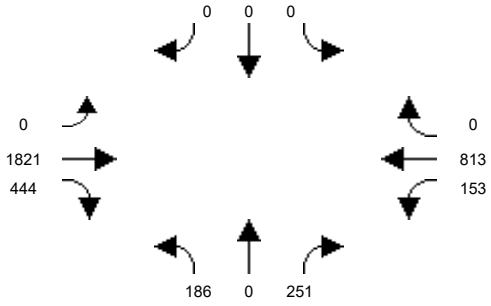
Intersection #24: Fairview St and MacArthur Blvd



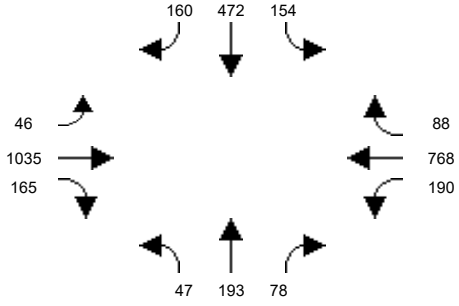
Intersection #25: Fairview Rd and Sunflower Ave



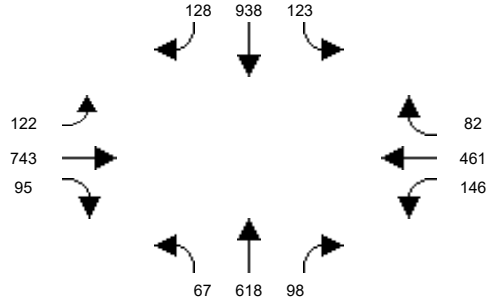
Intersection #26: Greenville St and Edinger Ave



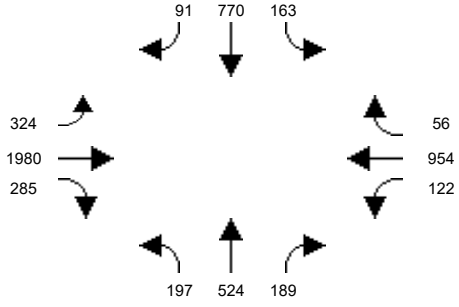
Intersection #27: Greenville St and Segerstrom Ave



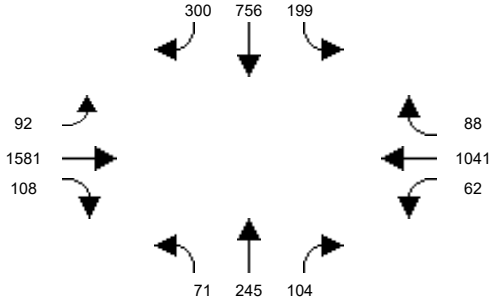
Intersection #28: Raitt St and McFadden Ave



Intersection #29: Raitt St and Edinger Ave



Intersection #30: Bear St and MacArthur Blvd



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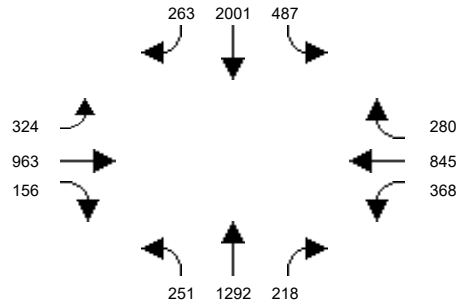
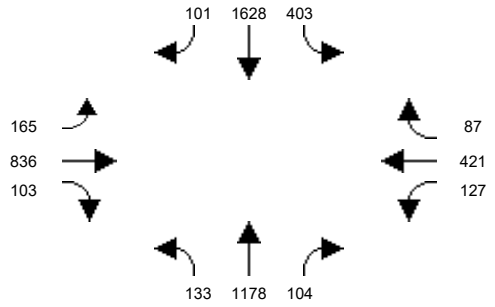
Santa Ana Circulation Element

Intersection Graphic Report
Entered Volume (Base Alternative)
2045 NP AM Peak Hour

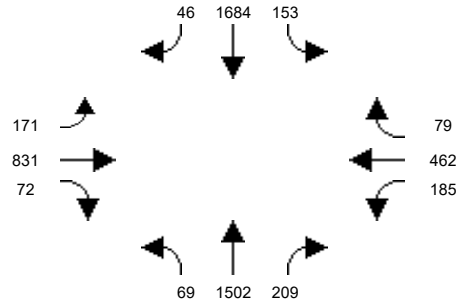
Intersection #31: Bristol St and 17th St



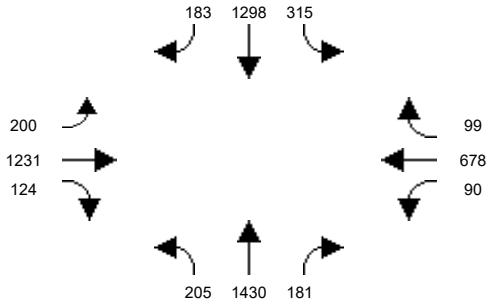
Intersection #32: Bristol St and Civic Center Dr



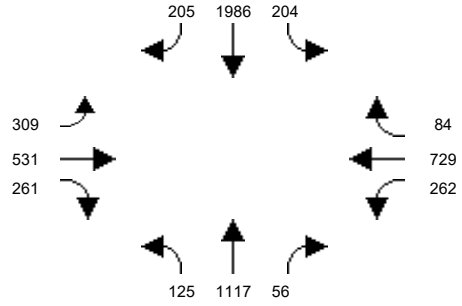
Intersection #33: Bristol St and Santa Ana Blvd



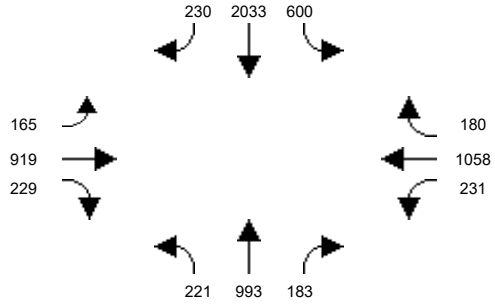
Intersection #34: Bristol St and 1st St



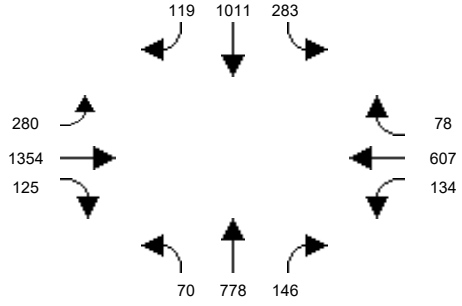
Intersection #35: Bristol St and McFadden Ave



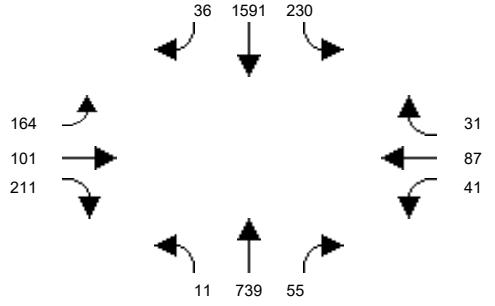
Intersection #36: Bristol St and Warner Ave



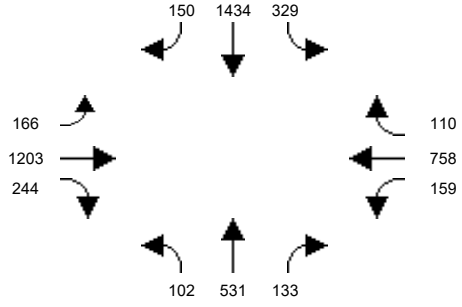
Intersection #37: Bristol St and Segerstrom Ave



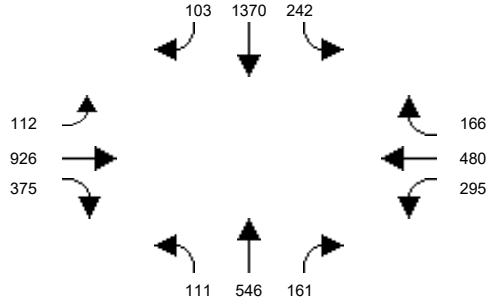
Intersection #38: Bristol St and Alton Ave



Intersection #39: Bristol St and MacArthur Blvd



Intersection #40: Bristol St and Sunflower Ave



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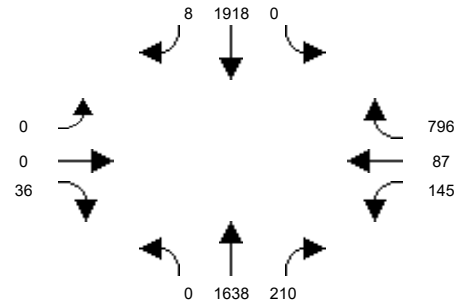
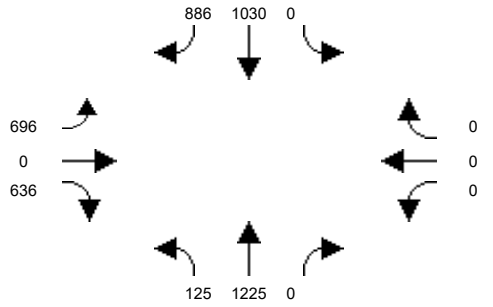
Santa Ana Circulation Element

Intersection Graphic Report
Entered Volume (Base Alternative)
2045 NP AM Peak Hour

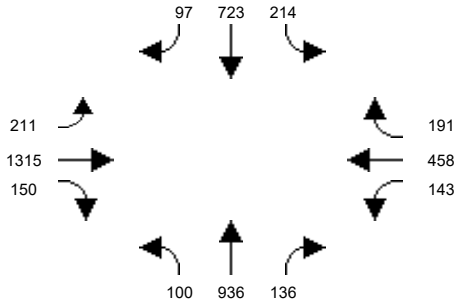
Intersection #41: Bristol St and I-405 NB Ramps



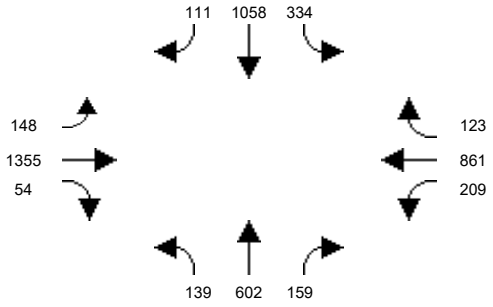
Intersection #42: Bristol St and I-405 SB Ramps



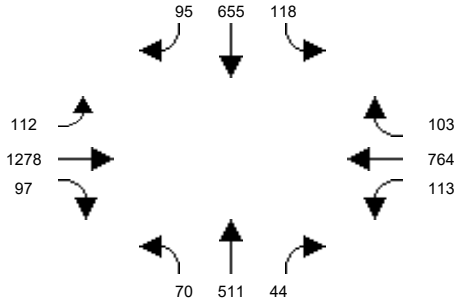
Intersection #43: Flower St and Santa Ana Blvd



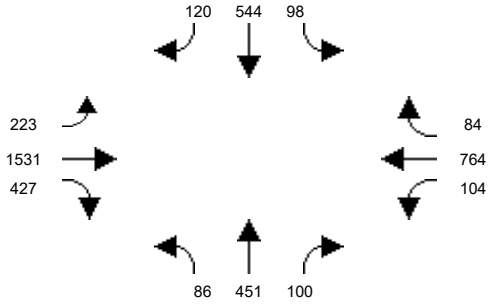
Intersection #44: Flower St and 1st St



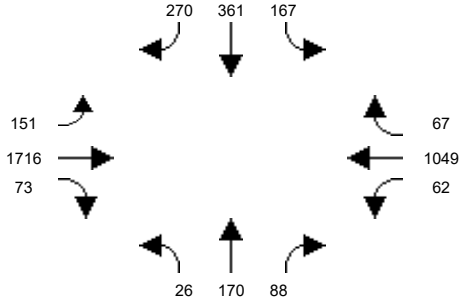
Intersection #45: Flower St and McFadden Ave



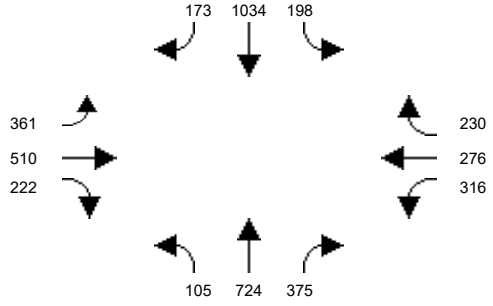
Intersection #46: Flower St and Segerstrom Ave



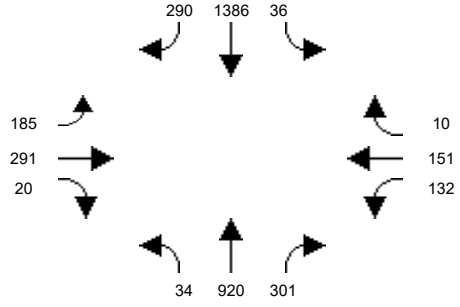
Intersection #47: Flower St and MacArthur Blvd



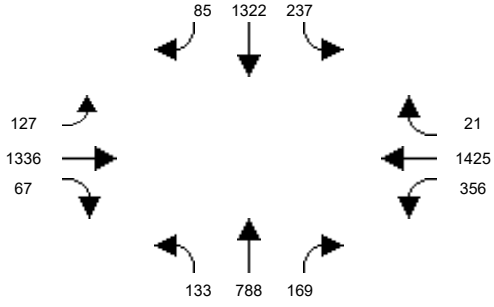
Intersection #48: Main St and La Veta Ave



Intersection #49: Main St and Mainplace Dr / Memory Ln



Intersection #50: Main St and 17th St



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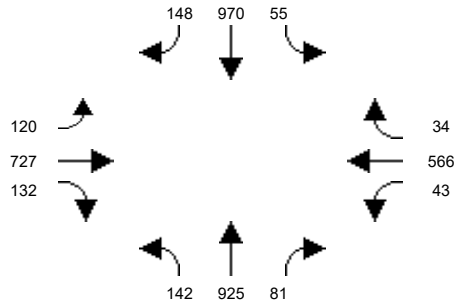
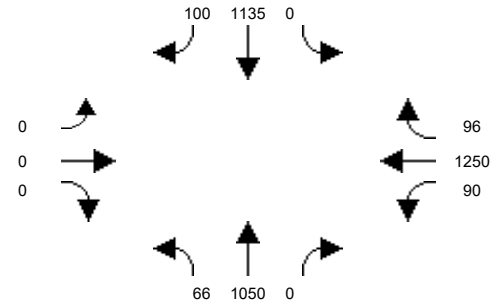
Santa Ana Circulation Element

Intersection Graphic Report
Entered Volume (Base Alternative)
2045 NP AM Peak Hour

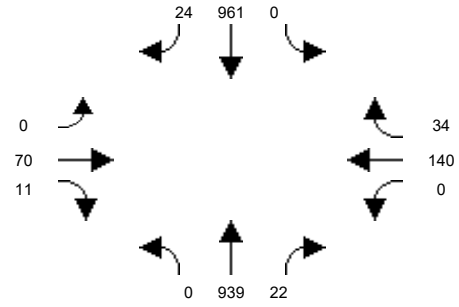
Intersection #51: Main St and Civic Center Dr



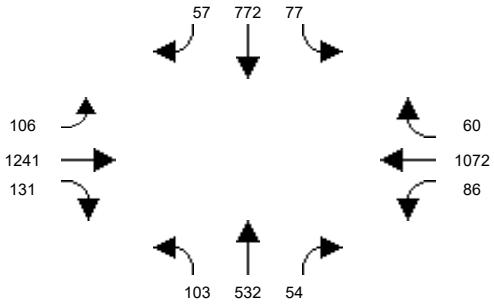
Intersection #52: Main St and Santa Ana Blvd



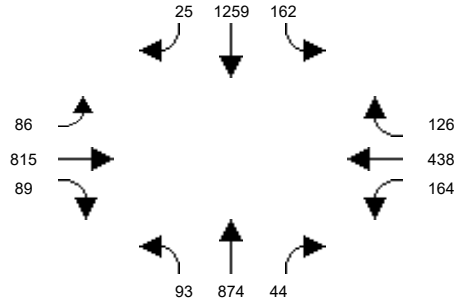
Intersection #53: Main St and 4th St



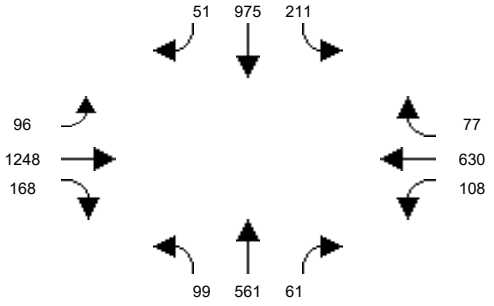
Intersection #54: Main St and 1st St



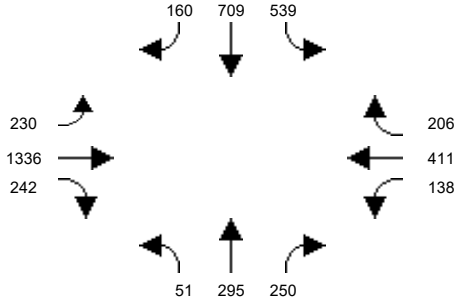
Intersection #55: Main St and McFadden Ave



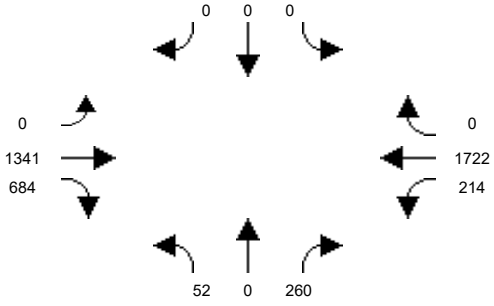
Intersection #56: Main St and Edinger Ave



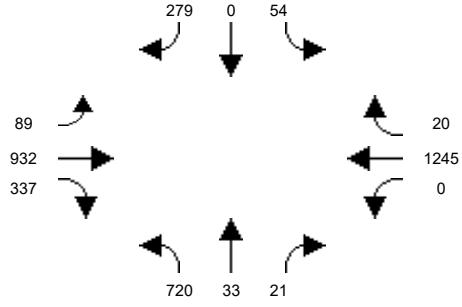
Intersection #57: Main St and MacArthur Blvd



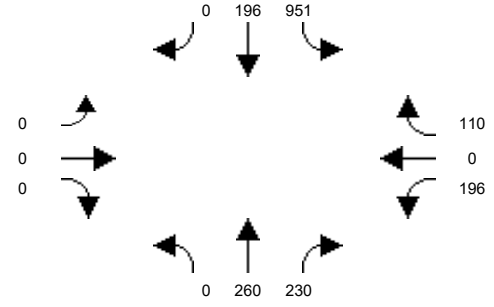
Intersection #58: Penn Wy and 17th St



Intersection #59: I-5 NB Off Ramps/17th Street



Intersection #60: Penn Wy and I-5 SB Ramps



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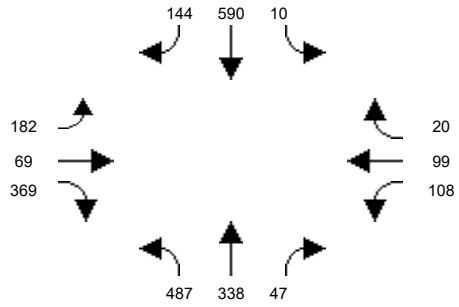
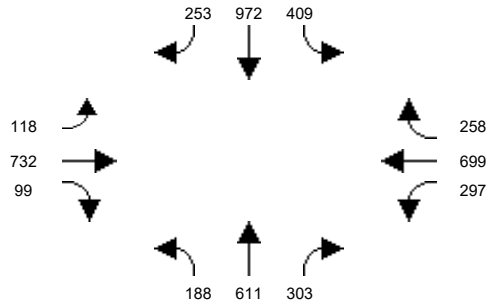
Santa Ana Circulation Element

Intersection Graphic Report
Entered Volume (Base Alternative)
2045 NP AM Peak Hour

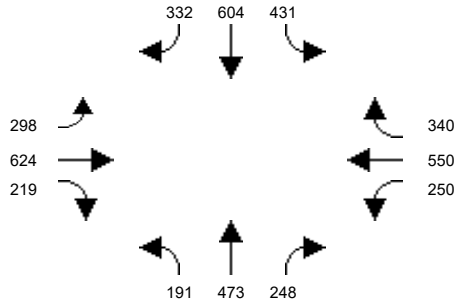
Intersection #61: Santiago St and Civic Center Dr



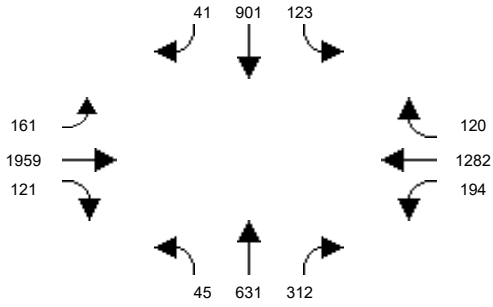
Intersection #62: Santiago St and Santa Ana Blvd



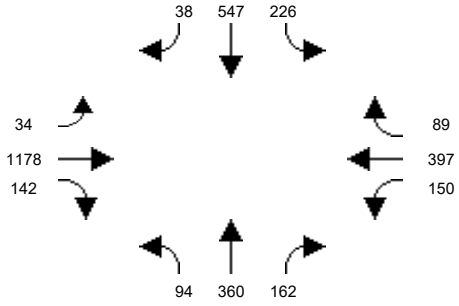
Intersection #63: Standard Ave and 4th St



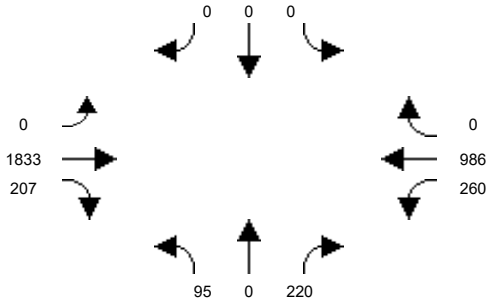
Intersection #64: Standard Ave and 1st St



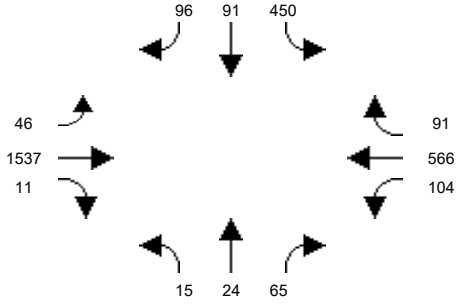
Intersection #65: Standard Ave and Mcfadden Ave



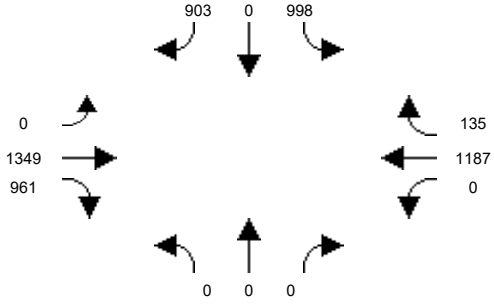
Intersection #66: Halladay St and Warner Ave



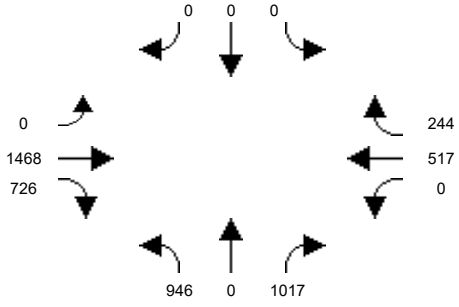
Intersection #67: Halladay St and Dyer Rd



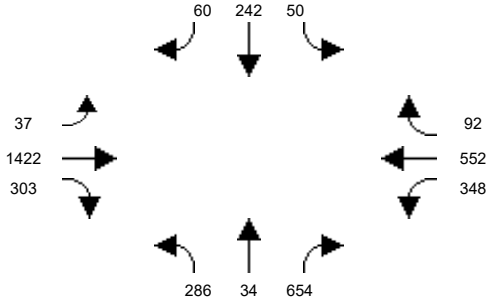
Intersection #68: SR-55 SB Ramps and MacArthur Blvd



Intersection #69: SR-55 NB Ramps and MacArthur Blvd



Intersection #70: SR-55 SB Ramps and Dyer Rd



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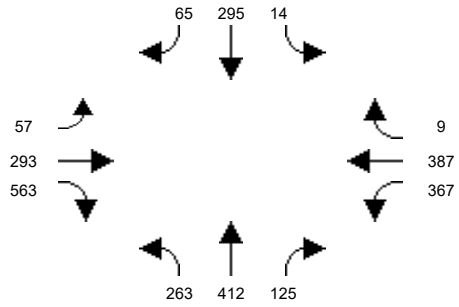
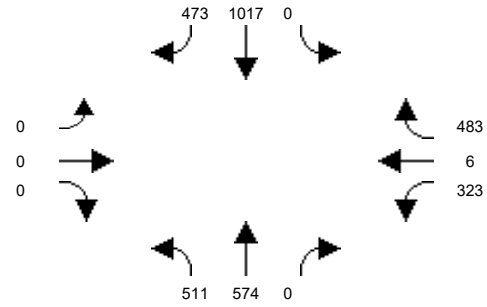
Santa Ana Circulation Element

Intersection Graphic Report
Entered Volume (Base Alternative)
2045 NP AM Peak Hour

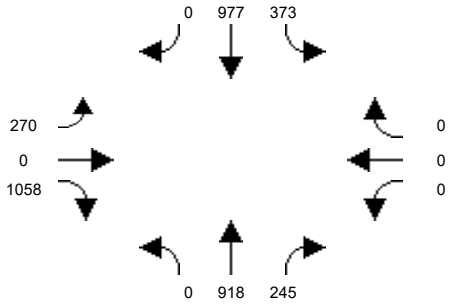
Intersection #71: Glassell St and La Veta Ave



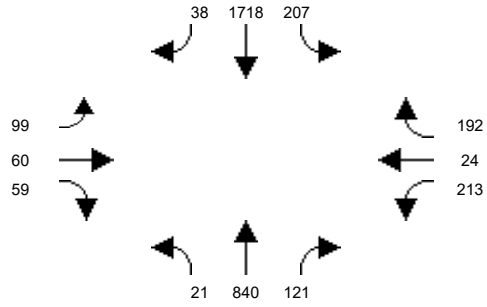
Intersection #72: Glassell St and SR-22 WB Ramps



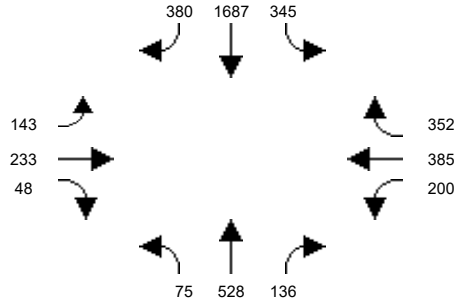
Intersection #73: Grand Ave / Glassell St and SR-22 EB Ramps



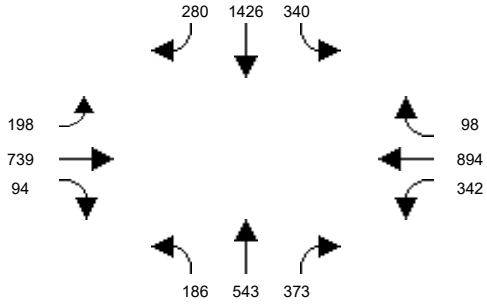
Intersection #74: Grand Ave and Fairhaven Ave



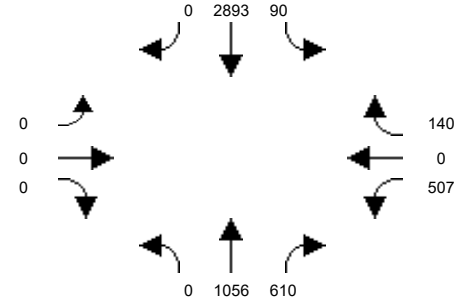
Intersection #75: Grand Ave and Santa Clara Ave



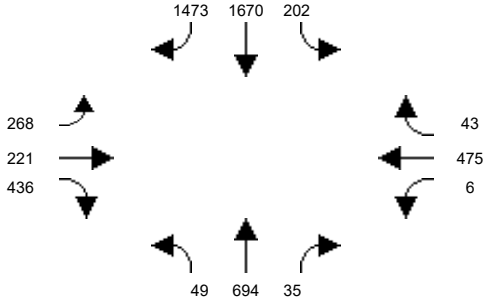
Intersection #76: Grand Ave and 17th St



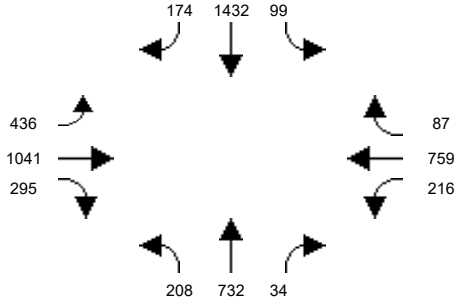
Intersection #77: Grand Ave and I-5 NB Ramps



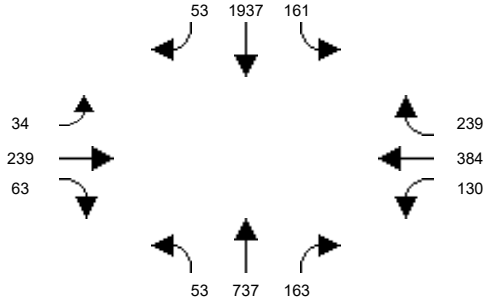
Intersection #78: Grand Ave and Santa Ana Blvd



Intersection #79: Grand Ave and 1st St



Intersection #80: Grand Ave and Chestnut Ave



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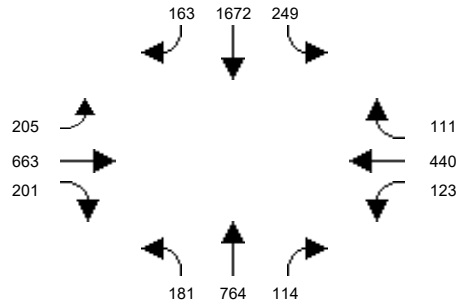
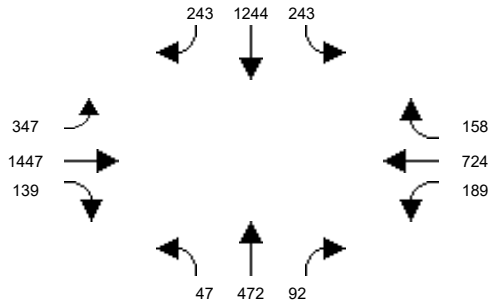
Santa Ana Circulation Element

Intersection Graphic Report
Entered Volume (Base Alternative)
2045 NP AM Peak Hour

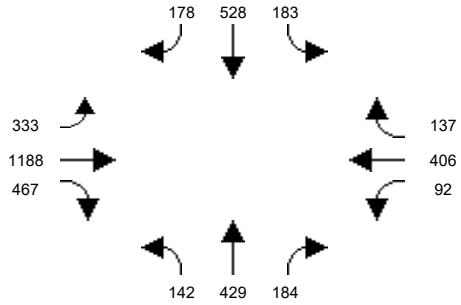
Intersection #81: Grand Ave and McFadden Ave



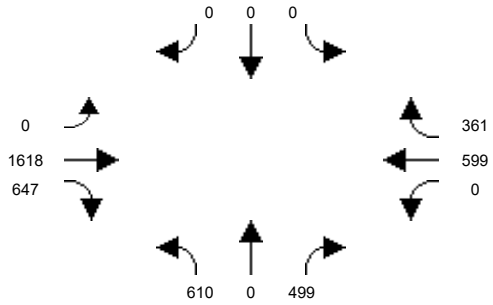
Intersection #82: Grand Ave and Edinger Ave



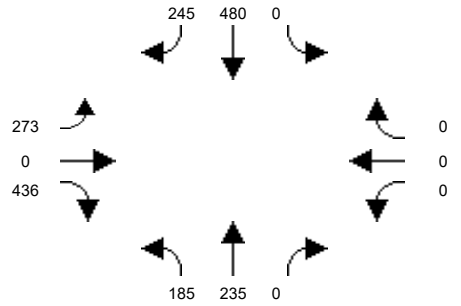
Intersection #83: Grand Ave and Warner Ave



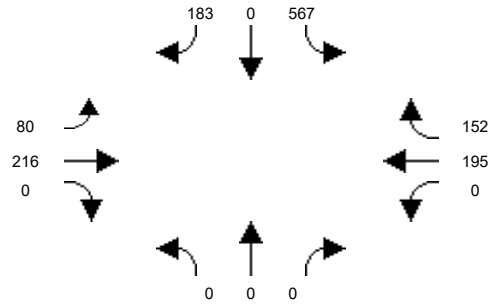
Intersection #84: SR-55 NB Ramps and Dyer Rd



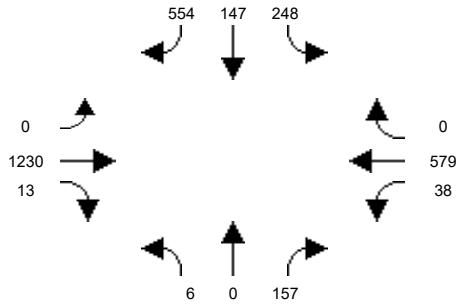
Intersection #85: Cambridge St and La Veta Ave



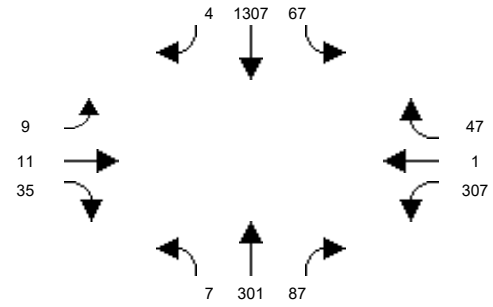
Intersection #86: Cambridge St and Fairhaven Ave



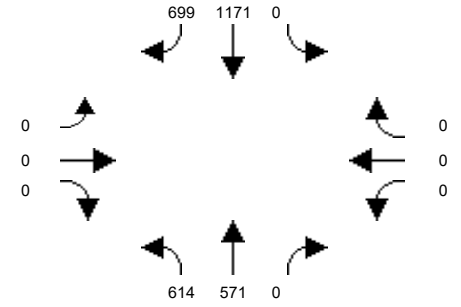
Intersection #87: Mabury St and 1st Street



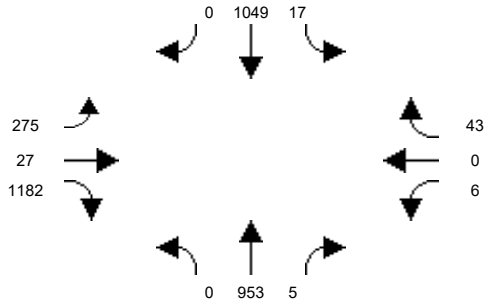
Intersection #88: Tustin St and La Veta Ave



Intersection #89: Tustin St and SR-22 WB On-Ramp



Intersection #90: Tustin St and SR-22 EB Off-Ramp / Seba Ave



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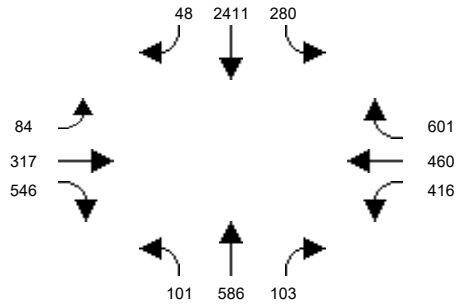
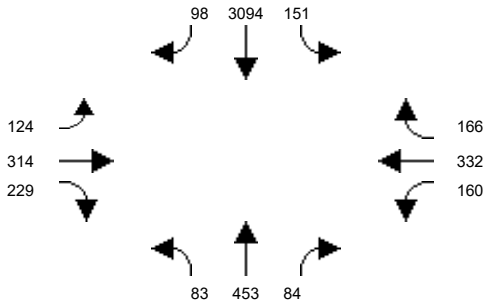
Santa Ana Circulation Element

Intersection Graphic Report
Entered Volume (Base Alternative)
2045 NP AM Peak Hour

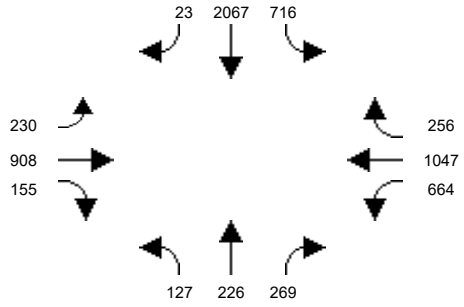
Intersection #91: Tustin Ave and Fairhaven Ave



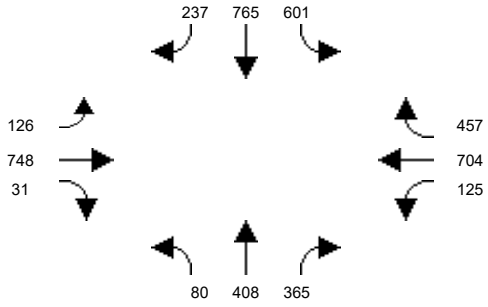
Intersection #92: Tustin Ave and Santa Clara Ave



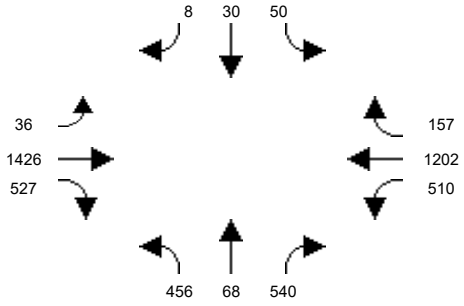
Intersection #93: Tustin Ave and 17th St



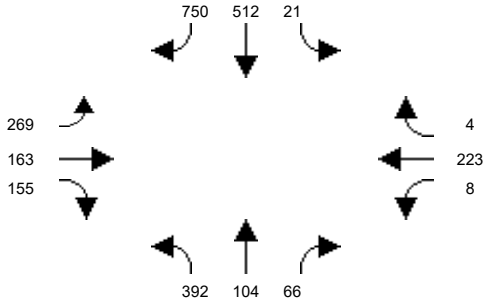
Intersection #94: Tustin Ave and 4th St



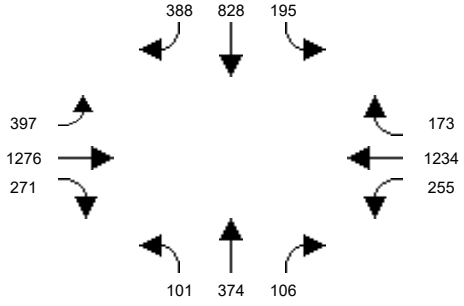
Intersection #95: SR-55 SB Ramps / Auto Mall Dr and Edinger Ave



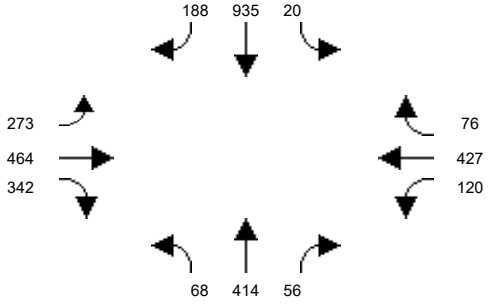
Intersection #96: SR-55 NB Ramps / Del Amo Ave and Newport Avenue



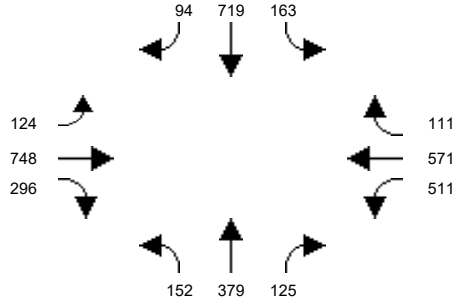
Intersection #97: Red Hill Ave and Edinger Ave



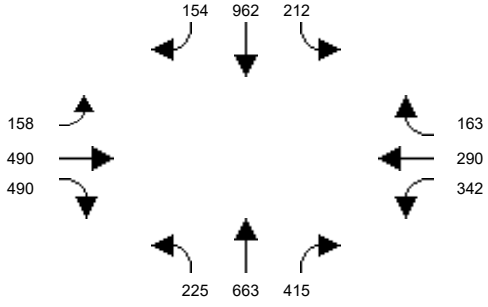
Intersection #98: Red Hill Ave and Warner Ave



Intersection #99: Red Hill Ave and Dyer Rd / barranca Pkwy



Intersection #100: Red Hill Ave and Alton Pkwy



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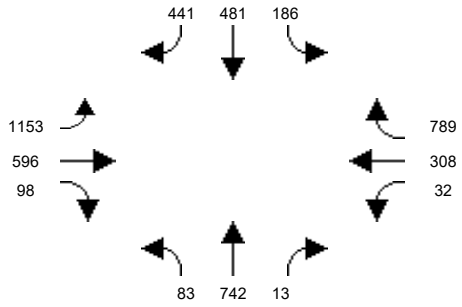
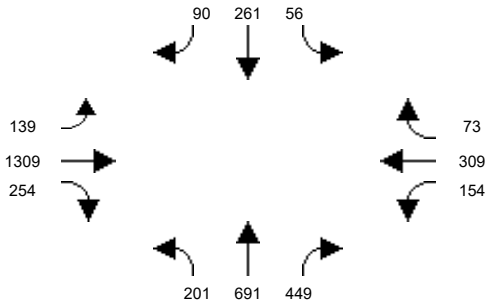
Santa Ana Circulation Element

Intersection Graphic Report
Entered Volume (Base Alternative)
2045 NP AM Peak Hour

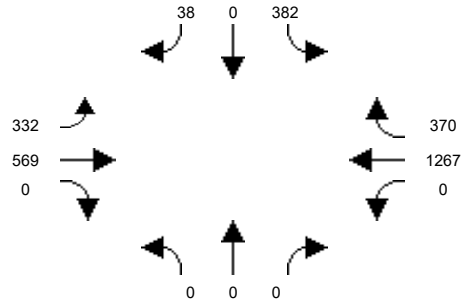
Intersection #101: Red Hill Ave and MacArthur Blvd



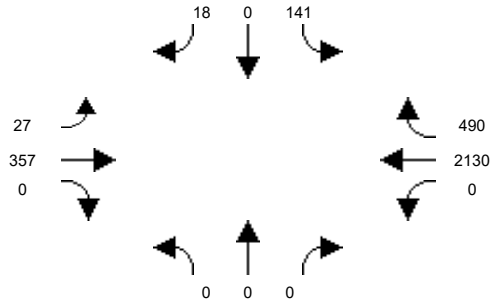
Intersection #102: Red Hill Ave and Main St



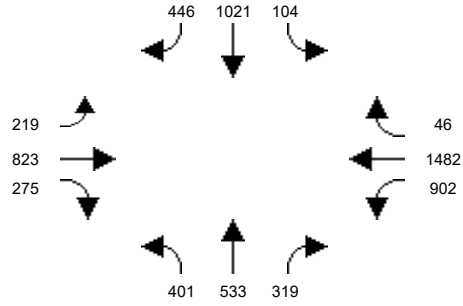
Intersection #103: I-5 SB Ramps and Santa Ana Blvd



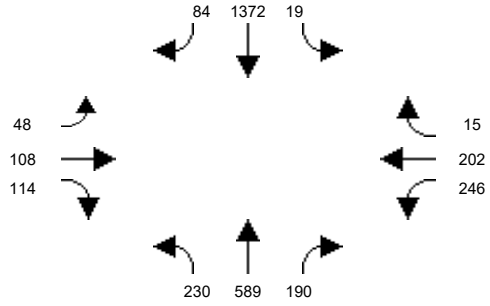
Intersection #104: Tustin Ranch Rd and Warner Ave



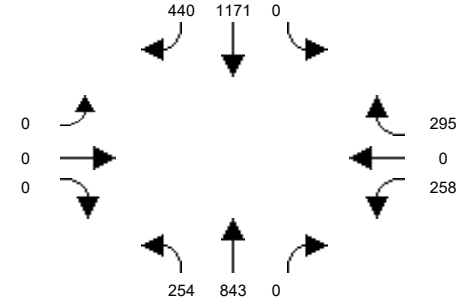
Intersection #105: Von Karman Ave and Barranca Pkwy



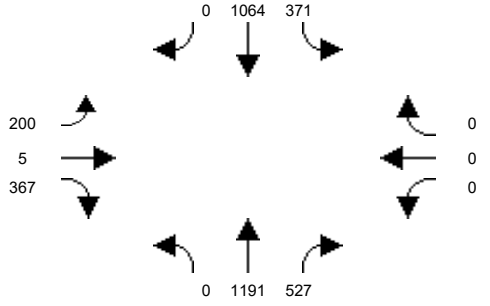
Intersection #106: Red Hill Avenue and El Camino Real



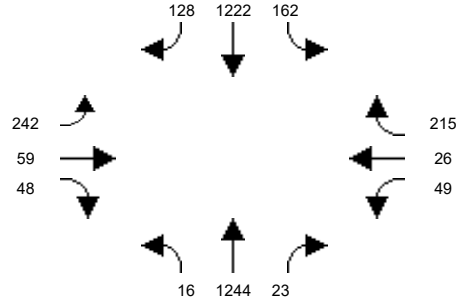
Intersection #107: Red Hill Avenue and I-5 NB Ramps



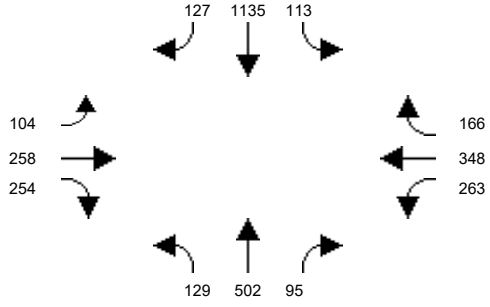
Intersection #108: Red Hill Avenue and I-5 SB Ramps



Intersection #109: Red Hill Avenue and Nisson Road



Intersection #110: Red Hill Avenue and Walnut Avenue



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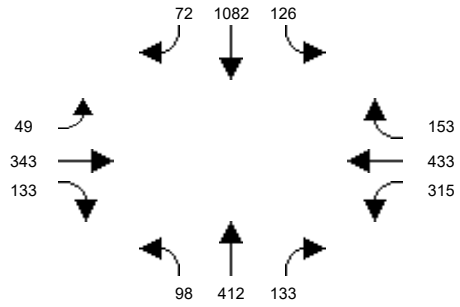
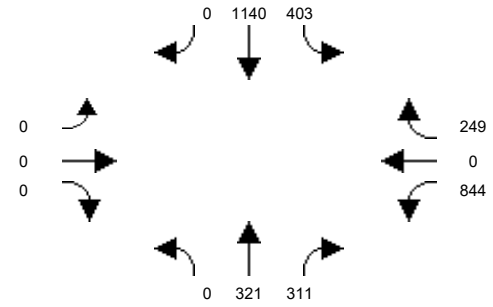
Santa Ana Circulation Element

Intersection Graphic Report
Entered Volume (Base Alternative)
2045 NP AM Peak Hour

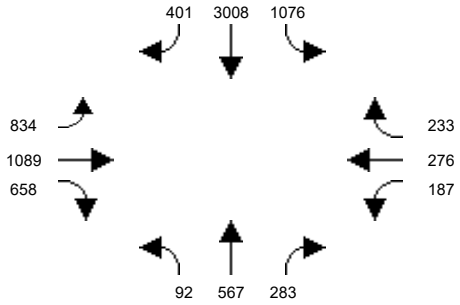
Intersection #111: Red Hill Avenue and Valencia Avenue



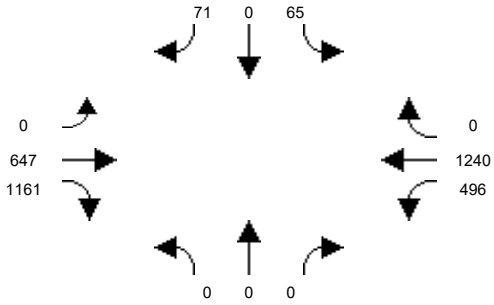
Intersection #112: Tustin Ranch Road and Warner Avenue North



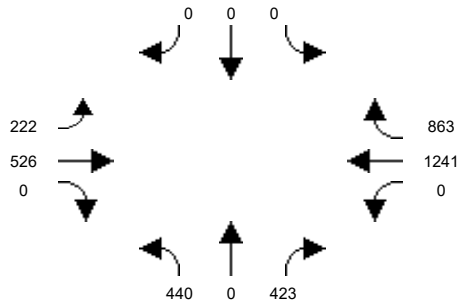
Intersection #113: Tustin Ranch Road and Walnut Avenue



Intersection #114: SR-55 SB Ramps and Irvine Boulevard



Intersection #115: SR-55 NB Ramps and Irvine Boulevard



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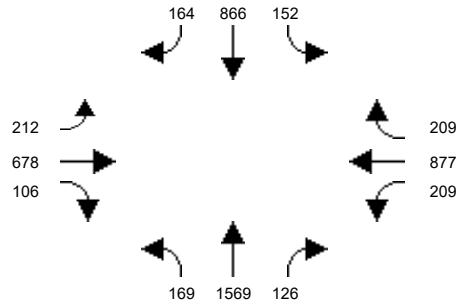
APPENDIX B.4

INTERSECTION VOLUMES –
2045 NP (PM PEAK HOUR)

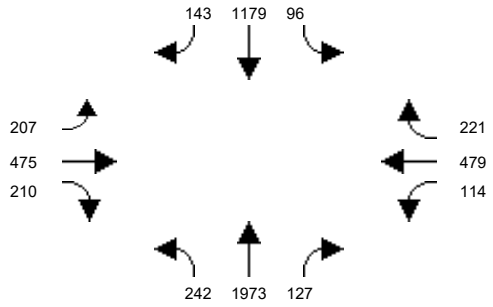
Santa Ana Circulation Element

Intersection Graphic Report
Entered Volume (Base Alternative)
2045 NP PM Peak Hour

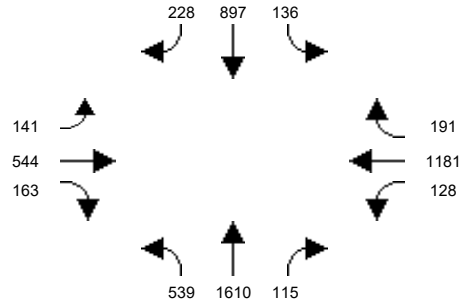
Intersection #1: Euclid St and 1st St



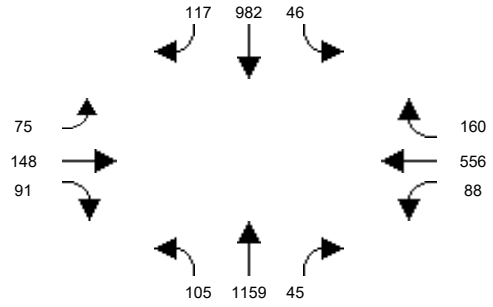
Intersection #2: Euclid St and McFadden Ave



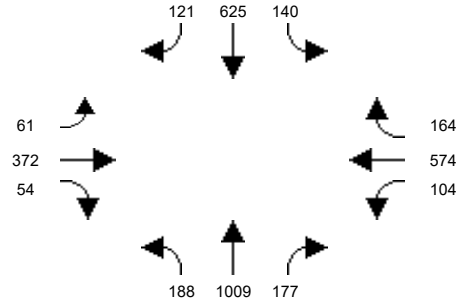
Intersection #3: Euclid St and Edinger Ave



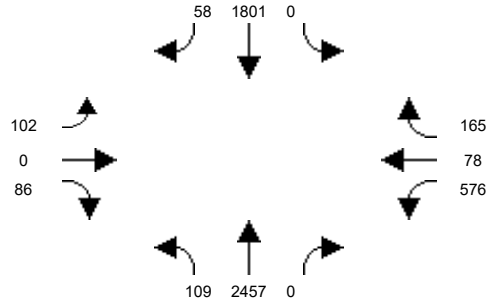
Intersection #4: Newhope St and Hazard Ave



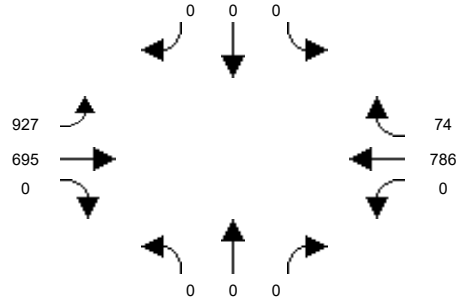
Intersection #5: Newhope St and McFadden Ave



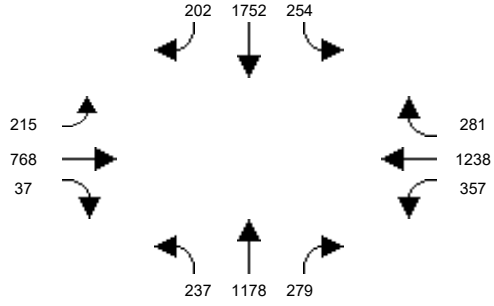
Intersection #6: Harbor Blvd and SR-22 WB Off-Ramp / Banner Dr



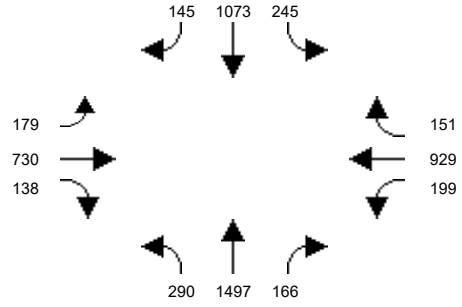
Intersection #7: Trask Avenue and SR-22 EB On-Ramp



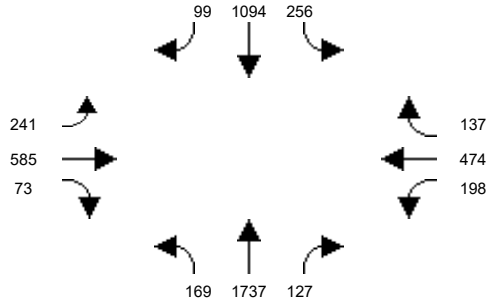
Intersection #8: Harbor Blvd and Westminster Ave



Intersection #9: Harbor Blvd and 1st St



Intersection #10: Harbor Blvd and McFadden Ave



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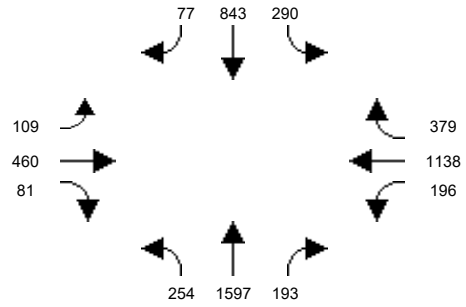
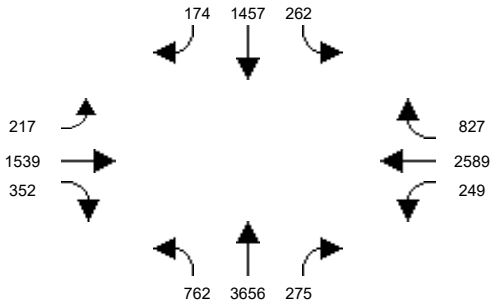
Santa Ana Circulation Element

Intersection Graphic Report
Entered Volume (Base Alternative)
2045 NP PM Peak Hour

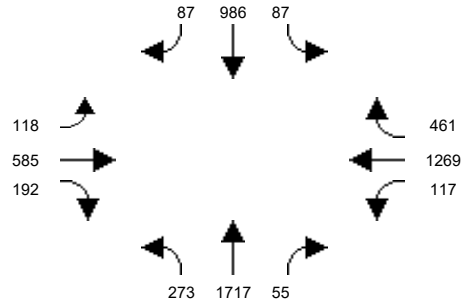
Intersection #11: Harbor Blvd and Edinger Ave



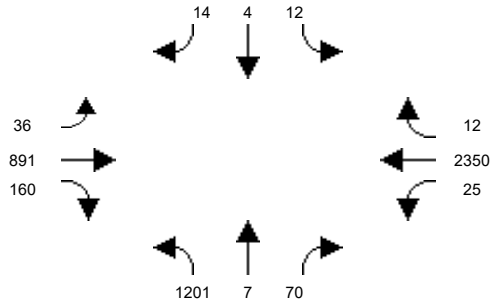
Intersection #12: Harbor Blvd and Warner Ave



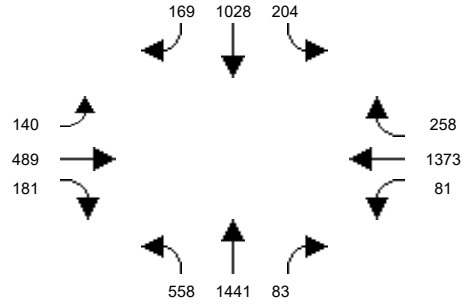
Intersection #13: Harbor Blvd and Segerstrom Ave



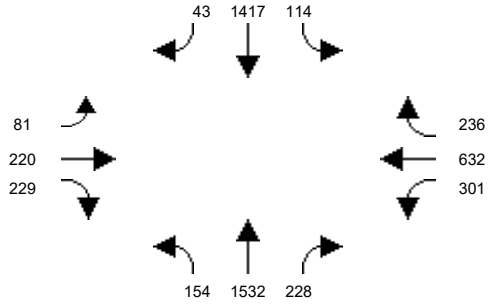
Intersection #14: MacArthur Blvd and Hyland Ave



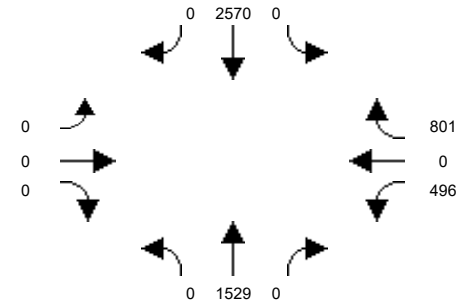
Intersection #15: MacArthur Blvd and Harbor Blvd



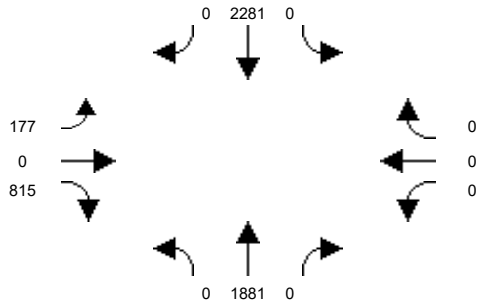
Intersection #16: Harbor Blvd and Sunflower Ave



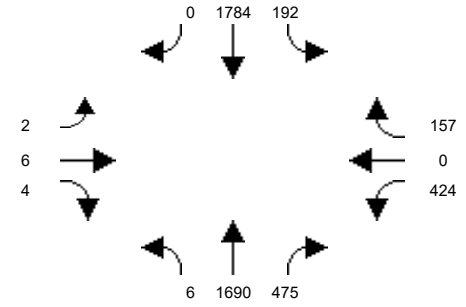
Intersection #17: Harbor Blvd and I-405 NB Off-Ramp



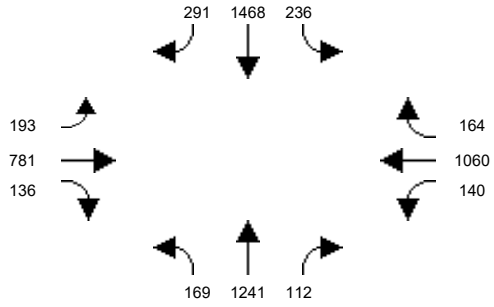
Intersection #18: Harbor Blvd and I-405 SB Off-Ramp



Intersection #19: Fairview St and Civic Center Dr



Intersection #20: Fairview St and 1st St



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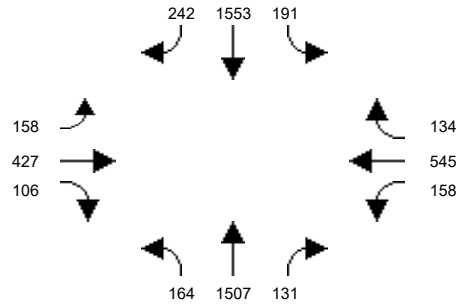
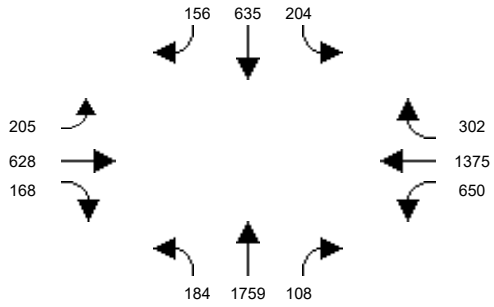
Santa Ana Circulation Element

Intersection Graphic Report
Entered Volume (Base Alternative)
2045 NP PM Peak Hour

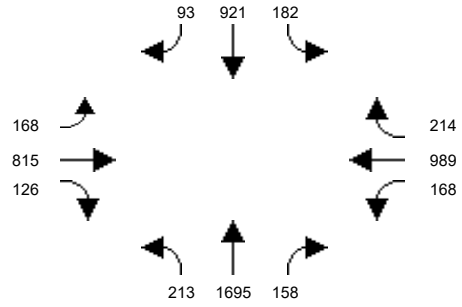
Intersection #21: Fairview St and McFadden Ave



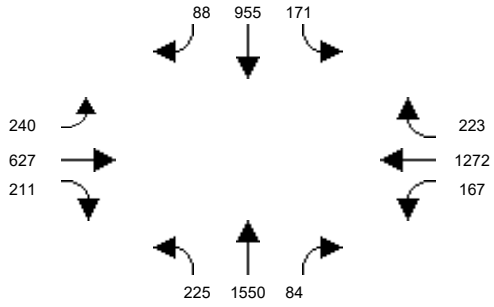
Intersection #22: Fairview St and Edinger Ave



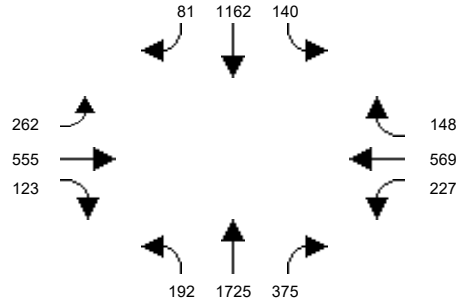
Intersection #23: Fairview St and Warner Ave



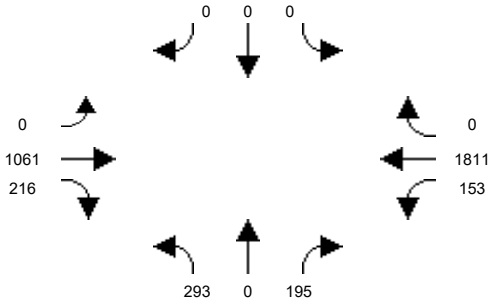
Intersection #24: Fairview St and MacArthur Blvd



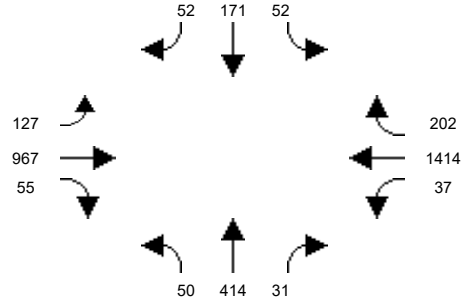
Intersection #25: Fairview Rd and Sunflower Ave



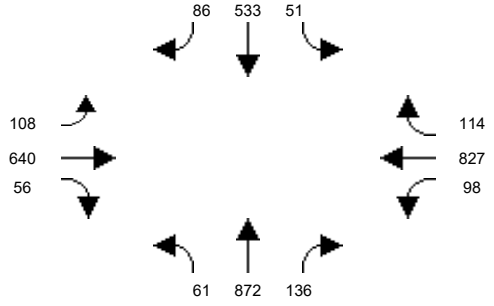
Intersection #26: Greenville St and Edinger Ave



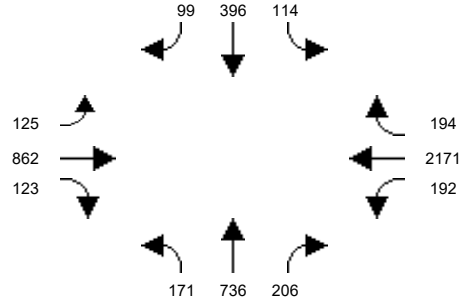
Intersection #27: Greenville St and Segerstrom Ave



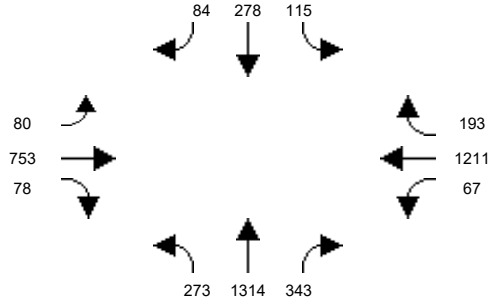
Intersection #28: Raitt St and McFadden Ave



Intersection #29: Raitt St and Edinger Ave



Intersection #30: Bear St and MacArthur Blvd



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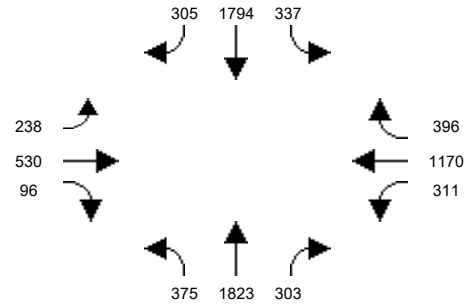
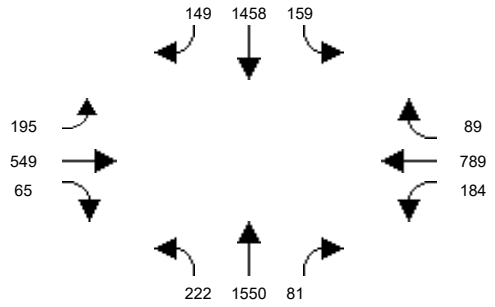
Santa Ana Circulation Element

Intersection Graphic Report
Entered Volume (Base Alternative)
2045 NP PM Peak Hour

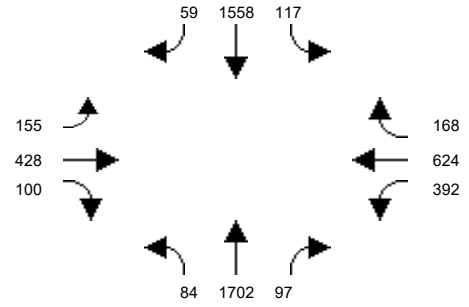
Intersection #31: Bristol St and 17th St



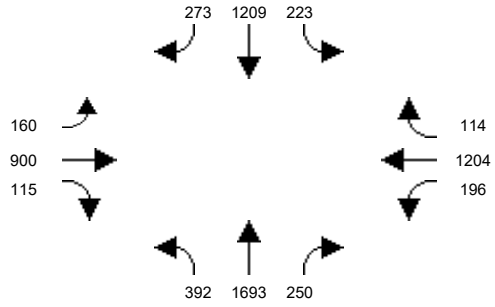
Intersection #32: Bristol St and Civic Center Dr



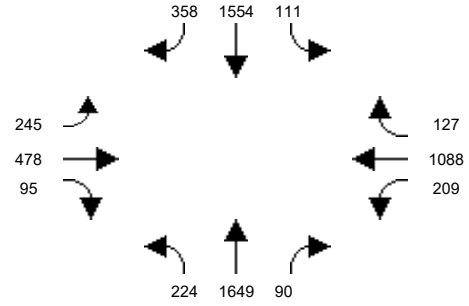
Intersection #33: Bristol St and Santa Ana Blvd



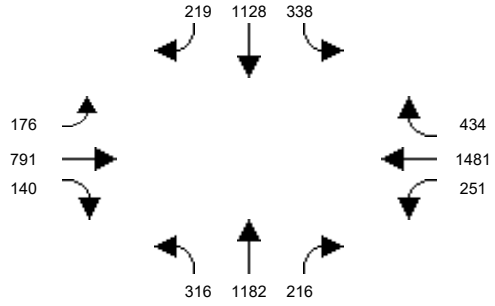
Intersection #34: Bristol St and 1st St



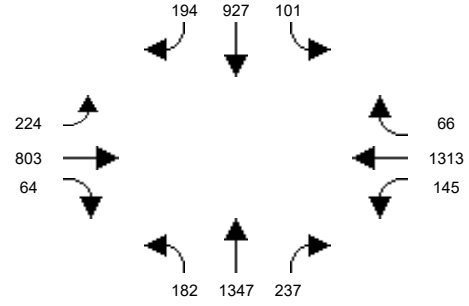
Intersection #35: Bristol St and McFadden Ave



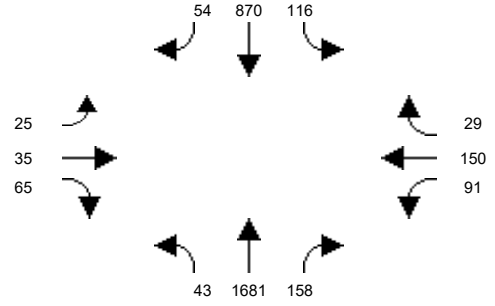
Intersection #36: Bristol St and Warner Ave



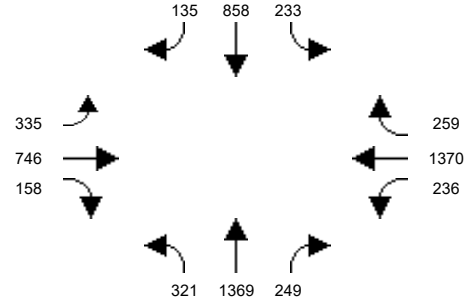
Intersection #37: Bristol St and Segerstrom Ave



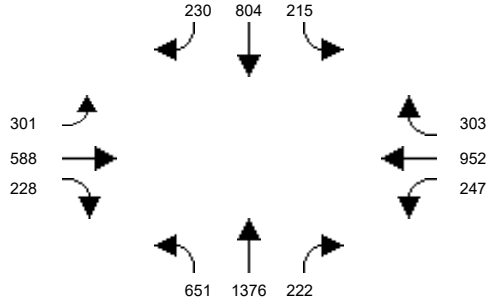
Intersection #38: Bristol St and Alton Ave



Intersection #39: Bristol St and MacArthur Blvd



Intersection #40: Bristol St and Sunflower Ave



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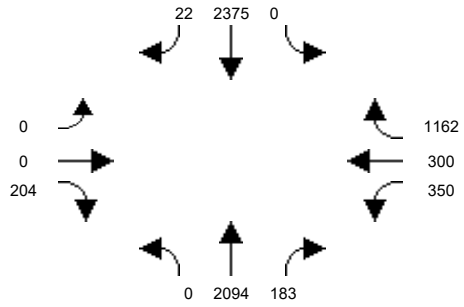
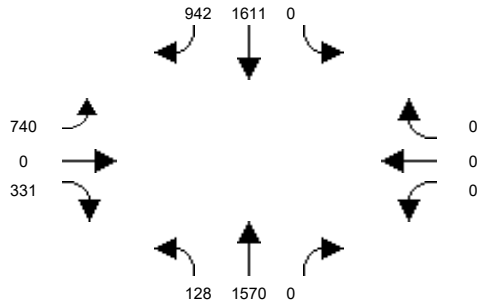
Santa Ana Circulation Element

Intersection Graphic Report
Entered Volume (Base Alternative)
2045 NP PM Peak Hour

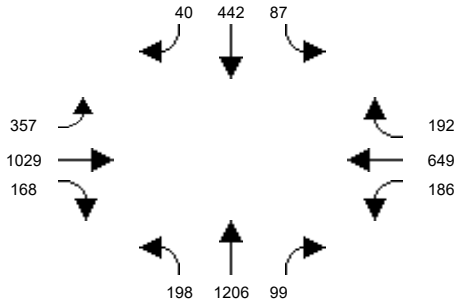
Intersection #41: Bristol St and I-405 NB Ramps



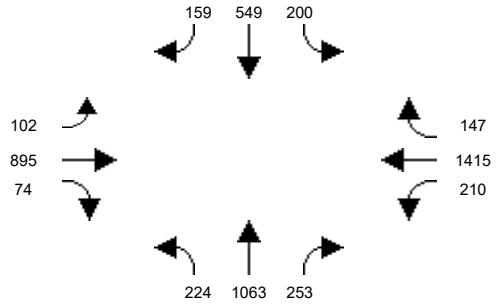
Intersection #42: Bristol St and I-405 SB Ramps



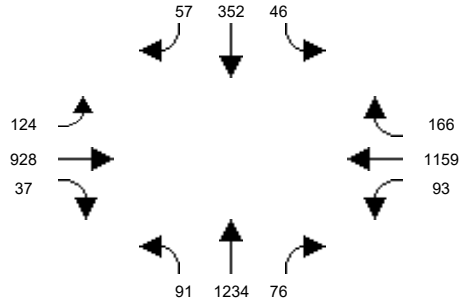
Intersection #43: Flower St and Santa Ana Blvd



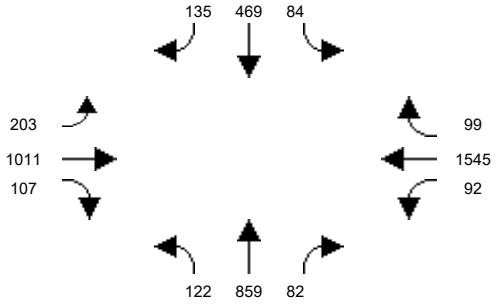
Intersection #44: Flower St and 1st St



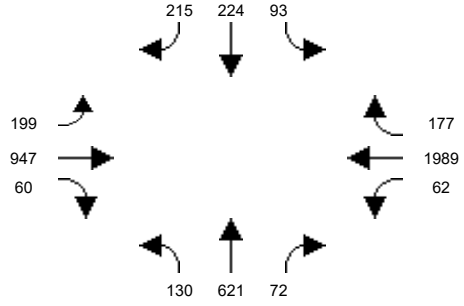
Intersection #45: Flower St and McFadden Ave



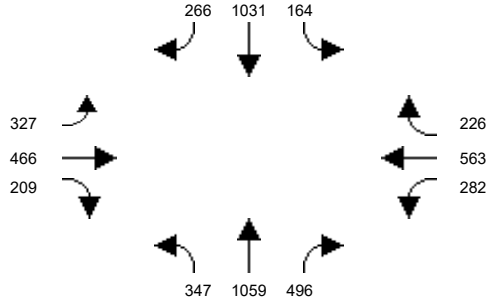
Intersection #46: Flower St and Segerstrom Ave



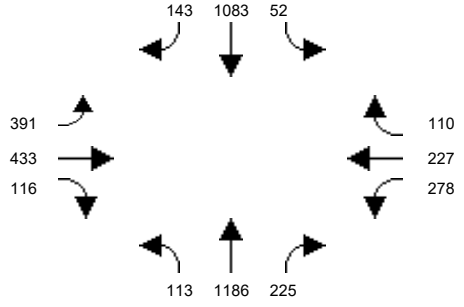
Intersection #47: Flower St and MacArthur Blvd



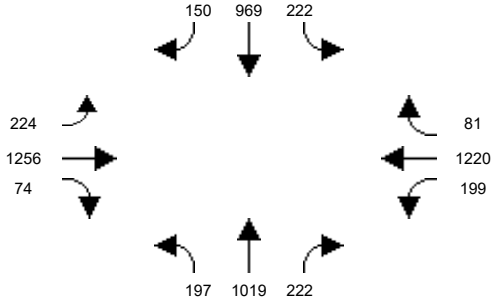
Intersection #48: Main St and La Veta Ave



Intersection #49: Main St and Mainplace Dr / Memory Ln



Intersection #50: Main St and 17th St



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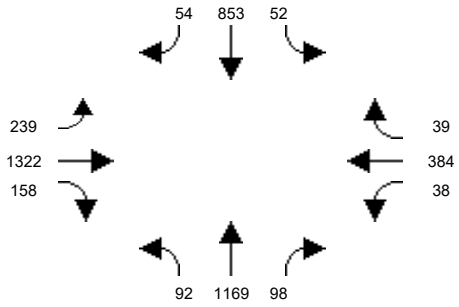
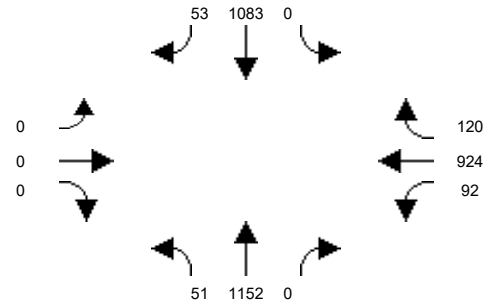
Santa Ana Circulation Element

Intersection Graphic Report
Entered Volume (Base Alternative)
2045 NP PM Peak Hour

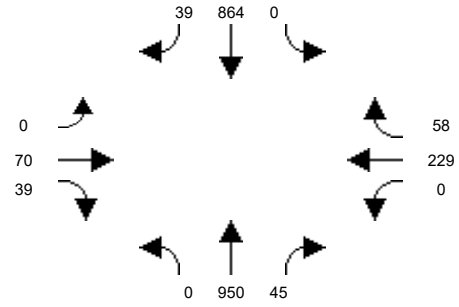
Intersection #51: Main St and Civic Center Dr



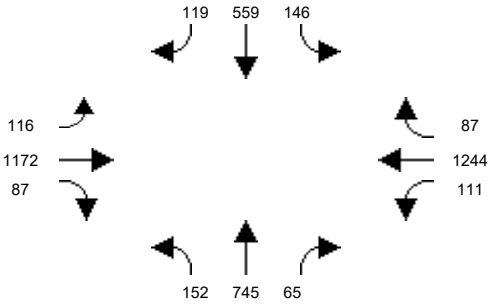
Intersection #52: Main St and Santa Ana Blvd



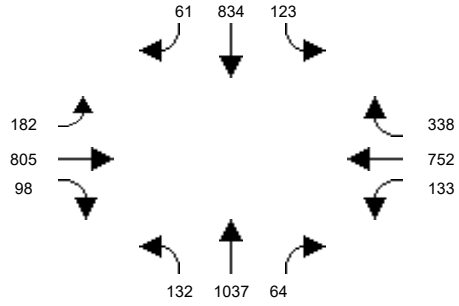
Intersection #53: Main St and 4th St



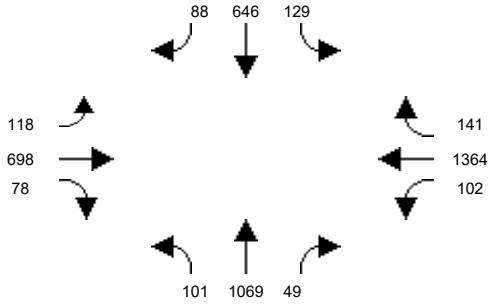
Intersection #54: Main St and 1st St



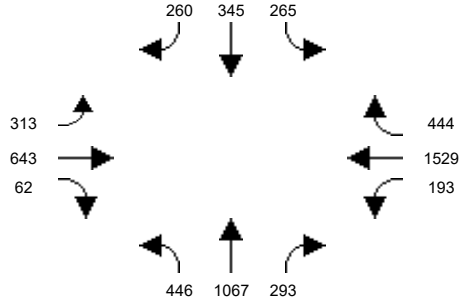
Intersection #55: Main St and McFadden Ave



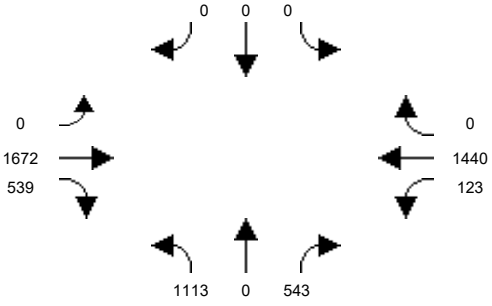
Intersection #56: Main St and Edinger Ave



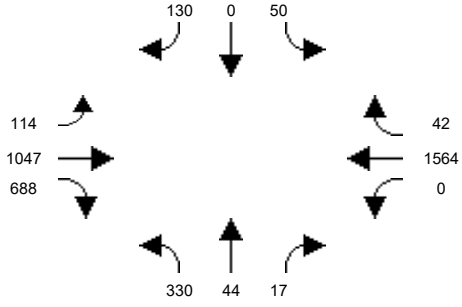
Intersection #57: Main St and MacArthur Blvd



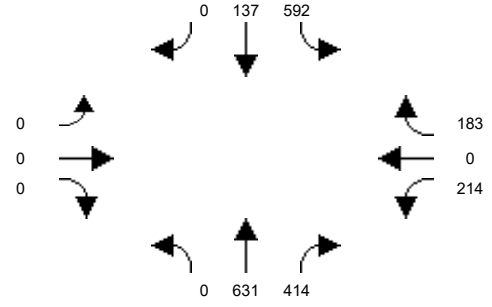
Intersection #58: Penn Wy and 17th St



Intersection #59: I-5 NB Off Ramps/17th Street



Intersection #60: Penn Wy and I-5 SB Ramps



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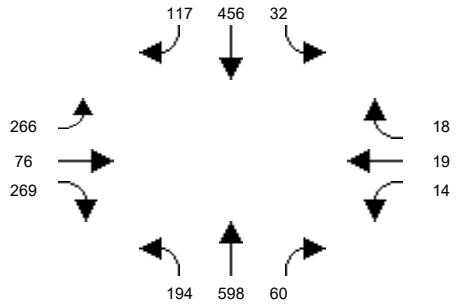
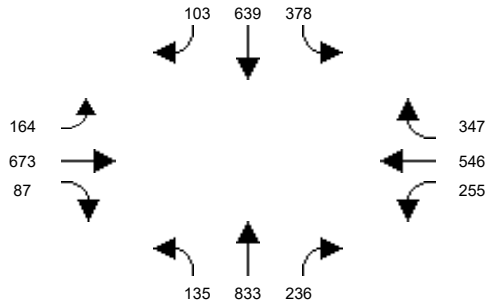
Santa Ana Circulation Element

Intersection Graphic Report
Entered Volume (Base Alternative)
2045 NP PM Peak Hour

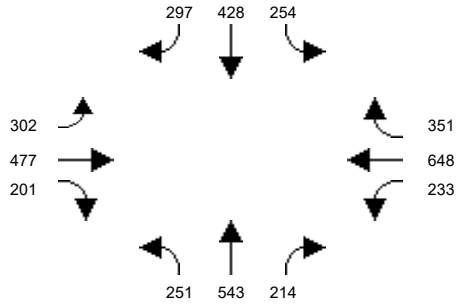
Intersection #61: Santiago St and Civic Center Dr



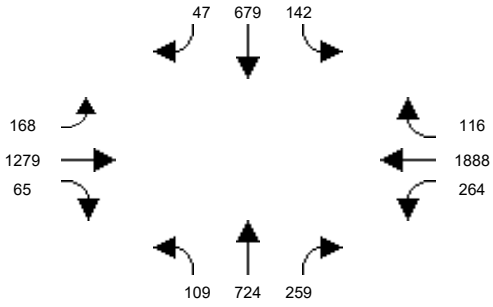
Intersection #62: Santiago St and Santa Ana Blvd



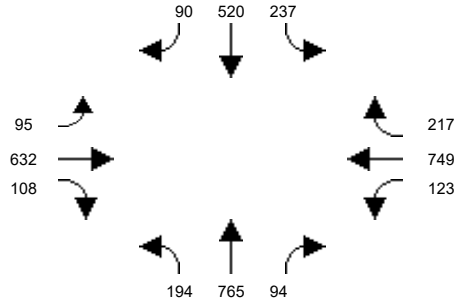
Intersection #63: Standard Ave and 4th St



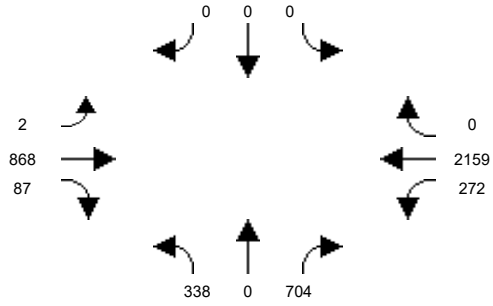
Intersection #64: Standard Ave and 1st St



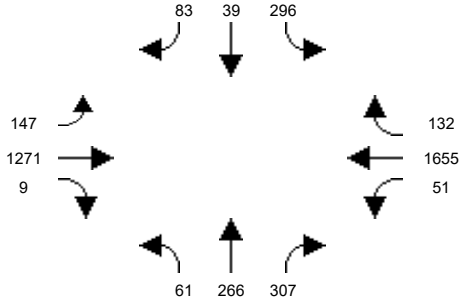
Intersection #65: Standard Ave and Mcfadden Ave



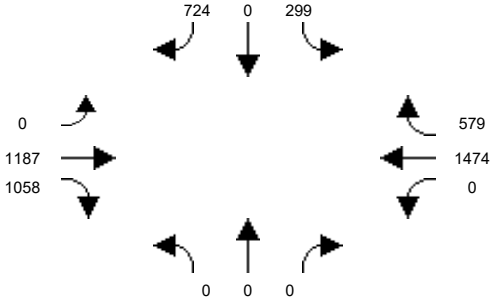
Intersection #66: Halladay St and Warner Ave



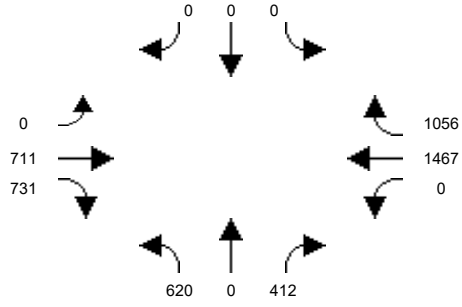
Intersection #67: Halladay St and Dyer Rd



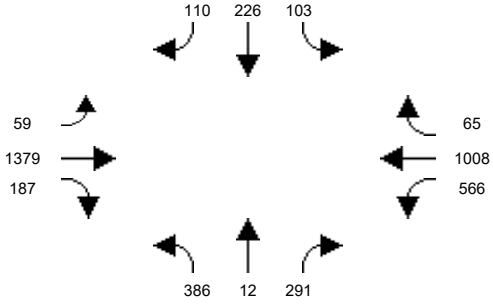
Intersection #68: SR-55 SB Ramps and MacArthur Blvd



Intersection #69: SR-55 NB Ramps and MacArthur Blvd



Intersection #70: SR-55 SB Ramps and Dyer Rd



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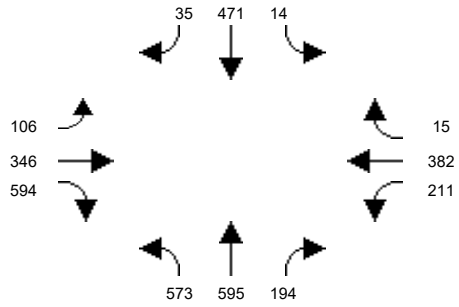
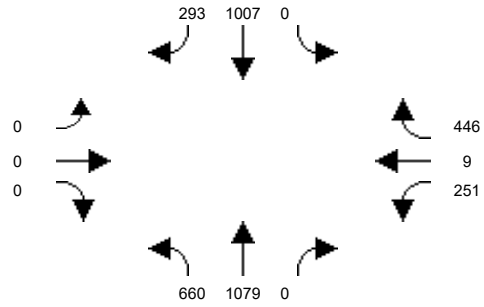
Santa Ana Circulation Element

Intersection Graphic Report
Entered Volume (Base Alternative)
2045 NP PM Peak Hour

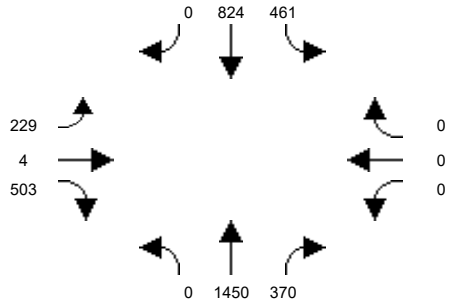
Intersection #71: Glassell St and La Veta Ave



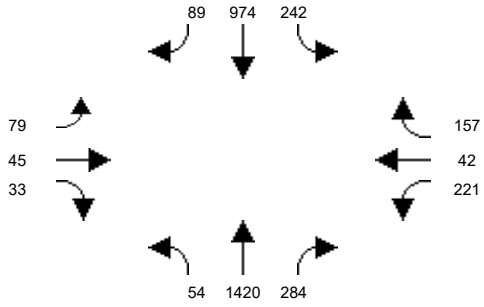
Intersection #72: Glassell St and SR-22 WB Ramps



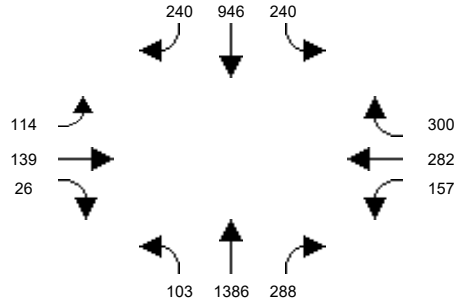
Intersection #73: Grand Ave / Glassell St and SR-22 EB Ramps



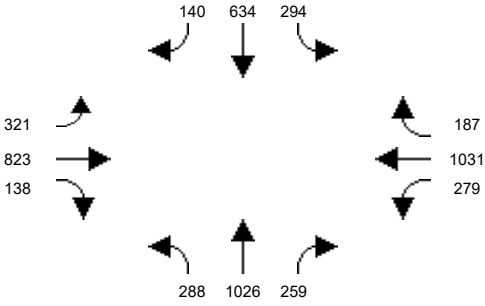
Intersection #74: Grand Ave and Fairhaven Ave



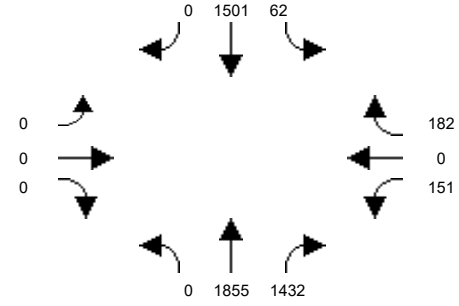
Intersection #75: Grand Ave and Santa Clara Ave



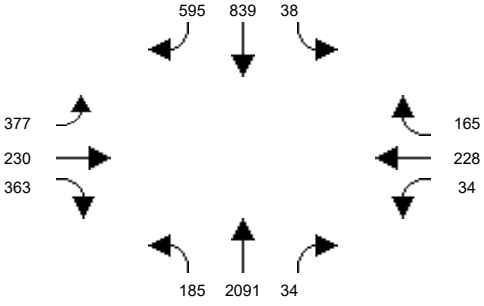
Intersection #76: Grand Ave and 17th St



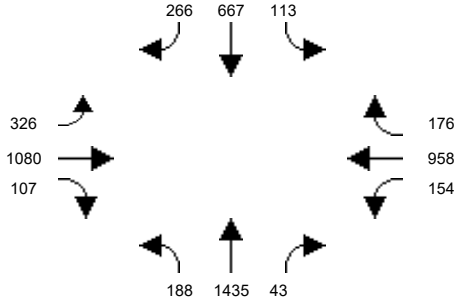
Intersection #77: Grand Ave and I-5 NB Ramps



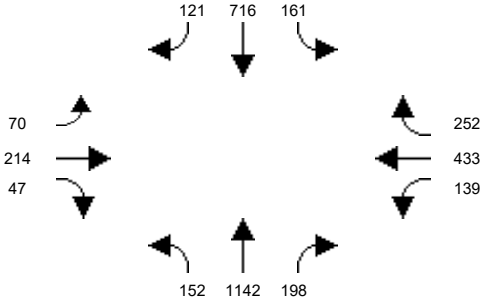
Intersection #78: Grand Ave and Santa Ana Blvd



Intersection #79: Grand Ave and 1st St



Intersection #80: Grand Ave and Chestnut Ave



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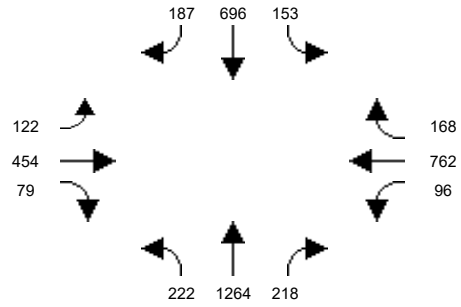
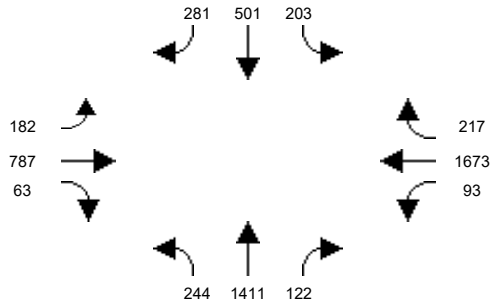
Santa Ana Circulation Element

Intersection Graphic Report
Entered Volume (Base Alternative)
2045 NP PM Peak Hour

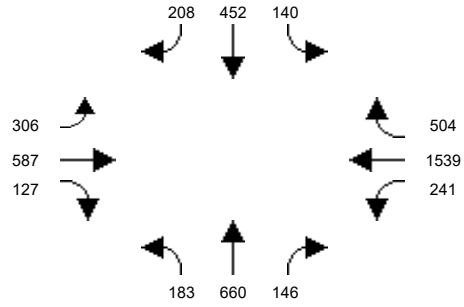
Intersection #81: Grand Ave and McFadden Ave



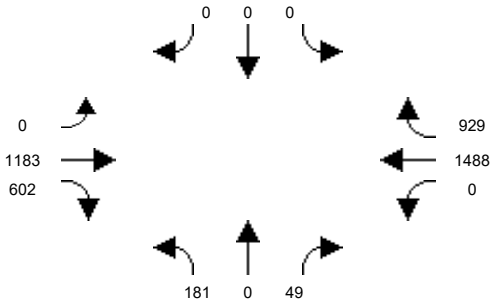
Intersection #82: Grand Ave and Edinger Ave



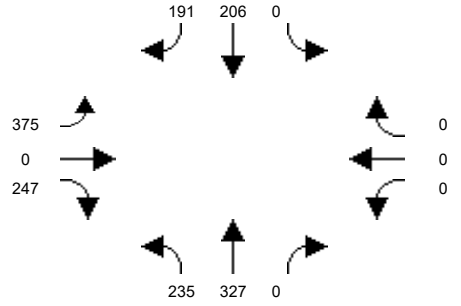
Intersection #83: Grand Ave and Warner Ave



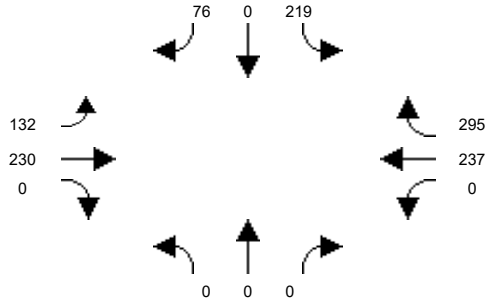
Intersection #84: SR-55 NB Ramps and Dyer Rd



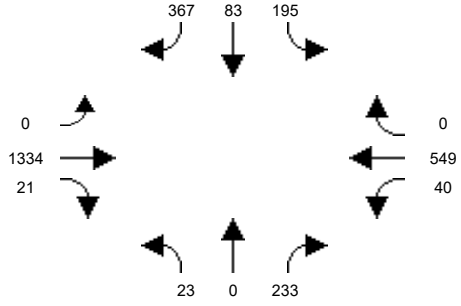
Intersection #85: Cambridge St and La Veta Ave



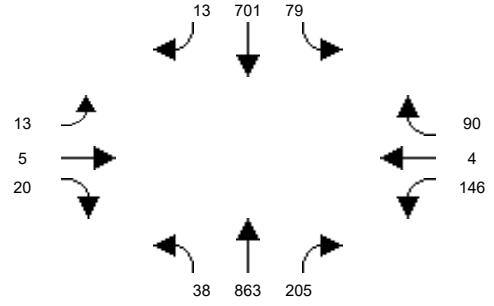
Intersection #86: Cambridge St and Fairhaven Ave



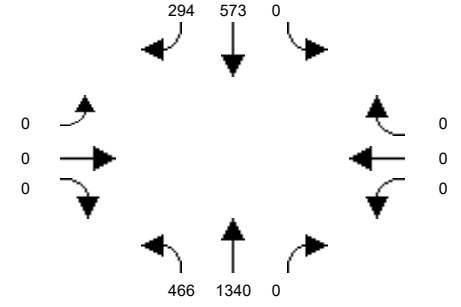
Intersection #87: Mabury St and 1st Street



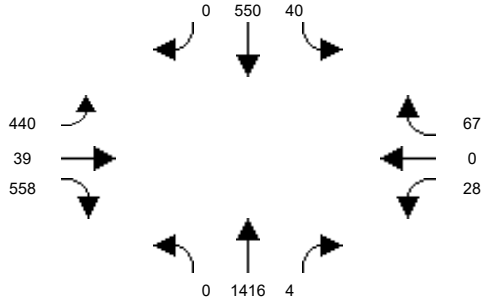
Intersection #88: Tustin St and La Veta Ave



Intersection #89: Tustin St and SR-22 WB On-Ramp



Intersection #90: Tustin St and SR-22 EB Off-Ramp / Seba Ave



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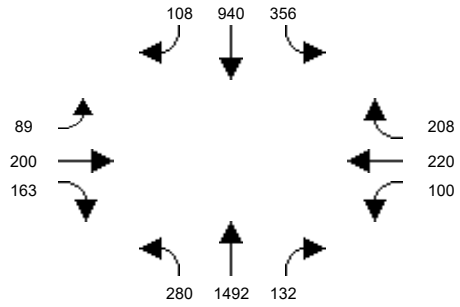
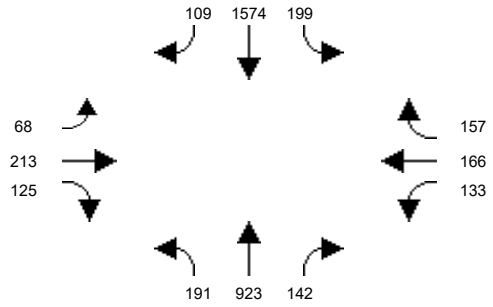
Santa Ana Circulation Element

Intersection Graphic Report
Entered Volume (Base Alternative)
2045 NP PM Peak Hour

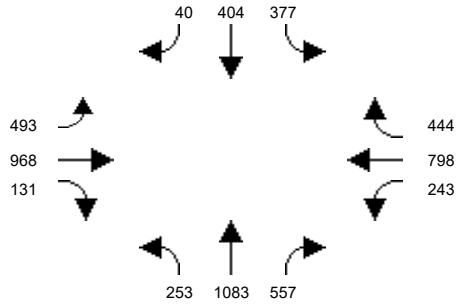
Intersection #91: Tustin Ave and Fairhaven Ave



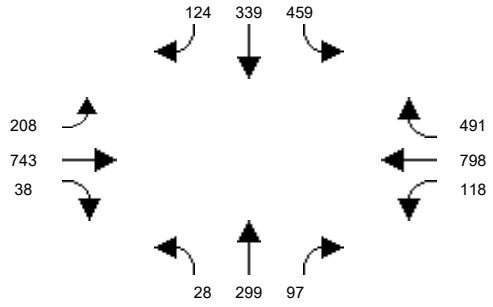
Intersection #92: Tustin Ave and Santa Clara Ave



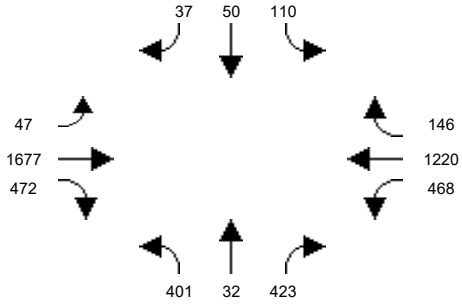
Intersection #93: Tustin Ave and 17th St



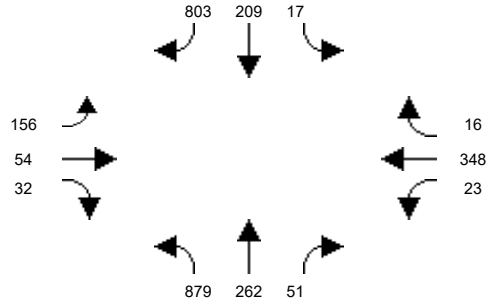
Intersection #94: Tustin Ave and 4th St



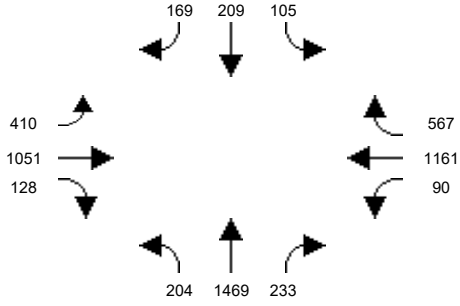
Intersection #95: SR-55 SB Ramps / Auto Mall Dr and Edinger Ave



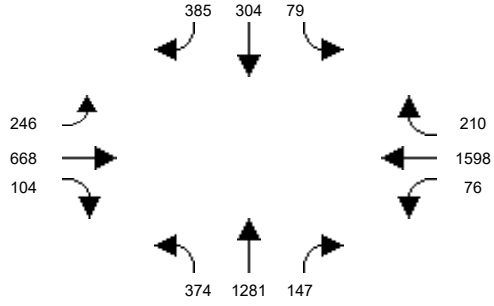
Intersection #96: SR-55 NB Ramps / Del Amo Ave and Newport Avenue



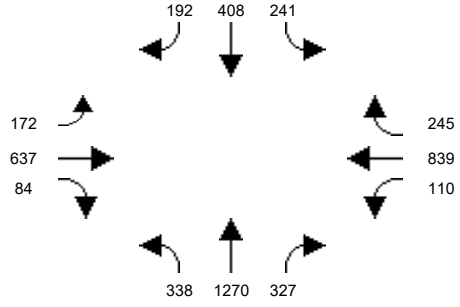
Intersection #97: Red Hill Ave and Edinger Ave



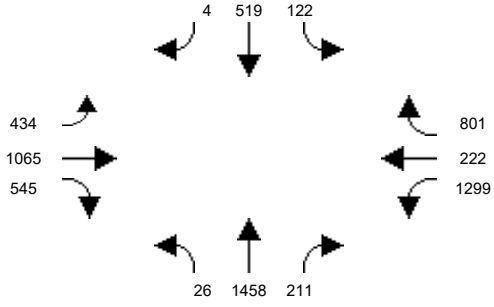
Intersection #98: Red Hill Ave and Warner Ave



Intersection #99: Red Hill Ave and Dyer Rd / barranca Pkwy



Intersection #100: Red Hill Ave and Alton Pkwy



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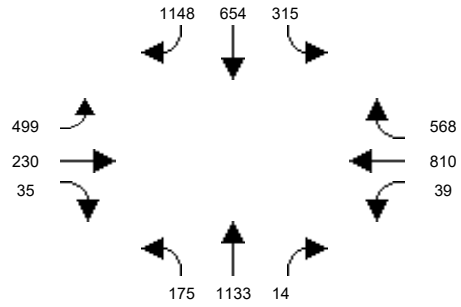
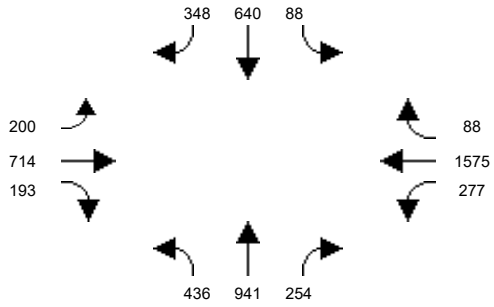
Santa Ana Circulation Element

Intersection Graphic Report
Entered Volume (Base Alternative)
2045 NP PM Peak Hour

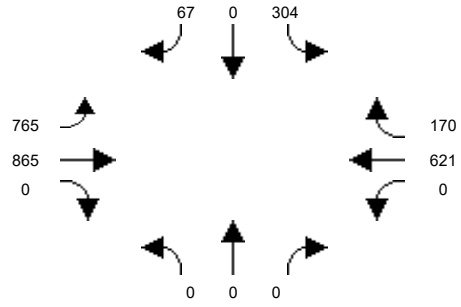
Intersection #101: Red Hill Ave and MacArthur Blvd



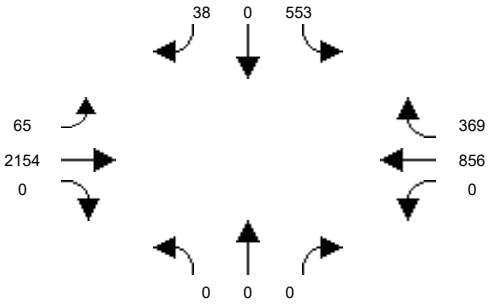
Intersection #102: Red Hill Ave and Main St



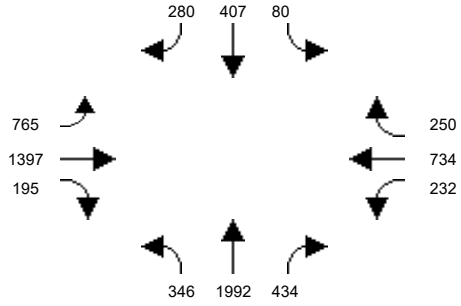
Intersection #103: I-5 SB Ramps and Santa Ana Blvd



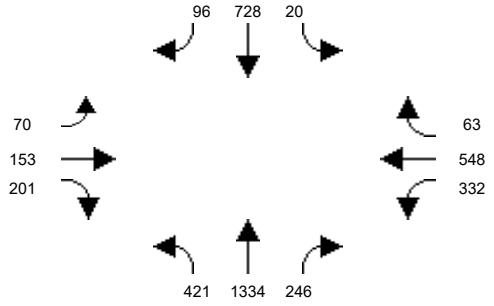
Intersection #104: Tustin Ranch Rd and Warner Ave



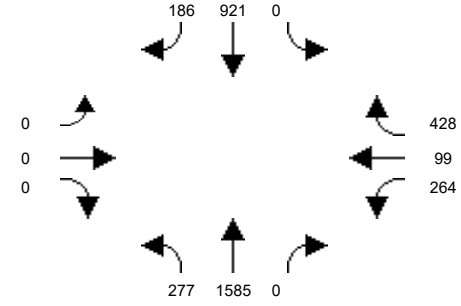
Intersection #105: Von Karman Ave and Barranca Pkwy



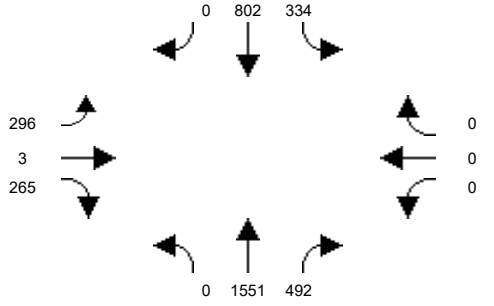
Intersection #106: Red Hill Avenue and El Camino Real



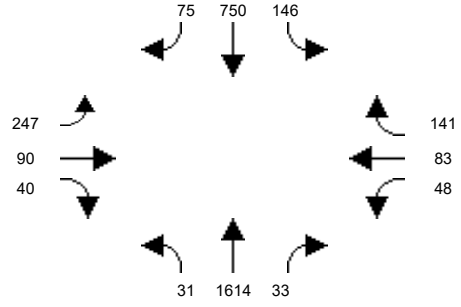
Intersection #107: Red Hill Avenue and I-5 NB Ramps



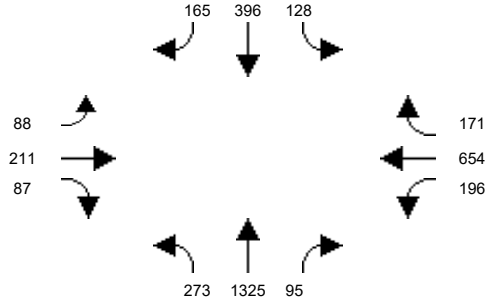
Intersection #108: Red Hill Avenue and I-5 SB Ramps



Intersection #109: Red Hill Avenue and Nisson Road



Intersection #110: Red Hill Avenue and Walnut Avenue



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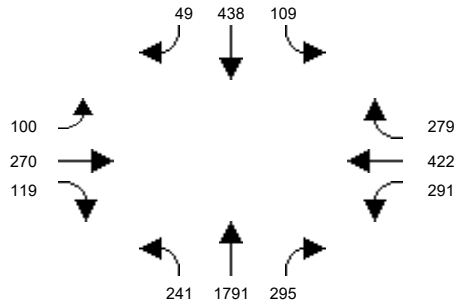
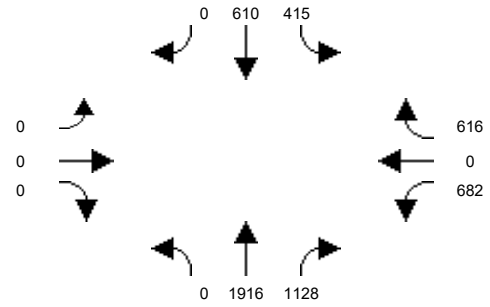
Santa Ana Circulation Element

Intersection Graphic Report
Entered Volume (Base Alternative)
2045 NP PM Peak Hour

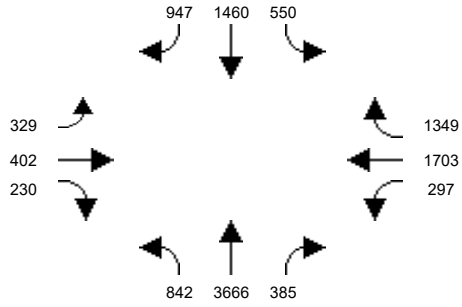
Intersection #111: Red Hill Avenue and Valencia Avenue



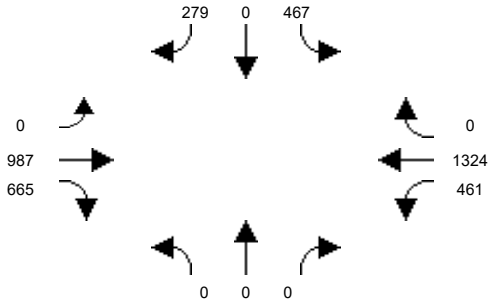
Intersection #112: Tustin Ranch Road and Warner Avenue North



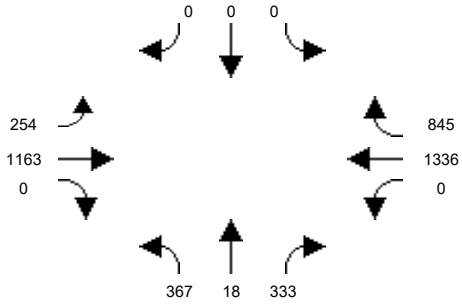
Intersection #113: Tustin Ranch Road and Walnut Avenue



Intersection #114: SR-55 SB Ramps and Irvine Boulevard



Intersection #115: SR-55 NB Ramps and Irvine Boulevard



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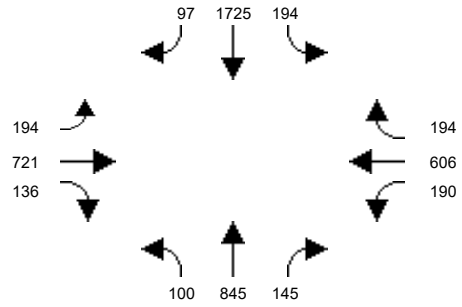
APPENDIX B.5

INTERSECTION VOLUMES –
2045 WP (AM PEAK HOUR)

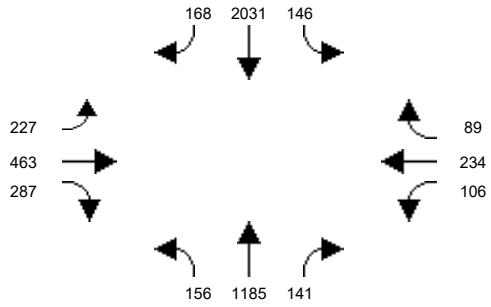
Santa Ana Circulation Element

Intersection Graphic Report
Entered Volume (Base Alternative)
2045 WP AM Peak Hour

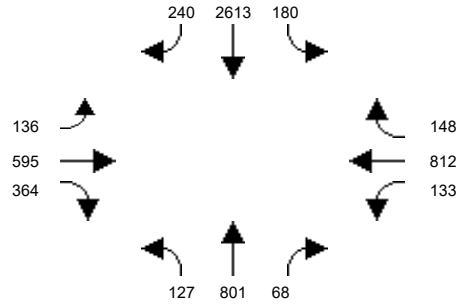
Intersection #1: Euclid St and 1st St



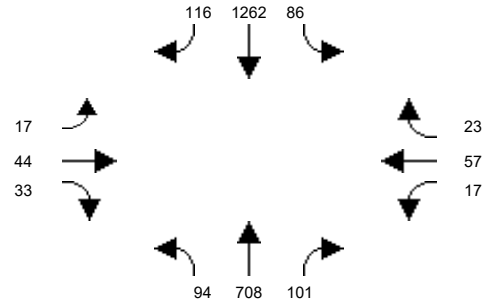
Intersection #2: Euclid St and McFadden Ave



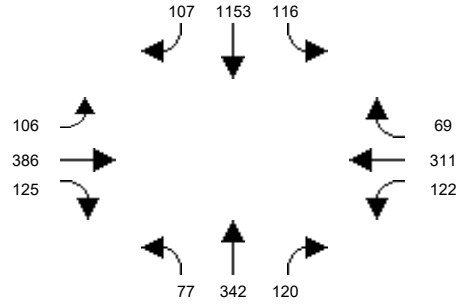
Intersection #3: Euclid St and Edinger Ave



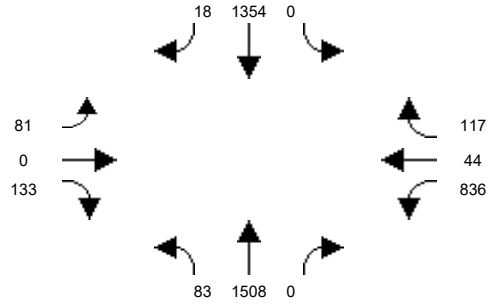
Intersection #4: Newhope St and Hazard Ave



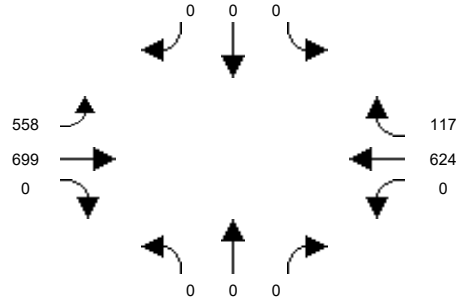
Intersection #5: Newhope St and McFadden Ave



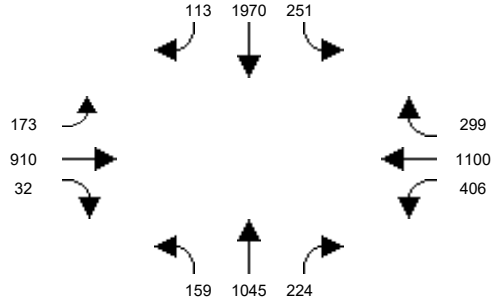
Intersection #6: Harbor Blvd and SR-22 WB Off-Ramp / Banner Dr



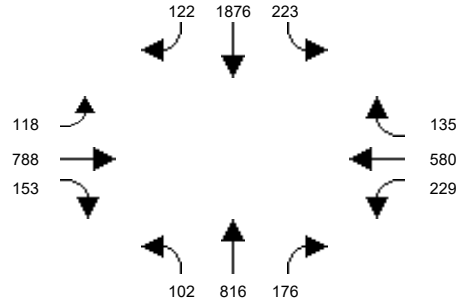
Intersection #7: Trask Avenue and SR-22 EB On-Ramp



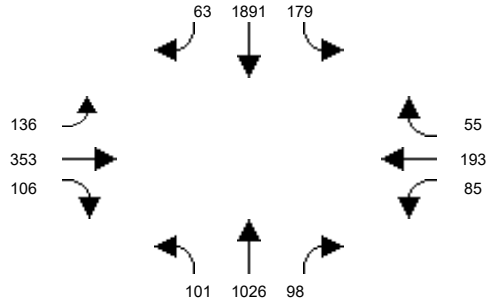
Intersection #8: Harbor Blvd and Westminster Ave



Intersection #9: Harbor Blvd and 1st St



Intersection #10: Harbor Blvd and McFadden Ave



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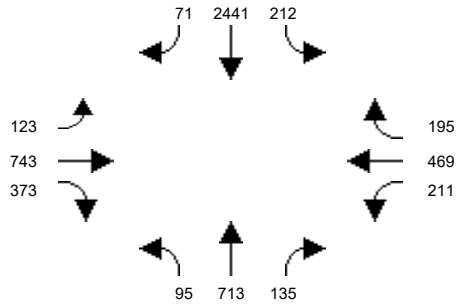
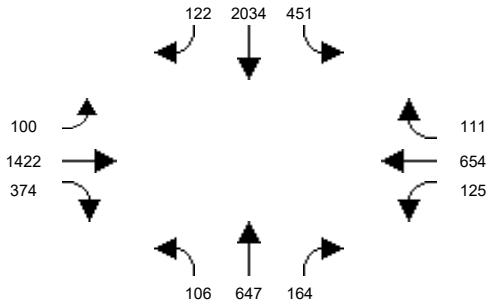
Santa Ana Circulation Element

Intersection Graphic Report
Entered Volume (Base Alternative)
2045 WP AM Peak Hour

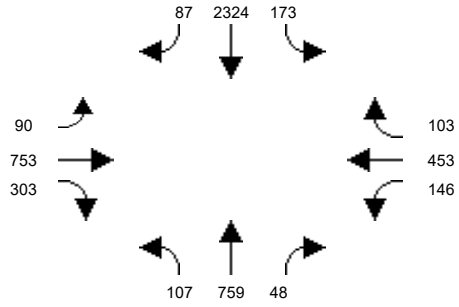
Intersection #11: Harbor Blvd and Edinger Ave



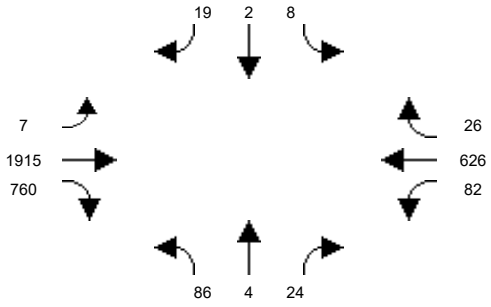
Intersection #12: Harbor Blvd and Warner Ave



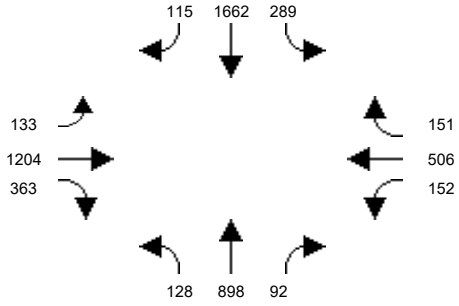
Intersection #13: Harbor Blvd and Segerstrom Ave



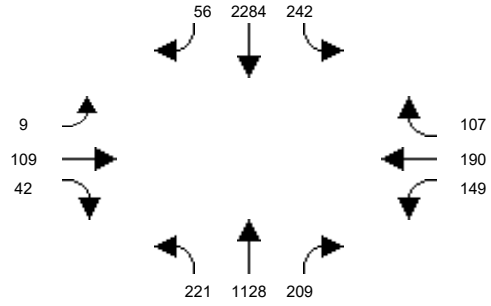
Intersection #14: MacArthur Blvd and Hyland Ave



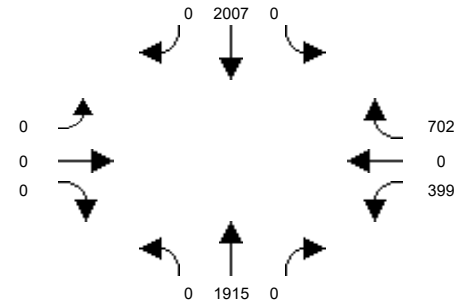
Intersection #15: MacArthur Blvd and Harbor Blvd



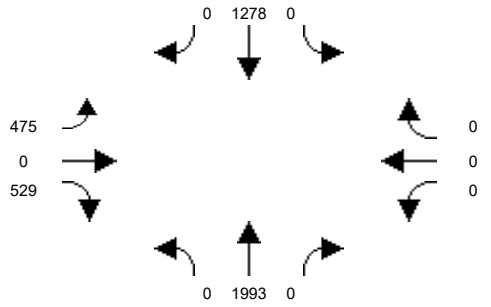
Intersection #16: Harbor Blvd and Sunflower Ave



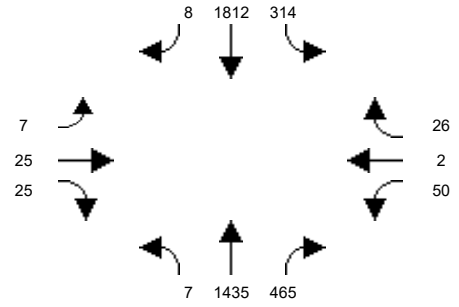
Intersection #17: Harbor Blvd and I-405 NB Off-Ramp



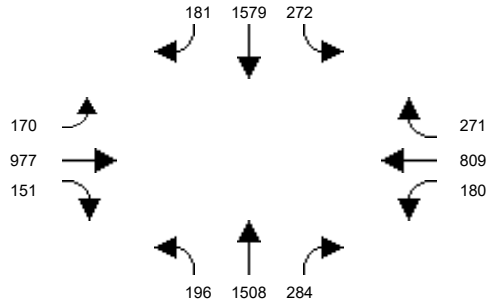
Intersection #18: Harbor Blvd and I-405 SB Off-Ramp



Intersection #19: Fairview St and Civic Center Dr



Intersection #20: Fairview St and 1st St



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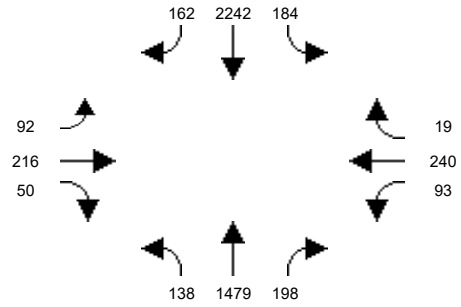
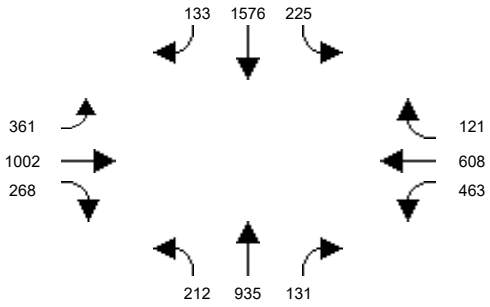
Santa Ana Circulation Element

Intersection Graphic Report
Entered Volume (Base Alternative)
2045 WP AM Peak Hour

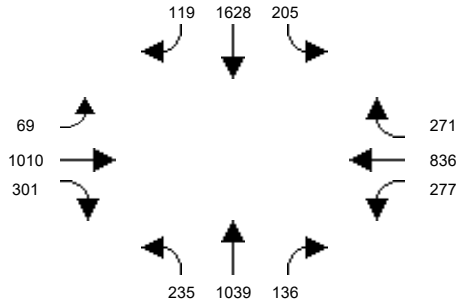
Intersection #21: Fairview St and McFadden Ave



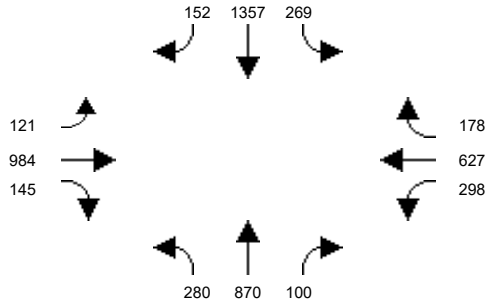
Intersection #22: Fairview St and Edinger Ave



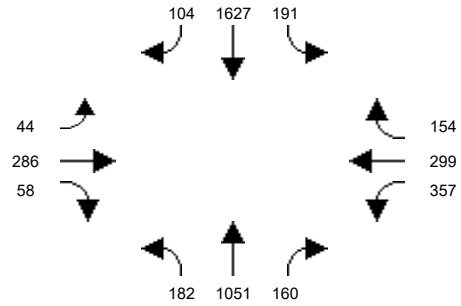
Intersection #23: Fairview St and Warner Ave



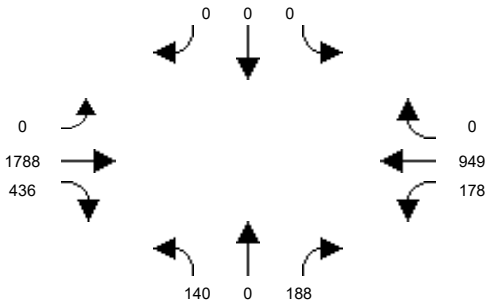
Intersection #24: Fairview St and MacArthur Blvd



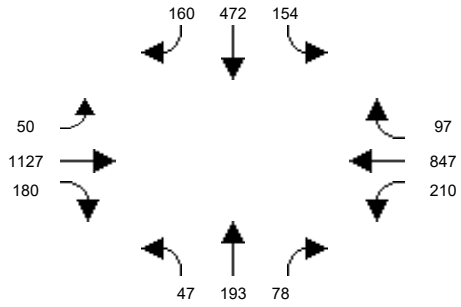
Intersection #25: Fairview Rd and Sunflower Ave



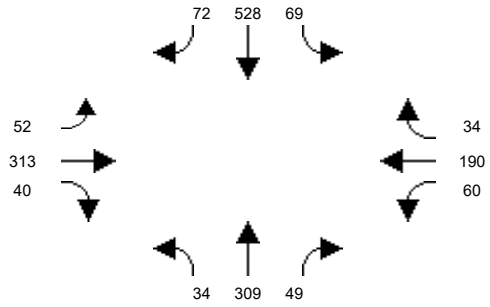
Intersection #26: Greenville St and Edinger Ave



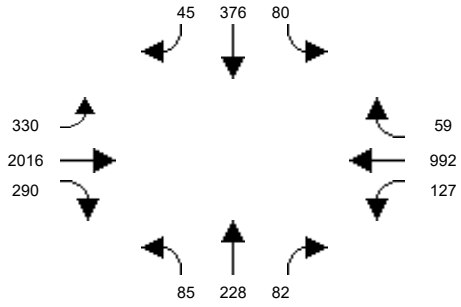
Intersection #27: Greenville St and Segerstrom Ave



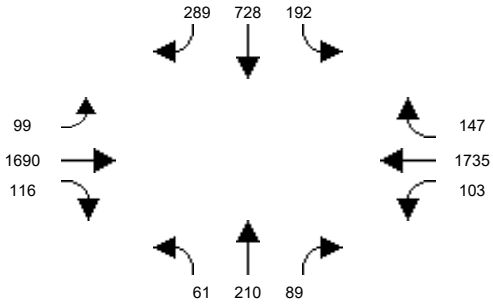
Intersection #28: Raitt St and McFadden Ave



Intersection #29: Raitt St and Edinger Ave



Intersection #30: Bear St and MacArthur Blvd



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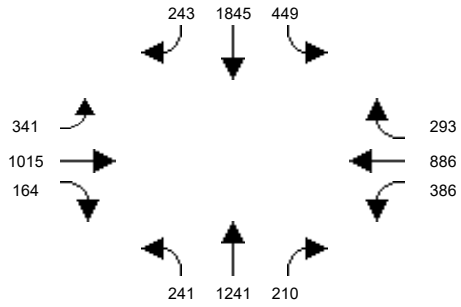
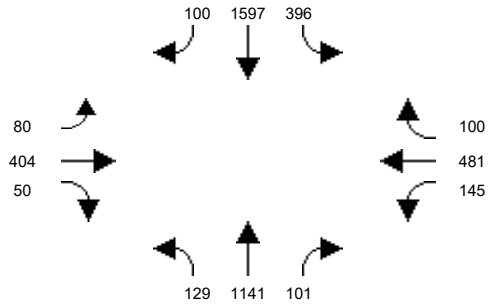
Santa Ana Circulation Element

Intersection Graphic Report
Entered Volume (Base Alternative)
2045 WP AM Peak Hour

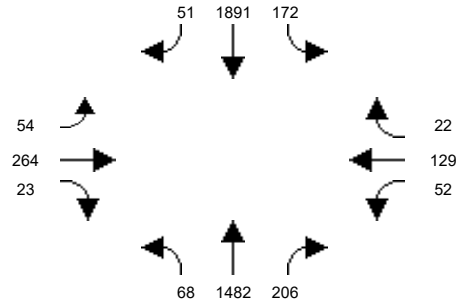
Intersection #31: Bristol St and 17th St



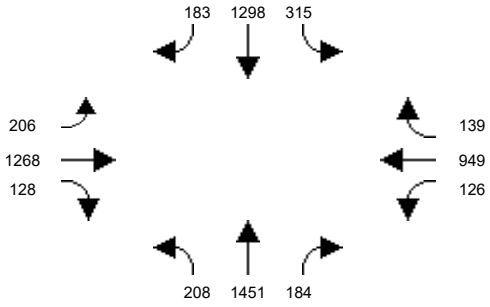
Intersection #32: Bristol St and Civic Center Dr



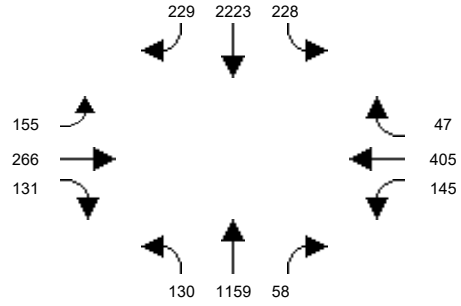
Intersection #33: Bristol St and Santa Ana Blvd



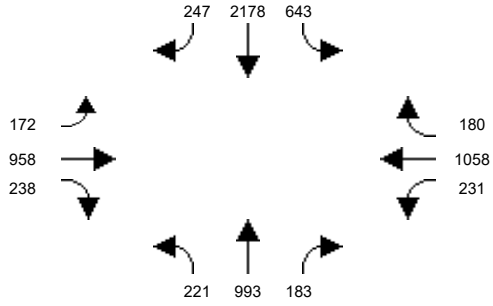
Intersection #34: Bristol St and 1st St



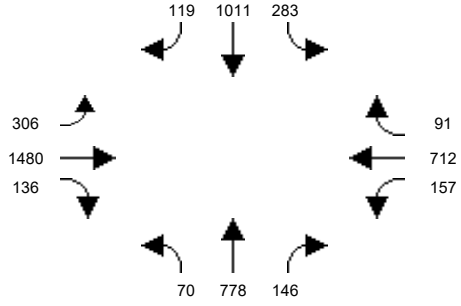
Intersection #35: Bristol St and McFadden Ave



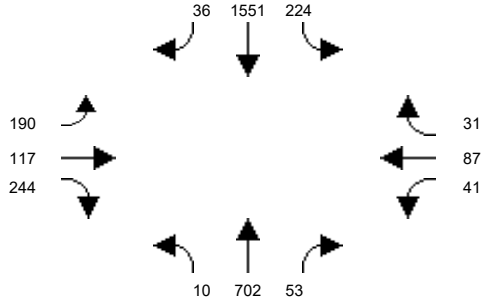
Intersection #36: Bristol St and Warner Ave



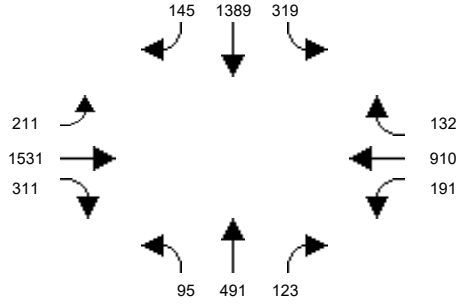
Intersection #37: Bristol St and Segerstrom Ave



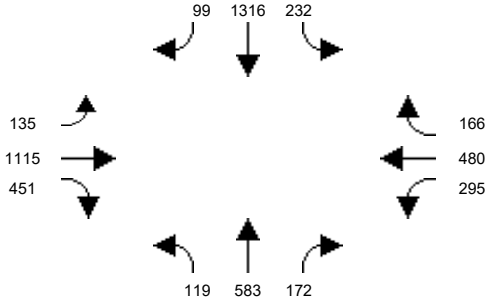
Intersection #38: Bristol St and Alton Ave



Intersection #39: Bristol St and MacArthur Blvd



Intersection #40: Bristol St and Sunflower Ave



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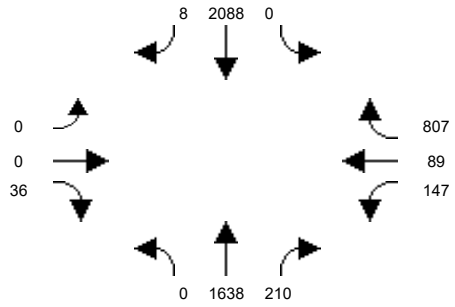
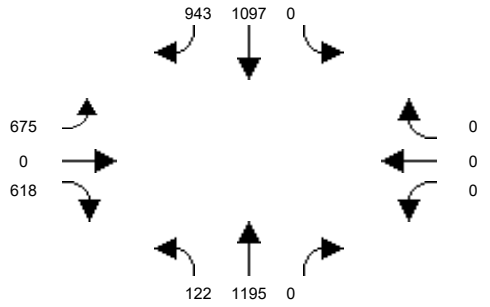
Santa Ana Circulation Element

Intersection Graphic Report
Entered Volume (Base Alternative)
2045 WP AM Peak Hour

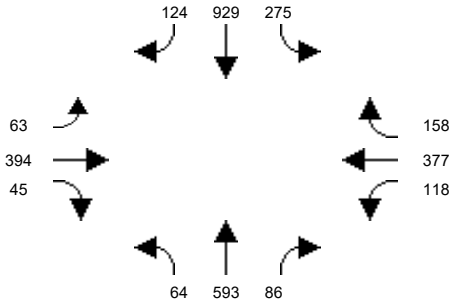
Intersection #41: Bristol St and I-405 NB Ramps



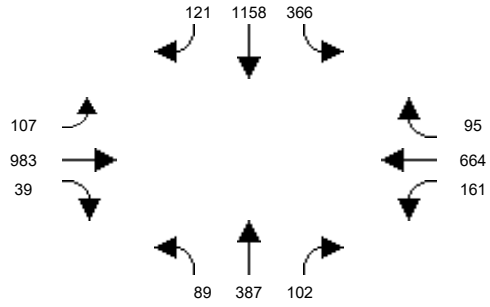
Intersection #42: Bristol St and I-405 SB Ramps



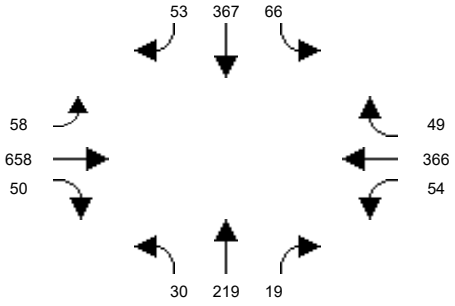
Intersection #43: Flower St and Santa Ana Blvd



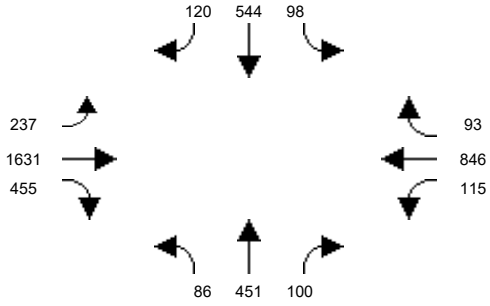
Intersection #44: Flower St and 1st St



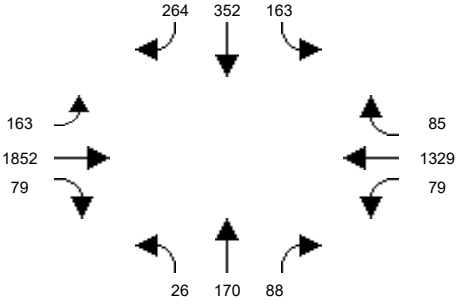
Intersection #45: Flower St and McFadden Ave



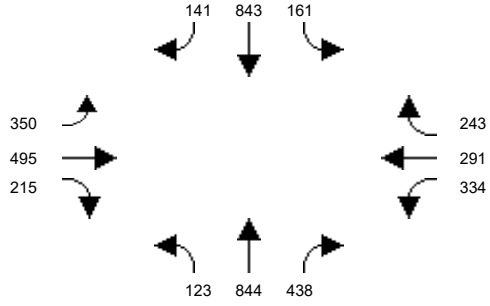
Intersection #46: Flower St and Segerstrom Ave



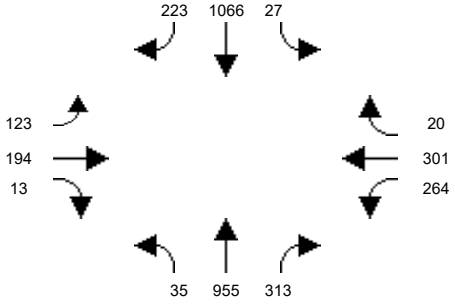
Intersection #47: Flower St and MacArthur Blvd



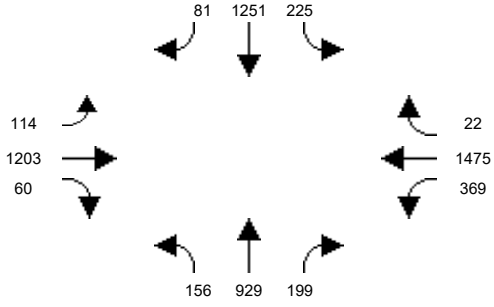
Intersection #48: Main St and La Veta Ave



Intersection #49: Main St and Mainplace Dr / Memory Ln



Intersection #50: Main St and 17th St



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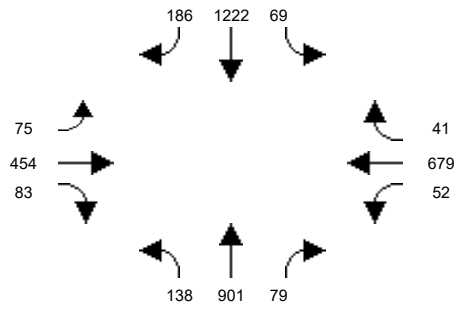
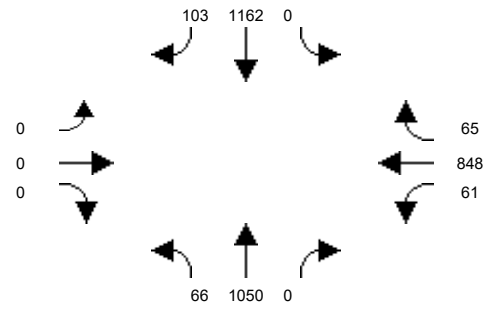
Santa Ana Circulation Element

Intersection Graphic Report
Entered Volume (Base Alternative)
2045 WP AM Peak Hour

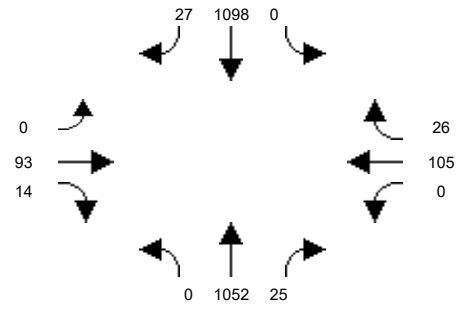
Intersection #51: Main St and Civic Center Dr



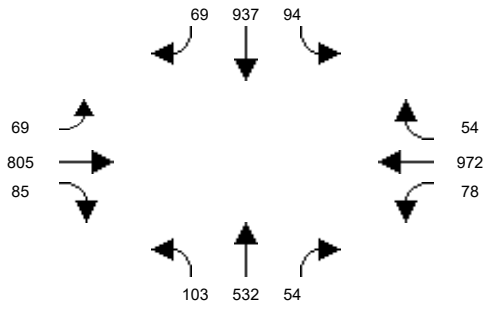
Intersection #52: Main St and Santa Ana Blvd



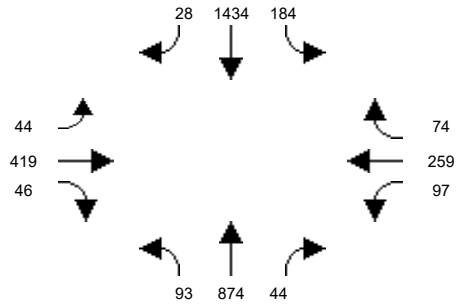
Intersection #53: Main St and 4th St



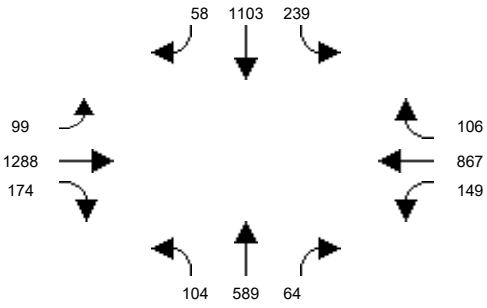
Intersection #54: Main St and 1st St



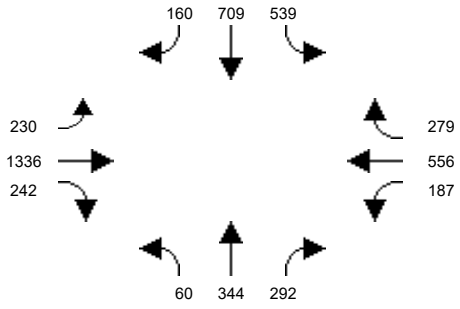
Intersection #55: Main St and McFadden Ave



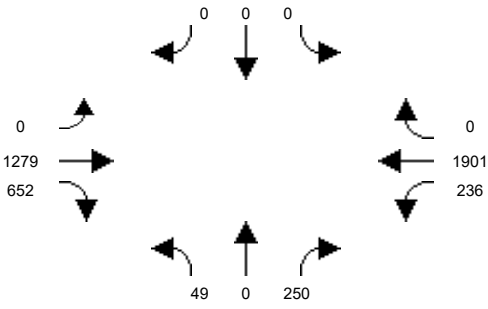
Intersection #56: Main St and Edinger Ave



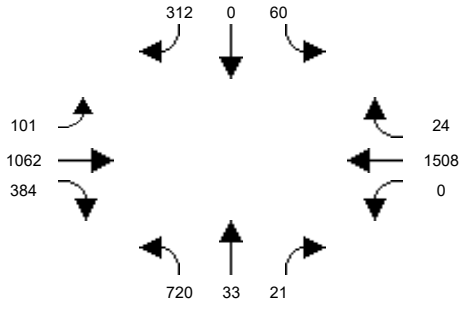
Intersection #57: Main St and MacArthur Blvd



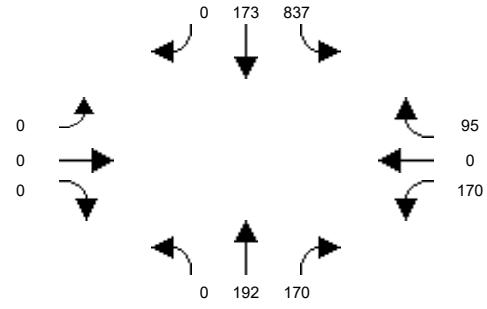
Intersection #58: Penn Wy and 17th St



Intersection #59: I-5 NB Off Ramps/17th Street



Intersection #60: Penn Wy and I-5 SB Ramps



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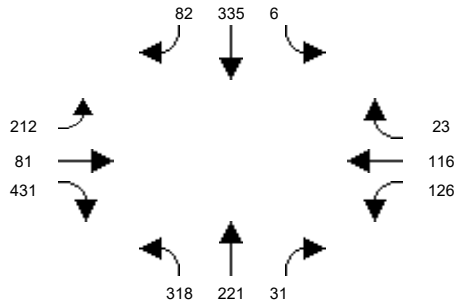
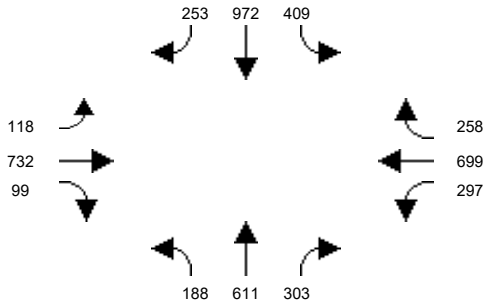
Santa Ana Circulation Element

Intersection Graphic Report
Entered Volume (Base Alternative)
2045 WP AM Peak Hour

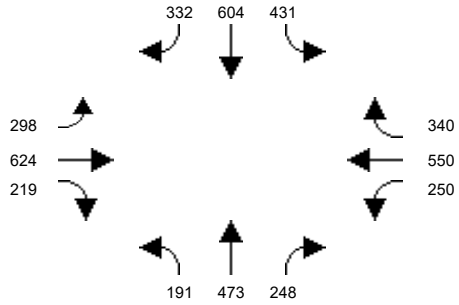
Intersection #61: Santiago St and Civic Center Dr



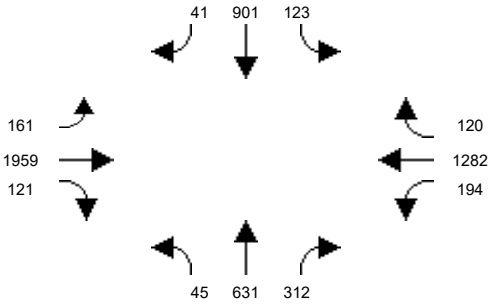
Intersection #62: Santiago St and Santa Ana Blvd



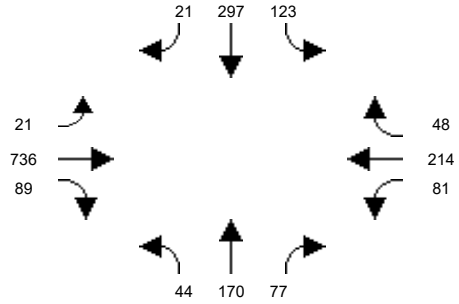
Intersection #63: Standard Ave and 4th St



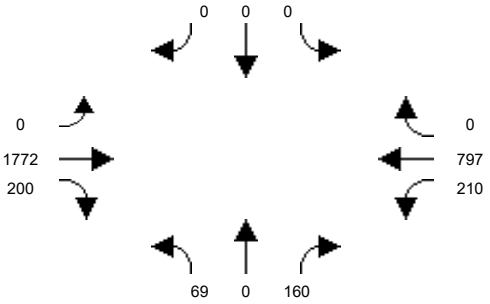
Intersection #64: Standard Ave and 1st St



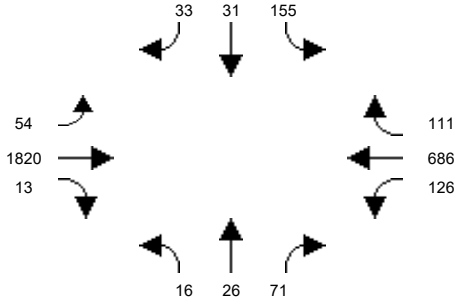
Intersection #65: Standard Ave and Mcfadden Ave



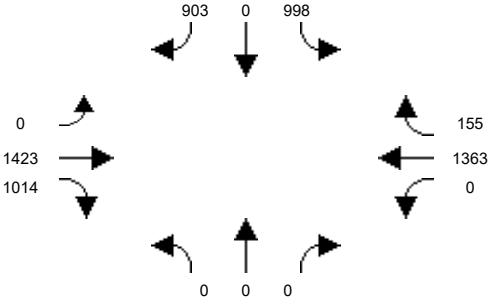
Intersection #66: Halladay St and Warner Ave



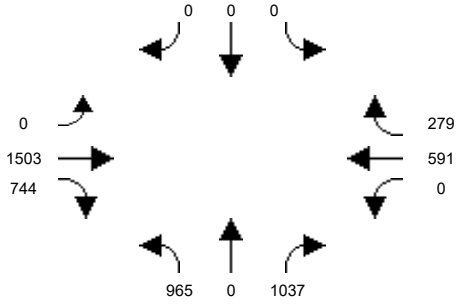
Intersection #67: Halladay St and Dyer Rd



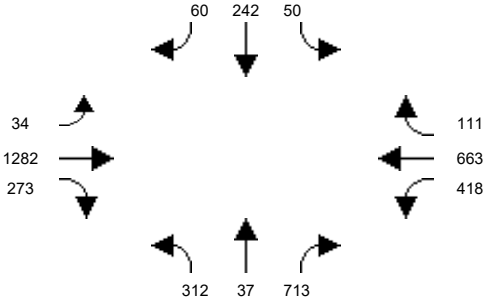
Intersection #68: SR-55 SB Ramps and MacArthur Blvd



Intersection #69: SR-55 NB Ramps and MacArthur Blvd



Intersection #70: SR-55 SB Ramps and Dyer Rd



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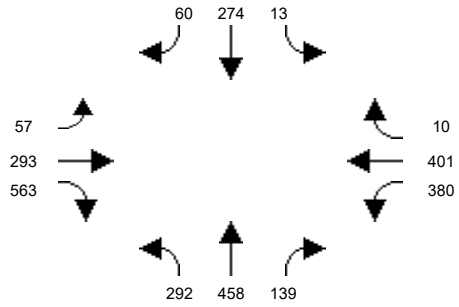
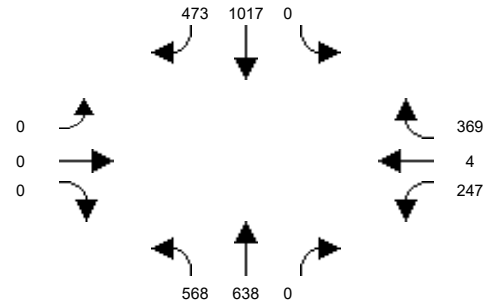
Santa Ana Circulation Element

Intersection Graphic Report
Entered Volume (Base Alternative)
2045 WP AM Peak Hour

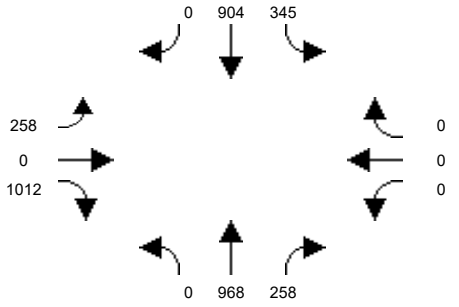
Intersection #71: Glassell St and La Veta Ave



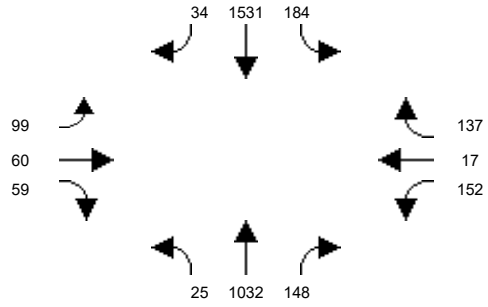
Intersection #72: Glassell St and SR-22 WB Ramps



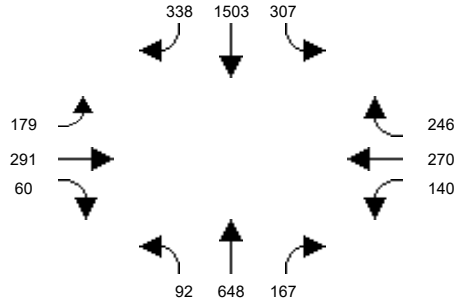
Intersection #73: Grand Ave / Glassell St and SR-22 EB Ramps



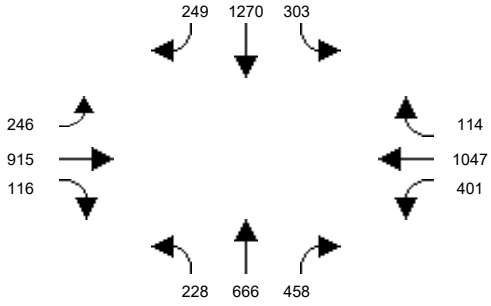
Intersection #74: Grand Ave and Fairhaven Ave



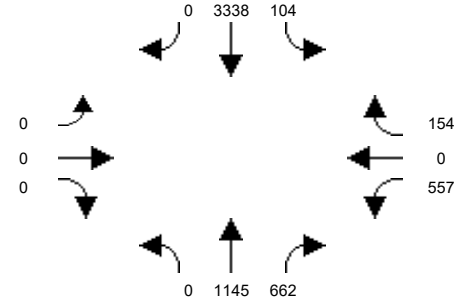
Intersection #75: Grand Ave and Santa Clara Ave



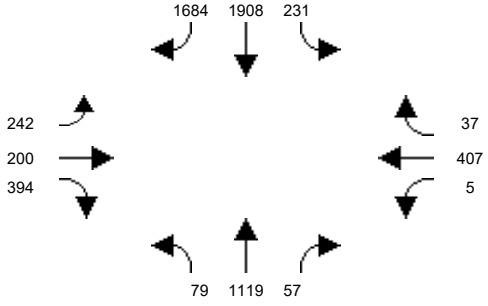
Intersection #76: Grand Ave and 17th St



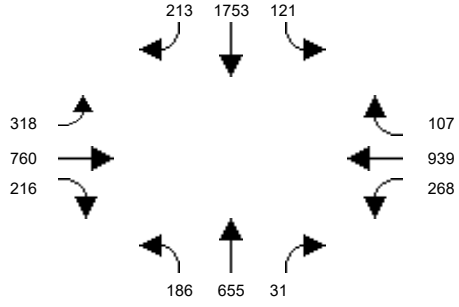
Intersection #77: Grand Ave and I-5 NB Ramps



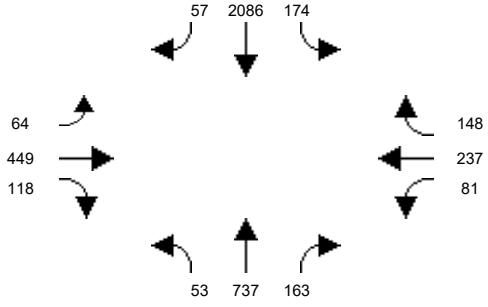
Intersection #78: Grand Ave and Santa Ana Blvd



Intersection #79: Grand Ave and 1st St



Intersection #80: Grand Ave and Chestnut Ave



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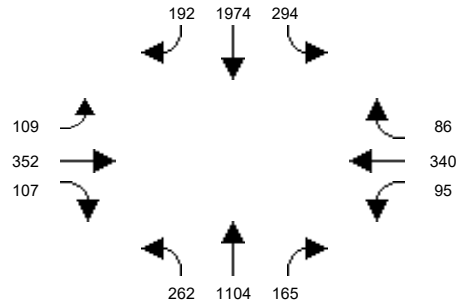
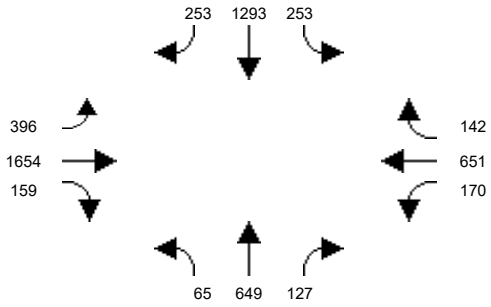
Santa Ana Circulation Element

Intersection Graphic Report
Entered Volume (Base Alternative)
2045 WP AM Peak Hour

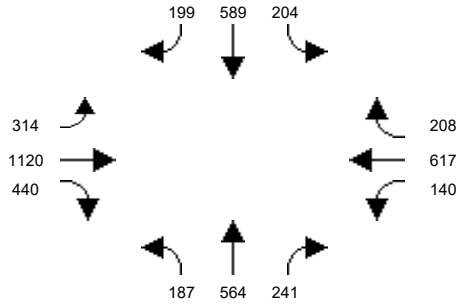
Intersection #81: Grand Ave and McFadden Ave



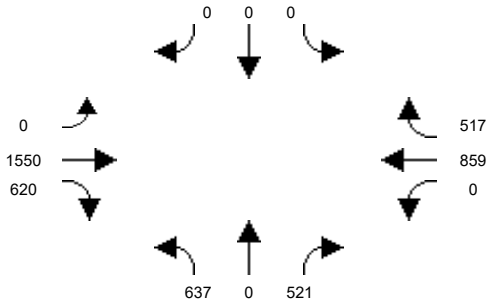
Intersection #82: Grand Ave and Edinger Ave



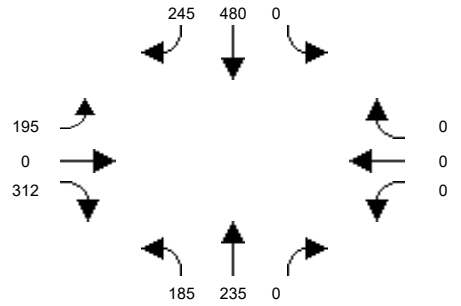
Intersection #83: Grand Ave and Warner Ave



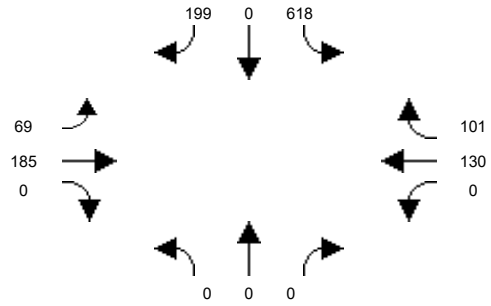
Intersection #84: SR-55 NB Ramps and Dyer Rd



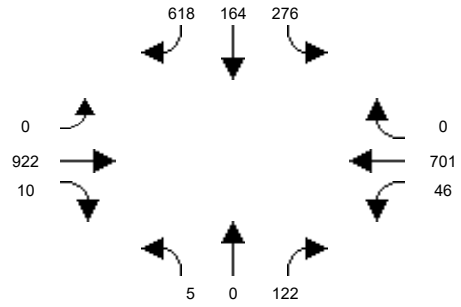
Intersection #85: Cambridge St and La Veta Ave



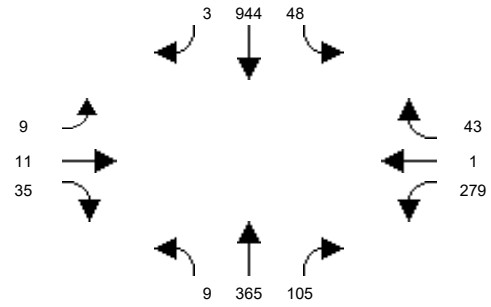
Intersection #86: Cambridge St and Fairhaven Ave



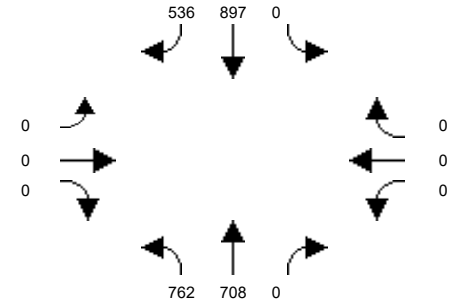
Intersection #87: Mabury St and 1st Street



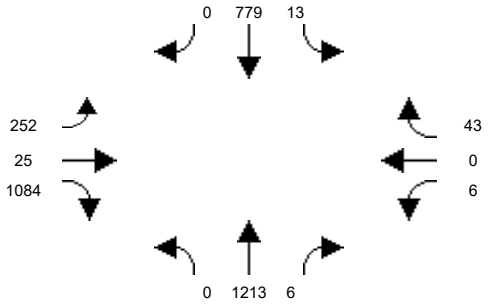
Intersection #88: Tustin St and La Veta Ave



Intersection #89: Tustin St and SR-22 WB On-Ramp



Intersection #90: Tustin St and SR-22 EB Off-Ramp / Seba Ave



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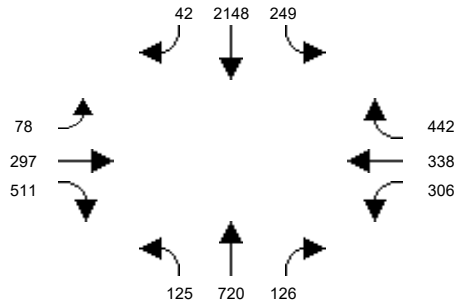
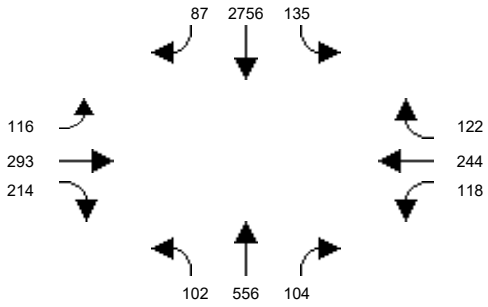
Santa Ana Circulation Element

Intersection Graphic Report
Entered Volume (Base Alternative)
2045 WP AM Peak Hour

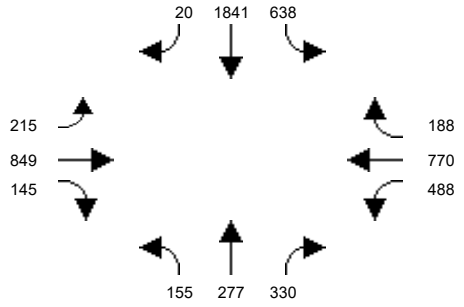
Intersection #91: Tustin Ave and Fairhaven Ave



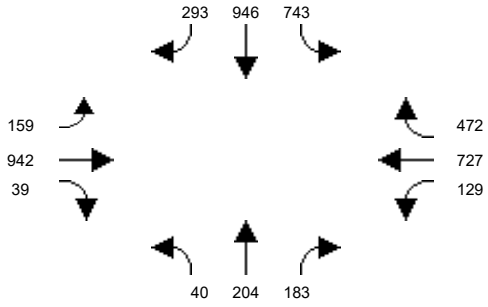
Intersection #92: Tustin Ave and Santa Clara Ave



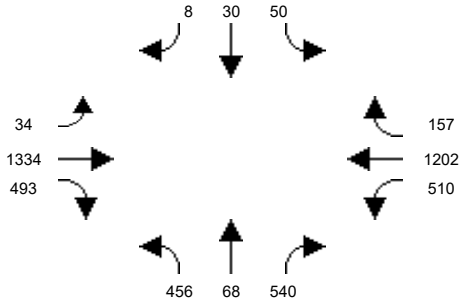
Intersection #93: Tustin Ave and 17th St



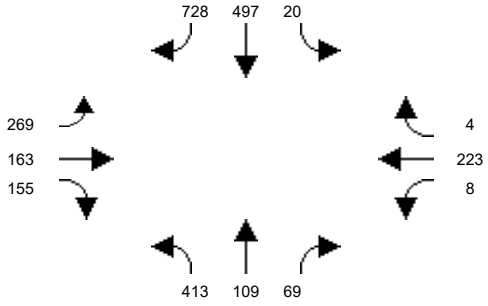
Intersection #94: Tustin Ave and 4th St



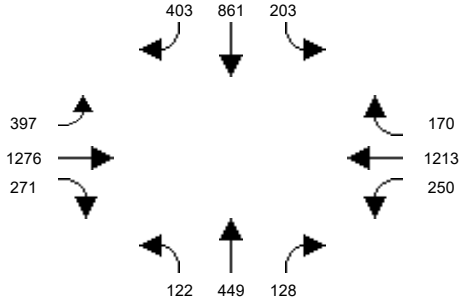
Intersection #95: SR-55 SB Ramps / Auto Mall Dr and Edinger Ave



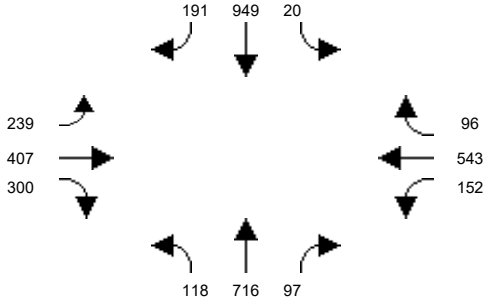
Intersection #96: SR-55 NB Ramps / Del Amo Ave and Newport Avenue



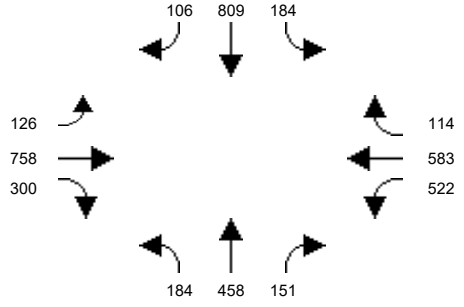
Intersection #97: Red Hill Ave and Edinger Ave



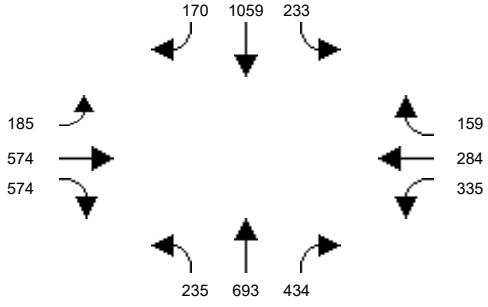
Intersection #98: Red Hill Ave and Warner Ave



Intersection #99: Red Hill Ave and Dyer Rd / barranca Pkwy



Intersection #100: Red Hill Ave and Alton Pkwy



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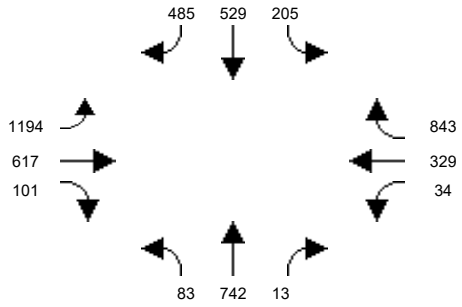
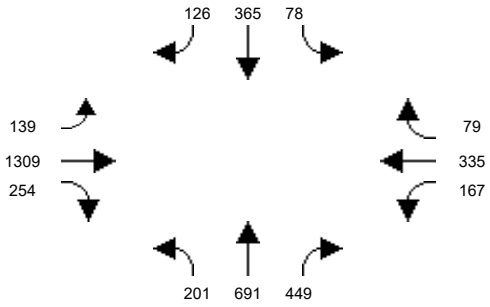
Santa Ana Circulation Element

Intersection Graphic Report
Entered Volume (Base Alternative)
2045 WP AM Peak Hour

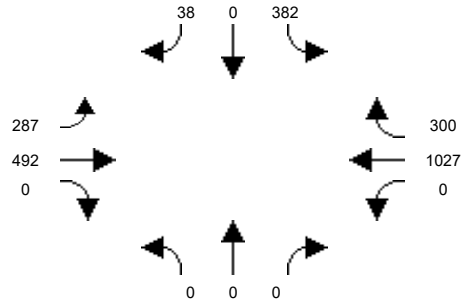
Intersection #101: Red Hill Ave and MacArthur Blvd



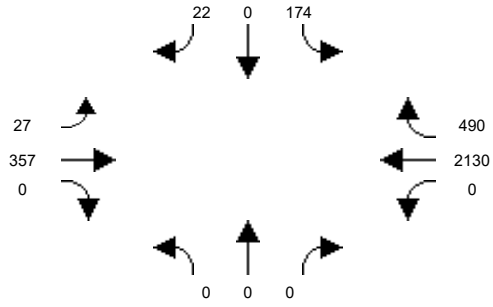
Intersection #102: Red Hill Ave and Main St



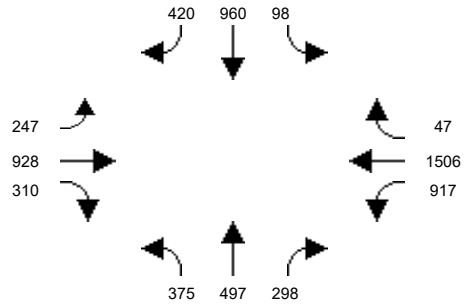
Intersection #103: I-5 SB Ramps and Santa Ana Blvd



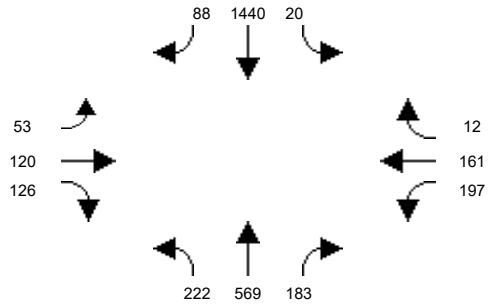
Intersection #104: Tustin Ranch Rd and Warner Ave



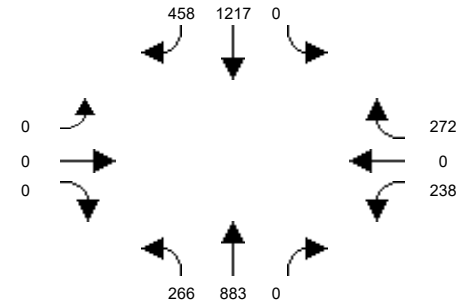
Intersection #105: Von Karman Ave and Barranca Pkwy



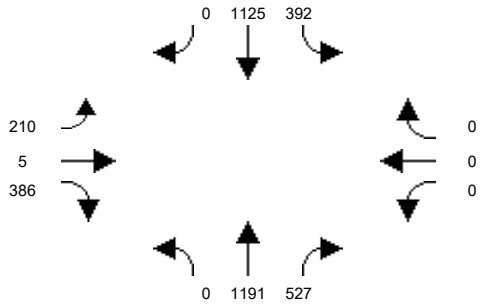
Intersection #106: Red Hill Avenue and El Camino Real



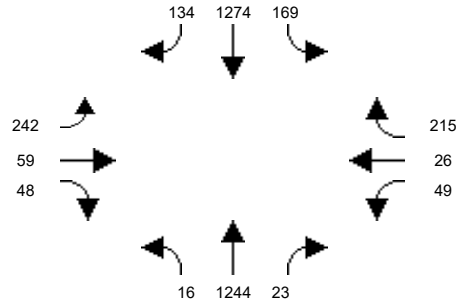
Intersection #107: Red Hill Avenue and I-5 NB Ramps



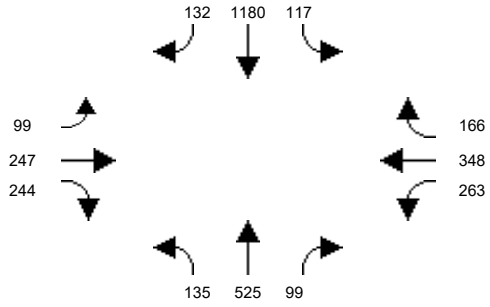
Intersection #108: Red Hill Avenue and I-5 SB Ramps



Intersection #109: Red Hill Avenue and Nisson Road



Intersection #110: Red Hill Avenue and Walnut Avenue



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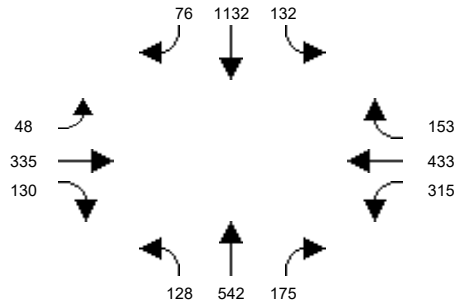
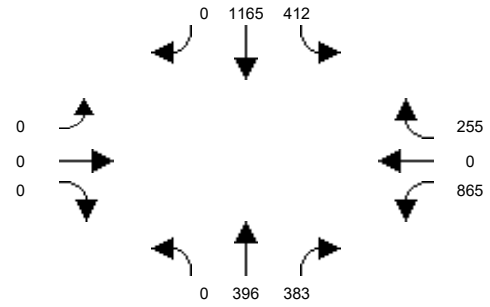
Santa Ana Circulation Element

Intersection Graphic Report
Entered Volume (Base Alternative)
2045 WP AM Peak Hour

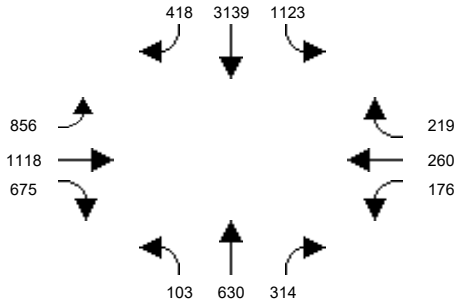
Intersection #111: Red Hill Avenue and Valencia Avenue



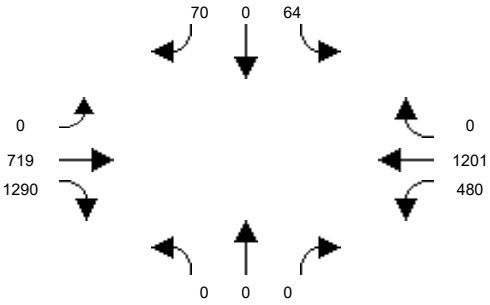
Intersection #112: Tustin Ranch Road and Warner Avenue North



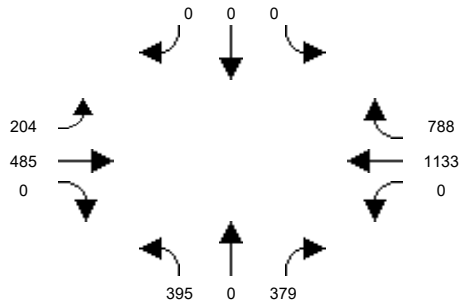
Intersection #113: Tustin Ranch Road and Walnut Avenue



Intersection #114: SR-55 SB Ramps and Irvine Boulevard



Intersection #115: SR-55 NB Ramps and Irvine Boulevard



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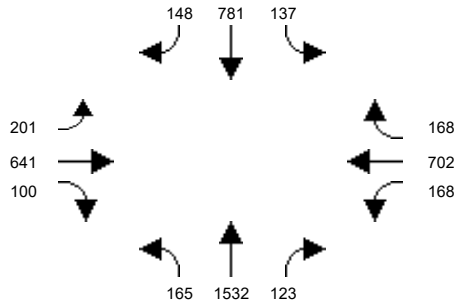
APPENDIX B.6

INTERSECTION VOLUMES –
2045 WP (PM PEAK HOUR)

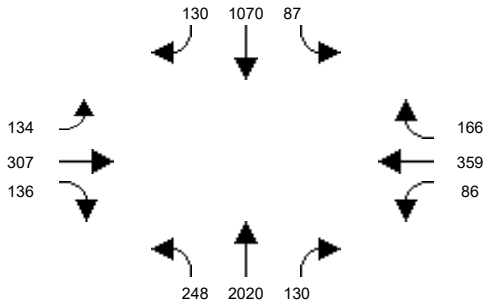
Santa Ana Circulation Element

Intersection Graphic Report
Entered Volume (Base Alternative)
2045 WP PM Peak Hour

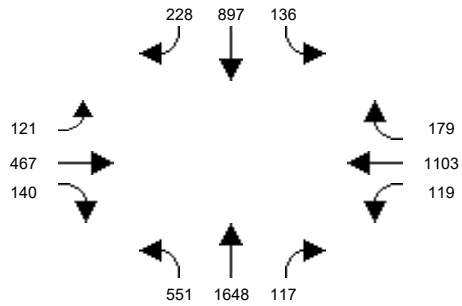
Intersection #1: Euclid St and 1st St



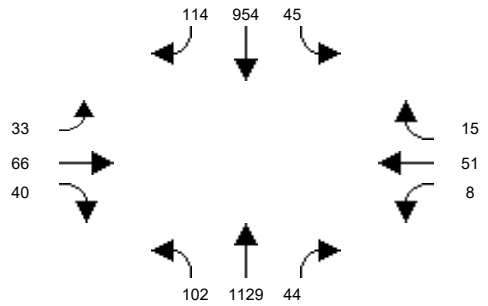
Intersection #2: Euclid St and McFadden Ave



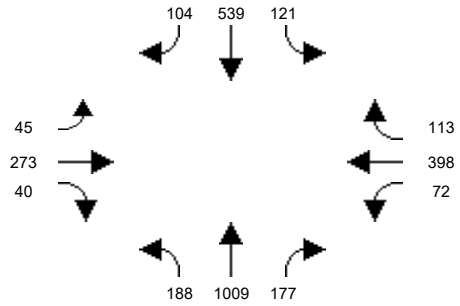
Intersection #3: Euclid St and Edinger Ave



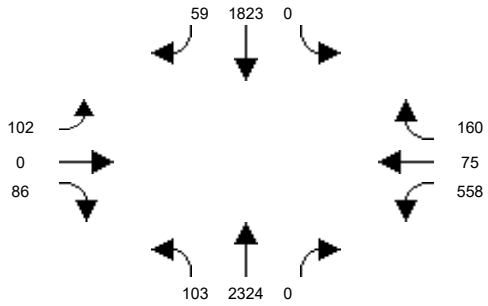
Intersection #4: Newhope St and Hazard Ave



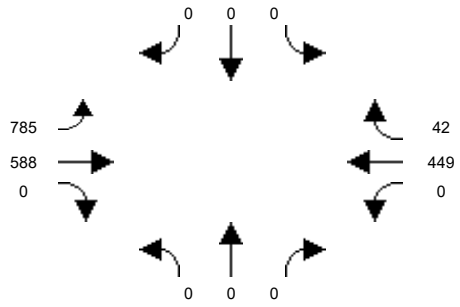
Intersection #5: Newhope St and McFadden Ave



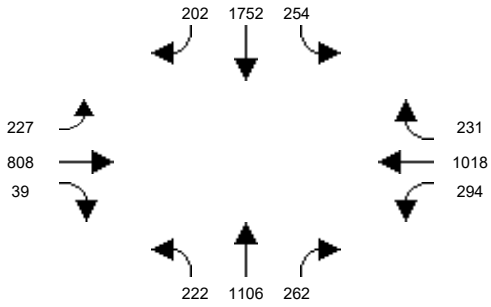
Intersection #6: Harbor Blvd and SR-22 WB Off-Ramp / Banner Dr



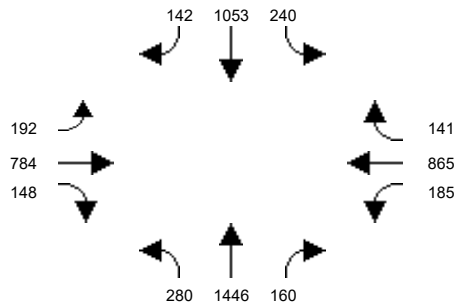
Intersection #7: Trask Avenue and SR-22 EB On-Ramp



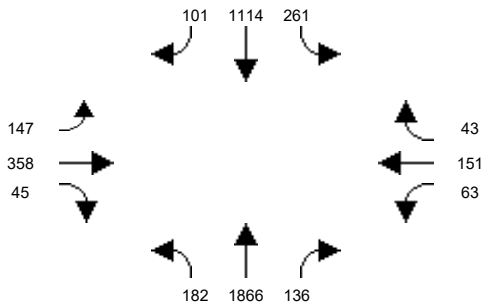
Intersection #8: Harbor Blvd and Westminster Ave



Intersection #9: Harbor Blvd and 1st St



Intersection #10: Harbor Blvd and McFadden Ave



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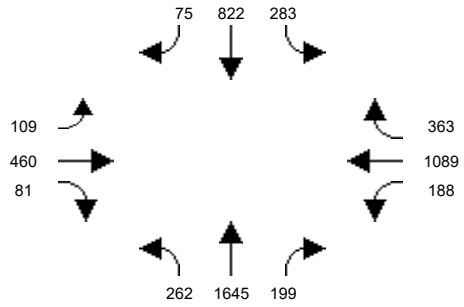
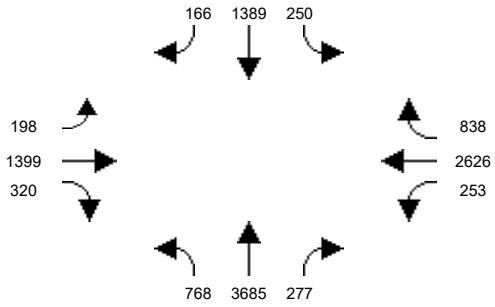
Santa Ana Circulation Element

Intersection Graphic Report
Entered Volume (Base Alternative)
2045 WP PM Peak Hour

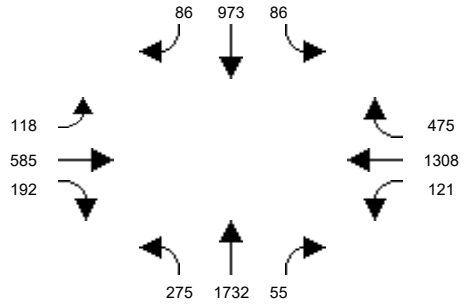
Intersection #11: Harbor Blvd and Edinger Ave



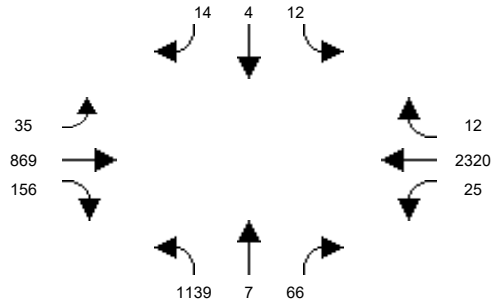
Intersection #12: Harbor Blvd and Warner Ave



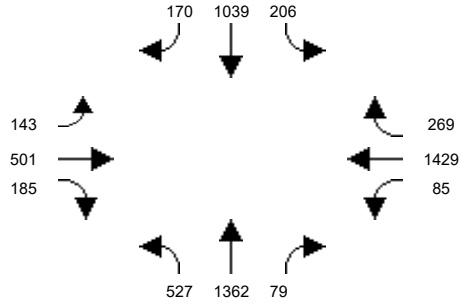
Intersection #13: Harbor Blvd and Segerstrom Ave



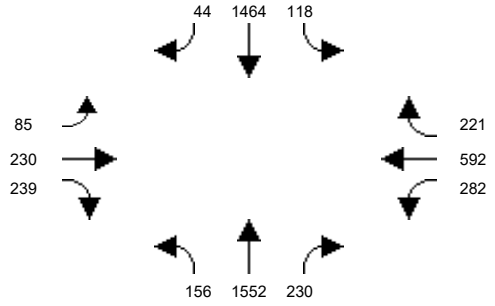
Intersection #14: MacArthur Blvd and Hyland Ave



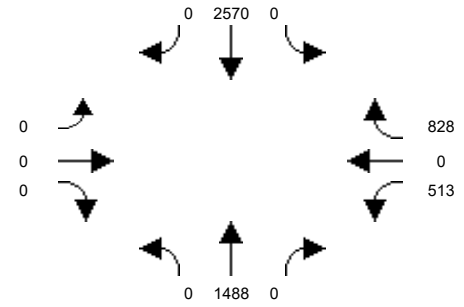
Intersection #15: MacArthur Blvd and Harbor Blvd



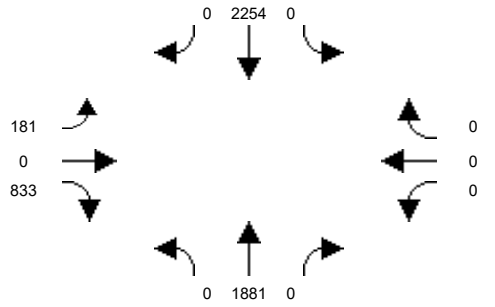
Intersection #16: Harbor Blvd and Sunflower Ave



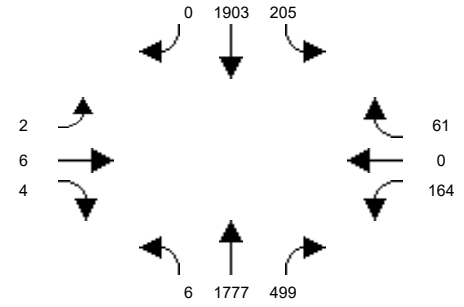
Intersection #17: Harbor Blvd and I-405 NB Off-Ramp



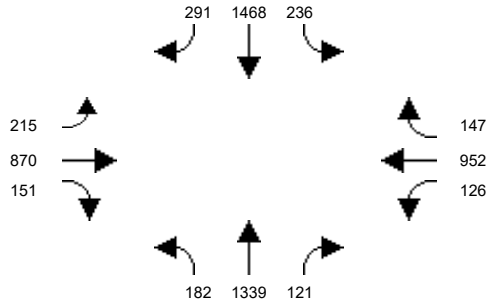
Intersection #18: Harbor Blvd and I-405 SB Off-Ramp



Intersection #19: Fairview St and Civic Center Dr



Intersection #20: Fairview St and 1st St



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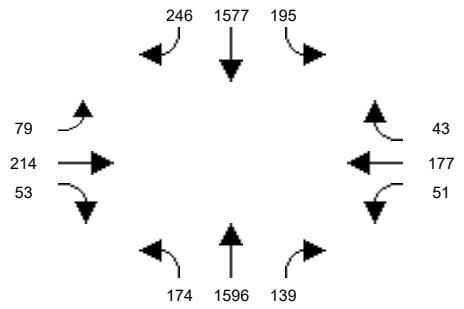
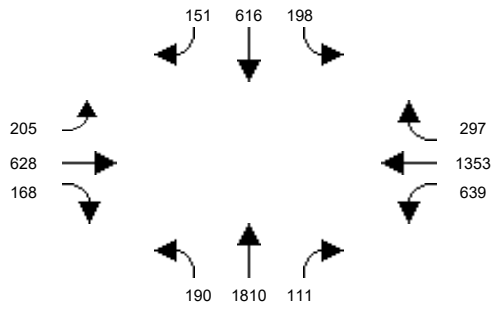
Santa Ana Circulation Element

Intersection Graphic Report
Entered Volume (Base Alternative)
2045 WP PM Peak Hour

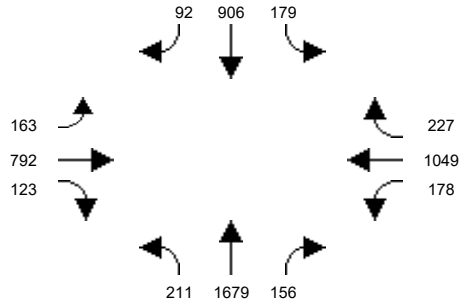
Intersection #21: Fairview St and McFadden Ave



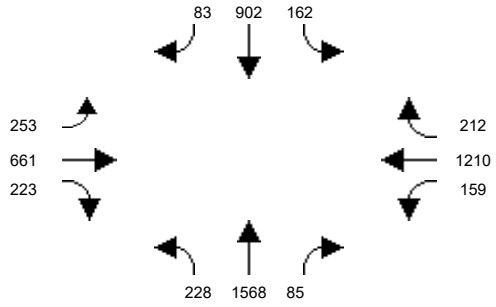
Intersection #22: Fairview St and Edinger Ave



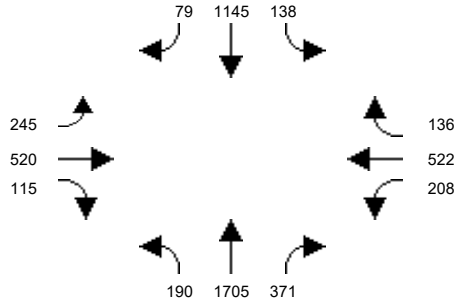
Intersection #23: Fairview St and Warner Ave



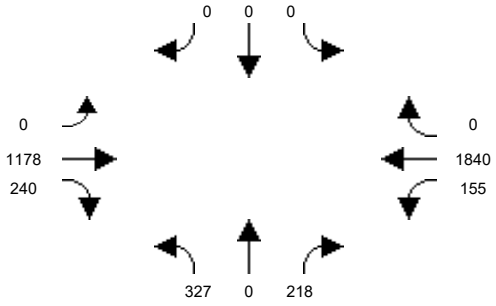
Intersection #24: Fairview St and MacArthur Blvd



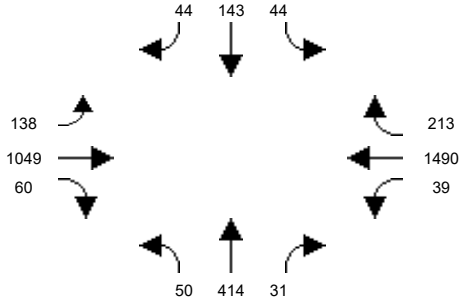
Intersection #25: Fairview Rd and Sunflower Ave



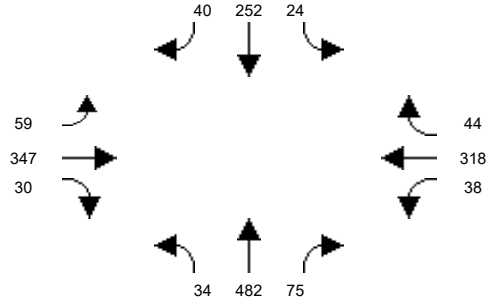
Intersection #26: Greenville St and Edinger Ave



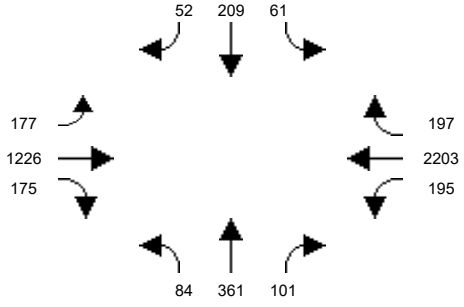
Intersection #27: Greenville St and Segerstrom Ave



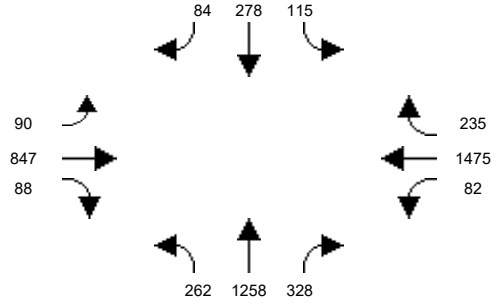
Intersection #28: Raitt St and McFadden Ave



Intersection #29: Raitt St and Edinger Ave



Intersection #30: Bear St and MacArthur Blvd



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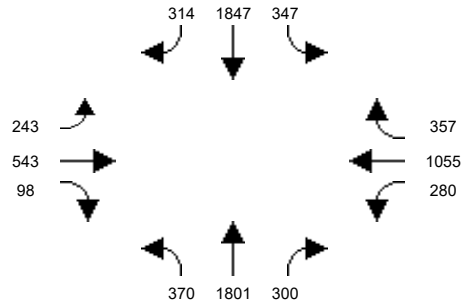
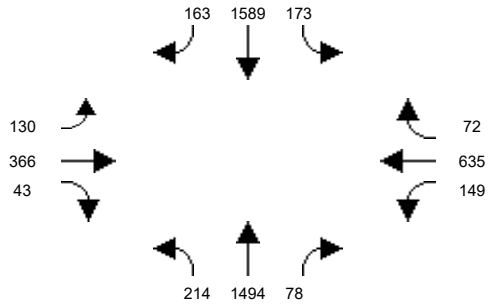
Santa Ana Circulation Element

Intersection Graphic Report
Entered Volume (Base Alternative)
2045 WP PM Peak Hour

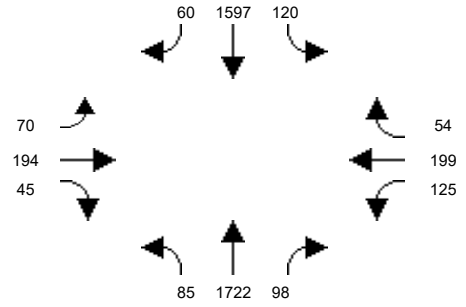
Intersection #31: Bristol St and 17th St



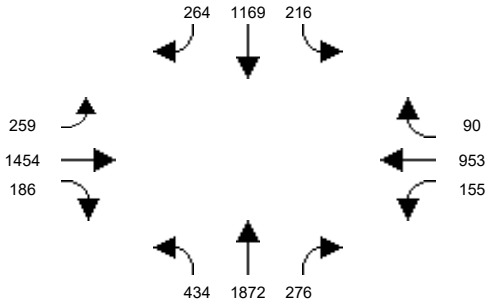
Intersection #32: Bristol St and Civic Center Dr



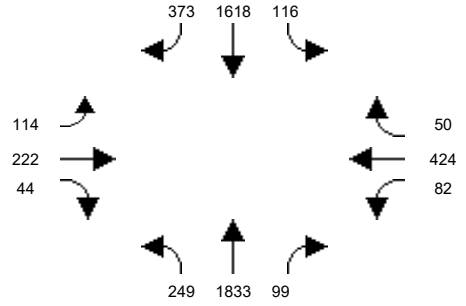
Intersection #33: Bristol St and Santa Ana Blvd



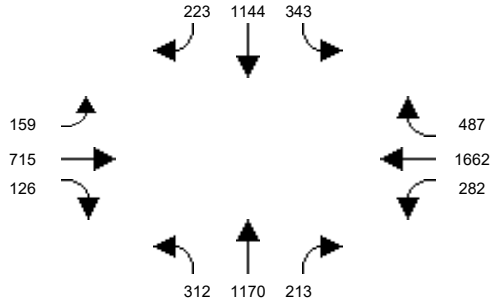
Intersection #34: Bristol St and 1st St



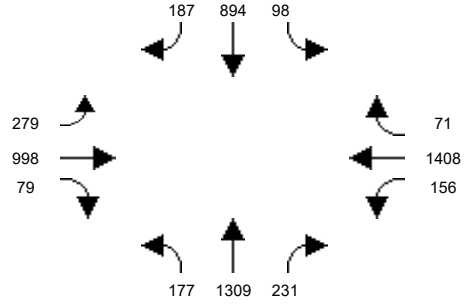
Intersection #35: Bristol St and McFadden Ave



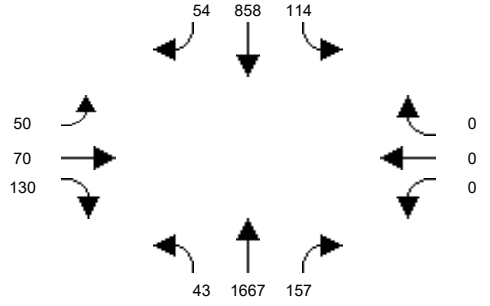
Intersection #36: Bristol St and Warner Ave



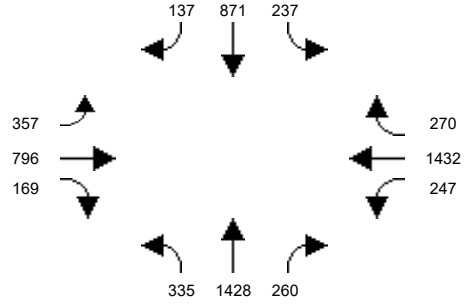
Intersection #37: Bristol St and Segerstrom Ave



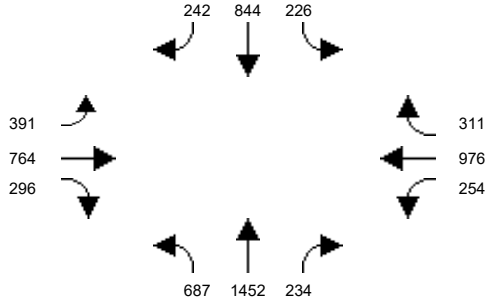
Intersection #38: Bristol St and Alton Ave



Intersection #39: Bristol St and MacArthur Blvd



Intersection #40: Bristol St and Sunflower Ave



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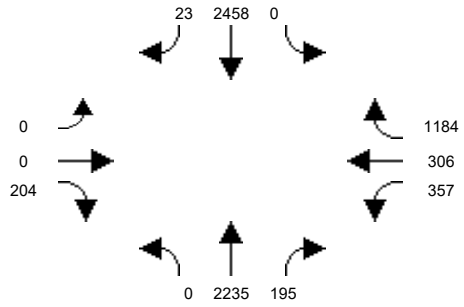
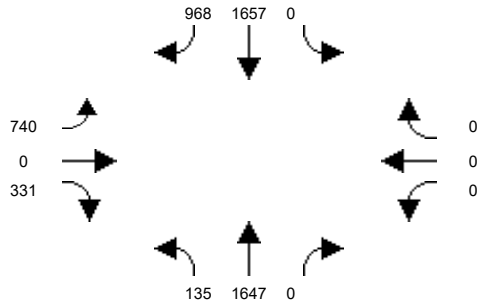
Santa Ana Circulation Element

Intersection Graphic Report
Entered Volume (Base Alternative)
2045 WP PM Peak Hour

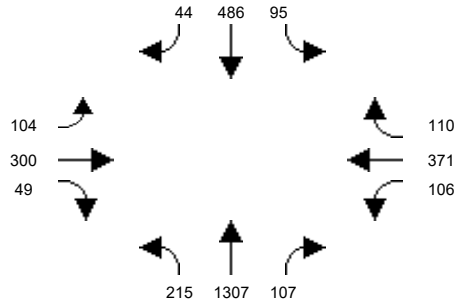
Intersection #41: Bristol St and I-405 NB Ramps



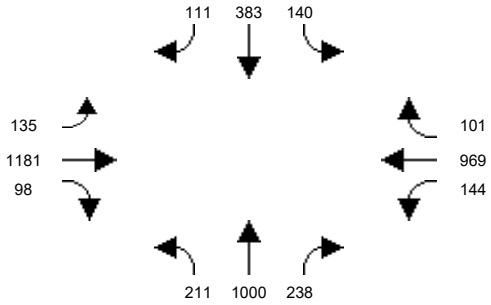
Intersection #42: Bristol St and I-405 SB Ramps



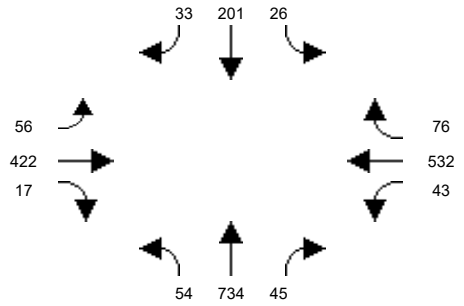
Intersection #43: Flower St and Santa Ana Blvd



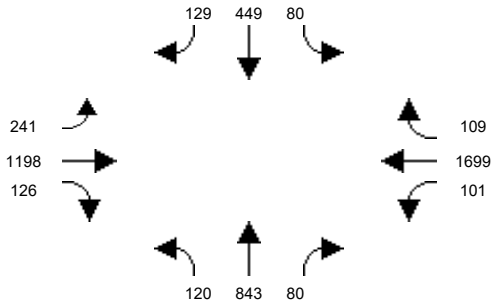
Intersection #44: Flower St and 1st St



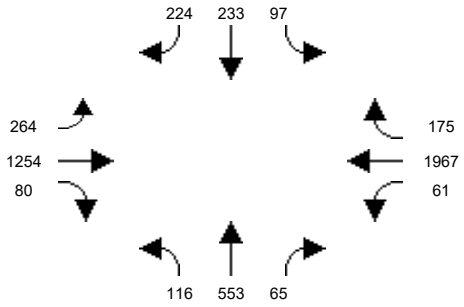
Intersection #45: Flower St and McFadden Ave



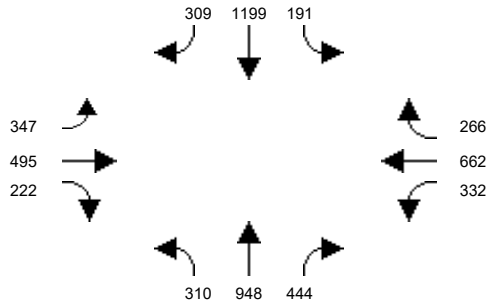
Intersection #46: Flower St and Segerstrom Ave



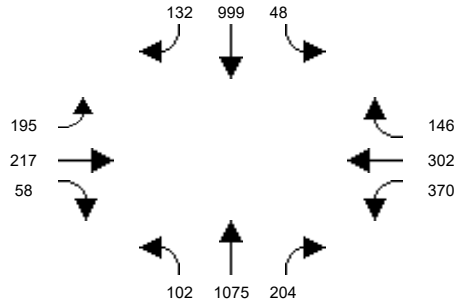
Intersection #47: Flower St and MacArthur Blvd



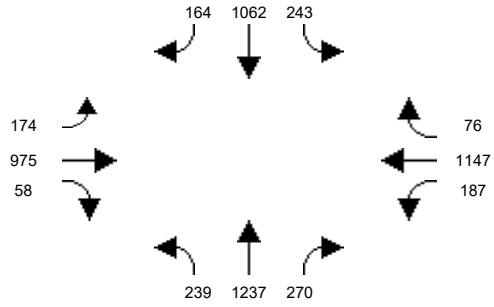
Intersection #48: Main St and La Veta Ave



Intersection #49: Main St and Mainplace Dr / Memory Ln



Intersection #50: Main St and 17th St



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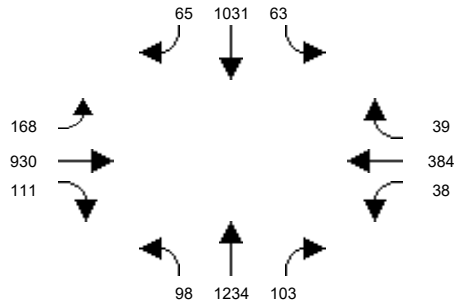
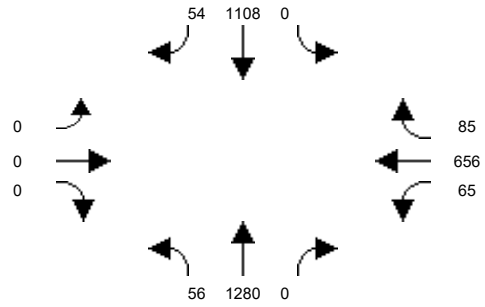
Santa Ana Circulation Element

Intersection Graphic Report
Entered Volume (Base Alternative)
2045 WP PM Peak Hour

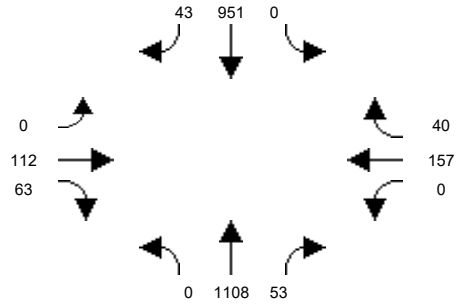
Intersection #51: Main St and Civic Center Dr



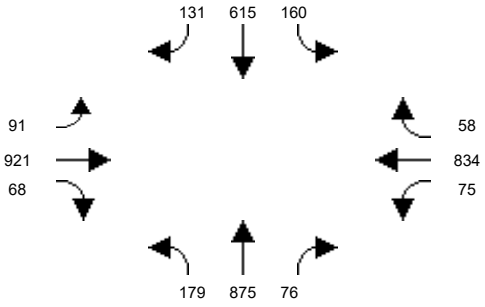
Intersection #52: Main St and Santa Ana Blvd



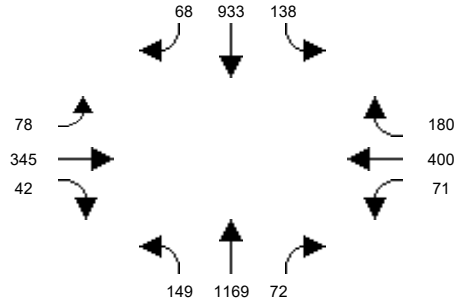
Intersection #53: Main St and 4th St



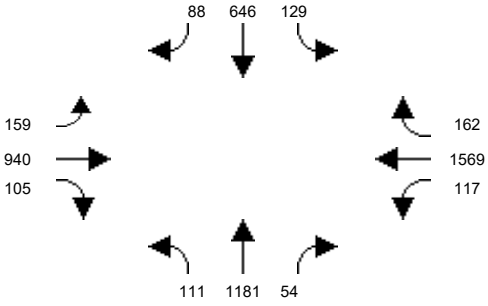
Intersection #54: Main St and 1st St



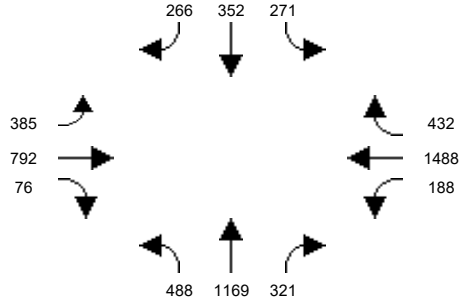
Intersection #55: Main St and McFadden Ave



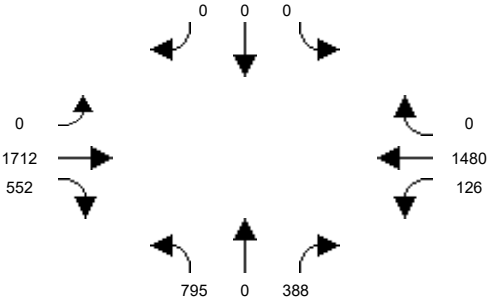
Intersection #56: Main St and Edinger Ave



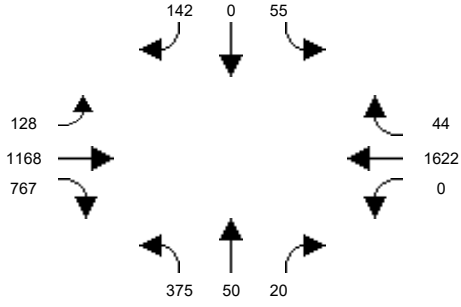
Intersection #57: Main St and MacArthur Blvd



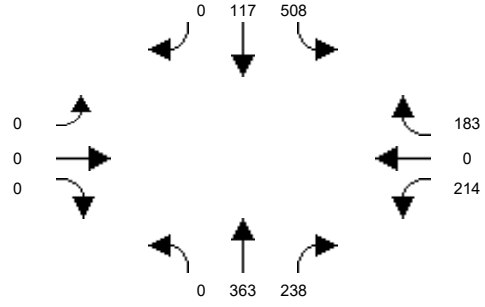
Intersection #58: Penn Wy and 17th St



Intersection #59: I-5 NB Off Ramps/17th Street



Intersection #60: Penn Wy and I-5 SB Ramps



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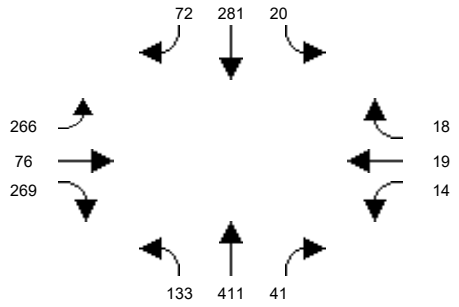
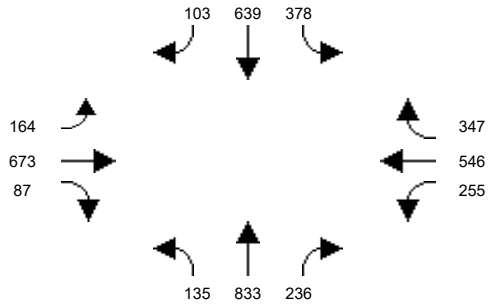
Santa Ana Circulation Element

Intersection Graphic Report
Entered Volume (Base Alternative)
2045 WP PM Peak Hour

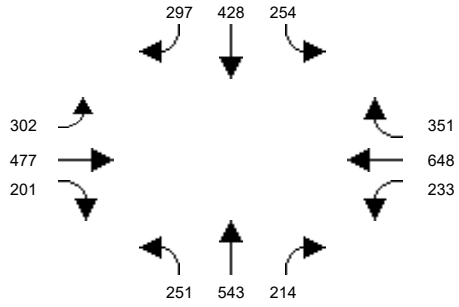
Intersection #61: Santiago St and Civic Center Dr



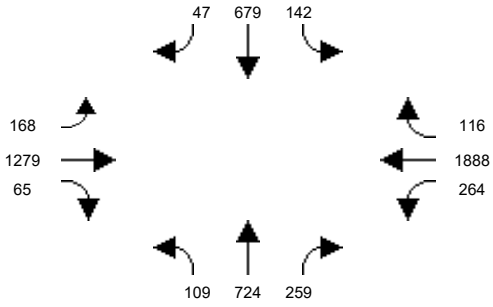
Intersection #62: Santiago St and Santa Ana Blvd



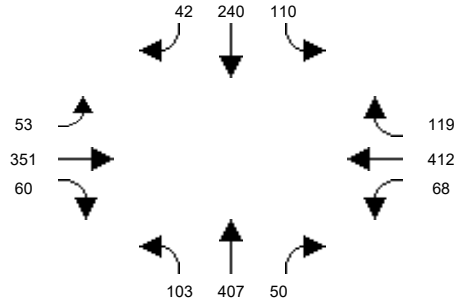
Intersection #63: Standard Ave and 4th St



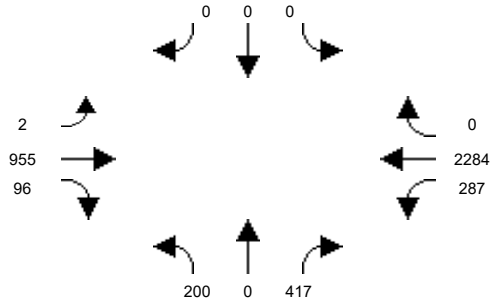
Intersection #64: Standard Ave and 1st St



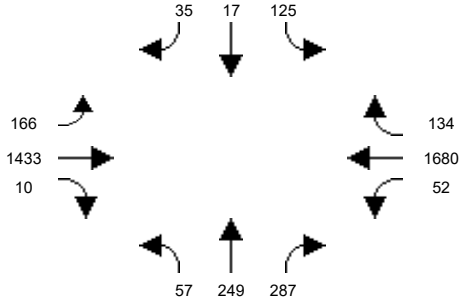
Intersection #65: Standard Ave and Mcfadden Ave



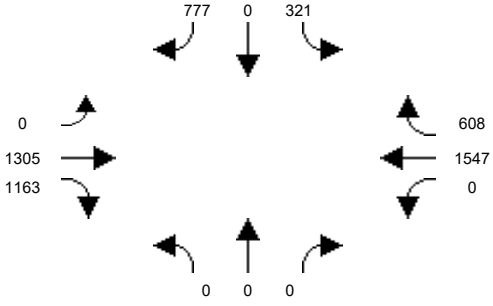
Intersection #66: Halladay St and Warner Ave



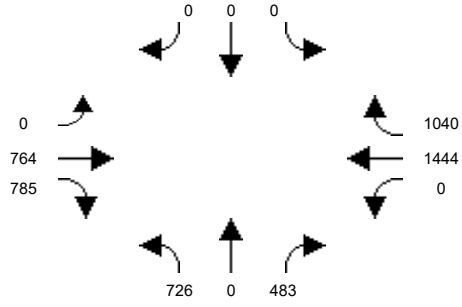
Intersection #67: Halladay St and Dyer Rd



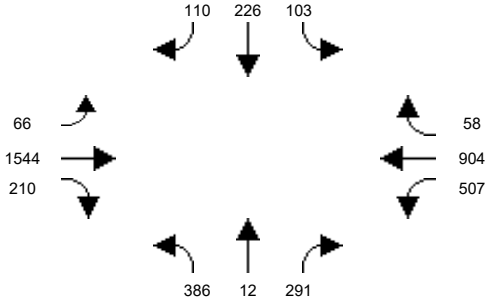
Intersection #68: SR-55 SB Ramps and MacArthur Blvd



Intersection #69: SR-55 NB Ramps and MacArthur Blvd



Intersection #70: SR-55 SB Ramps and Dyer Rd



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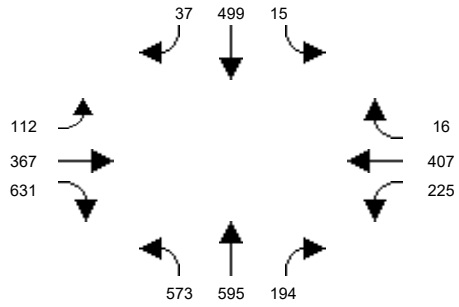
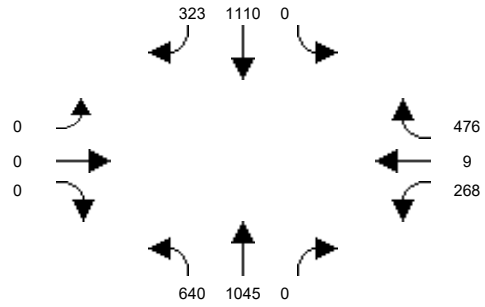
Santa Ana Circulation Element

Intersection Graphic Report
Entered Volume (Base Alternative)
2045 WP PM Peak Hour

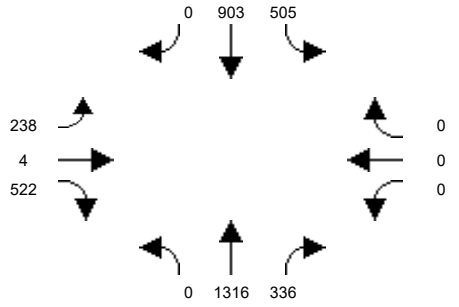
Intersection #71: Glassell St and La Veta Ave



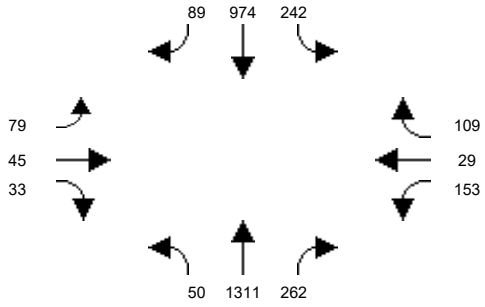
Intersection #72: Glassell St and SR-22 WB Ramps



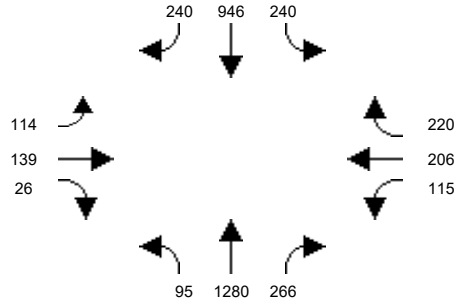
Intersection #73: Grand Ave / Glassell St and SR-22 EB Ramps



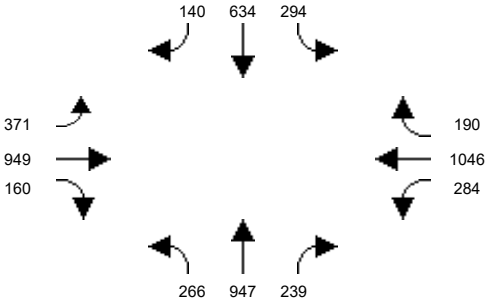
Intersection #74: Grand Ave and Fairhaven Ave



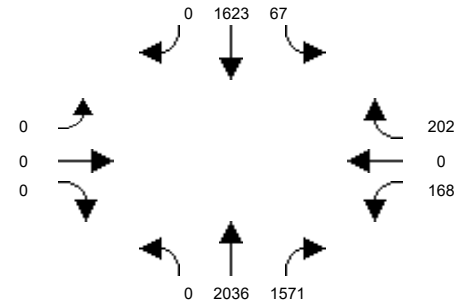
Intersection #75: Grand Ave and Santa Clara Ave



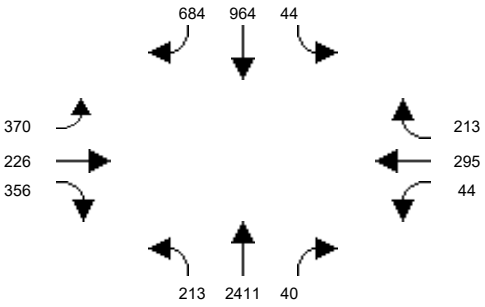
Intersection #76: Grand Ave and 17th St



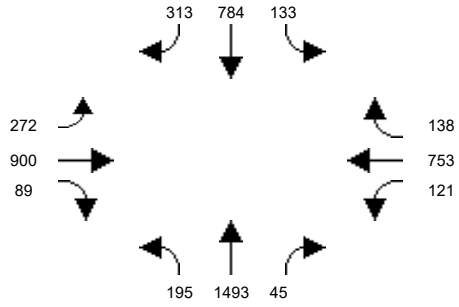
Intersection #77: Grand Ave and I-5 NB Ramps



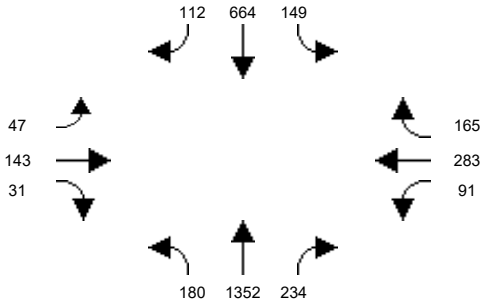
Intersection #78: Grand Ave and Santa Ana Blvd



Intersection #79: Grand Ave and 1st St



Intersection #80: Grand Ave and Chestnut Ave



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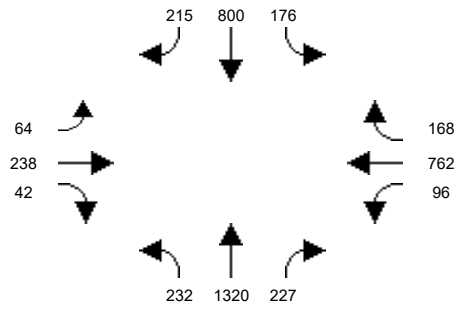
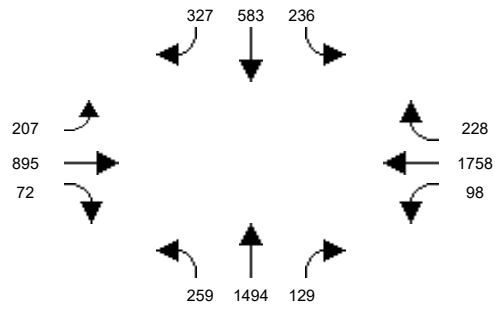
Santa Ana Circulation Element

Intersection Graphic Report
Entered Volume (Base Alternative)
2045 WP PM Peak Hour

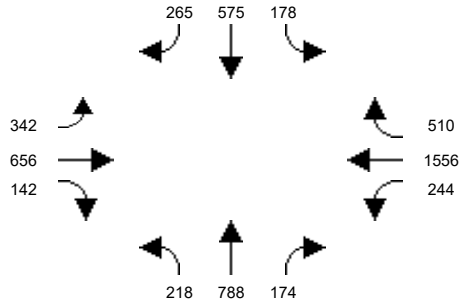
Intersection #81: Grand Ave and McFadden Ave



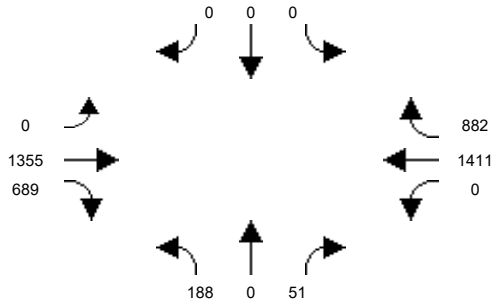
Intersection #82: Grand Ave and Edinger Ave



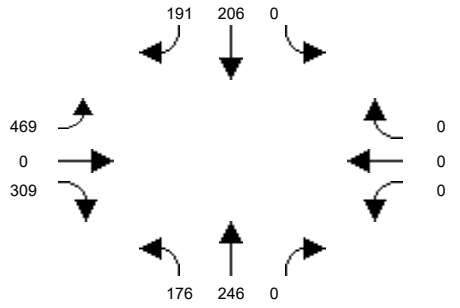
Intersection #83: Grand Ave and Warner Ave



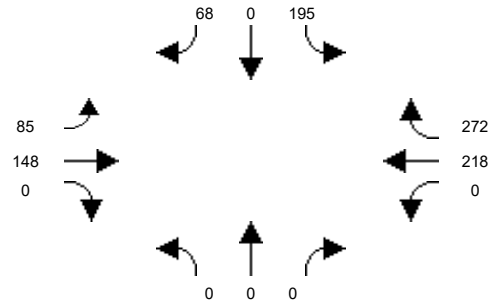
Intersection #84: SR-55 NB Ramps and Dyer Rd



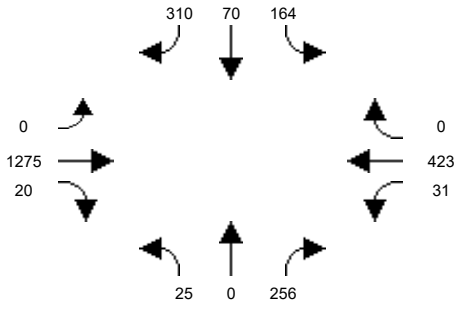
Intersection #85: Cambridge St and La Veta Ave



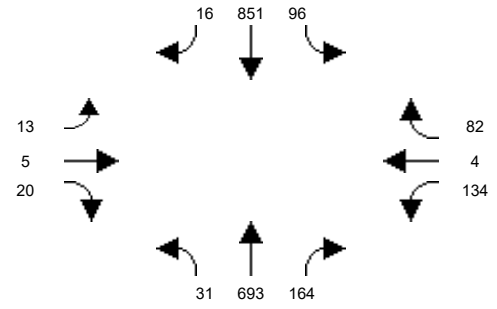
Intersection #86: Cambridge St and Fairhaven Ave



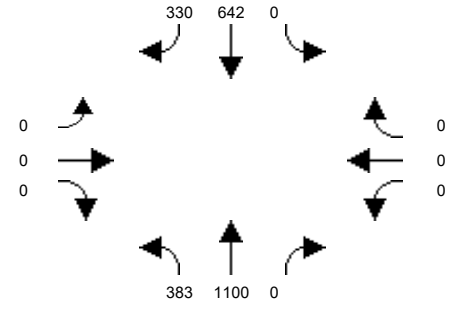
Intersection #87: Mabury St and 1st Street



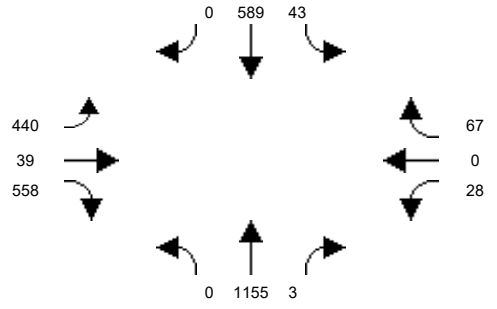
Intersection #88: Tustin St and La Veta Ave



Intersection #89: Tustin St and SR-22 WB On-Ramp



Intersection #90: Tustin St and SR-22 EB Off-Ramp / Seba Ave



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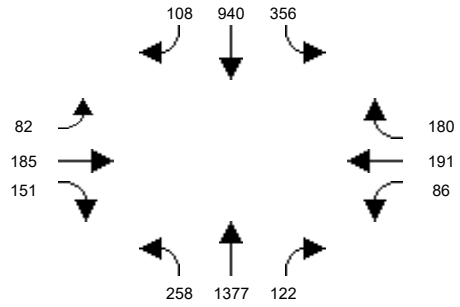
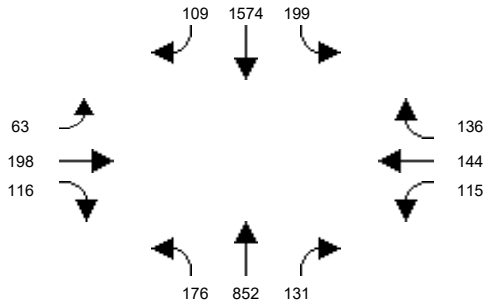
Santa Ana Circulation Element

Intersection Graphic Report
Entered Volume (Base Alternative)
2045 WP PM Peak Hour

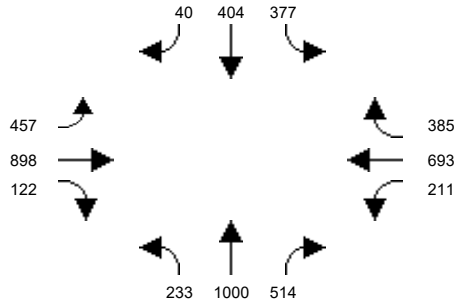
Intersection #91: Tustin Ave and Fairhaven Ave



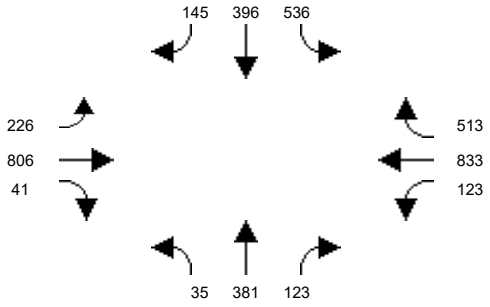
Intersection #92: Tustin Ave and Santa Clara Ave



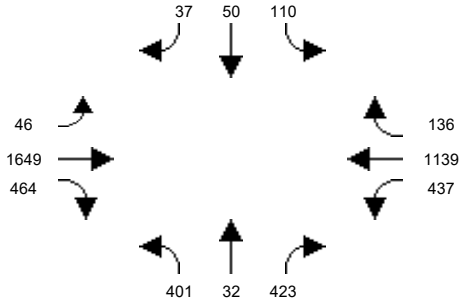
Intersection #93: Tustin Ave and 17th St



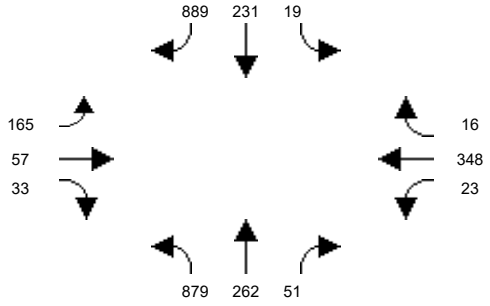
Intersection #94: Tustin Ave and 4th St



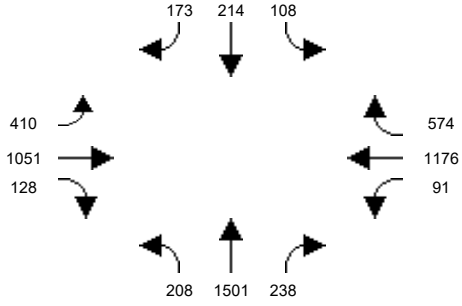
Intersection #95: SR-55 SB Ramps / Auto Mall Dr and Edinger Ave



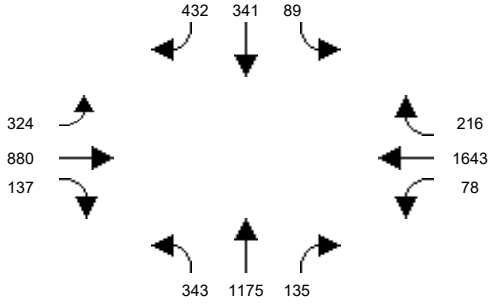
Intersection #96: SR-55 NB Ramps / Del Amo Ave and Newport Avenue



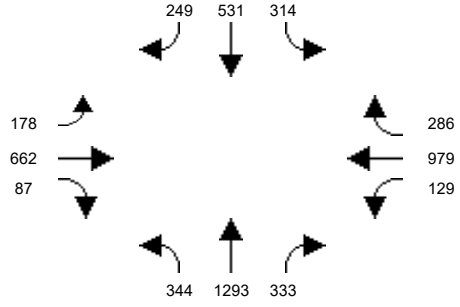
Intersection #97: Red Hill Ave and Edinger Ave



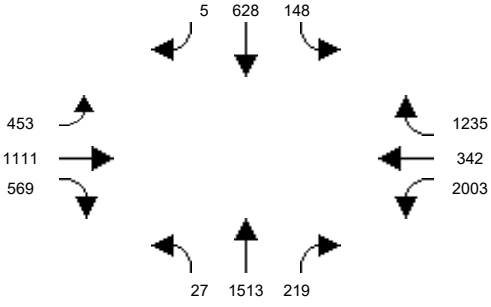
Intersection #98: Red Hill Ave and Warner Ave



Intersection #99: Red Hill Ave and Dyer Rd / barranca Pkwy



Intersection #100: Red Hill Ave and Alton Pkwy



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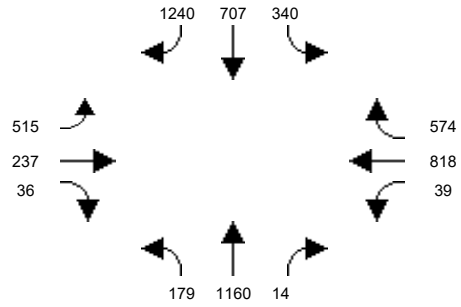
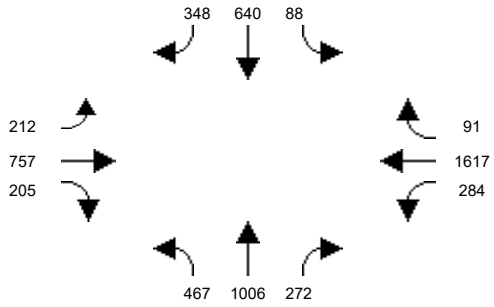
Santa Ana Circulation Element

Intersection Graphic Report
Entered Volume (Base Alternative)
2045 WP PM Peak Hour

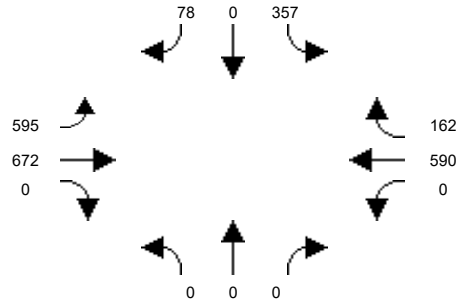
Intersection #101: Red Hill Ave and MacArthur Blvd



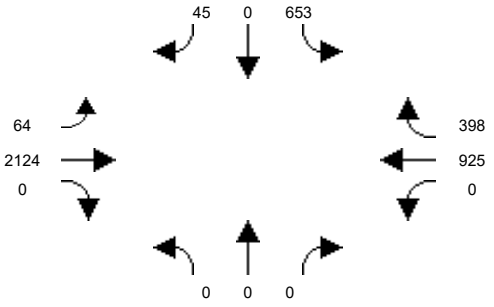
Intersection #102: Red Hill Ave and Main St



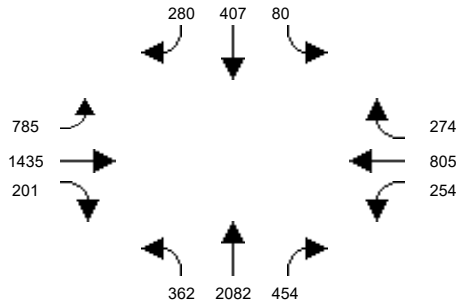
Intersection #103: I-5 SB Ramps and Santa Ana Blvd



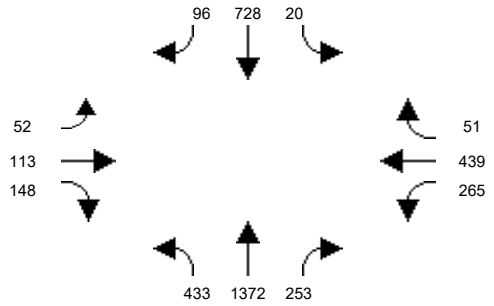
Intersection #104: Tustin Ranch Rd and Warner Ave



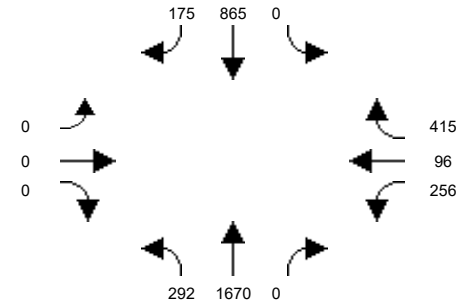
Intersection #105: Von Karman Ave and Barranca Pkwy



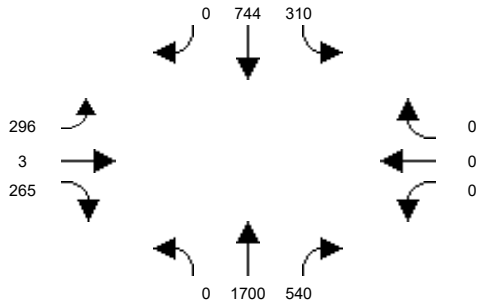
Intersection #106: Red Hill Avenue and El Camino Real



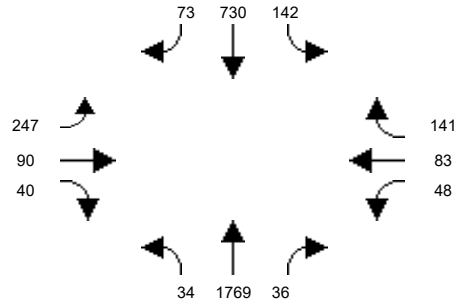
Intersection #107: Red Hill Avenue and I-5 NB Ramps



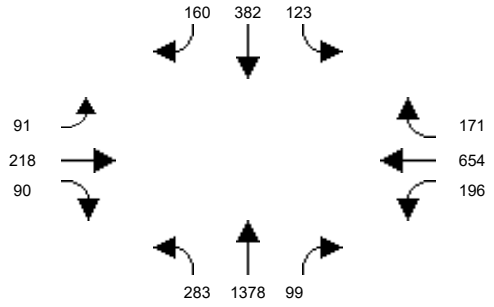
Intersection #108: Red Hill Avenue and I-5 SB Ramps



Intersection #109: Red Hill Avenue and Nisson Road



Intersection #110: Red Hill Avenue and Walnut Avenue



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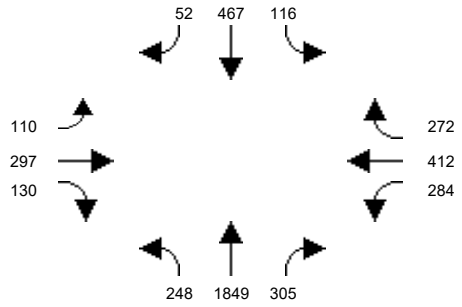
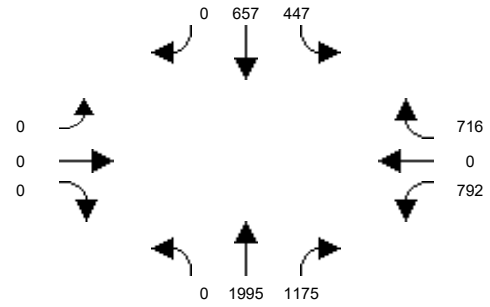
Santa Ana Circulation Element

Intersection Graphic Report
Entered Volume (Base Alternative)
2045 WP PM Peak Hour

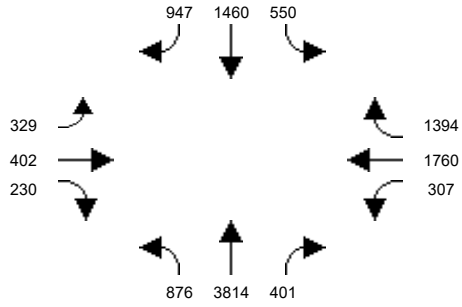
Intersection #111: Red Hill Avenue and Valencia Avenue



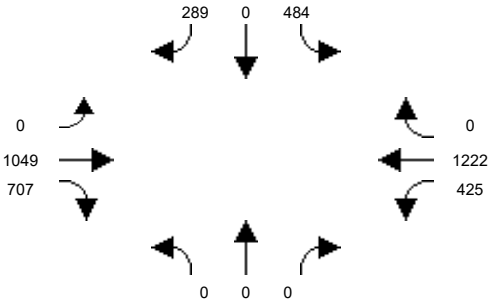
Intersection #112: Tustin Ranch Road and Warner Avenue North



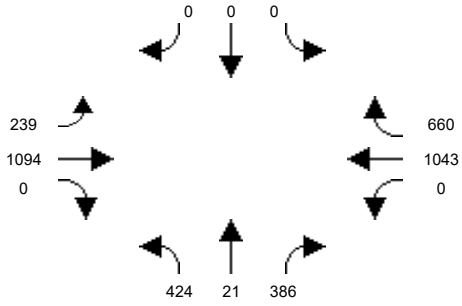
Intersection #113: Tustin Ranch Road and Walnut Avenue



Intersection #114: SR-55 SB Ramps and Irvine Boulevard



Intersection #115: SR-55 NB Ramps and Irvine Boulevard



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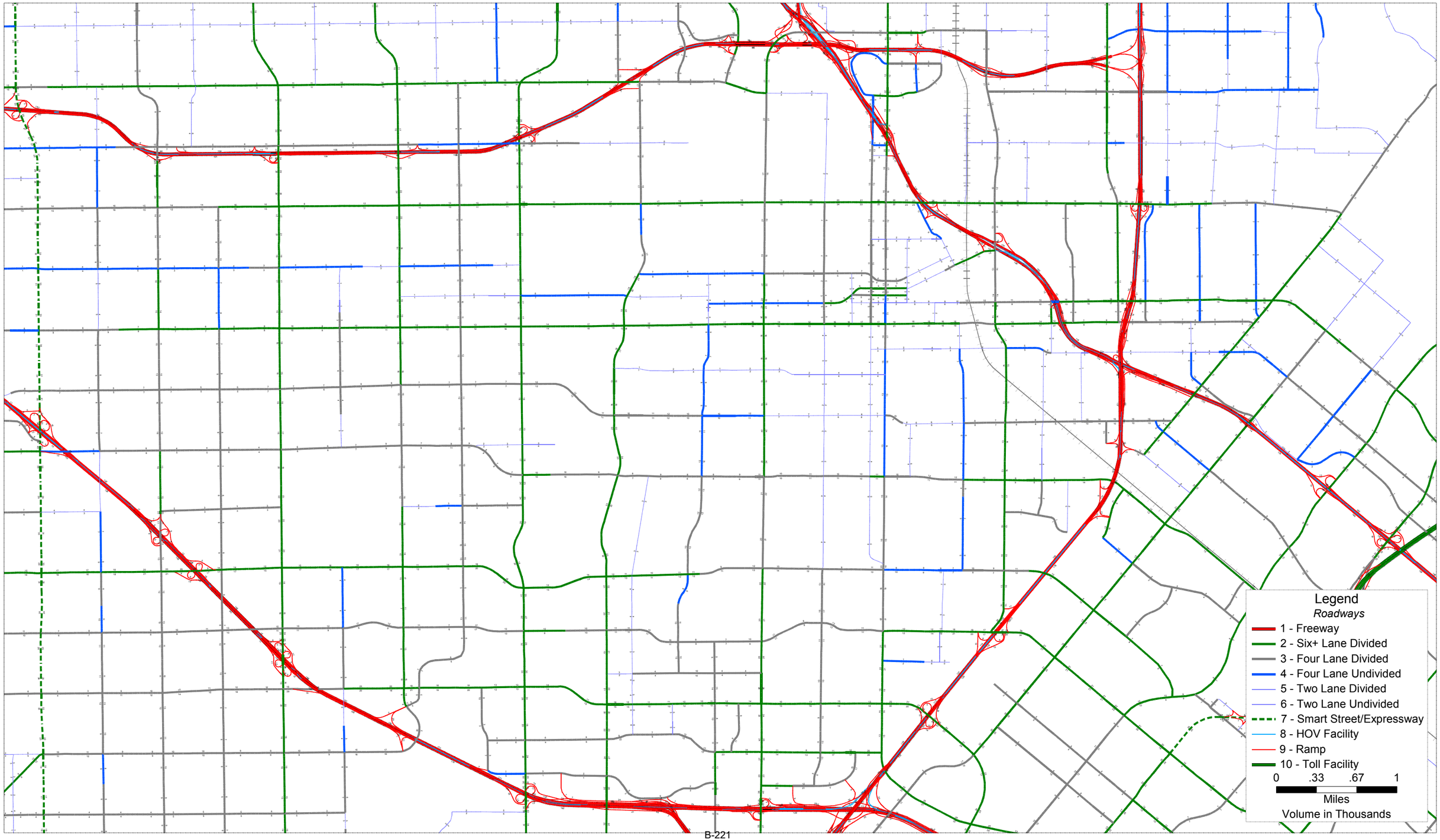
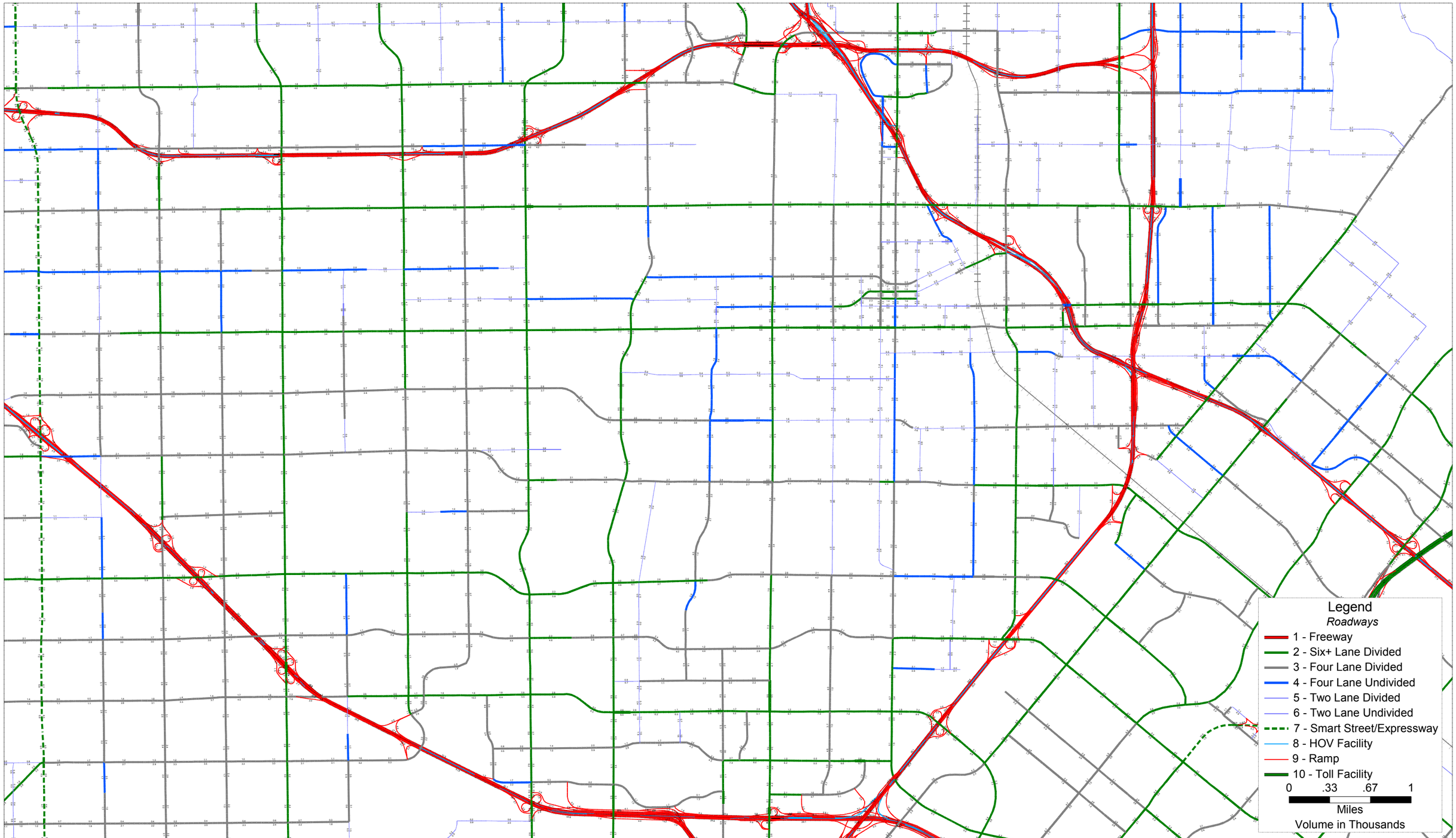
APPENDIX C
OCTAM VOLUME PLOTS

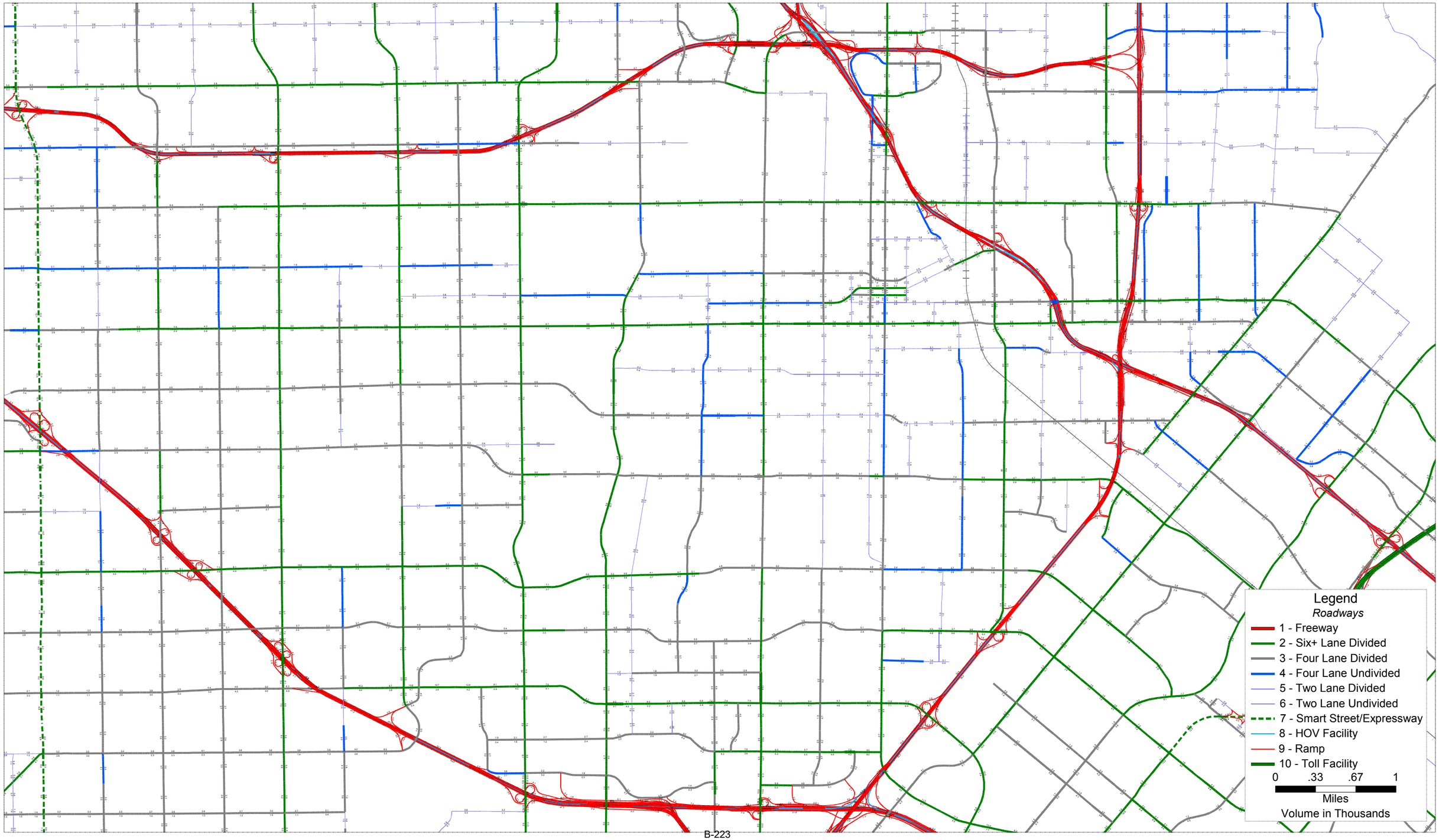
OCTAM 5.0 - Year 2016 Daily Forecasts
Volumes in Thousands
Raw Volumes - Not For Distribution



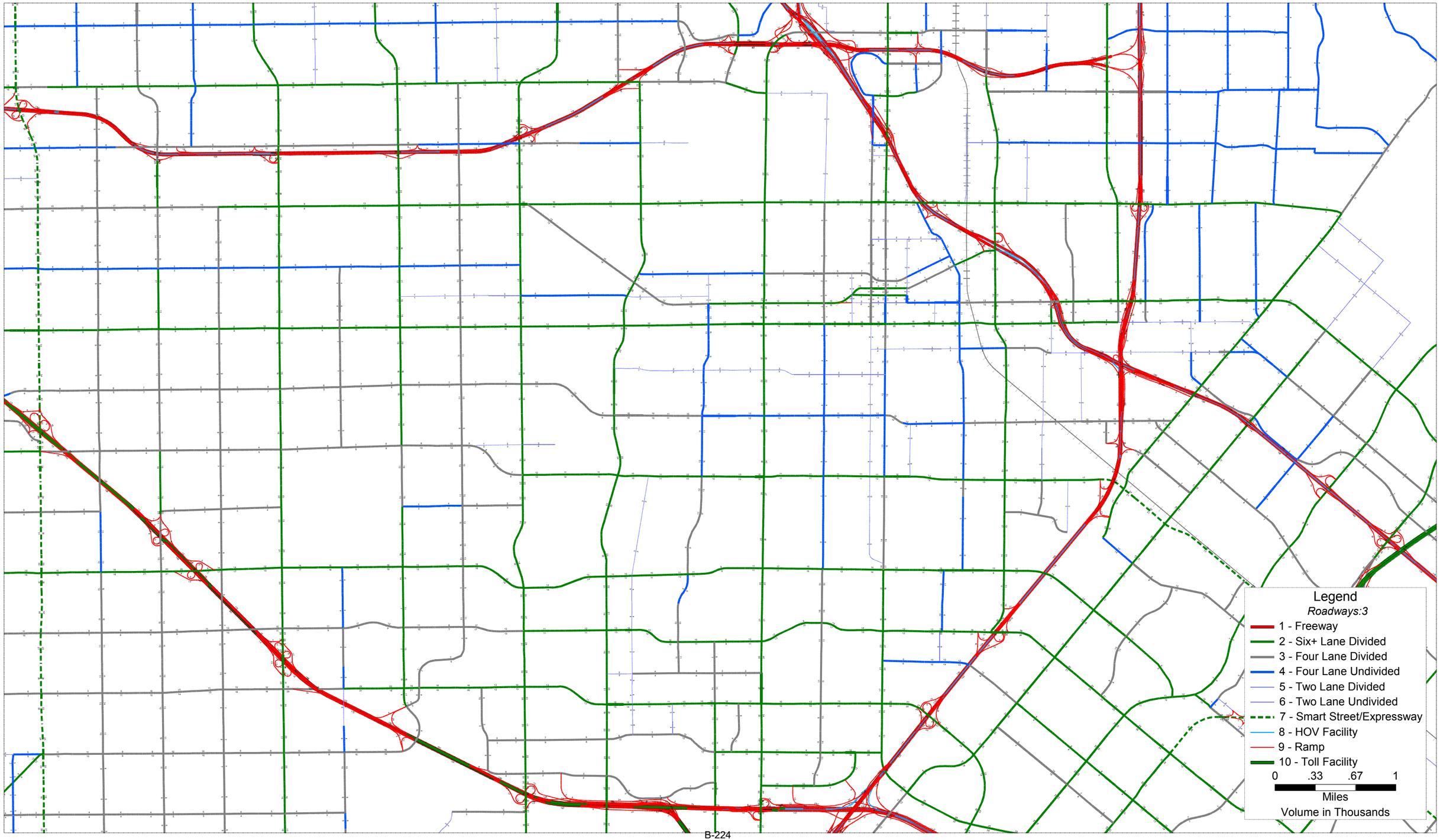
OCTAM 5.0 - Year 2016 AM Peak Period Forecasts
Volumes in Thousands
Raw Volumes - Not For Distribution



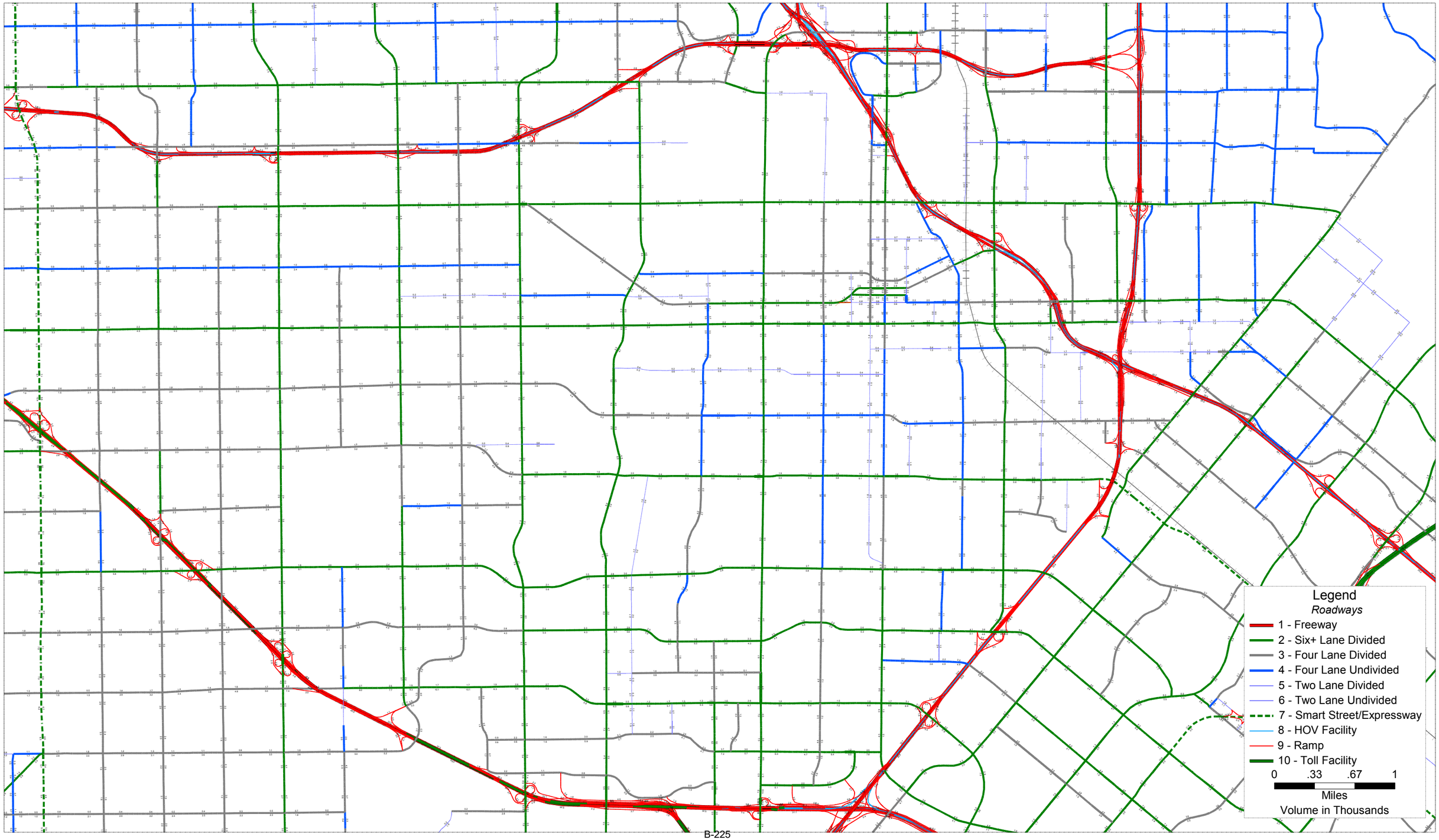
OCTAM 5.0 - Year 2016 PM Peak Period Forecasts
Volumes in Thousands
Raw Volumes - Not For Distribution



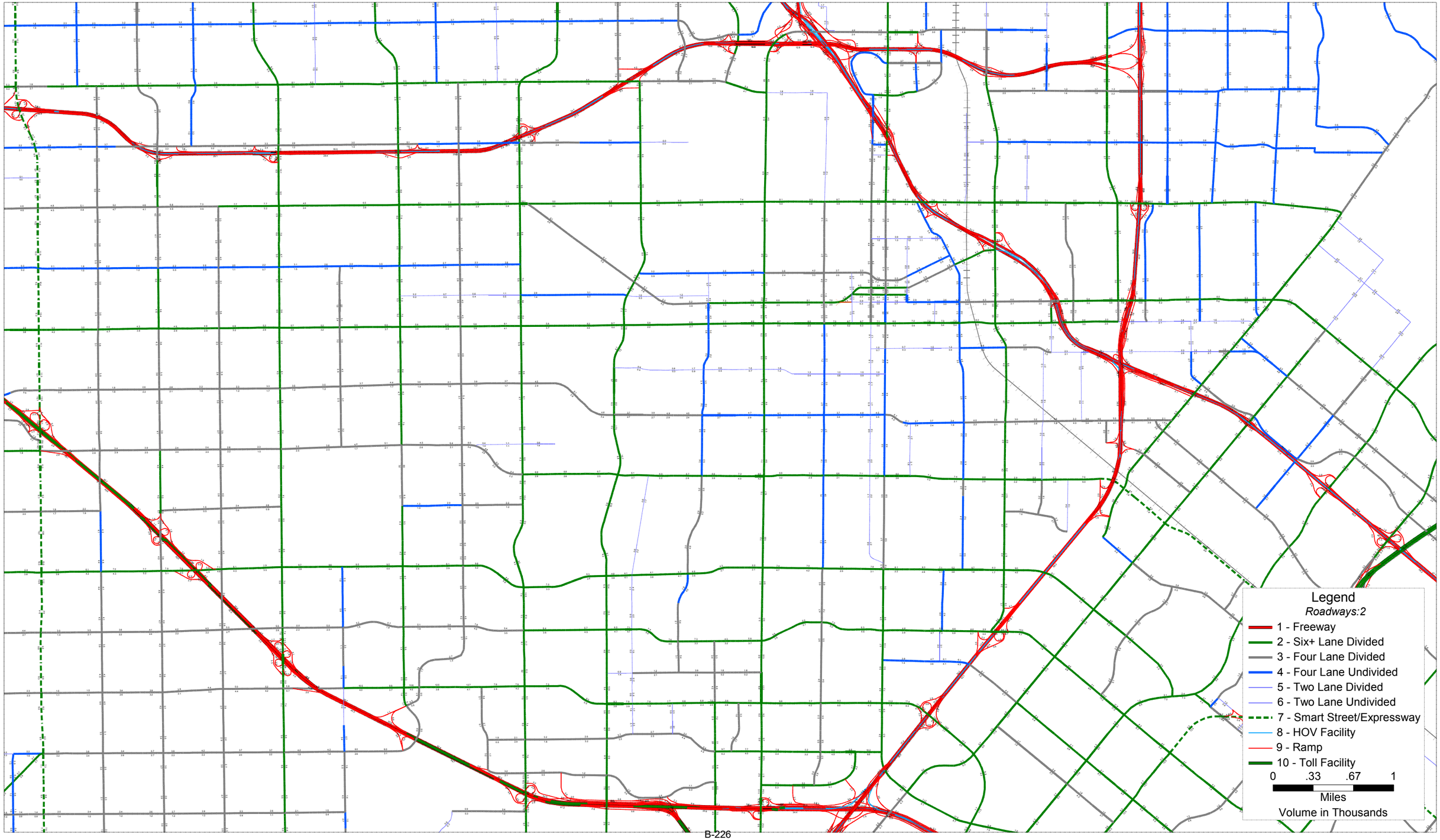
OCTAM 5.0 - Year 2045 SACE Baseline Daily Forecasts
Volumes in Thousands
Raw Volumes - Not For Distribution



OCTAM 5.0 - Year 2045 SACE Baseline AM Peak Period Forecasts
Volumes in Thousands
Raw Volumes - Not For Distribution



OCTAM 5.0 - Year 2045 SACE Baseline PM Peak Period Forecasts
Volumes in Thousands
Raw Volumes - Not For Distribution



APPENDIX D
ANALYSIS WORKSHEETS

APPENDIX D.1

ANALYSIS WORKSHEETS –
2020 NP (AM Peak Hour)

Santa Ana Circulation Element

Scenario Report

Scenario:	2020 NP AM Peak Hour
Command:	Default Command
Volume:	2020 NP AM
Geometry:	NP
Impact Fee:	Default Impact Fee
Trip Generation:	Default Trip Generation
Trip Distribution:	Default Trip Distribution
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

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Santa Ana Circulation Element

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 1 Euclid St and 1st St	D	xxxxx	0.849	D	xxxxx	0.849	+ 0.000 V/C
# 2 Euclid St and McFadden Ave	E	xxxxx	0.909	E	xxxxx	0.909	+ 0.000 V/C
# 3 Euclid St and Edinger Ave	D	xxxxx	0.861	D	xxxxx	0.861	+ 0.000 V/C
# 4 Newhope St and Hazard Ave	C	xxxxx	0.709	C	xxxxx	0.709	+ 0.000 V/C
# 5 Newhope St and McFadden Ave	D	xxxxx	0.828	D	xxxxx	0.828	+ 0.000 V/C
# 6 Harbor Blvd and SR-22 WB Off-R	C	27.4	0.695	C	27.4	0.695	+ 0.000 D/V
# 7 Trask Avenue and SR-22 EB On-R	B	11.5	0.457	B	11.5	0.457	+ 0.000 D/V
# 8 Harbor Blvd and Westminster Av	D	xxxxx	0.820	D	xxxxx	0.820	+ 0.000 V/C
# 9 Harbor Blvd and 1st St	D	xxxxx	0.807	D	xxxxx	0.807	+ 0.000 V/C
# 10 Harbor Blvd and McFadden Ave	C	xxxxx	0.791	C	xxxxx	0.791	+ 0.000 V/C
# 11 Harbor Blvd and Edinger Ave	C	xxxxx	0.766	C	xxxxx	0.766	+ 0.000 V/C
# 12 Harbor Blvd and Warner Ave	D	xxxxx	0.808	D	xxxxx	0.808	+ 0.000 V/C
# 13 Harbor Blvd and Segerstrom Ave	E	xxxxx	0.978	E	xxxxx	0.978	+ 0.000 V/C
# 14 MacArthur Blvd and Hyland Ave	B	xxxxx	0.608	B	xxxxx	0.608	+ 0.000 V/C
# 15 MacArthur Blvd and Harbor Blvd	C	xxxxx	0.754	C	xxxxx	0.754	+ 0.000 V/C
# 16 Harbor Blvd and Sunflower Ave	C	xxxxx	0.702	C	xxxxx	0.702	+ 0.000 V/C
# 17 Harbor Blvd and I-405 WB Off-R	B	19.7	0.695	B	19.7	0.695	+ 0.000 D/V
# 18 Harbor Blvd and I-405 EB Off-R	B	13.2	0.524	B	13.2	0.524	+ 0.000 D/V
# 19 Fairview St and Civic Center D	B	xxxxx	0.667	B	xxxxx	0.667	+ 0.000 V/C
# 20 Fairview St and 1st St	D	xxxxx	0.872	D	xxxxx	0.872	+ 0.000 V/C
# 21 Fairview St and McFadden Ave	C	xxxxx	0.786	C	xxxxx	0.786	+ 0.000 V/C
# 22 Fairview St and Edinger Ave	C	xxxxx	0.753	C	xxxxx	0.753	+ 0.000 V/C
# 23 Fairview St and Warner Ave	D	xxxxx	0.850	D	xxxxx	0.850	+ 0.000 V/C
# 24 Fairview St and MacArthur Blvd	C	xxxxx	0.704	C	xxxxx	0.704	+ 0.000 V/C

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Santa Ana Circulation Element

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 25 Fairview Rd and Sunflower Ave	C	xxxxx	0.705	C	xxxxx	0.705	+ 0.000 V/C
# 26 Greenville St and Edinger Ave	A	xxxxx	0.563	A	xxxxx	0.563	+ 0.000 V/C
# 27 Greenville St and Segerstrom A	C	xxxxx	0.727	C	xxxxx	0.727	+ 0.000 V/C
# 28 Raitt St and McFadden Ave	C	xxxxx	0.715	C	xxxxx	0.715	+ 0.000 V/C
# 29 Raitt St and Edinger Ave	D	xxxxx	0.851	D	xxxxx	0.851	+ 0.000 V/C
# 30 Bear St and MacArthur Blvd	C	xxxxx	0.737	C	xxxxx	0.737	+ 0.000 V/C
# 31 Bristol St and 17th St	C	xxxxx	0.725	C	xxxxx	0.725	+ 0.000 V/C
# 32 Bristol St and Civic Center Dr	D	xxxxx	0.827	D	xxxxx	0.827	+ 0.000 V/C
# 33 Bristol St and Santa Ana Blvd	B	xxxxx	0.669	B	xxxxx	0.669	+ 0.000 V/C
# 34 Bristol St and 1st St	C	xxxxx	0.745	C	xxxxx	0.745	+ 0.000 V/C
# 35 Bristol St and McFadden Ave	C	xxxxx	0.749	C	xxxxx	0.749	+ 0.000 V/C
# 36 Bristol St and Warner Ave	C	xxxxx	0.767	C	xxxxx	0.767	+ 0.000 V/C
# 37 Bristol St and Segerstrom Ave	C	xxxxx	0.794	C	xxxxx	0.794	+ 0.000 V/C
# 38 Bristol St and Alton Ave	A	xxxxx	0.556	A	xxxxx	0.556	+ 0.000 V/C
# 39 Bristol St and MacArthur Blvd	C	xxxxx	0.738	C	xxxxx	0.738	+ 0.000 V/C
# 40 Bristol St and Sunflower Ave	B	xxxxx	0.635	B	xxxxx	0.635	+ 0.000 V/C
# 41 Bristol St and I-405 WB Ramps	B	19.1	0.500	B	19.1	0.500	+ 0.000 D/V
# 42 Bristol St and I-405 EB Ramps	C	22.3	0.607	C	22.3	0.607	+ 0.000 D/V
# 43 Flower St and Santa Ana Blvd	A	xxxxx	0.596	A	xxxxx	0.596	+ 0.000 V/C
# 44 Flower St and 1st St	C	xxxxx	0.795	C	xxxxx	0.795	+ 0.000 V/C
# 45 Flower St and McFadden Ave	D	xxxxx	0.819	D	xxxxx	0.819	+ 0.000 V/C
# 46 Flower St and Segerstrom Ave	C	xxxxx	0.769	C	xxxxx	0.769	+ 0.000 V/C
# 47 Flower St and MacArthur Blvd	B	xxxxx	0.698	B	xxxxx	0.698	+ 0.000 V/C
# 48 Main St and La Veta Ave	A	xxxxx	0.574	A	xxxxx	0.574	+ 0.000 V/C
# 49 Main St and Mainplace Dr / Mem	A	xxxxx	0.485	A	xxxxx	0.485	+ 0.000 V/C
# 50 Main St and 17th St	D	xxxxx	0.821	D	xxxxx	0.821	+ 0.000 V/C

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Santa Ana Circulation Element

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 51 Main St and Civic Center Dr	C	xxxxx	0.755	C	xxxxx	0.755	+ 0.000 V/C
# 52 Main St and Santa Ana Blvd	B	xxxxx	0.667	B	xxxxx	0.667	+ 0.000 V/C
# 53 Main St and 4th St	A	xxxxx	0.490	A	xxxxx	0.490	+ 0.000 V/C
# 54 Main St and 1st St	C	xxxxx	0.758	C	xxxxx	0.758	+ 0.000 V/C
# 55 Main St and McFadden Ave	E	xxxxx	0.902	E	xxxxx	0.902	+ 0.000 V/C
# 56 Main St and Edinger Ave	D	xxxxx	0.826	D	xxxxx	0.826	+ 0.000 V/C
# 57 Main St and MacArthur Blvd	C	xxxxx	0.735	C	xxxxx	0.735	+ 0.000 V/C
# 58 Penn Wy and 17th St	B	11.2	0.602	B	11.2	0.602	+ 0.000 D/V
# 59 I-5 NB Off Ramps/17th Street	C	31.2	0.740	C	31.2	0.740	+ 0.000 D/V
# 60 Penn Wy and I-5 SB Ramps	B	19.0	0.436	B	19.0	0.436	+ 0.000 D/V
# 61 Santiago St and Civic Center D	C	16.9	0.723	C	16.9	0.723	+ 0.000 V/C
# 62 Santiago St and Santa Ana Blvd	A	xxxxx	0.553	A	xxxxx	0.553	+ 0.000 V/C
# 64 Standard Ave and 1st St	D	xxxxx	0.803	D	xxxxx	0.803	+ 0.000 V/C
# 65 Standard Ave and Mcfadden Ave	B	xxxxx	0.609	B	xxxxx	0.609	+ 0.000 V/C
# 66 Halladay St and Warner Ave	B	xxxxx	0.659	B	xxxxx	0.659	+ 0.000 V/C
# 67 Halladay St and Dyer Rd	A	xxxxx	0.567	A	xxxxx	0.567	+ 0.000 V/C
# 68 SR-55 SB Ramps and MacArthur B	B	19.8	0.615	B	19.8	0.615	+ 0.000 D/V
# 69 SR-55 NB Ramps and MacArthur B	B	19.2	0.742	B	19.2	0.742	+ 0.000 D/V
# 70 SR-55 SB Ramps and Dyer Rd	C	23.7	0.552	C	23.7	0.552	+ 0.000 D/V
# 71 Glassell St and La Veta Ave	B	xxxxx	0.603	B	xxxxx	0.603	+ 0.000 V/C
# 72 Glassell St and SR-22 WB Ramps	C	28.5	0.741	C	28.5	0.741	+ 0.000 D/V
# 73 Grand Ave / Glassell St and SR	C	27.0	0.760	C	27.0	0.760	+ 0.000 D/V
# 74 Grand Ave and Fairhaven Ave	B	xxxxx	0.680	B	xxxxx	0.680	+ 0.000 V/C
# 75 Grand Ave and Santa Clara Ave	D	xxxxx	0.885	D	xxxxx	0.885	+ 0.000 V/C
# 76 Grand Ave and 17th St	C	xxxxx	0.797	C	xxxxx	0.797	+ 0.000 V/C

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Santa Ana Circulation Element

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 77 Grand Ave and I-5 NB Ramps	B	12.9	0.516	B	12.9	0.516	+ 0.000 D/V
# 78 Grand Ave and Santa Ana Blvd	C	23.8	0.662	C	23.8	0.662	+ 0.000 D/V
# 79 Grand Ave and 1st St	D	xxxxx	0.803	D	xxxxx	0.803	+ 0.000 V/C
# 80 Grand Ave and Chestnut Ave	C	xxxxx	0.705	C	xxxxx	0.705	+ 0.000 V/C
# 81 Grand Ave and McFadden Ave	D	xxxxx	0.829	D	xxxxx	0.829	+ 0.000 V/C
# 82 Grand Ave and Edinger Ave	C	xxxxx	0.763	C	xxxxx	0.763	+ 0.000 V/C
# 83 Grand Ave and Warner Ave	A	xxxxx	0.528	A	xxxxx	0.528	+ 0.000 V/C
# 84 SR-55 NB Ramps and Dyer Rd	B	16.3	0.530	B	16.3	0.530	+ 0.000 D/V
# 85 Cambridge St and La Veta Ave	C	17.3	0.799	C	17.3	0.799	+ 0.000 V/C
# 86 Cambridge St and Fairhaven Ave	A	xxxxx	0.559	A	xxxxx	0.559	+ 0.000 V/C
# 87 Mabury St and 1st Street	C	28.3	0.691	C	28.3	0.691	+ 0.000 D/V
# 88 Tustin St and La Veta Ave	A	xxxxx	0.521	A	xxxxx	0.521	+ 0.000 V/C
# 89 Tustin St and SR-22 WB On-Ramp	B	12.9	0.734	B	12.9	0.734	+ 0.000 D/V
# 90 Tustin St and SR-22 EB Off-Ram	C	24.2	0.731	C	24.2	0.731	+ 0.000 D/V
# 91 Tustin Ave and Fairhaven Ave	E	xxxxx	0.977	E	xxxxx	0.977	+ 0.000 V/C
# 92 Tustin Ave and Santa Clara Ave	D	xxxxx	0.866	D	xxxxx	0.866	+ 0.000 V/C
# 93 Tustin Ave and 17th St	C	xxxxx	0.748	C	xxxxx	0.748	+ 0.000 V/C
# 94 Tustin Ave and 4th St	C	xxxxx	0.701	C	xxxxx	0.701	+ 0.000 V/C
# 95 SR-55 SB Ramps / Auto Mall Dr	C	24.4	0.558	C	24.4	0.558	+ 0.000 D/V
# 96 SR-55 NB Ramps / Del Amo Ave a	C	24.0	0.463	C	24.0	0.463	+ 0.000 D/V
# 97 Red Hill Ave and Edinger Ave	A	xxxxx	0.569	A	xxxxx	0.569	+ 0.000 V/C
# 98 Red Hill Ave and Warner Ave	A	xxxxx	0.485	A	xxxxx	0.485	+ 0.000 V/C
# 99 Red Hill Ave and Dyer Rd / bar	A	xxxxx	0.575	A	xxxxx	0.575	+ 0.000 V/C
#100 Red Hill Ave and Alton Pkwy	A	xxxxx	0.524	A	xxxxx	0.524	+ 0.000 V/C
#101 Red Hill Ave and MacArthur Blv	B	xxxxx	0.664	B	xxxxx	0.664	+ 0.000 V/C
#102 Red Hill Ave and Main St	B	xxxxx	0.670	B	xxxxx	0.670	+ 0.000 V/C

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Santa Ana Circulation Element

Intersection	Base LOS	Del/ Veh	V/ C	Future LOS	Del/ Veh	V/ C	Change in
#103 I-5 SB Ramps and Santa Ana Blv	B	17.4	0.514	B	17.4	0.514	+ 0.000 D/V
#104 Tustin Ranch Rd and Warner Ave	A	xxxxx	0.475	A	xxxxx	0.475	+ 0.000 V/C
#105 Von Karman Ave and Barranca Pk	C	xxxxx	0.762	C	xxxxx	0.762	+ 0.000 V/C
#106 Red Hill Avenue and El Camino	C	xxxxx	0.706	C	xxxxx	0.706	+ 0.000 V/C
#107 Red Hill Avenue and I-5 NB Ram	C	20.3	0.670	C	20.3	0.670	+ 0.000 D/V
#108 Red Hill Avenue and I-5 SB Ram	C	22.0	0.784	C	22.0	0.784	+ 0.000 D/V
#109 Red Hill Avenue and Nisson Roa	B	xxxxx	0.653	B	xxxxx	0.653	+ 0.000 V/C
#110 Red Hill Avenue and Walnut Ave	B	xxxxx	0.684	B	xxxxx	0.684	+ 0.000 V/C
#111 Red Hill Avenue and Valencia A	A	xxxxx	0.544	A	xxxxx	0.544	+ 0.000 V/C
#112 Tustin Ranch Road and Warner A	A	xxxxx	0.426	A	xxxxx	0.426	+ 0.000 V/C
#113 Tustin Ranch Road and Walnut A	F	xxxxx	1.193	F	xxxxx	1.193	+ 0.000 V/C
#114 SR-55 SB Ramps and Irvine Boul	C	23.2	0.970	C	23.2	0.970	+ 0.000 D/V
#115 SR-55 NB Ramps and Irvine Boul	B	19.8	0.797	B	19.8	0.797	+ 0.000 D/V

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #1 Euclid St and 1st St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.849
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	65	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			WideBypass			WideBypass		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2	1 0	1 0	2	1 0	1 0	2	1 0	1 0	2	1 0
Volume Module:												
Base Vol:	124	1044	179	207	1844	104	218	811	153	184	586	188
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	124	1044	179	207	1844	104	218	811	153	184	586	188
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	124	1044	179	207	1844	104	218	811	153	184	586	188
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	124	1044	179	207	1844	104	218	811	153	184	586	188
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	124	1044	179	207	1844	104	218	811	153	184	586	188
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.04	1.00	1.00	1.05	1.00	1.00	1.06	1.00
Lanes:	1.00	2.56	0.44	1.00	2.84	0.16	1.00	2.52	0.48	1.00	2.27	0.73
Final Sat.:	1600	4297	703	1600	4744	256	1600	4238	762	1600	3834	1166
Capacity Analysis Module:												
Vol/Sat:	0.08	0.24	0.25	0.13	0.39	0.41	0.14	0.19	0.20	0.12	0.15	0.16
Crit Moves:	****					****			****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #2 Euclid St and McFadden Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.909
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	92	Level Of Service:	E

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Prot+Permit			Prot+Permit		
Rights:	WideBypass			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 1	0	1 0	2 1	0	1 0	1 1	0	1 0	1 1	0
Volume Module:												
Base Vol:	145	1100	131	137	1906	158	227	463	287	166	368	140
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	145	1100	131	137	1906	158	227	463	287	166	368	140
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	145	1100	131	137	1906	158	227	463	287	166	368	140
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	145	1100	131	137	1906	158	227	463	287	166	368	140
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	145	1100	131	137	1906	158	227	463	287	166	368	140
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.05	1.00	1.00	1.05	1.00	1.00	1.04	1.00
Lanes:	1.00	2.68	0.32	1.00	2.77	0.23	1.00	1.23	0.77	1.00	1.45	0.55
Final Sat.:	1600	4489	511	1600	4633	367	1600	2075	1225	1600	2418	882
Capacity Analysis Module:												
Vol/Sat:	0.09	0.25	0.26	0.09	0.41	0.43	0.14	0.22	0.23	0.10	0.15	0.16
Crit Moves:	****					****			****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #3 Euclid St and Edinger Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.861
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	69	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2	1 0	2 0	2	1 0	1 0	2	0 1	1 0	2	0 1
Volume Module:												
Base Vol:	134	845	72	127	1842	169	172	753	460	100	609	111
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	134	845	72	127	1842	169	172	753	460	100	609	111
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	134	845	72	127	1842	169	172	753	460	100	609	111
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	134	845	72	127	1842	169	172	753	460	100	609	111
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	134	845	72	127	1842	169	172	753	460	100	609	111
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.05	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	2.00	2.76	0.24	2.00	2.75	0.25	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	3200	4623	377	3200	4597	403	1600	3400	1600	1600	3400	1600
Capacity Analysis Module:												
Vol/Sat:	0.04	0.18	0.19	0.04	0.40	0.42	0.11	0.22	0.29	0.06	0.18	0.07
Crit Moves:	****					****			****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #4 Newhope St and Hazard Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.709
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	38	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Prot+Permit			Prot+Permit			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1	1 0	1 0	1	1 0	1 0	1	1 0	1 0	1	1 0
Volume Module:												
Base Vol:	98	738	105	91	1341	123	78	199	147	51	170	68
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	98	738	105	91	1341	123	78	199	147	51	170	68
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	98	738	105	91	1341	123	78	199	147	51	170	68
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	98	738	105	91	1341	123	78	199	147	51	170	68
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	98	738	105	91	1341	123	78	199	147	51	170	68
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.04	1.00	1.00	1.03	1.00	1.00	1.05	1.00	1.00	1.04	1.00
Lanes:	1.00	1.75	0.25	1.00	1.83	0.17	1.00	1.15	0.85	1.00	1.43	0.57
Final Sat.:	1600	2901	399	1600	3031	269	1600	1940	1360	1600	2386	914
Capacity Analysis Module:												
Vol/Sat:	0.06	0.25	0.26	0.06	0.44	0.46	0.05	0.10	0.11	0.03	0.07	0.07
Crit Moves:	****					****			****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #5 Newhope St and McFadden Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.828
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	59	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Prot+Permit			Prot+Permit		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1	1 0	1 0	1	1 0	1 0	1	1 0	1 0	1	1 0
Volume Module:												
Base Vol:	110	491	173	119	1183	110	135	492	160	176	449	100
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	110	491	173	119	1183	110	135	492	160	176	449	100
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	110	491	173	119	1183	110	135	492	160	176	449	100
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	110	491	173	119	1183	110	135	492	160	176	449	100
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	110	491	173	119	1183	110	135	492	160	176	449	100
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.04	1.00	1.00	1.03	1.00	1.00	1.04	1.00	1.00	1.04	1.00
Lanes:	1.00	1.48	0.52	1.00	1.83	0.17	1.00	1.51	0.49	1.00	1.64	0.36
Final Sat.:	1600	2466	834	1600	3028	272	1600	2515	785	1600	2717	583
Capacity Analysis Module:												
Vol/Sat:	0.07	0.20	0.21	0.07	0.39	0.40	0.08	0.20	0.20	0.11	0.17	0.17
Crit Moves:	****					****		****			****	

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Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #6 Harbor Blvd and SR-22 WB Off-Ramp / Banner Dr

Cycle (sec):	100	Critical Vol./Cap.(X):	0.695
Loss Time (sec):	5	Average Delay (sec/veh):	27.4
Optimal Cycle:	38	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 0	0	0 0	2	1 0	0 0	1! 0	0	1 1	0 0	1
Volume Module:												
Base Vol:	70	1274	0	0	1354	18	74	0	121	836	44	117
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	70	1274	0	0	1354	18	74	0	121	836	44	117
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	70	1274	0	0	1354	18	74	0	121	836	44	117
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	70	1274	0	0	1354	18	74	0	121	836	44	117
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	70	1274	0	0	1354	18	74	0	121	836	44	117
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.91	1.00	1.00	0.91	0.91	0.90	1.00	0.90	0.96	0.96	0.85
Lanes:	1.00	3.00	0.00	0.00	2.96	0.04	0.38	0.00	0.62	1.90	0.10	1.00
Final Sat.:	1805	5187	0	0	5109	68	648	0	1059	3448	181	1615
Capacity Analysis Module:												
Vol/Sat:	0.04	0.25	0.00	0.00	0.27	0.27	0.11	0.00	0.11	0.24	0.24	0.07
Crit Moves:	****				****				****		****	
Green/Cycle:	0.06	0.44	0.00	0.00	0.38	0.38	0.16	0.00	0.16	0.35	0.35	0.35
Volume/Cap:	0.70	0.56	0.00	0.00	0.70	0.70	0.70	0.00	0.70	0.70	0.70	0.21
Delay/Veh:	65.4	21.3	0.0	0.0	27.2	27.2	46.8	0.0	46.8	29.7	29.7	23.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	65.4	21.3	0.0	0.0	27.2	27.2	46.8	0.0	46.8	29.7	29.7	23.0
LOS by Move:	E	C	A	A	C	C	D	A	D	C	C	C
HCM2k85thQ:	6	16	0	0	21	21	11	0	11	19	19	4

Note: Queue reported is the number of cars per lane.

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Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #7 Trask Avenue and SR-22 EB On-Ramp

Cycle (sec):	100	Critical Vol./Cap.(X):	0.457
Loss Time (sec):	5	Average Delay (sec/veh):	11.5
Optimal Cycle:	23	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	0 0	0	0 0	0 0	0	2 0	1 0	0	0 0	1 1	0
Volume Module:												
Base Vol:	0	0	0	0	0	0	651	815	0	0	738	138
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	651	815	0	0	738	138
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	0	0	0	651	815	0	0	738	138
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	0	0	0	651	815	0	0	738	138
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	0	0	0	651	815	0	0	738	138
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	0.92	1.00	1.00	1.00	0.93	0.93
Lanes:	0.00	0.00	0.00	0.00	0.00	0.00	2.00	1.00	0.00	0.00	1.68	0.32
Final Sat.:	0	0	0	0	0	0	3502	1900	0	0	2968	555
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.00	0.00	0.00	0.19	0.43	0.00	0.00	0.25	0.25
Crit Moves:							****				****	
Green/Cycle:	0.00	0.00	0.00	0.00	0.00	0.00	0.41	0.95	0.00	0.00	0.54	0.54
Volume/Cap:	0.00	0.00	0.00	0.00	0.00	0.00	0.46	0.45	0.00	0.00	0.46	0.46
Delay/Veh:	0.0	0.0	0.0	0.0	0.0	0.0	21.9	0.4	0.0	0.0	14.0	14.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	0.0	0.0	0.0	21.9	0.4	0.0	0.0	14.0	14.0
LOS by Move:	A	A	A	A	A	A	C	A	A	A	B	B
HCM2k85thQ:	0	0	0	0	0	0	12	4	0	0	13	13

Note: Queue reported is the number of cars per lane.

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #8 Harbor Blvd and Westminster Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.820
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	56	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 0	1	1 0	3 0	1	1 0	2 1	0	1 0	3 0	1
Volume Module:												
Base Vol:	178	1173	251	212	1663	95	176	927	33	212	574	156
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	178	1173	251	212	1663	95	176	927	33	212	574	156
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	178	1173	251	212	1663	95	176	927	33	212	574	156
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	178	1173	251	212	1663	95	176	927	33	212	574	156
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	178	1173	251	212	1663	95	176	927	33	212	574	156
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.04	1.00	1.00	1.06	1.00
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	1.00	2.90	0.10	1.00	3.00	1.00
Final Sat.:	1600	5100	1600	1600	5100	1600	1600	4835	165	1600	5100	1600
Capacity Analysis Module:												
Vol/Sat:	0.11	0.23	0.16	0.13	0.33	0.06	0.11	0.19	0.20	0.13	0.11	0.10
Crit Moves:	****			****					****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #9 Harbor Blvd and 1st St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.807
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	53	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 0	1	1 0	3 0	1	2 0	2 1	0	2 0	2 1	0
Volume Module:												
Base Vol:	117	935	202	227	1914	124	140	932	181	245	621	145
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	117	935	202	227	1914	124	140	932	181	245	621	145
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	117	935	202	227	1914	124	140	932	181	245	621	145
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	117	935	202	227	1914	124	140	932	181	245	621	145
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	117	935	202	227	1914	124	140	932	181	245	621	145
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.05	1.00	1.00	1.05	1.00
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	2.00	2.51	0.49	2.00	2.43	0.57
Final Sat.:	1600	5100	1600	1600	5100	1600	3200	4219	781	3200	4091	909
Capacity Analysis Module:												
Vol/Sat:	0.07	0.18	0.13	0.14	0.38	0.08	0.04	0.22	0.23	0.08	0.15	0.16
Crit Moves:	****				****				****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #10 Harbor Blvd and McFadden Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.791
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	50	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	3 0	1	2 0	2 1	0	1 0	1 1	0	1 0	1 1	0
Volume Module:												
Base Vol:	104	1059	101	182	1919	64	167	435	130	190	430	123
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	104	1059	101	182	1919	64	167	435	130	190	430	123
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	104	1059	101	182	1919	64	167	435	130	190	430	123
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	104	1059	101	182	1919	64	167	435	130	190	430	123
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	104	1059	101	182	1919	64	167	435	130	190	430	123
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.04	1.00	1.00	1.04	1.00	1.00	1.04	1.00
Lanes:	2.00	3.00	1.00	2.00	2.90	0.10	1.00	1.54	0.46	1.00	1.56	0.44
Final Sat.:	3200	5100	1600	3200	4845	155	1600	2564	736	1600	2588	712
Capacity Analysis Module:												
Vol/Sat:	0.03	0.21	0.06	0.06	0.40	0.41	0.10	0.17	0.18	0.12	0.17	0.17
Crit Moves:	****					****			****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #11 Harbor Blvd and Edinger Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.766
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	46	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	3 0	1	2 0	3 0	1	2 0	2 1	0	2 0	3 0	1
Volume Module:												
Base Vol:	103	772	146	183	2105	61	107	644	323	221	491	204
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	103	772	146	183	2105	61	107	644	323	221	491	204
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	103	772	146	183	2105	61	107	644	323	221	491	204
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	103	772	146	183	2105	61	107	644	323	221	491	204
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	103	772	146	183	2105	61	107	644	323	221	491	204
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	2.00	1.00	2.00	3.00	1.00
Final Sat.:	3200	5100	1600	3200	5100	1600	3200	3400	1600	3200	5100	1600
Capacity Analysis Module:												
Vol/Sat:	0.03	0.15	0.09	0.06	0.41	0.04	0.03	0.19	0.20	0.07	0.10	0.13
Crit Moves:	****			****					****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #12 Harbor Blvd and Warner Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.808
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	54	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 1	0	2 0	3 0	1	2 0	3 0	1	2 0	3 0	1
Volume Module:												
Base Vol:	115	701	178	457	2059	123	97	1385	364	151	792	134
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	115	701	178	457	2059	123	97	1385	364	151	792	134
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	115	701	178	457	2059	123	97	1385	364	151	792	134
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	115	701	178	457	2059	123	97	1385	364	151	792	134
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	115	701	178	457	2059	123	97	1385	364	151	792	134
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	2.00	2.39	0.61	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3200	4028	972	3200	5100	1600	3200	5100	1600	3200	5100	1600
Capacity Analysis Module:												
Vol/Sat:	0.04	0.17	0.18	0.14	0.40	0.08	0.03	0.27	0.23	0.05	0.16	0.08
Crit Moves:	****			****			****			****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #13 Harbor Blvd and Segerstrom Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.978
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	180	Level Of Service:	E

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Prot+Permit			Prot+Permit		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2	1 0	1 0	2	1 0	1 0	1	1 0	1 0	2	0 1
Volume Module:												
Base Vol:	111	791	50	171	2299	86	88	737	297	117	362	82
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	111	791	50	171	2299	86	88	737	297	117	362	82
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	111	791	50	171	2299	86	88	737	297	117	362	82
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	111	791	50	171	2299	86	88	737	297	117	362	82
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	111	791	50	171	2299	86	88	737	297	117	362	82
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.04	1.00	1.00	1.04	1.00	1.00	1.04	1.00	1.00	1.06	1.00
Lanes:	2.00	2.82	0.18	1.00	2.89	0.11	1.00	1.43	0.57	1.00	2.00	1.00
Final Sat.:	3200	4715	285	1600	4827	173	1600	2381	919	1600	3400	1600
Capacity Analysis Module:												
Vol/Sat:	0.03	0.17	0.18	0.11	0.48	0.50	0.06	0.31	0.32	0.07	0.11	0.05
Crit Moves:	****					****			****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #14 MacArthur Blvd and Hyland Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.608
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	29	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Prot+Permit			Prot+Permit		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	0 1	0	1 0	1 0	1	1 0	3 0	1	1 0	3 0	1
Volume Module:												
Base Vol:	69	3	19	8	2	19	7	1953	775	64	490	20
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	69	3	19	8	2	19	7	1953	775	64	490	20
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	69	3	19	8	2	19	7	1953	775	64	490	20
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	69	3	19	8	2	19	7	1953	775	64	490	20
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	69	3	19	8	2	19	7	1953	775	64	490	20
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	2.00	0.14	0.86	1.00	1.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00
Final Sat.:	3200	218	1382	1600	1700	1600	1600	5100	1600	1600	5100	1600
Capacity Analysis Module:												
Vol/Sat:	0.02	0.01	0.01	0.01	0.00	0.01	0.00	0.38	0.48	0.04	0.10	0.01
Crit Moves:	****					****			****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #15 MacArthur Blvd and Harbor Blvd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.754
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	44	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	3 0	1	2 0	3 0	1	1 0	3 0	1	1 0	3 0	1
Volume Module:												
Base Vol:	128	898	92	316	1820	126	126	1141	344	133	443	132
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	128	898	92	316	1820	126	126	1141	344	133	443	132
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	128	898	92	316	1820	126	126	1141	344	133	443	132
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	128	898	92	316	1820	126	126	1141	344	133	443	132
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	128	898	92	316	1820	126	126	1141	344	133	443	132
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00
Final Sat.:	3200	5100	1600	3200	5100	1600	1600	5100	1600	1600	5100	1600
Capacity Analysis Module:												
Vol/Sat:	0.04	0.18	0.06	0.10	0.36	0.08	0.08	0.22	0.22	0.08	0.09	0.08
Crit Moves:	****			****			****			****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #16 Harbor Blvd and Sunflower Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.702
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	37	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	3 0	1	2 0	3 0	1	1 0	1 1	0	1 1	0 1	0
Volume Module:												
Base Vol:	217	1107	205	246	2324	57	9	109	42	130	166	94
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	217	1107	205	246	2324	57	9	109	42	130	166	94
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	217	1107	205	246	2324	57	9	109	42	130	166	94
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	217	1107	205	246	2324	57	9	109	42	130	166	94
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	217	1107	205	246	2324	57	9	109	42	130	166	94
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.04	1.00	1.00	1.00	1.00
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	1.00	1.44	0.56	1.00	1.28	0.72
Final Sat.:	3200	5100	1600	3200	5100	1600	1600	2410	890	1603	2044	1152
Capacity Analysis Module:												
Vol/Sat:	0.07	0.22	0.13	0.08	0.46	0.04	0.01	0.05	0.05	0.08	0.08	0.08
Crit Moves:	****			****					****			****

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Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #17 Harbor Blvd and I-405 WB Off-Ramp

Cycle (sec):	100	Critical Vol./Cap.(X):	0.695
Loss Time (sec):	5	Average Delay (sec/veh):	19.7
Optimal Cycle:	38	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0 4	0 0	0	0 4	0 0	0	0 0	0 0	1	0 1!	0 1
Volume Module:												
Base Vol:	0	1567	0	0	2327	0	0	0	0	508	0	894
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1567	0	0	2327	0	0	0	0	508	0	894
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1567	0	0	2327	0	0	0	0	508	0	894
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1567	0	0	2327	0	0	0	0	508	0	894
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1567	0	0	2327	0	0	0	0	508	0	894
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	0.89	1.00	0.89
Lanes:	0.00	4.00	0.00	0.00	4.00	0.00	0.00	0.00	0.00	1.36	0.00	1.64
Final Sat.:	0	6916	0	0	6916	0	0	0	0	2298	0	2762
Capacity Analysis Module:												
Vol/Sat:	0.00	0.23	0.00	0.00	0.34	0.00	0.00	0.00	0.00	0.22	0.00	0.32
Crit Moves:	****				****							****
Green/Cycle:	0.00	0.48	0.00	0.00	0.48	0.00	0.00	0.00	0.00	0.47	0.00	0.47
Volume/Cap:	0.00	0.47	0.00	0.00	0.69	0.00	0.00	0.00	0.00	0.47	0.00	0.69
Delay/Veh:	0.0	17.3	0.0	0.0	20.7	0.0	0.0	0.0	0.0	18.4	0.0	22.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	17.3	0.0	0.0	20.7	0.0	0.0	0.0	0.0	18.4	0.0	22.2
LOS by Move:	A	B	A	A	C	A	A	A	A	B	A	C
HCM2k85thQ:	0	13	0	0	24	0	0	0	0	12	0	21

Note: Queue reported is the number of cars per lane.

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Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #18 Harbor Blvd and I-405 EB Off-Ramp

Cycle (sec):	100	Critical Vol./Cap.(X):	0.524
Loss Time (sec):	5	Average Delay (sec/veh):	13.2
Optimal Cycle:	26	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Ignore			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0 3	0 1	0	0 4	0 0	1	0 1!	0 1	0	0 0	0 0
Volume Module:												
Base Vol:	0	1729	0	0	1504	0	385	0	429	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1729	0	0	1504	0	385	0	429	0	0	0
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1729	0	0	1504	0	385	0	429	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1729	0	0	1504	0	385	0	429	0	0	0
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1729	0	0	1504	0	385	0	429	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.91	1.00	1.00	0.91	1.00	0.90	1.00	0.90	1.00	1.00	1.00
Lanes:	0.00	3.00	1.00	0.00	4.00	0.00	1.47	0.00	1.53	0.00	0.00	0.00
Final Sat.:	0	5187	1900	0	6916	0	2518	0	2611	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.33	0.00	0.00	0.22	0.00	0.15	0.00	0.16	0.00	0.00	0.00
Crit Moves:		****			****				****			
Green/Cycle:	0.00	0.64	0.00	0.00	0.64	0.00	0.31	0.00	0.31	0.00	0.00	0.00
Volume/Cap:	0.00	0.52	0.00	0.00	0.34	0.00	0.49	0.00	0.52	0.00	0.00	0.00
Delay/Veh:	0.0	10.1	0.0	0.0	8.5	0.0	28.0	0.0	28.5	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	10.1	0.0	0.0	8.5	0.0	28.0	0.0	28.5	0.0	0.0	0.0
LOS by Move:	A	B	A	A	A	A	C	A	C	A	A	A
HCM2k85thQ:	0	16	0	0	9	0	10	0	11	0	0	0

Note: Queue reported is the number of cars per lane.

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #19 Fairview St and Civic Center Dr

Cycle (sec):	100	Critical Vol./Cap.(X):	0.667
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	34	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	WideBypass			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 1	0	1 0	2 1	0	0 1	0 1	0	1 1	0 0	1
Volume Module:												
Base Vol:	6	1278	414	243	1402	6	6	23	23	300	9	155
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	6	1278	414	243	1402	6	6	23	23	300	9	155
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	6	1278	414	243	1402	6	6	23	23	300	9	155
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	6	1278	414	243	1402	6	6	23	23	300	9	155
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	6	1278	414	243	1402	6	6	23	23	300	9	155
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.04	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.27	0.73	1.00	2.99	0.01	0.23	0.89	0.88	1.94	0.06	1.00
Final Sat.:	1600	3826	1174	1600	4980	20	369	1415	1415	3107	93	1600
Capacity Analysis Module:												
Vol/Sat:	0.00	0.33	0.35	0.15	0.28	0.29	0.02	0.02	0.02	0.10	0.10	0.10
Crit Moves:			****	****			****					****

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #20 Fairview St and 1st St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.872
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	73	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			WideBypass			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 0	1	1 0	2 1	0	1 0	2 1	0	1 0	2 1	0
Volume Module:												
Base Vol:	157	1206	227	241	1401	161	214	1233	191	163	732	245
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	157	1206	227	241	1401	161	214	1233	191	163	732	245
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	157	1206	227	241	1401	161	214	1233	191	163	732	245
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	157	1206	227	241	1401	161	214	1233	191	163	732	245
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	157	1206	227	241	1401	161	214	1233	191	163	732	245
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.05	1.00	1.00	1.05	1.00	1.00	1.06	1.00
Lanes:	1.00	3.00	1.00	1.00	2.69	0.31	1.00	2.60	0.40	1.00	2.25	0.75
Final Sat.:	1600	5100	1600	1600	4505	495	1600	4356	644	1600	3796	1204
Capacity Analysis Module:												
Vol/Sat:	0.10	0.24	0.14	0.15	0.31	0.33	0.13	0.28	0.30	0.10	0.19	0.20
Crit Moves:	****					****			****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #21 Fairview St and McFadden Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.786
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	49	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 0	1	1 0	3 0	1	1 0	1 1	0	1 0	1 1	0
Volume Module:												
Base Vol:	121	1294	173	142	1727	125	221	522	120	194	500	40
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	121	1294	173	142	1727	125	221	522	120	194	500	40
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	121	1294	173	142	1727	125	221	522	120	194	500	40
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	121	1294	173	142	1727	125	221	522	120	194	500	40
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	121	1294	173	142	1727	125	221	522	120	194	500	40
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.04	1.00	1.00	1.03	1.00
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	1.00	1.63	0.37	1.00	1.85	0.15
Final Sat.:	1600	5100	1600	1600	5100	1600	1600	2702	598	1600	3063	237
Capacity Analysis Module:												
Vol/Sat:	0.08	0.25	0.11	0.09	0.34	0.08	0.14	0.19	0.20	0.12	0.16	0.17
Crit Moves:	****			****					****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #22 Fairview St and Edinger Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.753
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	44	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 1	0	2 0	2 1	0	2 0	2 1	0	2 0	2 1	0
Volume Module:												
Base Vol:	188	831	116	215	1503	127	237	657	176	421	553	110
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	188	831	116	215	1503	127	237	657	176	421	553	110
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	188	831	116	215	1503	127	237	657	176	421	553	110
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	188	831	116	215	1503	127	237	657	176	421	553	110
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	188	831	116	215	1503	127	237	657	176	421	553	110
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.05	1.00	1.00	1.05	1.00	1.00	1.05	1.00
Lanes:	2.00	2.63	0.37	2.00	2.77	0.23	2.00	2.37	0.63	2.00	2.50	0.50
Final Sat.:	3200	4412	588	3200	4626	374	3200	3986	1014	3200	4204	796
Capacity Analysis Module:												
Vol/Sat:	0.06	0.19	0.20	0.07	0.32	0.34	0.07	0.16	0.17	0.13	0.13	0.14
Crit Moves:	****					****			****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #23 Fairview St and Warner Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.850
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	65	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 1	0	2 0	2 1	0	2 0	2 1	0	2 0	2 1	0
Volume Module:												
Base Vol:	215	952	125	205	1628	119	69	1010	301	307	926	300
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	215	952	125	205	1628	119	69	1010	301	307	926	300
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	215	952	125	205	1628	119	69	1010	301	307	926	300
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	215	952	125	205	1628	119	69	1010	301	307	926	300
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	215	952	125	205	1628	119	69	1010	301	307	926	300
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.04	1.00	1.00	1.05	1.00	1.00	1.06	1.00
Lanes:	2.00	2.65	0.35	2.00	2.80	0.20	2.00	2.31	0.69	2.00	2.27	0.73
Final Sat.:	3200	4443	557	3200	4673	327	3200	3898	1102	3200	3825	1175
Capacity Analysis Module:												
Vol/Sat:	0.07	0.21	0.22	0.06	0.35	0.36	0.02	0.26	0.27	0.10	0.24	0.26
Crit Moves:	****					****			****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #24 Fairview St and MacArthur Blvd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.704
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	38	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 1	0	2 0	3 0	1	2 0	3 0	1	2 0	3 0	1
Volume Module:												
Base Vol:	248	771	89	307	1546	173	125	1019	150	235	494	140
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	248	771	89	307	1546	173	125	1019	150	235	494	140
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	248	771	89	307	1546	173	125	1019	150	235	494	140
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	248	771	89	307	1546	173	125	1019	150	235	494	140
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	248	771	89	307	1546	173	125	1019	150	235	494	140
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	2.00	2.69	0.31	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3200	4503	497	3200	5100	1600	3200	5100	1600	3200	5100	1600
Capacity Analysis Module:												
Vol/Sat:	0.08	0.17	0.18	0.10	0.30	0.11	0.04	0.20	0.09	0.07	0.10	0.09
Crit Moves:	****			****			****			****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #25 Fairview Rd and Sunflower Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.705
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	38	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	3 0	1	2 0	2 1	0	2 0	1 1	0	2 0	2 0	1
Volume Module:												
Base Vol:	185	1071	163	204	1738	111	49	322	65	306	256	132
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	185	1071	163	204	1738	111	49	322	65	306	256	132
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	185	1071	163	204	1738	111	49	322	65	306	256	132
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	185	1071	163	204	1738	111	49	322	65	306	256	132
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	185	1071	163	204	1738	111	49	322	65	306	256	132
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.04	1.00	1.00	1.04	1.00	1.00	1.06	1.00
Lanes:	2.00	3.00	1.00	2.00	2.82	0.18	2.00	1.66	0.34	2.00	2.00	1.00
Final Sat.:	3200	5100	1600	3200	4712	288	3200	2763	537	3200	3400	1600
Capacity Analysis Module:												
Vol/Sat:	0.06	0.21	0.10	0.06	0.37	0.39	0.02	0.12	0.12	0.10	0.08	0.08
Crit Moves:	****					****		****		****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #26 Greenville St and Edinger Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.563
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	27	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	0	0 1	0	0	0 0 0	0	0	2 1 0	1 0	2	0 0
Volume Module:												
Base Vol:	186	0	251	0	0	0	0	960	234	172	915	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	186	0	251	0	0	0	0	960	234	172	915	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	186	0	251	0	0	0	0	960	234	172	915	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	186	0	251	0	0	0	0	960	234	172	915	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	186	0	251	0	0	0	0	960	234	172	915	0
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.05	1.00	1.00	1.06	1.00
Lanes:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	2.41	0.59	1.00	2.00	0.00
Final Sat.:	1600	0	1600	0	0	0	0	4059	941	1600	3400	0
Capacity Analysis Module:												
Vol/Sat:	0.12	0.00	0.16	0.00	0.00	0.00	0.00	0.24	0.25	0.11	0.27	0.00
Crit Moves:			****						****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #27 Greenville St and Segerstrom Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.727
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	40	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			WideBypass			WideBypass		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1	1 0	1 0	1	0 1	1 0	1	1 0	1 0	1	1 0
Volume Module:												
Base Vol:	47	193	78	154	472	160	33	739	118	164	662	76
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	47	193	78	154	472	160	33	739	118	164	662	76
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	47	193	78	154	472	160	33	739	118	164	662	76
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	47	193	78	154	472	160	33	739	118	164	662	76
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	47	193	78	154	472	160	33	739	118	164	662	76
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.04	1.00	1.00	1.06	1.00	1.00	1.04	1.00	1.00	1.03	1.00
Lanes:	1.00	1.42	0.58	1.00	1.00	1.00	1.00	1.72	0.28	1.00	1.79	0.21
Final Sat.:	1600	2379	921	1600	1700	1600	1600	2859	441	1600	2970	330
Capacity Analysis Module:												
Vol/Sat:	0.03	0.08	0.08	0.10	0.28	0.10	0.02	0.26	0.27	0.10	0.22	0.23
Crit Moves:	****				****				****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #28 Raitt St and McFadden Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.715
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	39	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1	1 0	1 0	1	1 0	1 0	1	1 0	1 0	1	1 0
Volume Module:												
Base Vol:	62	570	90	100	762	104	116	704	90	172	542	97
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	62	570	90	100	762	104	116	704	90	172	542	97
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	62	570	90	100	762	104	116	704	90	172	542	97
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	62	570	90	100	762	104	116	704	90	172	542	97
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	62	570	90	100	762	104	116	704	90	172	542	97
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.04	1.00	1.00	1.04	1.00	1.00	1.04	1.00	1.00	1.04	1.00
Lanes:	1.00	1.73	0.27	1.00	1.76	0.24	1.00	1.77	0.23	1.00	1.70	0.30
Final Sat.:	1600	2864	436	1600	2916	384	1600	2937	363	1600	2814	486
Capacity Analysis Module:												
Vol/Sat:	0.04	0.20	0.21	0.06	0.26	0.27	0.07	0.24	0.25	0.11	0.19	0.20
Crit Moves:	****					****			****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #29 Raitt St and Edinger Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.851
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	65	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			WideBypass			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1	1 0	1 0	1	1 0	1 0	1	1 0	1 0	1	1 0
Volume Module:												
Base Vol:	188	501	181	152	716	85	165	1008	145	117	916	54
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	188	501	181	152	716	85	165	1008	145	117	916	54
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	188	501	181	152	716	85	165	1008	145	117	916	54
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	188	501	181	152	716	85	165	1008	145	117	916	54
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	188	501	181	152	716	85	165	1008	145	117	916	54
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.04	1.00	1.00	1.03	1.00	1.00	1.04	1.00	1.00	1.03	1.00
Lanes:	1.00	1.47	0.53	1.00	1.79	0.21	1.00	1.75	0.25	1.00	1.89	0.11
Final Sat.:	1600	2451	849	1600	2960	340	1600	2898	402	1600	3122	178
Capacity Analysis Module:												
Vol/Sat:	0.12	0.20	0.21	0.10	0.24	0.25	0.10	0.35	0.36	0.07	0.29	0.30
Crit Moves:	****					****			****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #30 Bear St and MacArthur Blvd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.737
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	42	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 0	1	1 0	2 0	1	1 0	2 1	0	1 0	2 1	0
Volume Module:												
Base Vol:	81	280	119	199	756	300	97	1663	114	70	1180	100
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	81	280	119	199	756	300	97	1663	114	70	1180	100
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	81	280	119	199	756	300	97	1663	114	70	1180	100
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	81	280	119	199	756	300	97	1663	114	70	1180	100
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	81	280	119	199	756	300	97	1663	114	70	1180	100
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.04	1.00	1.00	1.05	1.00
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	2.81	0.19	1.00	2.77	0.23
Final Sat.:	1600	3400	1600	1600	3400	1600	1600	4692	308	1600	4625	375
Capacity Analysis Module:												
Vol/Sat:	0.05	0.08	0.07	0.12	0.22	0.19	0.06	0.35	0.37	0.04	0.26	0.27
Crit Moves:	****			****					****	****		

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #31 Bristol St and 17th St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.725
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	40	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	3 0	1	2 0	3 0	1	2 0	2 1	0	2 0	3 0	1
Volume Module:												
Base Vol:	192	988	167	335	1376	181	324	963	156	359	824	273
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	192	988	167	335	1376	181	324	963	156	359	824	273
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	192	988	167	335	1376	181	324	963	156	359	824	273
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	192	988	167	335	1376	181	324	963	156	359	824	273
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	192	988	167	335	1376	181	324	963	156	359	824	273
OvlAdjVol:												106
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.05	1.00	1.00	1.06	1.00
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	2.58	0.42	2.00	3.00	1.00
Final Sat.:	3200	5100	1600	3200	5100	1600	3200	4331	669	3200	5100	1600
Capacity Analysis Module:												
Vol/Sat:	0.06	0.19	0.10	0.10	0.27	0.11	0.10	0.22	0.23	0.11	0.16	0.17
OvlAdjV/S:												0.07
Crit Moves:	****			****					****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #32 Bristol St and Civic Center Dr

Cycle (sec):	100	Critical Vol./Cap.(X):	0.827
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	58	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Prot+Permit			Prot+Permit		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2	1 0	1 0	2	1 0	1 0	1	1 0	1 0	1	1 0
Volume Module:												
Base Vol:	123	1087	96	318	1284	80	149	755	93	121	401	83
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	123	1087	96	318	1284	80	149	755	93	121	401	83
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	123	1087	96	318	1284	80	149	755	93	121	401	83
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	123	1087	96	318	1284	80	149	755	93	121	401	83
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	123	1087	96	318	1284	80	149	755	93	121	401	83
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.04	1.00	1.00	1.04	1.00	1.00	1.04	1.00
Lanes:	1.00	2.76	0.24	1.00	2.82	0.18	1.00	1.78	0.22	1.00	1.66	0.34
Final Sat.:	1600	4610	390	1600	4718	282	1600	2949	351	1600	2751	549
Capacity Analysis Module:												
Vol/Sat:	0.08	0.24	0.25	0.20	0.27	0.28	0.09	0.26	0.26	0.08	0.15	0.15
Crit Moves:			****	****				****		****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #33 Bristol St and Santa Ana Blvd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.669
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	34	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Prot+Permit			Prot+Permit		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2	1 0	1 0	2	1 0	1 0	1	1 0	1 0	1	1 0
Volume Module:												
Base Vol:	65	1419	197	137	1507	41	83	403	35	96	240	41
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	65	1419	197	137	1507	41	83	403	35	96	240	41
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	65	1419	197	137	1507	41	83	403	35	96	240	41
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	65	1419	197	137	1507	41	83	403	35	96	240	41
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	65	1419	197	137	1507	41	83	403	35	96	240	41
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.04	1.00	1.00	1.03	1.00	1.00	1.04	1.00
Lanes:	1.00	2.63	0.37	1.00	2.92	0.08	1.00	1.84	0.16	1.00	1.71	0.29
Final Sat.:	1600	4415	585	1600	4873	127	1600	3044	256	1600	2833	467
Capacity Analysis Module:												
Vol/Sat:	0.04	0.32	0.34	0.09	0.31	0.32	0.05	0.13	0.14	0.06	0.08	0.09
Crit Moves:			****	****					****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #34 Bristol St and 1st St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.745
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	43	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	3 0	1	2 0	3 0	1	1 0	2 1	0	1 0	2 1	0
Volume Module:												
Base Vol:	183	1278	162	275	1133	160	206	1268	128	108	813	119
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	183	1278	162	275	1133	160	206	1268	128	108	813	119
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	183	1278	162	275	1133	160	206	1268	128	108	813	119
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	183	1278	162	275	1133	160	206	1268	128	108	813	119
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	183	1278	162	275	1133	160	206	1268	128	108	813	119
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.05	1.00	1.00	1.05	1.00
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	1.00	2.72	0.28	1.00	2.62	0.38
Final Sat.:	3200	5100	1600	3200	5100	1600	1600	4560	440	1600	4387	613
Capacity Analysis Module:												
Vol/Sat:	0.06	0.25	0.10	0.09	0.22	0.10	0.13	0.28	0.29	0.07	0.19	0.19
Crit Moves:		****		****					****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #35 Bristol St and McFadden Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.749
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	43	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Prot+Permit			Prot+Permit		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 0	1	1 0	3 0	1	1 0	1 1	0	1 0	1 1	0
Volume Module:												
Base Vol:	118	1054	53	161	1571	162	275	472	232	155	432	50
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	118	1054	53	161	1571	162	275	472	232	155	432	50
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	118	1054	53	161	1571	162	275	472	232	155	432	50
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	118	1054	53	161	1571	162	275	472	232	155	432	50
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	118	1054	53	161	1571	162	275	472	232	155	432	50
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.05	1.00	1.00	1.03	1.00
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	1.00	1.34	0.66	1.00	1.79	0.21
Final Sat.:	1600	5100	1600	1600	5100	1600	1600	2245	1055	1600	2968	332
Capacity Analysis Module:												
Vol/Sat:	0.07	0.21	0.03	0.10	0.31	0.10	0.17	0.21	0.22	0.10	0.15	0.15
Crit Moves:	****			****			****			****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #36 Bristol St and Warner Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.767
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	46	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 0	1	2 0	2 1	0	1 0	3 0	1	1 0	3 0	1
Volume Module:												
Base Vol:	192	862	159	386	1307	148	206	1149	286	188	860	146
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	192	862	159	386	1307	148	206	1149	286	188	860	146
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	192	862	159	386	1307	148	206	1149	286	188	860	146
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	192	862	159	386	1307	148	206	1149	286	188	860	146
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	192	862	159	386	1307	148	206	1149	286	188	860	146
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.05	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	2.00	2.00	1.00	2.00	2.69	0.31	1.00	3.00	1.00	1.00	3.00	1.00
Final Sat.:	3200	3400	1600	3200	4512	488	1600	5100	1600	1600	5100	1600
Capacity Analysis Module:												
Vol/Sat:	0.06	0.25	0.10	0.12	0.29	0.30	0.13	0.23	0.18	0.12	0.17	0.09
Crit Moves:		****		****				****		****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #37 Bristol St and Segerstrom Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.794
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	51	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	WideBypass			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2	1 0	1 0	2	1 0	1 0	1	1 0	1 0	1	1 0
Volume Module:												
Base Vol:	65	725	136	283	1011	119	189	913	84	122	554	71
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	65	725	136	283	1011	119	189	913	84	122	554	71
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	65	725	136	283	1011	119	189	913	84	122	554	71
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	65	725	136	283	1011	119	189	913	84	122	554	71
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	65	725	136	283	1011	119	189	913	84	122	554	71
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.05	1.00	1.00	1.03	1.00	1.00	1.04	1.00
Lanes:	1.00	2.53	0.47	1.00	2.68	0.32	1.00	1.83	0.17	1.00	1.77	0.23
Final Sat.:	1600	4242	758	1600	4495	505	1600	3030	270	1600	2936	364
Capacity Analysis Module:												
Vol/Sat:	0.04	0.17	0.18	0.18	0.22	0.24	0.12	0.30	0.31	0.08	0.19	0.20
Crit Moves:			****	****					****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #38 Bristol St and Alton Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.556
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	26	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	WideBypass			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 1	0	1 0	3 0	1	1 0	1 1	0	1 0	0 1	0
Volume Module:												
Base Vol:	9	628	47	227	1571	36	190	117	244	41	87	31
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	9	628	47	227	1571	36	190	117	244	41	87	31
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	9	628	47	227	1571	36	190	117	244	41	87	31
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	9	628	47	227	1571	36	190	117	244	41	87	31
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	9	628	47	227	1571	36	190	117	244	41	87	31
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.04	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.00	1.00
Lanes:	1.00	2.79	0.21	1.00	3.00	1.00	1.00	1.00	1.00	1.00	0.74	0.26
Final Sat.:	1600	4666	334	1600	5100	1600	1600	1700	1600	1600	1180	420
Capacity Analysis Module:												
Vol/Sat:	0.01	0.13	0.14	0.14	0.31	0.02	0.12	0.07	0.15	0.03	0.07	0.07
Crit Moves:	****			****			****				****	

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #39 Bristol St and MacArthur Blvd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.738
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	42	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	3 0	1	2 0	2 1	0	2 0	3 0	1	2 0	3 0	1
Volume Module:												
Base Vol:	92	478	120	326	1419	148	192	1394	283	191	910	132
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	92	478	120	326	1419	148	192	1394	283	191	910	132
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	92	478	120	326	1419	148	192	1394	283	191	910	132
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	92	478	120	326	1419	148	192	1394	283	191	910	132
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	92	478	120	326	1419	148	192	1394	283	191	910	132
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.05	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	2.00	3.00	1.00	2.00	2.72	0.28	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3200	5100	1600	3200	4547	453	3200	5100	1600	3200	5100	1600
Capacity Analysis Module:												
Vol/Sat:	0.03	0.09	0.08	0.10	0.31	0.33	0.06	0.27	0.18	0.06	0.18	0.08
Crit Moves:	****					****		****		****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #40 Bristol St and Sunflower Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.635
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	31	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2	1 1	2 0	3	0 1	2 0	2	1 1	2 0	3	0 1
Volume Module:												
Base Vol:	94	461	136	245	1388	104	114	942	381	246	400	138
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	94	461	136	245	1388	104	114	942	381	246	400	138
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	94	461	136	245	1388	104	114	942	381	246	400	138
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	94	461	136	245	1388	104	114	942	381	246	400	138
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	94	461	136	245	1388	104	114	942	381	246	400	138
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.04	1.00	1.00	1.06	1.00
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	2.85	1.15	2.00	3.00	1.00
Final Sat.:	3200	5100	1600	3200	5100	1600	3200	4757	1843	3200	5100	1600
Capacity Analysis Module:												
Vol/Sat:	0.03	0.09	0.09	0.08	0.27	0.07	0.04	0.20	0.21	0.08	0.08	0.09
Crit Moves:	****			****					****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #41 Bristol St and I-405 WB Ramps

Cycle (sec):	100	Critical Vol./Cap.(X):	0.500
Loss Time (sec):	5	Average Delay (sec/veh):	19.1
Optimal Cycle:	25	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Ignore			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0 4	0 1	0	0 4	1 0	0	0 0	0 2	1	1 1	0 2
Volume Module:												
Base Vol:	0	1489	191	0	1967	8	0	0	34	121	73	665
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1489	191	0	1967	8	0	0	34	121	73	665
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1489	0	0	1967	8	0	0	34	121	73	665
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1489	0	0	1967	8	0	0	34	121	73	665
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1489	0	0	1967	8	0	0	34	121	73	665
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.91	1.00	1.00	0.91	0.91	1.00	1.00	0.75	0.92	0.92	0.75
Lanes:	0.00	4.00	1.00	0.00	4.98	0.02	0.00	0.00	2.00	1.87	1.13	2.00
Final Sat.:	0	6916	1900	0	8601	35	0	0	2842	3276	1976	2842
Capacity Analysis Module:												
Vol/Sat:	0.00	0.22	0.00	0.00	0.23	0.23	0.00	0.00	0.01	0.04	0.04	0.23
Crit Moves:	****				****				****			****
Green/Cycle:	0.00	0.46	0.00	0.00	0.46	0.46	0.00	0.00	0.02	0.47	0.47	0.47
Volume/Cap:	0.00	0.47	0.00	0.00	0.50	0.50	0.00	0.00	0.50	0.08	0.08	0.50
Delay/Veh:	0.0	18.8	0.0	0.0	19.2	19.2	0.0	0.0	53.9	14.7	14.7	18.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	18.8	0.0	0.0	19.2	19.2	0.0	0.0	53.9	14.7	14.7	18.7
LOS by Move:	A	B	A	A	B	B	A	A	D	B	B	B
HCM2k85thQ:	0	13	0	0	14	14	0	0	2	2	2	13

Note: Queue reported is the number of cars per lane.

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Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #42 Bristol St and I-405 EB Ramps

Cycle (sec):	100	Critical Vol./Cap.(X):	0.607
Loss Time (sec):	5	Average Delay (sec/veh):	22.3
Optimal Cycle:	31	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Ignore			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	4 0	0	0 0	2 1	1	3 0	0 0	1	0 0	0 0	0
Volume Module:												
Base Vol:	113	1108	0	0	985	847	573	0	524	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	113	1108	0	0	985	847	573	0	524	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	113	1108	0	0	985	0	573	0	524	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	113	1108	0	0	985	0	573	0	524	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	113	1108	0	0	985	0	573	0	524	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.91	1.00	1.00	0.91	0.91	0.92	1.00	0.85	1.00	1.00	1.00
Lanes:	1.00	4.00	0.00	0.00	3.00	1.00	3.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	1805	6916	0	0	5187	1729	5253	0	1615	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.06	0.16	0.00	0.00	0.19	0.00	0.11	0.00	0.32	0.00	0.00	0.00
Crit Moves:	****				****				****			
Green/Cycle:	0.10	0.42	0.00	0.00	0.31	0.00	0.53	0.00	0.53	0.00	0.00	0.00
Volume/Cap:	0.61	0.39	0.00	0.00	0.61	0.00	0.20	0.00	0.61	0.00	0.00	0.00
Delay/Veh:	48.6	20.4	0.0	0.0	29.8	0.0	12.2	0.0	17.3	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	48.6	20.4	0.0	0.0	29.8	0.0	12.2	0.0	17.3	0.0	0.0	0.0
LOS by Move:	D	C	A	A	C	A	B	A	B	A	A	A
HCM2k85thQ:	7	10	0	0	15	0	5	0	17	0	0	0

Note: Queue reported is the number of cars per lane.

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #43 Flower St and Santa Ana Blvd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.596
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	29	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Prot+Permit			Prot+Permit			Prot+Permit			Prot+Permit		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 0	1	1 0	2 0	1	1 0	3 0	1	1 0	2 0	1
Volume Module:												
Base Vol:	87	811	118	168	568	76	114	710	81	101	323	135
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	87	811	118	168	568	76	114	710	81	101	323	135
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	87	811	118	168	568	76	114	710	81	101	323	135
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	87	811	118	168	568	76	114	710	81	101	323	135
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	87	811	118	168	568	76	114	710	81	101	323	135
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	3.00	1.00	1.00	2.00	1.00
Final Sat.:	1600	3400	1600	1600	3400	1600	1600	5100	1600	1600	3400	1600
Capacity Analysis Module:												
Vol/Sat:	0.05	0.24	0.07	0.11	0.17	0.05	0.07	0.14	0.05	0.06	0.10	0.08
Crit Moves:		****			****			****			****	

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #44 Flower St and 1st St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.795
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	51	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 0	1	1 0	1 1	0	1 0	2 1	0	1 0	2 1	0
Volume Module:												
Base Vol:	139	602	159	175	554	58	165	1514	60	209	861	123
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	139	602	159	175	554	58	165	1514	60	209	861	123
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	139	602	159	175	554	58	165	1514	60	209	861	123
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	139	602	159	175	554	58	165	1514	60	209	861	123
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	139	602	159	175	554	58	165	1514	60	209	861	123
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.03	1.00	1.00	1.04	1.00	1.00	1.05	1.00
Lanes:	1.00	2.00	1.00	1.00	1.81	0.19	1.00	2.89	0.11	1.00	2.62	0.38
Final Sat.:	1600	3400	1600	1600	2997	303	1600	4817	183	1600	4400	600
Capacity Analysis Module:												
Vol/Sat:	0.09	0.18	0.10	0.11	0.18	0.19	0.10	0.31	0.33	0.13	0.20	0.21
Crit Moves:		****		****					****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #45 Flower St and McFadden Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.819
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	56	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	0 1	0	1 0	0 1	0	1 0	0 1	0	1 0	0 1	0
Volume Module:												
Base Vol:	60	438	38	66	367	53	51	581	44	64	432	58
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	60	438	38	66	367	53	51	581	44	64	432	58
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	60	438	38	66	367	53	51	581	44	64	432	58
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	60	438	38	66	367	53	51	581	44	64	432	58
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	60	438	38	66	367	53	51	581	44	64	432	58
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.92	0.08	1.00	0.87	0.13	1.00	0.93	0.07	1.00	0.88	0.12
Final Sat.:	1600	1472	128	1600	1398	202	1600	1487	113	1600	1411	189
Capacity Analysis Module:												
Vol/Sat:	0.04	0.30	0.30	0.04	0.26	0.26	0.03	0.39	0.39	0.04	0.31	0.31
Crit Moves:		****			****			****			****	

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #46 Flower St and Segerstrom Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.769
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	46	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1	1 0	1 0	1	1 0	1 0	1	1 0	1 0	1	1 0
Volume Module:												
Base Vol:	63	331	73	98	544	120	155	1065	297	74	546	60
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	63	331	73	98	544	120	155	1065	297	74	546	60
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	63	331	73	98	544	120	155	1065	297	74	546	60
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	63	331	73	98	544	120	155	1065	297	74	546	60
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	63	331	73	98	544	120	155	1065	297	74	546	60
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.04	1.00	1.00	1.04	1.00	1.00	1.04	1.00	1.00	1.03	1.00
Lanes:	1.00	1.64	0.36	1.00	1.64	0.36	1.00	1.56	0.44	1.00	1.80	0.20
Final Sat.:	1600	2722	578	1600	2722	578	1600	2602	698	1600	2983	317
Capacity Analysis Module:												
Vol/Sat:	0.04	0.12	0.13	0.06	0.20	0.21	0.10	0.41	0.43	0.05	0.18	0.19
Crit Moves:	****					****			****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #47 Flower St and MacArthur Blvd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.698
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	37	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1	1 0	1 0	1	1 0	1 0	2	1 0	1 0	2	1 0
Volume Module:												
Base Vol:	22	142	73	163	352	264	165	1879	80	54	909	58
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	22	142	73	163	352	264	165	1879	80	54	909	58
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	22	142	73	163	352	264	165	1879	80	54	909	58
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	22	142	73	163	352	264	165	1879	80	54	909	58
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	22	142	73	163	352	264	165	1879	80	54	909	58
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.05	1.00	1.00	1.04	1.00	1.00	1.04	1.00
Lanes:	1.00	1.32	0.68	1.00	1.14	0.86	1.00	2.88	0.12	1.00	2.82	0.18
Final Sat.:	1600	2213	1087	1600	1929	1371	1600	4804	196	1600	4712	288
Capacity Analysis Module:												
Vol/Sat:	0.01	0.06	0.07	0.10	0.18	0.19	0.10	0.39	0.41	0.03	0.19	0.20
Crit Moves:	****					****			****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #48 Main St and La Veta Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.574
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	27	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ovl			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	3 0	1	2 0	2 1	0	2 0	2 1	0	2 0	2 0	1
Volume Module:												
Base Vol:	84	579	300	198	1034	173	350	495	215	316	276	230
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	84	579	300	198	1034	173	350	495	215	316	276	230
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	84	579	300	198	1034	173	350	495	215	316	276	230
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	84	579	300	198	1034	173	350	495	215	316	276	230
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	84	579	300	198	1034	173	350	495	215	316	276	230
OvlAdjVol:			142									131
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.05	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	2.00	3.00	1.00	2.00	2.57	0.43	2.00	2.09	0.91	2.00	2.00	1.00
Final Sat.:	3200	5100	1600	3200	4312	688	3200	3546	1454	3200	3400	1600
Capacity Analysis Module:												
Vol/Sat:	0.03	0.11	0.19	0.06	0.24	0.25	0.11	0.14	0.15	0.10	0.08	0.14
OvlAdjV/S:			0.09									0.08
Crit Moves:	****					****			****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #49 Main St and Mainplace Dr / Memory Ln

Cycle (sec):	100	Critical Vol./Cap.(X):	0.485
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	23	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 1	0	2 0	2 1	0	2 0	2 1	0	2 0	2 0	1
Volume Module:												
Base Vol:	28	764	250	32	1244	260	148	233	16	198	226	15
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	28	764	250	32	1244	260	148	233	16	198	226	15
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	28	764	250	32	1244	260	148	233	16	198	226	15
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	28	764	250	32	1244	260	148	233	16	198	226	15
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	28	764	250	32	1244	260	148	233	16	198	226	15
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.05	1.00	1.00	1.04	1.00	1.00	1.06	1.00
Lanes:	2.00	2.26	0.74	2.00	2.48	0.52	2.00	2.81	0.19	2.00	2.00	1.00
Final Sat.:	3200	3817	1183	3200	4170	830	3200	4692	308	3200	3400	1600
Capacity Analysis Module:												
Vol/Sat:	0.01	0.20	0.21	0.01	0.30	0.31	0.05	0.05	0.05	0.06	0.07	0.01
Crit Moves:	****					****	****				****	

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #50 Main St and 17th St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.821
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	57	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 0	1	2 0	1 1	0	2 0	2 1	0	2 0	2 1	0
Volume Module:												
Base Vol:	128	760	163	195	1086	70	116	1225	61	325	1300	19
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	128	760	163	195	1086	70	116	1225	61	325	1300	19
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	128	760	163	195	1086	70	116	1225	61	325	1300	19
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	128	760	163	195	1086	70	116	1225	61	325	1300	19
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	128	760	163	195	1086	70	116	1225	61	325	1300	19
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.03	1.00	1.00	1.04	1.00	1.00	1.04	1.00
Lanes:	2.00	2.00	1.00	2.00	1.88	0.12	2.00	2.86	0.14	2.00	2.96	0.04
Final Sat.:	3200	3400	1600	3200	3106	194	3200	4772	228	3200	4931	69
Capacity Analysis Module:												
Vol/Sat:	0.04	0.22	0.10	0.06	0.35	0.36	0.04	0.26	0.27	0.10	0.26	0.27
Crit Moves:	****					****			****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #51 Main St and Civic Center Dr

Cycle (sec):	100	Critical Vol./Cap.(X):	0.755
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	44	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1	1 0	1 0	1	1 0	1 0	1	1 0	1 0	1	1 0
Volume Module:												
Base Vol:	138	901	79	59	1042	159	90	545	99	43	566	34
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	138	901	79	59	1042	159	90	545	99	43	566	34
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	138	901	79	59	1042	159	90	545	99	43	566	34
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	138	901	79	59	1042	159	90	545	99	43	566	34
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	138	901	79	59	1042	159	90	545	99	43	566	34
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.03	1.00	1.00	1.04	1.00	1.00	1.04	1.00	1.00	1.03	1.00
Lanes:	1.00	1.84	0.16	1.00	1.74	0.26	1.00	1.69	0.31	1.00	1.89	0.11
Final Sat.:	1600	3042	258	1600	2876	424	1600	2808	492	1600	3119	181
Capacity Analysis Module:												
Vol/Sat:	0.09	0.30	0.31	0.04	0.36	0.38	0.06	0.19	0.20	0.03	0.18	0.19
Crit Moves:	****					****	****					****

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #52 Main St and Santa Ana Blvd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.667
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	34	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 0	0	0 0	1 1	0	0 0	0 0	0	0 1	1 1	0
Volume Module:												
Base Vol:	68	1083	0	0	1107	98	0	0	0	61	848	65
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	68	1083	0	0	1107	98	0	0	0	61	848	65
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	68	1083	0	0	1107	98	0	0	0	61	848	65
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	68	1083	0	0	1107	98	0	0	0	61	848	65
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	68	1083	0	0	1107	98	0	0	0	61	848	65
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.03	1.00	1.00	1.06	1.00	1.00	1.02	1.00
Lanes:	1.00	2.00	0.00	0.00	1.84	0.16	0.00	0.00	0.00	0.19	2.61	0.20
Final Sat.:	1600	3400	0	0	3040	260	0	0	0	301	4279	320
Capacity Analysis Module:												
Vol/Sat:	0.04	0.32	0.00	0.00	0.36	0.38	0.00	0.00	0.00	0.04	0.20	0.20
Crit Moves:	****					****					****	

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #53 Main St and 4th St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.490
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	23	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	1 1	0	0 0	1 1	0	0 0	0 1	0	0 0	0 1	0
Volume Module:												
Base Vol:	0	977	23	0	1098	27	0	93	14	0	114	28
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	977	23	0	1098	27	0	93	14	0	114	28
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	977	23	0	1098	27	0	93	14	0	114	28
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	977	23	0	1098	27	0	93	14	0	114	28
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	977	23	0	1098	27	0	93	14	0	114	28
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.03	1.00	1.00	1.03	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	1.95	0.05	0.00	1.95	0.05	0.00	0.87	0.13	0.00	0.80	0.20
Final Sat.:	0	3226	74	0	3223	77	0	1391	209	0	1285	315
Capacity Analysis Module:												
Vol/Sat:	0.00	0.30	0.31	0.00	0.34	0.35	0.00	0.07	0.07	0.00	0.09	0.09
Crit Moves:	****					****	****				****	

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #54 Main St and 1st St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.758
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	44	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1	1 0	1 0	2	0 1	1 0	2	1 0	1 0	2	1 0
Volume Module:												
Base Vol:	116	596	60	88	882	65	119	1393	147	88	1097	61
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	116	596	60	88	882	65	119	1393	147	88	1097	61
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	116	596	60	88	882	65	119	1393	147	88	1097	61
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	116	596	60	88	882	65	119	1393	147	88	1097	61
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	116	596	60	88	882	65	119	1393	147	88	1097	61
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.03	1.00	1.00	1.06	1.00	1.00	1.05	1.00	1.00	1.04	1.00
Lanes:	1.00	1.82	0.18	1.00	2.00	1.00	1.00	2.71	0.29	1.00	2.84	0.16
Final Sat.:	1600	3007	293	1600	3400	1600	1600	4542	458	1600	4747	253
Capacity Analysis Module:												
Vol/Sat:	0.07	0.20	0.20	0.06	0.26	0.04	0.07	0.31	0.32	0.06	0.23	0.24
Crit Moves:	****			****					****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #55 Main St and McFadden Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.902
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	88	Level Of Service:	E

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Prot+Permit			Prot+Permit			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1	1 0	1 0	1	1 0	1 0	0 1	0	1 0	1 0	1
Volume Module:												
Base Vol:	89	838	42	175	1364	27	42	396	43	140	373	107
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	89	838	42	175	1364	27	42	396	43	140	373	107
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	89	838	42	175	1364	27	42	396	43	140	373	107
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	89	838	42	175	1364	27	42	396	43	140	373	107
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	89	838	42	175	1364	27	42	396	43	140	373	107
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.03	1.00	1.00	1.03	1.00	1.00	1.00	1.00	1.00	1.06	1.00
Lanes:	1.00	1.90	0.10	1.00	1.96	0.04	1.00	0.90	0.10	1.00	1.00	1.00
Final Sat.:	1600	3147	153	1600	3238	62	1600	1443	157	1600	1700	1600
Capacity Analysis Module:												
Vol/Sat:	0.06	0.27	0.28	0.11	0.42	0.43	0.03	0.27	0.27	0.09	0.22	0.07
Crit Moves:	****					****		****		****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #56 Main St and Edinger Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.826
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	58	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1	1 0	1 0	1	1 0	1 0	2	0 1	1 0	2	1 0
Volume Module:												
Base Vol:	109	617	67	228	1052	55	75	971	131	122	709	87
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	109	617	67	228	1052	55	75	971	131	122	709	87
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	109	617	67	228	1052	55	75	971	131	122	709	87
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	109	617	67	228	1052	55	75	971	131	122	709	87
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	109	617	67	228	1052	55	75	971	131	122	709	87
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.03	1.00	1.00	1.03	1.00	1.00	1.06	1.00	1.00	1.05	1.00
Lanes:	1.00	1.80	0.20	1.00	1.90	0.10	1.00	2.00	1.00	1.00	2.67	0.33
Final Sat.:	1600	2987	313	1600	3141	159	1600	3400	1600	1600	4475	525
Capacity Analysis Module:												
Vol/Sat:	0.07	0.21	0.21	0.14	0.33	0.35	0.05	0.29	0.08	0.08	0.16	0.17
Crit Moves:	****					****		****		****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #57 Main St and MacArthur Blvd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.735
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	41	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	3 0	1	2 0	3 0	1	2 0	3 0	1	2 0	3 0	1
Volume Module:												
Base Vol:	54	311	264	645	848	192	240	1393	252	146	435	218
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	54	311	264	645	848	192	240	1393	252	146	435	218
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	54	311	264	645	848	192	240	1393	252	146	435	218
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	54	311	264	645	848	192	240	1393	252	146	435	218
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	54	311	264	645	848	192	240	1393	252	146	435	218
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3200	5100	1600	3200	5100	1600	3200	5100	1600	3200	5100	1600
Capacity Analysis Module:												
Vol/Sat:	0.02	0.06	0.17	0.20	0.17	0.12	0.08	0.27	0.16	0.05	0.09	0.14
Crit Moves:			****	****				****		****		

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Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #58 Penn Wy and 17th St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.602
Loss Time (sec):	5	Average Delay (sec/veh):	11.2
Optimal Cycle:	30	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	0 0	2	0 0	0 0	0	0 0	2	1 0	1 0	3 0	0
Volume Module:												
Base Vol:	43	0	217	0	0	0	0	1238	631	214	1722	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	43	0	217	0	0	0	0	1238	631	214	1722	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	43	0	217	0	0	0	0	1238	631	214	1722	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	43	0	217	0	0	0	0	1238	631	214	1722	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	43	0	217	0	0	0	0	1238	631	214	1722	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.75	1.00	1.00	1.00	1.00	0.86	0.86	0.95	0.91	1.00
Lanes:	2.00	0.00	2.00	0.00	0.00	0.00	0.00	2.00	1.00	1.00	3.00	0.00
Final Sat.:	3502	0	2842	0	0	0	0	3282	1641	1805	5187	0
Capacity Analysis Module:												
Vol/Sat:	0.01	0.00	0.08	0.00	0.00	0.00	0.00	0.38	0.38	0.12	0.33	0.00
Crit Moves:			****					****		****		
Green/Cycle:	0.13	0.00	0.13	0.00	0.00	0.00	0.00	0.63	0.63	0.20	0.82	0.00
Volume/Cap:	0.10	0.00	0.60	0.00	0.00	0.00	0.00	0.60	0.61	0.60	0.40	0.00
Delay/Veh:	38.7	0.0	44.1	0.0	0.0	0.0	0.0	11.5	11.7	39.5	2.4	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	38.7	0.0	44.1	0.0	0.0	0.0	0.0	11.5	11.7	39.5	2.4	0.0
LOS by Move:	D	A	D	A	A	A	A	B	B	D	A	A
HCM2k85thQ:	1	0	7	0	0	0	0	19	20	10	8	0

Note: Queue reported is the number of cars per lane.

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Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #59 I-5 NB Off Ramps/17th Street

Cycle (sec):	100	Critical Vol./Cap.(X):	0.740
Loss Time (sec):	5	Average Delay (sec/veh):	31.2
Optimal Cycle:	44	Level Of Service:	C

Street Name:	I-5 NB Off Ramps						17th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Permitted		
Rights:	Include			Include			Ignore			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 1	0 0	1	1	0 0	0 1	1	0	3 0 1	0	0	2 1 0
Volume Module:												
Base Vol:	768	35	22	57	0	295	99	1040	376	0	1245	20
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	768	35	22	57	0	295	99	1040	376	0	1245	20
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Volume:	768	35	22	57	0	295	99	1040	0	0	1245	20
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	768	35	22	57	0	295	99	1040	0	0	1245	20
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
FinalVolume:	768	35	22	57	0	295	99	1040	0	0	1245	20
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.85	0.95	1.00	0.85	0.95	0.91	1.00	1.00	0.91	0.91
Lanes:	1.91	0.09	1.00	1.00	0.00	1.00	1.00	3.00	1.00	0.00	2.95	0.05
Final Sat.:	3467	158	1615	1805	0	1615	1805	5187	1900	0	5095	82
Capacity Analysis Module:												
Vol/Sat:	0.22	0.22	0.01	0.03	0.00	0.18	0.05	0.20	0.00	0.00	0.24	0.24
Crit Moves:		****				****	****				****	
Green/Cycle:	0.30	0.30	0.30	0.25	0.00	0.25	0.07	0.40	0.00	0.00	0.33	0.33
Volume/Cap:	0.74	0.74	0.05	0.13	0.00	0.74	0.74	0.50	0.00	0.00	0.74	0.74
Delay/Veh:	34.3	34.3	24.9	29.4	0.0	42.0	64.9	22.4	0.0	0.0	31.5	31.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	34.3	34.3	24.9	29.4	0.0	42.0	64.9	22.4	0.0	0.0	31.5	31.5
LOS by Move:	C	C	C	C	A	D	E	C	A	A	C	C
HCM2k85thQ:	19	19	1	2	0	15	7	13	0	0	21	21

Note: Queue reported is the number of cars per lane.

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Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #60 Penn Wy and I-5 SB Ramps

Cycle (sec):	100	Critical Vol./Cap.(X):	0.436
Loss Time (sec):	5	Average Delay (sec/veh):	19.0
Optimal Cycle:	22	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	2	0 1	2 0	2	0 0	0 0	0	0 0	1 0	0	0 2
Volume Module:												
Base Vol:	0	158	140	799	165	0	0	0	0	179	0	100
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	158	140	799	165	0	0	0	0	179	0	100
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	158	140	799	165	0	0	0	0	179	0	100
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	158	140	799	165	0	0	0	0	179	0	100
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	158	140	799	165	0	0	0	0	179	0	100
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.95	0.85	0.92	0.95	1.00	1.00	1.00	1.00	0.95	1.00	0.75
Lanes:	0.00	2.00	1.00	2.00	2.00	0.00	0.00	0.00	0.00	1.00	0.00	2.00
Final Sat.:	0	3610	1615	3502	3610	0	0	0	0	1805	0	2842
Capacity Analysis Module:												
Vol/Sat:	0.00	0.04	0.09	0.23	0.05	0.00	0.00	0.00	0.00	0.10	0.00	0.04
Crit Moves:			****	****						****		
Green/Cycle:	0.00	0.20	0.20	0.52	0.72	0.00	0.00	0.00	0.00	0.23	0.00	0.75
Volume/Cap:	0.00	0.22	0.44	0.44	0.06	0.00	0.00	0.00	0.00	0.44	0.00	0.05
Delay/Veh:	0.0	33.7	36.1	14.9	4.0	0.0	0.0	0.0	0.0	33.9	0.0	3.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	33.7	36.1	14.9	4.0	0.0	0.0	0.0	0.0	33.9	0.0	3.2
LOS by Move:	A	C	D	B	A	A	A	A	A	C	A	A
HCM2k85thQ:	0	3	6	12	1	0	0	0	0	8	0	1

Note: Queue reported is the number of cars per lane.

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Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Base Volume Alternative)

Intersection #61 Santiago St and Civic Center Dr

Cycle (sec):	100	Critical Vol./Cap.(X):	0.723
Loss Time (sec):	5	Average Delay (sec/veh):	16.9
Optimal Cycle:	0	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	0 1	0	1 0	0 1	0	0 1	0 0	1	0 0	1! 0	0
Volume Module:												
Base Vol:	206	143	20	5	303	74	121	46	246	72	66	13
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	206	143	20	5	303	74	121	46	246	72	66	13
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	206	143	20	5	303	74	121	46	246	72	66	13
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	206	143	20	5	303	74	121	46	246	72	66	13
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	206	143	20	5	303	74	121	46	246	72	66	13
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.88	0.12	1.00	0.80	0.20	0.72	0.28	1.00	0.48	0.44	0.08
Final Sat.:	468	443	62	471	419	102	337	128	540	208	190	37
Capacity Analysis Module:												
Vol/Sat:	0.44	0.32	0.32	0.01	0.72	0.72	0.36	0.36	0.46	0.35	0.35	0.35
Crit Moves:	****				****				****		****	
Delay/Veh:	15.5	12.6	12.6	10.2	24.0	24.0	14.0	14.0	13.9	14.2	14.2	14.2
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	15.5	12.6	12.6	10.2	24.0	24.0	14.0	14.0	13.9	14.2	14.2	14.2
LOS by Move:	C	B	B	B	C	C	B	B	B	B	B	B
ApproachDel:	14.2			23.8			13.9			14.2		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	14.2			23.8			13.9			14.2		
LOS by Appr:	B			C			B			B		
AllWayAvgQ:	0.7	0.4	0.4	0.0	2.1	2.1	0.5	0.5	0.7	0.4	0.4	0.4

Note: Queue reported is the number of cars per lane.

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #62 Santiago St and Santa Ana Blvd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.553
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	26	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1 0	1	1 0	1 0	1	1 0	1 1	0	1 0	2 0	1
Volume Module:												
Base Vol:	24	71	56	311	161	133	48	474	14	108	807	271
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	24	71	56	311	161	133	48	474	14	108	807	271
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	24	71	56	311	161	133	48	474	14	108	807	271
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	24	71	56	311	161	133	48	474	14	108	807	271
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	24	71	56	311	161	133	48	474	14	108	807	271
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.03	1.00	1.00	1.06	1.00
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.94	0.06	1.00	2.00	1.00
Final Sat.:	1600	1700	1600	1600	1700	1600	1600	3208	92	1600	3400	1600
Capacity Analysis Module:												
Vol/Sat:	0.02	0.04	0.04	0.19	0.09	0.08	0.03	0.15	0.15	0.07	0.24	0.17
Crit Moves:		****			****			****			****	

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #64 Standard Ave and 1st St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.803
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	53	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	0 1	0	0 0	1! 0	0	1 0	1 1	0	1 0	1 1	0
Volume Module:												
Base Vol:	108	191	119	12	231	25	86	1317	214	64	1012	12
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	108	191	119	12	231	25	86	1317	214	64	1012	12
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	108	191	119	12	231	25	86	1317	214	64	1012	12
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	108	191	119	12	231	25	86	1317	214	64	1012	12
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	108	191	119	12	231	25	86	1317	214	64	1012	12
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.04	1.00	1.00	1.03	1.00
Lanes:	1.00	0.62	0.38	0.04	0.87	0.09	1.00	1.72	0.28	1.00	1.98	0.02
Final Sat.:	1600	986	614	72	1379	149	1600	2853	447	1600	3263	38
Capacity Analysis Module:												
Vol/Sat:	0.07	0.19	0.19	0.01	0.17	0.17	0.05	0.46	0.48	0.04	0.31	0.32
Crit Moves:	****			****					****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #65 Standard Ave and Mcfadden Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.609
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	29	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1	1 0	1 0	1	1 0	1 0	1	1 0	1 0	1	1 0
Volume Module:												
Base Vol:	74	284	128	220	531	37	17	589	71	138	366	82
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	74	284	128	220	531	37	17	589	71	138	366	82
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	74	284	128	220	531	37	17	589	71	138	366	82
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	74	284	128	220	531	37	17	589	71	138	366	82
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	74	284	128	220	531	37	17	589	71	138	366	82
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.03	1.00	1.00	1.04	1.00	1.00	1.04	1.00
Lanes:	1.00	1.38	0.62	1.00	1.87	0.13	1.00	1.78	0.22	1.00	1.63	0.37
Final Sat.:	1600	2306	994	1600	3092	208	1600	2956	344	1600	2714	586
Capacity Analysis Module:												
Vol/Sat:	0.05	0.12	0.13	0.14	0.17	0.18	0.01	0.20	0.21	0.09	0.13	0.14
Crit Moves:			****	****					****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #66 Halladay St and Warner Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.659
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	33	Level Of Service:	B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Control:	Permitted				Permitted				Permitted				Permitted			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Y+R:	4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	
Lanes:	1	0	0	1	0	0	0	0	0	0	1	1	0	0	1	1
Volume Module:																
Base Vol:	43	0	100		0	0	0		0	1283	145		160	607	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	43	0	100		0	0	0		0	1283	145		160	607	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	43	0	100		0	0	0		0	1283	145		160	607	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	43	0	100		0	0	0		0	1283	145		160	607	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	43	0	100		0	0	0		0	1283	145		160	607	0	
Saturation Flow Module:																
Sat/Lane:	1600	1600	1600		1600	1600	1600		1600	1600	1600		1600	1600	1600	
Adjustment:	1.00	1.06	1.00		1.00	1.06	1.00		1.00	1.03	1.00		1.00	1.04	1.00	
Lanes:	1.00	0.00	1.00		0.00	0.00	0.00		0.00	1.80	0.20		0.42	1.58	0.00	
Final Sat.:	1600	0	1600		0	0	0		0	2975	325		668	2632	0	
Capacity Analysis Module:																
Vol/Sat:	0.03	0.00	0.06		0.00	0.00	0.00		0.00	0.43	0.45		0.10	0.23	0.00	
Crit Moves:			****								****		****			

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #67 Halladay St and Dyer Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.567
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	27	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	0	1 0	1 0	0	1 0	1 0	2	1 0	1 0	2	1 0
Volume Module:												
Base Vol:	11	18	49	183	37	39	41	1375	10	115	626	101
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	11	18	49	183	37	39	41	1375	10	115	626	101
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	11	18	49	183	37	39	41	1375	10	115	626	101
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	11	18	49	183	37	39	41	1375	10	115	626	101
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	11	18	49	183	37	39	41	1375	10	115	626	101
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.04	1.00	1.00	1.05	1.00
Lanes:	1.00	0.27	0.73	1.00	0.49	0.51	1.00	2.98	0.02	1.00	2.58	0.42
Final Sat.:	1600	430	1170	1600	779	821	1600	4965	35	1600	4333	667
Capacity Analysis Module:												
Vol/Sat:	0.01	0.04	0.04	0.11	0.05	0.05	0.03	0.28	0.29	0.07	0.14	0.15
Crit Moves:		****	****						****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #68 SR-55 SB Ramps and MacArthur Blvd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.615
Loss Time (sec):	5	Average Delay (sec/veh):	19.8
Optimal Cycle:	31	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Ignore			Ignore		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0	0	2	0	0	0	2	0	0	2	1	1	0	0	3	0	1
Volume Module:																		
Base Vol:	0	0	0	961	0	870	0	1441	1027	0	1275	145
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	961	0	870	0	1441	1027	0	1275	145
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Volume:	0	0	0	961	0	870	0	1441	0	0	1275	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	961	0	870	0	1441	0	0	1275	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
FinalVolume:	0	0	0	961	0	870	0	1441	0	0	1275	0
Saturation Flow Module:																		
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	0.92	1.00	0.75	1.00	0.91	0.91	1.00	0.91	1.00
Lanes:	0.00	0.00	0.00	2.00	0.00	2.00	0.00	3.00	1.00	0.00	3.00	1.00
Final Sat.:	0	0	0	3502	0	2842	0	5187	1729	0	5187	1900
Capacity Analysis Module:																		
Vol/Sat:	0.00	0.00	0.00	0.27	0.00	0.31	0.00	0.28	0.00	0.00	0.25	0.00
Crit Moves:						****		****		****		
Green/Cycle:	0.00	0.00	0.00	0.50	0.00	0.50	0.00	0.45	0.00	0.00	0.45	0.00
Volume/Cap:	0.00	0.00	0.00	0.55	0.00	0.61	0.00	0.61	0.00	0.00	0.54	0.00
Delay/Veh:	0.0	0.0	0.0	17.7	0.0	19.0	0.0	21.3	0.0	0.0	20.2	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	17.7	0.0	19.0	0.0	21.3	0.0	0.0	20.2	0.0
LOS by Move:	A	A	A	B	A	B	A	C	A	A	C	A
HCM2k85thQ:	0	0	0	16	0	17	0	19	0	0	16	0

Note: Queue reported is the number of cars per lane.

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Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #69 SR-55 NB Ramps and MacArthur Blvd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.742
Loss Time (sec):	5	Average Delay (sec/veh):	19.2
Optimal Cycle:	44	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Ignore			Include			Ignore			Ignore		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	0	0 1	0 0	0	0 0	0 0	2	0 2	0 0	3	0 1
Volume Module:												
Base Vol:	908	0	976	0	0	0	0	1609	796	0	517	244
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	908	0	976	0	0	0	0	1609	796	0	517	244
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Volume:	908	0	0	0	0	0	0	1609	0	0	517	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	908	0	0	0	0	0	0	1609	0	0	517	0
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
FinalVolume:	908	0	0	0	0	0	0	1609	0	0	517	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.88	1.00	0.91	1.00
Lanes:	2.00	0.00	1.00	0.00	0.00	0.00	0.00	2.00	2.00	0.00	3.00	1.00
Final Sat.:	3502	0	1900	0	0	0	0	3610	3344	0	5187	1900
Capacity Analysis Module:												
Vol/Sat:	0.26	0.00	0.00	0.00	0.00	0.00	0.00	0.45	0.00	0.00	0.10	0.00
Crit Moves:	****							****		****		
Green/Cycle:	0.35	0.00	0.00	0.00	0.00	0.00	0.00	0.60	0.00	0.00	0.60	0.00
Volume/Cap:	0.74	0.00	0.00	0.00	0.00	0.00	0.00	0.74	0.00	0.00	0.17	0.00
Delay/Veh:	31.1	0.0	0.0	0.0	0.0	0.0	0.0	15.8	0.0	0.0	8.9	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	31.1	0.0	0.0	0.0	0.0	0.0	0.0	15.8	0.0	0.0	8.9	0.0
LOS by Move:	C	A	A	A	A	A	A	B	A	A	A	A
HCM2k85thQ:	21	0	0	0	0	0	0	29	0	0	4	0

Note: Queue reported is the number of cars per lane.

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Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #70 SR-55 SB Ramps and Dyer Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.552
Loss Time (sec):	5	Average Delay (sec/veh):	23.7
Optimal Cycle:	27	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Ovl			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 1	0	0 2	0 1	1	0 1	1 0	3	0 1	2 0	3	0 1
Volume Module:												
Base Vol:	221	26	505	50	242	60	35	1338	285	408	647	108
Growth Adj:	1.00 1.00	1.00		1.00 1.00	1.00		1.00 1.00	1.00		1.00 1.00	1.00	
Initial Bse:	221	26	505	50	242	60	35	1338	285	408	647	108
User Adj:	1.00 1.00	1.00		1.00 1.00	1.00		1.00 1.00	1.00		1.00 1.00	1.00	
PHF Adj:	1.00 1.00	1.00		1.00 1.00	1.00		1.00 1.00	1.00		1.00 1.00	1.00	
PHF Volume:	221	26	505	50	242	60	35	1338	285	408	647	108
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	221	26	505	50	242	60	35	1338	285	408	647	108
PCE Adj:	1.00 1.00	1.00		1.00 1.00	1.00		1.00 1.00	1.00		1.00 1.00	1.00	
MLF Adj:	1.00 1.00	1.00		1.00 1.00	1.00		1.00 1.00	1.00		1.00 1.00	1.00	
FinalVolume:	221	26	505	50	242	60	35	1338	285	408	647	108
Saturation Flow Module:												
Sat/Lane:	1900 1900	1900		1900 1900	1900		1900 1900	1900		1900 1900	1900	
Adjustment:	0.96 0.96	0.75		0.94 0.94	0.85		0.95 0.91	0.85		0.92 0.91	0.85	
Lanes:	1.79 0.21	2.00		0.34 1.66	1.00		1.00 3.00	1.00		2.00 3.00	1.00	
Final Sat.:	3254	383	2842	613	2968	1615	1805	5187	1615	3502	5187	1615
Capacity Analysis Module:												
Vol/Sat:	0.07 0.07	0.18		0.08 0.08	0.04		0.02 0.26	0.18		0.12 0.12	0.07	
Crit Moves:	****			****			****			****		
Green/Cycle:	0.12 0.12	0.33		0.15 0.15	0.15		0.09 0.47	0.47		0.21 0.59	0.59	
Volume/Cap:	0.55 0.55	0.53		0.55 0.55	0.25		0.21 0.55	0.38		0.55 0.21	0.11	
Delay/Veh:	42.7 42.7	27.5		40.8 40.8	38.3		42.7 19.4	17.5		36.1 9.7	9.2	
User DelAdj:	1.00 1.00	1.00		1.00 1.00	1.00		1.00 1.00	1.00		1.00 1.00	1.00	
AdjDel/Veh:	42.7 42.7	27.5		40.8 40.8	38.3		42.7 19.4	17.5		36.1 9.7	9.2	
LOS by Move:	D	D	C	D	D	D	D	B	B	D	A	A
HCM2k85thQ:	7	7	12	8	8	3	2	17	9	10	5	2

Note: Queue reported is the number of cars per lane.

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #71 Glassell St and La Veta Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.603
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	29	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ovl			Include			Ovl			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	1 0	1	1 0	1 1	0	1 0	1 0	1	1 0	1 1	0
Volume Module:												
Base Vol:	263	412	125	17	358	79	38	195	375	236	249	6
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	263	412	125	17	358	79	38	195	375	236	249	6
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	263	412	125	17	358	79	38	195	375	236	249	6
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	263	412	125	17	358	79	38	195	375	236	249	6
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	263	412	125	17	358	79	38	195	375	236	249	6
OvlAdjVol:			0						244			
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.04	1.00	1.00	1.06	1.00	1.00	1.03	1.00
Lanes:	2.00	1.00	1.00	1.00	1.64	0.36	1.00	1.00	1.00	1.00	1.95	0.05
Final Sat.:	3200	1700	1600	1600	2722	578	1600	1700	1600	1600	3225	75
Capacity Analysis Module:												
Vol/Sat:	0.08	0.24	0.08	0.01	0.13	0.14	0.02	0.11	0.23	0.15	0.08	0.08
OvlAdjV/S:			0.00						0.15			
Crit Moves:		****			****				****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #72 Glassell St and SR-22 WB Ramps

Cycle (sec):	100	Critical Vol./Cap.(X):	0.741
Loss Time (sec):	5	Average Delay (sec/veh):	28.5
Optimal Cycle:	44	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Permitted			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 0	0	0 0	2 0	1	0 0	0 0	0	1 0	1! 0	1
Volume Module:												
Base Vol:	500	561	0	0	743	346	0	0	0	285	5	426
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	500	561	0	0	743	346	0	0	0	285	5	426
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	500	561	0	0	743	346	0	0	0	285	5	426
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	500	561	0	0	743	346	0	0	0	285	5	426
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	500	561	0	0	743	346	0	0	0	285	5	426
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	1.00	1.00	0.95	0.85	1.00	1.00	1.00	0.86	0.86	0.86
Lanes:	1.00	2.00	0.00	0.00	2.00	1.00	0.00	0.00	0.00	1.40	0.01	1.59
Final Sat.:	1805	3610	0	0	3610	1615	0	0	0	2270	23	2588
Capacity Analysis Module:												
Vol/Sat:	0.28	0.16	0.00	0.00	0.21	0.21	0.00	0.00	0.00	0.13	0.22	0.16
Crit Moves:	****				****						****	
Green/Cycle:	0.37	0.65	0.00	0.00	0.28	0.28	0.00	0.00	0.00	0.30	0.30	0.30
Volume/Cap:	0.74	0.24	0.00	0.00	0.74	0.77	0.00	0.00	0.00	0.42	0.74	0.55
Delay/Veh:	31.5	7.3	0.0	0.0	35.9	41.3	0.0	0.0	0.0	28.3	34.7	29.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	31.5	7.3	0.0	0.0	35.9	41.3	0.0	0.0	0.0	28.3	34.7	29.9
LOS by Move:	C	A	A	A	D	D	A	A	A	C	C	C
HCM2k85thQ:	22	6	0	0	19	17	0	0	0	8	17	11

Note: Queue reported is the number of cars per lane.

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Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #73 Grand Ave / Glassell St and SR-22 EB Ramps

Cycle (sec):	100	Critical Vol./Cap.(X):	0.760
Loss Time (sec):	5	Average Delay (sec/veh):	27.0
Optimal Cycle:	47	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	2	0 1	1 0	2	0 0	1 0	1!	0 1	0 0	0	0 0
Volume Module:												
Base Vol:	0	818	218	280	733	0	258	0	1012	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	818	218	280	733	0	258	0	1012	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	818	218	280	733	0	258	0	1012	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	818	218	280	733	0	258	0	1012	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	818	218	280	733	0	258	0	1012	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.95	0.85	0.95	0.95	1.00	0.87	1.00	0.87	1.00	1.00	1.00
Lanes:	0.00	2.00	1.00	1.00	2.00	0.00	1.20	0.00	1.80	0.00	0.00	0.00
Final Sat.:	0	3610	1615	1805	3610	0	1992	0	2974	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.23	0.13	0.16	0.20	0.00	0.13	0.00	0.34	0.00	0.00	0.00
Crit Moves:		****		****					****			
Green/Cycle:	0.00	0.30	0.30	0.20	0.50	0.00	0.45	0.00	0.45	0.00	0.00	0.00
Volume/Cap:	0.00	0.76	0.45	0.76	0.40	0.00	0.29	0.00	0.76	0.00	0.00	0.00
Delay/Veh:	0.0	35.0	29.1	46.4	15.7	0.0	17.6	0.0	25.2	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	35.0	29.1	46.4	15.7	0.0	17.6	0.0	25.2	0.0	0.0	0.0
LOS by Move:	A	D	C	D	B	A	B	A	C	A	A	A
HCM2k85thQ:	0	20	9	15	11	0	7	0	23	0	0	0

Note: Queue reported is the number of cars per lane.

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #74 Grand Ave and Fairhaven Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.680
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	35	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 1	0	1 0	2 0	1	1 0	1 1	0	1 0	1 0	1
Volume Module:												
Base Vol:	18	737	106	174	1444	32	99	60	59	254	28	229
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	18	737	106	174	1444	32	99	60	59	254	28	229
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	18	737	106	174	1444	32	99	60	59	254	28	229
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	18	737	106	174	1444	32	99	60	59	254	28	229
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	18	737	106	174	1444	32	99	60	59	254	28	229
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	1.00	2.62	0.38	1.00	2.00	1.00	1.00	1.01	0.99	1.00	1.00	1.00
Final Sat.:	1600	4396	604	1600	3400	1600	1600	1713	1587	1600	1700	1600
Capacity Analysis Module:												
Vol/Sat:	0.01	0.17	0.18	0.11	0.42	0.02	0.06	0.04	0.04	0.16	0.02	0.14
Crit Moves:	****			****			****			****		

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #75 Grand Ave and Santa Clara Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.885
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	79	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			WideBypass			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 1	0	1 0	1 1	0	1 0	0 1	0	1 0	1 0	1
Volume Module:												
Base Vol:	66	463	119	290	1418	319	143	233	48	120	231	211
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	66	463	119	290	1418	319	143	233	48	120	231	211
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	66	463	119	290	1418	319	143	233	48	120	231	211
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	66	463	119	290	1418	319	143	233	48	120	231	211
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	66	463	119	290	1418	319	143	233	48	120	231	211
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.04	1.00	1.00	1.00	1.00	1.00	1.06	1.00
Lanes:	1.00	2.39	0.61	1.00	1.63	0.37	1.00	0.83	0.17	1.00	1.00	1.00
Final Sat.:	1600	4019	981	1600	2712	588	1600	1327	273	1600	1700	1600
Capacity Analysis Module:												
Vol/Sat:	0.04	0.12	0.12	0.18	0.52	0.54	0.09	0.18	0.18	0.08	0.14	0.13
Crit Moves:	****					****		****		****		

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #76 Grand Ave and 17th St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.797
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	51	Level Of Service:	C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Y+R:	4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	
Lanes:	1	0 2	1	0	1	0 2	0	1	2	0 2	1	0	2	0 2	1	0
Volume Module:																
Base Vol:	163	476	327		286	1198	235		224	835	106		309	807	88	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	163	476	327		286	1198	235		224	835	106		309	807	88	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	163	476	327		286	1198	235		224	835	106		309	807	88	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	163	476	327		286	1198	235		224	835	106		309	807	88	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	163	476	327		286	1198	235		224	835	106		309	807	88	
Saturation Flow Module:																
Sat/Lane:	1600	1600	1600		1600	1600	1600		1600	1600	1600		1600	1600	1600	
Adjustment:	1.00	1.06	1.00		1.00	1.06	1.00		1.00	1.05	1.00		1.00	1.05	1.00	
Lanes:	1.00	2.00	1.00		1.00	2.00	1.00		2.00	2.66	0.34		2.00	2.71	0.29	
Final Sat.:	1600	3400	1600		1600	3400	1600		3200	4459	541		3200	4528	472	
Capacity Analysis Module:																
Vol/Sat:	0.10	0.14	0.20		0.18	0.35	0.15		0.07	0.19	0.20		0.10	0.18	0.19	
Crit Moves:	****					****					****		****			

Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #77 Grand Ave and I-5 NB Ramps

Cycle (sec):	100	Critical Vol./Cap.(X):	0.516
Loss Time (sec):	5	Average Delay (sec/veh):	12.9
Optimal Cycle:	26	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Ignore			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	2 0	1	1 0	3 0	0	0 0	0 0	0 0	2 0	0 0	1
Volume Module:												
Base Vol:	0	831	480	58	1869	0	0	0	0	456	0	126
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	831	480	58	1869	0	0	0	0	456	0	126
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	831	0	58	1869	0	0	0	0	456	0	126
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	831	0	58	1869	0	0	0	0	456	0	126
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	831	0	58	1869	0	0	0	0	456	0	126
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.95	1.00	0.95	0.91	1.00	1.00	1.00	1.00	0.92	1.00	0.85
Lanes:	0.00	2.00	1.00	1.00	3.00	0.00	0.00	0.00	0.00	2.00	0.00	1.00
Final Sat.:	0	3610	1900	1805	5187	0	0	0	0	3502	0	1615
Capacity Analysis Module:												
Vol/Sat:	0.00	0.23	0.00	0.03	0.36	0.00	0.00	0.00	0.00	0.13	0.00	0.08
Crit Moves:	****				****					****		
Green/Cycle:	0.00	0.61	0.00	0.09	0.70	0.00	0.00	0.00	0.00	0.25	0.00	0.25
Volume/Cap:	0.00	0.38	0.00	0.38	0.52	0.00	0.00	0.00	0.00	0.52	0.00	0.31
Delay/Veh:	0.0	9.9	0.0	44.7	7.3	0.0	0.0	0.0	0.0	32.7	0.0	30.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	9.9	0.0	44.7	7.3	0.0	0.0	0.0	0.0	32.7	0.0	30.8
LOS by Move:	A	A	A	D	A	A	A	A	A	C	A	C
HCM2k85thQ:	0	10	0	3	15	0	0	0	0	10	0	5

Note: Queue reported is the number of cars per lane.

Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #78 Grand Ave and Santa Ana Blvd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.662
Loss Time (sec):	5	Average Delay (sec/veh):	23.8
Optimal Cycle:	35	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Ovl			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 1	0	1 0	2 0	2	2 0	1 0	2	0 1	0 1	0
Volume Module:												
Base Vol:	71	1003	51	141	1166	1029	263	217	428	5	373	34
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	71	1003	51	141	1166	1029	263	217	428	5	373	34
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	71	1003	51	141	1166	1029	263	217	428	5	373	34
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	71	1003	51	141	1166	1029	263	217	428	5	373	34
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	71	1003	51	141	1166	1029	263	217	428	5	373	34
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.90	0.90	0.95	0.95	0.75	0.92	1.00	0.75	0.94	0.94	0.94
Lanes:	1.00	2.85	0.15	1.00	2.00	2.00	2.00	1.00	2.00	0.02	1.81	0.17
Final Sat.:	1805	4901	249	1805	3610	2842	3502	1900	2842	43	3226	294
Capacity Analysis Module:												
Vol/Sat:	0.04	0.20	0.20	0.08	0.32	0.36	0.08	0.11	0.15	0.12	0.12	0.12
Crit Moves:	****				****				****			****
Green/Cycle:	0.06	0.40	0.40	0.15	0.49	0.72	0.23	0.23	0.23	0.17	0.17	0.17
Volume/Cap:	0.66	0.52	0.52	0.52	0.66	0.51	0.33	0.50	0.66	0.66	0.66	0.66
Delay/Veh:	60.4	23.1	23.1	40.8	20.3	6.5	32.5	34.6	37.7	41.2	41.2	41.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	60.4	23.1	23.1	40.8	20.3	6.5	32.5	34.6	37.7	41.2	41.2	41.2
LOS by Move:	E	C	C	D	C	A	C	C	D	D	D	D
HCM2k85thQ:	5	14	14	7	22	13	6	10	12	11	11	11

Note: Queue reported is the number of cars per lane.

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #79 Grand Ave and 1st St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.803
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	53	Level Of Service:	D

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Y+R:	4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	
Lanes:	2	0 2	1	0	2	0 3	0	1	2	0 2	1	0	2	0 1	1	0
Volume Module:																
Base Vol:	213	751	35		99	1432	174		332	793	225		247	867	99	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	213	751	35		99	1432	174		332	793	225		247	867	99	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	213	751	35		99	1432	174		332	793	225		247	867	99	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	213	751	35		99	1432	174		332	793	225		247	867	99	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	213	751	35		99	1432	174		332	793	225		247	867	99	
Saturation Flow Module:																
Sat/Lane:	1600	1600	1600		1600	1600	1600		1600	1600	1600		1600	1600	1600	
Adjustment:	1.00	1.04	1.00		1.00	1.06	1.00		1.00	1.05	1.00		1.00	1.03	1.00	
Lanes:	2.00	2.87	0.13		2.00	3.00	1.00		2.00	2.34	0.66		2.00	1.80	0.20	
Final Sat.:	3200	4786	214		3200	5100	1600		3200	3939	1061		3200	2972	328	
Capacity Analysis Module:																
Vol/Sat:	0.07	0.16	0.16		0.03	0.28	0.11		0.10	0.20	0.21		0.08	0.29	0.30	
Crit Moves:	****					****			****						****	

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #80 Grand Ave and Chestnut Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.705
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	38	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2	1 0	1 0	2	1 0	1 0	1	1 0	1 0	1	1 0
Volume Module:												
Base Vol:	53	737	163	149	1788	49	60	419	110	118	347	216
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	53	737	163	149	1788	49	60	419	110	118	347	216
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	53	737	163	149	1788	49	60	419	110	118	347	216
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	53	737	163	149	1788	49	60	419	110	118	347	216
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	53	737	163	149	1788	49	60	419	110	118	347	216
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.04	1.00	1.00	1.04	1.00	1.00	1.05	1.00
Lanes:	1.00	2.46	0.54	1.00	2.92	0.08	1.00	1.58	0.42	1.00	1.23	0.77
Final Sat.:	1600	4131	869	1600	4872	128	1600	2635	665	1600	2072	1228
Capacity Analysis Module:												
Vol/Sat:	0.03	0.18	0.19	0.09	0.37	0.38	0.04	0.16	0.17	0.07	0.17	0.18
Crit Moves:	****					****			****	****		

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #81 Grand Ave and McFadden Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.829
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	59	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2	1 0	1 0	2	1 0	1 0	1	1 0	1 0	1	1 0
Volume Module:												
Base Vol:	171	722	108	237	1590	155	186	601	182	117	420	106
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	171	722	108	237	1590	155	186	601	182	117	420	106
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	171	722	108	237	1590	155	186	601	182	117	420	106
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	171	722	108	237	1590	155	186	601	182	117	420	106
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	171	722	108	237	1590	155	186	601	182	117	420	106
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.05	1.00	1.00	1.04	1.00	1.00	1.04	1.00
Lanes:	1.00	2.61	0.39	1.00	2.73	0.27	1.00	1.54	0.46	1.00	1.60	0.40
Final Sat.:	1600	4375	625	1600	4574	426	1600	2556	744	1600	2655	645
Capacity Analysis Module:												
Vol/Sat:	0.11	0.17	0.17	0.15	0.35	0.36	0.12	0.24	0.24	0.07	0.16	0.16
Crit Moves:	****					****		****		****		

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #82 Grand Ave and Edinger Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.763
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	45	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 1	0	1 0	2 1	0	1 0	2 1	0	1 0	2 1	0
Volume Module:												
Base Vol:	47	472	92	224	1146	224	319	1332	128	151	579	126
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	47	472	92	224	1146	224	319	1332	128	151	579	126
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	47	472	92	224	1146	224	319	1332	128	151	579	126
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	47	472	92	224	1146	224	319	1332	128	151	579	126
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	47	472	92	224	1146	224	319	1332	128	151	579	126
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.05	1.00	1.00	1.05	1.00	1.00	1.05	1.00
Lanes:	1.00	2.51	0.49	1.00	2.51	0.49	1.00	2.74	0.26	1.00	2.46	0.54
Final Sat.:	1600	4217	783	1600	4215	785	1600	4579	421	1600	4142	858
Capacity Analysis Module:												
Vol/Sat:	0.03	0.11	0.12	0.14	0.27	0.29	0.20	0.29	0.30	0.09	0.14	0.15
Crit Moves:	****					****			****	****		

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #83 Grand Ave and Warner Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.528
Loss Time (sec):	0	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	48	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 1	0	1 0	2 1	0	2 0	3 0	1	2 0	2 0	1
Volume Module:												
Base Vol:	169	510	218	199	574	194	256	914	359	88	388	131
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	169	510	218	199	574	194	256	914	359	88	388	131
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	169	510	218	199	574	194	256	914	359	88	388	131
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	169	510	218	199	574	194	256	914	359	88	388	131
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	169	510	218	199	574	194	256	914	359	88	388	131
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	1.00	2.10	0.90	1.00	2.24	0.76	2.00	3.00	1.00	2.00	2.00	1.00
Final Sat.:	1600	3563	1437	1600	3788	1213	3200	5100	1600	3200	3400	1600
Capacity Analysis Module:												
Vol/Sat:	0.11	0.14	0.15	0.12	0.15	0.16	0.08	0.18	0.22	0.03	0.11	0.08
Crit Moves:		****	****						****	****		

Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #84 SR-55 NB Ramps and Dyer Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.530
Loss Time (sec):	5	Average Delay (sec/veh):	16.3
Optimal Cycle:	26	Level Of Service:	B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Control:	Split Phase				Split Phase				Protected				Protected			
Rights:	Include				Include				Ignore				Ignore			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Y+R:	4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	
Lanes:	1	0	1!	0	1	0	0	0	0	0	0	3	0	1	0	0
Volume Module:																
Base Vol:	557	0	456		0	0	0		0	1533	613		0	719	433	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	557	0	456		0	0	0		0	1533	613		0	719	433	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	0.00		1.00	1.00	0.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	0.00		1.00	1.00	0.00	
PHF Volume:	557	0	456		0	0	0		0	1533	0		0	719	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	557	0	456		0	0	0		0	1533	0		0	719	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	0.00		1.00	1.00	0.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	0.00		1.00	1.00	0.00	
FinalVolume:	557	0	456		0	0	0		0	1533	0		0	719	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.91	1.00	0.91		1.00	1.00	1.00		1.00	0.91	1.00		1.00	0.91	0.91	
Lanes:	1.55	0.00	1.45		0.00	0.00	0.00		0.00	3.00	1.00		0.00	3.00	0.00	
Final Sat.:	2673	0	2501		0	0	0		0	5187	1900		0	5187	0	
Capacity Analysis Module:																
Vol/Sat:	0.21	0.00	0.18		0.00	0.00	0.00		0.00	0.30	0.00		0.00	0.14	0.00	
Crit Moves:	****									****				****		
Green/Cycle:	0.39	0.00	0.39		0.00	0.00	0.00		0.00	0.56	0.00		0.00	0.56	0.00	
Volume/Cap:	0.53	0.00	0.46		0.00	0.00	0.00		0.00	0.53	0.00		0.00	0.25	0.00	
Delay/Veh:	23.6	0.0	22.7		0.0	0.0	0.0		0.0	14.1	0.0		0.0	11.4	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	23.6	0.0	22.7		0.0	0.0	0.0		0.0	14.1	0.0		0.0	11.4	0.0	
LOS by Move:	C	A	C		A	A	A		A	B	A		A	B	A	
HCM2k85thQ:	13	0	11		0	0	0		0	16	0		0	6	0	

Note: Queue reported is the number of cars per lane.

Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Base Volume Alternative)

Intersection #85 Cambridge St and La Veta Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.799
Loss Time (sec):	5	Average Delay (sec/veh):	17.3
Optimal Cycle:	0	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0 1	0 0		0 0 1	0 1		1 0	0 0 1		0 0	0 0 0	
Volume Module:												
Base Vol:	160	204	0	0	480	245	117	0	187	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	160	204	0	0	480	245	117	0	187	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	160	204	0	0	480	245	117	0	187	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	160	204	0	0	480	245	117	0	187	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	160	204	0	0	480	245	117	0	187	0	0	0
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	514	554	0	0	601	671	467	0	553	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.31	0.37	xxxx	xxxx	0.80	0.37	0.25	xxxx	0.34	xxxx	xxxx	xxxx
Crit Moves:		****			****				****			
Delay/Veh:	12.5	12.5	0.0	0.0	27.6	10.8	12.4	0.0	11.8	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	12.5	12.5	0.0	0.0	27.6	10.8	12.4	0.0	11.8	0.0	0.0	0.0
LOS by Move:	B	B	*	*	D	B	B	*	B	*	*	*
ApproachDel:	12.5			21.9			12.0			xxxxxx		
Delay Adj:	1.00			1.00			1.00			xxxxx		
ApprAdjDel:	12.5			21.9			12.0			xxxxxx		
LOS by Appr:	B			C			B			*		
AllWayAvgQ:	0.4	0.5	0.0	0.0	3.2	0.5	0.3	0.0	0.4	0.0	0.0	0.0

Note: Queue reported is the number of cars per lane.

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #86 Cambridge St and Fairhaven Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.559
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	26	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	0 0	0	1 0	0 0	1	1 0	2 0	0	0 0	1 1	0
Volume Module:												
Base Vol:	0	0	0	515	0	166	80	216	0	0	247	192
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	515	0	166	80	216	0	0	247	192
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	515	0	166	80	216	0	0	247	192
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	515	0	166	80	216	0	0	247	192
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	515	0	166	80	216	0	0	247	192
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	2.00	0.00	0.00	1.13	0.87
Final Sat.:	0	0	0	1600	0	1600	1600	3400	0	0	1900	1400
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.32	0.00	0.10	0.05	0.06	0.00	0.00	0.13	0.14
Crit Moves:				****			****					****

Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #87 Mabury St and 1st Street

Cycle (sec):	100	Critical Vol./Cap.(X):	0.691
Loss Time (sec):	0	Average Delay (sec/veh):	28.3
Optimal Cycle:	74	Level Of Service:	C

Street Name:	Mabury						1st Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	0	0 1	1 0	1!	0 1	0 0	2	1 0	1 0	2	1 0
Volume Module:												
Base Vol:	10	0	244	238	141	533	0	1062	11	46	701	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	10	0	244	238	141	533	0	1062	11	46	701	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	10	0	244	238	141	533	0	1062	11	46	701	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	10	0	244	238	141	533	0	1062	11	46	701	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	10	0	244	238	141	533	0	1062	11	46	701	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	1.00	0.85	0.90	0.90	0.90	1.00	0.91	0.91	0.95	0.91	0.91
Lanes:	1.00	0.00	1.00	1.22	0.27	1.51	0.00	2.97	0.03	1.00	3.00	0.00
Final Sat.:	1805	0	1615	2097	458	2576	0	5129	53	1805	5187	0
Capacity Analysis Module:												
Vol/Sat:	0.01	0.00	0.15	0.11	0.31	0.21	0.00	0.21	0.21	0.03	0.14	0.00
Crit Moves:			****		****			****		****		
Green/Cycle:	0.22	0.00	0.22	0.45	0.45	0.45	0.00	0.30	0.30	0.04	0.34	0.00
Volume/Cap:	0.03	0.00	0.69	0.25	0.69	0.46	0.00	0.69	0.69	0.69	0.40	0.00
Delay/Veh:	30.7	0.0	41.8	17.4	23.8	19.6	0.0	32.3	32.3	74.4	25.6	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	30.7	0.0	41.8	17.4	23.8	19.6	0.0	32.3	32.3	74.4	25.6	0.0
LOS by Move:	C	A	D	B	C	B	A	C	C	E	C	A
HCM2k85thQ:	0	0	13	6	21	12	0	18	18	4	9	0

Note: Queue reported is the number of cars per lane.

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #88 Tustin St and La Veta Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.521
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	25	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0 2	1	0	1 0 2	1	0	1 0 1	1	0	1 1 0	0	1
Volume Module:												
Base Vol:	8	333	96	74	1452	4	9	11	35	447	2	69
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	8	333	96	74	1452	4	9	11	35	447	2	69
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	8	333	96	74	1452	4	9	11	35	447	2	69
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	8	333	96	74	1452	4	9	11	35	447	2	69
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	8	333	96	74	1452	4	9	11	35	447	2	69
OvlAdjVol:												0
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.04	1.00	1.00	1.06	1.00	1.00	1.00	1.00
Lanes:	1.00	2.33	0.67	1.00	2.99	0.01	1.00	1.00	1.00	1.99	0.01	1.00
Final Sat.:	1600	3926	1074	1600	4987	13	1600	1700	1600	3186	14	1600
Capacity Analysis Module:												
Vol/Sat:	0.01	0.08	0.09	0.05	0.29	0.30	0.01	0.01	0.02	0.14	0.14	0.04
OvlAdjV/S:												0.00
Crit Moves:	****					****			****	****		

Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #89 Tustin St and SR-22 WB On-Ramp

Cycle (sec):	100	Critical Vol./Cap.(X):	0.734
Loss Time (sec):	5	Average Delay (sec/veh):	12.9
Optimal Cycle:	43	Level Of Service:	B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Permitted				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0 2	0	0	0	0 2	1	0	0	0	0	0	0	0	0	0
Volume Module:																
Base Vol:	656	610	0	0	1395	833	0	0	0	0	0	0				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	656	610	0	0	1395	833	0	0	0	0	0	0				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Volume:	656	610	0	0	1395	833	0	0	0	0	0	0				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	656	610	0	0	1395	833	0	0	0	0	0	0				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
FinalVolume:	656	610	0	0	1395	833	0	0	0	0	0	0				
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	0.92	0.95	1.00	1.00	0.86	0.86	1.00	1.00	1.00	1.00	1.00	1.00				
Lanes:	2.00	2.00	0.00	0.00	2.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00				
Final Sat.:	3502	3610	0	0	3264	1632	0	0	0	0	0	0				
Capacity Analysis Module:																
Vol/Sat:	0.19	0.17	0.00	0.00	0.43	0.51	0.00	0.00	0.00	0.00	0.00	0.00				
Crit Moves:	****					****										
Green/Cycle:	0.26	0.95	0.00	0.00	0.69	0.69	0.00	0.00	0.00	0.00	0.00	0.00				
Volume/Cap:	0.73	0.18	0.00	0.00	0.61	0.73	0.00	0.00	0.00	0.00	0.00	0.00				
Delay/Veh:	37.3	0.2	0.0	0.0	8.4	10.5	0.0	0.0	0.0	0.0	0.0	0.0				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	37.3	0.2	0.0	0.0	8.4	10.5	0.0	0.0	0.0	0.0	0.0	0.0				
LOS by Move:	D	A	A	A	A	B	A	A	A	A	A	A				
HCM2k85thQ:	17	1	0	0	19	27	0	0	0	0	0	0				

Note: Queue reported is the number of cars per lane.

Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #90 Tustin St and SR-22 EB Off-Ramp / Seba Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.731
Loss Time (sec):	5	Average Delay (sec/veh):	24.2
Optimal Cycle:	43	Level Of Service:	C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Permitted				Permitted				Split Phase				Split Phase			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Y+R:	4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	
Lanes:	0	0 2	1 0		1	0 3	0 0		1	0 1!	0 1		0	0 1!	0 0	
Volume Module:																
Base Vol:	0	996	5		22	1349	0		244	24	1051		6	0	43	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	996	5		22	1349	0		244	24	1051		6	0	43	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	996	5		22	1349	0		244	24	1051		6	0	43	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	996	5		22	1349	0		244	24	1051		6	0	43	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	0	996	5		22	1349	0		244	24	1051		6	0	43	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	0.91	0.91		0.16	0.91	1.00		0.87	0.87	0.87		0.88	1.00	0.88	
Lanes:	0.00	2.99	0.01		1.00	3.00	0.00		1.18	0.04	1.78		0.12	0.00	0.88	
Final Sat.:	0	5156	26		304	5187	0		1958	59	2954		204	0	1460	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.19	0.19		0.07	0.26	0.00		0.12	0.41	0.36		0.03	0.00	0.03	
Crit Moves:						****				****			****			
Green/Cycle:	0.00	0.36	0.36		0.36	0.36	0.00		0.55	0.55	0.55		0.04	0.00	0.04	
Volume/Cap:	0.00	0.54	0.54		0.20	0.73	0.00		0.22	0.73	0.64		0.73	0.00	0.73	
Delay/Veh:	0.0	26.1	26.1		23.3	29.6	0.0		11.4	18.3	16.1		80.9	0.0	80.9	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	26.1	26.1		23.3	29.6	0.0		11.4	18.3	16.1		80.9	0.0	80.9	
LOS by Move:	A	C	C		C	C	A		B	B	B		F	A	F	
HCM2k85thQ:	0	14	14		1	21	0		5	24	20		5	0	5	

Note: Queue reported is the number of cars per lane.

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #91 Tustin Ave and Fairhaven Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.977
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	178	Level Of Service:	E

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2	1 0	2 0	2	1 0	1 0	1	1 0	1 0	1	0 1
Volume Module:												
Base Vol:	89	514	90	235	2026	40	68	258	444	306	338	442
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	89	514	90	235	2026	40	68	258	444	306	338	442
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	89	514	90	235	2026	40	68	258	444	306	338	442
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	89	514	90	235	2026	40	68	258	444	306	338	442
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	89	514	90	235	2026	40	68	258	444	306	338	442
OvlAdjVol:												325
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.04	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	2.00	2.55	0.45	2.00	2.94	0.06	1.00	1.00	1.00	1.00	1.00	1.00
Final Sat.:	3200	4285	715	3200	4907	93	1600	1700	1600	1600	1700	1600
Capacity Analysis Module:												
Vol/Sat:	0.03	0.12	0.13	0.07	0.41	0.43	0.04	0.15	0.28	0.19	0.20	0.28
OvlAdjV/S:												0.20
Crit Moves:	****					****			****	****		

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #92 Tustin Ave and Santa Clara Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.866
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	71	Level Of Service:	D

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Permitted				Permitted			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Y+R:	4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	
Lanes:	1	0 2	1	0	2	0 2	1	0	1	0 1	1	0	1	0 1	1	0
Volume Module:																
Base Vol:	73	397	74		127	2600	82		101	255	186		118	244	122	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	73	397	74		127	2600	82		101	255	186		118	244	122	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	73	397	74		127	2600	82		101	255	186		118	244	122	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	73	397	74		127	2600	82		101	255	186		118	244	122	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	73	397	74		127	2600	82		101	255	186		118	244	122	
Saturation Flow Module:																
Sat/Lane:	1600	1600	1600		1600	1600	1600		1600	1600	1600		1600	1600	1600	
Adjustment:	1.00	1.05	1.00		1.00	1.04	1.00		1.00	1.05	1.00		1.00	1.05	1.00	
Lanes:	1.00	2.53	0.47		2.00	2.91	0.09		1.00	1.16	0.84		1.00	1.33	0.67	
Final Sat.:	1600	4246	754		3200	4853	147		1600	1950	1350		1600	2233	1067	
Capacity Analysis Module:																
Vol/Sat:	0.05	0.09	0.10		0.04	0.54	0.56		0.06	0.13	0.14		0.07	0.11	0.11	
Crit Moves:	****						****				****	****				

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #93 Tustin Ave and 17th St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.748
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	43	Level Of Service:	C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Ovl				Include				Include				Ovl			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Y+R:	4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	
Lanes:	2	0 2	0 1		2	0 2	1 0		2	0 3	0 1		2	0 3	0 1	
Volume Module:																
Base Vol:	111	198	236		602	1737	19		187	738	126		488	770	188	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	111	198	236		602	1737	19		187	738	126		488	770	188	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	111	198	236		602	1737	19		187	738	126		488	770	188	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	111	198	236		602	1737	19		187	738	126		488	770	188	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	111	198	236		602	1737	19		187	738	126		488	770	188	
OvlAdjVol:			0												0	
Saturation Flow Module:																
Sat/Lane:	1600	1600	1600		1600	1600	1600		1600	1600	1600		1600	1600	1600	
Adjustment:	1.00	1.06	1.00		1.00	1.04	1.00		1.00	1.06	1.00		1.00	1.06	1.00	
Lanes:	2.00	2.00	1.00		2.00	2.97	0.03		2.00	3.00	1.00		2.00	3.00	1.00	
Final Sat.:	3200	3400	1600		3200	4948	52		3200	5100	1600		3200	5100	1600	
Capacity Analysis Module:																
Vol/Sat:	0.03	0.06	0.15		0.19	0.35	0.37		0.06	0.14	0.08		0.15	0.15	0.12	
OvlAdjV/S:			0.00												0.00	
Crit Moves:	****						****			****			****			

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #94 Tustin Ave and 4th St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.701
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	37	Level Of Service:	C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Y+R:	4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	
Lanes:	1	0 2	1	0	2	0 2	0	1	1	0 2	1	0	1	0 2	1	0
Volume Module:																
Base Vol:	48	245	219		664	845	262		114	676	28		103	579	376	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	48	245	219		664	845	262		114	676	28		103	579	376	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	48	245	219		664	845	262		114	676	28		103	579	376	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	48	245	219		664	845	262		114	676	28		103	579	376	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	48	245	219		664	845	262		114	676	28		103	579	376	
Saturation Flow Module:																
Sat/Lane:	1600	1600	1600		1600	1600	1600		1600	1600	1600		1600	1600	1600	
Adjustment:	1.00	1.06	1.00		1.00	1.06	1.00		1.00	1.04	1.00		1.00	1.06	1.00	
Lanes:	1.00	2.00	1.00		2.00	2.00	1.00		1.00	2.88	0.12		1.00	2.00	1.00	
Final Sat.:	1600	3400	1600		3200	3400	1600		1600	4809	191		1600	3400	1600	
Capacity Analysis Module:																
Vol/Sat:	0.03	0.07	0.14		0.21	0.25	0.16		0.07	0.14	0.15		0.06	0.17	0.24	
Crit Moves:			****		****				****						****	

Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #95 SR-55 SB Ramps / Auto Mall Dr and Edinger Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.558
Loss Time (sec):	5	Average Delay (sec/veh):	24.4
Optimal Cycle:	28	Level Of Service:	C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Split Phase				Split Phase				Protected				Protected			
Rights:	Include				Include				Ignore				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Y+R:	4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	
Lanes:	1	1 0	0	2	1	0 1	0	1	1	0 3	0	1	2	0 2	1	0
Volume Module:																
Base Vol:	421	63	498		50	30	8		28	1104	408		399	940	123	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	421	63	498		50	30	8		28	1104	408		399	940	123	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	0.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	0.00		1.00	1.00	1.00	
PHF Volume:	421	63	498		50	30	8		28	1104	0		399	940	123	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	421	63	498		50	30	8		28	1104	0		399	940	123	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	0.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	0.00		1.00	1.00	1.00	
FinalVolume:	421	63	498		50	30	8		28	1104	0		399	940	123	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.96	0.96	0.75		0.95	1.00	0.85		0.95	0.91	1.00		0.92	0.89	0.89	
Lanes:	1.74	0.26	2.00		1.00	1.00	1.00		1.00	3.00	1.00		2.00	2.65	0.35	
Final Sat.:	3167	474	2842		1805	1900	1615		1805	5187	1900		3502	4509	590	
Capacity Analysis Module:																
Vol/Sat:	0.13	0.13	0.18		0.03	0.02	0.00		0.02	0.21	0.00		0.11	0.21	0.21	
Crit Moves:			****		****					****			****			
Green/Cycle:	0.31	0.31	0.31		0.05	0.05	0.05		0.04	0.38	0.00		0.20	0.55	0.55	
Volume/Cap:	0.42	0.42	0.56		0.56	0.32	0.10		0.38	0.56	0.00		0.56	0.38	0.38	
Delay/Veh:	27.4	27.4	29.3		54.0	47.8	45.9		50.1	24.6	0.0		36.7	13.1	13.1	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	27.4	27.4	29.3		54.0	47.8	45.9		50.1	24.6	0.0		36.7	13.1	13.1	
LOS by Move:	C	C	C		D	D	D		D	C	A		D	B	B	
HCM2k85thQ:	9	9	12		4	2	1		2	15	0		10	11	11	

Note: Queue reported is the number of cars per lane.
****

Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #96 SR-55 NB Ramps / Del Amo Ave and Newport Avenue

Cycle (sec):	100	Critical Vol./Cap.(X):	0.463
Loss Time (sec):	5	Average Delay (sec/veh):	24.0
Optimal Cycle:	23	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Ovl			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0 2	1 0		1 0 3	0 1		2 0 1	1 0		1 0 1	1 0	
Volume Module:												
Base Vol:	227	60	38	14	344	504	253	153	146	8	223	4
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	227	60	38	14	344	504	253	153	146	8	223	4
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	227	60	38	14	344	504	253	153	146	8	223	4
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	227	60	38	14	344	504	253	153	146	8	223	4
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	227	60	38	14	344	504	253	153	146	8	223	4
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.86	0.86	0.95	0.91	0.85	0.92	0.88	0.88	0.95	0.95	0.95
Lanes:	2.00	2.00	1.00	1.00	3.00	1.00	2.00	1.02	0.98	1.00	1.96	0.04
Final Sat.:	3502	3257	1629	1805	5187	1615	3502	1712	1634	1805	3536	63
Capacity Analysis Module:												
Vol/Sat:	0.06	0.02	0.02	0.01	0.07	0.31	0.07	0.09	0.09	0.00	0.06	0.06
Crit Moves:	****					****	****				****	
Green/Cycle:	0.14	0.49	0.49	0.16	0.52	0.67	0.16	0.28	0.28	0.01	0.14	0.14
Volume/Cap:	0.46	0.04	0.05	0.05	0.13	0.46	0.46	0.32	0.32	0.32	0.46	0.46
Delay/Veh:	40.2	13.1	13.1	35.3	12.5	8.0	39.0	28.8	28.8	56.2	40.5	40.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	40.2	13.1	13.1	35.3	12.5	8.0	39.0	28.8	28.8	56.2	40.5	40.5
LOS by Move:	D	B	B	D	B	A	D	C	C	E	D	D
HCM2k85thQ:	6	1	1	1	3	11	6	6	6	1	6	6

Note: Queue reported is the number of cars per lane.

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #97 Red Hill Ave and Edinger Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.569
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	27	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Ovl			Ovl			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	3 0	1	2 0	3 0	1	2 0	3 0	1	2 0	3 0	1
Volume Module:												
Base Vol:	81	299	85	226	960	450	190	611	130	224	1085	152
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	81	299	85	226	960	450	190	611	130	224	1085	152
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	81	299	85	226	960	450	190	611	130	224	1085	152
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	81	299	85	226	960	450	190	611	130	224	1085	152
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	81	299	85	226	960	450	190	611	130	224	1085	152
OvlAdjVol:						355			89			
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3200	5100	1600	3200	5100	1600	3200	5100	1600	3200	5100	1600
Capacity Analysis Module:												
Vol/Sat:	0.03	0.06	0.05	0.07	0.19	0.28	0.06	0.12	0.08	0.07	0.21	0.10
OvlAdjV/S:						0.22			0.06			
Crit Moves:	****					****	****				****	

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #98 Red Hill Ave and Warner Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.485
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	23	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	3 1	0	2 0	2 1	0	1 0	2 1	0	2 0	3 0	1
Volume Module:												
Base Vol:	56	339	46	19	891	179	202	343	253	98	349	62
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	56	339	46	19	891	179	202	343	253	98	349	62
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	56	339	46	19	891	179	202	343	253	98	349	62
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	56	339	46	19	891	179	202	343	253	98	349	62
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	56	339	46	19	891	179	202	343	253	98	349	62
OvlAdjVol:												53
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.05	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	2.00	3.52	0.48	2.00	2.50	0.50	1.00	2.00	1.00	2.00	3.00	1.00
Final Sat.:	3200	5935	765	3200	4197	803	1600	3400	1600	3200	5100	1600
Capacity Analysis Module:												
Vol/Sat:	0.02	0.06	0.06	0.01	0.21	0.22	0.13	0.10	0.16	0.03	0.07	0.04
OvlAdjV/S:												0.03
Crit Moves:	****					****	****				****	

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #99 Red Hill Ave and Dyer Rd / barranca Pkwy

Cycle (sec):	100	Critical Vol./Cap.(X):	0.575
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	27	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	4 0	1	2 0	4 0	1	2 0	3 1	0	2 0	4 0	1
Volume Module:												
Base Vol:	127	316	104	199	876	115	118	710	281	578	645	126
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	127	316	104	199	876	115	118	710	281	578	645	126
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	127	316	104	199	876	115	118	710	281	578	645	126
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	127	316	104	199	876	115	118	710	281	578	645	126
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	127	316	104	199	876	115	118	710	281	578	645	126
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	2.00	4.00	1.00	2.00	4.00	1.00	2.00	3.00	1.00	2.00	4.00	1.00
Final Sat.:	3200	6800	1600	3200	6800	1600	3200	5100	1600	3200	6800	1600
Capacity Analysis Module:												
Vol/Sat:	0.04	0.05	0.07	0.06	0.13	0.07	0.04	0.14	0.18	0.18	0.09	0.08
Crit Moves:	****				****				****	****		

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #100 Red Hill Ave and Alton Pkwy

Cycle (sec):	100	Critical Vol./Cap.(X):	0.524
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	25	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 0	1	1 0	3 0	1	1 0	2 0	1	2 0	1 0	1
Volume Module:												
Base Vol:	174	512	321	251	1141	183	9	28	28	223	189	106
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	174	512	321	251	1141	183	9	28	28	223	189	106
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	174	512	321	251	1141	183	9	28	28	223	189	106
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	174	512	321	251	1141	183	9	28	28	223	189	106
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	174	512	321	251	1141	183	9	28	28	223	189	106
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	1.00	2.00	1.00	2.00	1.00	1.00
Final Sat.:	1600	5100	1600	1600	5100	1600	1600	3400	1600	3200	1700	1600
Capacity Analysis Module:												
Vol/Sat:	0.11	0.10	0.20	0.16	0.22	0.11	0.01	0.01	0.02	0.07	0.11	0.07
Crit Moves:			****	****			****				****	

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #101 Red Hill Ave and MacArthur Blvd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.664
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	34	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Ignore			Include			Ignore		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0 2	1 0		2 0 3	0 1		2 0 3	0 1		1 0 3	0 1	
Volume Module:												
Base Vol:	64	569	10	208	537	492	1248	645	106	23	223	571
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	64	569	10	208	537	492	1248	645	106	23	223	571
User Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Volume:	64	569	10	208	537	0	1248	645	106	23	223	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	64	569	10	208	537	0	1248	645	106	23	223	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
FinalVolume:	64	569	10	208	537	0	1248	645	106	23	223	0
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.04	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	2.00	2.95	0.05	2.00	3.00	1.00	2.00	3.00	1.00	1.00	3.00	1.00
Final Sat.:	3200	4917	83	3200	5100	1600	3200	5100	1600	1600	5100	1600
Capacity Analysis Module:												
Vol/Sat:	0.02	0.12	0.12	0.07	0.11	0.00	0.39	0.13	0.07	0.01	0.04	0.00
Crit Moves:		****			****			****			****	

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #102 Red Hill Ave and Main St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.670
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	34	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 0	1	2 0	2 0	1	2 0	2 1	0	2 0	2 1	0
Volume Module:												
Base Vol:	162	556	361	67	313	108	139	1309	254	154	309	73
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	162	556	361	67	313	108	139	1309	254	154	309	73
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	162	556	361	67	313	108	139	1309	254	154	309	73
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	162	556	361	67	313	108	139	1309	254	154	309	73
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	162	556	361	67	313	108	139	1309	254	154	309	73
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.05	1.00	1.00	1.05	1.00
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	2.00	2.51	0.49	2.00	2.43	0.57
Final Sat.:	3200	3400	1600	3200	3400	1600	3200	4220	780	3200	4083	917
Capacity Analysis Module:												
Vol/Sat:	0.05	0.16	0.23	0.02	0.09	0.07	0.04	0.31	0.33	0.05	0.08	0.08
Crit Moves:			****	****					****	****		

Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #103 I-5 SB Ramps and Santa Ana Blvd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.514
Loss Time (sec):	5	Average Delay (sec/veh):	17.4
Optimal Cycle:	25	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Ovl			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0	0	2	0	0	2	0	3	0	2	1
Volume Module:												
Base Vol:	0	0	0	367	0	36	323	554	0	1130		330
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	367	0	36	323	554	0	1130		330
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	367	0	36	323	554	0	1130		330
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	367	0	36	323	554	0	1130		330
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	367	0	36	323	554	0	1130		330
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	0.92	1.00	0.85	0.92	0.91	1.00	1.00	0.88	0.88
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	2.00	3.00	0.00	0.00	2.32	0.68
Final Sat.:	0	0	0	3502	0	1615	3502	5187	0	0	3878	1133
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.10	0.00	0.02	0.09	0.11	0.00	0.00	0.29	0.29
Crit Moves:				****			****				****	
Green/Cycle:	0.00	0.00	0.00	0.20	0.00	0.38	0.18	0.75	0.00	0.00	0.57	0.57
Volume/Cap:	0.00	0.00	0.00	0.51	0.00	0.06	0.51	0.14	0.00	0.00	0.51	0.51
Delay/Veh:	0.0	0.0	0.0	36.0	0.0	19.5	37.8	3.6	0.0	0.0	13.4	13.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

AdjDel/Veh:	0.0	0.0	0.0	36.0	0.0	19.5	37.8	3.6	0.0	0.0	13.4	13.4
LOS by Move:	A	A	A	D	A	B	D	A	A	A	B	B
HCM2k85thQ:	0	0	0	9	0	1	8	3	0	0	15	15

****

Note: Queue reported is the number of cars per lane.

****

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #104 Tustin Ranch Rd and Warner Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.475
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	23	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Ovl			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	0 0	0	2 0	0 0	1	2 0	3 0	0	0 0	3 0	1
Volume Module:												
Base Vol:	0	0	0	265	0	33	18	238	0	0	1717	395
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	265	0	33	18	238	0	0	1717	395
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	265	0	33	18	238	0	0	1717	395
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	265	0	33	18	238	0	0	1717	395
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	265	0	33	18	238	0	0	1717	395
OvlAdjVol:												263
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	2.00	3.00	0.00	0.00	3.00	1.00
Final Sat.:	0	0	0	3200	0	1600	3200	5100	0	0	5100	1600
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.08	0.00	0.02	0.01	0.05	0.00	0.00	0.34	0.25
OvlAdjV/S:												0.16
Crit Moves:				****			****				****	

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #105 Von Karman Ave and Barranca Pkwy

Cycle (sec):	100	Critical Vol./Cap.(X):	0.762
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	45	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Ovl			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0 1	1 0		2 0 2			2 0 3	0 1		2 0 4	0 1	
Volume Module:												
Base Vol:	107	142	85	119	1164	509	130	488	163	769	1263	39
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	107	142	85	119	1164	509	130	488	163	769	1263	39
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	107	142	85	119	1164	509	130	488	163	769	1263	39
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	107	142	85	119	1164	509	130	488	163	769	1263	39
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	107	142	85	119	1164	509	130	488	163	769	1263	39
OvlAdjVol:						379						
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	2.00	1.25	0.75	2.00	2.00	2.00	2.00	3.00	1.00	2.00	4.00	1.00
Final Sat.:	3200	2102	1198	3200	3400	3200	3200	5100	1600	3200	6800	1600
Capacity Analysis Module:												
Vol/Sat:	0.03	0.07	0.07	0.04	0.34	0.16	0.04	0.10	0.10	0.24	0.19	0.02
OvlAdjV/S:						0.12						
Crit Moves:	****			****			****			****		

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #106 Red Hill Avenue and El Camino Real

Cycle (sec):	100	Critical Vol./Cap.(X):	0.706
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	38	Level Of Service:	C

Street Name:	Red Hill Avenue						El Camino Real					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0 3	0 1	1	0 2	1 0	1	0 1	0 1	1	0 0	1 0
Volume Module:												
Base Vol:	306	785	253	18	1303	80	69	156	164	271	222	16
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	306	785	253	18	1303	80	69	156	164	271	222	16
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	306	785	253	18	1303	80	69	156	164	271	222	16
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	306	785	253	18	1303	80	69	156	164	271	222	16
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	306	785	253	18	1303	80	69	156	164	271	222	16
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.04	1.00	1.00	1.06	1.00	1.00	1.00	1.00
Lanes:	2.00	3.00	1.00	1.00	2.83	0.17	1.00	1.00	1.00	1.00	0.93	0.07
Final Sat.:	3200	5100	1600	1600	4722	278	1600	1700	1600	1600	1492	108
Capacity Analysis Module:												
Vol/Sat:	0.10	0.15	0.16	0.01	0.28	0.29	0.04	0.09	0.10	0.17	0.15	0.15
Crit Moves:	****					****			****	****		

Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #107 Red Hill Avenue and I-5 NB Ramps

Cycle (sec):	100	Critical Vol./Cap.(X):	0.670
Loss Time (sec):	5	Average Delay (sec/veh):	20.3
Optimal Cycle:	36	Level Of Service:	C

Street Name:	Red Hill Avenue						I-5 NB Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0 3	0 0	0	0 3	0 1	0	0 0	0 0	2	0 0	0 1
Volume Module:												
Base Vol:	327	1084	0	0	1263	475	0	0	0	228	0	261
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	327	1084	0	0	1263	475	0	0	0	228	0	261
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	327	1084	0	0	1263	475	0	0	0	228	0	261
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	327	1084	0	0	1263	475	0	0	0	228	0	261
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	327	1084	0	0	1263	475	0	0	0	228	0	261
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.91	1.00	1.00	0.91	0.85	1.00	1.00	1.00	0.60	1.00	0.85
Lanes:	1.00	3.00	0.00	0.00	3.00	1.00	0.00	0.00	0.00	2.00	0.00	1.00
Final Sat.:	1805	5187	0	0	5187	1615	0	0	0	2278	0	1615
Capacity Analysis Module:												
Vol/Sat:	0.18	0.21	0.00	0.00	0.24	0.29	0.00	0.00	0.00	0.10	0.00	0.16
Crit Moves:	****					****						****
Green/Cycle:	0.27	0.71	0.00	0.00	0.44	0.44	0.00	0.00	0.00	0.24	0.00	0.24
Volume/Cap:	0.67	0.29	0.00	0.00	0.56	0.67	0.00	0.00	0.00	0.42	0.00	0.67
Delay/Veh:	36.1	5.4	0.0	0.0	21.1	24.8	0.0	0.0	0.0	32.5	0.0	38.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

AdjDel/Veh:	36.1	5.4	0.0	0.0	21.1	24.8	0.0	0.0	0.0	32.5	0.0	38.8
LOS by Move:	D	A	A	A	C	C	A	A	A	C	A	D
HCM2k85thQ:	15	7	0	0	16	19	0	0	0	5	0	13

****

Note: Queue reported is the number of cars per lane.

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Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #108 Red Hill Avenue and I-5 SB Ramps

Cycle (sec):	100	Critical Vol./Cap.(X):	0.784
Loss Time (sec):	5	Average Delay (sec/veh):	22.0
Optimal Cycle:	51	Level Of Service:	C

Street Name:	Red Hill Avenue						I-5 SB Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	4 0	1	1 0	3 0	0	0 1	0 0	1	0 0	0 0	0
Volume Module:												
Base Vol:	0	1243	550	385	1105	0	168	4	309	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1243	550	385	1105	0	168	4	309	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1243	550	385	1105	0	168	4	309	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1243	550	385	1105	0	168	4	309	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1243	550	385	1105	0	168	4	309	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.91	0.85	0.95	0.91	1.00	0.95	0.95	0.85	1.00	1.00	1.00
Lanes:	0.00	4.00	1.00	1.00	3.00	0.00	0.98	0.02	1.00	0.00	0.00	0.00
Final Sat.:	0	6916	1615	1805	5187	0	1759	42	1615	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.18	0.34	0.21	0.21	0.00	0.10	0.10	0.19	0.00	0.00	0.00
Crit Moves:			****	****					****			
Green/Cycle:	0.00	0.43	0.43	0.27	0.71	0.00	0.24	0.24	0.24	0.00	0.00	0.00
Volume/Cap:	0.00	0.41	0.78	0.78	0.30	0.00	0.39	0.39	0.78	0.00	0.00	0.00
Delay/Veh:	0.0	19.6	30.1	41.8	5.5	0.0	32.2	32.2	45.3	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	19.6	30.1	41.8	5.5	0.0	32.2	32.2	45.3	0.0	0.0	0.0
LOS by Move:	A	B	C	D	A	A	C	C	D	A	A	A
HCM2k85thQ:	0	11	24	19	7	0	7	7	16	0	0	0

Note: Queue reported is the number of cars per lane.

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #109 Red Hill Avenue and Nisson Road

Cycle (sec):	100	Critical Vol./Cap.(X):	0.653
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	33	Level Of Service:	B

Street Name:	Red Hill Avenue						Nisson Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 1	0	1 0	2 1	0	1 0	0 1	0	1 0	0 1	0
Volume Module:												
Base Vol:	17	1298	24	152	1144	120	242	59	48	49	26	215
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	17	1298	24	152	1144	120	242	59	48	49	26	215
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	17	1298	24	152	1144	120	242	59	48	49	26	215
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	17	1298	24	152	1144	120	242	59	48	49	26	215
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	17	1298	24	152	1144	120	242	59	48	49	26	215
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.05	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	3.93	0.07	1.00	2.72	0.28	1.00	0.55	0.45	1.00	0.11	0.89
Final Sat.:	1600	6584	116	1600	4544	456	1600	882	718	1600	173	1427
Capacity Analysis Module:												
Vol/Sat:	0.01	0.20	0.21	0.10	0.25	0.26	0.15	0.07	0.07	0.03	0.15	0.15
Crit Moves:		****		****			****					****

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #110 Red Hill Avenue and Walnut Avenue

Cycle (sec):	100	Critical Vol./Cap.(X):	0.684
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	35	Level Of Service:	B

Street Name:	Red Hill Avenue						Walnut Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	2 1	0	1	0	2 1	0	1	0	1 1	0
Volume Module:												
Base Vol:	135	525	99	104	1046	117	160	398	392	192	254	121
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	135	525	99	104	1046	117	160	398	392	192	254	121
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	135	525	99	104	1046	117	160	398	392	192	254	121
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	135	525	99	104	1046	117	160	398	392	192	254	121
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	135	525	99	104	1046	117	160	398	392	192	254	121
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.05	1.00	1.00	1.06	1.00	1.00	1.05	1.00
Lanes:	1.00	2.52	0.48	1.00	2.70	0.30	1.00	1.01	0.99	2.00	1.35	0.65
Final Sat.:	1600	4238	762	1600	4517	483	1600	1712	1588	3200	2267	1033
Capacity Analysis Module:												
Vol/Sat:	0.08	0.12	0.13	0.07	0.23	0.24	0.10	0.23	0.25	0.06	0.11	0.12
Crit Moves:	****					****			****	****		

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #111 Red Hill Avenue and Valencia Avenue

Cycle (sec):	100	Critical Vol./Cap.(X):	0.544
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	26	Level Of Service:	A

Street Name:	Red Hill Avenue						Valencia Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ovl			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0 3	1 0	1	0 2	1 0	1	0 1	0 1	2	0 1	0 1
Volume Module:												
Base Vol:	77	325	105	120	1032	69	20	139	54	252	346	122
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	77	325	105	120	1032	69	20	139	54	252	346	122
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	77	325	105	120	1032	69	20	139	54	252	346	122
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	77	325	105	120	1032	69	20	139	54	252	346	122
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	77	325	105	120	1032	69	20	139	54	252	346	122
OvlAdjVol:			0									2
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.04	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	1.00	3.02	0.98	1.00	2.81	0.19	1.00	1.00	1.00	2.00	1.00	1.00
Final Sat.:	1600	5137	1563	1600	4699	301	1600	1700	1600	3200	1700	1600
Capacity Analysis Module:												
Vol/Sat:	0.05	0.06	0.07	0.08	0.22	0.23	0.01	0.08	0.03	0.08	0.20	0.08
OvlAdjV/S:			0.00									0.00
Crit Moves:	****					****	****				****	

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #112 Tustin Ranch Road and Warner Avenue North

Cycle (sec):	100	Critical Vol./Cap.(X):	0.426
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	21	Level Of Service:	A

Street Name:	Tustin Ranch Road						Warner Avenue North					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Ovl			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0	3 0 1	2	0	3 0 0	0	0	0 0 0	3	0	0 0 2
Volume Module:												
Base Vol:	0	272	263	456	1289	0	0	0	0	591	0	174
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	272	263	456	1289	0	0	0	0	591	0	174
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	272	263	456	1289	0	0	0	0	591	0	174
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	272	263	456	1289	0	0	0	0	591	0	174
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	272	263	456	1289	0	0	0	0	591	0	174
OvlAdjVol:			66									0
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	0.00	3.00	1.00	2.00	3.00	0.00	0.00	0.00	0.00	3.00	0.00	2.00
Final Sat.:	0	5100	1600	3200	5100	0	0	0	0	4800	0	3200
Capacity Analysis Module:												
Vol/Sat:	0.00	0.05	0.16	0.14	0.25	0.00	0.00	0.00	0.00	0.12	0.00	0.05
OvlAdjV/S:			0.04									0.00
Crit Moves:	****			****					****			

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #113 Tustin Ranch Road and Walnut Avenue

Cycle (sec):	100	Critical Vol./Cap.(X):	1.193
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	180	Level Of Service:	F

Street Name:	Tustin Ranch Road						Walnut Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ovl			Ovl			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	3 0 1	2	0	3 0 1	2	0	1 1 0	2	0	2 0 1
Volume Module:												
Base Vol:	123	756	377	1045	2921	389	702	917	554	231	341	288
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	123	756	377	1045	2921	389	702	917	554	231	341	288
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	123	756	377	1045	2921	389	702	917	554	231	341	288
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	123	756	377	1045	2921	389	702	917	554	231	341	288
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	123	756	377	1045	2921	389	702	917	554	231	341	288
OvlAdjVol:			262			38						0
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.05	1.00	1.00	1.06	1.00
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	1.25	0.75	2.00	2.00	1.00
Final Sat.:	3200	5100	1600	3200	5100	1600	3200	2095	1205	3200	3400	1600
Capacity Analysis Module:												
Vol/Sat:	0.04	0.15	0.24	0.33	0.57	0.24	0.22	0.44	0.46	0.07	0.10	0.18
OvlAdjV/S:			0.16			0.02						0.00
Crit Moves:	****			****					****	****		

Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #114 SR-55 SB Ramps and Irvine Boulevard

Cycle (sec):	100	Critical Vol./Cap.(X):	0.970
Loss Time (sec):	5	Average Delay (sec/veh):	23.2
Optimal Cycle:	165	Level Of Service:	C

Street Name:	SR-55 SB Ramps						Irvine Boulevard					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0	0	1	0	1! 0	1	0	0	2	1	0	1	0	3	0	0
Volume Module:												
Base Vol:	0	0	0	62	0	68	0	575	1032	425	1063	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	62	0	68	0	575	1032	425	1063	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	62	0	68	0	575	1032	425	1063	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	62	0	68	0	575	1032	425	1063	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	62	0	68	0	575	1032	425	1063	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	0.88	1.00	0.77	1.00	0.82	0.82	0.95	0.91	1.00
Lanes:	0.00	0.00	0.00	1.44	0.00	1.56	0.00	2.00	1.00	1.00	3.00	0.00
Final Sat.:	0	0	0	2415	0	2277	0	3126	1563	1805	5187	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.03	0.00	0.03	0.00	0.18	0.66	0.24	0.20	0.00
Crit Moves:				****					****	****		
Green/Cycle:	0.00	0.00	0.00	0.03	0.00	0.05	0.00	0.68	0.68	0.24	0.92	0.00
Volume/Cap:	0.00	0.00	0.00	0.86	0.00	0.58	0.00	0.27	0.97	0.97	0.22	0.00
Delay/Veh:	0.0	0.0	0.0	84.9	0.0	50.0	0.0	6.3	30.4	72.4	0.4	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	84.9	0.0	50.0	0.0	6.3	30.4	72.4	0.4	0.0
LOS by Move:	A	A	A	F	A	D	A	A	C	E	A	A

```
HCM2k85thQ:     0    0     0     5    0     4     0    6    54    27    2     0
********************************************************************************
Note: Queue reported is the number of cars per lane.
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Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #115 SR-55 NB Ramps and Irvine Boulevard

Cycle (sec):	100	Critical Vol./Cap.(X):	0.797
Loss Time (sec):	5	Average Delay (sec/veh):	19.8
Optimal Cycle:	54	Level Of Service:	B

Street Name:	SR-55 NB Ramps						Irvine Boulevard					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1! 0	1	0	0	0	0	1	0	3	0	0	0	0	2	1	0
Volume Module:																		
Base Vol:	410	0	394	0	0	0	187	444	0	0	1079	750
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	410	0	394	0	0	0	187	444	0	0	1079	750
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	410	0	394	0	0	0	187	444	0	0	1079	750
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	410	0	394	0	0	0	187	444	0	0	1079	750
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	410	0	394	0	0	0	187	444	0	0	1079	750
Saturation Flow Module:																		
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.75	1.00	0.74	1.00	1.00	1.00	0.95	0.91	1.00	1.00	0.85	0.85
Lanes:	1.51	0.00	1.49	0.00	0.00	0.00	1.00	3.00	0.00	0.00	2.00	1.00
Final Sat.:	2135	0	2095	0	0	0	1805	5187	0	0	3247	1624
Capacity Analysis Module:																		
Vol/Sat:	0.19	0.00	0.19	0.00	0.00	0.00	0.10	0.09	0.00	0.00	0.33	0.46
Crit Moves:	****						****					****
Green/Cycle:	0.24	0.00	0.48	0.00	0.00	0.00	0.13	0.71	0.00	0.00	0.58	0.58
Volume/Cap:	0.80	0.00	0.39	0.00	0.00	0.00	0.80	0.12	0.00	0.00	0.57	0.80
Delay/Veh:	40.3	0.0	16.7	0.0	0.0	0.0	59.3	4.6	0.0	0.0	13.5	18.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	40.3	0.0	16.7	0.0	0.0	0.0	59.3	4.6	0.0	0.0	13.5	18.5
LOS by Move:	D	A	B	A	A	A	E	A	A	A	B	B
HCM2k85thQ:	15	0	8	0	0	0	12	2	0	0	18	31

Note: Queue reported is the number of cars per lane.

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APPENDIX D.2

ANALYSIS WORKSHEETS –
2020 NP (PM Peak Hour)

Santa Ana Circulation Element

Scenario Report

Scenario:	2020 NP PM Peak Hour
Command:	Default Command
Volume:	2020 NP PM
Geometry:	NP
Impact Fee:	Default Impact Fee
Trip Generation:	Default Trip Generation
Trip Distribution:	Default Trip Distribution
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

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Santa Ana Circulation Element

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 1 Euclid St and 1st St	D	xxxxx	0.865	D	xxxxx	0.865	+ 0.000 V/C
# 2 Euclid St and McFadden Ave	D	xxxxx	0.833	D	xxxxx	0.833	+ 0.000 V/C
# 3 Euclid St and Edinger Ave	C	xxxxx	0.787	C	xxxxx	0.787	+ 0.000 V/C
# 4 Newhope St and Hazard Ave	B	xxxxx	0.642	B	xxxxx	0.642	+ 0.000 V/C
# 5 Newhope St and McFadden Ave	D	xxxxx	0.838	D	xxxxx	0.838	+ 0.000 V/C
# 6 Harbor Blvd and SR-22 WB Off-R	C	23.6	0.703	C	23.6	0.703	+ 0.000 D/V
# 7 Trask Avenue and SR-22 EB On-R	B	12.4	0.448	B	12.4	0.448	+ 0.000 D/V
# 8 Harbor Blvd and Westminster Av	C	xxxxx	0.792	C	xxxxx	0.792	+ 0.000 V/C
# 9 Harbor Blvd and 1st St	D	xxxxx	0.833	D	xxxxx	0.833	+ 0.000 V/C
# 10 Harbor Blvd and McFadden Ave	D	xxxxx	0.809	D	xxxxx	0.809	+ 0.000 V/C
# 11 Harbor Blvd and Edinger Ave	B	xxxxx	0.697	B	xxxxx	0.697	+ 0.000 V/C
# 12 Harbor Blvd and Warner Ave	F	xxxxx	1.581	F	xxxxx	1.581	+ 0.000 V/C
# 13 Harbor Blvd and Segerstrom Ave	D	xxxxx	0.897	D	xxxxx	0.897	+ 0.000 V/C
# 14 MacArthur Blvd and Hyland Ave	E	xxxxx	0.917	E	xxxxx	0.917	+ 0.000 V/C
# 15 MacArthur Blvd and Harbor Blvd	D	xxxxx	0.819	D	xxxxx	0.819	+ 0.000 V/C
# 16 Harbor Blvd and Sunflower Ave	C	xxxxx	0.780	C	xxxxx	0.780	+ 0.000 V/C
# 17 Harbor Blvd and I-405 WB Off-R	C	22.9	0.812	C	22.9	0.812	+ 0.000 D/V
# 18 Harbor Blvd and I-405 EB Off-R	B	16.2	0.630	B	16.2	0.630	+ 0.000 D/V
# 19 Fairview St and Civic Center D	B	xxxxx	0.662	B	xxxxx	0.662	+ 0.000 V/C
# 20 Fairview St and 1st St	D	xxxxx	0.883	D	xxxxx	0.883	+ 0.000 V/C
# 21 Fairview St and McFadden Ave	C	xxxxx	0.798	C	xxxxx	0.798	+ 0.000 V/C
# 22 Fairview St and Edinger Ave	D	xxxxx	0.811	D	xxxxx	0.811	+ 0.000 V/C
# 23 Fairview St and Warner Ave	D	xxxxx	0.845	D	xxxxx	0.845	+ 0.000 V/C
# 24 Fairview St and MacArthur Blvd	D	xxxxx	0.826	D	xxxxx	0.826	+ 0.000 V/C

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Santa Ana Circulation Element

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 25 Fairview Rd and Sunflower Ave	C	xxxxx	0.708	C	xxxxx	0.708	+ 0.000 V/C
# 26 Greenville St and Edinger Ave	A	xxxxx	0.586	A	xxxxx	0.586	+ 0.000 V/C
# 27 Greenville St and Segerstrom A	B	xxxxx	0.686	B	xxxxx	0.686	+ 0.000 V/C
# 28 Raitt St and McFadden Ave	C	xxxxx	0.722	C	xxxxx	0.722	+ 0.000 V/C
# 29 Raitt St and Edinger Ave	D	xxxxx	0.864	D	xxxxx	0.864	+ 0.000 V/C
# 30 Bear St and MacArthur Blvd	D	xxxxx	0.868	D	xxxxx	0.868	+ 0.000 V/C
# 31 Bristol St and 17th St	B	xxxxx	0.692	B	xxxxx	0.692	+ 0.000 V/C
# 32 Bristol St and Civic Center Dr	D	xxxxx	0.832	D	xxxxx	0.832	+ 0.000 V/C
# 33 Bristol St and Santa Ana Blvd	B	xxxxx	0.657	B	xxxxx	0.657	+ 0.000 V/C
# 34 Bristol St and 1st St	C	xxxxx	0.779	C	xxxxx	0.779	+ 0.000 V/C
# 35 Bristol St and McFadden Ave	C	xxxxx	0.752	C	xxxxx	0.752	+ 0.000 V/C
# 36 Bristol St and Warner Ave	C	xxxxx	0.790	C	xxxxx	0.790	+ 0.000 V/C
# 37 Bristol St and Segerstrom Ave	E	xxxxx	0.909	E	xxxxx	0.909	+ 0.000 V/C
# 38 Bristol St and Alton Ave	B	xxxxx	0.686	B	xxxxx	0.686	+ 0.000 V/C
# 39 Bristol St and MacArthur Blvd	D	xxxxx	0.812	D	xxxxx	0.812	+ 0.000 V/C
# 40 Bristol St and Sunflower Ave	B	xxxxx	0.689	B	xxxxx	0.689	+ 0.000 V/C
# 41 Bristol St and I-405 WB Ramps	C	28.2	0.829	C	28.2	0.829	+ 0.000 D/V
# 42 Bristol St and I-405 EB Ramps	B	18.4	0.595	B	18.4	0.595	+ 0.000 D/V
# 43 Flower St and Santa Ana Blvd	A	xxxxx	0.571	A	xxxxx	0.571	+ 0.000 V/C
# 44 Flower St and 1st St	C	xxxxx	0.752	C	xxxxx	0.752	+ 0.000 V/C
# 45 Flower St and McFadden Ave	E	xxxxx	0.920	E	xxxxx	0.920	+ 0.000 V/C
# 46 Flower St and Segerstrom Ave	D	xxxxx	0.897	D	xxxxx	0.897	+ 0.000 V/C
# 47 Flower St and MacArthur Blvd	E	xxxxx	0.906	E	xxxxx	0.906	+ 0.000 V/C
# 48 Main St and La Veta Ave	B	xxxxx	0.628	B	xxxxx	0.628	+ 0.000 V/C
# 49 Main St and Mainplace Dr / Mem	A	xxxxx	0.471	A	xxxxx	0.471	+ 0.000 V/C
# 50 Main St and 17th St	C	xxxxx	0.732	C	xxxxx	0.732	+ 0.000 V/C

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Santa Ana Circulation Element

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 51 Main St and Civic Center Dr	D	xxxxx	0.801	D	xxxxx	0.801	+ 0.000 V/C
# 52 Main St and Santa Ana Blvd	B	xxxxx	0.607	B	xxxxx	0.607	+ 0.000 V/C
# 53 Main St and 4th St	A	xxxxx	0.537	A	xxxxx	0.537	+ 0.000 V/C
# 54 Main St and 1st St	C	xxxxx	0.799	C	xxxxx	0.799	+ 0.000 V/C
# 55 Main St and McFadden Ave	D	xxxxx	0.845	D	xxxxx	0.845	+ 0.000 V/C
# 56 Main St and Edinger Ave	D	xxxxx	0.847	D	xxxxx	0.847	+ 0.000 V/C
# 57 Main St and MacArthur Blvd	C	xxxxx	0.777	C	xxxxx	0.777	+ 0.000 V/C
# 58 Penn Wy and 17th St	C	20.7	0.770	C	20.7	0.770	+ 0.000 D/V
# 59 I-5 NB Off Ramps/17th Street	B	19.5	0.589	B	19.5	0.589	+ 0.000 D/V
# 60 Penn Wy and I-5 SB Ramps	C	22.0	0.423	C	22.0	0.423	+ 0.000 D/V
# 61 Santiago St and Civic Center D	C	17.1	0.674	C	17.1	0.674	+ 0.000 V/C
# 62 Santiago St and Santa Ana Blvd	A	xxxxx	0.569	A	xxxxx	0.569	+ 0.000 V/C
# 64 Standard Ave and 1st St	D	xxxxx	0.842	D	xxxxx	0.842	+ 0.000 V/C
# 65 Standard Ave and Mcfadden Ave	B	xxxxx	0.682	B	xxxxx	0.682	+ 0.000 V/C
# 66 Halladay St and Warner Ave	B	xxxxx	0.677	B	xxxxx	0.677	+ 0.000 V/C
# 67 Halladay St and Dyer Rd	C	xxxxx	0.784	C	xxxxx	0.784	+ 0.000 V/C
# 68 SR-55 SB Ramps and MacArthur B	B	17.3	0.569	B	17.3	0.569	+ 0.000 D/V
# 69 SR-55 NB Ramps and MacArthur B	B	14.8	0.497	B	14.8	0.497	+ 0.000 D/V
# 70 SR-55 SB Ramps and Dyer Rd	C	25.7	0.669	C	25.7	0.669	+ 0.000 D/V
# 71 Glassell St and La Veta Ave	B	xxxxx	0.620	B	xxxxx	0.620	+ 0.000 V/C
# 72 Glassell St and SR-22 WB Ramps	C	24.8	0.766	C	24.8	0.766	+ 0.000 D/V
# 73 Grand Ave / Glassell St and SR	C	26.5	0.812	C	26.5	0.812	+ 0.000 D/V
# 74 Grand Ave and Fairhaven Ave	B	xxxxx	0.675	B	xxxxx	0.675	+ 0.000 V/C
# 75 Grand Ave and Santa Clara Ave	C	xxxxx	0.748	C	xxxxx	0.748	+ 0.000 V/C
# 76 Grand Ave and 17th St	D	xxxxx	0.828	D	xxxxx	0.828	+ 0.000 V/C

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Santa Ana Circulation Element

Intersection	Base LOS	Del/ Veh	V/ C	Future LOS	Del/ Veh	V/ C	Change in
# 77 Grand Ave and I-5 NB Ramps	A	10.0	0.518	A	10.0	0.518	+ 0.000 D/V
# 78 Grand Ave and Santa Ana Blvd	C	21.1	0.605	C	21.1	0.605	+ 0.000 D/V
# 79 Grand Ave and 1st St	C	xxxxx	0.793	C	xxxxx	0.793	+ 0.000 V/C
# 80 Grand Ave and Chestnut Ave	B	xxxxx	0.615	B	xxxxx	0.615	+ 0.000 V/C
# 81 Grand Ave and McFadden Ave	C	xxxxx	0.759	C	xxxxx	0.759	+ 0.000 V/C
# 82 Grand Ave and Edinger Ave	E	xxxxx	0.909	E	xxxxx	0.909	+ 0.000 V/C
# 83 Grand Ave and Warner Ave	C	xxxxx	0.704	C	xxxxx	0.704	+ 0.000 V/C
# 84 SR-55 NB Ramps and Dyer Rd	A	5.7	0.376	A	5.7	0.376	+ 0.000 D/V
# 85 Cambridge St and La Veta Ave	B	12.5	0.459	B	12.5	0.459	+ 0.000 V/C
# 86 Cambridge St and Fairhaven Ave	A	xxxxx	0.488	A	xxxxx	0.488	+ 0.000 V/C
# 87 Mabury St and 1st Street	C	26.1	0.703	C	26.1	0.703	+ 0.000 D/V
# 88 Tustin St and La Veta Ave	A	xxxxx	0.444	A	xxxxx	0.444	+ 0.000 V/C
# 89 Tustin St and SR-22 WB On-Ramp	B	12.1	0.446	B	12.1	0.446	+ 0.000 D/V
# 90 Tustin St and SR-22 EB Off-Ram	C	23.7	0.719	C	23.7	0.719	+ 0.000 D/V
# 91 Tustin Ave and Fairhaven Ave	B	xxxxx	0.614	B	xxxxx	0.614	+ 0.000 V/C
# 92 Tustin Ave and Santa Clara Ave	B	xxxxx	0.647	B	xxxxx	0.647	+ 0.000 V/C
# 93 Tustin Ave and 17th St	C	xxxxx	0.717	C	xxxxx	0.717	+ 0.000 V/C
# 94 Tustin Ave and 4th St	B	xxxxx	0.692	B	xxxxx	0.692	+ 0.000 V/C
# 95 SR-55 SB Ramps / Auto Mall Dr	C	25.1	0.583	C	25.1	0.583	+ 0.000 D/V
# 96 SR-55 NB Ramps / Del Amo Ave a	C	27.4	0.525	C	27.4	0.525	+ 0.000 D/V
# 97 Red Hill Ave and Edinger Ave	B	xxxxx	0.667	B	xxxxx	0.667	+ 0.000 V/C
# 98 Red Hill Ave and Warner Ave	A	xxxxx	0.588	A	xxxxx	0.588	+ 0.000 V/C
# 99 Red Hill Ave and Dyer Rd / bar	A	xxxxx	0.563	A	xxxxx	0.563	+ 0.000 V/C
#100 Red Hill Ave and Alton Pkwy	B	xxxxx	0.671	B	xxxxx	0.671	+ 0.000 V/C
#101 Red Hill Ave and MacArthur Blv	B	xxxxx	0.657	B	xxxxx	0.657	+ 0.000 V/C
#102 Red Hill Ave and Main St	C	xxxxx	0.774	C	xxxxx	0.774	+ 0.000 V/C

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Santa Ana Circulation Element

Intersection	Base LOS	Del/ Veh	V/ C	Future LOS	Del/ Veh	V/ C	Change in
#103 I-5 SB Ramps and Santa Ana Blv	B	18.9	0.431	B	18.9	0.431	+ 0.000 D/V
#104 Tustin Ranch Rd and Warner Ave	B	xxxxx	0.606	B	xxxxx	0.606	+ 0.000 V/C
#105 Von Karman Ave and Barranca Pk	D	xxxxx	0.874	D	xxxxx	0.874	+ 0.000 V/C
#106 Red Hill Avenue and El Camino	B	xxxxx	0.624	B	xxxxx	0.624	+ 0.000 V/C
#107 Red Hill Avenue and I-5 NB Ram	C	23.3	0.626	C	23.3	0.626	+ 0.000 D/V
#108 Red Hill Avenue and I-5 SB Ram	C	22.8	0.708	C	22.8	0.708	+ 0.000 D/V
#109 Red Hill Avenue and Nisson Roa	C	xxxxx	0.702	C	xxxxx	0.702	+ 0.000 V/C
#110 Red Hill Avenue and Walnut Ave	C	xxxxx	0.785	C	xxxxx	0.785	+ 0.000 V/C
#111 Red Hill Avenue and Valencia A	A	xxxxx	0.549	A	xxxxx	0.549	+ 0.000 V/C
#112 Tustin Ranch Road and Warner A	C	xxxxx	0.757	C	xxxxx	0.757	+ 0.000 V/C
#113 Tustin Ranch Road and Walnut A	F	xxxxx	1.630	F	xxxxx	1.630	+ 0.000 V/C
#114 SR-55 SB Ramps and Irvine Boul	C	21.5	0.794	C	21.5	0.794	+ 0.000 D/V
#115 SR-55 NB Ramps and Irvine Boul	B	19.5	0.809	B	19.5	0.809	+ 0.000 D/V

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #1 Euclid St and 1st St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.865
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	70	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			WideBypass			WideBypass		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 1	0	1 0	2 1	0	1 0	2 1	0	1 0	2 1	0
Volume Module:												
Base Vol:	159	1477	119	185	1053	199	212	678	106	217	909	217
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	159	1477	119	185	1053	199	212	678	106	217	909	217
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	159	1477	119	185	1053	199	212	678	106	217	909	217
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	159	1477	119	185	1053	199	212	678	106	217	909	217
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	159	1477	119	185	1053	199	212	678	106	217	909	217
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.05	1.00	1.00	1.05	1.00	1.00	1.05	1.00
Lanes:	1.00	2.78	0.22	1.00	2.52	0.48	1.00	2.59	0.41	1.00	2.42	0.58
Final Sat.:	1600	4642	358	1600	4237	763	1600	4351	649	1600	4075	925
Capacity Analysis Module:												
Vol/Sat:	0.10	0.32	0.33	0.12	0.25	0.26	0.13	0.16	0.16	0.14	0.22	0.23
Crit Moves:			****	****			****					****

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #2 Euclid St and McFadden Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.833
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	60	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Prot+Permit			Prot+Permit		
Rights:	WideBypass			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 1	0	1 0	2 1	0	1 0	1 1	0	1 0	1 1	0
Volume Module:												
Base Vol:	175	1426	92	110	1354	164	183	419	185	127	532	246
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	175	1426	92	110	1354	164	183	419	185	127	532	246
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	175	1426	92	110	1354	164	183	419	185	127	532	246
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	175	1426	92	110	1354	164	183	419	185	127	532	246
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	175	1426	92	110	1354	164	183	419	185	127	532	246
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.04	1.00	1.00	1.05	1.00	1.00	1.05	1.00	1.00	1.05	1.00
Lanes:	1.00	2.82	0.18	1.00	2.68	0.32	1.00	1.39	0.61	1.00	1.37	0.63
Final Sat.:	1600	4709	291	1600	4481	519	1600	2320	980	1600	2288	1012
Capacity Analysis Module:												
Vol/Sat:	0.11	0.30	0.32	0.07	0.30	0.32	0.11	0.18	0.19	0.08	0.23	0.24
Crit Moves:	****					****	****					****

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #3 Euclid St and Edinger Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.787
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	49	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 1	0	2 0	2 1	0	1 0	2 0	1	1 0	2 0	1
Volume Module:												
Base Vol:	526	1572	112	122	803	204	161	622	186	91	840	136
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	526	1572	112	122	803	204	161	622	186	91	840	136
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	526	1572	112	122	803	204	161	622	186	91	840	136
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	526	1572	112	122	803	204	161	622	186	91	840	136
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	526	1572	112	122	803	204	161	622	186	91	840	136
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.04	1.00	1.00	1.05	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	2.00	2.80	0.20	2.00	2.39	0.61	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	3200	4681	319	3200	4028	972	1600	3400	1600	1600	3400	1600
Capacity Analysis Module:												
Vol/Sat:	0.16	0.34	0.35	0.04	0.20	0.21	0.10	0.18	0.12	0.06	0.25	0.09
Crit Moves:		****	****				****				****	

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #4 Newhope St and Hazard Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.642
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	32	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Prot+Permit			Prot+Permit			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1	1 0	1 0	1	1 0	1 0	1	1 0	1 0	1	1 0
Volume Module:												
Base Vol:	116	1281	50	49	1038	124	108	214	131	32	202	58
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	116	1281	50	49	1038	124	108	214	131	32	202	58
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	116	1281	50	49	1038	124	108	214	131	32	202	58
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	116	1281	50	49	1038	124	108	214	131	32	202	58
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	116	1281	50	49	1038	124	108	214	131	32	202	58
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.03	1.00	1.00	1.03	1.00	1.00	1.05	1.00	1.00	1.04	1.00
Lanes:	1.00	1.92	0.08	1.00	1.79	0.21	1.00	1.24	0.76	1.00	1.55	0.45
Final Sat.:	1600	3180	120	1600	2959	341	1600	2085	1215	1600	2586	714
Capacity Analysis Module:												
Vol/Sat:	0.07	0.40	0.42	0.03	0.35	0.36	0.07	0.10	0.11	0.02	0.08	0.08
Crit Moves:			****	****			****				****	

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #5 Newhope St and McFadden Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.838
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	61	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Prot+Permit			Prot+Permit		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1	1 0	1 0	1	1 0	1 0	1	1 0	1 0	1	1 0
Volume Module:												
Base Vol:	202	1084	190	164	733	142	81	496	72	107	589	168
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	202	1084	190	164	733	142	81	496	72	107	589	168
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	202	1084	190	164	733	142	81	496	72	107	589	168
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	202	1084	190	164	733	142	81	496	72	107	589	168
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	202	1084	190	164	733	142	81	496	72	107	589	168
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.04	1.00	1.00	1.04	1.00	1.00	1.04	1.00	1.00	1.04	1.00
Lanes:	1.00	1.70	0.30	1.00	1.68	0.32	1.00	1.75	0.25	1.00	1.56	0.44
Final Sat.:	1600	2823	477	1600	2781	519	1600	2894	406	1600	2590	710
Capacity Analysis Module:												
Vol/Sat:	0.13	0.38	0.40	0.10	0.26	0.27	0.05	0.17	0.18	0.07	0.23	0.24
Crit Moves:			****	****			****					****

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Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #6 Harbor Blvd and SR-22 WB Off-Ramp / Banner Dr

Cycle (sec):	100	Critical Vol./Cap.(X):	0.703
Loss Time (sec):	5	Average Delay (sec/veh):	23.6
Optimal Cycle:	39	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 0	0	0 0	2 1	0	0 0	1! 0	0	1 1	0 0	1
Volume Module:												
Base Vol:	88	1992	0	0	1519	49	93	0	78	593	80	170
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	88	1992	0	0	1519	49	93	0	78	593	80	170
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	88	1992	0	0	1519	49	93	0	78	593	80	170
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	88	1992	0	0	1519	49	93	0	78	593	80	170
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	88	1992	0	0	1519	49	93	0	78	593	80	170
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.91	1.00	1.00	0.91	0.91	0.91	1.00	0.91	0.96	0.96	0.85
Lanes:	1.00	3.00	0.00	0.00	2.91	0.09	0.54	0.00	0.46	1.76	0.24	1.00
Final Sat.:	1805	5187	0	0	5000	161	944	0	792	3208	433	1615
Capacity Analysis Module:												
Vol/Sat:	0.05	0.38	0.00	0.00	0.30	0.30	0.10	0.00	0.10	0.18	0.18	0.11
Crit Moves:		****			****			****			****	
Green/Cycle:	0.08	0.55	0.00	0.00	0.47	0.47	0.14	0.00	0.14	0.26	0.26	0.26
Volume/Cap:	0.64	0.70	0.00	0.00	0.64	0.64	0.70	0.00	0.70	0.70	0.70	0.40
Delay/Veh:	55.1	17.5	0.0	0.0	20.7	20.7	49.9	0.0	49.9	35.7	35.7	31.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	55.1	17.5	0.0	0.0	20.7	20.7	49.9	0.0	49.9	35.7	35.7	31.0
LOS by Move:	E	B	A	A	C	C	D	A	D	D	D	C
HCM2k85thQ:	6	25	0	0	21	21	10	0	10	16	16	7

Note: Queue reported is the number of cars per lane.

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Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #7 Trask Avenue and SR-22 EB On-Ramp

Cycle (sec):	100	Critical Vol./Cap.(X):	0.448
Loss Time (sec):	5	Average Delay (sec/veh):	12.4
Optimal Cycle:	23	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	0 0	0	0 0	0 0	0	2 0	1 0	0	0 0	1 1	0
Volume Module:												
Base Vol:	0	0	0	0	0	0	838	628	0	0	606	57
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	838	628	0	0	606	57
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	0	0	0	838	628	0	0	606	57
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	0	0	0	838	628	0	0	606	57
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	0	0	0	838	628	0	0	606	57
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	0.92	1.00	1.00	1.00	0.94	0.94
Lanes:	0.00	0.00	0.00	0.00	0.00	0.00	2.00	1.00	0.00	0.00	1.83	0.17
Final Sat.:	0	0	0	0	0	0	3502	1900	0	0	3257	306
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.00	0.00	0.00	0.24	0.33	0.00	0.00	0.19	0.19
Crit Moves:							****				****	
Green/Cycle:	0.00	0.00	0.00	0.00	0.00	0.00	0.53	0.95	0.00	0.00	0.42	0.42
Volume/Cap:	0.00	0.00	0.00	0.00	0.00	0.00	0.45	0.35	0.00	0.00	0.45	0.45
Delay/Veh:	0.0	0.0	0.0	0.0	0.0	0.0	14.4	0.3	0.0	0.0	21.2	21.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	0.0	0.0	0.0	14.4	0.3	0.0	0.0	21.2	21.2
LOS by Move:	A	A	A	A	A	A	B	A	A	A	C	C
HCM2k85thQ:	0	0	0	0	0	0	12	3	0	0	12	12

Note: Queue reported is the number of cars per lane.

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #8 Harbor Blvd and Westminster Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.792
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	50	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 0	1	1 0	3 0	1	1 0	2 1	0	1 0	3 0	1
Volume Module:												
Base Vol:	276	1374	325	207	1430	165	187	667	32	230	797	181
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	276	1374	325	207	1430	165	187	667	32	230	797	181
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	276	1374	325	207	1430	165	187	667	32	230	797	181
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	276	1374	325	207	1430	165	187	667	32	230	797	181
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	276	1374	325	207	1430	165	187	667	32	230	797	181
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.04	1.00	1.00	1.06	1.00
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	1.00	2.86	0.14	1.00	3.00	1.00
Final Sat.:	1600	5100	1600	1600	5100	1600	1600	4780	220	1600	5100	1600
Capacity Analysis Module:												
Vol/Sat:	0.17	0.27	0.20	0.13	0.28	0.10	0.12	0.14	0.15	0.14	0.16	0.11
Crit Moves:	****			****					****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #9 Harbor Blvd and 1st St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.833
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	60	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 0	1	1 0	3 0	1	2 0	2 1	0	2 0	2 1	0
Volume Module:												
Base Vol:	287	1480	164	278	1218	164	188	766	145	230	1073	175
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	287	1480	164	278	1218	164	188	766	145	230	1073	175
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	287	1480	164	278	1218	164	188	766	145	230	1073	175
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	287	1480	164	278	1218	164	188	766	145	230	1073	175
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	287	1480	164	278	1218	164	188	766	145	230	1073	175
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.05	1.00	1.00	1.05	1.00
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	2.00	2.52	0.48	2.00	2.58	0.42
Final Sat.:	1600	5100	1600	1600	5100	1600	3200	4236	764	3200	4327	673
Capacity Analysis Module:												
Vol/Sat:	0.18	0.29	0.10	0.17	0.24	0.10	0.06	0.18	0.19	0.07	0.25	0.26
Crit Moves:		****			****			****				****

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #10 Harbor Blvd and McFadden Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.809
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	54	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	3 0	1	2 0	2 1	0	1 0	1 1	0	1 0	1 1	0
Volume Module:												
Base Vol:	167	1716	125	298	1273	115	214	520	65	211	506	146
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	167	1716	125	298	1273	115	214	520	65	211	506	146
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	167	1716	125	298	1273	115	214	520	65	211	506	146
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	167	1716	125	298	1273	115	214	520	65	211	506	146
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	167	1716	125	298	1273	115	214	520	65	211	506	146
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.05	1.00	1.00	1.04	1.00	1.00	1.04	1.00
Lanes:	2.00	3.00	1.00	2.00	2.75	0.25	1.00	1.78	0.22	1.00	1.55	0.45
Final Sat.:	3200	5100	1600	3200	4602	398	1600	2944	356	1600	2583	717
Capacity Analysis Module:												
Vol/Sat:	0.05	0.34	0.08	0.09	0.28	0.29	0.13	0.18	0.18	0.13	0.20	0.20
Crit Moves:		****			****			****			****	

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #11 Harbor Blvd and Edinger Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.697
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	37	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	3 0	1	2 0	3 0	1	2 0	2 1	0	2 0	3 0	1
Volume Module:												
Base Vol:	282	1773	214	283	822	75	134	564	100	140	813	271
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	282	1773	214	283	822	75	134	564	100	140	813	271
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	282	1773	214	283	822	75	134	564	100	140	813	271
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	282	1773	214	283	822	75	134	564	100	140	813	271
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	282	1773	214	283	822	75	134	564	100	140	813	271
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.05	1.00	1.00	1.06	1.00
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	2.55	0.45	2.00	3.00	1.00
Final Sat.:	3200	5100	1600	3200	5100	1600	3200	4277	723	3200	5100	1600
Capacity Analysis Module:												
Vol/Sat:	0.09	0.35	0.13	0.09	0.16	0.05	0.04	0.13	0.14	0.04	0.16	0.17
Crit Moves:		****			****			****				****

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #12 Harbor Blvd and Warner Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	1.581
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	180	Level Of Service:	F

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 1	0	2 0	3 0	1	2 0	3 0	1	2 0	3 0	1
Volume Module:												
Base Vol:	774	3713	279	274	1525	182	241	1707	390	260	2700	862
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	774	3713	279	274	1525	182	241	1707	390	260	2700	862
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	774	3713	279	274	1525	182	241	1707	390	260	2700	862
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	774	3713	279	274	1525	182	241	1707	390	260	2700	862
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	774	3713	279	274	1525	182	241	1707	390	260	2700	862
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.04	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	2.00	2.79	0.21	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3200	4665	335	3200	5100	1600	3200	5100	1600	3200	5100	1600
Capacity Analysis Module:												
Vol/Sat:	0.24	0.80	0.83	0.09	0.30	0.11	0.08	0.33	0.24	0.08	0.53	0.54
Crit Moves:		****	****				****					****

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #13 Harbor Blvd and Segerstrom Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.897
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	85	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Prot+Permit			Prot+Permit		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2	1 0	1 0	2	1 0	1 0	1	1 0	1 0	2	0 1
Volume Module:												
Base Vol:	299	1881	60	91	1027	91	111	552	181	99	1074	390
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	299	1881	60	91	1027	91	111	552	181	99	1074	390
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	299	1881	60	91	1027	91	111	552	181	99	1074	390
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	299	1881	60	91	1027	91	111	552	181	99	1074	390
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	299	1881	60	91	1027	91	111	552	181	99	1074	390
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.04	1.00	1.00	1.05	1.00	1.00	1.04	1.00	1.00	1.06	1.00
Lanes:	2.00	2.91	0.09	1.00	2.76	0.24	1.00	1.51	0.49	1.00	2.00	1.00
Final Sat.:	3200	4852	148	1600	4609	391	1600	2510	790	1600	3400	1600
Capacity Analysis Module:												
Vol/Sat:	0.09	0.39	0.40	0.06	0.22	0.23	0.07	0.22	0.23	0.06	0.32	0.24
Crit Moves:			****	****			****				****	

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #14 MacArthur Blvd and Hyland Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.917
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	98	Level Of Service:	E

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Prot+Permit			Prot+Permit		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	0 1	0	1 0	1 0	1	1 0	3 0	1	1 0	3 0	1
Volume Module:												
Base Vol:	1201	7	70	12	4	14	36	891	160	25	2350	12
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	1201	7	70	12	4	14	36	891	160	25	2350	12
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	1201	7	70	12	4	14	36	891	160	25	2350	12
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	1201	7	70	12	4	14	36	891	160	25	2350	12
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	1201	7	70	12	4	14	36	891	160	25	2350	12
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	2.00	0.09	0.91	1.00	1.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00
Final Sat.:	3200	145	1455	1600	1700	1600	1600	5100	1600	1600	5100	1600
Capacity Analysis Module:												
Vol/Sat:	0.38	0.05	0.05	0.01	0.00	0.01	0.02	0.17	0.10	0.02	0.46	0.01
Crit Moves:	****					****	****				****	

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #15 MacArthur Blvd and Harbor Blvd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.819
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	56	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	3 0	1	2 0	3 0	1	1 0	3 0	1	1 0	3 0	1
Volume Module:												
Base Vol:	588	1519	88	213	1073	176	140	489	181	87	1467	276
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	588	1519	88	213	1073	176	140	489	181	87	1467	276
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	588	1519	88	213	1073	176	140	489	181	87	1467	276
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	588	1519	88	213	1073	176	140	489	181	87	1467	276
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	588	1519	88	213	1073	176	140	489	181	87	1467	276
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00
Final Sat.:	3200	5100	1600	3200	5100	1600	1600	5100	1600	1600	5100	1600
Capacity Analysis Module:												
Vol/Sat:	0.18	0.30	0.06	0.07	0.21	0.11	0.09	0.10	0.11	0.05	0.29	0.17
Crit Moves:	****				****		****				****	

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #16 Harbor Blvd and Sunflower Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.780
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	48	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	3 0	1	2 0	3 0	1	1 0	1 1	0	1 1	0 1	0
Volume Module:												
Base Vol:	178	1771	263	112	1393	42	67	182	189	254	533	199
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	178	1771	263	112	1393	42	67	182	189	254	533	199
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	178	1771	263	112	1393	42	67	182	189	254	533	199
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	178	1771	263	112	1393	42	67	182	189	254	533	199
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	178	1771	263	112	1393	42	67	182	189	254	533	199
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.04	1.00
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	1.00	1.00	1.00	1.00	1.39	0.61
Final Sat.:	3200	5100	1600	3200	5100	1600	1600	1700	1600	1600	2322	974
Capacity Analysis Module:												
Vol/Sat:	0.06	0.35	0.16	0.04	0.27	0.03	0.04	0.11	0.12	0.16	0.23	0.20
Crit Moves:		****			****				****		****	

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Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #17 Harbor Blvd and I-405 WB Off-Ramp

Cycle (sec):	100	Critical Vol./Cap.(X):	0.812
Loss Time (sec):	5	Average Delay (sec/veh):	22.9
Optimal Cycle:	57	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	4	0 0	0 0	4	0 0	0 0	0	0 0	1 0	1! 0	1
Volume Module:												
Base Vol:	0	1529	0	0	2475	0	0	0	0	701	0	1132
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1529	0	0	2475	0	0	0	0	701	0	1132
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1529	0	0	2475	0	0	0	0	701	0	1132
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1529	0	0	2475	0	0	0	0	701	0	1132
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1529	0	0	2475	0	0	0	0	701	0	1132
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	0.89	1.00	0.89
Lanes:	0.00	4.00	0.00	0.00	4.00	0.00	0.00	0.00	0.00	1.38	0.00	1.62
Final Sat.:	0	6916	0	0	6916	0	0	0	0	2337	0	2735
Capacity Analysis Module:												
Vol/Sat:	0.00	0.22	0.00	0.00	0.36	0.00	0.00	0.00	0.00	0.30	0.00	0.41
Crit Moves:	****				****							****
Green/Cycle:	0.00	0.44	0.00	0.00	0.44	0.00	0.00	0.00	0.00	0.51	0.00	0.51
Volume/Cap:	0.00	0.50	0.00	0.00	0.81	0.00	0.00	0.00	0.00	0.59	0.00	0.81
Delay/Veh:	0.0	20.2	0.0	0.0	26.1	0.0	0.0	0.0	0.0	17.5	0.0	22.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	20.2	0.0	0.0	26.1	0.0	0.0	0.0	0.0	17.5	0.0	22.9
LOS by Move:	A	C	A	A	C	A	A	A	A	B	A	C
HCM2k85thQ:	0	14	0	0	29	0	0	0	0	17	0	29

Note: Queue reported is the number of cars per lane.

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Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #18 Harbor Blvd and I-405 EB Off-Ramp

Cycle (sec):	100	Critical Vol./Cap.(X):	0.630
Loss Time (sec):	5	Average Delay (sec/veh):	16.2
Optimal Cycle:	32	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Ignore			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0 3	0 1	0	0 4	0 0	1	0 1!	0 1	0	0 0	0 0
Volume Module:												
Base Vol:	0	1861	0	0	2147	0	157	0	722	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1861	0	0	2147	0	157	0	722	0	0	0
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1861	0	0	2147	0	157	0	722	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1861	0	0	2147	0	157	0	722	0	0	0
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1861	0	0	2147	0	157	0	722	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.91	1.00	1.00	0.91	1.00	0.87	1.00	0.87	1.00	1.00	1.00
Lanes:	0.00	3.00	1.00	0.00	4.00	0.00	1.18	0.00	1.82	0.00	0.00	0.00
Final Sat.:	0	5187	1900	0	6916	0	1946	0	3008	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.36	0.00	0.00	0.31	0.00	0.08	0.00	0.24	0.00	0.00	0.00
Crit Moves:		****		****					****			
Green/Cycle:	0.00	0.57	0.00	0.00	0.57	0.00	0.38	0.00	0.38	0.00	0.00	0.00
Volume/Cap:	0.00	0.63	0.00	0.00	0.55	0.00	0.21	0.00	0.63	0.00	0.00	0.00
Delay/Veh:	0.0	14.9	0.0	0.0	13.6	0.0	20.9	0.0	26.2	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	14.9	0.0	0.0	13.6	0.0	20.9	0.0	26.2	0.0	0.0	0.0
LOS by Move:	A	B	A	A	B	A	C	A	C	A	A	A
HCM2k85thQ:	0	21	0	0	17	0	4	0	16	0	0	0

Note: Queue reported is the number of cars per lane.

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #19 Fairview St and Civic Center Dr

Cycle (sec):	100	Critical Vol./Cap.(X):	0.662
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	34	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	WideBypass			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2	1 0	1 0	2	1 0	0 1	0	1 0	1 1	0	0 1
Volume Module:												
Base Vol:	5	1430	402	144	1338	0	2	5	4	438	0	162
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	5	1430	402	144	1338	0	2	5	4	438	0	162
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	5	1430	402	144	1338	0	2	5	4	438	0	162
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	5	1430	402	144	1338	0	2	5	4	438	0	162
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	5	1430	402	144	1338	0	2	5	4	438	0	162
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.04	1.00	1.00	1.00	1.00	1.00	1.06	1.00
Lanes:	1.00	2.34	0.66	1.00	3.00	0.00	0.36	0.91	0.73	2.00	0.00	1.00
Final Sat.:	1600	3947	1053	1600	5000	0	582	1455	1164	3200	0	1600
Capacity Analysis Module:												
Vol/Sat:	0.00	0.36	0.38	0.09	0.27	0.00	0.00	0.00	0.00	0.14	0.00	0.10
Crit Moves:			****	****				****		****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #20 Fairview St and 1st St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.883
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	78	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			WideBypass			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 0	1	1 0	2 1	0	1 0	2 1	0	1 0	2 1	0
Volume Module:												
Base Vol:	149	1094	99	203	1264	251	215	870	151	159	1204	186
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	149	1094	99	203	1264	251	215	870	151	159	1204	186
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	149	1094	99	203	1264	251	215	870	151	159	1204	186
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	149	1094	99	203	1264	251	215	870	151	159	1204	186
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	149	1094	99	203	1264	251	215	870	151	159	1204	186
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.05	1.00	1.00	1.05	1.00	1.00	1.05	1.00
Lanes:	1.00	3.00	1.00	1.00	2.50	0.50	1.00	2.56	0.44	1.00	2.60	0.40
Final Sat.:	1600	5100	1600	1600	4205	795	1600	4290	710	1600	4358	642
Capacity Analysis Module:												
Vol/Sat:	0.09	0.21	0.06	0.13	0.30	0.32	0.13	0.20	0.21	0.10	0.28	0.29
Crit Moves:	****					****	****					****

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #21 Fairview St and McFadden Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.798
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	52	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 0	1	1 0	3 0	1	1 0	1 1	0	1 0	1 1	0
Volume Module:												
Base Vol:	159	1462	127	155	1257	196	244	659	163	158	545	134
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	159	1462	127	155	1257	196	244	659	163	158	545	134
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	159	1462	127	155	1257	196	244	659	163	158	545	134
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	159	1462	127	155	1257	196	244	659	163	158	545	134
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	159	1462	127	155	1257	196	244	659	163	158	545	134
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.04	1.00	1.00	1.04	1.00
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	1.00	1.60	0.40	1.00	1.61	0.39
Final Sat.:	1600	5100	1600	1600	5100	1600	1600	2665	635	1600	2668	632
Capacity Analysis Module:												
Vol/Sat:	0.10	0.29	0.08	0.10	0.25	0.12	0.15	0.25	0.26	0.10	0.20	0.21
Crit Moves:		****			****			****				****

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #22 Fairview St and Edinger Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.811
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	54	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 1	0	2 0	2 1	0	2 0	2 1	0	2 0	2 1	0
Volume Module:												
Base Vol:	188	1793	110	198	616	151	230	703	188	373	789	173
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	188	1793	110	198	616	151	230	703	188	373	789	173
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	188	1793	110	198	616	151	230	703	188	373	789	173
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	188	1793	110	198	616	151	230	703	188	373	789	173
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	188	1793	110	198	616	151	230	703	188	373	789	173
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.04	1.00	1.00	1.05	1.00	1.00	1.05	1.00	1.00	1.05	1.00
Lanes:	2.00	2.83	0.17	2.00	2.41	0.59	2.00	2.37	0.63	2.00	2.46	0.54
Final Sat.:	3200	4723	277	3200	4055	945	3200	3987	1013	3200	4137	863
Capacity Analysis Module:												
Vol/Sat:	0.06	0.38	0.40	0.06	0.15	0.16	0.07	0.18	0.19	0.12	0.19	0.20
Crit Moves:			****	****					****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #23 Fairview St and Warner Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.845
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	63	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 1	0	2 0	2 1	0	2 0	2 1	0	2 0	2 1	0
Volume Module:												
Base Vol:	217	1728	161	188	951	96	197	955	148	188	1108	240
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	217	1728	161	188	951	96	197	955	148	188	1108	240
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	217	1728	161	188	951	96	197	955	148	188	1108	240
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	217	1728	161	188	951	96	197	955	148	188	1108	240
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	217	1728	161	188	951	96	197	955	148	188	1108	240
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.05	1.00	1.00	1.05	1.00	1.00	1.05	1.00
Lanes:	2.00	2.74	0.26	2.00	2.72	0.28	2.00	2.60	0.40	2.00	2.47	0.53
Final Sat.:	3200	4591	409	3200	4560	440	3200	4356	644	3200	4145	855
Capacity Analysis Module:												
Vol/Sat:	0.07	0.38	0.39	0.06	0.21	0.22	0.06	0.22	0.23	0.06	0.27	0.28
Crit Moves:			****	****			****					****

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #24 Fairview St and MacArthur Blvd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.826
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	58	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 1	0	2 0	3 0	1	2 0	3 0	1	2 0	3 0	1
Volume Module:												
Base Vol:	243	1672	91	171	955	88	280	731	246	179	1365	239
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	243	1672	91	171	955	88	280	731	246	179	1365	239
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	243	1672	91	171	955	88	280	731	246	179	1365	239
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	243	1672	91	171	955	88	280	731	246	179	1365	239
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	243	1672	91	171	955	88	280	731	246	179	1365	239
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.04	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	2.00	2.85	0.15	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3200	4752	248	3200	5100	1600	3200	5100	1600	3200	5100	1600
Capacity Analysis Module:												
Vol/Sat:	0.08	0.35	0.37	0.05	0.19	0.06	0.09	0.14	0.15	0.06	0.27	0.15
Crit Moves:			****	****			****				****	

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #25 Fairview Rd and Sunflower Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.708
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	38	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	3 0	1	2 0	2 1	0	2 0	1 1	0	2 0	2 0	1
Volume Module:												
Base Vol:	201	1806	393	144	1196	83	203	430	95	265	664	173
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	201	1806	393	144	1196	83	203	430	95	265	664	173
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	201	1806	393	144	1196	83	203	430	95	265	664	173
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	201	1806	393	144	1196	83	203	430	95	265	664	173
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	201	1806	393	144	1196	83	203	430	95	265	664	173
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.04	1.00	1.00	1.04	1.00	1.00	1.06	1.00
Lanes:	2.00	3.00	1.00	2.00	2.81	0.19	2.00	1.64	0.36	2.00	2.00	1.00
Final Sat.:	3200	5100	1600	3200	4689	311	3200	2721	579	3200	3400	1600
Capacity Analysis Module:												
Vol/Sat:	0.06	0.35	0.25	0.05	0.26	0.27	0.06	0.16	0.16	0.08	0.20	0.11
Crit Moves:		****			****			****			****	

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #26 Greenville St and Edinger Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.586
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	28	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	0	0 1	0 0	0	0 0	0 0	2	1 0	1 0	2	0 0
Volume Module:												
Base Vol:	327	0	218	0	0	0	0	982	200	95	1128	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	327	0	218	0	0	0	0	982	200	95	1128	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	327	0	218	0	0	0	0	982	200	95	1128	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	327	0	218	0	0	0	0	982	200	95	1128	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	327	0	218	0	0	0	0	982	200	95	1128	0
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.05	1.00	1.00	1.06	1.00
Lanes:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	2.49	0.51	1.00	2.00	0.00
Final Sat.:	1600	0	1600	0	0	0	0	4188	812	1600	3400	0
Capacity Analysis Module:												
Vol/Sat:	0.20	0.00	0.14	0.00	0.00	0.00	0.00	0.23	0.25	0.06	0.33	0.00
Crit Moves:	****						****				****	

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #27 Greenville St and Segerstrom Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.686
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	36	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			WideBypass			WideBypass		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1	1 0	1 0	1	0 1	1 0	1	1 0	1 0	1	1 0
Volume Module:												
Base Vol:	57	476	36	61	200	61	108	823	47	27	1037	148
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	57	476	36	61	200	61	108	823	47	27	1037	148
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	57	476	36	61	200	61	108	823	47	27	1037	148
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	57	476	36	61	200	61	108	823	47	27	1037	148
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	57	476	36	61	200	61	108	823	47	27	1037	148
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.03	1.00	1.00	1.06	1.00	1.00	1.03	1.00	1.00	1.04	1.00
Lanes:	1.00	1.86	0.14	1.00	1.00	1.00	1.00	1.89	0.11	1.00	1.75	0.25
Final Sat.:	1600	3075	225	1600	1700	1600	1600	3127	173	1600	2900	400
Capacity Analysis Module:												
Vol/Sat:	0.04	0.15	0.16	0.04	0.12	0.04	0.07	0.26	0.27	0.02	0.36	0.37
Crit Moves:			****	****			****					****

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

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Intersection #28 Raitt St and McFadden Ave

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Cycle (sec):	100	Critical Vol./Cap.(X):	0.722	
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx	
Optimal Cycle:	40	Level Of Service:	C	

****

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1	1 0	1 0	1	1 0	1 0	1	1 0	1 0	1	1 0
Volume Module:												
Base Vol:	58	835	130	45	474	76	126	747	65	88	742	102
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	58	835	130	45	474	76	126	747	65	88	742	102
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	58	835	130	45	474	76	126	747	65	88	742	102
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	58	835	130	45	474	76	126	747	65	88	742	102
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	58	835	130	45	474	76	126	747	65	88	742	102
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.04	1.00	1.00	1.04	1.00	1.00	1.03	1.00	1.00	1.04	1.00
Lanes:	1.00	1.73	0.27	1.00	1.72	0.28	1.00	1.84	0.16	1.00	1.76	0.24
Final Sat.:	1600	2869	431	1600	2858	442	1600	3044	256	1600	2913	387
Capacity Analysis Module:												
Vol/Sat:	0.04	0.29	0.30	0.03	0.17	0.17	0.08	0.25	0.25	0.06	0.25	0.26
Crit Moves:			****	****			****					****

****

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #29 Raitt St and Edinger Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.864
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	70	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			WideBypass			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1	1 0	1 0	1	1 0	1 0	1	1 0	1 0	1	1 0
Volume Module:												
Base Vol:	190	816	229	111	384	96	139	961	137	86	972	87
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	190	816	229	111	384	96	139	961	137	86	972	87
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	190	816	229	111	384	96	139	961	137	86	972	87
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	190	816	229	111	384	96	139	961	137	86	972	87
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	190	816	229	111	384	96	139	961	137	86	972	87
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.04	1.00	1.00	1.04	1.00	1.00	1.04	1.00	1.00	1.03	1.00
Lanes:	1.00	1.56	0.44	1.00	1.60	0.40	1.00	1.75	0.25	1.00	1.84	0.16
Final Sat.:	1600	2599	701	1600	2660	640	1600	2901	399	1600	3037	263
Capacity Analysis Module:												
Vol/Sat:	0.12	0.31	0.33	0.07	0.14	0.15	0.09	0.33	0.34	0.05	0.32	0.33
Crit Moves:		****	****				****					****

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #30 Bear St and MacArthur Blvd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.868
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	71	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 0	1	1 0	2 0	1	1 0	2 1	0	1 0	2 1	0
Volume Module:												
Base Vol:	200	962	251	112	271	82	97	910	94	93	1673	266
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	200	962	251	112	271	82	97	910	94	93	1673	266
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	200	962	251	112	271	82	97	910	94	93	1673	266
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	200	962	251	112	271	82	97	910	94	93	1673	266
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	200	962	251	112	271	82	97	910	94	93	1673	266
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.05	1.00	1.00	1.05	1.00
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	2.72	0.28	1.00	2.59	0.41
Final Sat.:	1600	3400	1600	1600	3400	1600	1600	4551	449	1600	4342	658
Capacity Analysis Module:												
Vol/Sat:	0.13	0.28	0.16	0.07	0.08	0.05	0.06	0.20	0.21	0.06	0.39	0.40
Crit Moves:		****			****			****				****

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #31 Bristol St and 17th St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.692
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	36	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	3 0	1	2 0	3 0	1	2 0	2 1	0	2 0	3 0	1
Volume Module:												
Base Vol:	236	1148	191	243	1293	220	336	750	136	284	1069	362
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	236	1148	191	243	1293	220	336	750	136	284	1069	362
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	236	1148	191	243	1293	220	336	750	136	284	1069	362
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	236	1148	191	243	1293	220	336	750	136	284	1069	362
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	236	1148	191	243	1293	220	336	750	136	284	1069	362
OvlAdjVol:												241
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.05	1.00	1.00	1.06	1.00
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	2.54	0.46	2.00	3.00	1.00
Final Sat.:	3200	5100	1600	3200	5100	1600	3200	4263	737	3200	5100	1600
Capacity Analysis Module:												
Vol/Sat:	0.07	0.23	0.12	0.08	0.25	0.14	0.11	0.18	0.18	0.09	0.21	0.23
OvlAdjV/S:												0.15
Crit Moves:	****			****			****			****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

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Intersection #32 Bristol St and Civic Center Dr

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Cycle (sec):	100	Critical Vol./Cap.(X):	0.832	
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx	
Optimal Cycle:	60	Level Of Service:	D	

****

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Prot+Permit			Prot+Permit		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2	1 0	1 0	2	1 0	1 0	1	1 0	1 0	1	1 0
Volume Module:												
Base Vol:	200	1399	73	136	1250	128	190	534	63	169	723	82
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	200	1399	73	136	1250	128	190	534	63	169	723	82
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	200	1399	73	136	1250	128	190	534	63	169	723	82
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	200	1399	73	136	1250	128	190	534	63	169	723	82
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	200	1399	73	136	1250	128	190	534	63	169	723	82
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.04	1.00	1.00	1.05	1.00	1.00	1.03	1.00	1.00	1.03	1.00
Lanes:	1.00	2.85	0.15	1.00	2.72	0.28	1.00	1.79	0.21	1.00	1.80	0.20
Final Sat.:	1600	4762	238	1600	4554	446	1600	2962	338	1600	2974	326
Capacity Analysis Module:												
Vol/Sat:	0.13	0.29	0.31	0.09	0.27	0.29	0.12	0.18	0.19	0.11	0.24	0.25
Crit Moves:	****					****	****					****

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #33 Bristol St and Santa Ana Blvd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.657
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	33	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Prot+Permit			Prot+Permit		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2	1 0	1 0	2	1 0	1 0	1	1 0	1 0	1	1 0
Volume Module:												
Base Vol:	75	1524	87	105	1402	53	59	163	38	233	371	100
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	75	1524	87	105	1402	53	59	163	38	233	371	100
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	75	1524	87	105	1402	53	59	163	38	233	371	100
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	75	1524	87	105	1402	53	59	163	38	233	371	100
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	75	1524	87	105	1402	53	59	163	38	233	371	100
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.04	1.00	1.00	1.04	1.00	1.00	1.04	1.00	1.00	1.04	1.00
Lanes:	1.00	2.84	0.16	1.00	2.89	0.11	1.00	1.62	0.38	1.00	1.58	0.42
Final Sat.:	1600	4741	259	1600	4825	175	1600	2695	605	1600	2621	679
Capacity Analysis Module:												
Vol/Sat:	0.05	0.32	0.34	0.07	0.29	0.30	0.04	0.06	0.06	0.15	0.14	0.15
Crit Moves:			****	****				****		****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #34 Bristol St and 1st St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.779
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	48	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	3 0	1	2 0	3 0	1	1 0	2 1	0	1 0	2 1	0
Volume Module:												
Base Vol:	286	1235	182	206	1115	252	189	1062	136	217	1330	126
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	286	1235	182	206	1115	252	189	1062	136	217	1330	126
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	286	1235	182	206	1115	252	189	1062	136	217	1330	126
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	286	1235	182	206	1115	252	189	1062	136	217	1330	126
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	286	1235	182	206	1115	252	189	1062	136	217	1330	126
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.05	1.00	1.00	1.05	1.00
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	1.00	2.66	0.34	1.00	2.74	0.26
Final Sat.:	3200	5100	1600	3200	5100	1600	1600	4455	545	1600	4585	415
Capacity Analysis Module:												
Vol/Sat:	0.09	0.24	0.11	0.06	0.22	0.16	0.12	0.24	0.25	0.14	0.29	0.30
Crit Moves:	****			****			****					****

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #35 Bristol St and McFadden Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.752
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	44	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Prot+Permit			Prot+Permit		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 0	1	1 0	3 0	1	1 0	1 1	0	1 0	1 1	0
Volume Module:												
Base Vol:	213	1566	85	84	1171	270	262	512	102	97	504	59
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	213	1566	85	84	1171	270	262	512	102	97	504	59
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	213	1566	85	84	1171	270	262	512	102	97	504	59
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	213	1566	85	84	1171	270	262	512	102	97	504	59
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	213	1566	85	84	1171	270	262	512	102	97	504	59
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.04	1.00	1.00	1.03	1.00
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	1.00	1.67	0.33	1.00	1.79	0.21
Final Sat.:	1600	5100	1600	1600	5100	1600	1600	2768	532	1600	2965	335
Capacity Analysis Module:												
Vol/Sat:	0.13	0.31	0.05	0.05	0.23	0.17	0.16	0.18	0.19	0.06	0.17	0.18
Crit Moves:	****				****		****					****

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #36 Bristol St and Warner Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.790
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	50	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 0	1	2 0	2 1	0	1 0	3 0	1	1 0	3 0	1
Volume Module:												
Base Vol:	309	1157	211	251	838	163	193	868	153	173	1021	299
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	309	1157	211	251	838	163	193	868	153	173	1021	299
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	309	1157	211	251	838	163	193	868	153	173	1021	299
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	309	1157	211	251	838	163	193	868	153	173	1021	299
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	309	1157	211	251	838	163	193	868	153	173	1021	299
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.05	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	2.00	2.00	1.00	2.00	2.51	0.49	1.00	3.00	1.00	1.00	3.00	1.00
Final Sat.:	3200	3400	1600	3200	4218	782	1600	5100	1600	1600	5100	1600
Capacity Analysis Module:												
Vol/Sat:	0.10	0.34	0.13	0.08	0.20	0.21	0.12	0.17	0.10	0.11	0.20	0.19
Crit Moves:		****			****			****			****	

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #37 Bristol St and Segerstrom Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.909
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	92	Level Of Service:	E

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	WideBypass			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2	1 0	1 0	2	1 0	1 0	1	1 0	1 0	1	1 0
Volume Module:												
Base Vol:	179	1322	233	92	843	176	200	716	57	119	1074	54
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	179	1322	233	92	843	176	200	716	57	119	1074	54
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	179	1322	233	92	843	176	200	716	57	119	1074	54
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	179	1322	233	92	843	176	200	716	57	119	1074	54
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	179	1322	233	92	843	176	200	716	57	119	1074	54
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.05	1.00	1.00	1.03	1.00	1.00	1.03	1.00
Lanes:	1.00	2.55	0.45	1.00	2.48	0.52	1.00	1.85	0.15	1.00	1.90	0.10
Final Sat.:	1600	4281	719	1600	4171	829	1600	3064	236	1600	3147	153
Capacity Analysis Module:												
Vol/Sat:	0.11	0.31	0.32	0.06	0.20	0.21	0.13	0.23	0.24	0.07	0.34	0.35
Crit Moves:			****	****			****					****

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #38 Bristol St and Alton Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.686
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	36	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	WideBypass			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 1	0	1 0	3 0	1	1 0	1 1	0	1 0	0 1	0
Volume Module:												
Base Vol:	43	1681	158	119	896	56	75	105	195	91	150	29
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	43	1681	158	119	896	56	75	105	195	91	150	29
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	43	1681	158	119	896	56	75	105	195	91	150	29
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	43	1681	158	119	896	56	75	105	195	91	150	29
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	43	1681	158	119	896	56	75	105	195	91	150	29
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.00	1.00
Lanes:	1.00	2.74	0.26	1.00	3.00	1.00	1.00	1.00	1.00	1.00	0.84	0.16
Final Sat.:	1600	4588	412	1600	5100	1600	1600	1700	1600	1600	1341	259
Capacity Analysis Module:												
Vol/Sat:	0.03	0.37	0.38	0.07	0.18	0.04	0.05	0.06	0.12	0.06	0.11	0.11
Crit Moves:			****	****					****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #39 Bristol St and MacArthur Blvd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.812
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	55	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	3 0	1	2 0	2 1	0	2 0	3 0	1	2 0	3 0	1
Volume Module:												
Base Vol:	335	1428	260	223	821	129	357	796	169	265	1536	290
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	335	1428	260	223	821	129	357	796	169	265	1536	290
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	335	1428	260	223	821	129	357	796	169	265	1536	290
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	335	1428	260	223	821	129	357	796	169	265	1536	290
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	335	1428	260	223	821	129	357	796	169	265	1536	290
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.05	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	2.00	3.00	1.00	2.00	2.59	0.41	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3200	5100	1600	3200	4348	652	3200	5100	1600	3200	5100	1600
Capacity Analysis Module:												
Vol/Sat:	0.10	0.28	0.16	0.07	0.19	0.20	0.11	0.16	0.11	0.08	0.30	0.18
Crit Moves:		****			****			****			****	

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #40 Bristol St and Sunflower Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.689
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	36	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 1	1	2 0	3 0	1	2 0	2 1	1	2 0	3 0	1
Volume Module:												
Base Vol:	645	1363	220	201	750	215	293	573	222	263	1012	322
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	645	1363	220	201	750	215	293	573	222	263	1012	322
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	645	1363	220	201	750	215	293	573	222	263	1012	322
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	645	1363	220	201	750	215	293	573	222	263	1012	322
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	645	1363	220	201	750	215	293	573	222	263	1012	322
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.04	1.00	1.00	1.06	1.00
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	2.88	1.12	2.00	3.00	1.00
Final Sat.:	3200	5100	1600	3200	5100	1600	3200	4813	1787	3200	5100	1600
Capacity Analysis Module:												
Vol/Sat:	0.20	0.27	0.14	0.06	0.15	0.13	0.09	0.12	0.12	0.08	0.20	0.20
Crit Moves:	****				****		****				****	

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Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #41 Bristol St and I-405 WB Ramps

Cycle (sec):	100	Critical Vol./Cap.(X):	0.829
Loss Time (sec):	5	Average Delay (sec/veh):	28.2
Optimal Cycle:	61	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Ignore			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0 4	0 1	0	0 4	1 0	0	0 0	0 2	1	1 1	0 2
Volume Module:												
Base Vol:	0	2094	183	0	2148	20	0	0	194	357	306	1184
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	2094	183	0	2148	20	0	0	194	357	306	1184
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	2094	0	0	2148	20	0	0	194	357	306	1184
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	2094	0	0	2148	20	0	0	194	357	306	1184
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	2094	0	0	2148	20	0	0	194	357	306	1184
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.91	1.00	1.00	0.91	0.91	1.00	1.00	0.75	0.93	0.93	0.75
Lanes:	0.00	4.00	1.00	0.00	4.95	0.05	0.00	0.00	2.00	1.62	1.38	2.00
Final Sat.:	0	6916	1900	0	8557	80	0	0	2842	2840	2434	2842
Capacity Analysis Module:												
Vol/Sat:	0.00	0.30	0.00	0.00	0.25	0.25	0.00	0.00	0.07	0.13	0.13	0.42
Crit Moves:		****		****					****			****
Green/Cycle:	0.00	0.37	0.00	0.00	0.37	0.37	0.00	0.00	0.08	0.50	0.50	0.50
Volume/Cap:	0.00	0.83	0.00	0.00	0.69	0.69	0.00	0.00	0.83	0.25	0.25	0.83
Delay/Veh:	0.0	31.3	0.0	0.0	27.5	27.5	0.0	0.0	66.4	14.2	14.2	25.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	31.3	0.0	0.0	27.5	27.5	0.0	0.0	66.4	14.2	14.2	25.4
LOS by Move:	A	C	A	A	C	C	A	A	E	B	B	C
HCM2k85thQ:	0	27	0	0	20	20	0	0	9	6	6	29

Note: Queue reported is the number of cars per lane.

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Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #42 Bristol St and I-405 EB Ramps

Cycle (sec):	100	Critical Vol./Cap.(X):	0.595
Loss Time (sec):	5	Average Delay (sec/veh):	18.4
Optimal Cycle:	30	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Ignore			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	4 0	0	0 0	2 1	1	3 0	0 0	1	0 0	0 0	0
Volume Module:												
Base Vol:	127	1555	0	0	1506	880	740	0	331	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	127	1555	0	0	1506	880	740	0	331	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	127	1555	0	0	1506	0	740	0	331	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	127	1555	0	0	1506	0	740	0	331	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	127	1555	0	0	1506	0	740	0	331	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.91	1.00	1.00	0.91	0.91	0.92	1.00	0.85	1.00	1.00	1.00
Lanes:	1.00	4.00	0.00	0.00	3.00	1.00	3.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	1805	6916	0	0	5187	1729	5253	0	1615	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.07	0.22	0.00	0.00	0.29	0.00	0.14	0.00	0.20	0.00	0.00	0.00
Crit Moves:	****				****				****			
Green/Cycle:	0.12	0.61	0.00	0.00	0.49	0.00	0.34	0.00	0.34	0.00	0.00	0.00
Volume/Cap:	0.60	0.37	0.00	0.00	0.60	0.00	0.41	0.00	0.60	0.00	0.00	0.00
Delay/Veh:	46.3	10.1	0.0	0.0	18.9	0.0	25.2	0.0	28.8	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	46.3	10.1	0.0	0.0	18.9	0.0	25.2	0.0	28.8	0.0	0.0	0.0
LOS by Move:	D	B	A	A	B	A	C	A	C	A	A	A
HCM2k85thQ:	7	10	0	0	19	0	9	0	14	0	0	0

Note: Queue reported is the number of cars per lane.

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #43 Flower St and Santa Ana Blvd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.571
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	27	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Prot+Permit			Prot+Permit			Prot+Permit			Prot+Permit		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 0	1	1 0	2 0	1	1 0	3 0	1	1 0	2 0	1
Volume Module:												
Base Vol:	124	754	62	104	530	48	134	386	63	146	510	151
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	124	754	62	104	530	48	134	386	63	146	510	151
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	124	754	62	104	530	48	134	386	63	146	510	151
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	124	754	62	104	530	48	134	386	63	146	510	151
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	124	754	62	104	530	48	134	386	63	146	510	151
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	3.00	1.00	1.00	2.00	1.00
Final Sat.:	1600	3400	1600	1600	3400	1600	1600	5100	1600	1600	3400	1600
Capacity Analysis Module:												
Vol/Sat:	0.08	0.22	0.04	0.07	0.16	0.03	0.08	0.08	0.04	0.09	0.15	0.09
Crit Moves:		****			****			****			****	

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #44 Flower St and 1st St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.752
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	44	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 0	1	1 0	1 1	0	1 0	2 1	0	1 0	2 1	0
Volume Module:												
Base Vol:	132	625	149	170	466	135	139	1217	101	210	1415	147
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	132	625	149	170	466	135	139	1217	101	210	1415	147
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	132	625	149	170	466	135	139	1217	101	210	1415	147
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	132	625	149	170	466	135	139	1217	101	210	1415	147
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	132	625	149	170	466	135	139	1217	101	210	1415	147
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.04	1.00	1.00	1.05	1.00	1.00	1.05	1.00
Lanes:	1.00	2.00	1.00	1.00	1.55	0.45	1.00	2.77	0.23	1.00	2.72	0.28
Final Sat.:	1600	3400	1600	1600	2581	719	1600	4632	368	1600	4548	452
Capacity Analysis Module:												
Vol/Sat:	0.08	0.18	0.09	0.11	0.18	0.19	0.09	0.26	0.27	0.13	0.31	0.33
Crit Moves:		****			****			****				****

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #45 Flower St and McFadden Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.920
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	100	Level Of Service:	E

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	0 1	0	1 0	0 1	0	1 0	0 1	0	1 0	0 1	0
Volume Module:												
Base Vol:	42	567	35	46	352	57	64	478	19	48	595	85
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	42	567	35	46	352	57	64	478	19	48	595	85
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	42	567	35	46	352	57	64	478	19	48	595	85
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	42	567	35	46	352	57	64	478	19	48	595	85
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	42	567	35	46	352	57	64	478	19	48	595	85
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.94	0.06	1.00	0.86	0.14	1.00	0.96	0.04	1.00	0.88	0.12
Final Sat.:	1600	1507	93	1600	1377	223	1600	1539	61	1600	1400	200
Capacity Analysis Module:												
Vol/Sat:	0.03	0.38	0.38	0.03	0.26	0.26	0.04	0.31	0.31	0.03	0.43	0.43
Crit Moves:		****			****			****			****	

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #46 Flower St and Segerstrom Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.897
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	85	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1	1 0	1 0	1	1 0	1 0	1	1 0	1 0	1	1 0
Volume Module:												
Base Vol:	120	843	80	66	369	106	158	786	83	75	1258	81
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	120	843	80	66	369	106	158	786	83	75	1258	81
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	120	843	80	66	369	106	158	786	83	75	1258	81
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	120	843	80	66	369	106	158	786	83	75	1258	81
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	120	843	80	66	369	106	158	786	83	75	1258	81
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.03	1.00	1.00	1.04	1.00	1.00	1.03	1.00	1.00	1.03	1.00
Lanes:	1.00	1.83	0.17	1.00	1.55	0.45	1.00	1.81	0.19	1.00	1.88	0.12
Final Sat.:	1600	3023	277	1600	2586	714	1600	2994	306	1600	3106	194
Capacity Analysis Module:												
Vol/Sat:	0.08	0.28	0.29	0.04	0.14	0.15	0.10	0.26	0.27	0.05	0.40	0.42
Crit Moves:			****	****			****					****

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #47 Flower St and MacArthur Blvd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.906
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	90	Level Of Service:	E

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1	1 0	1 0	1	1 0	1 0	2	1 0	1 0	2	1 0
Volume Module:												
Base Vol:	133	634	74	85	205	197	209	994	63	62	1989	177
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	133	634	74	85	205	197	209	994	63	62	1989	177
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	133	634	74	85	205	197	209	994	63	62	1989	177
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	133	634	74	85	205	197	209	994	63	62	1989	177
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	133	634	74	85	205	197	209	994	63	62	1989	177
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.03	1.00	1.00	1.06	1.00	1.00	1.04	1.00	1.00	1.05	1.00
Lanes:	1.00	1.79	0.21	1.00	1.02	0.98	1.00	2.82	0.18	1.00	2.75	0.25
Final Sat.:	1600	2966	334	1600	1732	1568	1600	4714	286	1600	4608	392
Capacity Analysis Module:												
Vol/Sat:	0.08	0.21	0.22	0.05	0.12	0.13	0.13	0.21	0.22	0.04	0.43	0.45
Crit Moves:			****	****			****					****

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #48 Main St and La Veta Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.628
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	31	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ovl			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	3 0	1	2 0	2 1	0	2 0	2 1	0	2 0	2 0	1
Volume Module:												
Base Vol:	307	938	439	145	911	235	296	422	189	257	513	206
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	307	938	439	145	911	235	296	422	189	257	513	206
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	307	938	439	145	911	235	296	422	189	257	513	206
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	307	938	439	145	911	235	296	422	189	257	513	206
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	307	938	439	145	911	235	296	422	189	257	513	206
OvlAdjVol:			310									134
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.05	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	2.00	3.00	1.00	2.00	2.38	0.62	2.00	2.07	0.93	2.00	2.00	1.00
Final Sat.:	3200	5100	1600	3200	4016	984	3200	3515	1485	3200	3400	1600
Capacity Analysis Module:												
Vol/Sat:	0.10	0.18	0.27	0.05	0.23	0.24	0.09	0.12	0.13	0.08	0.15	0.13
OvlAdjV/S:			0.19									0.08
Crit Moves:	****					****	****				****	

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #49 Main St and Mainplace Dr / Memory Ln

Cycle (sec):	100	Critical Vol./Cap.(X):	0.471
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	22	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2	1 0	2 0	2	1 0	2 0	2	1 0	2 0	2	0 1
Volume Module:												
Base Vol:	90	945	179	51	1055	139	293	325	87	185	151	73
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	90	945	179	51	1055	139	293	325	87	185	151	73
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	90	945	179	51	1055	139	293	325	87	185	151	73
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	90	945	179	51	1055	139	293	325	87	185	151	73
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	90	945	179	51	1055	139	293	325	87	185	151	73
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.05	1.00	1.00	1.05	1.00	1.00	1.06	1.00
Lanes:	2.00	2.52	0.48	2.00	2.65	0.35	2.00	2.37	0.63	2.00	2.00	1.00
Final Sat.:	3200	4236	764	3200	4441	559	3200	3986	1014	3200	3400	1600
Capacity Analysis Module:												
Vol/Sat:	0.03	0.22	0.23	0.02	0.24	0.25	0.09	0.08	0.09	0.06	0.04	0.05
Crit Moves:	****					****			****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #50 Main St and 17th St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.732
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	41	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 0	1	2 0	1 1	0	2 0	2 1	0	2 0	2 1	0
Volume Module:												
Base Vol:	197	1019	222	173	757	117	221	1237	73	178	1089	72
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	197	1019	222	173	757	117	221	1237	73	178	1089	72
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	197	1019	222	173	757	117	221	1237	73	178	1089	72
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	197	1019	222	173	757	117	221	1237	73	178	1089	72
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	197	1019	222	173	757	117	221	1237	73	178	1089	72
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.04	1.00	1.00	1.04	1.00	1.00	1.04	1.00
Lanes:	2.00	2.00	1.00	2.00	1.73	0.27	2.00	2.83	0.17	2.00	2.81	0.19
Final Sat.:	3200	3400	1600	3200	2872	428	3200	4733	267	3200	4702	298
Capacity Analysis Module:												
Vol/Sat:	0.06	0.30	0.14	0.05	0.26	0.27	0.07	0.26	0.27	0.06	0.23	0.24
Crit Moves:		****		****					****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #51 Main St and Civic Center Dr

Cycle (sec):	100	Critical Vol./Cap.(X):	0.801
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	52	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1	1 0	1 0	1	1 0	1 0	1	1 0	1 0	1	1 0
Volume Module:												
Base Vol:	89	1126	94	61	995	63	159	881	105	38	384	39
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	89	1126	94	61	995	63	159	881	105	38	384	39
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	89	1126	94	61	995	63	159	881	105	38	384	39
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	89	1126	94	61	995	63	159	881	105	38	384	39
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	89	1126	94	61	995	63	159	881	105	38	384	39
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.03	1.00	1.00	1.03	1.00	1.00	1.03	1.00	1.00	1.03	1.00
Lanes:	1.00	1.85	0.15	1.00	1.88	0.12	1.00	1.79	0.21	1.00	1.82	0.18
Final Sat.:	1600	3053	247	1600	3109	191	1600	2959	341	1600	3005	295
Capacity Analysis Module:												
Vol/Sat:	0.06	0.37	0.38	0.04	0.32	0.33	0.10	0.30	0.31	0.02	0.13	0.13
Crit Moves:			****	****					****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #52 Main St and Santa Ana Blvd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.607
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	29	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 0	0	0 0	1 1	0	0 0	0 0	0	0 1	1 1	0
Volume Module:												
Base Vol:	54	1229	0	0	1083	53	0	0	0	65	656	85
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	54	1229	0	0	1083	53	0	0	0	65	656	85
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	54	1229	0	0	1083	53	0	0	0	65	656	85
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	54	1229	0	0	1083	53	0	0	0	65	656	85
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	54	1229	0	0	1083	53	0	0	0	65	656	85
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.03	1.00	1.00	1.06	1.00	1.00	1.03	1.00
Lanes:	1.00	2.00	0.00	0.00	1.91	0.09	0.00	0.00	0.00	0.24	2.44	0.32
Final Sat.:	1600	3400	0	0	3151	149	0	0	0	387	4007	506
Capacity Analysis Module:												
Vol/Sat:	0.03	0.36	0.00	0.00	0.34	0.36	0.00	0.00	0.00	0.04	0.16	0.17
Crit Moves:	****					****						****

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #53 Main St and 4th St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.537
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	25	Level Of Service:	A

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Permitted				Permitted				Permitted				Permitted			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Y+R:	4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	
Lanes:	0	0 1	1	0	0	0 1	1	0	0	0 0	1	0	0	0 0	1	0
Volume Module:																
Base Vol:	0	1055	50		0	1037	47		0	98	55		0	181	46	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	1055	50		0	1037	47		0	98	55		0	181	46	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	1055	50		0	1037	47		0	98	55		0	181	46	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	1055	50		0	1037	47		0	98	55		0	181	46	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	0	1055	50		0	1037	47		0	98	55		0	181	46	
Saturation Flow Module:																
Sat/Lane:	1600	1600	1600		1600	1600	1600		1600	1600	1600		1600	1600	1600	
Adjustment:	1.00	1.03	1.00		1.00	1.03	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Lanes:	0.00	1.91	0.09		0.00	1.91	0.09		0.00	0.64	0.36		0.00	0.80	0.20	
Final Sat.:	0	3155	145		0	3161	139		0	1025	575		0	1276	324	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.33	0.35		0.00	0.33	0.34		0.00	0.10	0.10		0.00	0.14	0.14	
Crit Moves:		****	****						****					****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #54 Main St and 1st St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.799
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	52	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1	1 0	1 0	2	0 1	1 0	2	1 0	1 0	2	1 0
Volume Module:												
Base Vol:	169	826	72	175	671	143	120	1214	90	114	1275	89
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	169	826	72	175	671	143	120	1214	90	114	1275	89
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	169	826	72	175	671	143	120	1214	90	114	1275	89
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	169	826	72	175	671	143	120	1214	90	114	1275	89
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	169	826	72	175	671	143	120	1214	90	114	1275	89
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.03	1.00	1.00	1.06	1.00	1.00	1.04	1.00	1.00	1.04	1.00
Lanes:	1.00	1.84	0.16	1.00	2.00	1.00	1.00	2.79	0.21	1.00	2.80	0.20
Final Sat.:	1600	3043	257	1600	3400	1600	1600	4669	331	1600	4687	313
Capacity Analysis Module:												
Vol/Sat:	0.11	0.27	0.28	0.11	0.20	0.09	0.08	0.26	0.27	0.07	0.27	0.28
Crit Moves:		****	****				****					****

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #55 Main St and McFadden Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.845
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	64	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Prot+Permit			Prot+Permit			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1	1 0	1 0	1	1 0	1 0	0 1	0	1 0	1 0	1
Volume Module:												
Base Vol:	146	1147	71	134	908	66	78	345	42	85	480	216
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	146	1147	71	134	908	66	78	345	42	85	480	216
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	146	1147	71	134	908	66	78	345	42	85	480	216
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	146	1147	71	134	908	66	78	345	42	85	480	216
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	146	1147	71	134	908	66	78	345	42	85	480	216
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.03	1.00	1.00	1.03	1.00	1.00	1.00	1.00	1.00	1.06	1.00
Lanes:	1.00	1.88	0.12	1.00	1.86	0.14	1.00	0.89	0.11	1.00	1.00	1.00
Final Sat.:	1600	3113	187	1600	3083	217	1600	1426	174	1600	1700	1600
Capacity Analysis Module:												
Vol/Sat:	0.09	0.37	0.38	0.08	0.29	0.30	0.05	0.24	0.24	0.05	0.28	0.14
Crit Moves:			****	****			****				****	

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #56 Main St and Edinger Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.847
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	64	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1	1 0	1 0	1	1 0	1 0	2	0 1	1 0	2	1 0
Volume Module:												
Base Vol:	99	1050	48	122	609	83	127	752	84	97	1296	134
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	99	1050	48	122	609	83	127	752	84	97	1296	134
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	99	1050	48	122	609	83	127	752	84	97	1296	134
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	99	1050	48	122	609	83	127	752	84	97	1296	134
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	99	1050	48	122	609	83	127	752	84	97	1296	134
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.03	1.00	1.00	1.04	1.00	1.00	1.06	1.00	1.00	1.05	1.00
Lanes:	1.00	1.91	0.09	1.00	1.76	0.24	1.00	2.00	1.00	1.00	2.72	0.28
Final Sat.:	1600	3160	140	1600	2916	384	1600	3400	1600	1600	4550	450
Capacity Analysis Module:												
Vol/Sat:	0.06	0.33	0.34	0.08	0.21	0.22	0.08	0.22	0.05	0.06	0.28	0.30
Crit Moves:			****	****			****					****

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #57 Main St and MacArthur Blvd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.777
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	48	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	3 0	1	2 0	3 0	1	2 0	3 0	1	2 0	3 0	1
Volume Module:												
Base Vol:	488	1169	321	283	368	278	298	613	59	198	1570	456
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	488	1169	321	283	368	278	298	613	59	198	1570	456
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	488	1169	321	283	368	278	298	613	59	198	1570	456
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	488	1169	321	283	368	278	298	613	59	198	1570	456
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	488	1169	321	283	368	278	298	613	59	198	1570	456
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3200	5100	1600	3200	5100	1600	3200	5100	1600	3200	5100	1600
Capacity Analysis Module:												
Vol/Sat:	0.15	0.23	0.20	0.09	0.07	0.17	0.09	0.12	0.04	0.06	0.31	0.28
Crit Moves:	****					****	****				****	

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Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #58 Penn Wy and 17th St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.770
Loss Time (sec):	5	Average Delay (sec/veh):	20.7
Optimal Cycle:	48	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	0	0 2	0	0	0 0 0	0	0	2 1 0	1	0	3 0 0
Volume Module:												
Base Vol:	848	0	414	0	0	0	0	1590	513	123	1440	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	848	0	414	0	0	0	0	1590	513	123	1440	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	848	0	414	0	0	0	0	1590	513	123	1440	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	848	0	414	0	0	0	0	1590	513	123	1440	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	848	0	414	0	0	0	0	1590	513	123	1440	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.75	1.00	1.00	1.00	1.00	0.88	0.88	0.95	0.91	1.00
Lanes:	2.00	0.00	2.00	0.00	0.00	0.00	0.00	2.27	0.73	1.00	3.00	0.00
Final Sat.:	3502	0	2842	0	0	0	0	3777	1218	1805	5187	0
Capacity Analysis Module:												
Vol/Sat:	0.24	0.00	0.15	0.00	0.00	0.00	0.00	0.42	0.42	0.07	0.28	0.00
Crit Moves:	****							****		****		
Green/Cycle:	0.31	0.00	0.31	0.00	0.00	0.00	0.00	0.55	0.55	0.09	0.64	0.00
Volume/Cap:	0.77	0.00	0.46	0.00	0.00	0.00	0.00	0.77	0.77	0.77	0.44	0.00
Delay/Veh:	34.4	0.0	27.9	0.0	0.0	0.0	0.0	19.1	19.1	64.7	9.3	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	34.4	0.0	27.9	0.0	0.0	0.0	0.0	19.1	19.1	64.7	9.3	0.0
LOS by Move:	C	A	C	A	A	A	A	B	B	E	A	A
HCM2k85thQ:	21	0	9	0	0	0	0	29	29	9	12	0

Note: Queue reported is the number of cars per lane.

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Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #59 I-5 NB Off Ramps/17th Street

Cycle (sec):	100	Critical Vol./Cap.(X):	0.589
Loss Time (sec):	5	Average Delay (sec/veh):	19.5
Optimal Cycle:	30	Level Of Service:	B

Street Name:	I-5 NB Off Ramps						17th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Permitted		
Rights:	Include			Include			Ignore			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 1	0	0 1	1	0 0	0 1	1	0 3	0 1	0	0 2	1 0
Volume Module:												
Base Vol:	345	46	18	51	0	133	120	1099	722	0	1525	41
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	345	46	18	51	0	133	120	1099	722	0	1525	41
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Volume:	345	46	18	51	0	133	120	1099	0	0	1525	41
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	345	46	18	51	0	133	120	1099	0	0	1525	41
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
FinalVolume:	345	46	18	51	0	133	120	1099	0	0	1525	41
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.96	0.96	0.85	0.95	1.00	0.85	0.95	0.91	1.00	1.00	0.91	0.91
Lanes:	1.76	0.24	1.00	1.00	0.00	1.00	1.00	3.00	1.00	0.00	2.92	0.08
Final Sat.:	3212	428	1615	1805	0	1615	1805	5187	1900	0	5031	135
Capacity Analysis Module:												
Vol/Sat:	0.11	0.11	0.01	0.03	0.00	0.08	0.07	0.21	0.00	0.00	0.30	0.30
Crit Moves:		****				****	****				****	
Green/Cycle:	0.18	0.18	0.18	0.14	0.00	0.14	0.11	0.63	0.00	0.00	0.51	0.51
Volume/Cap:	0.59	0.59	0.06	0.20	0.00	0.59	0.59	0.34	0.00	0.00	0.59	0.59
Delay/Veh:	38.8	38.8	33.9	38.5	0.0	44.3	46.6	8.9	0.0	0.0	17.2	17.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	38.8	38.8	33.9	38.5	0.0	44.3	46.6	8.9	0.0	0.0	17.2	17.2
LOS by Move:	D	D	C	D	A	D	D	A	A	A	B	B
HCM2k85thQ:	10	10	1	2	0	7	7	9	0	0	19	19

Note: Queue reported is the number of cars per lane.

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Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #60 Penn Wy and I-5 SB Ramps

Cycle (sec):	100	Critical Vol./Cap.(X):	0.423
Loss Time (sec):	5	Average Delay (sec/veh):	22.0
Optimal Cycle:	22	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	2	0 1	2 0	2	0 0	0 0	0	0 0	1 0	0	0 2
Volume Module:												
Base Vol:	0	363	238	550	127	0	0	0	0	175	0	150
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	363	238	550	127	0	0	0	0	175	0	150
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	363	238	550	127	0	0	0	0	175	0	150
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	363	238	550	127	0	0	0	0	175	0	150
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	363	238	550	127	0	0	0	0	175	0	150
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.95	0.85	0.92	0.95	1.00	1.00	1.00	1.00	0.95	1.00	0.75
Lanes:	0.00	2.00	1.00	2.00	2.00	0.00	0.00	0.00	0.00	1.00	0.00	2.00
Final Sat.:	0	3610	1615	3502	3610	0	0	0	0	1805	0	2842
Capacity Analysis Module:												
Vol/Sat:	0.00	0.10	0.15	0.16	0.04	0.00	0.00	0.00	0.00	0.10	0.00	0.05
Crit Moves:			****	****						****		
Green/Cycle:	0.00	0.35	0.35	0.37	0.72	0.00	0.00	0.00	0.00	0.23	0.00	0.60
Volume/Cap:	0.00	0.29	0.42	0.42	0.05	0.00	0.00	0.00	0.00	0.42	0.00	0.09
Delay/Veh:	0.0	23.7	25.4	23.6	4.1	0.0	0.0	0.0	0.0	33.6	0.0	8.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	23.7	25.4	23.6	4.1	0.0	0.0	0.0	0.0	33.6	0.0	8.4
LOS by Move:	A	C	C	C	A	A	A	A	A	C	A	A
HCM2k85thQ:	0	7	9	10	1	0	0	0	0	8	0	2

Note: Queue reported is the number of cars per lane.

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Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Base Volume Alternative)

Intersection #61 Santiago St and Civic Center Dr

Cycle (sec):	100	Critical Vol./Cap.(X):	0.674
Loss Time (sec):	5	Average Delay (sec/veh):	17.1
Optimal Cycle:	0	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	0 1	0	1 0	0 1	0	0 1	0 0	1	0 0	1! 0	0
Volume Module:												
Base Vol:	97	299	30	13	187	48	266	76	269	14	19	18
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	97	299	30	13	187	48	266	76	269	14	19	18
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	97	299	30	13	187	48	266	76	269	14	19	18
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	97	299	30	13	187	48	266	76	269	14	19	18
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	97	299	30	13	187	48	266	76	269	14	19	18
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.91	0.09	1.00	0.80	0.20	0.78	0.22	1.00	0.27	0.38	0.35
Final Sat.:	481	478	48	458	401	103	395	113	597	122	166	157
Capacity Analysis Module:												
Vol/Sat:	0.20	0.63	0.63	0.03	0.47	0.47	0.67	0.67	0.45	0.11	0.11	0.11
Crit Moves:		****				****		****			****	
Delay/Veh:	11.7	19.4	19.4	10.4	15.1	15.1	22.2	22.2	13.1	11.2	11.2	11.2
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	11.7	19.4	19.4	10.4	15.1	15.1	22.2	22.2	13.1	11.2	11.2	11.2
LOS by Move:	B	C	C	B	C	C	C	C	B	B	B	B
ApproachDel:		17.6			14.8			18.2			11.2	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		17.6			14.8			18.2			11.2	
LOS by Appr:		C			B			C			B	
AllWayAvgQ:	0.2	1.5	1.5	0.0	0.8	0.8	1.8	1.8	0.7	0.1	0.1	0.1

Note: Queue reported is the number of cars per lane.

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #62 Santiago St and Santa Ana Blvd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.569
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	27	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1 0	1	1 0	1 0	1	1 0	1 1	0	1 0	2 0	1
Volume Module:												
Base Vol:	36	133	84	297	120	61	71	649	20	73	492	187
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	36	133	84	297	120	61	71	649	20	73	492	187
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	36	133	84	297	120	61	71	649	20	73	492	187
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	36	133	84	297	120	61	71	649	20	73	492	187
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	36	133	84	297	120	61	71	649	20	73	492	187
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.03	1.00	1.00	1.06	1.00
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.94	0.06	1.00	2.00	1.00
Final Sat.:	1600	1700	1600	1600	1700	1600	1600	3204	96	1600	3400	1600
Capacity Analysis Module:												
Vol/Sat:	0.02	0.08	0.05	0.19	0.07	0.04	0.04	0.20	0.21	0.05	0.14	0.12
Crit Moves:		****		****					****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #64 Standard Ave and 1st St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.842
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	62	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	0 1	0	0 0	1! 0	0	1 0	1 1	0	1 0	1 1	0
Volume Module:												
Base Vol:	185	367	119	19	189	23	177	1218	129	91	1148	21
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	185	367	119	19	189	23	177	1218	129	91	1148	21
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	185	367	119	19	189	23	177	1218	129	91	1148	21
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	185	367	119	19	189	23	177	1218	129	91	1148	21
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	185	367	119	19	189	23	177	1218	129	91	1148	21
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.03	1.00	1.00	1.03	1.00
Lanes:	1.00	0.76	0.24	0.08	0.82	0.10	1.00	1.81	0.19	1.00	1.96	0.04
Final Sat.:	1600	1208	392	132	1309	159	1600	2994	306	1600	3243	57
Capacity Analysis Module:												
Vol/Sat:	0.12	0.30	0.30	0.01	0.14	0.14	0.11	0.41	0.42	0.06	0.35	0.37
Crit Moves:		****			****			****				****

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #65 Standard Ave and Mcfadden Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.682
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	35	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1	1 0	1 0	1	1 0	1 0	1	1 0	1 0	1	1 0
Volume Module:												
Base Vol:	169	667	82	137	300	52	53	351	60	117	712	206
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	169	667	82	137	300	52	53	351	60	117	712	206
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	169	667	82	137	300	52	53	351	60	117	712	206
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	169	667	82	137	300	52	53	351	60	117	712	206
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	169	667	82	137	300	52	53	351	60	117	712	206
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.04	1.00	1.00	1.04	1.00	1.00	1.04	1.00	1.00	1.04	1.00
Lanes:	1.00	1.78	0.22	1.00	1.70	0.30	1.00	1.71	0.29	1.00	1.55	0.45
Final Sat.:	1600	2950	350	1600	2827	473	1600	2833	467	1600	2582	718
Capacity Analysis Module:												
Vol/Sat:	0.11	0.23	0.23	0.09	0.11	0.11	0.03	0.12	0.13	0.07	0.28	0.29
Crit Moves:		****			****			****				****

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #66 Halladay St and Warner Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.677
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	35	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	0	0 1	0	0	0 0 0	0	1	0 1 0	0	1	1 0 0
Volume Module:												
Base Vol:	169	0	352	0	0	0	2	926	93	141	1121	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	169	0	352	0	0	0	2	926	93	141	1121	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	169	0	352	0	0	0	2	926	93	141	1121	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	169	0	352	0	0	0	2	926	93	141	1121	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	169	0	352	0	0	0	2	926	93	141	1121	0
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.00	1.00	1.00	1.04	1.00
Lanes:	1.00	0.00	1.00	0.00	0.00	0.00	0.01	1.81	0.18	0.22	1.78	0.00
Final Sat.:	1600	0	1600	0	0	0	6	2902	291	358	2942	0
Capacity Analysis Module:												
Vol/Sat:	0.11	0.00	0.22	0.00	0.00	0.00	0.00	0.32	0.32	0.09	0.38	0.00
Crit Moves:			****					****		****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #67 Halladay St and Dyer Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.784
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	49	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	0	1 0	1 0	0	1 0	1 0	2	1 0	1 0	2	1 0
Volume Module:												
Base Vol:	41	180	208	114	15	32	150	1298	9	45	1451	116
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	41	180	208	114	15	32	150	1298	9	45	1451	116
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	41	180	208	114	15	32	150	1298	9	45	1451	116
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	41	180	208	114	15	32	150	1298	9	45	1451	116
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	41	180	208	114	15	32	150	1298	9	45	1451	116
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.04	1.00	1.00	1.04	1.00
Lanes:	1.00	0.46	0.54	1.00	0.32	0.68	1.00	2.98	0.02	1.00	2.78	0.22
Final Sat.:	1600	742	858	1600	511	1089	1600	4967	33	1600	4645	355
Capacity Analysis Module:												
Vol/Sat:	0.03	0.24	0.24	0.07	0.03	0.03	0.09	0.26	0.27	0.03	0.31	0.33
Crit Moves:		****			****			****				****

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Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #68 SR-55 SB Ramps and MacArthur Blvd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.569
Loss Time (sec):	5	Average Delay (sec/veh):	17.3
Optimal Cycle:	28	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Ignore			Ignore		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0	0	2	0	0	0	2	0	0	2	1	1	0	0	3	0	1
Volume Module:												
Base Vol:	0	0	0	288	0	697	0	1167	1040	0	1532	602
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	288	0	697	0	1167	1040	0	1532	602
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Volume:	0	0	0	288	0	697	0	1167	0	0	1532	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	288	0	697	0	1167	0	0	1532	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
FinalVolume:	0	0	0	288	0	697	0	1167	0	0	1532	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	0.92	1.00	0.75	1.00	0.91	0.91	1.00	0.91	1.00
Lanes:	0.00	0.00	0.00	2.00	0.00	2.00	0.00	3.00	1.00	0.00	3.00	1.00
Final Sat.:	0	0	0	3502	0	2842	0	5187	1729	0	5187	1900
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.08	0.00	0.25	0.00	0.22	0.00	0.00	0.30	0.00
Crit Moves:						****	****				****	
Green/Cycle:	0.00	0.00	0.00	0.43	0.00	0.43	0.00	0.52	0.00	0.00	0.52	0.00
Volume/Cap:	0.00	0.00	0.00	0.19	0.00	0.57	0.00	0.43	0.00	0.00	0.57	0.00
Delay/Veh:	0.0	0.0	0.0	17.7	0.0	22.1	0.0	15.0	0.0	0.0	16.7	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	17.7	0.0	22.1	0.0	15.0	0.0	0.0	16.7	0.0
LOS by Move:	A	A	A	B	A	C	A	B	A	A	B	A
HCM2k85thQ:	0	0	0	4	0	15	0	12	0	0	18	0

Note: Queue reported is the number of cars per lane.

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Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #69 SR-55 NB Ramps and MacArthur Blvd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.497
Loss Time (sec):	5	Average Delay (sec/veh):	14.8
Optimal Cycle:	25	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Ignore			Include			Ignore			Ignore		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	0	0 1	0 0	0	0 0	0 0	2	0 2	0 0	3	0 1
Volume Module:												
Base Vol:	641	0	426	0	0	0	0	711	731	0	1501	1081
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	641	0	426	0	0	0	0	711	731	0	1501	1081
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Volume:	641	0	0	0	0	0	0	711	0	0	1501	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	641	0	0	0	0	0	0	711	0	0	1501	0
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
FinalVolume:	641	0	0	0	0	0	0	711	0	0	1501	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.88	1.00	0.91	1.00
Lanes:	2.00	0.00	1.00	0.00	0.00	0.00	0.00	2.00	2.00	0.00	3.00	1.00
Final Sat.:	3502	0	1900	0	0	0	0	3610	3344	0	5187	1900
Capacity Analysis Module:												
Vol/Sat:	0.18	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.00	0.00	0.29	0.00
Crit Moves:	****						****				****	
Green/Cycle:	0.37	0.00	0.00	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.58	0.00
Volume/Cap:	0.50	0.00	0.00	0.00	0.00	0.00	0.00	0.34	0.00	0.00	0.50	0.00
Delay/Veh:	24.7	0.0	0.0	0.0	0.0	0.0	0.0	11.0	0.0	0.0	12.4	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	24.7	0.0	0.0	0.0	0.0	0.0	0.0	11.0	0.0	0.0	12.4	0.0
LOS by Move:	C	A	A	A	A	A	A	B	A	A	B	A
HCM2k85thQ:	12	0	0	0	0	0	0	9	0	0	15	0

Note: Queue reported is the number of cars per lane.

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Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #70 SR-55 SB Ramps and Dyer Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.669
Loss Time (sec):	5	Average Delay (sec/veh):	25.7
Optimal Cycle:	36	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Ovl			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 1	0	0 2	0 1	1	0 1	1 0	3	0 1	2 0	3	0 1
Volume Module:												
Base Vol:	319	10	240	103	226	110	65	1523	207	556	991	64
Growth Adj:	1.00 1.00		1.00	1.00 1.00		1.00	1.00 1.00		1.00	1.00 1.00		1.00
Initial Bse:	319	10	240	103	226	110	65	1523	207	556	991	64
User Adj:	1.00 1.00		1.00	1.00 1.00		1.00	1.00 1.00		1.00	1.00 1.00		1.00
PHF Adj:	1.00 1.00		1.00	1.00 1.00		1.00	1.00 1.00		1.00	1.00 1.00		1.00
PHF Volume:	319	10	240	103	226	110	65	1523	207	556	991	64
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	319	10	240	103	226	110	65	1523	207	556	991	64
PCE Adj:	1.00 1.00		1.00	1.00 1.00		1.00	1.00 1.00		1.00	1.00 1.00		1.00
MLF Adj:	1.00 1.00		1.00	1.00 1.00		1.00	1.00 1.00		1.00	1.00 1.00		1.00
FinalVolume:	319	10	240	103	226	110	65	1523	207	556	991	64
Saturation Flow Module:												
Sat/Lane:	1900 1900		1900	1900 1900		1900	1900 1900		1900	1900 1900		1900
Adjustment:	0.95 0.95		0.75	0.94 0.94		0.85	0.95 0.91		0.85	0.92 0.91		0.85
Lanes:	1.94 0.06		2.00	0.63 1.37		1.00	1.00 3.00		1.00	2.00 3.00		1.00
Final Sat.:	3515	110	2842	1113 2443		1615	1805 5187		1615	3502 5187		1615
Capacity Analysis Module:												
Vol/Sat:	0.09 0.09		0.08	0.09 0.09		0.07	0.04 0.29		0.13	0.16 0.19		0.04
Crit Moves:	****			****			****			****		
Green/Cycle:	0.14 0.14		0.37	0.14 0.14		0.14	0.11 0.44		0.44	0.24 0.57		0.57
Volume/Cap:	0.67 0.67		0.23	0.67 0.67		0.49	0.34 0.67		0.29	0.67 0.34		0.07
Delay/Veh:	44.6 44.6		21.6	44.5 44.5		41.6	42.4 23.1		18.3	36.7 11.6		9.7
User DelAdj:	1.00 1.00		1.00	1.00 1.00		1.00	1.00 1.00		1.00	1.00 1.00		1.00
AdjDel/Veh:	44.6 44.6		21.6	44.5 44.5		41.6	42.4 23.1		18.3	36.7 11.6		9.7
LOS by Move:	D	D	C	D	D	D	D	C	B	D	B	A
HCM2k85thQ:	9	9	5	10	10	6	3	21	6	14	9	1

Note: Queue reported is the number of cars per lane.

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #71 Glassell St and La Veta Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.620
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	30	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ovl			Include			Ovl			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	1 0	1	1 0	1 1	0	1 0	1 0	1	1 0	1 1	0
Volume Module:												
Base Vol:	472	490	160	15	499	37	82	268	461	155	280	11
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	472	490	160	15	499	37	82	268	461	155	280	11
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	472	490	160	15	499	37	82	268	461	155	280	11
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	472	490	160	15	499	37	82	268	461	155	280	11
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	472	490	160	15	499	37	82	268	461	155	280	11
OvlAdjVol:			5						225			
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.03	1.00	1.00	1.06	1.00	1.00	1.03	1.00
Lanes:	2.00	1.00	1.00	1.00	1.86	0.14	1.00	1.00	1.00	1.00	1.92	0.08
Final Sat.:	3200	1700	1600	1600	3079	221	1600	1700	1600	1600	3179	121
Capacity Analysis Module:												
Vol/Sat:	0.15	0.29	0.10	0.01	0.16	0.17	0.05	0.16	0.29	0.10	0.09	0.09
OvlAdjV/S:			0.00						0.14			
Crit Moves:	****					****		****		****		

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Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #72 Glassell St and SR-22 WB Ramps

Cycle (sec):	100	Critical Vol./Cap.(X):	0.766
Loss Time (sec):	5	Average Delay (sec/veh):	24.8
Optimal Cycle:	48	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Permitted			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 0	0	0 0	2 0	1	0 0	0 0	0	1 0	1! 0	1
Volume Module:												
Base Vol:	557	910	0	0	878	255	0	0	0	201	7	357
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	557	910	0	0	878	255	0	0	0	201	7	357
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	557	910	0	0	878	255	0	0	0	201	7	357
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	557	910	0	0	878	255	0	0	0	201	7	357
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	557	910	0	0	878	255	0	0	0	201	7	357
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	1.00	1.00	0.95	0.85	1.00	1.00	1.00	0.86	0.86	0.86
Lanes:	1.00	2.00	0.00	0.00	2.00	1.00	0.00	0.00	0.00	1.35	0.02	1.63
Final Sat.:	1805	3610	0	0	3610	1615	0	0	0	2201	40	2645
Capacity Analysis Module:												
Vol/Sat:	0.31	0.25	0.00	0.00	0.24	0.16	0.00	0.00	0.00	0.09	0.18	0.13
Crit Moves:	****				****						****	
Green/Cycle:	0.40	0.72	0.00	0.00	0.32	0.32	0.00	0.00	0.00	0.23	0.23	0.23
Volume/Cap:	0.77	0.35	0.00	0.00	0.77	0.50	0.00	0.00	0.00	0.40	0.77	0.59
Delay/Veh:	30.7	5.3	0.0	0.0	33.9	28.4	0.0	0.0	0.0	32.9	40.8	35.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	30.7	5.3	0.0	0.0	33.9	28.4	0.0	0.0	0.0	32.9	40.8	35.3
LOS by Move:	C	A	A	A	C	C	A	A	A	C	D	D
HCM2k85thQ:	24	9	0	0	21	10	0	0	0	6	15	10

Note: Queue reported is the number of cars per lane.

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Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #73 Grand Ave / Glassell St and SR-22 EB Ramps

Cycle (sec):	100	Critical Vol./Cap.(X):	0.812
Loss Time (sec):	5	Average Delay (sec/veh):	26.5
Optimal Cycle:	57	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0 2	0 1	1	0 2	0 0	1	0 1!	0 1	0	0 0	0 0
Volume Module:												
Base Vol:	0	1202	307	381	681	0	229	4	503	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1202	307	381	681	0	229	4	503	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1202	307	381	681	0	229	4	503	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1202	307	381	681	0	229	4	503	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1202	307	381	681	0	229	4	503	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.95	0.85	0.95	0.95	1.00	0.86	0.86	0.86	1.00	1.00	1.00
Lanes:	0.00	2.00	1.00	1.00	2.00	0.00	1.31	0.01	1.68	0.00	0.00	0.00
Final Sat.:	0	3610	1615	1805	3610	0	2129	18	2731	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.33	0.19	0.21	0.19	0.00	0.11	0.23	0.18	0.00	0.00	0.00
Crit Moves:		****		****				****				
Green/Cycle:	0.00	0.41	0.41	0.26	0.67	0.00	0.28	0.28	0.28	0.00	0.00	0.00
Volume/Cap:	0.00	0.81	0.46	0.81	0.28	0.00	0.38	0.81	0.66	0.00	0.00	0.00
Delay/Veh:	0.0	29.6	22.0	45.1	6.8	0.0	29.2	39.2	33.2	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	29.6	22.0	45.1	6.8	0.0	29.2	39.2	33.2	0.0	0.0	0.0
LOS by Move:	A	C	C	D	A	A	C	D	C	A	A	A
HCM2k85thQ:	0	28	11	20	7	0	7	19	14	0	0	0

Note: Queue reported is the number of cars per lane.

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #74 Grand Ave and Fairhaven Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.675
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	35	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 1	0	1 0	2 0	1	1 0	1 1	0	1 0	1 0	1
Volume Module:												
Base Vol:	46	1214	243	222	894	82	79	45	33	255	48	181
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	46	1214	243	222	894	82	79	45	33	255	48	181
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	46	1214	243	222	894	82	79	45	33	255	48	181
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	46	1214	243	222	894	82	79	45	33	255	48	181
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	46	1214	243	222	894	82	79	45	33	255	48	181
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.06	1.00	1.00	1.05	1.00	1.00	1.06	1.00
Lanes:	1.00	2.50	0.50	1.00	2.00	1.00	1.00	1.15	0.85	1.00	1.00	1.00
Final Sat.:	1600	4199	801	1600	3400	1600	1600	1946	1354	1600	1700	1600
Capacity Analysis Module:												
Vol/Sat:	0.03	0.29	0.30	0.14	0.26	0.05	0.05	0.02	0.02	0.16	0.03	0.11
Crit Moves:			****	****				****		****		

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #75 Grand Ave and Santa Clara Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.748
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	43	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			WideBypass			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2	1 0	1 0	1	1 0	1 0	0	1 0	1 0	1 0	1
Volume Module:												
Base Vol:	88	1185	246	220	868	220	159	194	36	136	244	260
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	88	1185	246	220	868	220	159	194	36	136	244	260
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	88	1185	246	220	868	220	159	194	36	136	244	260
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	88	1185	246	220	868	220	159	194	36	136	244	260
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	88	1185	246	220	868	220	159	194	36	136	244	260
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.04	1.00	1.00	1.00	1.00	1.00	1.06	1.00
Lanes:	1.00	2.48	0.52	1.00	1.60	0.40	1.00	0.84	0.16	1.00	1.00	1.00
Final Sat.:	1600	4175	825	1600	2653	647	1600	1350	250	1600	1700	1600
Capacity Analysis Module:												
Vol/Sat:	0.06	0.28	0.30	0.14	0.33	0.34	0.10	0.14	0.14	0.09	0.14	0.16
Crit Moves:			****	****			****					****

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #76 Grand Ave and 17th St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.828
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	59	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 1	0	1 0	2 0	1	2 0	2 1	0	2 0	2 1	0
Volume Module:												
Base Vol:	246	877	221	270	582	128	346	886	149	300	1107	201
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	246	877	221	270	582	128	346	886	149	300	1107	201
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	246	877	221	270	582	128	346	886	149	300	1107	201
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	246	877	221	270	582	128	346	886	149	300	1107	201
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	246	877	221	270	582	128	346	886	149	300	1107	201
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.06	1.00	1.00	1.05	1.00	1.00	1.05	1.00
Lanes:	1.00	2.40	0.60	1.00	2.00	1.00	2.00	2.57	0.43	2.00	2.54	0.46
Final Sat.:	1600	4034	966	1600	3400	1600	3200	4309	691	3200	4262	738
Capacity Analysis Module:												
Vol/Sat:	0.15	0.22	0.23	0.17	0.17	0.08	0.11	0.21	0.22	0.09	0.26	0.27
Crit Moves:		****	****				****					****

Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #77 Grand Ave and I-5 NB Ramps

Cycle (sec):	100	Critical Vol./Cap.(X):	0.518
Loss Time (sec):	5	Average Delay (sec/veh):	10.0
Optimal Cycle:	26	Level Of Service:	A

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Split Phase				Split Phase			
Rights:	Ignore				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Y+R:	4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	
Lanes:	0	0 2	0	1	1	0 3	0	0	0	0 0	0	0	2	0 0	0	1
Volume Module:																
Base Vol:	0	1297	1001		48	1164	0		0	0	0		143	0	172	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	1297	1001		48	1164	0		0	0	0		143	0	172	
User Adj:	1.00	1.00	0.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	0.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	1297	0		48	1164	0		0	0	0		143	0	172	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	1297	0		48	1164	0		0	0	0		143	0	172	
PCE Adj:	1.00	1.00	0.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	0.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	0	1297	0		48	1164	0		0	0	0		143	0	172	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	0.95	1.00		0.95	0.91	1.00		1.00	1.00	1.00		0.92	1.00	0.85	
Lanes:	0.00	2.00	1.00		1.00	3.00	0.00		0.00	0.00	0.00		2.00	0.00	1.00	
Final Sat.:	0	3610	1900		1805	5187	0		0	0	0		3502	0	1615	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.36	0.00		0.03	0.22	0.00		0.00	0.00	0.00		0.04	0.00	0.11	
Crit Moves:		****				****									****	
Green/Cycle:	0.00	0.69	0.00		0.05	0.74	0.00		0.00	0.00	0.00		0.21	0.00	0.21	
Volume/Cap:	0.00	0.52	0.00		0.52	0.30	0.00		0.00	0.00	0.00		0.20	0.00	0.52	
Delay/Veh:	0.0	7.5	0.0		51.3	4.3	0.0		0.0	0.0	0.0		33.0	0.0	36.8	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	7.5	0.0		51.3	4.3	0.0		0.0	0.0	0.0		33.0	0.0	36.8	
LOS by Move:	A	A	A		D	A	A		A	A	A		C	A	D	
HCM2k85thQ:	0	15	0		4	7	0		0	0	0		3	0	8	

Note: Queue reported is the number of cars per lane.

Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #78 Grand Ave and Santa Ana Blvd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.605
Loss Time (sec):	5	Average Delay (sec/veh):	21.1
Optimal Cycle:	31	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Ovl			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 1	0	1 0	2 0	2	2 0	1 0	2	0 1	0 1	0
Volume Module:												
Base Vol:	167	1888	31	34	750	532	328	200	316	20	134	97
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	167	1888	31	34	750	532	328	200	316	20	134	97
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	167	1888	31	34	750	532	328	200	316	20	134	97
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	167	1888	31	34	750	532	328	200	316	20	134	97
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	167	1888	31	34	750	532	328	200	316	20	134	97
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.91	0.91	0.95	0.95	0.75	0.92	1.00	0.75	0.89	0.89	0.89
Lanes:	1.00	2.95	0.05	1.00	2.00	2.00	2.00	1.00	2.00	0.16	1.07	0.77
Final Sat.:	1805	5093	84	1805	3610	2842	3502	1900	2842	270	1808	1309
Capacity Analysis Module:												
Vol/Sat:	0.09	0.37	0.37	0.02	0.21	0.19	0.09	0.11	0.11	0.07	0.07	0.07
Crit Moves:		****		****					****	****		
Green/Cycle:	0.20	0.61	0.61	0.03	0.45	0.63	0.18	0.18	0.18	0.12	0.12	0.12
Volume/Cap:	0.47	0.61	0.61	0.61	0.47	0.30	0.51	0.57	0.61	0.61	0.61	0.61
Delay/Veh:	36.4	12.3	12.3	65.2	19.6	8.6	37.4	39.5	39.5	44.1	44.1	44.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	36.4	12.3	12.3	65.2	19.6	8.6	37.4	39.5	39.5	44.1	44.1	44.1
LOS by Move:	D	B	B	E	B	A	D	D	D	D	D	D
HCM2k85thQ:	8	20	20	3	13	7	8	10	9	8	8	8

Note: Queue reported is the number of cars per lane.

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #79 Grand Ave and 1st St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.793
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	51	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 1	0	2 0	3 0	1	2 0	2 1	0	2 0	1 1	0
Volume Module:												
Base Vol:	165	1261	38	120	706	282	277	918	91	151	941	173
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	165	1261	38	120	706	282	277	918	91	151	941	173
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	165	1261	38	120	706	282	277	918	91	151	941	173
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	165	1261	38	120	706	282	277	918	91	151	941	173
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	165	1261	38	120	706	282	277	918	91	151	941	173
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.04	1.00	1.00	1.06	1.00	1.00	1.05	1.00	1.00	1.04	1.00
Lanes:	2.00	2.91	0.09	2.00	3.00	1.00	2.00	2.73	0.27	2.00	1.69	0.31
Final Sat.:	3200	4860	140	3200	5100	1600	3200	4567	433	3200	2803	497
Capacity Analysis Module:												
Vol/Sat:	0.05	0.26	0.27	0.04	0.14	0.18	0.09	0.20	0.21	0.05	0.34	0.35
Crit Moves:			****	****			****					****

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #80 Grand Ave and Chestnut Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.615
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	30	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2	1 0	1 0	2	1 0	1 0	1	1 0	1 0	1	1 0
Volume Module:												
Base Vol:	140	1050	182	149	664	112	93	285	62	107	333	194
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	140	1050	182	149	664	112	93	285	62	107	333	194
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	140	1050	182	149	664	112	93	285	62	107	333	194
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	140	1050	182	149	664	112	93	285	62	107	333	194
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	140	1050	182	149	664	112	93	285	62	107	333	194
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.05	1.00	1.00	1.04	1.00	1.00	1.05	1.00
Lanes:	1.00	2.56	0.44	1.00	2.57	0.43	1.00	1.64	0.36	1.00	1.26	0.74
Final Sat.:	1600	4291	709	1600	4307	693	1600	2728	572	1600	2122	1178
Capacity Analysis Module:												
Vol/Sat:	0.09	0.24	0.26	0.09	0.15	0.16	0.06	0.10	0.11	0.07	0.16	0.16
Crit Moves:			****	****			****				****	

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #81 Grand Ave and McFadden Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.759
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	45	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 1	0	1 0	2 1	0	1 0	1 1	0	1 0	1 1	0
Volume Module:												
Base Vol:	202	1150	198	138	626	168	128	476	83	86	686	151
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	202	1150	198	138	626	168	128	476	83	86	686	151
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	202	1150	198	138	626	168	128	476	83	86	686	151
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	202	1150	198	138	626	168	128	476	83	86	686	151
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	202	1150	198	138	626	168	128	476	83	86	686	151
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.05	1.00	1.00	1.04	1.00	1.00	1.04	1.00
Lanes:	1.00	2.56	0.44	1.00	2.37	0.63	1.00	1.70	0.30	1.00	1.64	0.36
Final Sat.:	1600	4295	705	1600	3984	1016	1600	2825	475	1600	2723	577
Capacity Analysis Module:												
Vol/Sat:	0.13	0.27	0.28	0.09	0.16	0.17	0.08	0.17	0.17	0.05	0.25	0.26
Crit Moves:			****	****			****					****

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #82 Grand Ave and Edinger Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.909
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	92	Level Of Service:	E

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 1	0	1 0	2 1	0	1 0	2 1	0	1 0	2 1	0
Volume Module:												
Base Vol:	242	1397	121	165	408	229	201	868	70	74	1333	173
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	242	1397	121	165	408	229	201	868	70	74	1333	173
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	242	1397	121	165	408	229	201	868	70	74	1333	173
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	242	1397	121	165	408	229	201	868	70	74	1333	173
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	242	1397	121	165	408	229	201	868	70	74	1333	173
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.06	1.00	1.00	1.05	1.00	1.00	1.05	1.00
Lanes:	1.00	2.76	0.24	1.00	2.00	1.00	1.00	2.78	0.22	1.00	2.66	0.34
Final Sat.:	1600	4617	383	1600	3400	1600	1600	4642	358	1600	4449	551
Capacity Analysis Module:												
Vol/Sat:	0.15	0.30	0.32	0.10	0.12	0.14	0.13	0.19	0.20	0.05	0.30	0.31
Crit Moves:		****	****				****					****

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #83 Grand Ave and Warner Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.704
Loss Time (sec):	0	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	77	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2	1 0	1 0	2	1 0	2 0	3	0 1	2 0	2	0 1
Volume Module:												
Base Vol:	242	873	193	146	471	217	342	656	142	151	964	316
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	242	873	193	146	471	217	342	656	142	151	964	316
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	242	873	193	146	471	217	342	656	142	151	964	316
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	242	873	193	146	471	217	342	656	142	151	964	316
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	242	873	193	146	471	217	342	656	142	151	964	316
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	1.00	2.46	0.54	1.00	2.05	0.95	2.00	3.00	1.00	2.00	2.00	1.00
Final Sat.:	1600	4131	869	1600	3486	1514	3200	5100	1600	3200	3400	1600
Capacity Analysis Module:												
Vol/Sat:	0.15	0.21	0.22	0.09	0.14	0.14	0.11	0.13	0.09	0.05	0.28	0.20
Crit Moves:			****	****			****				****	

Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #84 SR-55 NB Ramps and Dyer Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.376
Loss Time (sec):	5	Average Delay (sec/veh):	5.7
Optimal Cycle:	20	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Ignore			Ignore		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1! 0	1	0	0	0	0	0	3	0	1
Volume Module:												
Base Vol:	188	0	51	0	0	0	0	1339	681	0	1545	965
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	188	0	51	0	0	0	0	1339	681	0	1545	965
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Volume:	188	0	51	0	0	0	0	1339	0	0	1545	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	188	0	51	0	0	0	0	1339	0	0	1545	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
FinalVolume:	188	0	51	0	0	0	0	1339	0	0	1545	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	1.00	0.93	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	0.91
Lanes:	1.79	0.00	1.21	0.00	0.00	0.00	0.00	3.00	1.00	0.00	3.00	0.00
Final Sat.:	3161	0	2147	0	0	0	0	5187	1900	0	5187	0
Capacity Analysis Module:												
Vol/Sat:	0.06	0.00	0.02	0.00	0.00	0.00	0.00	0.26	0.00	0.00	0.30	0.00
Crit Moves:	****						****				****	
Green/Cycle:	0.16	0.00	0.16	0.00	0.00	0.00	0.00	0.79	0.00	0.00	0.79	0.00
Volume/Cap:	0.38	0.00	0.15	0.00	0.00	0.00	0.00	0.33	0.00	0.00	0.38	0.00
Delay/Veh:	38.1	0.0	36.3	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.1	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	38.1	0.0	36.3	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.1	0.0
LOS by Move:	D	A	D	A	A	A	A	A	A	A	A	A
HCM2k85thQ:	5	0	2	0	0	0	0	7	0	0	8	0

Note: Queue reported is the number of cars per lane.

Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Base Volume Alternative)

Intersection #85 Cambridge St and La Veta Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.459
Loss Time (sec):	5	Average Delay (sec/veh):	12.5
Optimal Cycle:	0	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0 1	0 0		0 0 1	0 1		1 0	0 0 1		0 0	0 0 0	
Volume Module:												
Base Vol:	191	266	0	0	196	181	219	0	144	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	191	266	0	0	196	181	219	0	144	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	191	266	0	0	196	181	219	0	144	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	191	266	0	0	196	181	219	0	144	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	191	266	0	0	196	181	219	0	144	0	0	0
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	535	579	0	0	563	631	500	0	595	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.36	0.46	xxxx	xxxx	0.35	0.29	0.44	xxxx	0.24	xxxx	xxxx	xxxx
Crit Moves:		****			****		****					
Delay/Veh:	12.7	13.6	0.0	0.0	12.0	10.3	14.7	0.0	10.2	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	12.7	13.6	0.0	0.0	12.0	10.3	14.7	0.0	10.2	0.0	0.0	0.0
LOS by Move:	B	B	*	*	B	B	B	*	B	*	*	*
ApproachDel:	13.3			11.2			12.9			xxxxxx		
Delay Adj:	1.00			1.00			1.00			xxxxx		
ApprAdjDel:	13.3			11.2			12.9			xxxxxx		
LOS by Appr:	B			B			B			*		
AllWayAvgQ:	0.5	0.8	0.0	0.0	0.5	0.4	0.7	0.0	0.3	0.0	0.0	0.0

Note: Queue reported is the number of cars per lane.

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #86 Cambridge St and Fairhaven Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.488
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	23	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	0 0	0	1 0	0 0	1	1 0	2 0	0	0 0	1 1	0
Volume Module:												
Base Vol:	0	0	0	219	0	76	141	246	0	0	273	340
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	219	0	76	141	246	0	0	273	340
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	219	0	76	141	246	0	0	273	340
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	219	0	76	141	246	0	0	273	340
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	219	0	76	141	246	0	0	273	340
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	2.00	0.00	0.00	1.00	1.00
Final Sat.:	0	0	0	1600	0	1600	1600	3400	0	0	1700	1600
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.14	0.00	0.05	0.09	0.07	0.00	0.00	0.16	0.21
Crit Moves:				****			****					****

Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #87 Mabury St and 1st Street

Cycle (sec):	100	Critical Vol./Cap.(X):	0.703
Loss Time (sec):	0	Average Delay (sec/veh):	26.1
Optimal Cycle:	77	Level Of Service:	C

Street Name:	Mabury						1st Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	0	0 1	1 0		1! 0 1	0 0		2 1 0	1 0		2 1 0
Volume Module:												
Base Vol:	25	0	256	207	88	390	0	1512	24	40	549	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	25	0	256	207	88	390	0	1512	24	40	549	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	25	0	256	207	88	390	0	1512	24	40	549	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	25	0	256	207	88	390	0	1512	24	40	549	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	25	0	256	207	88	390	0	1512	24	40	549	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	1.00	0.85	0.90	0.90	0.90	1.00	0.91	0.91	0.95	0.91	0.91
Lanes:	1.00	0.00	1.00	1.27	0.23	1.50	0.00	2.95	0.05	1.00	3.00	0.00
Final Sat.:	1805	0	1615	2171	390	2576	0	5096	81	1805	5187	0
Capacity Analysis Module:												
Vol/Sat:	0.01	0.00	0.16	0.10	0.23	0.15	0.00	0.30	0.30	0.02	0.11	0.00
Crit Moves:			****		****			****		****		
Green/Cycle:	0.23	0.00	0.23	0.32	0.32	0.32	0.00	0.42	0.42	0.03	0.45	0.00
Volume/Cap:	0.06	0.00	0.70	0.30	0.70	0.47	0.00	0.70	0.70	0.70	0.23	0.00
Delay/Veh:	30.5	0.0	41.7	25.6	32.1	27.4	0.0	24.8	24.8	80.7	16.7	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	30.5	0.0	41.7	25.6	32.1	27.4	0.0	24.8	24.8	80.7	16.7	0.0
LOS by Move:	C	A	D	C	C	C	A	C	C	F	B	A
HCM2k85thQ:	1	0	13	6	17	10	0	22	22	4	6	0

Note: Queue reported is the number of cars per lane.

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #88 Tustin St and La Veta Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.444
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	21	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2	1 0	1 0	2	1 0	1 0	1	1 0	1 1	0	0 1
Volume Module:												
Base Vol:	46	1033	245	90	801	15	13	5	20	183	5	112
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	46	1033	245	90	801	15	13	5	20	183	5	112
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	46	1033	245	90	801	15	13	5	20	183	5	112
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	46	1033	245	90	801	15	13	5	20	183	5	112
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	46	1033	245	90	801	15	13	5	20	183	5	112
OvlAdjVol:												22
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.04	1.00	1.00	1.06	1.00	1.00	1.00	1.00
Lanes:	1.00	2.42	0.58	1.00	2.94	0.06	1.00	1.00	1.00	1.95	0.05	1.00
Final Sat.:	1600	4080	920	1600	4912	88	1600	1700	1600	3115	85	1600
Capacity Analysis Module:												
Vol/Sat:	0.03	0.25	0.27	0.06	0.16	0.17	0.01	0.00	0.01	0.06	0.06	0.07
OvlAdjV/S:												0.01
Crit Moves:			****	****					****		****	

Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #89 Tustin St and SR-22 WB On-Ramp

Cycle (sec):	100	Critical Vol./Cap.(X):	0.446
Loss Time (sec):	5	Average Delay (sec/veh):	12.1
Optimal Cycle:	36	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 0	0	0 0	2	1 0	0 0	0 0	0 0	0 0	0 0	0
Volume Module:												
Base Vol:	532	1529	0	0	711	365	0	0	0	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	532	1529	0	0	711	365	0	0	0	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	532	1529	0	0	711	365	0	0	0	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	532	1529	0	0	711	365	0	0	0	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	532	1529	0	0	711	365	0	0	0	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.95	1.00	1.00	0.86	0.86	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	2.00	0.00	0.00	2.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
Final Sat.:	3502	3610	0	0	3282	1641	0	0	0	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.15	0.42	0.00	0.00	0.22	0.22	0.00	0.00	0.00	0.00	0.00	0.00
Crit Moves:		****										
Green/Cycle:	0.63	0.95	0.00	0.00	0.32	0.32	0.00	0.00	0.00	0.00	0.00	0.00
Volume/Cap:	0.24	0.45	0.00	0.00	0.67	0.69	0.00	0.00	0.00	0.00	0.00	0.00
Delay/Veh:	8.2	0.3	0.0	0.0	30.5	31.0	0.0	0.0	0.0	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	8.2	0.3	0.0	0.0	30.5	31.0	0.0	0.0	0.0	0.0	0.0	0.0
LOS by Move:	A	A	A	A	C	C	A	A	A	A	A	A
HCM2k85thQ:	6	4	0	0	17	18	0	0	0	0	0	0

Note: Queue reported is the number of cars per lane.

Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #90 Tustin St and SR-22 EB Off-Ramp / Seba Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.719
Loss Time (sec):	5	Average Delay (sec/veh):	23.7
Optimal Cycle:	41	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0 2	1 0	1	0 3	0 0	1	0 1!	0 1	0	0 1!	0 0
Volume Module:												
Base Vol:	0	1547	4	52	707	0	458	41	581	28	0	67
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1547	4	52	707	0	458	41	581	28	0	67
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1547	4	52	707	0	458	41	581	28	0	67
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1547	4	52	707	0	458	41	581	28	0	67
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1547	4	52	707	0	458	41	581	28	0	67
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.91	0.91	0.10	0.91	1.00	0.90	0.90	0.90	0.89	1.00	0.89
Lanes:	0.00	2.99	0.01	1.00	3.00	0.00	1.41	0.07	1.52	0.29	0.00	0.71
Final Sat.:	0	5174	13	182	5187	0	2408	125	2595	499	0	1195
Capacity Analysis Module:												
Vol/Sat:	0.00	0.30	0.30	0.29	0.14	0.00	0.19	0.33	0.22	0.06	0.00	0.06
Crit Moves:		****						****		****		
Green/Cycle:	0.00	0.42	0.42	0.42	0.42	0.00	0.46	0.46	0.46	0.08	0.00	0.08
Volume/Cap:	0.00	0.72	0.72	0.69	0.33	0.00	0.42	0.72	0.49	0.72	0.00	0.72
Delay/Veh:	0.0	25.5	25.5	46.8	19.8	0.0	18.4	23.7	19.2	62.4	0.0	62.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	25.5	25.5	46.8	19.8	0.0	18.4	23.7	19.2	62.4	0.0	62.4
LOS by Move:	A	C	C	D	B	A	B	C	B	E	A	E
HCM2k85thQ:	0	23	23	4	8	0	10	22	13	7	0	7

Note: Queue reported is the number of cars per lane.

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #91 Tustin Ave and Fairhaven Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.614
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	30	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2	1 0	2 0	2	1 0	1 0	1	1 0	1 0	1	0 1
Volume Module:												
Base Vol:	239	1275	113	327	862	99	80	180	147	94	208	196
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	239	1275	113	327	862	99	80	180	147	94	208	196
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	239	1275	113	327	862	99	80	180	147	94	208	196
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	239	1275	113	327	862	99	80	180	147	94	208	196
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	239	1275	113	327	862	99	80	180	147	94	208	196
OvlAdjVol:												32
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.05	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	2.00	2.76	0.24	2.00	2.69	0.31	1.00	1.10	0.90	1.00	1.00	1.00
Final Sat.:	3200	4609	391	3200	4506	494	1600	1861	1439	1600	1700	1600
Capacity Analysis Module:												
Vol/Sat:	0.07	0.28	0.29	0.10	0.19	0.20	0.05	0.10	0.10	0.06	0.12	0.12
OvlAdjV/S:												0.02
Crit Moves:			****	****			****			****		

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #92 Tustin Ave and Santa Clara Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.647
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	32	Level Of Service:	B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Permitted				Permitted			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Y+R:	4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	
Lanes:	1	0 2	1	0	2	0 2	1	0	1	0 1	1	0	1	0 1	1	0
Volume Module:																
Base Vol:	163	789	121		183	1444	100		61	192	113		125	157	148	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	163	789	121		183	1444	100		61	192	113		125	157	148	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	163	789	121		183	1444	100		61	192	113		125	157	148	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	163	789	121		183	1444	100		61	192	113		125	157	148	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	163	789	121		183	1444	100		61	192	113		125	157	148	
Saturation Flow Module:																
Sat/Lane:	1600	1600	1600		1600	1600	1600		1600	1600	1600		1600	1600	1600	
Adjustment:	1.00	1.05	1.00		1.00	1.04	1.00		1.00	1.05	1.00		1.00	1.06	1.00	
Lanes:	1.00	2.60	0.40		2.00	2.81	0.19		1.00	1.26	0.74		1.00	1.03	0.97	
Final Sat.:	1600	4362	638		3200	4689	311		1600	2114	1186		1600	1747	1553	
Capacity Analysis Module:																
Vol/Sat:	0.10	0.18	0.19		0.06	0.31	0.32		0.04	0.09	0.10		0.08	0.09	0.10	
Crit Moves:	****						****				****		****			

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #93 Tustin Ave and 17th St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.717
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	39	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ovl			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 0	1	2 0	2 1	0	2 0	3 0	1	2 0	3 0	1
Volume Module:												
Base Vol:	216	926	476	346	371	37	444	872	118	229	753	419
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	216	926	476	346	371	37	444	872	118	229	753	419
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	216	926	476	346	371	37	444	872	118	229	753	419
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	216	926	476	346	371	37	444	872	118	229	753	419
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	216	926	476	346	371	37	444	872	118	229	753	419
OvlAdjVol:			362									246
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.05	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	2.00	2.00	1.00	2.00	2.73	0.27	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3200	3400	1600	3200	4565	435	3200	5100	1600	3200	5100	1600
Capacity Analysis Module:												
Vol/Sat:	0.07	0.27	0.30	0.11	0.08	0.08	0.14	0.17	0.07	0.07	0.15	0.26
OvlAdjV/S:			0.23									0.15
Crit Moves:	****			****			****			****		

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #94 Tustin Ave and 4th St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.692
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	36	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0 2	1	0	2 0 2	0	1	1 0 2	1	0	1 0 2	1	0
Volume Module:												
Base Vol:	55	598	194	459	339	124	180	642	33	88	596	367
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	55	598	194	459	339	124	180	642	33	88	596	367
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	55	598	194	459	339	124	180	642	33	88	596	367
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	55	598	194	459	339	124	180	642	33	88	596	367
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	55	598	194	459	339	124	180	642	33	88	596	367
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.04	1.00	1.00	1.06	1.00
Lanes:	1.00	2.27	0.73	2.00	2.00	1.00	1.00	2.85	0.15	1.00	2.00	1.00
Final Sat.:	1600	3824	1176	3200	3400	1600	1600	4765	235	1600	3400	1600
Capacity Analysis Module:												
Vol/Sat:	0.03	0.16	0.16	0.14	0.10	0.08	0.11	0.13	0.14	0.06	0.18	0.23
Crit Moves:	****			****			****					****

Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #95 SR-55 SB Ramps / Auto Mall Dr and Edinger Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.583
Loss Time (sec):	5	Average Delay (sec/veh):	25.1
Optimal Cycle:	29	Level Of Service:	C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Split Phase				Split Phase				Protected				Protected			
Rights:	Include				Include				Ignore				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Y+R:	4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	
Lanes:	1	1 0	0	2	1	0 1	0	1	1	0 3	0	1	2	0 2	1	0
Volume Module:																
Base Vol:	377	30	398		110	50	37		35	1258	354		385	1003	120	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	377	30	398		110	50	37		35	1258	354		385	1003	120	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	0.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	0.00		1.00	1.00	1.00	
PHF Volume:	377	30	398		110	50	37		35	1258	0		385	1003	120	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	377	30	398		110	50	37		35	1258	0		385	1003	120	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	0.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	0.00		1.00	1.00	1.00	
FinalVolume:	377	30	398		110	50	37		35	1258	0		385	1003	120	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.96	0.96	0.75		0.95	1.00	0.85		0.95	0.91	1.00		0.92	0.90	0.90	
Lanes:	1.85	0.15	2.00		1.00	1.00	1.00		1.00	3.00	1.00		2.00	2.68	0.32	
Final Sat.:	3365	268	2842		1805	1900	1615		1805	5187	1900		3502	4559	545	
Capacity Analysis Module:																
Vol/Sat:	0.11	0.11	0.14		0.06	0.03	0.02		0.02	0.24	0.00		0.11	0.22	0.22	
Crit Moves:			****		****					****			****			
Green/Cycle:	0.24	0.24	0.24		0.10	0.10	0.10		0.05	0.42	0.00		0.19	0.56	0.56	
Volume/Cap:	0.47	0.47	0.58		0.58	0.25	0.22		0.40	0.58	0.00		0.58	0.40	0.40	
Delay/Veh:	32.9	32.9	34.8		47.3	41.8	41.7		49.0	22.9	0.0		38.3	12.7	12.7	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	32.9	32.9	34.8		47.3	41.8	41.7		49.0	22.9	0.0		38.3	12.7	12.7	
LOS by Move:	C	C	C		D	D	D		D	C	A		D	B	B	
HCM2k85thQ:	9	9	11		6	3	2		2	17	0		10	11	11	

Note: Queue reported is the number of cars per lane.
****

Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #96 SR-55 NB Ramps / Del Amo Ave and Newport Avenue

Cycle (sec):	100	Critical Vol./Cap.(X):	0.525
Loss Time (sec):	5	Average Delay (sec/veh):	27.4
Optimal Cycle:	26	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Ovl			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0 2	1 0		1 0 3	0 1		2 0 1	1 0		1 0 1	1 0	
Volume Module:												
Base Vol:	583	174	34	8	97	373	104	36	21	23	348	16
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	583	174	34	8	97	373	104	36	21	23	348	16
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	583	174	34	8	97	373	104	36	21	23	348	16
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	583	174	34	8	97	373	104	36	21	23	348	16
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	583	174	34	8	97	373	104	36	21	23	348	16
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.89	0.89	0.95	0.91	0.85	0.92	0.90	0.90	0.95	0.94	0.94
Lanes:	2.00	2.51	0.49	1.00	3.00	1.00	2.00	1.26	0.74	1.00	1.91	0.09
Final Sat.:	3502	4235	828	1805	5187	1615	3502	2155	1257	1805	3427	158
Capacity Analysis Module:												
Vol/Sat:	0.17	0.04	0.04	0.00	0.02	0.23	0.03	0.02	0.02	0.01	0.10	0.10
Crit Moves:	****					****	****				****	
Green/Cycle:	0.32	0.63	0.63	0.07	0.38	0.44	0.06	0.14	0.14	0.11	0.19	0.19
Volume/Cap:	0.53	0.07	0.07	0.07	0.05	0.53	0.53	0.12	0.12	0.12	0.53	0.53
Delay/Veh:	28.5	7.1	7.1	43.8	19.4	21.1	48.5	37.6	37.6	40.6	37.0	37.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	28.5	7.1	7.1	43.8	19.4	21.1	48.5	37.6	37.6	40.6	37.0	37.0
LOS by Move:	C	A	A	D	B	C	D	D	D	D	D	D
HCM2k85thQ:	12	1	1	0	1	13	4	1	1	1	9	9

Note: Queue reported is the number of cars per lane.

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #97 Red Hill Ave and Edinger Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.667
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	34	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Ovl			Ovl			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0 3	0 1	2	0 3	0 1	2	0 3	0 1	2	0 3	0 1
Volume Module:												
Base Vol:	159	1146	182	145	289	234	327	838	102	62	803	392
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	159	1146	182	145	289	234	327	838	102	62	803	392
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	159	1146	182	145	289	234	327	838	102	62	803	392
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	159	1146	182	145	289	234	327	838	102	62	803	392
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	159	1146	182	145	289	234	327	838	102	62	803	392
OvlAdjVol:						70			22			
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3200	5100	1600	3200	5100	1600	3200	5100	1600	3200	5100	1600
Capacity Analysis Module:												
Vol/Sat:	0.05	0.22	0.11	0.05	0.06	0.15	0.10	0.16	0.06	0.02	0.16	0.25
OvlAdjV/S:						0.04			0.01			
Crit Moves:	****			****			****					****

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #98 Red Hill Ave and Warner Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.588
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	28	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	3 1	0	2 0	2 1	0	1 0	2 1	0	2 0	3 0	1
Volume Module:												
Base Vol:	382	1308	150	58	223	283	222	603	94	25	525	69
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	382	1308	150	58	223	283	222	603	94	25	525	69
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	382	1308	150	58	223	283	222	603	94	25	525	69
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	382	1308	150	58	223	283	222	603	94	25	525	69
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	382	1308	150	58	223	283	222	603	94	25	525	69
OvlAdjVol:												40
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.06	1.00	1.00	1.05	1.00	1.00	1.06	1.00
Lanes:	2.00	3.59	0.41	2.00	2.00	1.00	1.00	2.60	0.40	2.00	3.00	1.00
Final Sat.:	3200	6042	658	3200	3400	1600	1600	4353	647	3200	5100	1600
Capacity Analysis Module:												
Vol/Sat:	0.12	0.22	0.23	0.02	0.07	0.18	0.14	0.14	0.15	0.01	0.10	0.04
OvlAdjV/S:												0.03
Crit Moves:	****					****	****				****	

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #99 Red Hill Ave and Dyer Rd / barranca Pkwy

Cycle (sec):	100	Critical Vol./Cap.(X):	0.563
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	27	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	4 0	1	2 0	4 0	1	2 0	3 1	0	2 0	4 0	1
Volume Module:												
Base Vol:	356	1339	345	185	313	147	203	753	99	127	966	282
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	356	1339	345	185	313	147	203	753	99	127	966	282
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	356	1339	345	185	313	147	203	753	99	127	966	282
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	356	1339	345	185	313	147	203	753	99	127	966	282
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	356	1339	345	185	313	147	203	753	99	127	966	282
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.05	1.00	1.00	1.06	1.00
Lanes:	2.00	4.00	1.00	2.00	4.00	1.00	2.00	3.54	0.46	2.00	4.00	1.00
Final Sat.:	3200	6800	1600	3200	6800	1600	3200	5956	744	3200	6800	1600
Capacity Analysis Module:												
Vol/Sat:	0.11	0.20	0.22	0.06	0.05	0.09	0.06	0.13	0.13	0.04	0.14	0.18
Crit Moves:			****	****			****					****

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #100 Red Hill Ave and Alton Pkwy

Cycle (sec):	100	Critical Vol./Cap.(X):	0.671
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	34	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 0	1	1 0	3 0	1	1 0	2 0	1	2 0	1 0	1
Volume Module:												
Base Vol:	27	1499	217	124	528	4	132	324	166	433	74	267
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	27	1499	217	124	528	4	132	324	166	433	74	267
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	27	1499	217	124	528	4	132	324	166	433	74	267
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	27	1499	217	124	528	4	132	324	166	433	74	267
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	27	1499	217	124	528	4	132	324	166	433	74	267
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	1.00	2.00	1.00	2.00	1.00	1.00
Final Sat.:	1600	5100	1600	1600	5100	1600	1600	3400	1600	3200	1700	1600
Capacity Analysis Module:												
Vol/Sat:	0.02	0.29	0.14	0.08	0.10	0.00	0.08	0.10	0.10	0.14	0.04	0.17
Crit Moves:		****			****			****				****

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #101 Red Hill Ave and MacArthur Blvd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.657
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	33	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Ignore			Include			Ignore		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0 2	1 0		2 0 3	0 1		2 0 3	0 1		1 0 3	0 1	
Volume Module:												
Base Vol:	125	809	10	286	594	1042	597	275	42	39	818	574
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	125	809	10	286	594	1042	597	275	42	39	818	574
User Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Volume:	125	809	10	286	594	0	597	275	42	39	818	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	125	809	10	286	594	0	597	275	42	39	818	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
FinalVolume:	125	809	10	286	594	0	597	275	42	39	818	0
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.04	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	2.00	2.96	0.04	2.00	3.00	1.00	2.00	3.00	1.00	1.00	3.00	1.00
Final Sat.:	3200	4941	59	3200	5100	1600	3200	5100	1600	1600	5100	1600
Capacity Analysis Module:												
Vol/Sat:	0.04	0.16	0.17	0.09	0.12	0.00	0.19	0.05	0.03	0.02	0.16	0.00
Crit Moves:			****	****			****				****	

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #102 Red Hill Ave and Main St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.774
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	47	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 0	1	2 0	2 0	1	2 0	2 1	0	2 0	2 1	0
Volume Module:												
Base Vol:	416	897	242	74	538	292	198	705	191	279	1589	89
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	416	897	242	74	538	292	198	705	191	279	1589	89
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	416	897	242	74	538	292	198	705	191	279	1589	89
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	416	897	242	74	538	292	198	705	191	279	1589	89
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	416	897	242	74	538	292	198	705	191	279	1589	89
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.05	1.00	1.00	1.04	1.00
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	2.00	2.36	0.64	2.00	2.84	0.16
Final Sat.:	3200	3400	1600	3200	3400	1600	3200	3977	1023	3200	4745	255
Capacity Analysis Module:												
Vol/Sat:	0.13	0.26	0.15	0.02	0.16	0.18	0.06	0.18	0.19	0.09	0.33	0.35
Crit Moves:	****					****	****					****

Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #103 I-5 SB Ramps and Santa Ana Blvd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.431
Loss Time (sec):	5	Average Delay (sec/veh):	18.9
Optimal Cycle:	22	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Ovl			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0	0	2	0	0	2	0	3	0	2	1
Volume Module:												
Base Vol:	0	0	0	278	0	61	561	634	0	0	668	183
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	278	0	61	561	634	0	0	668	183
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	278	0	61	561	634	0	0	668	183
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	278	0	61	561	634	0	0	668	183
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	278	0	61	561	634	0	0	668	183
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	0.92	1.00	0.85	0.92	0.91	1.00	1.00	0.88	0.88
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	2.00	3.00	0.00	0.00	2.35	0.65
Final Sat.:	0	0	0	3502	0	1615	3502	5187	0	0	3941	1080
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.08	0.00	0.04	0.16	0.12	0.00	0.00	0.17	0.17
Crit Moves:				****			****				****	
Green/Cycle:	0.00	0.00	0.00	0.18	0.00	0.56	0.37	0.77	0.00	0.00	0.39	0.39
Volume/Cap:	0.00	0.00	0.00	0.43	0.00	0.07	0.43	0.16	0.00	0.00	0.43	0.43
Delay/Veh:	0.0	0.0	0.0	36.6	0.0	10.3	23.7	3.1	0.0	0.0	22.3	22.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

AdjDel/Veh:	0.0	0.0	0.0	36.6	0.0	10.3	23.7	3.1	0.0	0.0	22.3	22.3
LOS by Move:	A	A	A	D	A	B	C	A	A	A	C	C
HCM2k85thQ:	0	0	0	7	0	1	10	3	0	0	11	11

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Note: Queue reported is the number of cars per lane.

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #104 Tustin Ranch Rd and Warner Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.606
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	29	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Ovl			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	0 0	0	2 0	0 0	1	2 0	3 0	0	0 0	3 0	1
Volume Module:												
Base Vol:	0	0	0	653	0	45	54	1795	0	0	548	236
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	653	0	45	54	1795	0	0	548	236
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	653	0	45	54	1795	0	0	548	236
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	653	0	45	54	1795	0	0	548	236
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	653	0	45	54	1795	0	0	548	236
OvlAdjVol:												0
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	2.00	3.00	0.00	0.00	3.00	1.00
Final Sat.:	0	0	0	3200	0	1600	3200	5100	0	0	5100	1600
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.20	0.00	0.03	0.02	0.35	0.00	0.00	0.11	0.15
OvlAdjV/S:												0.00
Crit Moves:				****				****		****		

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #105 Von Karman Ave and Barranca Pkwy

Cycle (sec):	100	Critical Vol./Cap.(X):	0.874	
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx	
Optimal Cycle:	74	Level Of Service:	D	

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Ovl			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0 1	1 0		2 0 2			2 0 3	0 1		2 0 4	0 1	
Volume Module:												
Base Vol:	224	1290	281	67	343	236	560	1023	143	204	646	220
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	224	1290	281	67	343	236	560	1023	143	204	646	220
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	224	1290	281	67	343	236	560	1023	143	204	646	220
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	224	1290	281	67	343	236	560	1023	143	204	646	220
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	224	1290	281	67	343	236	560	1023	143	204	646	220
OvlAdjVol:						0						
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.04	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	2.00	1.64	0.36	2.00	2.00	2.00	2.00	3.00	1.00	2.00	4.00	1.00
Final Sat.:	3200	2728	572	3200	3400	3200	3200	5100	1600	3200	6800	1600
Capacity Analysis Module:												
Vol/Sat:	0.07	0.47	0.49	0.02	0.10	0.07	0.17	0.20	0.09	0.06	0.10	0.14
OvlAdjV/S:						0.00						
Crit Moves:		****	****				****					****

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #106 Red Hill Avenue and El Camino Real

Cycle (sec):	100	Critical Vol./Cap.(X):	0.624
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	31	Level Of Service:	B

Street Name:	Red Hill Avenue						El Camino Real					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0 3	0 1	1	0 2	1 0	1	0 1	0 1	1	0 0	1 0
Volume Module:												
Base Vol:	415	1315	242	20	728	96	70	153	201	199	329	38
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	415	1315	242	20	728	96	70	153	201	199	329	38
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	415	1315	242	20	728	96	70	153	201	199	329	38
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	415	1315	242	20	728	96	70	153	201	199	329	38
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	415	1315	242	20	728	96	70	153	201	199	329	38
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.05	1.00	1.00	1.06	1.00	1.00	1.00	1.00
Lanes:	2.00	3.00	1.00	1.00	2.65	0.35	1.00	1.00	1.00	1.00	0.90	0.10
Final Sat.:	3200	5100	1600	1600	4441	559	1600	1700	1600	1600	1434	166
Capacity Analysis Module:												
Vol/Sat:	0.13	0.26	0.15	0.01	0.16	0.17	0.04	0.09	0.13	0.12	0.23	0.23
Crit Moves:	****					****	****				****	

Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #107 Red Hill Avenue and I-5 NB Ramps

Cycle (sec):	100	Critical Vol./Cap.(X):	0.626
Loss Time (sec):	5	Average Delay (sec/veh):	23.3
Optimal Cycle:	32	Level Of Service:	C

Street Name:	Red Hill Avenue						I-5 NB Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0 3	0 0	0	0 3	0 1	0	0 0	0 0	1	1 0	1 0
Volume Module:												
Base Vol:	272	1557	0	0	939	190	0	0	0	256	96	415
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	272	1557	0	0	939	190	0	0	0	256	96	415
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	272	1557	0	0	939	190	0	0	0	256	96	415
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	272	1557	0	0	939	190	0	0	0	256	96	415
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	272	1557	0	0	939	190	0	0	0	256	96	415
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.91	1.00	1.00	0.91	0.85	1.00	1.00	1.00	0.83	0.83	0.83
Lanes:	1.00	3.00	0.00	0.00	3.00	1.00	0.00	0.00	0.00	1.45	0.55	1.00
Final Sat.:	1805	5187	0	0	5187	1615	0	0	0	2292	860	1576
Capacity Analysis Module:												
Vol/Sat:	0.15	0.30	0.00	0.00	0.18	0.12	0.00	0.00	0.00	0.11	0.11	0.26
Crit Moves:	****				****							****
Green/Cycle:	0.24	0.53	0.00	0.00	0.29	0.29	0.00	0.00	0.00	0.42	0.42	0.42
Volume/Cap:	0.63	0.57	0.00	0.00	0.63	0.41	0.00	0.00	0.00	0.27	0.27	0.63
Delay/Veh:	36.8	16.1	0.0	0.0	31.7	29.2	0.0	0.0	0.0	19.0	19.0	23.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

AdjDel/Veh:	36.8	16.1	0.0	0.0	31.7	29.2	0.0	0.0	0.0	19.0	19.0	23.8
LOS by Move:	D	B	A	A	C	C	A	A	A	B	B	C
HCM2k85thQ:	13	18	0	0	15	8	0	0	0	6	6	17

****

Note: Queue reported is the number of cars per lane.

****

Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #108 Red Hill Avenue and I-5 SB Ramps

Cycle (sec):	100	Critical Vol./Cap.(X):	0.708
Loss Time (sec):	5	Average Delay (sec/veh):	22.8
Optimal Cycle:	40	Level Of Service:	C

Street Name:	Red Hill Avenue						I-5 SB Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0 4	0 1	1	0 3	0 0	0	1 0	0 1	0	0 0	0 0
Volume Module:												
Base Vol:	0	1521	483	352	846	0	309	3	277	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1521	483	352	846	0	309	3	277	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1521	483	352	846	0	309	3	277	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1521	483	352	846	0	309	3	277	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1521	483	352	846	0	309	3	277	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.91	0.85	0.95	0.91	1.00	0.92	0.92	0.85	1.00	1.00	1.00
Lanes:	0.00	4.00	1.00	1.00	3.00	0.00	0.99	0.01	1.00	0.00	0.00	0.00
Final Sat.:	0	6916	1615	1805	5187	0	1733	17	1615	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.22	0.30	0.20	0.16	0.00	0.18	0.18	0.17	0.00	0.00	0.00
Crit Moves:			****	****				****				
Green/Cycle:	0.00	0.42	0.42	0.28	0.70	0.00	0.25	0.25	0.25	0.00	0.00	0.00
Volume/Cap:	0.00	0.52	0.71	0.71	0.23	0.00	0.71	0.71	0.68	0.00	0.00	0.00
Delay/Veh:	0.0	21.5	27.2	37.3	5.5	0.0	39.3	39.3	38.4	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	21.5	27.2	37.3	5.5	0.0	39.3	39.3	38.4	0.0	0.0	0.0
LOS by Move:	A	C	C	D	A	A	D	D	D	A	A	A
HCM2k85thQ:	0	15	20	17	5	0	15	15	13	0	0	0

Note: Queue reported is the number of cars per lane.

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #109 Red Hill Avenue and Nisson Road

Cycle (sec):	100	Critical Vol./Cap.(X):	0.702
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	37	Level Of Service:	C

Street Name:	Red Hill Avenue						Nisson Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 1	0	1 0	2 1	0	1 0	0 1	0	1 0	0 1	0
Volume Module:												
Base Vol:	30	1583	32	168	865	87	247	90	40	48	83	141
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	30	1583	32	168	865	87	247	90	40	48	83	141
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	30	1583	32	168	865	87	247	90	40	48	83	141
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	30	1583	32	168	865	87	247	90	40	48	83	141
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	30	1583	32	168	865	87	247	90	40	48	83	141
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.05	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	3.92	0.08	1.00	2.73	0.27	1.00	0.69	0.31	1.00	0.37	0.63
Final Sat.:	1600	6573	127	1600	4561	439	1600	1108	492	1600	593	1007
Capacity Analysis Module:												
Vol/Sat:	0.02	0.24	0.25	0.11	0.19	0.20	0.15	0.08	0.08	0.03	0.14	0.14
Crit Moves:			****	****			****				****	

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #110 Red Hill Avenue and Walnut Avenue

Cycle (sec):	100	Critical Vol./Cap.(X):	0.785
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	49	Level Of Service:	C

Street Name:	Red Hill Avenue						Walnut Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	2	1	0	1	0	2	1	0	1	0	1	0	2	0	1	1	0
Volume Module:												
Base Vol:	287	1395	100	136	422	176	112	269	111	205	682	178
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	287	1395	100	136	422	176	112	269	111	205	682	178
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	287	1395	100	136	422	176	112	269	111	205	682	178
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	287	1395	100	136	422	176	112	269	111	205	682	178
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	287	1395	100	136	422	176	112	269	111	205	682	178
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.04	1.00	1.00	1.06	1.00	1.00	1.04	1.00	1.00	1.04	1.00
Lanes:	1.00	2.80	0.20	1.00	2.12	0.88	1.00	1.42	0.58	2.00	1.59	0.41
Final Sat.:	1600	4679	321	1600	3587	1413	1600	2365	935	3200	2638	662
Capacity Analysis Module:												
Vol/Sat:	0.18	0.30	0.31	0.09	0.12	0.12	0.07	0.11	0.12	0.06	0.26	0.27
Crit Moves:			****	****			****					****

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #111 Red Hill Avenue and Valencia Avenue

Cycle (sec):	100	Critical Vol./Cap.(X):	0.549
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	26	Level Of Service:	A

Street Name:	Red Hill Avenue						Valencia Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ovl			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0 3	1 0	1	0 2	1 0	1	0 1	0 1	2	0 1	0 1
Volume Module:												
Base Vol:	220	1637	270	109	438	49	70	189	83	118	171	113
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	220	1637	270	109	438	49	70	189	83	118	171	113
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	220	1637	270	109	438	49	70	189	83	118	171	113
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	220	1637	270	109	438	49	70	189	83	118	171	113
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	220	1637	270	109	438	49	70	189	83	118	171	113
OvlAdjVol:			237									4
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.05	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	1.00	3.43	0.57	1.00	2.70	0.30	1.00	1.00	1.00	2.00	1.00	1.00
Final Sat.:	1600	5794	906	1600	4517	483	1600	1700	1600	3200	1700	1600
Capacity Analysis Module:												
Vol/Sat:	0.14	0.28	0.30	0.07	0.10	0.10	0.04	0.11	0.05	0.04	0.10	0.07
OvlAdjV/S:			0.26									0.00
Crit Moves:	****			****				****		****		

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #112 Tustin Ranch Road and Warner Avenue North

Cycle (sec):	100	Critical Vol./Cap.(X):	0.757
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	44	Level Of Service:	C

Street Name:	Tustin Ranch Road						Warner Avenue North					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Ovl			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0	3 0 1	2	0	3 0 0	0	0	0 0 0	3	0	0 0 2
Volume Module:												
Base Vol:	0	1623	956	351	516	0	0	0	0	479	0	433
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1623	956	351	516	0	0	0	0	479	0	433
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1623	956	351	516	0	0	0	0	479	0	433
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1623	956	351	516	0	0	0	0	479	0	433
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1623	956	351	516	0	0	0	0	479	0	433
OvlAdjVol:			796									82
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	0.00	3.00	1.00	2.00	3.00	0.00	0.00	0.00	0.00	3.00	0.00	2.00
Final Sat.:	0	5100	1600	3200	5100	0	0	0	0	4800	0	3200
Capacity Analysis Module:												
Vol/Sat:	0.00	0.32	0.60	0.11	0.10	0.00	0.00	0.00	0.00	0.10	0.00	0.14
OvlAdjV/S:			0.50									0.03
Crit Moves:			****	****						****		

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #113 Tustin Ranch Road and Walnut Avenue

Cycle (sec):	100	Critical Vol./Cap.(X):	1.630
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	180	Level Of Service:	F

Street Name:	Tustin Ranch Road						Walnut Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ovl			Ovl			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	3 0 1	2	0	3 0 1	2	0	1 1 0	2	0	2 0 1
Volume Module:												
Base Vol:	762	3319	349	454	1206	782	365	447	255	287	1646	1304
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	762	3319	349	454	1206	782	365	447	255	287	1646	1304
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	762	3319	349	454	1206	782	365	447	255	287	1646	1304
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	762	3319	349	454	1206	782	365	447	255	287	1646	1304
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	762	3319	349	454	1206	782	365	447	255	287	1646	1304
OvlAdjVol:			206			600						1077
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.05	1.00	1.00	1.06	1.00
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	1.27	0.73	2.00	2.00	1.00
Final Sat.:	3200	5100	1600	3200	5100	1600	3200	2138	1162	3200	3400	1600
Capacity Analysis Module:												
Vol/Sat:	0.24	0.65	0.22	0.14	0.24	0.49	0.11	0.21	0.22	0.09	0.48	0.82
OvlAdjV/S:			0.13			0.37						0.67
Crit Moves:	****			****			****					****

Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #114 SR-55 SB Ramps and Irvine Boulevard

Cycle (sec):	100	Critical Vol./Cap.(X):	0.794
Loss Time (sec):	5	Average Delay (sec/veh):	21.5
Optimal Cycle:	53	Level Of Service:	C

Street Name:	SR-55 SB Ramps						Irvine Boulevard					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0	0	1	0	1! 0	1	0	0	2	1	0
Volume Module:												
Base Vol:	0	0	0	434	0	259	0	862	581	372	1069	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	434	0	259	0	862	581	372	1069	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	434	0	259	0	862	581	372	1069	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	434	0	259	0	862	581	372	1069	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	434	0	259	0	862	581	372	1069	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	0.74	1.00	0.73	1.00	0.86	0.86	0.95	0.91	1.00
Lanes:	0.00	0.00	0.00	1.62	0.00	1.38	0.00	2.00	1.00	1.00	3.00	0.00
Final Sat.:	0	0	0	2276	0	1912	0	3251	1625	1805	5187	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.19	0.00	0.14	0.00	0.27	0.36	0.21	0.21	0.00
Crit Moves:				****					****	****		
Green/Cycle:	0.00	0.00	0.00	0.24	0.00	0.48	0.00	0.45	0.45	0.26	0.71	0.00
Volume/Cap:	0.00	0.00	0.00	0.79	0.00	0.28	0.00	0.59	0.79	0.79	0.29	0.00
Delay/Veh:	0.0	0.0	0.0	40.8	0.0	15.7	0.0	20.9	26.0	43.6	5.3	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	40.8	0.0	15.7	0.0	20.9	26.0	43.6	5.3	0.0
LOS by Move:	A	A	A	D	A	B	A	C	C	D	A	A

```
HCM2k85thQ:     0    0     0    15    0     6     0   17    27    19    7     0
********************************************************************************
Note: Queue reported is the number of cars per lane.
********************************************************************************
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Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #115 SR-55 NB Ramps and Irvine Boulevard

Cycle (sec):	100	Critical Vol./Cap.(X):	0.809
Loss Time (sec):	5	Average Delay (sec/veh):	19.5
Optimal Cycle:	56	Level Of Service:	B

Street Name:	SR-55 NB Ramps						Irvine Boulevard					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1! 0	1	0	0	0	0	1	0	3	0	0	0	0	2	1	0
Volume Module:																		
Base Vol:	328	16	298	0	0	0	229	1048	0	0	1132	716
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	328	16	298	0	0	0	229	1048	0	0	1132	716
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	328	16	298	0	0	0	229	1048	0	0	1132	716
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	328	16	298	0	0	0	229	1048	0	0	1132	716
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	328	16	298	0	0	0	229	1048	0	0	1132	716
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.86	0.86	0.86	1.00	1.00	1.00	0.95	0.91	1.00	1.00	0.86	0.86
Lanes:	1.50	0.05	1.45	0.00	0.00	0.00	1.00	3.00	0.00	0.00	2.00	1.00
Final Sat.:	2444	79	2370	0	0	0	1805	5187	0	0	3257	1629
Capacity Analysis Module:												
Vol/Sat:	0.13	0.20	0.13	0.00	0.00	0.00	0.13	0.20	0.00	0.00	0.35	0.44
Crit Moves:		****					****					****
Green/Cycle:	0.25	0.25	0.25	0.00	0.00	0.00	0.16	0.70	0.00	0.00	0.54	0.54
Volume/Cap:	0.54	0.81	0.50	0.00	0.00	0.00	0.81	0.29	0.00	0.00	0.64	0.81
Delay/Veh:	33.0	41.5	32.5	0.0	0.0	0.0	56.5	5.7	0.0	0.0	16.4	20.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	33.0	41.5	32.5	0.0	0.0	0.0	56.5	5.7	0.0	0.0	16.4	20.8
LOS by Move:	C	D	C	A	A	A	E	A	A	A	B	C
HCM2k85thQ:	10	18	9	0	0	0	14	7	0	0	21	31

Note: Queue reported is the number of cars per lane.

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APPENDIX D.3

ANALYSIS WORKSHEETS –
2045 NP (AM Peak Hour)

Santa Ana Circulation Element

Scenario Report

Scenario:	2045 NP AM Peak Hour
Command:	Default Command
Volume:	2045 NP AM
Geometry:	MPAH
Impact Fee:	Default Impact Fee
Trip Generation:	Default Trip Generation
Trip Distribution:	Default Trip Distribution
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

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Santa Ana Circulation Element

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 1 Euclid St and 1st St	D	xxxxx	0.858	D	xxxxx	0.858	+ 0.000 V/C
# 2 Euclid St and McFadden Ave	E	xxxxx	0.975	E	xxxxx	0.975	+ 0.000 V/C
# 3 Euclid St and Edinger Ave	E	xxxxx	0.991	E	xxxxx	0.991	+ 0.000 V/C
# 4 Newhope St and Hazard Ave	C	xxxxx	0.777	C	xxxxx	0.777	+ 0.000 V/C
# 5 Newhope St and McFadden Ave	D	xxxxx	0.827	D	xxxxx	0.827	+ 0.000 V/C
# 6 Harbor Blvd and SR-22 WB Off-R	C	28.4	0.738	C	28.4	0.738	+ 0.000 D/V
# 7 Trask Avenue and SR-22 EB On-R	B	12.0	0.516	B	12.0	0.516	+ 0.000 D/V
# 8 Harbor Blvd and Westminster Av	E	xxxxx	0.985	E	xxxxx	0.985	+ 0.000 V/C
# 9 Harbor Blvd and 1st St	C	xxxxx	0.789	C	xxxxx	0.789	+ 0.000 V/C
# 10 Harbor Blvd and McFadden Ave	C	xxxxx	0.788	C	xxxxx	0.788	+ 0.000 V/C
# 11 Harbor Blvd and Edinger Ave	D	xxxxx	0.836	D	xxxxx	0.836	+ 0.000 V/C
# 12 Harbor Blvd and Warner Ave	C	xxxxx	0.789	C	xxxxx	0.789	+ 0.000 V/C
# 13 Harbor Blvd and Segerstrom Ave	E	xxxxx	0.965	E	xxxxx	0.965	+ 0.000 V/C
# 14 MacArthur Blvd and Hyland Ave	B	xxxxx	0.611	B	xxxxx	0.611	+ 0.000 V/C
# 15 MacArthur Blvd and Harbor Blvd	C	xxxxx	0.736	C	xxxxx	0.736	+ 0.000 V/C
# 16 Harbor Blvd and Sunflower Ave	C	xxxxx	0.704	C	xxxxx	0.704	+ 0.000 V/C
# 17 Harbor Blvd and I-405 NB Off-R	B	18.0	0.569	B	18.0	0.569	+ 0.000 D/V
# 18 Harbor Blvd and I-405 SB Off-R	B	15.0	0.612	B	15.0	0.612	+ 0.000 D/V
# 19 Fairview St and Civic Center D	C	xxxxx	0.741	C	xxxxx	0.741	+ 0.000 V/C
# 20 Fairview St and 1st St	D	xxxxx	0.859	D	xxxxx	0.859	+ 0.000 V/C
# 21 Fairview St and McFadden Ave	C	xxxxx	0.799	C	xxxxx	0.799	+ 0.000 V/C
# 22 Fairview St and Edinger Ave	D	xxxxx	0.861	D	xxxxx	0.861	+ 0.000 V/C
# 23 Fairview St and Warner Ave	D	xxxxx	0.816	D	xxxxx	0.816	+ 0.000 V/C
# 24 Fairview St and MacArthur Blvd	B	xxxxx	0.684	B	xxxxx	0.684	+ 0.000 V/C

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Santa Ana Circulation Element

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 25 Fairview Rd and Sunflower Ave	B	xxxxx	0.697	B	xxxxx	0.697	+ 0.000 V/C
# 26 Greenville St and Edinger Ave	C	xxxxx	0.774	C	xxxxx	0.774	+ 0.000 V/C
# 27 Greenville St and Segerstrom A	D	xxxxx	0.843	D	xxxxx	0.843	+ 0.000 V/C
# 28 Raitt St and McFadden Ave	C	xxxxx	0.778	C	xxxxx	0.778	+ 0.000 V/C
# 29 Raitt St and Edinger Ave	E	xxxxx	0.990	E	xxxxx	0.990	+ 0.000 V/C
# 30 Bear St and MacArthur Blvd	C	xxxxx	0.707	C	xxxxx	0.707	+ 0.000 V/C
# 31 Bristol St and 17th St	D	xxxxx	0.869	D	xxxxx	0.869	+ 0.000 V/C
# 32 Bristol St and Civic Center Dr	E	xxxxx	0.942	E	xxxxx	0.942	+ 0.000 V/C
# 33 Bristol St and Santa Ana Blvd	D	xxxxx	0.806	D	xxxxx	0.806	+ 0.000 V/C
# 34 Bristol St and 1st St	C	xxxxx	0.767	C	xxxxx	0.767	+ 0.000 V/C
# 35 Bristol St and McFadden Ave	E	xxxxx	0.956	E	xxxxx	0.956	+ 0.000 V/C
# 36 Bristol St and Warner Ave	E	xxxxx	0.915	E	xxxxx	0.915	+ 0.000 V/C
# 37 Bristol St and Segerstrom Ave	D	xxxxx	0.811	D	xxxxx	0.811	+ 0.000 V/C
# 38 Bristol St and Alton Ave	A	xxxxx	0.545	A	xxxxx	0.545	+ 0.000 V/C
# 39 Bristol St and MacArthur Blvd	B	xxxxx	0.697	B	xxxxx	0.697	+ 0.000 V/C
# 40 Bristol St and Sunflower Ave	B	xxxxx	0.649	B	xxxxx	0.649	+ 0.000 V/C
# 41 Bristol St and I-405 NB Ramps	C	20.8	0.557	C	20.8	0.557	+ 0.000 D/V
# 42 Bristol St and I-405 SB Ramps	C	23.9	0.696	C	23.9	0.696	+ 0.000 D/V
# 43 Flower St and Santa Ana Blvd	D	xxxxx	0.806	D	xxxxx	0.806	+ 0.000 V/C
# 44 Flower St and 1st St	E	xxxxx	0.926	E	xxxxx	0.926	+ 0.000 V/C
# 45 Flower St and McFadden Ave	E	xxxxx	0.900	E	xxxxx	0.900	+ 0.000 V/C
# 46 Flower St and Segerstrom Ave	C	xxxxx	0.784	C	xxxxx	0.784	+ 0.000 V/C
# 47 Flower St and MacArthur Blvd	B	xxxxx	0.675	B	xxxxx	0.675	+ 0.000 V/C
# 48 Main St and La Veta Ave	A	xxxxx	0.586	A	xxxxx	0.586	+ 0.000 V/C
# 49 Main St and Mainplace Dr / Mem	A	xxxxx	0.512	A	xxxxx	0.512	+ 0.000 V/C
# 50 Main St and 17th St	D	xxxxx	0.884	D	xxxxx	0.884	+ 0.000 V/C

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Santa Ana Circulation Element

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 51 Main St and Civic Center Dr	C	xxxxx	0.783	C	xxxxx	0.783	+ 0.000 V/C
# 52 Main St and Santa Ana Blvd	E	xxxxx	0.926	E	xxxxx	0.926	+ 0.000 V/C
# 53 Main St and 4th St	A	xxxxx	0.410	A	xxxxx	0.410	+ 0.000 V/C
# 54 Main St and 1st St	B	xxxxx	0.681	B	xxxxx	0.681	+ 0.000 V/C
# 55 Main St and McFadden Ave	D	xxxxx	0.894	D	xxxxx	0.894	+ 0.000 V/C
# 56 Main St and Edinger Ave	C	xxxxx	0.795	C	xxxxx	0.795	+ 0.000 V/C
# 57 Main St and MacArthur Blvd	B	xxxxx	0.680	B	xxxxx	0.680	+ 0.000 V/C
# 58 Penn Wy and 17th St	B	12.2	0.660	B	12.2	0.660	+ 0.000 D/V
# 59 I-5 NB Off Ramps/17th Street	C	30.0	0.710	C	30.0	0.710	+ 0.000 D/V
# 60 Penn Wy and I-5 SB Ramps	C	21.2	0.550	C	21.2	0.550	+ 0.000 D/V
# 61 Santiago St and Civic Center D	F	159.2	1.769	F	159.2	1.769	+ 0.000 V/C
# 62 Santiago St and Santa Ana Blvd	F	xxxxx	1.037	F	xxxxx	1.037	+ 0.000 V/C
# 63 Standard Ave and 4th St	E	xxxxx	0.939	E	xxxxx	0.939	+ 0.000 V/C
# 64 Standard Ave and 1st St	E	xxxxx	0.976	E	xxxxx	0.976	+ 0.000 V/C
# 65 Standard Ave and Mcfadden Ave	D	xxxxx	0.854	D	xxxxx	0.854	+ 0.000 V/C
# 66 Halladay St and Warner Ave	C	xxxxx	0.775	C	xxxxx	0.775	+ 0.000 V/C
# 67 Halladay St and Dyer Rd	C	xxxxx	0.774	C	xxxxx	0.774	+ 0.000 V/C
# 68 SR-55 SB Ramps and MacArthur B	B	19.9	0.608	B	19.9	0.608	+ 0.000 D/V
# 69 SR-55 NB Ramps and MacArthur B	B	19.3	0.712	B	19.3	0.712	+ 0.000 D/V
# 70 SR-55 SB Ramps and Dyer Rd	C	25.7	0.617	C	25.7	0.617	+ 0.000 D/V
# 71 Glassell St and La Veta Ave	D	xxxxx	0.800	D	xxxxx	0.800	+ 0.000 V/C
# 72 Glassell St and SR-22 WB Ramps	C	32.6	0.871	C	32.6	0.871	+ 0.000 D/V
# 73 Grand Ave / Glassell St and SR	C	30.6	0.860	C	30.6	0.860	+ 0.000 D/V
# 74 Grand Ave and Fairhaven Ave	B	xxxxx	0.611	B	xxxxx	0.611	+ 0.000 V/C
# 75 Grand Ave and Santa Clara Ave	D	xxxxx	0.843	D	xxxxx	0.843	+ 0.000 V/C

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Santa Ana Circulation Element

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 76 Grand Ave and 17th St	C	xxxxx	0.794	C	xxxxx	0.794	+ 0.000 V/C
# 77 Grand Ave and I-5 NB Ramps	B	13.2	0.740	B	13.2	0.740	+ 0.000 D/V
# 78 Grand Ave and Santa Ana Blvd	C	26.0	0.832	C	26.0	0.832	+ 0.000 D/V
# 79 Grand Ave and 1st St	C	xxxxx	0.742	C	xxxxx	0.742	+ 0.000 V/C
# 80 Grand Ave and Chestnut Ave	C	xxxxx	0.704	C	xxxxx	0.704	+ 0.000 V/C
# 81 Grand Ave and McFadden Ave	D	xxxxx	0.892	D	xxxxx	0.892	+ 0.000 V/C
# 82 Grand Ave and Edinger Ave	D	xxxxx	0.838	D	xxxxx	0.838	+ 0.000 V/C
# 83 Grand Ave and Warner Ave	B	xxxxx	0.613	B	xxxxx	0.613	+ 0.000 V/C
# 84 SR-55 NB Ramps and Dyer Rd	B	17.1	0.569	B	17.1	0.569	+ 0.000 D/V
# 85 Cambridge St and La Veta Ave	D	31.6	0.971	D	31.6	0.971	+ 0.000 V/C
# 86 Cambridge St and Fairhaven Ave	A	xxxxx	0.563	A	xxxxx	0.563	+ 0.000 V/C
# 87 Mabury St and 1st Street	C	27.4	0.714	C	27.4	0.714	+ 0.000 D/V
# 88 Tustin St and La Veta Ave	A	xxxxx	0.446	A	xxxxx	0.446	+ 0.000 V/C
# 89 Tustin St and SR-22 WB On-Ramp	B	12.2	0.635	B	12.2	0.635	+ 0.000 D/V
# 90 Tustin St and SR-22 EB Off-Ram	C	25.0	0.723	C	25.0	0.723	+ 0.000 D/V
# 91 Tustin Ave and Fairhaven Ave	F	xxxxx	1.195	F	xxxxx	1.195	+ 0.000 V/C
# 92 Tustin Ave and Santa Clara Ave	F	xxxxx	1.037	F	xxxxx	1.037	+ 0.000 V/C
# 93 Tustin Ave and 17th St	E	xxxxx	0.911	E	xxxxx	0.911	+ 0.000 V/C
# 94 Tustin Ave and 4th St	D	xxxxx	0.830	D	xxxxx	0.830	+ 0.000 V/C
# 95 SR-55 SB Ramps / Auto Mall Dr	C	25.2	0.672	C	25.2	0.672	+ 0.000 D/V
# 96 SR-55 NB Ramps / Del Amo Ave a	C	25.4	0.673	C	25.4	0.673	+ 0.000 D/V
# 97 Red Hill Ave and Edinger Ave	B	xxxxx	0.610	B	xxxxx	0.610	+ 0.000 V/C
# 98 Red Hill Ave and Warner Ave	A	xxxxx	0.560	A	xxxxx	0.560	+ 0.000 V/C
# 99 Red Hill Ave and Dyer Rd / bar	A	xxxxx	0.548	A	xxxxx	0.548	+ 0.000 V/C
#100 Red Hill Ave and Alton Pkwy	D	xxxxx	0.855	D	xxxxx	0.855	+ 0.000 V/C
#101 Red Hill Ave and MacArthur Blv	B	xxxxx	0.686	B	xxxxx	0.686	+ 0.000 V/C

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Santa Ana Circulation Element

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
#102 Red Hill Ave and Main St	C	xxxxx	0.722	C	xxxxx	0.722	+ 0.000 V/C
#103 I-5 SB Ramps and Santa Ana Blv	B	17.4	0.559	B	17.4	0.559	+ 0.000 D/V
#104 Tustin Ranch Rd and Warner Ave	A	xxxxx	0.520	A	xxxxx	0.520	+ 0.000 V/C
#105 Von Karman Ave and Barranca Pk	E	xxxxx	0.929	E	xxxxx	0.929	+ 0.000 V/C
#106 Red Hill Avenue and El Camino	B	xxxxx	0.650	B	xxxxx	0.650	+ 0.000 V/C
#107 Red Hill Avenue and I-5 NB Ram	C	20.8	0.627	C	20.8	0.627	+ 0.000 D/V
#108 Red Hill Avenue and I-5 SB Ram	C	23.7	0.799	C	23.7	0.799	+ 0.000 D/V
#109 Red Hill Avenue and Nisson Roa	B	xxxxx	0.651	B	xxxxx	0.651	+ 0.000 V/C
#110 Red Hill Avenue and Walnut Ave	B	xxxxx	0.636	B	xxxxx	0.636	+ 0.000 V/C
#111 Red Hill Avenue and Valencia A	B	xxxxx	0.652	B	xxxxx	0.652	+ 0.000 V/C
#112 Tustin Ranch Road and Warner A	A	xxxxx	0.449	A	xxxxx	0.449	+ 0.000 V/C
#113 Tustin Ranch Road and Walnut A	F	xxxxx	1.273	F	xxxxx	1.273	+ 0.000 V/C
#114 SR-55 SB Ramps and Irvine Boul	D	41.0	1.099	D	41.0	1.099	+ 0.000 D/V
#115 SR-55 NB Ramps and Irvine Boul	C	23.5	0.906	C	23.5	0.906	+ 0.000 D/V

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #1 Euclid St and 1st St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.858
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	68	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			WideBypass			WideBypass		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2	1 0	1 0	2	1 0	1 0	2	1 0	1 0	2	1 0
Volume Module:												
Base Vol:	103	870	149	200	1785	101	252	937	177	190	606	194
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	103	870	149	200	1785	101	252	937	177	190	606	194
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	103	870	149	200	1785	101	252	937	177	190	606	194
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	103	870	149	200	1785	101	252	937	177	190	606	194
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	103	870	149	200	1785	101	252	937	177	190	606	194
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.04	1.00	1.00	1.05	1.00	1.00	1.06	1.00
Lanes:	1.00	2.56	0.44	1.00	2.84	0.16	1.00	2.52	0.48	1.00	2.27	0.73
Final Sat.:	1600	4298	702	1600	4743	257	1600	4237	763	1600	3836	1164
Capacity Analysis Module:												
Vol/Sat:	0.06	0.20	0.21	0.13	0.38	0.39	0.16	0.22	0.23	0.12	0.16	0.17
Crit Moves:	****					****			****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #2 Euclid St and McFadden Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.975
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	172	Level Of Service:	E

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Prot+Permit			Prot+Permit		
Rights:	WideBypass			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2	1 0	1 0	2	1 0	1 0	1	1 0	1 0	1	1 0
Volume Module:												
Base Vol:	162	1227	146	148	2062	171	255	521	323	151	335	127
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	162	1227	146	148	2062	171	255	521	323	151	335	127
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	162	1227	146	148	2062	171	255	521	323	151	335	127
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	162	1227	146	148	2062	171	255	521	323	151	335	127
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	162	1227	146	148	2062	171	255	521	323	151	335	127
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.05	1.00	1.00	1.05	1.00	1.00	1.04	1.00
Lanes:	1.00	2.68	0.32	1.00	2.77	0.23	1.00	1.23	0.77	1.00	1.45	0.55
Final Sat.:	1600	4490	510	1600	4632	368	1600	2075	1225	1600	2420	880
Capacity Analysis Module:												
Vol/Sat:	0.10	0.27	0.29	0.09	0.45	0.47	0.16	0.25	0.26	0.09	0.14	0.14
Crit Moves:	****					****			****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #3 Euclid St and Edinger Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.991
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	180	Level Of Service:	E

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 1	0	2 0	2 1	0	1 0	2 0	1	1 0	2 0	1
Volume Module:												
Base Vol:	127	801	68	168	2442	224	160	700	428	125	761	139
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	127	801	68	168	2442	224	160	700	428	125	761	139
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	127	801	68	168	2442	224	160	700	428	125	761	139
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	127	801	68	168	2442	224	160	700	428	125	761	139
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	127	801	68	168	2442	224	160	700	428	125	761	139
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.05	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	2.00	2.77	0.23	2.00	2.75	0.25	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	3200	4624	376	3200	4597	403	1600	3400	1600	1600	3400	1600
Capacity Analysis Module:												
Vol/Sat:	0.04	0.17	0.18	0.05	0.53	0.56	0.10	0.21	0.27	0.08	0.22	0.09
Crit Moves:	****					****			****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #4 Newhope St and Hazard Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.777
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	48	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Prot+Permit			Prot+Permit			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1	1 0	1 0	1	1 0	1 0	1	1 0	1 0	1	1 0
Volume Module:												
Base Vol:	78	590	84	88	1302	119	108	276	204	119	397	159
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	78	590	84	88	1302	119	108	276	204	119	397	159
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	78	590	84	88	1302	119	108	276	204	119	397	159
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	78	590	84	88	1302	119	108	276	204	119	397	159
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	78	590	84	88	1302	119	108	276	204	119	397	159
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.04	1.00	1.00	1.03	1.00	1.00	1.05	1.00	1.00	1.04	1.00
Lanes:	1.00	1.75	0.25	1.00	1.83	0.17	1.00	1.15	0.85	1.00	1.43	0.57
Final Sat.:	1600	2901	399	1600	3032	268	1600	1940	1360	1600	2385	915
Capacity Analysis Module:												
Vol/Sat:	0.05	0.20	0.21	0.06	0.43	0.44	0.07	0.14	0.15	0.07	0.17	0.17
Crit Moves:	****					****	****				****	

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #5 Newhope St and McFadden Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.827
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	58	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Prot+Permit			Prot+Permit		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1	1 0	1 0	1	1 0	1 0	1	1 0	1 0	1	1 0
Volume Module:												
Base Vol:	77	342	120	122	1213	113	135	492	160	190	484	108
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	77	342	120	122	1213	113	135	492	160	190	484	108
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	77	342	120	122	1213	113	135	492	160	190	484	108
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	77	342	120	122	1213	113	135	492	160	190	484	108
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	77	342	120	122	1213	113	135	492	160	190	484	108
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.04	1.00	1.00	1.03	1.00	1.00	1.04	1.00	1.00	1.04	1.00
Lanes:	1.00	1.48	0.52	1.00	1.83	0.17	1.00	1.51	0.49	1.00	1.64	0.36
Final Sat.:	1600	2469	831	1600	3027	273	1600	2515	785	1600	2716	584
Capacity Analysis Module:												
Vol/Sat:	0.05	0.14	0.14	0.08	0.40	0.41	0.08	0.20	0.20	0.12	0.18	0.19
Crit Moves:	****					****		****		****		

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Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #6 Harbor Blvd and SR-22 WB Off-Ramp / Banner Dr

Cycle (sec):	100	Critical Vol./Cap.(X):	0.738
Loss Time (sec):	5	Average Delay (sec/veh):	28.4
Optimal Cycle:	43	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 0	0	0 0	2	1 0	0 0	1! 0	0	1 1	0 0	1
Volume Module:												
Base Vol:	84	1534	0	0	1465	19	81	0	133	836	44	117
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	84	1534	0	0	1465	19	81	0	133	836	44	117
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	84	1534	0	0	1465	19	81	0	133	836	44	117
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	84	1534	0	0	1465	19	81	0	133	836	44	117
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	84	1534	0	0	1465	19	81	0	133	836	44	117
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.91	1.00	1.00	0.91	0.91	0.90	1.00	0.90	0.96	0.96	0.85
Lanes:	1.00	3.00	0.00	0.00	2.96	0.04	0.38	0.00	0.62	1.90	0.10	1.00
Final Sat.:	1805	5187	0	0	5110	66	646	0	1061	3448	181	1615
Capacity Analysis Module:												
Vol/Sat:	0.05	0.30	0.00	0.00	0.29	0.29	0.13	0.00	0.13	0.24	0.24	0.07
Crit Moves:	****				****		****				****	
Green/Cycle:	0.06	0.45	0.00	0.00	0.39	0.39	0.17	0.00	0.17	0.33	0.33	0.33
Volume/Cap:	0.74	0.65	0.00	0.00	0.74	0.74	0.74	0.00	0.74	0.74	0.74	0.22
Delay/Veh:	68.3	22.0	0.0	0.0	27.7	27.7	49.0	0.0	49.0	32.2	32.2	24.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	68.3	22.0	0.0	0.0	27.7	27.7	49.0	0.0	49.0	32.2	32.2	24.5
LOS by Move:	E	C	A	A	C	C	D	A	D	C	C	C
HCM2k85thQ:	7	21	0	0	23	23	12	0	12	20	20	4

Note: Queue reported is the number of cars per lane.

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Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #7 Trask Avenue and SR-22 EB On-Ramp

Cycle (sec):	100	Critical Vol./Cap.(X):	0.516
Loss Time (sec):	5	Average Delay (sec/veh):	12.0
Optimal Cycle:	26	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	0 0	0	0 0	0 0	0	2 0	1 0	0	0 0	1 1	0
Volume Module:												
Base Vol:	0	0	0	0	0	0	713	893	0	0	852	159
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	713	893	0	0	852	159
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	0	0	0	713	893	0	0	852	159
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	0	0	0	713	893	0	0	852	159
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	0	0	0	713	893	0	0	852	159
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	0.92	1.00	1.00	1.00	0.93	0.93
Lanes:	0.00	0.00	0.00	0.00	0.00	0.00	2.00	1.00	0.00	0.00	1.69	0.31
Final Sat.:	0	0	0	0	0	0	3502	1900	0	0	2969	554
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.47	0.00	0.00	0.29	0.29
Crit Moves:							****				****	
Green/Cycle:	0.00	0.00	0.00	0.00	0.00	0.00	0.39	0.95	0.00	0.00	0.56	0.56
Volume/Cap:	0.00	0.00	0.00	0.00	0.00	0.00	0.52	0.49	0.00	0.00	0.52	0.52
Delay/Veh:	0.0	0.0	0.0	0.0	0.0	0.0	23.4	0.5	0.0	0.0	14.1	14.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	0.0	0.0	0.0	23.4	0.5	0.0	0.0	14.1	14.1
LOS by Move:	A	A	A	A	A	A	C	A	A	A	B	B
HCM2k85thQ:	0	0	0	0	0	0	13	5	0	0	16	16

Note: Queue reported is the number of cars per lane.

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #8 Harbor Blvd and Westminster Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.985
Loss Time (sec):	0	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	180	Level Of Service:	E

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	WideBypass			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 0	1	1 0	3 0	1	1 0	2 1	0	1 0	3 0	1
Volume Module:												
Base Vol:	178	1173	251	258	2021	115	192	1010	36	415	1124	306
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	178	1173	251	258	2021	115	192	1010	36	415	1124	306
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	178	1173	251	258	2021	115	192	1010	36	415	1124	306
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	178	1173	251	258	2021	115	192	1010	36	415	1124	306
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	178	1173	251	258	2021	115	192	1010	36	415	1124	306
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.04	1.00	1.00	1.06	1.00
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	1.00	2.90	0.10	1.00	3.00	1.00
Final Sat.:	1600	5100	1600	1600	5100	1600	1600	4835	165	1600	5100	1600
Capacity Analysis Module:												
Vol/Sat:	0.11	0.23	0.16	0.16	0.40	0.07	0.12	0.21	0.22	0.26	0.22	0.19
Crit Moves:	****			****					****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #9 Harbor Blvd and 1st St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.789
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	50	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 0	1	1 0	3 0	1	2 0	2 1	0	2 0	2 1	0
Volume Module:												
Base Vol:	95	756	163	236	1989	129	138	919	178	196	497	116
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	95	756	163	236	1989	129	138	919	178	196	497	116
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	95	756	163	236	1989	129	138	919	178	196	497	116
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	95	756	163	236	1989	129	138	919	178	196	497	116
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	95	756	163	236	1989	129	138	919	178	196	497	116
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.05	1.00	1.00	1.05	1.00
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	2.00	2.51	0.49	2.00	2.43	0.57
Final Sat.:	1600	5100	1600	1600	5100	1600	3200	4221	779	3200	4092	908
Capacity Analysis Module:												
Vol/Sat:	0.06	0.15	0.10	0.15	0.39	0.08	0.04	0.22	0.23	0.06	0.12	0.13
Crit Moves:	****			****					****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #10 Harbor Blvd and McFadden Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.788
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	50	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	3 0	1	2 0	2 1	0	1 0	1 1	0	1 0	1 1	0
Volume Module:												
Base Vol:	104	1059	101	190	2004	67	177	462	138	138	311	89
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	104	1059	101	190	2004	67	177	462	138	138	311	89
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	104	1059	101	190	2004	67	177	462	138	138	311	89
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	104	1059	101	190	2004	67	177	462	138	138	311	89
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	104	1059	101	190	2004	67	177	462	138	138	311	89
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.04	1.00	1.00	1.04	1.00	1.00	1.04	1.00
Lanes:	2.00	3.00	1.00	2.00	2.90	0.10	1.00	1.54	0.46	1.00	1.56	0.44
Final Sat.:	3200	5100	1600	3200	4845	155	1600	2564	736	1600	2588	712
Capacity Analysis Module:												
Vol/Sat:	0.03	0.21	0.06	0.06	0.41	0.43	0.11	0.18	0.19	0.09	0.12	0.13
Crit Moves:	****					****			****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #11 Harbor Blvd and Edinger Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.836
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	61	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	3 0	1	2 0	3 0	1	2 0	2 1	0	2 0	3 0	1
Volume Module:												
Base Vol:	103	772	146	204	2349	68	123	743	373	191	424	176
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	103	772	146	204	2349	68	123	743	373	191	424	176
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	103	772	146	204	2349	68	123	743	373	191	424	176
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	103	772	146	204	2349	68	123	743	373	191	424	176
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	103	772	146	204	2349	68	123	743	373	191	424	176
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	2.00	1.00	2.00	3.00	1.00
Final Sat.:	3200	5100	1600	3200	5100	1600	3200	3400	1600	3200	5100	1600
Capacity Analysis Module:												
Vol/Sat:	0.03	0.15	0.09	0.06	0.46	0.04	0.04	0.22	0.23	0.06	0.08	0.11
Crit Moves:	****			****					****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #12 Harbor Blvd and Warner Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.789
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	50	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 1	0	2 0	3 0	1	2 0	3 0	1	2 0	3 0	1
Volume Module:												
Base Vol:	109	665	169	429	1933	116	101	1440	379	138	723	122
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	109	665	169	429	1933	116	101	1440	379	138	723	122
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	109	665	169	429	1933	116	101	1440	379	138	723	122
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	109	665	169	429	1933	116	101	1440	379	138	723	122
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	109	665	169	429	1933	116	101	1440	379	138	723	122
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	2.00	2.39	0.61	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3200	4027	973	3200	5100	1600	3200	5100	1600	3200	5100	1600
Capacity Analysis Module:												
Vol/Sat:	0.03	0.17	0.17	0.13	0.38	0.07	0.03	0.28	0.24	0.04	0.14	0.08
Crit Moves:	****			****			****			****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #13 Harbor Blvd and Segerstrom Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.965
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	152	Level Of Service:	E

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Prot+Permit			Prot+Permit		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2	1 0	1 0	2	1 0	1 0	1	1 0	1 0	2	0 1
Volume Module:												
Base Vol:	107	759	48	169	2274	85	82	689	278	140	434	98
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	107	759	48	169	2274	85	82	689	278	140	434	98
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	107	759	48	169	2274	85	82	689	278	140	434	98
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	107	759	48	169	2274	85	82	689	278	140	434	98
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	107	759	48	169	2274	85	82	689	278	140	434	98
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.04	1.00	1.00	1.04	1.00	1.00	1.04	1.00	1.00	1.06	1.00
Lanes:	2.00	2.82	0.18	1.00	2.89	0.11	1.00	1.43	0.57	1.00	2.00	1.00
Final Sat.:	3200	4714	286	1600	4827	173	1600	2380	920	1600	3400	1600
Capacity Analysis Module:												
Vol/Sat:	0.03	0.16	0.17	0.11	0.47	0.49	0.05	0.29	0.30	0.09	0.13	0.06
Crit Moves:	****					****			****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #14 MacArthur Blvd and Hyland Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.611
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	30	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Prot+Permit			Prot+Permit		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	0 1	0	1 0	1 0	1	1 0	3 0	1	1 0	3 0	1
Volume Module:												
Base Vol:	86	4	24	8	2	19	7	1934	767	68	517	21
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	86	4	24	8	2	19	7	1934	767	68	517	21
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	86	4	24	8	2	19	7	1934	767	68	517	21
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	86	4	24	8	2	19	7	1934	767	68	517	21
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	86	4	24	8	2	19	7	1934	767	68	517	21
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	2.00	0.14	0.86	1.00	1.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00
Final Sat.:	3200	229	1371	1600	1700	1600	1600	5100	1600	1600	5100	1600
Capacity Analysis Module:												
Vol/Sat:	0.03	0.02	0.02	0.01	0.00	0.01	0.00	0.38	0.48	0.04	0.10	0.01
Crit Moves:	****					****			****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #15 MacArthur Blvd and Harbor Blvd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.736
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	41	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	3 0	1	2 0	3 0	1	1 0	3 0	1	1 0	3 0	1
Volume Module:												
Base Vol:	131	920	94	295	1701	118	131	1183	357	128	427	127
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	131	920	94	295	1701	118	131	1183	357	128	427	127
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	131	920	94	295	1701	118	131	1183	357	128	427	127
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	131	920	94	295	1701	118	131	1183	357	128	427	127
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	131	920	94	295	1701	118	131	1183	357	128	427	127
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00
Final Sat.:	3200	5100	1600	3200	5100	1600	1600	5100	1600	1600	5100	1600
Capacity Analysis Module:												
Vol/Sat:	0.04	0.18	0.06	0.09	0.33	0.07	0.08	0.23	0.22	0.08	0.08	0.08
Crit Moves:	****			****			****			****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #16 Harbor Blvd and Sunflower Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.704
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	38	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	3 0	1	2 0	3 0	1	1 0	1 1	0	1 1	0 1	0
Volume Module:												
Base Vol:	221	1128	209	233	2204	54	13	153	59	139	178	101
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	221	1128	209	233	2204	54	13	153	59	139	178	101
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	221	1128	209	233	2204	54	13	153	59	139	178	101
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	221	1128	209	233	2204	54	13	153	59	139	178	101
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	221	1128	209	233	2204	54	13	153	59	139	178	101
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.04	1.00	1.00	1.05	1.00
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	1.00	1.44	0.56	1.00	1.28	0.72
Final Sat.:	3200	5100	1600	3200	5100	1600	1600	2409	891	1601	2146	1153
Capacity Analysis Module:												
Vol/Sat:	0.07	0.22	0.13	0.07	0.43	0.03	0.01	0.06	0.07	0.09	0.08	0.09
Crit Moves:	****			****					****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #17 Harbor Blvd and I-405 NB Off-Ramp

Cycle (sec):	100	Critical Vol./Cap.(X):	0.569
Loss Time (sec):	5	Average Delay (sec/veh):	18.0
Optimal Cycle:	28	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	4	0 0	0 0	4	0 0	0 0	0	0 0	1 0	1! 0	1
Volume Module:												
Base Vol:	0	1915	0	0	1978	0	0	0	0	399	0	702
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1915	0	0	1978	0	0	0	0	399	0	702
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1915	0	0	1978	0	0	0	0	399	0	702
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1915	0	0	1978	0	0	0	0	399	0	702
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1915	0	0	1978	0	0	0	0	399	0	702
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	0.89	1.00	0.89
Lanes:	0.00	4.00	0.00	0.00	4.00	0.00	0.00	0.00	0.00	1.36	0.00	1.64
Final Sat.:	0	6916	0	0	6916	0	0	0	0	2298	0	2762
Capacity Analysis Module:												
Vol/Sat:	0.00	0.28	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.17	0.00	0.25
Crit Moves:	****				****							****
Green/Cycle:	0.00	0.50	0.00	0.00	0.50	0.00	0.00	0.00	0.00	0.45	0.00	0.45
Volume/Cap:	0.00	0.55	0.00	0.00	0.57	0.00	0.00	0.00	0.00	0.39	0.00	0.57
Delay/Veh:	0.0	17.3	0.0	0.0	17.5	0.0	0.0	0.0	0.0	18.6	0.0	20.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	17.3	0.0	0.0	17.5	0.0	0.0	0.0	0.0	18.6	0.0	20.9
LOS by Move:	A	B	A	A	B	A	A	A	A	B	A	C
HCM2k85thQ:	0	17	0	0	18	0	0	0	0	9	0	15

Note: Queue reported is the number of cars per lane.

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Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #18 Harbor Blvd and I-405 SB Off-Ramp

Cycle (sec):	100	Critical Vol./Cap.(X):	0.612
Loss Time (sec):	5	Average Delay (sec/veh):	15.0
Optimal Cycle:	31	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Ignore			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0 3	0 1	0	0 4	0 0	1	0	1! 0 1	0	0 0	0 0
Volume Module:												
Base Vol:	0	1963	0	0	1253	0	475	0	529	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1963	0	0	1253	0	475	0	529	0	0	0
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1963	0	0	1253	0	475	0	529	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1963	0	0	1253	0	475	0	529	0	0	0
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1963	0	0	1253	0	475	0	529	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.91	1.00	1.00	0.91	1.00	0.90	1.00	0.90	1.00	1.00	1.00
Lanes:	0.00	3.00	1.00	0.00	4.00	0.00	1.47	0.00	1.53	0.00	0.00	0.00
Final Sat.:	0	5187	1900	0	6916	0	2519	0	2610	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.38	0.00	0.00	0.18	0.00	0.19	0.00	0.20	0.00	0.00	0.00
Crit Moves:		****		****					****			
Green/Cycle:	0.00	0.62	0.00	0.00	0.62	0.00	0.33	0.00	0.33	0.00	0.00	0.00
Volume/Cap:	0.00	0.61	0.00	0.00	0.29	0.00	0.57	0.00	0.61	0.00	0.00	0.00
Delay/Veh:	0.0	12.0	0.0	0.0	8.9	0.0	28.0	0.0	28.7	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	12.0	0.0	0.0	8.9	0.0	28.0	0.0	28.7	0.0	0.0	0.0
LOS by Move:	A	B	A	A	A	A	C	A	C	A	A	A
HCM2k85thQ:	0	21	0	0	8	0	13	0	15	0	0	0

Note: Queue reported is the number of cars per lane.

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #19 Fairview St and Civic Center Dr

Cycle (sec):	100	Critical Vol./Cap.(X):	0.741
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	42	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	WideBypass			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2	1 0	1 0	2	1 0	0 1	0	1 0	1 1	0	0 1
Volume Module:												
Base Vol:	7	1569	508	332	1915	8	7	25	25	100	3	52
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	7	1569	508	332	1915	8	7	25	25	100	3	52
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	7	1569	508	332	1915	8	7	25	25	100	3	52
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	7	1569	508	332	1915	8	7	25	25	100	3	52
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	7	1569	508	332	1915	8	7	25	25	100	3	52
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.04	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.27	0.73	1.00	2.99	0.01	0.24	0.88	0.88	1.94	0.06	1.00
Final Sat.:	1600	3826	1174	1600	4980	20	393	1404	1404	3107	93	1600
Capacity Analysis Module:												
Vol/Sat:	0.00	0.41	0.43	0.21	0.38	0.40	0.02	0.02	0.02	0.03	0.03	0.03
Crit Moves:			****	****				****				****

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #20 Fairview St and 1st St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.859
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	68	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 0	1	1 0	2 1	0	1 0	2 1	0	1 0	2 1	0
Volume Module:												
Base Vol:	200	1538	289	245	1426	164	200	1153	179	120	539	181
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	200	1538	289	245	1426	164	200	1153	179	120	539	181
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	200	1538	289	245	1426	164	200	1153	179	120	539	181
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	200	1538	289	245	1426	164	200	1153	179	120	539	181
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	200	1538	289	245	1426	164	200	1153	179	120	539	181
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.05	1.00	1.00	1.05	1.00	1.00	1.06	1.00
Lanes:	1.00	3.00	1.00	1.00	2.69	0.31	1.00	2.60	0.40	1.00	2.25	0.75
Final Sat.:	1600	5100	1600	1600	4505	495	1600	4355	645	1600	3793	1207
Capacity Analysis Module:												
Vol/Sat:	0.13	0.30	0.18	0.15	0.32	0.33	0.13	0.26	0.28	0.08	0.14	0.15
Crit Moves:	****					****			****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #21 Fairview St and McFadden Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.799
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	52	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 0	1	1 0	3 0	1	1 0	1 1	0	1 0	1 1	0
Volume Module:												
Base Vol:	141	1510	202	154	1878	136	221	522	120	147	380	30
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	141	1510	202	154	1878	136	221	522	120	147	380	30
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	141	1510	202	154	1878	136	221	522	120	147	380	30
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	141	1510	202	154	1878	136	221	522	120	147	380	30
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	141	1510	202	154	1878	136	221	522	120	147	380	30
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.04	1.00	1.00	1.03	1.00
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	1.00	1.63	0.37	1.00	1.85	0.15
Final Sat.:	1600	5100	1600	1600	5100	1600	1600	2702	598	1600	3066	234
Capacity Analysis Module:												
Vol/Sat:	0.09	0.30	0.13	0.10	0.37	0.09	0.14	0.19	0.20	0.09	0.12	0.13
Crit Moves:	****			****					****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #22 Fairview St and Edinger Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.861
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	69	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 1	0	2 0	2 1	0	2 0	2 1	0	2 0	2 1	0
Volume Module:												
Base Vol:	200	883	123	223	1558	132	361	1002	268	421	553	110
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	200	883	123	223	1558	132	361	1002	268	421	553	110
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	200	883	123	223	1558	132	361	1002	268	421	553	110
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	200	883	123	223	1558	132	361	1002	268	421	553	110
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	200	883	123	223	1558	132	361	1002	268	421	553	110
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.05	1.00	1.00	1.05	1.00	1.00	1.05	1.00
Lanes:	2.00	2.63	0.37	2.00	2.77	0.23	2.00	2.37	0.63	2.00	2.50	0.50
Final Sat.:	3200	4413	587	3200	4625	375	3200	3987	1013	3200	4204	796
Capacity Analysis Module:												
Vol/Sat:	0.06	0.20	0.21	0.07	0.34	0.35	0.11	0.25	0.26	0.13	0.13	0.14
Crit Moves:	****					****			****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #23 Fairview St and Warner Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.816
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	55	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 1	0	2 0	2 1	0	2 0	2 1	0	2 0	2 1	0
Volume Module:												
Base Vol:	222	981	129	194	1543	113	68	991	295	267	807	261
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	222	981	129	194	1543	113	68	991	295	267	807	261
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	222	981	129	194	1543	113	68	991	295	267	807	261
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	222	981	129	194	1543	113	68	991	295	267	807	261
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	222	981	129	194	1543	113	68	991	295	267	807	261
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.04	1.00	1.00	1.05	1.00	1.00	1.06	1.00
Lanes:	2.00	2.65	0.35	2.00	2.80	0.20	2.00	2.31	0.69	2.00	2.27	0.73
Final Sat.:	3200	4442	558	3200	4672	328	3200	3899	1101	3200	3827	1173
Capacity Analysis Module:												
Vol/Sat:	0.07	0.22	0.23	0.06	0.33	0.35	0.02	0.25	0.27	0.08	0.21	0.22
Crit Moves:	****					****			****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #24 Fairview St and MacArthur Blvd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.684
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	36	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 1	0	2 0	3 0	1	2 0	3 0	1	2 0	3 0	1
Volume Module:												
Base Vol:	261	811	94	290	1460	163	121	984	145	235	494	140
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	261	811	94	290	1460	163	121	984	145	235	494	140
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	261	811	94	290	1460	163	121	984	145	235	494	140
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	261	811	94	290	1460	163	121	984	145	235	494	140
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	261	811	94	290	1460	163	121	984	145	235	494	140
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	2.00	2.69	0.31	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3200	4501	499	3200	5100	1600	3200	5100	1600	3200	5100	1600
Capacity Analysis Module:												
Vol/Sat:	0.08	0.18	0.19	0.09	0.29	0.10	0.04	0.19	0.09	0.07	0.10	0.09
Crit Moves:	****			****			****			****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #25 Fairview Rd and Sunflower Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.697
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	37	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	3 0	1	2 0	2 1	0	2 0	1 1	0	2 0	2 0	1
Volume Module:												
Base Vol:	185	1071	163	191	1627	104	49	322	65	357	299	154
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	185	1071	163	191	1627	104	49	322	65	357	299	154
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	185	1071	163	191	1627	104	49	322	65	357	299	154
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	185	1071	163	191	1627	104	49	322	65	357	299	154
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	185	1071	163	191	1627	104	49	322	65	357	299	154
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.04	1.00	1.00	1.04	1.00	1.00	1.06	1.00
Lanes:	2.00	3.00	1.00	2.00	2.82	0.18	2.00	1.66	0.34	2.00	2.00	1.00
Final Sat.:	3200	5100	1600	3200	4712	288	3200	2763	537	3200	3400	1600
Capacity Analysis Module:												
Vol/Sat:	0.06	0.21	0.10	0.06	0.35	0.36	0.02	0.12	0.12	0.11	0.09	0.10
Crit Moves:	****					****		****		****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #26 Greenville St and Edinger Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.774
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	47	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	0	0 1	0 0	0	0 0	0 0	2	1 0	1 0	3	0 0
Volume Module:												
Base Vol:	186	0	251	0	0	0	0	1821	444	153	813	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	186	0	251	0	0	0	0	1821	444	153	813	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	186	0	251	0	0	0	0	1821	444	153	813	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	186	0	251	0	0	0	0	1821	444	153	813	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	186	0	251	0	0	0	0	1821	444	153	813	0
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.05	1.00	1.00	1.06	1.00
Lanes:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	2.41	0.59	1.00	3.00	0.00
Final Sat.:	1600	0	1600	0	0	0	0	4059	941	1600	5100	0
Capacity Analysis Module:												
Vol/Sat:	0.12	0.00	0.16	0.00	0.00	0.00	0.00	0.45	0.47	0.10	0.16	0.00
Crit Moves:			****						****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #27 Greenville St and Segerstrom Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.843
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	63	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	0	1 0	1 0	0	1 0	1 0	2	1 0	1 0	2	1 0
Volume Module:												
Base Vol:	47	193	78	154	472	160	46	1035	165	190	768	88
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	47	193	78	154	472	160	46	1035	165	190	768	88
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	47	193	78	154	472	160	46	1035	165	190	768	88
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	47	193	78	154	472	160	46	1035	165	190	768	88
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	47	193	78	154	472	160	46	1035	165	190	768	88
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.05	1.00	1.00	1.05	1.00
Lanes:	1.00	0.71	0.29	1.00	0.75	0.25	1.00	2.59	0.41	1.00	2.69	0.31
Final Sat.:	1600	1139	461	1600	1195	405	1600	4340	660	1600	4507	493
Capacity Analysis Module:												
Vol/Sat:	0.03	0.17	0.17	0.10	0.39	0.40	0.03	0.24	0.25	0.12	0.17	0.18
Crit Moves:	****					****			****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #28 Raitt St and McFadden Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.778
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	48	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1	1 0	1 0	1	1 0	1 0	1	1 0	1 0	1	1 0
Volume Module:												
Base Vol:	67	618	98	123	938	128	122	743	95	146	461	82
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	67	618	98	123	938	128	122	743	95	146	461	82
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	67	618	98	123	938	128	122	743	95	146	461	82
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	67	618	98	123	938	128	122	743	95	146	461	82
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	67	618	98	123	938	128	122	743	95	146	461	82
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.04	1.00	1.00	1.04	1.00	1.00	1.04	1.00	1.00	1.04	1.00
Lanes:	1.00	1.73	0.27	1.00	1.76	0.24	1.00	1.77	0.23	1.00	1.70	0.30
Final Sat.:	1600	2862	438	1600	2916	384	1600	2937	363	1600	2817	483
Capacity Analysis Module:												
Vol/Sat:	0.04	0.22	0.22	0.08	0.32	0.33	0.08	0.25	0.26	0.09	0.16	0.17
Crit Moves:	****					****			****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #29 Raitt St and Edinger Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.990
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	180	Level Of Service:	E

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Y+R:	4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	
Lanes:	1	0 1	1	0	1	0 1	1	0	1	0 2	1	0	1	0 2	1	0
Volume Module:																
Base Vol:	197	524	189		163	770	91		324	1980	285		122	954	56	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	197	524	189		163	770	91		324	1980	285		122	954	56	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	197	524	189		163	770	91		324	1980	285		122	954	56	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	197	524	189		163	770	91		324	1980	285		122	954	56	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	197	524	189		163	770	91		324	1980	285		122	954	56	
Saturation Flow Module:																
Sat/Lane:	1600	1600	1600		1600	1600	1600		1600	1600	1600		1600	1600	1600	
Adjustment:	1.00	1.04	1.00		1.00	1.03	1.00		1.00	1.05	1.00		1.00	1.04	1.00	
Lanes:	1.00	1.47	0.53		1.00	1.79	0.21		1.00	2.62	0.38		1.00	2.83	0.17	
Final Sat.:	1600	2452	848		1600	2962	338		1600	4396	604		1600	4734	266	
Capacity Analysis Module:																
Vol/Sat:	0.12	0.21	0.22		0.10	0.26	0.27		0.20	0.45	0.47		0.08	0.20	0.21	
Crit Moves:	****						****				****		****			

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #30 Bear St and MacArthur Blvd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.707
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	38	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 0	1	1 0	2 0	1	1 0	2 1	0	1 0	2 1	0
Volume Module:												
Base Vol:	71	245	104	199	756	300	92	1581	108	62	1041	88
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	71	245	104	199	756	300	92	1581	108	62	1041	88
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	71	245	104	199	756	300	92	1581	108	62	1041	88
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	71	245	104	199	756	300	92	1581	108	62	1041	88
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	71	245	104	199	756	300	92	1581	108	62	1041	88
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.04	1.00	1.00	1.05	1.00
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	2.81	0.19	1.00	2.77	0.23
Final Sat.:	1600	3400	1600	1600	3400	1600	1600	4693	307	1600	4626	374
Capacity Analysis Module:												
Vol/Sat:	0.04	0.07	0.07	0.12	0.22	0.19	0.06	0.34	0.35	0.04	0.23	0.24
Crit Moves:	****			****					****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #31 Bristol St and 17th St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.869
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	72	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	3 0	1	2 0	3 0	1	2 0	2 1	0	2 0	3 0	1
Volume Module:												
Base Vol:	251	1292	218	487	2001	263	324	963	156	368	845	280
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	251	1292	218	487	2001	263	324	963	156	368	845	280
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	251	1292	218	487	2001	263	324	963	156	368	845	280
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	251	1292	218	487	2001	263	324	963	156	368	845	280
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	251	1292	218	487	2001	263	324	963	156	368	845	280
OvlAdjVol:												36
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.05	1.00	1.00	1.06	1.00
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	2.58	0.42	2.00	3.00	1.00
Final Sat.:	3200	5100	1600	3200	5100	1600	3200	4331	669	3200	5100	1600
Capacity Analysis Module:												
Vol/Sat:	0.08	0.25	0.14	0.15	0.39	0.16	0.10	0.22	0.23	0.12	0.17	0.17
OvlAdjV/S:												0.02
Crit Moves:	****			****					****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #32 Bristol St and Civic Center Dr

Cycle (sec):	100	Critical Vol./Cap.(X):	0.942
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	120	Level Of Service:	E

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Prot+Permit			Prot+Permit		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2	1 0	1 0	2	1 0	1 0	1	1 0	1 0	1	1 0
Volume Module:												
Base Vol:	133	1178	104	403	1628	101	165	836	103	127	421	87
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	133	1178	104	403	1628	101	165	836	103	127	421	87
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	133	1178	104	403	1628	101	165	836	103	127	421	87
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	133	1178	104	403	1628	101	165	836	103	127	421	87
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	133	1178	104	403	1628	101	165	836	103	127	421	87
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.04	1.00	1.00	1.04	1.00	1.00	1.04	1.00
Lanes:	1.00	2.76	0.24	1.00	2.82	0.18	1.00	1.78	0.22	1.00	1.66	0.34
Final Sat.:	1600	4611	389	1600	4720	280	1600	2949	351	1600	2752	548
Capacity Analysis Module:												
Vol/Sat:	0.08	0.26	0.27	0.25	0.34	0.36	0.10	0.28	0.29	0.08	0.15	0.16
Crit Moves:			****	****					****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #33 Bristol St and Santa Ana Blvd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.806
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	53	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Prot+Permit			Prot+Permit		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 1	0	1 0	2 1	0	1 0	2 1	0	1 0	2 1	0
Volume Module:												
Base Vol:	69	1502	209	153	1684	46	171	831	72	185	462	79
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	69	1502	209	153	1684	46	171	831	72	185	462	79
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	69	1502	209	153	1684	46	171	831	72	185	462	79
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	69	1502	209	153	1684	46	171	831	72	185	462	79
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	69	1502	209	153	1684	46	171	831	72	185	462	79
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.04	1.00	1.00	1.05	1.00	1.00	1.05	1.00
Lanes:	1.00	2.63	0.37	1.00	2.92	0.08	1.00	2.76	0.24	1.00	2.56	0.44
Final Sat.:	1600	4414	586	1600	4872	128	1600	4617	383	1600	4299	701
Capacity Analysis Module:												
Vol/Sat:	0.04	0.34	0.36	0.10	0.35	0.36	0.11	0.18	0.19	0.12	0.11	0.11
Crit Moves:		****	****						****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #34 Bristol St and 1st St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.767
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	46	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	3 0	1	2 0	3 0	1	1 0	2 1	0	1 0	2 1	0
Volume Module:												
Base Vol:	205	1430	181	315	1298	183	200	1231	124	90	678	99
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	205	1430	181	315	1298	183	200	1231	124	90	678	99
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	205	1430	181	315	1298	183	200	1231	124	90	678	99
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	205	1430	181	315	1298	183	200	1231	124	90	678	99
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	205	1430	181	315	1298	183	200	1231	124	90	678	99
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.05	1.00	1.00	1.05	1.00
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	1.00	2.73	0.27	1.00	2.62	0.38
Final Sat.:	3200	5100	1600	3200	5100	1600	1600	4561	439	1600	4388	612
Capacity Analysis Module:												
Vol/Sat:	0.06	0.28	0.11	0.10	0.25	0.11	0.13	0.27	0.28	0.06	0.15	0.16
Crit Moves:		****		****					****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #35 Bristol St and McFadden Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.956
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	139	Level Of Service:	E

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Prot+Permit			Prot+Permit		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 0	1	1 0	3 0	1	1 0	1 1	0	1 0	1 1	0
Volume Module:												
Base Vol:	125	1117	56	204	1986	205	309	531	261	262	729	84
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	125	1117	56	204	1986	205	309	531	261	262	729	84
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	125	1117	56	204	1986	205	309	531	261	262	729	84
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	125	1117	56	204	1986	205	309	531	261	262	729	84
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	125	1117	56	204	1986	205	309	531	261	262	729	84
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.05	1.00	1.00	1.03	1.00
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	1.00	1.34	0.66	1.00	1.79	0.21
Final Sat.:	1600	5100	1600	1600	5100	1600	1600	2245	1055	1600	2969	331
Capacity Analysis Module:												
Vol/Sat:	0.08	0.22	0.04	0.13	0.39	0.13	0.19	0.24	0.25	0.16	0.25	0.25
Crit Moves:	****			****			****			****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #36 Bristol St and Warner Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.915
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	96	Level Of Service:	E

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 1	0	2 0	2 1	0	1 0	3 0	1	1 0	3 0	1
Volume Module:												
Base Vol:	221	993	183	600	2033	230	165	919	229	231	1058	180
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	221	993	183	600	2033	230	165	919	229	231	1058	180
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	221	993	183	600	2033	230	165	919	229	231	1058	180
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	221	993	183	600	2033	230	165	919	229	231	1058	180
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	221	993	183	600	2033	230	165	919	229	231	1058	180
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.05	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	2.00	2.53	0.47	2.00	2.70	0.30	1.00	3.00	1.00	1.00	3.00	1.00
Final Sat.:	3200	4253	747	3200	4512	488	1600	5100	1600	1600	5100	1600
Capacity Analysis Module:												
Vol/Sat:	0.07	0.23	0.24	0.19	0.45	0.47	0.10	0.18	0.14	0.14	0.21	0.11
Crit Moves:	****					****		****		****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #37 Bristol St and Segerstrom Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.811
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	54	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	WideBypass			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2	1 0	1 0	2	1 0	1 0	2	1 0	1 0	2	1 0
Volume Module:												
Base Vol:	70	778	146	283	1011	119	280	1354	125	134	607	78
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	70	778	146	283	1011	119	280	1354	125	134	607	78
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	70	778	146	283	1011	119	280	1354	125	134	607	78
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	70	778	146	283	1011	119	280	1354	125	134	607	78
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	70	778	146	283	1011	119	280	1354	125	134	607	78
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.05	1.00	1.00	1.05	1.00	1.00	1.05	1.00
Lanes:	1.00	2.53	0.47	1.00	2.68	0.32	1.00	2.75	0.25	1.00	2.66	0.34
Final Sat.:	1600	4242	758	1600	4495	505	1600	4594	406	1600	4453	547
Capacity Analysis Module:												
Vol/Sat:	0.04	0.18	0.19	0.18	0.22	0.24	0.17	0.29	0.31	0.08	0.14	0.14
Crit Moves:			****	****					****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #38 Bristol St and Alton Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.545
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	26	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	WideBypass			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 1	0	1 0	3 0	1	1 0	1 1	0	1 0	0 1	0
Volume Module:												
Base Vol:	11	739	55	230	1591	36	164	101	211	41	87	31
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	11	739	55	230	1591	36	164	101	211	41	87	31
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	11	739	55	230	1591	36	164	101	211	41	87	31
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	11	739	55	230	1591	36	164	101	211	41	87	31
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	11	739	55	230	1591	36	164	101	211	41	87	31
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.04	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.00	1.00
Lanes:	1.00	2.79	0.21	1.00	3.00	1.00	1.00	1.00	1.00	1.00	0.74	0.26
Final Sat.:	1600	4668	332	1600	5100	1600	1600	1700	1600	1600	1180	420
Capacity Analysis Module:												
Vol/Sat:	0.01	0.16	0.17	0.14	0.31	0.02	0.10	0.06	0.13	0.03	0.07	0.07
Crit Moves:	****				****			****				****

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #39 Bristol St and MacArthur Blvd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.697
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	37	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	3 0	1	2 0	2 1	0	2 0	3 0	1	2 0	3 0	1
Volume Module:												
Base Vol:	102	531	133	329	1434	150	166	1203	244	159	758	110
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	102	531	133	329	1434	150	166	1203	244	159	758	110
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	102	531	133	329	1434	150	166	1203	244	159	758	110
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	102	531	133	329	1434	150	166	1203	244	159	758	110
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	102	531	133	329	1434	150	166	1203	244	159	758	110
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.05	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	2.00	3.00	1.00	2.00	2.72	0.28	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3200	5100	1600	3200	4545	455	3200	5100	1600	3200	5100	1600
Capacity Analysis Module:												
Vol/Sat:	0.03	0.10	0.08	0.10	0.32	0.33	0.05	0.24	0.15	0.05	0.15	0.07
Crit Moves:	****					****		****		****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #40 Bristol St and Sunflower Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.649
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	32	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 1	1	2 0	3 0	1	2 0	2 1	1	2 0	3 0	1
Volume Module:												
Base Vol:	111	546	161	242	1370	103	112	926	375	295	480	166
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	111	546	161	242	1370	103	112	926	375	295	480	166
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	111	546	161	242	1370	103	112	926	375	295	480	166
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	111	546	161	242	1370	103	112	926	375	295	480	166
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	111	546	161	242	1370	103	112	926	375	295	480	166
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.04	1.00	1.00	1.06	1.00
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	2.85	1.15	2.00	3.00	1.00
Final Sat.:	3200	5100	1600	3200	5100	1600	3200	4755	1845	3200	5100	1600
Capacity Analysis Module:												
Vol/Sat:	0.03	0.11	0.10	0.08	0.27	0.06	0.04	0.19	0.20	0.09	0.09	0.10
Crit Moves:	****			****					****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #41 Bristol St and I-405 NB Ramps

Cycle (sec):	100	Critical Vol./Cap.(X):	0.557
Loss Time (sec):	5	Average Delay (sec/veh):	20.8
Optimal Cycle:	28	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	4	0 1	0 0	4	1 0	0 0	0	0 2	1 1	1	0 2
Volume Module:												
Base Vol:	0	1638	210	0	1918	8	0	0	36	145	87	796
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1638	210	0	1918	8	0	0	36	145	87	796
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1638	210	0	1918	8	0	0	36	145	87	796
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1638	210	0	1918	8	0	0	36	145	87	796
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1638	210	0	1918	8	0	0	36	145	87	796
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.91	0.85	1.00	0.91	0.91	1.00	1.00	0.75	0.92	0.92	0.75
Lanes:	0.00	4.00	1.00	0.00	4.98	0.02	0.00	0.00	2.00	1.88	1.12	2.00
Final Sat.:	0	6916	1615	0	8600	36	0	0	2842	3283	1970	2842
Capacity Analysis Module:												
Vol/Sat:	0.00	0.24	0.13	0.00	0.22	0.22	0.00	0.00	0.01	0.04	0.04	0.28
Crit Moves:		****		****					****			****
Green/Cycle:	0.00	0.42	0.42	0.00	0.42	0.42	0.00	0.00	0.02	0.50	0.50	0.50
Volume/Cap:	0.00	0.56	0.31	0.00	0.52	0.52	0.00	0.00	0.56	0.09	0.09	0.56
Delay/Veh:	0.0	21.9	19.3	0.0	21.4	21.4	0.0	0.0	58.8	13.0	13.0	17.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	21.9	19.3	0.0	21.4	21.4	0.0	0.0	58.8	13.0	13.0	17.7
LOS by Move:	A	C	B	A	C	C	A	A	E	B	B	B
HCM2k85thQ:	0	16	7	0	15	15	0	0	2	2	2	15

Note: Queue reported is the number of cars per lane.

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Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #42 Bristol St and I-405 SB Ramps

Cycle (sec):	100	Critical Vol./Cap.(X):	0.696
Loss Time (sec):	5	Average Delay (sec/veh):	23.9
Optimal Cycle:	38	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Ignore			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	4 0	0	0 0	2 1	1	3 0	0 0	1	0 0	0 0	0
Volume Module:												
Base Vol:	125	1225	0	0	1030	886	696	0	636	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	125	1225	0	0	1030	886	696	0	636	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	125	1225	0	0	1030	0	696	0	636	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	125	1225	0	0	1030	0	696	0	636	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	125	1225	0	0	1030	0	696	0	636	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.91	1.00	1.00	0.91	0.91	0.92	1.00	0.85	1.00	1.00	1.00
Lanes:	1.00	4.00	0.00	0.00	3.00	1.00	3.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	1805	6916	0	0	5187	1729	5253	0	1615	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.07	0.18	0.00	0.00	0.20	0.00	0.13	0.00	0.39	0.00	0.00	0.00
Crit Moves:	****				****				****			
Green/Cycle:	0.10	0.38	0.00	0.00	0.29	0.00	0.57	0.00	0.57	0.00	0.00	0.00
Volume/Cap:	0.70	0.46	0.00	0.00	0.70	0.00	0.23	0.00	0.70	0.00	0.00	0.00
Delay/Veh:	54.9	23.1	0.0	0.0	33.4	0.0	10.9	0.0	18.0	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	54.9	23.1	0.0	0.0	33.4	0.0	10.9	0.0	18.0	0.0	0.0	0.0
LOS by Move:	D	C	A	A	C	A	B	A	B	A	A	A
HCM2k85thQ:	8	12	0	0	17	0	6	0	22	0	0	0

Note: Queue reported is the number of cars per lane.

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #43 Flower St and Santa Ana Blvd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.806
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	53	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Prot+Permit			Prot+Permit			Prot+Permit			Prot+Permit		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 0	1	1 0	2 0	1	1 0	3 0	1	1 0	2 1	0
Volume Module:												
Base Vol:	100	936	136	214	723	97	211	1315	150	143	458	191
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	100	936	136	214	723	97	211	1315	150	143	458	191
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	100	936	136	214	723	97	211	1315	150	143	458	191
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	100	936	136	214	723	97	211	1315	150	143	458	191
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	100	936	136	214	723	97	211	1315	150	143	458	191
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	3.00	1.00	1.00	2.12	0.88
Final Sat.:	1600	3400	1600	1600	3400	1600	1600	5100	1600	1600	3587	1413
Capacity Analysis Module:												
Vol/Sat:	0.06	0.28	0.09	0.13	0.21	0.06	0.13	0.26	0.09	0.09	0.13	0.14
Crit Moves:		****			****			****			****	

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #44 Flower St and 1st St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.926
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	105	Level Of Service:	E

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 0	1	1 0	1 1	0	1 0	2 1	0	1 0	2 1	0
Volume Module:												
Base Vol:	139	602	159	334	1058	111	148	1355	54	209	861	123
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	139	602	159	334	1058	111	148	1355	54	209	861	123
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	139	602	159	334	1058	111	148	1355	54	209	861	123
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	139	602	159	334	1058	111	148	1355	54	209	861	123
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	139	602	159	334	1058	111	148	1355	54	209	861	123
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.03	1.00	1.00	1.04	1.00	1.00	1.05	1.00
Lanes:	1.00	2.00	1.00	1.00	1.81	0.19	1.00	2.89	0.11	1.00	2.62	0.38
Final Sat.:	1600	3400	1600	1600	2996	304	1600	4816	184	1600	4400	600
Capacity Analysis Module:												
Vol/Sat:	0.09	0.18	0.10	0.21	0.35	0.37	0.09	0.28	0.29	0.13	0.20	0.21
Crit Moves:	****					****			****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #45 Flower St and McFadden Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.900
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	87	Level Of Service:	E

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 1	0 1	0	0 1	0 1	0	0 1	0 1	0	0 1	0 1	0
Volume Module:												
Base Vol:	70	511	44	118	655	95	112	1278	97	113	764	103
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	70	511	44	118	655	95	112	1278	97	113	764	103
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	70	511	44	118	655	95	112	1278	97	113	764	103
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	70	511	44	118	655	95	112	1278	97	113	764	103
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	70	511	44	118	655	95	112	1278	97	113	764	103
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.22	1.64	0.14	0.27	1.51	0.22	0.15	1.72	0.13	0.23	1.56	0.21
Final Sat.:	358	2616	225	435	2415	350	241	2750	209	369	2495	336
Capacity Analysis Module:												
Vol/Sat:	0.04	0.20	0.20	0.07	0.27	0.27	0.07	0.46	0.46	0.07	0.31	0.31
Crit Moves:	****			****			****			****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #46 Flower St and Segerstrom Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.784
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	49	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1	1 0	1 0	1	1 0	1 0	2	1 0	1 0	2	1 0
Volume Module:												
Base Vol:	86	451	100	98	544	120	223	1531	427	104	764	84
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	86	451	100	98	544	120	223	1531	427	104	764	84
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	86	451	100	98	544	120	223	1531	427	104	764	84
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	86	451	100	98	544	120	223	1531	427	104	764	84
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	86	451	100	98	544	120	223	1531	427	104	764	84
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.04	1.00	1.00	1.04	1.00	1.00	1.05	1.00	1.00	1.05	1.00
Lanes:	1.00	1.64	0.36	1.00	1.64	0.36	1.00	2.35	0.65	1.00	2.70	0.30
Final Sat.:	1600	2719	581	1600	2722	578	1600	3953	1047	1600	4525	475
Capacity Analysis Module:												
Vol/Sat:	0.05	0.17	0.17	0.06	0.20	0.21	0.14	0.39	0.41	0.07	0.17	0.18
Crit Moves:	****					****			****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #47 Flower St and MacArthur Blvd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.675
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	35	Level Of Service:	B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Permitted				Permitted				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Y+R:	4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	
Lanes:	1	0 1	1	0	1	0 1	1	0	1	0 2	1	0	1	0 2	1	0
Volume Module:																
Base Vol:	26	170	88		167	361	270		151	1716	73		62	1049	67	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	26	170	88		167	361	270		151	1716	73		62	1049	67	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	26	170	88		167	361	270		151	1716	73		62	1049	67	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	26	170	88		167	361	270		151	1716	73		62	1049	67	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	26	170	88		167	361	270		151	1716	73		62	1049	67	
Saturation Flow Module:																
Sat/Lane:	1600	1600	1600		1600	1600	1600		1600	1600	1600		1600	1600	1600	
Adjustment:	1.00	1.05	1.00		1.00	1.05	1.00		1.00	1.04	1.00		1.00	1.04	1.00	
Lanes:	1.00	1.32	0.68		1.00	1.14	0.86		1.00	2.88	0.12		1.00	2.82	0.18	
Final Sat.:	1600	2209	1091		1600	1931	1369		1600	4804	196		1600	4712	288	
Capacity Analysis Module:																
Vol/Sat:	0.02	0.08	0.08		0.10	0.19	0.20		0.09	0.36	0.37		0.04	0.22	0.23	
Crit Moves:	****						****				****	****				

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #48 Main St and La Veta Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.586
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	28	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ovl			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	3 0	1	2 0	2 1	0	2 0	2 1	0	2 0	2 0	1
Volume Module:												
Base Vol:	105	724	375	198	1034	173	361	510	222	316	276	230
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	105	724	375	198	1034	173	361	510	222	316	276	230
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	105	724	375	198	1034	173	361	510	222	316	276	230
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	105	724	375	198	1034	173	361	510	222	316	276	230
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	105	724	375	198	1034	173	361	510	222	316	276	230
OvlAdjVol:			217									131
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.05	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	2.00	3.00	1.00	2.00	2.57	0.43	2.00	2.09	0.91	2.00	2.00	1.00
Final Sat.:	3200	5100	1600	3200	4312	688	3200	3544	1456	3200	3400	1600
Capacity Analysis Module:												
Vol/Sat:	0.03	0.14	0.23	0.06	0.24	0.25	0.11	0.14	0.15	0.10	0.08	0.14
OvlAdjV/S:			0.14									0.08
Crit Moves:	****					****			****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #49 Main St and Mainplace Dr / Memory Ln

Cycle (sec):	100	Critical Vol./Cap.(X):	0.512
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	24	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 1	0	2 0	2 1	0	2 0	2 1	0	2 0	2 0	1
Volume Module:												
Base Vol:	34	920	301	36	1386	290	185	291	20	132	151	10
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	34	920	301	36	1386	290	185	291	20	132	151	10
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	34	920	301	36	1386	290	185	291	20	132	151	10
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	34	920	301	36	1386	290	185	291	20	132	151	10
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	34	920	301	36	1386	290	185	291	20	132	151	10
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.05	1.00	1.00	1.04	1.00	1.00	1.06	1.00
Lanes:	2.00	2.26	0.74	2.00	2.48	0.52	2.00	2.81	0.19	2.00	2.00	1.00
Final Sat.:	3200	3817	1183	3200	4169	831	3200	4691	309	3200	3400	1600
Capacity Analysis Module:												
Vol/Sat:	0.01	0.24	0.25	0.01	0.33	0.35	0.06	0.06	0.06	0.04	0.04	0.01
Crit Moves:	****					****	****				****	

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #50 Main St and 17th St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.884
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	78	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 0	1	2 0	2 0	1	2 0	2 1	0	2 0	2 1	0
Volume Module:												
Base Vol:	133	788	169	237	1322	85	127	1336	67	356	1425	21
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	133	788	169	237	1322	85	127	1336	67	356	1425	21
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	133	788	169	237	1322	85	127	1336	67	356	1425	21
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	133	788	169	237	1322	85	127	1336	67	356	1425	21
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	133	788	169	237	1322	85	127	1336	67	356	1425	21
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.04	1.00	1.00	1.04	1.00
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	2.00	2.86	0.14	2.00	2.96	0.04
Final Sat.:	3200	3400	1600	3200	3400	1600	3200	4771	229	3200	4930	70
Capacity Analysis Module:												
Vol/Sat:	0.04	0.23	0.11	0.07	0.39	0.05	0.04	0.28	0.29	0.11	0.29	0.30
Crit Moves:	****			****					****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #51 Main St and Civic Center Dr

Cycle (sec):	100	Critical Vol./Cap.(X):	0.783
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	49	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1	1 0	1 0	1	1 0	1 0	1	1 0	1 0	1	1 0
Volume Module:												
Base Vol:	142	925	81	55	970	148	120	727	132	43	566	34
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	142	925	81	55	970	148	120	727	132	43	566	34
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	142	925	81	55	970	148	120	727	132	43	566	34
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	142	925	81	55	970	148	120	727	132	43	566	34
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	142	925	81	55	970	148	120	727	132	43	566	34
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.03	1.00	1.00	1.04	1.00	1.00	1.04	1.00	1.00	1.03	1.00
Lanes:	1.00	1.84	0.16	1.00	1.74	0.26	1.00	1.69	0.31	1.00	1.89	0.11
Final Sat.:	1600	3042	258	1600	2876	424	1600	2808	492	1600	3119	181
Capacity Analysis Module:												
Vol/Sat:	0.09	0.30	0.31	0.03	0.34	0.35	0.08	0.26	0.27	0.03	0.18	0.19
Crit Moves:	****					****			****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #52 Main St and Santa Ana Blvd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.926
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	105	Level Of Service:	E

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 0	0	0 0	1 1	0	0 0	0 0	0	0 1	0 1	0
Volume Module:												
Base Vol:	66	1050	0	0	1135	100	0	0	0	90	1250	96
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	66	1050	0	0	1135	100	0	0	0	90	1250	96
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	66	1050	0	0	1135	100	0	0	0	90	1250	96
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	66	1050	0	0	1135	100	0	0	0	90	1250	96
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	66	1050	0	0	1135	100	0	0	0	90	1250	96
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.03	1.00	1.00	1.06	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	0.00	0.00	1.84	0.16	0.00	0.00	0.00	0.13	1.74	0.13
Final Sat.:	1600	3400	0	0	3041	259	0	0	0	201	2786	214
Capacity Analysis Module:												
Vol/Sat:	0.04	0.31	0.00	0.00	0.37	0.39	0.00	0.00	0.00	0.06	0.45	0.45
Crit Moves:	****					****					****	

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #53 Main St and 4th St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.410
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	20	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	1	1 0	0 0	1	1 0	0 0	1	1 0	0 0	1	1 0
Volume Module:												
Base Vol:	0	939	22	0	961	24	0	70	11	0	140	34
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	939	22	0	961	24	0	70	11	0	140	34
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	939	22	0	961	24	0	70	11	0	140	34
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	939	22	0	961	24	0	70	11	0	140	34
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	939	22	0	961	24	0	70	11	0	140	34
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.03	1.00	1.00	1.03	1.00	1.00	1.04	1.00	1.00	1.04	1.00
Lanes:	0.00	1.95	0.05	0.00	1.95	0.05	0.00	1.73	0.27	0.00	1.61	0.39
Final Sat.:	0	3227	73	0	3222	78	0	2865	435	0	2675	625
Capacity Analysis Module:												
Vol/Sat:	0.00	0.29	0.30	0.00	0.30	0.31	0.00	0.02	0.03	0.00	0.05	0.05
Crit Moves:	****					****	****				****	

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #54 Main St and 1st St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.681
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	35	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1	1 0	1 0	2	0 1	1 0	2	1 0	1 0	2	1 0
Volume Module:												
Base Vol:	103	532	54	77	772	57	106	1241	131	86	1072	60
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	103	532	54	77	772	57	106	1241	131	86	1072	60
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	103	532	54	77	772	57	106	1241	131	86	1072	60
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	103	532	54	77	772	57	106	1241	131	86	1072	60
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	103	532	54	77	772	57	106	1241	131	86	1072	60
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.03	1.00	1.00	1.06	1.00	1.00	1.05	1.00	1.00	1.04	1.00
Lanes:	1.00	1.82	0.18	1.00	2.00	1.00	1.00	2.71	0.29	1.00	2.84	0.16
Final Sat.:	1600	3005	295	1600	3400	1600	1600	4542	458	1600	4746	254
Capacity Analysis Module:												
Vol/Sat:	0.06	0.18	0.18	0.05	0.23	0.04	0.07	0.27	0.29	0.05	0.23	0.24
Crit Moves:	****			****					****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #55 Main St and McFadden Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.894
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	84	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Prot+Permit			Prot+Permit			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1	1 0	1 0	1	1 0	1 0	1	1 0	1 0	1	1 0
Volume Module:												
Base Vol:	93	874	44	162	1259	25	86	815	89	164	438	126
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	93	874	44	162	1259	25	86	815	89	164	438	126
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	93	874	44	162	1259	25	86	815	89	164	438	126
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	93	874	44	162	1259	25	86	815	89	164	438	126
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	93	874	44	162	1259	25	86	815	89	164	438	126
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.03	1.00	1.00	1.03	1.00	1.00	1.03	1.00	1.00	1.04	1.00
Lanes:	1.00	1.90	0.10	1.00	1.96	0.04	1.00	1.80	0.20	1.00	1.55	0.45
Final Sat.:	1600	3147	153	1600	3238	62	1600	2985	315	1600	2585	715
Capacity Analysis Module:												
Vol/Sat:	0.06	0.28	0.29	0.10	0.39	0.40	0.05	0.27	0.28	0.10	0.17	0.18
Crit Moves:	****					****			****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #56 Main St and Edinger Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.795
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	51	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1	1 0	1 0	1	1 0	1 0	2	1 0	1 0	2	1 0
Volume Module:												
Base Vol:	99	561	61	211	975	51	96	1248	168	108	630	77
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	99	561	61	211	975	51	96	1248	168	108	630	77
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	99	561	61	211	975	51	96	1248	168	108	630	77
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	99	561	61	211	975	51	96	1248	168	108	630	77
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	99	561	61	211	975	51	96	1248	168	108	630	77
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.03	1.00	1.00	1.03	1.00	1.00	1.05	1.00	1.00	1.05	1.00
Lanes:	1.00	1.80	0.20	1.00	1.90	0.10	1.00	2.64	0.36	1.00	2.67	0.33
Final Sat.:	1600	2986	314	1600	3141	159	1600	4431	569	1600	4477	523
Capacity Analysis Module:												
Vol/Sat:	0.06	0.19	0.19	0.13	0.31	0.32	0.06	0.28	0.29	0.07	0.14	0.15
Crit Moves:	****					****			****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #57 Main St and MacArthur Blvd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.680
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	35	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	3 0	1	2 0	3 0	1	2 0	3 0	1	2 0	3 0	1
Volume Module:												
Base Vol:	51	295	250	539	709	160	230	1336	242	138	411	206
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	51	295	250	539	709	160	230	1336	242	138	411	206
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	51	295	250	539	709	160	230	1336	242	138	411	206
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	51	295	250	539	709	160	230	1336	242	138	411	206
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	51	295	250	539	709	160	230	1336	242	138	411	206
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3200	5100	1600	3200	5100	1600	3200	5100	1600	3200	5100	1600
Capacity Analysis Module:												
Vol/Sat:	0.02	0.06	0.16	0.17	0.14	0.10	0.07	0.26	0.15	0.04	0.08	0.13
Crit Moves:			****	****				****		****		

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Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #58 Penn Wy and 17th St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.660
Loss Time (sec):	5	Average Delay (sec/veh):	12.2
Optimal Cycle:	35	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	0	0 2	0 0	0	0 0	0 0	2	1 0	1 0	3	0 0
Volume Module:												
Base Vol:	52	0	260	0	0	0	0	1341	684	214	1722	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	52	0	260	0	0	0	0	1341	684	214	1722	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	52	0	260	0	0	0	0	1341	684	214	1722	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	52	0	260	0	0	0	0	1341	684	214	1722	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	52	0	260	0	0	0	0	1341	684	214	1722	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.75	1.00	1.00	1.00	1.00	0.86	0.86	0.95	0.91	1.00
Lanes:	2.00	0.00	2.00	0.00	0.00	0.00	0.00	2.00	1.00	1.00	3.00	0.00
Final Sat.:	3502	0	2842	0	0	0	0	3282	1641	1805	5187	0
Capacity Analysis Module:												
Vol/Sat:	0.01	0.00	0.09	0.00	0.00	0.00	0.00	0.41	0.42	0.12	0.33	0.00
Crit Moves:			****						****	****		
Green/Cycle:	0.14	0.00	0.14	0.00	0.00	0.00	0.00	0.63	0.63	0.18	0.81	0.00
Volume/Cap:	0.11	0.00	0.66	0.00	0.00	0.00	0.00	0.65	0.66	0.66	0.41	0.00
Delay/Veh:	37.8	0.0	44.9	0.0	0.0	0.0	0.0	11.9	12.2	43.1	2.7	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	37.8	0.0	44.9	0.0	0.0	0.0	0.0	11.9	12.2	43.1	2.7	0.0
LOS by Move:	D	A	D	A	A	A	A	B	B	D	A	A
HCM2k85thQ:	1	0	9	0	0	0	0	22	22	11	9	0

Note: Queue reported is the number of cars per lane.

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Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #59 I-5 NB Off Ramps/17th Street

Cycle (sec):	100	Critical Vol./Cap.(X):	0.710
Loss Time (sec):	5	Average Delay (sec/veh):	30.0
Optimal Cycle:	40	Level Of Service:	C

Street Name:	I-5 NB Off Ramps						17th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Permitted		
Rights:	Include			Include			Ignore			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 1	0	0 1	1	0 0	0 1	1	0 3	0 1	0	0 2	1 0
Volume Module:												
Base Vol:	720	33	21	54	0	279	89	932	337	0	1245	20
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	720	33	21	54	0	279	89	932	337	0	1245	20
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Volume:	720	33	21	54	0	279	89	932	0	0	1245	20
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	720	33	21	54	0	279	89	932	0	0	1245	20
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
FinalVolume:	720	33	21	54	0	279	89	932	0	0	1245	20
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.85	0.95	1.00	0.85	0.95	0.91	1.00	1.00	0.91	0.91
Lanes:	1.91	0.09	1.00	1.00	0.00	1.00	1.00	3.00	1.00	0.00	2.95	0.05
Final Sat.:	3466	159	1615	1805	0	1615	1805	5187	1900	0	5095	82
Capacity Analysis Module:												
Vol/Sat:	0.21	0.21	0.01	0.03	0.00	0.17	0.05	0.18	0.00	0.00	0.24	0.24
Crit Moves:	****					****	****				****	
Green/Cycle:	0.29	0.29	0.29	0.24	0.00	0.24	0.07	0.41	0.00	0.00	0.34	0.34
Volume/Cap:	0.71	0.71	0.04	0.12	0.00	0.71	0.71	0.43	0.00	0.00	0.71	0.71
Delay/Veh:	33.8	33.8	25.4	29.6	0.0	40.5	62.7	21.1	0.0	0.0	29.8	29.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	33.8	33.8	25.4	29.6	0.0	40.5	62.7	21.1	0.0	0.0	29.8	29.8
LOS by Move:	C	C	C	C	A	D	E	C	A	A	C	C
HCM2k85thQ:	17	17	1	2	0	14	7	12	0	0	20	20

Note: Queue reported is the number of cars per lane.

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Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #60 Penn Wy and I-5 SB Ramps

Cycle (sec):	100	Critical Vol./Cap.(X):	0.550
Loss Time (sec):	5	Average Delay (sec/veh):	21.2
Optimal Cycle:	27	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	2	0 1	2 0	2	0 0	0 0	0	0 0	1 0	0	0 2
Volume Module:												
Base Vol:	0	260	230	951	196	0	0	0	0	196	0	110
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	260	230	951	196	0	0	0	0	196	0	110
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	260	230	951	196	0	0	0	0	196	0	110
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	260	230	951	196	0	0	0	0	196	0	110
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	260	230	951	196	0	0	0	0	196	0	110
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.95	0.85	0.92	0.95	1.00	1.00	1.00	1.00	0.95	1.00	0.75
Lanes:	0.00	2.00	1.00	2.00	2.00	0.00	0.00	0.00	0.00	1.00	0.00	2.00
Final Sat.:	0	3610	1615	3502	3610	0	0	0	0	1805	0	2842
Capacity Analysis Module:												
Vol/Sat:	0.00	0.07	0.14	0.27	0.05	0.00	0.00	0.00	0.00	0.11	0.00	0.04
Crit Moves:			****	****						****		
Green/Cycle:	0.00	0.26	0.26	0.49	0.75	0.00	0.00	0.00	0.00	0.20	0.00	0.69
Volume/Cap:	0.00	0.28	0.55	0.55	0.07	0.00	0.00	0.00	0.00	0.55	0.00	0.06
Delay/Veh:	0.0	29.8	33.6	18.0	3.2	0.0	0.0	0.0	0.0	38.0	0.0	5.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	29.8	33.6	18.0	3.2	0.0	0.0	0.0	0.0	38.0	0.0	5.0
LOS by Move:	A	C	C	B	A	A	A	A	A	D	A	A
HCM2k85thQ:	0	5	10	16	1	0	0	0	0	9	0	1

Note: Queue reported is the number of cars per lane.

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Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Base Volume Alternative)

Intersection #61 Santiago St and Civic Center Dr

Cycle (sec):	100	Critical Vol./Cap.(X):	1.769
Loss Time (sec):	5	Average Delay (sec/veh):	159.2
Optimal Cycle:	0	Level Of Service:	F

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	0 1	0	1 0	0 1	0	0 1	0 0	1	0 0	1! 0	0
Volume Module:												
Base Vol:	487	338	47	10	590	144	182	69	369	108	99	20
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	487	338	47	10	590	144	182	69	369	108	99	20
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	487	338	47	10	590	144	182	69	369	108	99	20
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	487	338	47	10	590	144	182	69	369	108	99	20
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	487	338	47	10	590	144	182	69	369	108	99	20
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.88	0.12	1.00	0.80	0.20	0.73	0.27	1.00	0.47	0.44	0.09
Final Sat.:	402	377	52	381	333	81	289	110	453	177	162	33
Capacity Analysis Module:												
Vol/Sat:	1.21	0.90	0.90	0.03	1.77	1.77	0.63	0.63	0.82	0.61	0.61	0.61
Crit Moves:	****				****				****	****		
Delay/Veh:	144.0	50.3	50.3	12.3	377	376.5	25.7	25.7	36.9	26.3	26.3	26.3
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	144.0	50.3	50.3	12.3	377	376.5	25.7	25.7	36.9	26.3	26.3	26.3
LOS by Move:	F	F	F	B	F	F	D	D	E	D	D	D
ApproachDel:	102.6			371.6			32.3			26.3		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	102.6			371.6			32.3			26.3		
LOS by Appr:	F			F			D			D		
AllWayAvgQ:	14.8	4.7	4.7	0.0	42.1	42.1	1.5	1.5	3.3	1.4	1.4	1.4

Note: Queue reported is the number of cars per lane.

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #62 Santiago St and Santa Ana Blvd

Cycle (sec):	100	Critical Vol./Cap.(X):	1.037
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	180	Level Of Service:	F

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1	1 0	1 0	1	1 0	1 0	1	1 0	1 0	2	0 1
Volume Module:												
Base Vol:	188	611	303	409	972	253	118	732	99	297	699	258
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	188	611	303	409	972	253	118	732	99	297	699	258
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	188	611	303	409	972	253	118	732	99	297	699	258
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	188	611	303	409	972	253	118	732	99	297	699	258
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	188	611	303	409	972	253	118	732	99	297	699	258
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.04	1.00	1.00	1.04	1.00	1.00	1.06	1.00
Lanes:	1.00	1.34	0.66	1.00	1.59	0.41	1.00	1.76	0.24	1.00	2.00	1.00
Final Sat.:	1600	2239	1061	1600	2639	661	1600	2919	381	1600	3400	1600
Capacity Analysis Module:												
Vol/Sat:	0.12	0.27	0.29	0.26	0.37	0.38	0.07	0.25	0.26	0.19	0.21	0.16
Crit Moves:			****	****					****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #63 Standard Ave and 4th St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.939
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	117	Level Of Service:	E

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 0	1	1 0	2 0	1	1 0	1 1	0	1 0	1 1	0
Volume Module:												
Base Vol:	191	473	248	431	604	332	298	624	219	250	550	340
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	191	473	248	431	604	332	298	624	219	250	550	340
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	191	473	248	431	604	332	298	624	219	250	550	340
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	191	473	248	431	604	332	298	624	219	250	550	340
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	191	473	248	431	604	332	298	624	219	250	550	340
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.04	1.00	1.00	1.05	1.00
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	1.48	0.52	1.00	1.24	0.76
Final Sat.:	1600	3400	1600	1600	3400	1600	1600	2469	831	1600	2078	1222
Capacity Analysis Module:												
Vol/Sat:	0.12	0.14	0.16	0.27	0.18	0.21	0.19	0.25	0.26	0.16	0.26	0.28
Crit Moves:			****	****			****					****

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #64 Standard Ave and 1st St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.976
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	176	Level Of Service:	E

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1	1 0	1 0	1	1 0	1 0	2	1 0	1 0	2	1 0
Volume Module:												
Base Vol:	45	631	312	123	901	41	161	1959	121	194	1282	120
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	45	631	312	123	901	41	161	1959	121	194	1282	120
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	45	631	312	123	901	41	161	1959	121	194	1282	120
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	45	631	312	123	901	41	161	1959	121	194	1282	120
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	45	631	312	123	901	41	161	1959	121	194	1282	120
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.03	1.00	1.00	1.04	1.00	1.00	1.05	1.00
Lanes:	1.00	1.34	0.66	1.00	1.91	0.09	1.00	2.83	0.17	1.00	2.74	0.26
Final Sat.:	1600	2241	1059	1600	3161	139	1600	4721	279	1600	4589	411
Capacity Analysis Module:												
Vol/Sat:	0.03	0.28	0.29	0.08	0.29	0.29	0.10	0.41	0.43	0.12	0.28	0.29
Crit Moves:		****	****						****	****		

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #65 Standard Ave and Mcfadden Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.854
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	66	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1	1 0	1 0	1	1 0	1 0	1	1 0	1 0	1	1 0
Volume Module:												
Base Vol:	94	360	162	226	547	38	34	1178	142	150	397	89
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	94	360	162	226	547	38	34	1178	142	150	397	89
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	94	360	162	226	547	38	34	1178	142	150	397	89
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	94	360	162	226	547	38	34	1178	142	150	397	89
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	94	360	162	226	547	38	34	1178	142	150	397	89
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.03	1.00	1.00	1.04	1.00	1.00	1.04	1.00
Lanes:	1.00	1.38	0.62	1.00	1.87	0.13	1.00	1.78	0.22	1.00	1.63	0.37
Final Sat.:	1600	2307	993	1600	3092	208	1600	2956	344	1600	2714	586
Capacity Analysis Module:												
Vol/Sat:	0.06	0.16	0.16	0.14	0.18	0.18	0.02	0.40	0.41	0.09	0.15	0.15
Crit Moves:		****		****					****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #66 Halladay St and Warner Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.775
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	47	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	0	0 1	0	0	0 0 0	0	0	2 1 0	0	1	2 0 0
Volume Module:												
Base Vol:	95	0	220	0	0	0	0	1833	207	260	986	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	95	0	220	0	0	0	0	1833	207	260	986	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	95	0	220	0	0	0	0	1833	207	260	986	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	95	0	220	0	0	0	0	1833	207	260	986	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	95	0	220	0	0	0	0	1833	207	260	986	0
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.05	1.00	1.00	1.05	1.00
Lanes:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	2.70	0.30	0.63	2.37	0.00
Final Sat.:	1600	0	1600	0	0	0	0	4513	487	1002	3998	0
Capacity Analysis Module:												
Vol/Sat:	0.06	0.00	0.14	0.00	0.00	0.00	0.00	0.41	0.43	0.16	0.25	0.00
Crit Moves:			****						****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #67 Halladay St and Dyer Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.774
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	47	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	0 1	0	1 0	0 1	0	1 0	2 1	0	1 0	2 1	0
Volume Module:												
Base Vol:	15	24	65	450	91	96	46	1537	11	104	566	91
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	15	24	65	450	91	96	46	1537	11	104	566	91
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	15	24	65	450	91	96	46	1537	11	104	566	91
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	15	24	65	450	91	96	46	1537	11	104	566	91
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	15	24	65	450	91	96	46	1537	11	104	566	91
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.04	1.00	1.00	1.05	1.00
Lanes:	1.00	0.27	0.73	1.00	0.49	0.51	1.00	2.98	0.02	1.00	2.58	0.42
Final Sat.:	1600	431	1169	1600	779	821	1600	4966	34	1600	4335	665
Capacity Analysis Module:												
Vol/Sat:	0.01	0.06	0.06	0.28	0.12	0.12	0.03	0.31	0.32	0.07	0.13	0.14
Crit Moves:		****		****					****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #68 SR-55 SB Ramps and MacArthur Blvd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.608
Loss Time (sec):	5	Average Delay (sec/veh):	19.9
Optimal Cycle:	31	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Ignore			Ignore		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0	0	2	0	0	0	2	0	0	2	1	1	0	0	3	0	1
Volume Module:																		
Base Vol:	0	0	0	998	0	903	0	1349	961	0	1187	135
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	998	0	903	0	1349	961	0	1187	135
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Volume:	0	0	0	998	0	903	0	1349	0	0	1187	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	998	0	903	0	1349	0	0	1187	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
FinalVolume:	0	0	0	998	0	903	0	1349	0	0	1187	0
Saturation Flow Module:																		
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	0.92	1.00	0.75	1.00	0.91	0.91	1.00	0.91	1.00
Lanes:	0.00	0.00	0.00	2.00	0.00	2.00	0.00	3.00	1.00	0.00	3.00	1.00
Final Sat.:	0	0	0	3502	0	2842	0	5187	1729	0	5187	1900
Capacity Analysis Module:																		
Vol/Sat:	0.00	0.00	0.00	0.29	0.00	0.32	0.00	0.26	0.00	0.00	0.23	0.00
Crit Moves:						****		****		****		
Green/Cycle:	0.00	0.00	0.00	0.52	0.00	0.52	0.00	0.43	0.00	0.00	0.43	0.00
Volume/Cap:	0.00	0.00	0.00	0.55	0.00	0.61	0.00	0.61	0.00	0.00	0.54	0.00
Delay/Veh:	0.0	0.0	0.0	16.3	0.0	17.5	0.0	22.6	0.0	0.0	21.5	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	16.3	0.0	17.5	0.0	22.6	0.0	0.0	21.5	0.0
LOS by Move:	A	A	A	B	A	B	A	C	A	A	C	A
HCM2k85thQ:	0	0	0	16	0	17	0	18	0	0	15	0

Note: Queue reported is the number of cars per lane.

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Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #69 SR-55 NB Ramps and MacArthur Blvd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.712
Loss Time (sec):	5	Average Delay (sec/veh):	19.3
Optimal Cycle:	40	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Ignore			Include			Ignore			Ignore		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	0	0 1	0 0	0	0 0	0 0	2	0 2	0 0	3	0 1
Volume Module:												
Base Vol:	946	0	1017	0	0	0	0	1468	726	0	517	244
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	946	0	1017	0	0	0	0	1468	726	0	517	244
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Volume:	946	0	0	0	0	0	0	1468	0	0	517	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	946	0	0	0	0	0	0	1468	0	0	517	0
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
FinalVolume:	946	0	0	0	0	0	0	1468	0	0	517	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.88	1.00	0.91	1.00
Lanes:	2.00	0.00	1.00	0.00	0.00	0.00	0.00	2.00	2.00	0.00	3.00	1.00
Final Sat.:	3502	0	1900	0	0	0	0	3610	3344	0	5187	1900
Capacity Analysis Module:												
Vol/Sat:	0.27	0.00	0.00	0.00	0.00	0.00	0.00	0.41	0.00	0.00	0.10	0.00
Crit Moves:	****							****		****		
Green/Cycle:	0.38	0.00	0.00	0.00	0.00	0.00	0.00	0.57	0.00	0.00	0.57	0.00
Volume/Cap:	0.71	0.00	0.00	0.00	0.00	0.00	0.00	0.71	0.00	0.00	0.17	0.00
Delay/Veh:	28.2	0.0	0.0	0.0	0.0	0.0	0.0	16.7	0.0	0.0	10.3	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	28.2	0.0	0.0	0.0	0.0	0.0	0.0	16.7	0.0	0.0	10.3	0.0
LOS by Move:	C	A	A	A	A	A	A	B	A	A	B	A
HCM2k85thQ:	21	0	0	0	0	0	0	26	0	0	4	0

Note: Queue reported is the number of cars per lane.

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Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #70 SR-55 SB Ramps and Dyer Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.617
Loss Time (sec):	5	Average Delay (sec/veh):	25.7
Optimal Cycle:	31	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Ovl			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 1	0 0	2	0 1	1 0	1	1 0	3 0	1	2 0	3 0	1
Volume Module:												
Base Vol:	286	34	654	50	242	60	37	1422	303	348	552	92
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	286	34	654	50	242	60	37	1422	303	348	552	92
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	286	34	654	50	242	60	37	1422	303	348	552	92
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	286	34	654	50	242	60	37	1422	303	348	552	92
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	286	34	654	50	242	60	37	1422	303	348	552	92
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.96	0.96	0.75	0.94	0.94	0.85	0.95	0.91	0.85	0.92	0.91	0.85
Lanes:	1.79	0.21	2.00	0.34	1.66	1.00	1.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3250	386	2842	613	2968	1615	1805	5187	1615	3502	5187	1615
Capacity Analysis Module:												
Vol/Sat:	0.09	0.09	0.23	0.08	0.08	0.04	0.02	0.27	0.19	0.10	0.11	0.06
Crit Moves:			****		****			****		****		
Green/Cycle:	0.21	0.21	0.37	0.13	0.13	0.13	0.10	0.44	0.44	0.16	0.51	0.51
Volume/Cap:	0.42	0.42	0.62	0.62	0.62	0.28	0.21	0.62	0.42	0.62	0.21	0.11
Delay/Veh:	34.4	34.4	26.6	43.4	43.4	39.8	42.1	21.8	19.4	41.1	13.6	12.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	34.4	34.4	26.6	43.4	43.4	39.8	42.1	21.8	19.4	41.1	13.6	12.9
LOS by Move:	C	C	C	D	D	D	D	C	B	D	B	B
HCM2k85thQ:	7	7	15	8	8	3	2	19	10	9	5	2

Note: Queue reported is the number of cars per lane.

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #71 Glassell St and La Veta Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.800
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	52	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ovl			Include			Ovl			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	1 0	1	1 0	1 1	0	1 0	1 0	1	1 0	1 1	0
Volume Module:												
Base Vol:	263	412	125	14	295	65	57	293	563	367	387	9
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	263	412	125	14	295	65	57	293	563	367	387	9
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	263	412	125	14	295	65	57	293	563	367	387	9
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	263	412	125	14	295	65	57	293	563	367	387	9
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	263	412	125	14	295	65	57	293	563	367	387	9
OvlAdjVol:			0						431			
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.04	1.00	1.00	1.06	1.00	1.00	1.03	1.00
Lanes:	2.00	1.00	1.00	1.00	1.64	0.36	1.00	1.00	1.00	1.00	1.95	0.05
Final Sat.:	3200	1700	1600	1600	2722	578	1600	1700	1600	1600	3227	73
Capacity Analysis Module:												
Vol/Sat:	0.08	0.24	0.08	0.01	0.11	0.11	0.04	0.17	0.35	0.23	0.12	0.12
OvlAdjV/S:			0.00						0.27			
Crit Moves:		****		****					****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #72 Glassell St and SR-22 WB Ramps

Cycle (sec):	100	Critical Vol./Cap.(X):	0.871
Loss Time (sec):	5	Average Delay (sec/veh):	32.6
Optimal Cycle:	75	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Permitted			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 0	0	0 0	2 0	1	0 0	0 0	0	1 0	1! 0	1
Volume Module:												
Base Vol:	511	574	0	0	1017	473	0	0	0	323	6	483
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	511	574	0	0	1017	473	0	0	0	323	6	483
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	511	574	0	0	1017	473	0	0	0	323	6	483
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	511	574	0	0	1017	473	0	0	0	323	6	483
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	511	574	0	0	1017	473	0	0	0	323	6	483
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	1.00	1.00	0.95	0.85	1.00	1.00	1.00	0.86	0.86	0.86
Lanes:	1.00	2.00	0.00	0.00	2.00	1.00	0.00	0.00	0.00	1.39	0.01	1.60
Final Sat.:	1805	3610	0	0	3610	1615	0	0	0	2270	24	2588
Capacity Analysis Module:												
Vol/Sat:	0.28	0.16	0.00	0.00	0.28	0.29	0.00	0.00	0.00	0.14	0.25	0.19
Crit Moves:	****					****					****	
Green/Cycle:	0.33	0.66	0.00	0.00	0.34	0.34	0.00	0.00	0.00	0.29	0.29	0.29
Volume/Cap:	0.87	0.24	0.00	0.00	0.84	0.87	0.00	0.00	0.00	0.49	0.87	0.65
Delay/Veh:	45.1	6.9	0.0	0.0	35.9	45.4	0.0	0.0	0.0	29.7	42.8	32.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	45.1	6.9	0.0	0.0	35.9	45.4	0.0	0.0	0.0	29.7	42.8	32.3
LOS by Move:	D	A	A	A	D	D	A	A	A	C	D	C
HCM2k85thQ:	26	6	0	0	26	25	0	0	0	10	22	14

Note: Queue reported is the number of cars per lane.

Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #73 Grand Ave / Glassell St and SR-22 EB Ramps

Cycle (sec):	100	Critical Vol./Cap.(X):	0.860
Loss Time (sec):	5	Average Delay (sec/veh):	30.6
Optimal Cycle:	71	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	2	0 1	1 0	2	0 0	1 0	1!	0 1	0 0	0	0 0
Volume Module:												
Base Vol:	0	918	245	373	977	0	270	0	1058	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	918	245	373	977	0	270	0	1058	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	918	245	373	977	0	270	0	1058	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	918	245	373	977	0	270	0	1058	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	918	245	373	977	0	270	0	1058	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.95	0.85	0.95	0.95	1.00	0.87	1.00	0.87	1.00	1.00	1.00
Lanes:	0.00	2.00	1.00	1.00	2.00	0.00	1.20	0.00	1.80	0.00	0.00	0.00
Final Sat.:	0	3610	1615	1805	3610	0	1992	0	2974	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.25	0.15	0.21	0.27	0.00	0.14	0.00	0.36	0.00	0.00	0.00
Crit Moves:		****		****					****			
Green/Cycle:	0.00	0.30	0.30	0.24	0.54	0.00	0.41	0.00	0.41	0.00	0.00	0.00
Volume/Cap:	0.00	0.86	0.51	0.86	0.50	0.00	0.33	0.00	0.86	0.00	0.00	0.00
Delay/Veh:	0.0	40.4	30.2	52.1	15.0	0.0	19.9	0.0	31.8	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	40.4	30.2	52.1	15.0	0.0	19.9	0.0	31.8	0.0	0.0	0.0
LOS by Move:	A	D	C	D	B	A	B	A	C	A	A	A
HCM2k85thQ:	0	25	10	21	15	0	7	0	28	0	0	0

Note: Queue reported is the number of cars per lane.

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #74 Grand Ave and Fairhaven Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.611
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	30	Level Of Service:	B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Permitted				Permitted			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Y+R:	4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	
Lanes:	1	0 2	1	0	1	0 2	1	0	1	0 1	1	0	1	0 1	0	1
Volume Module:																
Base Vol:	21	840	121		207	1718	38		99	60	59		213	24	192	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	21	840	121		207	1718	38		99	60	59		213	24	192	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	21	840	121		207	1718	38		99	60	59		213	24	192	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	21	840	121		207	1718	38		99	60	59		213	24	192	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	21	840	121		207	1718	38		99	60	59		213	24	192	
Saturation Flow Module:																
Sat/Lane:	1600	1600	1600		1600	1600	1600		1600	1600	1600		1600	1600	1600	
Adjustment:	1.00	1.05	1.00		1.00	1.04	1.00		1.00	1.06	1.00		1.00	1.06	1.00	
Lanes:	1.00	2.62	0.38		1.00	2.94	0.06		1.00	1.01	0.99		1.00	1.00	1.00	
Final Sat.:	1600	4396	604		1600	4896	104		1600	1713	1587		1600	1700	1600	
Capacity Analysis Module:																
Vol/Sat:	0.01	0.19	0.20		0.13	0.35	0.37		0.06	0.04	0.04		0.13	0.01	0.12	
Crit Moves:	****						****		****						****	

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #75 Grand Ave and Santa Clara Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.843
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	63	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			WideBypass			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 1	0	1 0	2 1	0	1 0	0 1	0	1 0	1 0	1
Volume Module:												
Base Vol:	75	528	136	345	1687	380	143	233	48	200	385	352
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	75	528	136	345	1687	380	143	233	48	200	385	352
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	75	528	136	345	1687	380	143	233	48	200	385	352
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	75	528	136	345	1687	380	143	233	48	200	385	352
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	75	528	136	345	1687	380	143	233	48	200	385	352
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.05	1.00	1.00	1.00	1.00	1.00	1.06	1.00
Lanes:	1.00	2.39	0.61	1.00	2.45	0.55	1.00	0.83	0.17	1.00	1.00	1.00
Final Sat.:	1600	4017	983	1600	4118	882	1600	1327	273	1600	1700	1600
Capacity Analysis Module:												
Vol/Sat:	0.05	0.13	0.14	0.22	0.41	0.43	0.09	0.18	0.18	0.13	0.23	0.22
Crit Moves:	****					****	****				****	

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #76 Grand Ave and 17th St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.794
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	51	Level Of Service:	C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Y+R:	4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	
Lanes:	1	0	2	1	0	1	0	2	1	0	2	0	1	0	2	0
Volume Module:																
Base Vol:	186	543	373		340	1426	280		198	739	94		342	894	98	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	186	543	373		340	1426	280		198	739	94		342	894	98	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	186	543	373		340	1426	280		198	739	94		342	894	98	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	186	543	373		340	1426	280		198	739	94		342	894	98	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	186	543	373		340	1426	280		198	739	94		342	894	98	
Saturation Flow Module:																
Sat/Lane:	1600	1600	1600		1600	1600	1600		1600	1600	1600		1600	1600	1600	
Adjustment:	1.00	1.06	1.00		1.00	1.05	1.00		1.00	1.05	1.00		1.00	1.05	1.00	
Lanes:	1.00	2.00	1.00		1.00	2.51	0.49		2.00	2.66	0.34		2.00	2.70	0.30	
Final Sat.:	1600	3400	1600		1600	4212	788		3200	4458	542		3200	4526	474	
Capacity Analysis Module:																
Vol/Sat:	0.12	0.16	0.23		0.21	0.34	0.36		0.06	0.17	0.17		0.11	0.20	0.21	
Crit Moves:	****						****			****			****			

Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #77 Grand Ave and I-5 NB Ramps

Cycle (sec):	100	Critical Vol./Cap.(X):	0.740
Loss Time (sec):	5	Average Delay (sec/veh):	13.2
Optimal Cycle:	44	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Ignore			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	2 0	1	1 0	3 0	0	0 0	0 0	0 0	2 0	0 0	1
Volume Module:												
Base Vol:	0	1056	610	90	2893	0	0	0	0	507	0	140
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1056	610	90	2893	0	0	0	0	507	0	140
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1056	0	90	2893	0	0	0	0	507	0	140
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1056	0	90	2893	0	0	0	0	507	0	140
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1056	0	90	2893	0	0	0	0	507	0	140
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.95	1.00	0.95	0.91	1.00	1.00	1.00	1.00	0.92	1.00	0.85
Lanes:	0.00	2.00	1.00	1.00	3.00	0.00	0.00	0.00	0.00	2.00	0.00	1.00
Final Sat.:	0	3610	1900	1805	5187	0	0	0	0	3502	0	1615
Capacity Analysis Module:												
Vol/Sat:	0.00	0.29	0.00	0.05	0.56	0.00	0.00	0.00	0.00	0.14	0.00	0.09
Crit Moves:	****				****					****		
Green/Cycle:	0.00	0.64	0.00	0.11	0.75	0.00	0.00	0.00	0.00	0.20	0.00	0.20
Volume/Cap:	0.00	0.45	0.00	0.45	0.74	0.00	0.00	0.00	0.00	0.74	0.00	0.44
Delay/Veh:	0.0	9.1	0.0	43.3	7.6	0.0	0.0	0.0	0.0	42.1	0.0	36.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	9.1	0.0	43.3	7.6	0.0	0.0	0.0	0.0	42.1	0.0	36.4
LOS by Move:	A	A	A	D	A	A	A	A	A	D	A	D
HCM2k85thQ:	0	13	0	5	28	0	0	0	0	14	0	7

Note: Queue reported is the number of cars per lane.

Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #78 Grand Ave and Santa Ana Blvd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.832
Loss Time (sec):	5	Average Delay (sec/veh):	26.0
Optimal Cycle:	62	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Ovl			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 1	0	1 0	2 0	2	2 0	1 0	2	0 1	0 1	0
Volume Module:												
Base Vol:	49	694	35	202	1670	1473	268	221	436	6	475	43
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	49	694	35	202	1670	1473	268	221	436	6	475	43
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	49	694	35	202	1670	1473	268	221	436	6	475	43
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	49	694	35	202	1670	1473	268	221	436	6	475	43
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	49	694	35	202	1670	1473	268	221	436	6	475	43
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.90	0.90	0.95	0.95	0.75	0.92	1.00	0.75	0.94	0.94	0.94
Lanes:	1.00	2.86	0.14	1.00	2.00	2.00	2.00	1.00	2.00	0.02	1.82	0.16
Final Sat.:	1805	4903	247	1805	3610	2842	3502	1900	2842	41	3230	292
Capacity Analysis Module:												
Vol/Sat:	0.03	0.14	0.14	0.11	0.46	0.52	0.08	0.12	0.15	0.15	0.15	0.15
Crit Moves:	****				****				****		****	
Green/Cycle:	0.03	0.33	0.33	0.26	0.56	0.74	0.18	0.18	0.18	0.18	0.18	0.18
Volume/Cap:	0.83	0.43	0.43	0.43	0.83	0.70	0.42	0.63	0.83	0.83	0.83	0.83
Delay/Veh:	109.2	26.4	26.4	31.5	21.4	8.1	36.5	41.3	50.1	48.9	48.9	48.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	109.2	26.4	26.4	31.5	21.4	8.1	36.5	41.3	50.1	48.9	48.9	48.9
LOS by Move:	F	C	C	C	C	A	D	D	D	D	D	D
HCM2k85thQ:	5	10	10	8	35	22	6	11	15	16	16	16

Note: Queue reported is the number of cars per lane.

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #79 Grand Ave and 1st St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.742
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	42	Level Of Service:	C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Y+R:	4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	
Lanes:	2	0 2	1	0	2	0 3	0	1	2	0 2	1	0	2	0 2	1	0
Volume Module:																
Base Vol:	208	732	34		99	1432	174		436	1041	295		216	759	87	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	208	732	34		99	1432	174		436	1041	295		216	759	87	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	208	732	34		99	1432	174		436	1041	295		216	759	87	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	208	732	34		99	1432	174		436	1041	295		216	759	87	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	208	732	34		99	1432	174		436	1041	295		216	759	87	
Saturation Flow Module:																
Sat/Lane:	1600	1600	1600		1600	1600	1600		1600	1600	1600		1600	1600	1600	
Adjustment:	1.00	1.04	1.00		1.00	1.06	1.00		1.00	1.05	1.00		1.00	1.05	1.00	
Lanes:	2.00	2.87	0.13		2.00	3.00	1.00		2.00	2.34	0.66		2.00	2.69	0.31	
Final Sat.:	3200	4787	213		3200	5100	1600		3200	3940	1060		3200	4506	494	
Capacity Analysis Module:																
Vol/Sat:	0.07	0.15	0.16		0.03	0.28	0.11		0.14	0.26	0.28		0.07	0.17	0.18	
Crit Moves:	****					****					****	****				

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #80 Grand Ave and Chestnut Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.704
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	38	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2	1 0	1 0	2	1 0	1 0	1	1 0	1 0	1	1 0
Volume Module:												
Base Vol:	53	737	163	161	1937	53	34	239	63	130	384	239
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	53	737	163	161	1937	53	34	239	63	130	384	239
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	53	737	163	161	1937	53	34	239	63	130	384	239
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	53	737	163	161	1937	53	34	239	63	130	384	239
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	53	737	163	161	1937	53	34	239	63	130	384	239
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.04	1.00	1.00	1.04	1.00	1.00	1.05	1.00
Lanes:	1.00	2.46	0.54	1.00	2.92	0.08	1.00	1.58	0.42	1.00	1.23	0.77
Final Sat.:	1600	4131	869	1600	4872	128	1600	2632	668	1600	2072	1228
Capacity Analysis Module:												
Vol/Sat:	0.03	0.18	0.19	0.10	0.40	0.41	0.02	0.09	0.09	0.08	0.19	0.19
Crit Moves:	****					****	****				****	

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #81 Grand Ave and McFadden Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.892
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	82	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 1	0	1 0	2 1	0	1 0	1 1	0	1 0	1 1	0
Volume Module:												
Base Vol:	181	764	114	249	1672	163	205	663	201	123	440	111
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	181	764	114	249	1672	163	205	663	201	123	440	111
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	181	764	114	249	1672	163	205	663	201	123	440	111
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	181	764	114	249	1672	163	205	663	201	123	440	111
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	181	764	114	249	1672	163	205	663	201	123	440	111
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.05	1.00	1.00	1.04	1.00	1.00	1.04	1.00
Lanes:	1.00	2.61	0.39	1.00	2.73	0.27	1.00	1.53	0.47	1.00	1.60	0.40
Final Sat.:	1600	4377	623	1600	4574	426	1600	2556	744	1600	2655	645
Capacity Analysis Module:												
Vol/Sat:	0.11	0.17	0.18	0.16	0.37	0.38	0.13	0.26	0.27	0.08	0.17	0.17
Crit Moves:	****					****			****	****		

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #82 Grand Ave and Edinger Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.838
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	61	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 1	0	1 0	2 1	0	1 0	2 1	0	1 0	2 1	0
Volume Module:												
Base Vol:	47	472	92	243	1244	243	347	1447	139	189	724	158
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	47	472	92	243	1244	243	347	1447	139	189	724	158
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	47	472	92	243	1244	243	347	1447	139	189	724	158
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	47	472	92	243	1244	243	347	1447	139	189	724	158
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	47	472	92	243	1244	243	347	1447	139	189	724	158
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.05	1.00	1.00	1.05	1.00	1.00	1.05	1.00
Lanes:	1.00	2.51	0.49	1.00	2.51	0.49	1.00	2.74	0.26	1.00	2.46	0.54
Final Sat.:	1600	4217	783	1600	4216	784	1600	4579	421	1600	4140	860
Capacity Analysis Module:												
Vol/Sat:	0.03	0.11	0.12	0.15	0.30	0.31	0.22	0.32	0.33	0.12	0.17	0.18
Crit Moves:	****					****			****	****		

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #83 Grand Ave and Warner Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.613
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	30	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 1	0	1 0	2 1	0	2 0	3 0	1	2 0	2 1	0
Volume Module:												
Base Vol:	142	429	184	183	528	178	333	1188	467	92	406	137
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	142	429	184	183	528	178	333	1188	467	92	406	137
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	142	429	184	183	528	178	333	1188	467	92	406	137
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	142	429	184	183	528	178	333	1188	467	92	406	137
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	142	429	184	183	528	178	333	1188	467	92	406	137
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	1.00	2.10	0.90	1.00	2.24	0.76	2.00	3.00	1.00	2.00	2.24	0.76
Final Sat.:	1600	3559	1441	1600	3790	1210	3200	5100	1600	3200	3789	1211
Capacity Analysis Module:												
Vol/Sat:	0.09	0.12	0.13	0.11	0.14	0.15	0.10	0.23	0.29	0.03	0.11	0.11
Crit Moves:		****	****						****	****		

Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #84 SR-55 NB Ramps and Dyer Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.569
Loss Time (sec):	5	Average Delay (sec/veh):	17.1
Optimal Cycle:	28	Level Of Service:	B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Split Phase				Split Phase				Protected				Protected			
Rights:	Include				Include				Ignore				Ignore			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Y+R:	4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	
Lanes:	1	0	1! 0	1	0	0	0	0	0	0	3	0	1	0	0	2 1 0
Volume Module:																
Base Vol:	610	0	499		0	0	0		0	1618	647		0	599	361	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	610	0	499		0	0	0		0	1618	647		0	599	361	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	0.00		1.00	1.00	0.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	0.00		1.00	1.00	0.00	
PHF Volume:	610	0	499		0	0	0		0	1618	0		0	599	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	610	0	499		0	0	0		0	1618	0		0	599	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	0.00		1.00	1.00	0.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	0.00		1.00	1.00	0.00	
FinalVolume:	610	0	499		0	0	0		0	1618	0		0	599	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.91	1.00	0.91		1.00	1.00	1.00		1.00	0.91	1.00		1.00	0.91	0.91	
Lanes:	1.55	0.00	1.45		0.00	0.00	0.00		0.00	3.00	1.00		0.00	3.00	0.00	
Final Sat.:	2674	0	2501		0	0	0		0	5187	1900		0	5187	0	
Capacity Analysis Module:																
Vol/Sat:	0.23	0.00	0.20		0.00	0.00	0.00		0.00	0.31	0.00		0.00	0.12	0.00	
Crit Moves:	****									****				****		
Green/Cycle:	0.40	0.00	0.40		0.00	0.00	0.00		0.00	0.55	0.00		0.00	0.55	0.00	
Volume/Cap:	0.57	0.00	0.50		0.00	0.00	0.00		0.00	0.57	0.00		0.00	0.21	0.00	
Delay/Veh:	23.6	0.0	22.6		0.0	0.0	0.0		0.0	15.1	0.0		0.0	11.6	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	23.6	0.0	22.6		0.0	0.0	0.0		0.0	15.1	0.0		0.0	11.6	0.0	
LOS by Move:	C	A	C		A	A	A		A	B	A		A	B	A	
HCM2k85thQ:	15	0	12		0	0	0		0	18	0		0	5	0	

Note: Queue reported is the number of cars per lane.

Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Base Volume Alternative)

Intersection #85 Cambridge St and La Veta Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.971
Loss Time (sec):	5	Average Delay (sec/veh):	31.6
Optimal Cycle:	0	Level Of Service:	D

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Control:	Stop Sign				Stop Sign				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Lanes:	1	0	1	0	0	0	0	1	0	1	0	0	0	1	0	0
Volume Module:																
Base Vol:	185	235	0		0	480	245		273	0	436		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	185	235	0		0	480	245		273	0	436		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	185	235	0		0	480	245		273	0	436		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	185	235	0		0	480	245		273	0	436		0	0	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	185	235	0		0	480	245		273	0	436		0	0	0	
Saturation Flow Module:																
Adjustment:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Lanes:	1.00	1.00	0.00		0.00	1.00	1.00		1.00	0.00	1.00		0.00	0.00	0.00	
Final Sat.:	434	463	0		0	494	537		458	0	539		0	0	0	
Capacity Analysis Module:																
Vol/Sat:	0.43	0.51	xxxx		xxxx	0.97	0.46		0.60	xxxx	0.81		xxxx	xxxx	xxxx	
Crit Moves:		****				****					****					
Delay/Veh:	16.6	17.7	0.0		0.0	59.7	14.5		21.1	0.0	30.8		0.0	0.0	0.0	
Delay Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	16.6	17.7	0.0		0.0	59.7	14.5		21.1	0.0	30.8		0.0	0.0	0.0	
LOS by Move:	C	C	*		*	F	B		C	*	D		*	*	*	
ApproachDel:	17.2				44.4				27.1				xxxxxx			
Delay Adj:	1.00				1.00				1.00				xxxxx			
ApprAdjDel:	17.2				44.4				27.1				xxxxxx			
LOS by Appr:	C				E				D				*			
AllWayAvgQ:	0.7	0.9	0.0		0.0	6.8	0.8		1.4	0.0	3.2		0.0	0.0	0.0	

Note: Queue reported is the number of cars per lane.

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #86 Cambridge St and Fairhaven Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.563
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	27	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	0 0	0	1 0	0 0	1	1 0	2 0	0	0 0	1 1	0
Volume Module:												
Base Vol:	0	0	0	567	0	183	80	216	0	0	195	152
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	567	0	183	80	216	0	0	195	152
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	567	0	183	80	216	0	0	195	152
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	567	0	183	80	216	0	0	195	152
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	567	0	183	80	216	0	0	195	152
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	2.00	0.00	0.00	1.12	0.88
Final Sat.:	0	0	0	1600	0	1600	1600	3400	0	0	1898	1402
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.35	0.00	0.11	0.05	0.06	0.00	0.00	0.10	0.11
Crit Moves:				****			****					****

Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #87 Mabury St and 1st Street

Cycle (sec):	100	Critical Vol./Cap.(X):	0.714
Loss Time (sec):	5	Average Delay (sec/veh):	27.4
Optimal Cycle:	40	Level Of Service:	C

Street Name:	Mabury						1st Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	0	0 1	1 0	1! 0	1	0 0	2	1 0	1 0	2	1 0
Volume Module:												
Base Vol:	6	0	157	248	147	554	0	1230	13	38	579	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	6	0	157	248	147	554	0	1230	13	38	579	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	6	0	157	248	147	554	0	1230	13	38	579	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	6	0	157	248	147	554	0	1230	13	38	579	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	6	0	157	248	147	554	0	1230	13	38	579	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	1.00	0.85	0.90	0.90	0.90	1.00	0.91	0.91	0.95	0.91	0.91
Lanes:	1.00	0.00	1.00	1.23	0.27	1.50	0.00	2.97	0.03	1.00	3.00	0.00
Final Sat.:	1805	0	1615	2097	459	2575	0	5128	54	1805	5187	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.10	0.12	0.32	0.22	0.00	0.24	0.24	0.02	0.11	0.00
Crit Moves:			****		****			****		****		
Green/Cycle:	0.14	0.00	0.14	0.45	0.45	0.45	0.00	0.34	0.34	0.03	0.37	0.00
Volume/Cap:	0.02	0.00	0.71	0.26	0.71	0.48	0.00	0.71	0.71	0.71	0.31	0.00
Delay/Veh:	37.5	0.0	51.9	17.3	24.2	19.6	0.0	30.4	30.4	84.9	22.8	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	37.5	0.0	51.9	17.3	24.2	19.6	0.0	30.4	30.4	84.9	22.8	0.0
LOS by Move:	D	A	D	B	C	B	A	C	C	F	C	A
HCM2k85thQ:	0	0	10	6	22	12	0	20	20	4	7	0

Note: Queue reported is the number of cars per lane.

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #88 Tustin St and La Veta Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.446
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	22	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0 2	1	0	1 0 2	1	0	1 0 1	1	0	1 1 0	0	1
Volume Module:												
Base Vol:	7	301	87	67	1307	4	9	11	35	307	1	47
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	7	301	87	67	1307	4	9	11	35	307	1	47
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	7	301	87	67	1307	4	9	11	35	307	1	47
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	7	301	87	67	1307	4	9	11	35	307	1	47
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	7	301	87	67	1307	4	9	11	35	307	1	47
OvlAdjVol:												0
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.04	1.00	1.00	1.06	1.00	1.00	1.00	1.00
Lanes:	1.00	2.33	0.67	1.00	2.99	0.01	1.00	1.00	1.00	1.99	0.01	1.00
Final Sat.:	1600	3924	1076	1600	4985	15	1600	1700	1600	3190	10	1600
Capacity Analysis Module:												
Vol/Sat:	0.00	0.08	0.08	0.04	0.26	0.27	0.01	0.01	0.02	0.10	0.10	0.03
OvlAdjV/S:												0.00
Crit Moves:	****					****			****		****	

Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #89 Tustin St and SR-22 WB On-Ramp

Cycle (sec):	100	Critical Vol./Cap.(X):	0.635
Loss Time (sec):	5	Average Delay (sec/veh):	12.2
Optimal Cycle:	33	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0 2	0 0	0	0 2	1 0	0	0 0	0 0	0	0 0	0 0
Volume Module:												
Base Vol:	614	571	0	0	1171	699	0	0	0	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	614	571	0	0	1171	699	0	0	0	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	614	571	0	0	1171	699	0	0	0	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	614	571	0	0	1171	699	0	0	0	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	614	571	0	0	1171	699	0	0	0	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.95	1.00	1.00	0.86	0.86	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	2.00	0.00	0.00	2.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
Final Sat.:	3502	3610	0	0	3264	1632	0	0	0	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.18	0.16	0.00	0.00	0.36	0.43	0.00	0.00	0.00	0.00	0.00	0.00
Crit Moves:	****					****						
Green/Cycle:	0.28	0.95	0.00	0.00	0.67	0.67	0.00	0.00	0.00	0.00	0.00	0.00
Volume/Cap:	0.64	0.17	0.00	0.00	0.53	0.64	0.00	0.00	0.00	0.00	0.00	0.00
Delay/Veh:	33.2	0.2	0.0	0.0	8.4	9.8	0.0	0.0	0.0	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	33.2	0.2	0.0	0.0	8.4	9.8	0.0	0.0	0.0	0.0	0.0	0.0
LOS by Move:	C	A	A	A	A	A	A	A	A	A	A	A
HCM2k85thQ:	14	1	0	0	15	21	0	0	0	0	0	0

Note: Queue reported is the number of cars per lane.

Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #90 Tustin St and SR-22 EB Off-Ramp / Seba Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.723
Loss Time (sec):	5	Average Delay (sec/veh):	25.0
Optimal Cycle:	42	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0 2	1 0	1	0 3	0 0	1	0 1!	0 1	0	0 1!	0 0
Volume Module:												
Base Vol:	0	953	5	17	1049	0	275	27	1182	6	0	43
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	953	5	17	1049	0	275	27	1182	6	0	43
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	953	5	17	1049	0	275	27	1182	6	0	43
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	953	5	17	1049	0	275	27	1182	6	0	43
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	953	5	17	1049	0	275	27	1182	6	0	43
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.91	0.91	0.14	0.91	1.00	0.87	0.87	0.87	0.88	1.00	0.88
Lanes:	0.00	2.98	0.02	1.00	3.00	0.00	1.18	0.04	1.78	0.12	0.00	0.88
Final Sat.:	0	5155	27	272	5187	0	1961	59	2956	204	0	1460
Capacity Analysis Module:												
Vol/Sat:	0.00	0.18	0.18	0.06	0.20	0.00	0.14	0.46	0.40	0.03	0.00	0.03
Crit Moves:					****			****		****		
Green/Cycle:	0.00	0.28	0.28	0.28	0.28	0.00	0.63	0.63	0.63	0.04	0.00	0.04
Volume/Cap:	0.00	0.66	0.66	0.22	0.72	0.00	0.22	0.72	0.63	0.72	0.00	0.72
Delay/Veh:	0.0	33.0	33.0	29.2	34.4	0.0	8.0	13.9	12.0	79.1	0.0	79.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	33.0	33.0	29.2	34.4	0.0	8.0	13.9	12.0	79.1	0.0	79.1
LOS by Move:	A	C	C	C	C	A	A	B	B	E	A	E
HCM2k85thQ:	0	16	16	1	18	0	5	25	19	5	0	5

Note: Queue reported is the number of cars per lane.

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #91 Tustin Ave and Fairhaven Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	1.195
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	180	Level Of Service:	F

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 1	0	2 0	2 1	0	1 0	1 1	0	1 0	1 0	1
Volume Module:												
Base Vol:	101	586	103	280	2411	48	84	317	546	416	460	601
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	101	586	103	280	2411	48	84	317	546	416	460	601
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	101	586	103	280	2411	48	84	317	546	416	460	601
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	101	586	103	280	2411	48	84	317	546	416	460	601
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	101	586	103	280	2411	48	84	317	546	416	460	601
OvlAdjVol:												461
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.04	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	2.00	2.55	0.45	2.00	2.94	0.06	1.00	1.00	1.00	1.00	1.00	1.00
Final Sat.:	3200	4282	718	3200	4906	94	1600	1700	1600	1600	1700	1600
Capacity Analysis Module:												
Vol/Sat:	0.03	0.14	0.14	0.09	0.49	0.51	0.05	0.19	0.34	0.26	0.27	0.38
OvlAdjV/S:												0.29
Crit Moves:	****					****			****	****		

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #92 Tustin Ave and Santa Clara Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	1.037
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	180	Level Of Service:	F

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Control:	Protected				Protected				Permitted				Permitted			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Y+R:	4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	
Lanes:	1	0	2	1	0	2	0	2	1	0	1	0	1	1	0	
Volume Module:																
Base Vol:	83	453	84		151	3094	98		124	314	229		160	332	166	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	83	453	84		151	3094	98		124	314	229		160	332	166	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	83	453	84		151	3094	98		124	314	229		160	332	166	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	83	453	84		151	3094	98		124	314	229		160	332	166	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	83	453	84		151	3094	98		124	314	229		160	332	166	
Saturation Flow Module:																
Sat/Lane:	1600	1600	1600		1600	1600	1600		1600	1600	1600		1600	1600	1600	
Adjustment:	1.00	1.05	1.00		1.00	1.04	1.00		1.00	1.05	1.00		1.00	1.05	1.00	
Lanes:	1.00	2.53	0.47		2.00	2.91	0.09		1.00	1.16	0.84		1.00	1.33	0.67	
Final Sat.:	1600	4249	751		3200	4853	147		1600	1950	1350		1600	2233	1067	
Capacity Analysis Module:																
Vol/Sat:	0.05	0.11	0.11		0.05	0.64	0.67		0.08	0.16	0.17		0.10	0.15	0.16	
Crit Moves:	****						****				****	****				

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #93 Tustin Ave and 17th St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.911
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	93	Level Of Service:	E

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ovl			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 0	1	2 0	2 1	0	2 0	3 0	1	2 0	3 0	1
Volume Module:												
Base Vol:	127	226	269	716	2067	23	230	908	155	664	1047	256
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	127	226	269	716	2067	23	230	908	155	664	1047	256
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	127	226	269	716	2067	23	230	908	155	664	1047	256
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	127	226	269	716	2067	23	230	908	155	664	1047	256
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	127	226	269	716	2067	23	230	908	155	664	1047	256
OvlAdjVol:			0									0
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.04	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	2.00	2.00	1.00	2.00	2.97	0.03	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3200	3400	1600	3200	4947	53	3200	5100	1600	3200	5100	1600
Capacity Analysis Module:												
Vol/Sat:	0.04	0.07	0.17	0.22	0.42	0.44	0.07	0.18	0.10	0.21	0.21	0.16
OvlAdjV/S:			0.00									0.00
Crit Moves:	****					****		****			****	

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #94 Tustin Ave and 4th St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.830
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	59	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2	1 0	2 0	2	0 1	1 0	2	1 1	1 0	2	1 0
Volume Module:												
Base Vol:	80	408	365	601	765	237	126	748	31	125	704	457
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	80	408	365	601	765	237	126	748	31	125	704	457
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	80	408	365	601	765	237	126	748	31	125	704	457
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	80	408	365	601	765	237	126	748	31	125	704	457
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	80	408	365	601	765	237	126	748	31	125	704	457
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	1.00	2.00	1.00	2.00	2.00	1.00	1.00	3.00	1.00	1.00	2.00	1.00
Final Sat.:	1600	3400	1600	3200	3400	1600	1600	5100	1600	1600	3400	1600
Capacity Analysis Module:												
Vol/Sat:	0.05	0.12	0.23	0.19	0.23	0.15	0.08	0.15	0.02	0.08	0.21	0.29
Crit Moves:		****	****				****					****

Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #95 SR-55 SB Ramps / Auto Mall Dr and Edinger Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.672
Loss Time (sec):	5	Average Delay (sec/veh):	25.2
Optimal Cycle:	36	Level Of Service:	C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Split Phase				Split Phase				Protected				Protected			
Rights:	Include				Include				Ignore				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Y+R:	4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	
Lanes:	1	1 0	0	2	1	0 1	0	1	1	0 3	0	1	2	0 2	1	0
Volume Module:																
Base Vol:	456	68	540		50	30	8		36	1426	527		510	1202	157	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	456	68	540		50	30	8		36	1426	527		510	1202	157	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	0.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	0.00		1.00	1.00	1.00	
PHF Volume:	456	68	540		50	30	8		36	1426	0		510	1202	157	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	456	68	540		50	30	8		36	1426	0		510	1202	157	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	0.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	0.00		1.00	1.00	1.00	
FinalVolume:	456	68	540		50	30	8		36	1426	0		510	1202	157	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.96	0.96	0.75		0.95	1.00	0.85		0.95	0.91	1.00		0.92	0.89	0.89	
Lanes:	1.74	0.26	2.00		1.00	1.00	1.00		1.00	3.00	1.00		2.00	2.65	0.35	
Final Sat.:	3168	472	2842		1805	1900	1615		1805	5187	1900		3502	4510	589	
Capacity Analysis Module:																
Vol/Sat:	0.14	0.14	0.19		0.03	0.02	0.00		0.02	0.27	0.00		0.15	0.27	0.27	
Crit Moves:			****		****					****			****			
Green/Cycle:	0.28	0.28	0.28		0.04	0.04	0.04		0.04	0.41	0.00		0.22	0.58	0.58	
Volume/Cap:	0.51	0.51	0.67		0.67	0.38	0.12		0.46	0.67	0.00		0.67	0.46	0.46	
Delay/Veh:	30.5	30.5	34.0		68.7	49.8	47.0		50.8	24.9	0.0		38.3	12.0	12.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	30.5	30.5	34.0		68.7	49.8	47.0		50.8	24.9	0.0		38.3	12.0	12.0	
LOS by Move:	C	C	C		E	D	D		D	C	A		D	B	B	
HCM2k85thQ:	11	11	14		4	2	1		3	20	0		13	13	13	

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Note: Queue reported is the number of cars per lane.
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Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #96 SR-55 NB Ramps / Del Amo Ave and Newport Avenue

Cycle (sec):	100	Critical Vol./Cap.(X):	0.673
Loss Time (sec):	5	Average Delay (sec/veh):	25.4
Optimal Cycle:	36	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Ovl			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0 2	1 0		1 0 3	0 1		2 0 1	1 0		1 0 1	1 0	
Volume Module:												
Base Vol:	392	104	66	21	512	750	269	163	155	8	223	4
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	392	104	66	21	512	750	269	163	155	8	223	4
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	392	104	66	21	512	750	269	163	155	8	223	4
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	392	104	66	21	512	750	269	163	155	8	223	4
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	392	104	66	21	512	750	269	163	155	8	223	4
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.86	0.86	0.95	0.91	0.85	0.92	0.88	0.88	0.95	0.95	0.95
Lanes:	2.00	2.00	1.00	1.00	3.00	1.00	2.00	1.03	0.97	1.00	1.96	0.04
Final Sat.:	3502	3257	1629	1805	5187	1615	3502	1715	1631	1805	3536	63
Capacity Analysis Module:												
Vol/Sat:	0.11	0.03	0.04	0.01	0.10	0.46	0.08	0.10	0.10	0.00	0.06	0.06
Crit Moves:	****					****	****				****	
Green/Cycle:	0.17	0.58	0.58	0.17	0.58	0.69	0.11	0.20	0.20	0.01	0.09	0.09
Volume/Cap:	0.67	0.06	0.07	0.07	0.17	0.67	0.67	0.48	0.48	0.48	0.67	0.67
Delay/Veh:	42.2	9.3	9.4	35.3	10.0	10.6	47.0	36.0	36.0	69.3	49.1	49.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	42.2	9.3	9.4	35.3	10.0	10.6	47.0	36.0	36.0	69.3	49.1	49.1
LOS by Move:	D	A	A	D	B	B	D	D	D	E	D	D
HCM2k85thQ:	11	1	2	1	4	21	8	8	8	1	8	8

Note: Queue reported is the number of cars per lane.

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #97 Red Hill Ave and Edinger Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.610
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	30	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Ovl			Ovl			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0 3	0 1	2	0 3	0 1	2	0 3	0 1	2	0 3	0 1
Volume Module:												
Base Vol:	101	374	106	195	828	388	397	1276	271	255	1234	173
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	101	374	106	195	828	388	397	1276	271	255	1234	173
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	101	374	106	195	828	388	397	1276	271	255	1234	173
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	101	374	106	195	828	388	397	1276	271	255	1234	173
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	101	374	106	195	828	388	397	1276	271	255	1234	173
OvlAdjVol:						189			221			
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3200	5100	1600	3200	5100	1600	3200	5100	1600	3200	5100	1600
Capacity Analysis Module:												
Vol/Sat:	0.03	0.07	0.07	0.06	0.16	0.24	0.12	0.25	0.17	0.08	0.24	0.11
OvlAdjV/S:						0.12			0.14			
Crit Moves:	****				****		****				****	

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #98 Red Hill Ave and Warner Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.560
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	27	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0 3	1 0	2	0 2	1 0	1	0 2	1 0	2	0 3	0 1
Volume Module:												
Base Vol:	68	414	56	20	935	188	273	464	342	120	427	76
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	68	414	56	20	935	188	273	464	342	120	427	76
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	68	414	56	20	935	188	273	464	342	120	427	76
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	68	414	56	20	935	188	273	464	342	120	427	76
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	68	414	56	20	935	188	273	464	342	120	427	76
OvlAdjVol:												66
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.05	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	2.00	3.52	0.48	2.00	2.50	0.50	1.00	2.00	1.00	2.00	3.00	1.00
Final Sat.:	3200	5937	763	3200	4196	804	1600	3400	1600	3200	5100	1600
Capacity Analysis Module:												
Vol/Sat:	0.02	0.07	0.07	0.01	0.22	0.23	0.17	0.14	0.21	0.04	0.08	0.05
OvlAdjV/S:												0.04
Crit Moves:	****					****	****				****	

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #99 Red Hill Ave and Dyer Rd / barranca Pkwy

Cycle (sec):	100	Critical Vol./Cap.(X):	0.548
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	26	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0 4	0	1	2 0 4	0	1	2 0 3	1	0	2 0 4	0	1
Volume Module:												
Base Vol:	152	379	125	163	719	94	124	748	296	511	571	111
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	152	379	125	163	719	94	124	748	296	511	571	111
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	152	379	125	163	719	94	124	748	296	511	571	111
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	152	379	125	163	719	94	124	748	296	511	571	111
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	152	379	125	163	719	94	124	748	296	511	571	111
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	2.00	4.00	1.00	2.00	4.00	1.00	2.00	3.00	1.00	2.00	4.00	1.00
Final Sat.:	3200	6800	1600	3200	6800	1600	3200	5100	1600	3200	6800	1600
Capacity Analysis Module:												
Vol/Sat:	0.05	0.06	0.08	0.05	0.11	0.06	0.04	0.15	0.19	0.16	0.08	0.07
Crit Moves:	****				****				****	****		

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #100 Red Hill Ave and Alton Pkwy

Cycle (sec):	100	Critical Vol./Cap.(X):	0.855
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	67	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 0	1	1 0	3 0	1	1 0	2 0	1	2 0	1 0	1
Volume Module:												
Base Vol:	225	663	415	212	962	154	158	490	490	342	290	163
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	225	663	415	212	962	154	158	490	490	342	290	163
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	225	663	415	212	962	154	158	490	490	342	290	163
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	225	663	415	212	962	154	158	490	490	342	290	163
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	225	663	415	212	962	154	158	490	490	342	290	163
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	1.00	2.00	1.00	2.00	1.00	1.00
Final Sat.:	1600	5100	1600	1600	5100	1600	1600	3400	1600	3200	1700	1600
Capacity Analysis Module:												
Vol/Sat:	0.14	0.13	0.26	0.13	0.19	0.10	0.10	0.14	0.31	0.11	0.17	0.10
Crit Moves:			****	****					****	****		

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #101 Red Hill Ave and MacArthur Blvd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.686
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	36	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Ignore			Include			Ignore		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0 2	1 0		2 0 3	0 1		2 0 3	0 1		1 0 3	0 1	
Volume Module:												
Base Vol:	83	742	13	186	481	441	1153	596	98	32	308	789
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	83	742	13	186	481	441	1153	596	98	32	308	789
User Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Volume:	83	742	13	186	481	0	1153	596	98	32	308	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	83	742	13	186	481	0	1153	596	98	32	308	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
FinalVolume:	83	742	13	186	481	0	1153	596	98	32	308	0
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.04	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	2.00	2.95	0.05	2.00	3.00	1.00	2.00	3.00	1.00	1.00	3.00	1.00
Final Sat.:	3200	4917	83	3200	5100	1600	3200	5100	1600	1600	5100	1600
Capacity Analysis Module:												
Vol/Sat:	0.03	0.15	0.16	0.06	0.09	0.00	0.36	0.12	0.06	0.02	0.06	0.00
Crit Moves:			****	****			****				****	

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #102 Red Hill Ave and Main St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.722
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	40	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 0	1	2 0	2 0	1	2 0	2 1	0	2 0	2 1	0
Volume Module:												
Base Vol:	201	691	449	56	261	90	139	1309	254	154	309	73
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	201	691	449	56	261	90	139	1309	254	154	309	73
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	201	691	449	56	261	90	139	1309	254	154	309	73
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	201	691	449	56	261	90	139	1309	254	154	309	73
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	201	691	449	56	261	90	139	1309	254	154	309	73
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.05	1.00	1.00	1.05	1.00
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	2.00	2.51	0.49	2.00	2.43	0.57
Final Sat.:	3200	3400	1600	3200	3400	1600	3200	4220	780	3200	4083	917
Capacity Analysis Module:												
Vol/Sat:	0.06	0.20	0.28	0.02	0.08	0.06	0.04	0.31	0.33	0.05	0.08	0.08
Crit Moves:			****	****					****	****		

Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #103 I-5 SB Ramps and Santa Ana Blvd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.559
Loss Time (sec):	5	Average Delay (sec/veh):	17.4
Optimal Cycle:	28	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Ovl			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0	0	2	0	0	2	0	3	0	2	1
Volume Module:												
Base Vol:	0	0	0	382	0	38	332	569	0	0	1267	370
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	382	0	38	332	569	0	0	1267	370
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	382	0	38	332	569	0	0	1267	370
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	382	0	38	332	569	0	0	1267	370
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	382	0	38	332	569	0	0	1267	370
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	0.92	1.00	0.85	0.92	0.91	1.00	1.00	0.88	0.88
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	2.00	3.00	0.00	0.00	2.32	0.68
Final Sat.:	0	0	0	3502	0	1615	3502	5187	0	0	3878	1133
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.11	0.00	0.02	0.09	0.11	0.00	0.00	0.33	0.33
Crit Moves:				****			****				****	
Green/Cycle:	0.00	0.00	0.00	0.20	0.00	0.37	0.17	0.75	0.00	0.00	0.58	0.58
Volume/Cap:	0.00	0.00	0.00	0.56	0.00	0.06	0.56	0.15	0.00	0.00	0.56	0.56
Delay/Veh:	0.0	0.0	0.0	37.4	0.0	20.7	39.3	3.4	0.0	0.0	13.0	13.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

AdjDel/Veh:	0.0	0.0	0.0	37.4	0.0	20.7	39.3	3.4	0.0	0.0	13.0	13.0
LOS by Move:	A	A	A	D	A	C	D	A	A	A	B	B
HCM2k85thQ:	0	0	0	9	0	1	9	3	0	0	17	17

****

Note: Queue reported is the number of cars per lane.

****

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #104 Tustin Ranch Rd and Warner Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.520
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	25	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	0 0	0	2 0	0 0	1	2 0	3 0	0	0 0	3 0	1
Volume Module:												
Base Vol:	0	0	0	141	0	18	27	357	0	0	2130	490
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	141	0	18	27	357	0	0	2130	490
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	141	0	18	27	357	0	0	2130	490
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	141	0	18	27	357	0	0	2130	490
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	141	0	18	27	357	0	0	2130	490
OvlAdjVol:												420
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	2.00	3.00	0.00	0.00	3.00	1.00
Final Sat.:	0	0	0	3200	0	1600	3200	5100	0	0	5100	1600
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.04	0.00	0.01	0.01	0.07	0.00	0.00	0.42	0.31
OvlAdjV/S:												0.26
Crit Moves:				****			****				****	

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #105 Von Karman Ave and Barranca Pkwy

Cycle (sec):	100	Critical Vol./Cap.(X):	0.929
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	108	Level Of Service:	E

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Ovl			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0 1	1 0		2 0 2			2 0 3	0 1		2 0 4	0 1	
Volume Module:												
Base Vol:	401	533	319	104	1021	446	219	823	275	902	1482	46
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	401	533	319	104	1021	446	219	823	275	902	1482	46
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	401	533	319	104	1021	446	219	823	275	902	1482	46
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	401	533	319	104	1021	446	219	823	275	902	1482	46
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	401	533	319	104	1021	446	219	823	275	902	1482	46
OvlAdjVol:						227						
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	2.00	1.25	0.75	2.00	2.00	2.00	2.00	3.00	1.00	2.00	4.00	1.00
Final Sat.:	3200	2102	1198	3200	3400	3200	3200	5100	1600	3200	6800	1600
Capacity Analysis Module:												
Vol/Sat:	0.13	0.25	0.27	0.03	0.30	0.14	0.07	0.16	0.17	0.28	0.22	0.03
OvlAdjV/S:						0.07						
Crit Moves:	****			****					****	****		

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #106 Red Hill Avenue and El Camino Real

Cycle (sec):	100	Critical Vol./Cap.(X):	0.650
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	33	Level Of Service:	B

Street Name:	Red Hill Avenue						El Camino Real					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0 3	0 1	1	0 2	1 0	1	0 1	0 1	1	0 0	1 0
Volume Module:												
Base Vol:	230	589	190	19	1372	84	48	108	114	246	202	15
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	230	589	190	19	1372	84	48	108	114	246	202	15
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	230	589	190	19	1372	84	48	108	114	246	202	15
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	230	589	190	19	1372	84	48	108	114	246	202	15
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	230	589	190	19	1372	84	48	108	114	246	202	15
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.04	1.00	1.00	1.06	1.00	1.00	1.00	1.00
Lanes:	2.00	3.00	1.00	1.00	2.83	0.17	1.00	1.00	1.00	1.00	0.93	0.07
Final Sat.:	3200	5100	1600	1600	4723	277	1600	1700	1600	1600	1489	111
Capacity Analysis Module:												
Vol/Sat:	0.07	0.12	0.12	0.01	0.29	0.30	0.03	0.06	0.07	0.15	0.14	0.14
Crit Moves:	****					****			****	****		

Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #107 Red Hill Avenue and I-5 NB Ramps

Cycle (sec):	100	Critical Vol./Cap.(X):	0.627
Loss Time (sec):	5	Average Delay (sec/veh):	20.8
Optimal Cycle:	32	Level Of Service:	C

Street Name:	Red Hill Avenue						I-5 NB Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0 3	0 0	0	0 3	0 1	0	0 0	0 0	2	0 0	0 1
Volume Module:												
Base Vol:	254	843	0	0	1171	440	0	0	0	258	0	295
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	254	843	0	0	1171	440	0	0	0	258	0	295
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	254	843	0	0	1171	440	0	0	0	258	0	295
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	254	843	0	0	1171	440	0	0	0	258	0	295
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	254	843	0	0	1171	440	0	0	0	258	0	295
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.91	1.00	1.00	0.91	0.85	1.00	1.00	1.00	0.60	1.00	0.85
Lanes:	1.00	3.00	0.00	0.00	3.00	1.00	0.00	0.00	0.00	2.00	0.00	1.00
Final Sat.:	1805	5187	0	0	5187	1615	0	0	0	2267	0	1615
Capacity Analysis Module:												
Vol/Sat:	0.14	0.16	0.00	0.00	0.23	0.27	0.00	0.00	0.00	0.11	0.00	0.18
Crit Moves:	****					****						****
Green/Cycle:	0.22	0.66	0.00	0.00	0.43	0.43	0.00	0.00	0.00	0.29	0.00	0.29
Volume/Cap:	0.63	0.25	0.00	0.00	0.52	0.63	0.00	0.00	0.00	0.39	0.00	0.63
Delay/Veh:	38.1	7.0	0.0	0.0	20.9	23.8	0.0	0.0	0.0	28.7	0.0	33.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

AdjDel/Veh:	38.1	7.0	0.0	0.0	20.9	23.8	0.0	0.0	0.0	28.7	0.0	33.4
LOS by Move:	D	A	A	A	C	C	A	A	A	C	A	C
HCM2k85thQ:	12	6	0	0	15	17	0	0	0	6	0	13

****

Note: Queue reported is the number of cars per lane.

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Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #108 Red Hill Avenue and I-5 SB Ramps

Cycle (sec):	100	Critical Vol./Cap.(X):	0.799
Loss Time (sec):	5	Average Delay (sec/veh):	23.7
Optimal Cycle:	54	Level Of Service:	C

Street Name:	Red Hill Avenue						I-5 SB Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	4 0	1	1 0	3 0	0	0 1	0 0	1	0 0	0 0	0
Volume Module:												
Base Vol:	0	1191	527	371	1064	0	200	5	367	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1191	527	371	1064	0	200	5	367	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1191	527	371	1064	0	200	5	367	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1191	527	371	1064	0	200	5	367	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1191	527	371	1064	0	200	5	367	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.91	0.85	0.95	0.91	1.00	0.95	0.95	0.85	1.00	1.00	1.00
Lanes:	0.00	4.00	1.00	1.00	3.00	0.00	0.98	0.02	1.00	0.00	0.00	0.00
Final Sat.:	0	6916	1615	1805	5187	0	1757	44	1615	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.17	0.33	0.21	0.21	0.00	0.11	0.11	0.23	0.00	0.00	0.00
Crit Moves:			****	****					****			
Green/Cycle:	0.00	0.41	0.41	0.26	0.67	0.00	0.28	0.28	0.28	0.00	0.00	0.00
Volume/Cap:	0.00	0.42	0.80	0.80	0.31	0.00	0.40	0.40	0.80	0.00	0.00	0.00
Delay/Veh:	0.0	21.2	32.8	44.2	7.1	0.0	29.4	29.4	42.7	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	21.2	32.8	44.2	7.1	0.0	29.4	29.4	42.7	0.0	0.0	0.0
LOS by Move:	A	C	C	D	A	A	C	C	D	A	A	A
HCM2k85thQ:	0	11	24	19	8	0	8	8	19	0	0	0

Note: Queue reported is the number of cars per lane.

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #109 Red Hill Avenue and Nisson Road

Cycle (sec):	100	Critical Vol./Cap.(X):	0.651
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	33	Level Of Service:	B

Street Name:	Red Hill Avenue						Nisson Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 1	0	1 0	2 1	0	1 0	0 1	0	1 0	0 1	0
Volume Module:												
Base Vol:	16	1244	23	162	1222	128	242	59	48	49	26	215
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	16	1244	23	162	1222	128	242	59	48	49	26	215
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	16	1244	23	162	1222	128	242	59	48	49	26	215
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	16	1244	23	162	1222	128	242	59	48	49	26	215
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	16	1244	23	162	1222	128	242	59	48	49	26	215
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.05	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	3.93	0.07	1.00	2.72	0.28	1.00	0.55	0.45	1.00	0.11	0.89
Final Sat.:	1600	6584	116	1600	4545	455	1600	882	718	1600	173	1427
Capacity Analysis Module:												
Vol/Sat:	0.01	0.19	0.20	0.10	0.27	0.28	0.15	0.07	0.07	0.03	0.15	0.15
Crit Moves:			****	****			****					****

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #110 Red Hill Avenue and Walnut Avenue

Cycle (sec):	100	Critical Vol./Cap.(X):	0.636
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	31	Level Of Service:	B

Street Name:	Red Hill Avenue						Walnut Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	2	1	0	1	0	2	1	0	1	0	1	0	2	0	1	1	0
Volume Module:												
Base Vol:	129	502	95	113	1135	127	104	258	254	263	348	166
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	129	502	95	113	1135	127	104	258	254	263	348	166
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	129	502	95	113	1135	127	104	258	254	263	348	166
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	129	502	95	113	1135	127	104	258	254	263	348	166
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	129	502	95	113	1135	127	104	258	254	263	348	166
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.05	1.00	1.00	1.06	1.00	1.00	1.05	1.00
Lanes:	1.00	2.52	0.48	1.00	2.70	0.30	1.00	1.01	0.99	2.00	1.35	0.65
Final Sat.:	1600	4236	764	1600	4517	483	1600	1713	1588	3200	2267	1033
Capacity Analysis Module:												
Vol/Sat:	0.08	0.12	0.12	0.07	0.25	0.26	0.07	0.15	0.16	0.08	0.15	0.16
Crit Moves:	****					****			****	****		

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #111 Red Hill Avenue and Valencia Avenue

Cycle (sec):	100	Critical Vol./Cap.(X):	0.652
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	33	Level Of Service:	B

Street Name:	Red Hill Avenue						Valencia Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ovl			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0 3	1 0	1	0 2	1 0	1	0 1	0 1	2	0 1	0 1
Volume Module:												
Base Vol:	98	412	133	126	1082	72	49	343	133	315	433	153
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	98	412	133	126	1082	72	49	343	133	315	433	153
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	98	412	133	126	1082	72	49	343	133	315	433	153
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	98	412	133	126	1082	72	49	343	133	315	433	153
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	98	412	133	126	1082	72	49	343	133	315	433	153
OvlAdjVol:			0									27
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.04	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	1.00	3.02	0.98	1.00	2.81	0.19	1.00	1.00	1.00	2.00	1.00	1.00
Final Sat.:	1600	5138	1562	1600	4701	299	1600	1700	1600	3200	1700	1600
Capacity Analysis Module:												
Vol/Sat:	0.06	0.08	0.09	0.08	0.23	0.24	0.03	0.20	0.08	0.10	0.25	0.10
OvlAdjV/S:			0.00									0.02
Crit Moves:	****					****		****		****		

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #112 Tustin Ranch Road and Warner Avenue North

Cycle (sec):	100	Critical Vol./Cap.(X):	0.449
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	22	Level Of Service:	A

Street Name:	Tustin Ranch Road						Warner Avenue North					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Ovl			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0	3 0 1	2	0	3 0 0	0	0	0 0 0	3	0	0 0 2
Volume Module:												
Base Vol:	0	321	311	403	1140	0	0	0	0	844	0	249
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	321	311	403	1140	0	0	0	0	844	0	249
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	321	311	403	1140	0	0	0	0	844	0	249
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	321	311	403	1140	0	0	0	0	844	0	249
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	321	311	403	1140	0	0	0	0	844	0	249
OvlAdjVol:			30									0
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	0.00	3.00	1.00	2.00	3.00	0.00	0.00	0.00	0.00	3.00	0.00	2.00
Final Sat.:	0	5100	1600	3200	5100	0	0	0	0	4800	0	3200
Capacity Analysis Module:												
Vol/Sat:	0.00	0.06	0.19	0.13	0.22	0.00	0.00	0.00	0.00	0.18	0.00	0.08
OvlAdjV/S:			0.02									0.00
Crit Moves:	****			****						****		

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #113 Tustin Ranch Road and Walnut Avenue

Cycle (sec):	100	Critical Vol./Cap.(X):	1.273
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	180	Level Of Service:	F

Street Name:	Tustin Ranch Road						Walnut Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ovl			Ovl			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	3	0	1	2	0	3	0	1	2	0	1	1	0	2	0	2	0	1
Volume Module:																				
Base Vol:	92	567	283	1076	3008	401	834	1089	658	187	276	233								
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
Initial Bse:	92	567	283	1076	3008	401	834	1089	658	187	276	233								
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
PHF Volume:	92	567	283	1076	3008	401	834	1089	658	187	276	233								
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0								
Reduced Vol:	92	567	283	1076	3008	401	834	1089	658	187	276	233								
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
FinalVolume:	92	567	283	1076	3008	401	834	1089	658	187	276	233								
OvlAdjVol:			190			0						0								
Saturation Flow Module:																				
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600								
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.05	1.00	1.00	1.06	1.00								
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	1.25	0.75	2.00	2.00	1.00								
Final Sat.:	3200	5100	1600	3200	5100	1600	3200	2095	1205	3200	3400	1600								
Capacity Analysis Module:																				
Vol/Sat:	0.03	0.11	0.18	0.34	0.59	0.25	0.26	0.52	0.55	0.06	0.08	0.15								
OvlAdjV/S:			0.12			0.00						0.00								
Crit Moves:	****			****					****	****										

Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #114 SR-55 SB Ramps and Irvine Boulevard

Cycle (sec):	100	Critical Vol./Cap.(X):	1.099
Loss Time (sec):	5	Average Delay (sec/veh):	41.0
Optimal Cycle:	180	Level Of Service:	D

Street Name:	SR-55 SB Ramps						Irvine Boulevard					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0	0	1	0	1! 0	1	0	0	2	1	0	1	0	3	0	0
Volume Module:												
Base Vol:	0	0	0	65	0	71	0	647	1161	496	1240	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	65	0	71	0	647	1161	496	1240	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	65	0	71	0	647	1161	496	1240	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	65	0	71	0	647	1161	496	1240	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	65	0	71	0	647	1161	496	1240	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	0.88	1.00	0.77	1.00	0.82	0.82	0.95	0.91	1.00
Lanes:	0.00	0.00	0.00	1.44	0.00	1.56	0.00	2.00	1.00	1.00	3.00	0.00
Final Sat.:	0	0	0	2417	0	2277	0	3126	1563	1805	5187	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.03	0.00	0.03	0.00	0.21	0.74	0.27	0.24	0.00
Crit Moves:				****					****	****		
Green/Cycle:	0.00	0.00	0.00	0.02	0.00	0.05	0.00	0.68	0.68	0.25	0.93	0.00
Volume/Cap:	0.00	0.00	0.00	0.90	0.00	0.65	0.00	0.31	1.10	1.10	0.26	0.00
Delay/Veh:	0.0	0.0	0.0	94.5	0.0	54.0	0.0	6.6	70.6	109.4	0.4	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	94.5	0.0	54.0	0.0	6.6	70.6	109.4	0.4	0.0
LOS by Move:	A	A	A	F	A	D	A	A	E	F	A	A

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HCM2k85thQ:     0    0     0     5    0     4     0    7    77    36    2     0
********************************************************************************
Note: Queue reported is the number of cars per lane.
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Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #115 SR-55 NB Ramps and Irvine Boulevard

Cycle (sec):	100	Critical Vol./Cap.(X):	0.906
Loss Time (sec):	5	Average Delay (sec/veh):	23.5
Optimal Cycle:	93	Level Of Service:	C

Street Name:	SR-55 NB Ramps						Irvine Boulevard					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1! 0	1	0	0	0	0	1	0	3	0	0	0	0	2	1	0
Volume Module:																		
Base Vol:	440	0	423	0	0	0	222	526	0	0	1241	863
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	440	0	423	0	0	0	222	526	0	0	1241	863
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	440	0	423	0	0	0	222	526	0	0	1241	863
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	440	0	423	0	0	0	222	526	0	0	1241	863
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	440	0	423	0	0	0	222	526	0	0	1241	863
Saturation Flow Module:																		
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.75	1.00	0.74	1.00	1.00	1.00	0.95	0.91	1.00	1.00	0.85	0.85
Lanes:	1.51	0.00	1.49	0.00	0.00	0.00	1.00	3.00	0.00	0.00	2.00	1.00
Final Sat.:	2135	0	2097	0	0	0	1805	5187	0	0	3247	1624
Capacity Analysis Module:																		
Vol/Sat:	0.21	0.00	0.20	0.00	0.00	0.00	0.12	0.10	0.00	0.00	0.38	0.53
Crit Moves:	****						****					****
Green/Cycle:	0.23	0.00	0.45	0.00	0.00	0.00	0.14	0.72	0.00	0.00	0.59	0.59
Volume/Cap:	0.91	0.00	0.44	0.00	0.00	0.00	0.91	0.14	0.00	0.00	0.65	0.91
Delay/Veh:	49.8	0.0	18.8	0.0	0.0	0.0	76.1	4.3	0.0	0.0	14.3	23.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	49.8	0.0	18.8	0.0	0.0	0.0	76.1	4.3	0.0	0.0	14.3	23.8
LOS by Move:	D	A	B	A	A	A	E	A	A	A	B	C
HCM2k85thQ:	18	0	10	0	0	0	15	3	0	0	21	42

Note: Queue reported is the number of cars per lane.

APPENDIX D.4

ANALYSIS WORKSHEETS –
2045 NP (PM Peak Hour)

Santa Ana Circulation Element

Scenario Report

Scenario:	2045 NP PM Peak Hour
Command:	Default Command
Volume:	2045 NP PM
Geometry:	MPAH
Impact Fee:	Default Impact Fee
Trip Generation:	Default Trip Generation
Trip Distribution:	Default Trip Distribution
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

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Santa Ana Circulation Element

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 1 Euclid St and 1st St	D	xxxxx	0.857	D	xxxxx	0.857	+ 0.000 V/C
# 2 Euclid St and McFadden Ave	D	xxxxx	0.896	D	xxxxx	0.896	+ 0.000 V/C
# 3 Euclid St and Edinger Ave	D	xxxxx	0.888	D	xxxxx	0.888	+ 0.000 V/C
# 4 Newhope St and Hazard Ave	C	xxxxx	0.721	C	xxxxx	0.721	+ 0.000 V/C
# 5 Newhope St and McFadden Ave	C	xxxxx	0.777	C	xxxxx	0.777	+ 0.000 V/C
# 6 Harbor Blvd and SR-22 WB Off-R	C	24.2	0.802	C	24.2	0.802	+ 0.000 D/V
# 7 Trask Avenue and SR-22 EB On-R	B	13.6	0.533	B	13.6	0.533	+ 0.000 D/V
# 8 Harbor Blvd and Westminster Av	D	xxxxx	0.882	D	xxxxx	0.882	+ 0.000 V/C
# 9 Harbor Blvd and 1st St	C	xxxxx	0.778	C	xxxxx	0.778	+ 0.000 V/C
# 10 Harbor Blvd and McFadden Ave	D	xxxxx	0.812	D	xxxxx	0.812	+ 0.000 V/C
# 11 Harbor Blvd and Edinger Ave	C	xxxxx	0.725	C	xxxxx	0.725	+ 0.000 V/C
# 12 Harbor Blvd and Warner Ave	F	xxxxx	1.536	F	xxxxx	1.536	+ 0.000 V/C
# 13 Harbor Blvd and Segerstrom Ave	E	xxxxx	0.921	E	xxxxx	0.921	+ 0.000 V/C
# 14 MacArthur Blvd and Hyland Ave	E	xxxxx	0.917	E	xxxxx	0.917	+ 0.000 V/C
# 15 MacArthur Blvd and Harbor Blvd	C	xxxxx	0.783	C	xxxxx	0.783	+ 0.000 V/C
# 16 Harbor Blvd and Sunflower Ave	C	xxxxx	0.717	C	xxxxx	0.717	+ 0.000 V/C
# 17 Harbor Blvd and I-405 NB Off-R	B	18.3	0.699	B	18.3	0.699	+ 0.000 D/V
# 18 Harbor Blvd and I-405 SB Off-R	B	17.9	0.667	B	17.9	0.667	+ 0.000 D/V
# 19 Fairview St and Civic Center D	C	xxxxx	0.757	C	xxxxx	0.757	+ 0.000 V/C
# 20 Fairview St and 1st St	D	xxxxx	0.898	D	xxxxx	0.898	+ 0.000 V/C
# 21 Fairview St and McFadden Ave	C	xxxxx	0.776	C	xxxxx	0.776	+ 0.000 V/C
# 22 Fairview St and Edinger Ave	E	xxxxx	0.916	E	xxxxx	0.916	+ 0.000 V/C
# 23 Fairview St and Warner Ave	C	xxxxx	0.796	C	xxxxx	0.796	+ 0.000 V/C
# 24 Fairview St and MacArthur Blvd	C	xxxxx	0.768	C	xxxxx	0.768	+ 0.000 V/C

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Santa Ana Circulation Element

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 25 Fairview Rd and Sunflower Ave	C	xxxxx	0.715	C	xxxxx	0.715	+ 0.000 V/C
# 26 Greenville St and Edinger Ave	A	xxxxx	0.595	A	xxxxx	0.595	+ 0.000 V/C
# 27 Greenville St and Segerstrom A	C	xxxxx	0.777	C	xxxxx	0.777	+ 0.000 V/C
# 28 Raitt St and McFadden Ave	C	xxxxx	0.758	C	xxxxx	0.758	+ 0.000 V/C
# 29 Raitt St and Edinger Ave	E	xxxxx	0.986	E	xxxxx	0.986	+ 0.000 V/C
# 30 Bear St and MacArthur Blvd	D	xxxxx	0.851	D	xxxxx	0.851	+ 0.000 V/C
# 31 Bristol St and 17th St	D	xxxxx	0.823	D	xxxxx	0.823	+ 0.000 V/C
# 32 Bristol St and Civic Center Dr	E	xxxxx	0.911	E	xxxxx	0.911	+ 0.000 V/C
# 33 Bristol St and Santa Ana Blvd	D	xxxxx	0.853	D	xxxxx	0.853	+ 0.000 V/C
# 34 Bristol St and 1st St	D	xxxxx	0.826	D	xxxxx	0.826	+ 0.000 V/C
# 35 Bristol St and McFadden Ave	F	xxxxx	1.028	F	xxxxx	1.028	+ 0.000 V/C
# 36 Bristol St and Warner Ave	D	xxxxx	0.847	D	xxxxx	0.847	+ 0.000 V/C
# 37 Bristol St and Segerstrom Ave	D	xxxxx	0.870	D	xxxxx	0.870	+ 0.000 V/C
# 38 Bristol St and Alton Ave	B	xxxxx	0.633	B	xxxxx	0.633	+ 0.000 V/C
# 39 Bristol St and MacArthur Blvd	C	xxxxx	0.765	C	xxxxx	0.765	+ 0.000 V/C
# 40 Bristol St and Sunflower Ave	B	xxxxx	0.692	B	xxxxx	0.692	+ 0.000 V/C
# 41 Bristol St and I-405 NB Ramps	C	28.5	0.825	C	28.5	0.825	+ 0.000 D/V
# 42 Bristol St and I-405 SB Ramps	B	18.3	0.617	B	18.3	0.617	+ 0.000 D/V
# 43 Flower St and Santa Ana Blvd	D	xxxxx	0.857	D	xxxxx	0.857	+ 0.000 V/C
# 44 Flower St and 1st St	D	xxxxx	0.877	D	xxxxx	0.877	+ 0.000 V/C
# 45 Flower St and McFadden Ave	F	xxxxx	1.037	F	xxxxx	1.037	+ 0.000 V/C
# 46 Flower St and Segerstrom Ave	D	xxxxx	0.866	D	xxxxx	0.866	+ 0.000 V/C
# 47 Flower St and MacArthur Blvd	E	xxxxx	0.900	E	xxxxx	0.900	+ 0.000 V/C
# 48 Main St and La Veta Ave	B	xxxxx	0.696	B	xxxxx	0.696	+ 0.000 V/C
# 49 Main St and Mainplace Dr / Mem	A	xxxxx	0.556	A	xxxxx	0.556	+ 0.000 V/C
# 50 Main St and 17th St	C	xxxxx	0.760	C	xxxxx	0.760	+ 0.000 V/C

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Santa Ana Circulation Element

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 51 Main St and Civic Center Dr	E	xxxxx	0.965	E	xxxxx	0.965	+ 0.000 V/C
# 52 Main St and Santa Ana Blvd	C	xxxxx	0.792	C	xxxxx	0.792	+ 0.000 V/C
# 53 Main St and 4th St	A	xxxxx	0.447	A	xxxxx	0.447	+ 0.000 V/C
# 54 Main St and 1st St	C	xxxxx	0.744	C	xxxxx	0.744	+ 0.000 V/C
# 55 Main St and McFadden Ave	E	xxxxx	0.925	E	xxxxx	0.925	+ 0.000 V/C
# 56 Main St and Edinger Ave	D	xxxxx	0.867	D	xxxxx	0.867	+ 0.000 V/C
# 57 Main St and MacArthur Blvd	C	xxxxx	0.749	C	xxxxx	0.749	+ 0.000 V/C
# 58 Penn Wy and 17th St	C	25.5	0.872	C	25.5	0.872	+ 0.000 D/V
# 59 I-5 NB Off Ramps/17th Street	B	19.0	0.587	B	19.0	0.587	+ 0.000 D/V
# 60 Penn Wy and I-5 SB Ramps	C	23.0	0.573	C	23.0	0.573	+ 0.000 D/V
# 61 Santiago St and Civic Center D	F	110.0	1.369	F	110.0	1.369	+ 0.000 V/C
# 62 Santiago St and Santa Ana Blvd	F	xxxxx	1.017	F	xxxxx	1.017	+ 0.000 V/C
# 63 Standard Ave and 4th St	D	xxxxx	0.893	D	xxxxx	0.893	+ 0.000 V/C
# 64 Standard Ave and 1st St	E	xxxxx	0.968	E	xxxxx	0.968	+ 0.000 V/C
# 65 Standard Ave and Mcfadden Ave	D	xxxxx	0.828	D	xxxxx	0.828	+ 0.000 V/C
# 66 Halladay St and Warner Ave	E	xxxxx	0.975	E	xxxxx	0.975	+ 0.000 V/C
# 67 Halladay St and Dyer Rd	F	xxxxx	1.057	F	xxxxx	1.057	+ 0.000 V/C
# 68 SR-55 SB Ramps and MacArthur B	B	17.8	0.567	B	17.8	0.567	+ 0.000 D/V
# 69 SR-55 NB Ramps and MacArthur B	B	14.6	0.484	B	14.6	0.484	+ 0.000 D/V
# 70 SR-55 SB Ramps and Dyer Rd	C	26.5	0.663	C	26.5	0.663	+ 0.000 D/V
# 71 Glassell St and La Veta Ave	C	xxxxx	0.744	C	xxxxx	0.744	+ 0.000 V/C
# 72 Glassell St and SR-22 WB Ramps	C	30.5	0.910	C	30.5	0.910	+ 0.000 D/V
# 73 Grand Ave / Glassell St and SR	C	31.6	0.931	C	31.6	0.931	+ 0.000 D/V
# 74 Grand Ave and Fairhaven Ave	C	xxxxx	0.717	C	xxxxx	0.717	+ 0.000 V/C
# 75 Grand Ave and Santa Clara Ave	D	xxxxx	0.808	D	xxxxx	0.808	+ 0.000 V/C

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Santa Ana Circulation Element

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 76 Grand Ave and 17th St	D	xxxxx	0.856	D	xxxxx	0.856	+ 0.000 V/C
# 77 Grand Ave and I-5 NB Ramps	B	10.1	0.696	B	10.1	0.696	+ 0.000 D/V
# 78 Grand Ave and Santa Ana Blvd	C	25.3	0.721	C	25.3	0.721	+ 0.000 D/V
# 79 Grand Ave and 1st St	C	xxxxx	0.731	C	xxxxx	0.731	+ 0.000 V/C
# 80 Grand Ave and Chestnut Ave	B	xxxxx	0.688	B	xxxxx	0.688	+ 0.000 V/C
# 81 Grand Ave and McFadden Ave	D	xxxxx	0.821	D	xxxxx	0.821	+ 0.000 V/C
# 82 Grand Ave and Edinger Ave	F	xxxxx	1.004	F	xxxxx	1.004	+ 0.000 V/C
# 83 Grand Ave and Warner Ave	D	xxxxx	0.827	D	xxxxx	0.827	+ 0.000 V/C
# 84 SR-55 NB Ramps and Dyer Rd	A	5.7	0.362	A	5.7	0.362	+ 0.000 D/V
# 85 Cambridge St and La Veta Ave	C	19.7	0.779	C	19.7	0.779	+ 0.000 V/C
# 86 Cambridge St and Fairhaven Ave	A	xxxxx	0.454	A	xxxxx	0.454	+ 0.000 V/C
# 87 Mabury St and 1st Street	C	27.1	0.674	C	27.1	0.674	+ 0.000 D/V
# 88 Tustin St and La Veta Ave	A	xxxxx	0.381	A	xxxxx	0.381	+ 0.000 V/C
# 89 Tustin St and SR-22 WB On-Ramp	B	11.1	0.391	B	11.1	0.391	+ 0.000 D/V
# 90 Tustin St and SR-22 EB Off-Ram	C	23.1	0.679	C	23.1	0.679	+ 0.000 D/V
# 91 Tustin Ave and Fairhaven Ave	B	xxxxx	0.685	B	xxxxx	0.685	+ 0.000 V/C
# 92 Tustin Ave and Santa Clara Ave	C	xxxxx	0.709	C	xxxxx	0.709	+ 0.000 V/C
# 93 Tustin Ave and 17th St	C	xxxxx	0.797	C	xxxxx	0.797	+ 0.000 V/C
# 94 Tustin Ave and 4th St	C	xxxxx	0.708	C	xxxxx	0.708	+ 0.000 V/C
# 95 SR-55 SB Ramps / Auto Mall Dr	C	25.5	0.702	C	25.5	0.702	+ 0.000 D/V
# 96 SR-55 NB Ramps / Del Amo Ave a	D	39.1	0.895	D	39.1	0.895	+ 0.000 D/V
# 97 Red Hill Ave and Edinger Ave	D	xxxxx	0.853	D	xxxxx	0.853	+ 0.000 V/C
# 98 Red Hill Ave and Warner Ave	D	xxxxx	0.875	D	xxxxx	0.875	+ 0.000 V/C
# 99 Red Hill Ave and Dyer Rd / bar	A	xxxxx	0.537	A	xxxxx	0.537	+ 0.000 V/C
#100 Red Hill Ave and Alton Pkwy	F	xxxxx	1.184	F	xxxxx	1.184	+ 0.000 V/C
#101 Red Hill Ave and MacArthur Blv	C	xxxxx	0.702	C	xxxxx	0.702	+ 0.000 V/C

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Santa Ana Circulation Element

Intersection	Base LOS	Del/ Veh	V/ C	Future LOS	Del/ Veh	V/ C	Change in
#102 Red Hill Ave and Main St	D	xxxxx	0.813	D	xxxxx	0.813	+ 0.000 V/C
#103 I-5 SB Ramps and Santa Ana Blv	B	18.4	0.487	B	18.4	0.487	+ 0.000 D/V
#104 Tustin Ranch Rd and Warner Ave	B	xxxxx	0.645	B	xxxxx	0.645	+ 0.000 V/C
#105 Von Karman Ave and Barranca Pk	F	xxxxx	1.228	F	xxxxx	1.228	+ 0.000 V/C
#106 Red Hill Avenue and El Camino	C	xxxxx	0.779	C	xxxxx	0.779	+ 0.000 V/C
#107 Red Hill Avenue and I-5 NB Ram	C	23.7	0.634	C	23.7	0.634	+ 0.000 D/V
#108 Red Hill Avenue and I-5 SB Ram	C	22.2	0.695	C	22.2	0.695	+ 0.000 D/V
#109 Red Hill Avenue and Nisson Roa	B	xxxxx	0.693	B	xxxxx	0.693	+ 0.000 V/C
#110 Red Hill Avenue and Walnut Ave	C	xxxxx	0.739	C	xxxxx	0.739	+ 0.000 V/C
#111 Red Hill Avenue and Valencia A	C	xxxxx	0.738	C	xxxxx	0.738	+ 0.000 V/C
#112 Tustin Ranch Road and Warner A	D	xxxxx	0.885	D	xxxxx	0.885	+ 0.000 V/C
#113 Tustin Ranch Road and Walnut A	F	xxxxx	1.715	F	xxxxx	1.715	+ 0.000 V/C
#114 SR-55 SB Ramps and Irvine Boul	C	25.6	0.915	C	25.6	0.915	+ 0.000 D/V
#115 SR-55 NB Ramps and Irvine Boul	C	22.9	0.932	C	22.9	0.932	+ 0.000 D/V

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #1 Euclid St and 1st St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.857
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	67	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			WideBypass			WideBypass		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2	1 0	1 0	2	1 0	1 0	2	1 0	1 0	2	1 0
Volume Module:												
Base Vol:	169	1569	126	152	866	164	212	678	106	209	877	209
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	169	1569	126	152	866	164	212	678	106	209	877	209
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	169	1569	126	152	866	164	212	678	106	209	877	209
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	169	1569	126	152	866	164	212	678	106	209	877	209
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	169	1569	126	152	866	164	212	678	106	209	877	209
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.05	1.00	1.00	1.05	1.00	1.00	1.05	1.00
Lanes:	1.00	2.78	0.22	1.00	2.52	0.48	1.00	2.59	0.41	1.00	2.42	0.58
Final Sat.:	1600	4643	357	1600	4236	764	1600	4351	649	1600	4076	924
Capacity Analysis Module:												
Vol/Sat:	0.11	0.34	0.35	0.10	0.20	0.21	0.13	0.16	0.16	0.13	0.22	0.23
Crit Moves:		****	****				****					****

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #2 Euclid St and McFadden Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.896
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	84	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Prot+Permit			Prot+Permit		
Rights:	WideBypass			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2	1 0	1 0	2	1 0	1 0	1	1 0	1 0	1	1 0
Volume Module:												
Base Vol:	242	1973	127	96	1179	143	207	475	210	114	479	221
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	242	1973	127	96	1179	143	207	475	210	114	479	221
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	242	1973	127	96	1179	143	207	475	210	114	479	221
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	242	1973	127	96	1179	143	207	475	210	114	479	221
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	242	1973	127	96	1179	143	207	475	210	114	479	221
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.04	1.00	1.00	1.05	1.00	1.00	1.05	1.00	1.00	1.05	1.00
Lanes:	1.00	2.82	0.18	1.00	2.68	0.32	1.00	1.39	0.61	1.00	1.37	0.63
Final Sat.:	1600	4710	290	1600	4481	519	1600	2319	981	1600	2290	1010
Capacity Analysis Module:												
Vol/Sat:	0.15	0.42	0.44	0.06	0.26	0.28	0.13	0.20	0.21	0.07	0.21	0.22
Crit Moves:			****	****			****					****

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #3 Euclid St and Edinger Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.888
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	80	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 1	0	2 0	2 1	0	1 0	2 0	1	1 0	2 0	1
Volume Module:												
Base Vol:	539	1610	115	136	897	228	141	544	163	128	1181	191
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	539	1610	115	136	897	228	141	544	163	128	1181	191
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	539	1610	115	136	897	228	141	544	163	128	1181	191
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	539	1610	115	136	897	228	141	544	163	128	1181	191
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	539	1610	115	136	897	228	141	544	163	128	1181	191
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.04	1.00	1.00	1.05	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	2.00	2.80	0.20	2.00	2.39	0.61	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	3200	4680	320	3200	4027	973	1600	3400	1600	1600	3400	1600
Capacity Analysis Module:												
Vol/Sat:	0.17	0.34	0.36	0.04	0.22	0.23	0.09	0.16	0.10	0.08	0.35	0.12
Crit Moves:	****					****	****				****	

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #4 Newhope St and Hazard Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.721
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	40	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Prot+Permit			Prot+Permit			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1	1 0	1 0	1	1 0	1 0	1	1 0	1 0	1	1 0
Volume Module:												
Base Vol:	105	1159	45	46	982	117	75	148	91	88	556	160
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	105	1159	45	46	982	117	75	148	91	88	556	160
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	105	1159	45	46	982	117	75	148	91	88	556	160
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	105	1159	45	46	982	117	75	148	91	88	556	160
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	105	1159	45	46	982	117	75	148	91	88	556	160
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.03	1.00	1.00	1.03	1.00	1.00	1.05	1.00	1.00	1.04	1.00
Lanes:	1.00	1.93	0.07	1.00	1.79	0.21	1.00	1.24	0.76	1.00	1.55	0.45
Final Sat.:	1600	3180	120	1600	2959	341	1600	2082	1218	1600	2585	715
Capacity Analysis Module:												
Vol/Sat:	0.07	0.36	0.38	0.03	0.33	0.34	0.05	0.07	0.07	0.06	0.22	0.22
Crit Moves:	****					****	****				****	

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #5 Newhope St and McFadden Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.777
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	48	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Prot+Permit			Prot+Permit		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1	1 0	1 0	1	1 0	1 0	1	1 0	1 0	1	1 0
Volume Module:												
Base Vol:	188	1009	177	140	625	121	61	372	54	104	574	164
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	188	1009	177	140	625	121	61	372	54	104	574	164
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	188	1009	177	140	625	121	61	372	54	104	574	164
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	188	1009	177	140	625	121	61	372	54	104	574	164
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	188	1009	177	140	625	121	61	372	54	104	574	164
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.04	1.00	1.00	1.04	1.00	1.00	1.04	1.00	1.00	1.04	1.00
Lanes:	1.00	1.70	0.30	1.00	1.68	0.32	1.00	1.75	0.25	1.00	1.56	0.44
Final Sat.:	1600	2822	478	1600	2781	519	1600	2894	406	1600	2589	711
Capacity Analysis Module:												
Vol/Sat:	0.12	0.36	0.37	0.09	0.22	0.23	0.04	0.13	0.13	0.07	0.22	0.23
Crit Moves:			****	****			****					****

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Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #6 Harbor Blvd and SR-22 WB Off-Ramp / Banner Dr

Cycle (sec):	100	Critical Vol./Cap.(X):	0.802
Loss Time (sec):	5	Average Delay (sec/veh):	24.2
Optimal Cycle:	55	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 0	0	0 0	2 1	0	0 0	1! 0	0	1 1	0 0	1
Volume Module:												
Base Vol:	109	2457	0	0	1801	58	102	0	86	576	78	165
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	109	2457	0	0	1801	58	102	0	86	576	78	165
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	109	2457	0	0	1801	58	102	0	86	576	78	165
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	109	2457	0	0	1801	58	102	0	86	576	78	165
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	109	2457	0	0	1801	58	102	0	86	576	78	165
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.91	1.00	1.00	0.91	0.91	0.91	1.00	0.91	0.96	0.96	0.85
Lanes:	1.00	3.00	0.00	0.00	2.91	0.09	0.54	0.00	0.46	1.76	0.24	1.00
Final Sat.:	1805	5187	0	0	5000	161	942	0	794	3206	434	1615
Capacity Analysis Module:												
Vol/Sat:	0.06	0.47	0.00	0.00	0.36	0.36	0.11	0.00	0.11	0.18	0.18	0.10
Crit Moves:		****		****			****			****		
Green/Cycle:	0.08	0.59	0.00	0.00	0.51	0.51	0.14	0.00	0.14	0.22	0.22	0.22
Volume/Cap:	0.71	0.80	0.00	0.00	0.71	0.71	0.80	0.00	0.80	0.80	0.80	0.46
Delay/Veh:	59.1	17.5	0.0	0.0	20.0	20.0	59.6	0.0	59.6	42.4	42.4	34.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	59.1	17.5	0.0	0.0	20.0	20.0	59.6	0.0	59.6	42.4	42.4	34.4
LOS by Move:	E	B	A	A	C	C	E	A	E	D	D	C
HCM2k85thQ:	7	33	0	0	25	25	12	0	12	18	18	7

Note: Queue reported is the number of cars per lane.

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Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #7 Trask Avenue and SR-22 EB On-Ramp

Cycle (sec):	100	Critical Vol./Cap.(X):	0.533
Loss Time (sec):	5	Average Delay (sec/veh):	13.6
Optimal Cycle:	26	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	0 0	0	0 0	0 0	0	2 0	1 0	0	0 0	1 1	0
Volume Module:												
Base Vol:	0	0	0	0	0	0	927	695	0	0	786	74
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	927	695	0	0	786	74
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	0	0	0	927	695	0	0	786	74
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	0	0	0	927	695	0	0	786	74
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	0	0	0	927	695	0	0	786	74
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	0.92	1.00	1.00	1.00	0.94	0.94
Lanes:	0.00	0.00	0.00	0.00	0.00	0.00	2.00	1.00	0.00	0.00	1.83	0.17
Final Sat.:	0	0	0	0	0	0	3502	1900	0	0	3256	307
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.00	0.00	0.00	0.26	0.37	0.00	0.00	0.24	0.24
Crit Moves:							****				****	
Green/Cycle:	0.00	0.00	0.00	0.00	0.00	0.00	0.50	0.95	0.00	0.00	0.45	0.45
Volume/Cap:	0.00	0.00	0.00	0.00	0.00	0.00	0.53	0.39	0.00	0.00	0.53	0.53
Delay/Veh:	0.0	0.0	0.0	0.0	0.0	0.0	17.5	0.3	0.0	0.0	20.1	20.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	0.0	0.0	0.0	17.5	0.3	0.0	0.0	20.1	20.1
LOS by Move:	A	A	A	A	A	A	B	A	A	A	C	C
HCM2k85thQ:	0	0	0	0	0	0	15	3	0	0	15	15

Note: Queue reported is the number of cars per lane.

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #8 Harbor Blvd and Westminster Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.882
Loss Time (sec):	0	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	180	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	WideBypass			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 0	1	1 0	3 0	1	1 0	2 1	0	1 0	3 0	1
Volume Module:												
Base Vol:	237	1178	279	254	1752	202	215	768	37	357	1238	281
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	237	1178	279	254	1752	202	215	768	37	357	1238	281
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	237	1178	279	254	1752	202	215	768	37	357	1238	281
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	237	1178	279	254	1752	202	215	768	37	357	1238	281
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	237	1178	279	254	1752	202	215	768	37	357	1238	281
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.04	1.00	1.00	1.06	1.00
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	1.00	2.86	0.14	1.00	3.00	1.00
Final Sat.:	1600	5100	1600	1600	5100	1600	1600	4779	221	1600	5100	1600
Capacity Analysis Module:												
Vol/Sat:	0.15	0.23	0.17	0.16	0.34	0.13	0.13	0.16	0.17	0.22	0.24	0.18
Crit Moves:	****			****					****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #9 Harbor Blvd and 1st St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.778
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	48	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 0	1	1 0	3 0	1	2 0	2 1	0	2 0	2 1	0
Volume Module:												
Base Vol:	290	1497	166	245	1073	145	179	730	138	199	929	151
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	290	1497	166	245	1073	145	179	730	138	199	929	151
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	290	1497	166	245	1073	145	179	730	138	199	929	151
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	290	1497	166	245	1073	145	179	730	138	199	929	151
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	290	1497	166	245	1073	145	179	730	138	199	929	151
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.05	1.00	1.00	1.05	1.00
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	2.00	2.52	0.48	2.00	2.58	0.42
Final Sat.:	1600	5100	1600	1600	5100	1600	3200	4237	763	3200	4329	671
Capacity Analysis Module:												
Vol/Sat:	0.18	0.29	0.10	0.15	0.21	0.09	0.06	0.17	0.18	0.06	0.21	0.23
Crit Moves:		****			****			****				****

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #10 Harbor Blvd and McFadden Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.812
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	55	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	3 0	1	2 0	2 1	0	1 0	1 1	0	1 0	1 1	0
Volume Module:												
Base Vol:	169	1737	127	256	1094	99	241	585	73	198	474	137
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	169	1737	127	256	1094	99	241	585	73	198	474	137
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	169	1737	127	256	1094	99	241	585	73	198	474	137
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	169	1737	127	256	1094	99	241	585	73	198	474	137
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	169	1737	127	256	1094	99	241	585	73	198	474	137
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.05	1.00	1.00	1.04	1.00	1.00	1.04	1.00
Lanes:	2.00	3.00	1.00	2.00	2.75	0.25	1.00	1.78	0.22	1.00	1.55	0.45
Final Sat.:	3200	5100	1600	3200	4602	398	1600	2945	355	1600	2582	718
Capacity Analysis Module:												
Vol/Sat:	0.05	0.34	0.08	0.08	0.24	0.25	0.15	0.20	0.21	0.12	0.18	0.19
Crit Moves:		****			****			****				****

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #11 Harbor Blvd and Edinger Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.725
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	40	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	3 0	1	2 0	3 0	1	2 0	2 1	0	2 0	3 0	1
Volume Module:												
Base Vol:	254	1597	193	290	843	77	109	460	81	196	1138	379
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	254	1597	193	290	843	77	109	460	81	196	1138	379
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	254	1597	193	290	843	77	109	460	81	196	1138	379
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	254	1597	193	290	843	77	109	460	81	196	1138	379
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	254	1597	193	290	843	77	109	460	81	196	1138	379
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.05	1.00	1.00	1.06	1.00
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	2.55	0.45	2.00	3.00	1.00
Final Sat.:	3200	5100	1600	3200	5100	1600	3200	4281	719	3200	5100	1600
Capacity Analysis Module:												
Vol/Sat:	0.08	0.31	0.12	0.09	0.17	0.05	0.03	0.11	0.11	0.06	0.22	0.24
Crit Moves:		****			****			****				****

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #12 Harbor Blvd and Warner Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	1.536
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	180	Level Of Service:	F

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 1	0	2 0	3 0	1	2 0	3 0	1	2 0	3 0	1
Volume Module:												
Base Vol:	762	3656	275	262	1457	174	217	1539	352	249	2589	827
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	762	3656	275	262	1457	174	217	1539	352	249	2589	827
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	762	3656	275	262	1457	174	217	1539	352	249	2589	827
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	762	3656	275	262	1457	174	217	1539	352	249	2589	827
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	762	3656	275	262	1457	174	217	1539	352	249	2589	827
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.04	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	2.00	2.79	0.21	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3200	4664	336	3200	5100	1600	3200	5100	1600	3200	5100	1600
Capacity Analysis Module:												
Vol/Sat:	0.24	0.78	0.82	0.08	0.29	0.11	0.07	0.30	0.22	0.08	0.51	0.52
Crit Moves:		****	****				****					****

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #13 Harbor Blvd and Segerstrom Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.921
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	100	Level Of Service:	E

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Prot+Permit			Prot+Permit		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 1	0	1 0	2 1	0	1 0	1 1	0	1 0	2 0	1
Volume Module:												
Base Vol:	273	1717	55	87	986	87	118	585	192	117	1269	461
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	273	1717	55	87	986	87	118	585	192	117	1269	461
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	273	1717	55	87	986	87	118	585	192	117	1269	461
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	273	1717	55	87	986	87	118	585	192	117	1269	461
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	273	1717	55	87	986	87	118	585	192	117	1269	461
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.04	1.00	1.00	1.05	1.00	1.00	1.04	1.00	1.00	1.06	1.00
Lanes:	2.00	2.91	0.09	1.00	2.76	0.24	1.00	1.51	0.49	1.00	2.00	1.00
Final Sat.:	3200	4851	149	1600	4611	389	1600	2509	791	1600	3400	1600
Capacity Analysis Module:												
Vol/Sat:	0.09	0.35	0.37	0.05	0.21	0.22	0.07	0.23	0.24	0.07	0.37	0.29
Crit Moves:			****	****			****				****	

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #14 MacArthur Blvd and Hyland Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.917
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	98	Level Of Service:	E

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Prot+Permit			Prot+Permit		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	0 1	0	1 0	1 0	1	1 0	3 0	1	1 0	3 0	1
Volume Module:												
Base Vol:	1201	7	70	12	4	14	36	891	160	25	2350	12
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	1201	7	70	12	4	14	36	891	160	25	2350	12
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	1201	7	70	12	4	14	36	891	160	25	2350	12
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	1201	7	70	12	4	14	36	891	160	25	2350	12
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	1201	7	70	12	4	14	36	891	160	25	2350	12
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	2.00	0.09	0.91	1.00	1.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00
Final Sat.:	3200	145	1455	1600	1700	1600	1600	5100	1600	1600	5100	1600
Capacity Analysis Module:												
Vol/Sat:	0.38	0.05	0.05	0.01	0.00	0.01	0.02	0.17	0.10	0.02	0.46	0.01
Crit Moves:	****					****	****				****	

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #15 MacArthur Blvd and Harbor Blvd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.783
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	49	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	3 0	1	2 0	3 0	1	1 0	3 0	1	1 0	3 0	1
Volume Module:												
Base Vol:	558	1441	83	204	1028	169	140	489	181	81	1373	258
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	558	1441	83	204	1028	169	140	489	181	81	1373	258
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	558	1441	83	204	1028	169	140	489	181	81	1373	258
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	558	1441	83	204	1028	169	140	489	181	81	1373	258
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	558	1441	83	204	1028	169	140	489	181	81	1373	258
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00
Final Sat.:	3200	5100	1600	3200	5100	1600	1600	5100	1600	1600	5100	1600
Capacity Analysis Module:												
Vol/Sat:	0.17	0.28	0.05	0.06	0.20	0.11	0.09	0.10	0.11	0.05	0.27	0.16
Crit Moves:	****				****		****				****	

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #16 Harbor Blvd and Sunflower Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.717
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	39	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	3 0	1	2 0	3 0	1	1 0	1 1	0	1 1	0 1	0
Volume Module:												
Base Vol:	154	1532	228	114	1417	43	81	220	229	301	632	236
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	154	1532	228	114	1417	43	81	220	229	301	632	236
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	154	1532	228	114	1417	43	81	220	229	301	632	236
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	154	1532	228	114	1417	43	81	220	229	301	632	236
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	154	1532	228	114	1417	43	81	220	229	301	632	236
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.04	1.00
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	1.00	1.00	1.00	1.00	1.39	0.61
Final Sat.:	3200	5100	1600	3200	5100	1600	1600	1700	1600	1600	2322	974
Capacity Analysis Module:												
Vol/Sat:	0.05	0.30	0.14	0.04	0.28	0.03	0.05	0.13	0.14	0.19	0.27	0.24
Crit Moves:		****			****				****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #17 Harbor Blvd and I-405 NB Off-Ramp

Cycle (sec):	100	Critical Vol./Cap.(X):	0.699
Loss Time (sec):	5	Average Delay (sec/veh):	18.3
Optimal Cycle:	39	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	4	0 0	0 0	4	0 0	0 0	0	0 0	1 0	1! 0	1
Volume Module:												
Base Vol:	0	1529	0	0	2570	0	0	0	0	496	0	801
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1529	0	0	2570	0	0	0	0	496	0	801
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1529	0	0	2570	0	0	0	0	496	0	801
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1529	0	0	2570	0	0	0	0	496	0	801
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1529	0	0	2570	0	0	0	0	496	0	801
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	0.89	1.00	0.89
Lanes:	0.00	4.00	0.00	0.00	4.00	0.00	0.00	0.00	0.00	1.38	0.00	1.62
Final Sat.:	0	6916	0	0	6916	0	0	0	0	2337	0	2735
Capacity Analysis Module:												
Vol/Sat:	0.00	0.22	0.00	0.00	0.37	0.00	0.00	0.00	0.00	0.21	0.00	0.29
Crit Moves:	****				****							****
Green/Cycle:	0.00	0.53	0.00	0.00	0.53	0.00	0.00	0.00	0.00	0.42	0.00	0.42
Volume/Cap:	0.00	0.42	0.00	0.00	0.70	0.00	0.00	0.00	0.00	0.51	0.00	0.70
Delay/Veh:	0.0	14.2	0.0	0.0	18.1	0.0	0.0	0.0	0.0	21.6	0.0	25.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	14.2	0.0	0.0	18.1	0.0	0.0	0.0	0.0	21.6	0.0	25.1
LOS by Move:	A	B	A	A	B	A	A	A	A	C	A	C
HCM2k85thQ:	0	12	0	0	25	0	0	0	0	13	0	20

Note: Queue reported is the number of cars per lane.

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Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #18 Harbor Blvd and I-405 SB Off-Ramp

Cycle (sec):	100	Critical Vol./Cap.(X):	0.667
Loss Time (sec):	5	Average Delay (sec/veh):	17.9
Optimal Cycle:	35	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Ignore			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0 3	0 1	0	0 4	0 0	1	0 1!	0 1	0	0 0	0 0
Volume Module:												
Base Vol:	0	1881	0	0	2281	0	177	0	815	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1881	0	0	2281	0	177	0	815	0	0	0
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1881	0	0	2281	0	177	0	815	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1881	0	0	2281	0	177	0	815	0	0	0
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1881	0	0	2281	0	177	0	815	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.91	1.00	1.00	0.91	1.00	0.87	1.00	0.87	1.00	1.00	1.00
Lanes:	0.00	3.00	1.00	0.00	4.00	0.00	1.18	0.00	1.82	0.00	0.00	0.00
Final Sat.:	0	5187	1900	0	6916	0	1946	0	3008	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.36	0.00	0.00	0.33	0.00	0.09	0.00	0.27	0.00	0.00	0.00
Crit Moves:		****			****				****			
Green/Cycle:	0.00	0.54	0.00	0.00	0.54	0.00	0.41	0.00	0.41	0.00	0.00	0.00
Volume/Cap:	0.00	0.67	0.00	0.00	0.61	0.00	0.22	0.00	0.67	0.00	0.00	0.00
Delay/Veh:	0.0	17.0	0.0	0.0	15.8	0.0	19.4	0.0	25.3	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	17.0	0.0	0.0	15.8	0.0	19.4	0.0	25.3	0.0	0.0	0.0
LOS by Move:	A	B	A	A	B	A	B	A	C	A	A	A
HCM2k85thQ:	0	23	0	0	20	0	5	0	18	0	0	0

Note: Queue reported is the number of cars per lane.

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #19 Fairview St and Civic Center Dr

Cycle (sec):	100	Critical Vol./Cap.(X):	0.757
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	44	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	WideBypass			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2	1 0	1 0	2	1 0	0 1	0	1 0	1 1	0	0 1
Volume Module:												
Base Vol:	6	1690	475	192	1784	0	2	6	4	424	0	157
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	6	1690	475	192	1784	0	2	6	4	424	0	157
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	6	1690	475	192	1784	0	2	6	4	424	0	157
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	6	1690	475	192	1784	0	2	6	4	424	0	157
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	6	1690	475	192	1784	0	2	6	4	424	0	157
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.04	1.00	1.00	1.00	1.00	1.00	1.06	1.00
Lanes:	1.00	2.34	0.66	1.00	3.00	0.00	0.33	1.00	0.67	2.00	0.00	1.00
Final Sat.:	1600	3947	1053	1600	5000	0	533	1600	1067	3200	0	1600
Capacity Analysis Module:												
Vol/Sat:	0.00	0.43	0.45	0.12	0.36	0.00	0.00	0.00	0.00	0.13	0.00	0.10
Crit Moves:			****	****			****			****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #20 Fairview St and 1st St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.898
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	85	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 0	1	1 0	2 1	0	1 0	2 1	0	1 0	2 1	0
Volume Module:												
Base Vol:	169	1241	112	236	1468	291	193	781	136	140	1060	164
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	169	1241	112	236	1468	291	193	781	136	140	1060	164
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	169	1241	112	236	1468	291	193	781	136	140	1060	164
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	169	1241	112	236	1468	291	193	781	136	140	1060	164
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	169	1241	112	236	1468	291	193	781	136	140	1060	164
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.05	1.00	1.00	1.05	1.00	1.00	1.05	1.00
Lanes:	1.00	3.00	1.00	1.00	2.50	0.50	1.00	2.56	0.44	1.00	2.60	0.40
Final Sat.:	1600	5100	1600	1600	4206	794	1600	4288	712	1600	4357	643
Capacity Analysis Module:												
Vol/Sat:	0.11	0.24	0.07	0.15	0.35	0.37	0.12	0.18	0.19	0.09	0.24	0.26
Crit Moves:	****					****	****					****

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #21 Fairview St and McFadden Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.776
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	47	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 0	1	1 0	3 0	1	1 0	1 1	0	1 0	1 1	0
Volume Module:												
Base Vol:	164	1507	131	191	1553	242	158	427	106	158	545	134
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	164	1507	131	191	1553	242	158	427	106	158	545	134
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	164	1507	131	191	1553	242	158	427	106	158	545	134
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	164	1507	131	191	1553	242	158	427	106	158	545	134
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	164	1507	131	191	1553	242	158	427	106	158	545	134
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.04	1.00	1.00	1.04	1.00
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	1.00	1.60	0.40	1.00	1.61	0.39
Final Sat.:	1600	5100	1600	1600	5100	1600	1600	2664	636	1600	2668	632
Capacity Analysis Module:												
Vol/Sat:	0.10	0.30	0.08	0.12	0.30	0.15	0.10	0.16	0.17	0.10	0.20	0.21
Crit Moves:		****			****			****				****

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #22 Fairview St and Edinger Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.916
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	97	Level Of Service:	E

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 1	0	2 0	2 1	0	2 0	2 1	0	2 0	2 1	0
Volume Module:												
Base Vol:	184	1759	108	204	635	156	205	628	168	650	1375	302
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	184	1759	108	204	635	156	205	628	168	650	1375	302
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	184	1759	108	204	635	156	205	628	168	650	1375	302
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	184	1759	108	204	635	156	205	628	168	650	1375	302
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	184	1759	108	204	635	156	205	628	168	650	1375	302
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.04	1.00	1.00	1.05	1.00	1.00	1.05	1.00	1.00	1.05	1.00
Lanes:	2.00	2.83	0.17	2.00	2.41	0.59	2.00	2.37	0.63	2.00	2.46	0.54
Final Sat.:	3200	4722	278	3200	4053	947	3200	3987	1013	3200	4136	864
Capacity Analysis Module:												
Vol/Sat:	0.06	0.37	0.39	0.06	0.16	0.16	0.06	0.16	0.17	0.20	0.33	0.35
Crit Moves:		****	****				****					****

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #23 Fairview St and Warner Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.796
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	51	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 1	0	2 0	2 1	0	2 0	2 1	0	2 0	2 1	0
Volume Module:												
Base Vol:	213	1695	158	182	921	93	168	815	126	168	989	214
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	213	1695	158	182	921	93	168	815	126	168	989	214
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	213	1695	158	182	921	93	168	815	126	168	989	214
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	213	1695	158	182	921	93	168	815	126	168	989	214
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	213	1695	158	182	921	93	168	815	126	168	989	214
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.05	1.00	1.00	1.05	1.00	1.00	1.05	1.00
Lanes:	2.00	2.74	0.26	2.00	2.72	0.28	2.00	2.60	0.40	2.00	2.47	0.53
Final Sat.:	3200	4591	409	3200	4560	440	3200	4357	643	3200	4146	854
Capacity Analysis Module:												
Vol/Sat:	0.07	0.37	0.39	0.06	0.20	0.21	0.05	0.19	0.20	0.05	0.24	0.25
Crit Moves:			****	****			****					****

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #24 Fairview St and MacArthur Blvd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.768
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	46	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 1	0	2 0	3 0	1	2 0	3 0	1	2 0	3 0	1
Volume Module:												
Base Vol:	225	1550	84	171	955	88	240	627	211	167	1272	223
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	225	1550	84	171	955	88	240	627	211	167	1272	223
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	225	1550	84	171	955	88	240	627	211	167	1272	223
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	225	1550	84	171	955	88	240	627	211	167	1272	223
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	225	1550	84	171	955	88	240	627	211	167	1272	223
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.04	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	2.00	2.85	0.15	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3200	4753	247	3200	5100	1600	3200	5100	1600	3200	5100	1600
Capacity Analysis Module:												
Vol/Sat:	0.07	0.33	0.34	0.05	0.19	0.06	0.08	0.12	0.13	0.05	0.25	0.14
Crit Moves:			****	****			****				****	

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #25 Fairview Rd and Sunflower Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.715
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	39	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	3 0	1	2 0	2 1	0	2 0	1 1	0	2 0	2 0	1
Volume Module:												
Base Vol:	192	1725	375	140	1162	81	262	555	123	227	569	148
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	192	1725	375	140	1162	81	262	555	123	227	569	148
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	192	1725	375	140	1162	81	262	555	123	227	569	148
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	192	1725	375	140	1162	81	262	555	123	227	569	148
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	192	1725	375	140	1162	81	262	555	123	227	569	148
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.04	1.00	1.00	1.04	1.00	1.00	1.06	1.00
Lanes:	2.00	3.00	1.00	2.00	2.80	0.20	2.00	1.64	0.36	2.00	2.00	1.00
Final Sat.:	3200	5100	1600	3200	4687	313	3200	2719	581	3200	3400	1600
Capacity Analysis Module:												
Vol/Sat:	0.06	0.34	0.23	0.04	0.25	0.26	0.08	0.20	0.21	0.07	0.17	0.09
Crit Moves:		****		****					****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #26 Greenville St and Edinger Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.595
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	29	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	0	0 1	0 0	0	0 0	0 0	2	1 0	1 0	3	0 0
Volume Module:												
Base Vol:	293	0	195	0	0	0	0	1061	216	153	1811	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	293	0	195	0	0	0	0	1061	216	153	1811	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	293	0	195	0	0	0	0	1061	216	153	1811	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	293	0	195	0	0	0	0	1061	216	153	1811	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	293	0	195	0	0	0	0	1061	216	153	1811	0
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.05	1.00	1.00	1.06	1.00
Lanes:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	2.49	0.51	1.00	3.00	0.00
Final Sat.:	1600	0	1600	0	0	0	0	4188	812	1600	5100	0
Capacity Analysis Module:												
Vol/Sat:	0.18	0.00	0.12	0.00	0.00	0.00	0.00	0.25	0.27	0.10	0.36	0.00
Crit Moves:	****								****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #27 Greenville St and Segerstrom Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.777
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	48	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	0	1 0	1 0	0	1 0	1 0	2	1 0	1 0	2	1 0
Volume Module:												
Base Vol:	50	414	31	52	171	52	127	967	55	37	1414	202
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	50	414	31	52	171	52	127	967	55	37	1414	202
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	50	414	31	52	171	52	127	967	55	37	1414	202
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	50	414	31	52	171	52	127	967	55	37	1414	202
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	50	414	31	52	171	52	127	967	55	37	1414	202
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.04	1.00	1.00	1.05	1.00
Lanes:	1.00	0.93	0.07	1.00	0.77	0.23	1.00	2.84	0.16	1.00	2.62	0.38
Final Sat.:	1600	1489	111	1600	1227	373	1600	4742	258	1600	4400	600
Capacity Analysis Module:												
Vol/Sat:	0.03	0.28	0.28	0.03	0.14	0.14	0.08	0.20	0.21	0.02	0.32	0.34
Crit Moves:		****			****			****				****

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #28 Raitt St and McFadden Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.758
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	45	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1	1 0	1 0	1	1 0	1 0	1	1 0	1 0	1	1 0
Volume Module:												
Base Vol:	61	872	136	51	533	86	108	640	56	98	827	114
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	61	872	136	51	533	86	108	640	56	98	827	114
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	61	872	136	51	533	86	108	640	56	98	827	114
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	61	872	136	51	533	86	108	640	56	98	827	114
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	61	872	136	51	533	86	108	640	56	98	827	114
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.04	1.00	1.00	1.04	1.00	1.00	1.03	1.00	1.00	1.04	1.00
Lanes:	1.00	1.73	0.27	1.00	1.72	0.28	1.00	1.84	0.16	1.00	1.76	0.24
Final Sat.:	1600	2868	432	1600	2855	445	1600	3043	257	1600	2912	388
Capacity Analysis Module:												
Vol/Sat:	0.04	0.30	0.32	0.03	0.19	0.19	0.07	0.21	0.22	0.06	0.28	0.29
Crit Moves:			****	****			****					****

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #29 Raitt St and Edinger Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.986
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	180	Level Of Service:	E

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1	1 0	1 0	1	1 0	1 0	2	1 0	1 0	2	1 0
Volume Module:												
Base Vol:	171	736	206	114	396	99	125	862	123	192	2171	194
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	171	736	206	114	396	99	125	862	123	192	2171	194
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	171	736	206	114	396	99	125	862	123	192	2171	194
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	171	736	206	114	396	99	125	862	123	192	2171	194
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	171	736	206	114	396	99	125	862	123	192	2171	194
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.04	1.00	1.00	1.04	1.00	1.00	1.05	1.00	1.00	1.05	1.00
Lanes:	1.00	1.56	0.44	1.00	1.60	0.40	1.00	2.63	0.37	1.00	2.75	0.25
Final Sat.:	1600	2600	700	1600	2660	640	1600	4401	599	1600	4606	394
Capacity Analysis Module:												
Vol/Sat:	0.11	0.28	0.29	0.07	0.15	0.15	0.08	0.20	0.21	0.12	0.47	0.49
Crit Moves:		****	****				****					****

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #30 Bear St and MacArthur Blvd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.851
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	65	Level Of Service:	D

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Y+R:	4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	
Lanes:	1	0 2	0	1	1	0 2	0	1	1	0 2	1	0	1	0 2	1	0
Volume Module:																
Base Vol:	273	1314	343		115	278	84		80	753	78		67	1211	193	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	273	1314	343		115	278	84		80	753	78		67	1211	193	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	273	1314	343		115	278	84		80	753	78		67	1211	193	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	273	1314	343		115	278	84		80	753	78		67	1211	193	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	273	1314	343		115	278	84		80	753	78		67	1211	193	
Saturation Flow Module:																
Sat/Lane:	1600	1600	1600		1600	1600	1600		1600	1600	1600		1600	1600	1600	
Adjustment:	1.00	1.06	1.00		1.00	1.06	1.00		1.00	1.05	1.00		1.00	1.05	1.00	
Lanes:	1.00	2.00	1.00		1.00	2.00	1.00		1.00	2.72	0.28		1.00	2.59	0.41	
Final Sat.:	1600	3400	1600		1600	3400	1600		1600	4549	451		1600	4340	660	
Capacity Analysis Module:																
Vol/Sat:	0.17	0.39	0.21		0.07	0.08	0.05		0.05	0.17	0.17		0.04	0.28	0.29	
Crit Moves:		****				****				****					****	

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #31 Bristol St and 17th St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.823
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	57	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	3 0	1	2 0	3 0	1	2 0	2 1	0	2 0	3 0	1
Volume Module:												
Base Vol:	375	1823	303	337	1794	305	238	530	96	311	1170	396
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	375	1823	303	337	1794	305	238	530	96	311	1170	396
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	375	1823	303	337	1794	305	238	530	96	311	1170	396
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	375	1823	303	337	1794	305	238	530	96	311	1170	396
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	375	1823	303	337	1794	305	238	530	96	311	1170	396
OvlAdjVol:												228
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.05	1.00	1.00	1.06	1.00
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	2.54	0.46	2.00	3.00	1.00
Final Sat.:	3200	5100	1600	3200	5100	1600	3200	4264	736	3200	5100	1600
Capacity Analysis Module:												
Vol/Sat:	0.12	0.36	0.19	0.11	0.35	0.19	0.07	0.12	0.13	0.10	0.23	0.25
OvlAdjV/S:												0.14
Crit Moves:	****			****			****			****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #32 Bristol St and Civic Center Dr

Cycle (sec):	100	Critical Vol./Cap.(X):	0.911
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	93	Level Of Service:	E

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Prot+Permit			Prot+Permit		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2	1 0	1 0	2	1 0	1 0	1	1 0	1 0	1	1 0
Volume Module:												
Base Vol:	222	1550	81	159	1458	149	195	549	65	184	789	89
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	222	1550	81	159	1458	149	195	549	65	184	789	89
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	222	1550	81	159	1458	149	195	549	65	184	789	89
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	222	1550	81	159	1458	149	195	549	65	184	789	89
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	222	1550	81	159	1458	149	195	549	65	184	789	89
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.04	1.00	1.00	1.05	1.00	1.00	1.03	1.00	1.00	1.03	1.00
Lanes:	1.00	2.85	0.15	1.00	2.72	0.28	1.00	1.79	0.21	1.00	1.80	0.20
Final Sat.:	1600	4762	238	1600	4555	445	1600	2961	339	1600	2976	324
Capacity Analysis Module:												
Vol/Sat:	0.14	0.33	0.34	0.10	0.32	0.33	0.12	0.19	0.19	0.12	0.27	0.27
Crit Moves:	****					****	****				****	

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #33 Bristol St and Santa Ana Blvd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.853
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	66	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Prot+Permit			Prot+Permit		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 1	0	1 0	2 1	0	1 0	2 1	0	1 0	2 1	0
Volume Module:												
Base Vol:	84	1702	97	117	1558	59	155	428	100	392	624	168
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	84	1702	97	117	1558	59	155	428	100	392	624	168
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	84	1702	97	117	1558	59	155	428	100	392	624	168
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	84	1702	97	117	1558	59	155	428	100	392	624	168
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	84	1702	97	117	1558	59	155	428	100	392	624	168
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.04	1.00	1.00	1.04	1.00	1.00	1.05	1.00	1.00	1.05	1.00
Lanes:	1.00	2.84	0.16	1.00	2.89	0.11	1.00	2.43	0.57	1.00	2.36	0.64
Final Sat.:	1600	4741	259	1600	4825	175	1600	4091	909	1600	3982	1018
Capacity Analysis Module:												
Vol/Sat:	0.05	0.36	0.37	0.07	0.32	0.34	0.10	0.10	0.11	0.25	0.16	0.16
Crit Moves:			****	****					****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #34 Bristol St and 1st St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.826
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	58	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	3 0	1	2 0	3 0	1	1 0	2 1	0	1 0	2 1	0
Volume Module:												
Base Vol:	392	1693	250	223	1209	273	160	900	115	196	1204	114
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	392	1693	250	223	1209	273	160	900	115	196	1204	114
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	392	1693	250	223	1209	273	160	900	115	196	1204	114
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	392	1693	250	223	1209	273	160	900	115	196	1204	114
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	392	1693	250	223	1209	273	160	900	115	196	1204	114
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.05	1.00	1.00	1.05	1.00
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	1.00	2.66	0.34	1.00	2.74	0.26
Final Sat.:	3200	5100	1600	3200	5100	1600	1600	4456	544	1600	4585	415
Capacity Analysis Module:												
Vol/Sat:	0.12	0.33	0.16	0.07	0.24	0.17	0.10	0.20	0.21	0.12	0.26	0.27
Crit Moves:		****			****			****				****

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #35 Bristol St and McFadden Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	1.028
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	180	Level Of Service:	F

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Prot+Permit			Prot+Permit		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 0	1	1 0	3 0	1	1 0	1 1	0	1 0	1 1	0
Volume Module:												
Base Vol:	224	1649	90	111	1554	358	245	478	95	209	1088	127
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	224	1649	90	111	1554	358	245	478	95	209	1088	127
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	224	1649	90	111	1554	358	245	478	95	209	1088	127
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	224	1649	90	111	1554	358	245	478	95	209	1088	127
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	224	1649	90	111	1554	358	245	478	95	209	1088	127
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.04	1.00	1.00	1.03	1.00
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	1.00	1.67	0.33	1.00	1.79	0.21
Final Sat.:	1600	5100	1600	1600	5100	1600	1600	2769	531	1600	2966	334
Capacity Analysis Module:												
Vol/Sat:	0.14	0.32	0.06	0.07	0.30	0.22	0.15	0.17	0.18	0.13	0.37	0.38
Crit Moves:	****				****		****					****

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #36 Bristol St and Warner Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.847
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	64	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 1	0	2 0	2 1	0	1 0	3 0	1	1 0	3 0	1
Volume Module:												
Base Vol:	316	1182	216	338	1128	219	176	791	140	251	1481	434
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	316	1182	216	338	1128	219	176	791	140	251	1481	434
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	316	1182	216	338	1128	219	176	791	140	251	1481	434
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	316	1182	216	338	1128	219	176	791	140	251	1481	434
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	316	1182	216	338	1128	219	176	791	140	251	1481	434
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.05	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	2.00	2.54	0.46	2.00	2.51	0.49	1.00	3.00	1.00	1.00	3.00	1.00
Final Sat.:	3200	4258	742	3200	4220	780	1600	5100	1600	1600	5100	1600
Capacity Analysis Module:												
Vol/Sat:	0.10	0.28	0.29	0.11	0.27	0.28	0.11	0.16	0.09	0.16	0.29	0.27
Crit Moves:		****	****				****				****	

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #37 Bristol St and Segerstrom Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.870
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	72	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	WideBypass			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2	1 0	1 0	2	1 0	1 0	2	1 0	1 0	2	1 0
Volume Module:												
Base Vol:	182	1347	237	101	927	194	224	803	64	145	1313	66
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	182	1347	237	101	927	194	224	803	64	145	1313	66
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	182	1347	237	101	927	194	224	803	64	145	1313	66
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	182	1347	237	101	927	194	224	803	64	145	1313	66
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	182	1347	237	101	927	194	224	803	64	145	1313	66
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.05	1.00	1.00	1.04	1.00	1.00	1.04	1.00
Lanes:	1.00	2.55	0.45	1.00	2.48	0.52	1.00	2.78	0.22	1.00	2.86	0.14
Final Sat.:	1600	4282	718	1600	4169	831	1600	4646	354	1600	4770	230
Capacity Analysis Module:												
Vol/Sat:	0.11	0.31	0.33	0.06	0.22	0.23	0.14	0.17	0.18	0.09	0.28	0.29
Crit Moves:			****	****			****					****

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #38 Bristol St and Alton Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.633
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	31	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	WideBypass			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 1	0	1 0	3 0	1	1 0	1 1	0	1 0	0 1	0
Volume Module:												
Base Vol:	43	1681	158	116	870	54	25	35	65	91	150	29
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	43	1681	158	116	870	54	25	35	65	91	150	29
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	43	1681	158	116	870	54	25	35	65	91	150	29
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	43	1681	158	116	870	54	25	35	65	91	150	29
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	43	1681	158	116	870	54	25	35	65	91	150	29
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.00	1.00
Lanes:	1.00	2.74	0.26	1.00	3.00	1.00	1.00	1.00	1.00	1.00	0.84	0.16
Final Sat.:	1600	4588	412	1600	5100	1600	1600	1700	1600	1600	1341	259
Capacity Analysis Module:												
Vol/Sat:	0.03	0.37	0.38	0.07	0.17	0.03	0.02	0.02	0.04	0.06	0.11	0.11
Crit Moves:			****	****			****				****	

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #39 Bristol St and MacArthur Blvd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.765
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	46	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	3 0	1	2 0	2 1	0	2 0	3 0	1	2 0	3 0	1
Volume Module:												
Base Vol:	321	1369	249	233	858	135	335	746	158	236	1370	259
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	321	1369	249	233	858	135	335	746	158	236	1370	259
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	321	1369	249	233	858	135	335	746	158	236	1370	259
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	321	1369	249	233	858	135	335	746	158	236	1370	259
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	321	1369	249	233	858	135	335	746	158	236	1370	259
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.05	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	2.00	3.00	1.00	2.00	2.59	0.41	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3200	5100	1600	3200	4347	653	3200	5100	1600	3200	5100	1600
Capacity Analysis Module:												
Vol/Sat:	0.10	0.27	0.16	0.07	0.20	0.21	0.10	0.15	0.10	0.07	0.27	0.16
Crit Moves:		****			****			****			****	

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #40 Bristol St and Sunflower Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.692
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	36	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 1	1	2 0	3 0	1	2 0	2 1	1	2 0	3 0	1
Volume Module:												
Base Vol:	651	1376	222	215	804	230	301	588	228	247	952	303
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	651	1376	222	215	804	230	301	588	228	247	952	303
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	651	1376	222	215	804	230	301	588	228	247	952	303
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	651	1376	222	215	804	230	301	588	228	247	952	303
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	651	1376	222	215	804	230	301	588	228	247	952	303
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.04	1.00	1.00	1.06	1.00
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	2.88	1.12	2.00	3.00	1.00
Final Sat.:	3200	5100	1600	3200	5100	1600	3200	4812	1788	3200	5100	1600
Capacity Analysis Module:												
Vol/Sat:	0.20	0.27	0.14	0.07	0.16	0.14	0.09	0.12	0.13	0.08	0.19	0.19
Crit Moves:	****			****			****			****		

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Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #41 Bristol St and I-405 NB Ramps

Cycle (sec):	100	Critical Vol./Cap.(X):	0.825
Loss Time (sec):	5	Average Delay (sec/veh):	28.5
Optimal Cycle:	60	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0 4	0 1	0	0 4	1 0	0	0 0	0 2	1	1 1	0 2
Volume Module:												
Base Vol:	0	2094	183	0	2375	22	0	0	204	350	300	1162
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	2094	183	0	2375	22	0	0	204	350	300	1162
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	2094	183	0	2375	22	0	0	204	350	300	1162
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	2094	183	0	2375	22	0	0	204	350	300	1162
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	2094	183	0	2375	22	0	0	204	350	300	1162
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.91	0.85	1.00	0.91	0.91	1.00	1.00	0.75	0.93	0.93	0.75
Lanes:	0.00	4.00	1.00	0.00	4.95	0.05	0.00	0.00	2.00	1.62	1.38	2.00
Final Sat.:	0	6916	1615	0	8557	79	0	0	2842	2840	2434	2842
Capacity Analysis Module:												
Vol/Sat:	0.00	0.30	0.11	0.00	0.28	0.28	0.00	0.00	0.07	0.12	0.12	0.41
Crit Moves:		****		****					****			****
Green/Cycle:	0.00	0.37	0.37	0.00	0.37	0.37	0.00	0.00	0.09	0.50	0.50	0.50
Volume/Cap:	0.00	0.82	0.31	0.00	0.76	0.76	0.00	0.00	0.82	0.25	0.25	0.82
Delay/Veh:	0.0	31.0	22.9	0.0	28.8	28.8	0.0	0.0	64.6	14.5	14.5	25.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	31.0	22.9	0.0	28.8	28.8	0.0	0.0	64.6	14.5	14.5	25.6
LOS by Move:	A	C	C	A	C	C	A	A	E	B	B	C
HCM2k85thQ:	0	27	6	0	23	23	0	0	9	6	6	28

Note: Queue reported is the number of cars per lane.

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Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #42 Bristol St and I-405 SB Ramps

Cycle (sec):	100	Critical Vol./Cap.(X):	0.617
Loss Time (sec):	5	Average Delay (sec/veh):	18.3
Optimal Cycle:	31	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Ignore			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	4 0	0	0 0	2 1	1	3 0	0 0	1	0 0	0 0	0
Volume Module:												
Base Vol:	128	1570	0	0	1611	942	740	0	331	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	128	1570	0	0	1611	942	740	0	331	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	128	1570	0	0	1611	0	740	0	331	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	128	1570	0	0	1611	0	740	0	331	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	128	1570	0	0	1611	0	740	0	331	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.91	1.00	1.00	0.91	0.91	0.92	1.00	0.85	1.00	1.00	1.00
Lanes:	1.00	4.00	0.00	0.00	3.00	1.00	3.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	1805	6916	0	0	5187	1729	5253	0	1615	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.07	0.23	0.00	0.00	0.31	0.00	0.14	0.00	0.20	0.00	0.00	0.00
Crit Moves:	****				****				****			
Green/Cycle:	0.11	0.62	0.00	0.00	0.50	0.00	0.33	0.00	0.33	0.00	0.00	0.00
Volume/Cap:	0.62	0.37	0.00	0.00	0.62	0.00	0.42	0.00	0.62	0.00	0.00	0.00
Delay/Veh:	47.7	9.5	0.0	0.0	18.4	0.0	26.1	0.0	30.2	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	47.7	9.5	0.0	0.0	18.4	0.0	26.1	0.0	30.2	0.0	0.0	0.0
LOS by Move:	D	A	A	A	B	A	C	A	C	A	A	A
HCM2k85thQ:	7	10	0	0	20	0	10	0	14	0	0	0

Note: Queue reported is the number of cars per lane.

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #43 Flower St and Santa Ana Blvd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.857
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	68	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Prot+Permit			Prot+Permit			Prot+Permit			Prot+Permit		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 0	1	1 0	2 0	1	1 0	3 0	1	1 0	2 1	0
Volume Module:												
Base Vol:	198	1206	99	87	442	40	357	1029	168	186	649	192
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	198	1206	99	87	442	40	357	1029	168	186	649	192
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	198	1206	99	87	442	40	357	1029	168	186	649	192
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	198	1206	99	87	442	40	357	1029	168	186	649	192
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	198	1206	99	87	442	40	357	1029	168	186	649	192
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.05	1.00
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	3.00	1.00	1.00	2.32	0.68
Final Sat.:	1600	3400	1600	1600	3400	1600	1600	5100	1600	1600	3904	1096
Capacity Analysis Module:												
Vol/Sat:	0.12	0.35	0.06	0.05	0.13	0.03	0.22	0.20	0.11	0.12	0.17	0.18
Crit Moves:		****			****			****				****

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #44 Flower St and 1st St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.877
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	75	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 0	1	1 0	1 1	0	1 0	2 1	0	1 0	2 1	0
Volume Module:												
Base Vol:	224	1063	253	200	549	159	102	895	74	210	1415	147
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	224	1063	253	200	549	159	102	895	74	210	1415	147
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	224	1063	253	200	549	159	102	895	74	210	1415	147
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	224	1063	253	200	549	159	102	895	74	210	1415	147
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	224	1063	253	200	549	159	102	895	74	210	1415	147
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.04	1.00	1.00	1.05	1.00	1.00	1.05	1.00
Lanes:	1.00	2.00	1.00	1.00	1.55	0.45	1.00	2.77	0.23	1.00	2.72	0.28
Final Sat.:	1600	3400	1600	1600	2581	719	1600	4633	367	1600	4548	452
Capacity Analysis Module:												
Vol/Sat:	0.14	0.31	0.16	0.13	0.21	0.22	0.06	0.19	0.20	0.13	0.31	0.33
Crit Moves:		****			****			****				****

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #45 Flower St and McFadden Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	1.037
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	180	Level Of Service:	F

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 1	0 1	0	0 1	0 1	0	0 1	0 1	0	0 1	0 1	0
Volume Module:												
Base Vol:	91	1234	76	46	352	57	124	928	37	93	1159	166
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	91	1234	76	46	352	57	124	928	37	93	1159	166
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	91	1234	76	46	352	57	124	928	37	93	1159	166
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	91	1234	76	46	352	57	124	928	37	93	1159	166
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	91	1234	76	46	352	57	124	928	37	93	1159	166
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.13	1.76	0.11	0.20	1.55	0.25	0.23	1.70	0.07	0.13	1.64	0.23
Final Sat.:	208	2819	174	324	2476	401	364	2727	109	210	2616	375
Capacity Analysis Module:												
Vol/Sat:	0.06	0.44	0.44	0.03	0.14	0.14	0.08	0.34	0.34	0.06	0.44	0.44
Crit Moves:		****			****			****			****	

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #46 Flower St and Segerstrom Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.866
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	71	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1	1 0	1 0	1	1 0	1 0	2	1 0	1 0	2	1 0
Volume Module:												
Base Vol:	122	859	82	84	469	135	203	1011	107	92	1545	99
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	122	859	82	84	469	135	203	1011	107	92	1545	99
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	122	859	82	84	469	135	203	1011	107	92	1545	99
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	122	859	82	84	469	135	203	1011	107	92	1545	99
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	122	859	82	84	469	135	203	1011	107	92	1545	99
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.03	1.00	1.00	1.04	1.00	1.00	1.05	1.00	1.00	1.04	1.00
Lanes:	1.00	1.83	0.17	1.00	1.55	0.45	1.00	2.71	0.29	1.00	2.82	0.18
Final Sat.:	1600	3021	279	1600	2585	715	1600	4541	459	1600	4711	289
Capacity Analysis Module:												
Vol/Sat:	0.08	0.28	0.29	0.05	0.18	0.19	0.13	0.22	0.23	0.06	0.33	0.34
Crit Moves:			****	****			****					****

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #47 Flower St and MacArthur Blvd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.900
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	87	Level Of Service:	E

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Permitted				Permitted				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Y+R:	4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	
Lanes:	1	0 1	1	0	1	0 1	1	0	1	0 2	1	0	1	0 2	1	0
Volume Module:																
Base Vol:	130	621	72		93	224	215		199	947	60		62	1989	177	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	130	621	72		93	224	215		199	947	60		62	1989	177	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	130	621	72		93	224	215		199	947	60		62	1989	177	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	130	621	72		93	224	215		199	947	60		62	1989	177	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	130	621	72		93	224	215		199	947	60		62	1989	177	
Saturation Flow Module:																
Sat/Lane:	1600	1600	1600		1600	1600	1600		1600	1600	1600		1600	1600	1600	
Adjustment:	1.00	1.03	1.00		1.00	1.06	1.00		1.00	1.04	1.00		1.00	1.05	1.00	
Lanes:	1.00	1.79	0.21		1.00	1.02	0.98		1.00	2.82	0.18		1.00	2.75	0.25	
Final Sat.:	1600	2968	332		1600	1733	1567		1600	4714	286		1600	4608	392	
Capacity Analysis Module:																
Vol/Sat:	0.08	0.21	0.22		0.06	0.13	0.14		0.12	0.20	0.21		0.04	0.43	0.45	
Crit Moves:			****		****				****						****	

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #48 Main St and La Veta Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.696
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	37	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ovl			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	3 0	1	2 0	2 1	0	2 0	2 1	0	2 0	2 0	1
Volume Module:												
Base Vol:	347	1059	496	164	1031	266	327	466	209	282	563	226
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	347	1059	496	164	1031	266	327	466	209	282	563	226
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	347	1059	496	164	1031	266	327	466	209	282	563	226
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	347	1059	496	164	1031	266	327	466	209	282	563	226
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	347	1059	496	164	1031	266	327	466	209	282	563	226
OvlAdjVol:			355									144
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.05	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	2.00	3.00	1.00	2.00	2.38	0.62	2.00	2.07	0.93	2.00	2.00	1.00
Final Sat.:	3200	5100	1600	3200	4016	984	3200	3514	1486	3200	3400	1600
Capacity Analysis Module:												
Vol/Sat:	0.11	0.21	0.31	0.05	0.26	0.27	0.10	0.13	0.14	0.09	0.17	0.14
OvlAdjV/S:			0.22									0.09
Crit Moves:	****					****	****				****	

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #49 Main St and Mainplace Dr / Memory Ln

Cycle (sec):	100	Critical Vol./Cap.(X):	0.556
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	26	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 1	0	2 0	2 1	0	2 0	2 1	0	2 0	2 0	1
Volume Module:												
Base Vol:	113	1186	225	52	1083	143	391	433	116	278	227	110
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	113	1186	225	52	1083	143	391	433	116	278	227	110
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	113	1186	225	52	1083	143	391	433	116	278	227	110
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	113	1186	225	52	1083	143	391	433	116	278	227	110
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	113	1186	225	52	1083	143	391	433	116	278	227	110
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.05	1.00	1.00	1.05	1.00	1.00	1.06	1.00
Lanes:	2.00	2.52	0.48	2.00	2.65	0.35	2.00	2.37	0.63	2.00	2.00	1.00
Final Sat.:	3200	4235	765	3200	4440	560	3200	3986	1014	3200	3400	1600
Capacity Analysis Module:												
Vol/Sat:	0.04	0.28	0.29	0.02	0.24	0.26	0.12	0.11	0.11	0.09	0.07	0.07
Crit Moves:			****	****				****		****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #50 Main St and 17th St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.760
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	45	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 0	1	2 0	2 0	1	2 0	2 1	0	2 0	2 1	0
Volume Module:												
Base Vol:	197	1019	222	222	969	150	224	1256	74	199	1220	81
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	197	1019	222	222	969	150	224	1256	74	199	1220	81
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	197	1019	222	222	969	150	224	1256	74	199	1220	81
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	197	1019	222	222	969	150	224	1256	74	199	1220	81
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	197	1019	222	222	969	150	224	1256	74	199	1220	81
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.04	1.00	1.00	1.04	1.00
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	2.00	2.83	0.17	2.00	2.81	0.19
Final Sat.:	3200	3400	1600	3200	3400	1600	3200	4733	267	3200	4701	299
Capacity Analysis Module:												
Vol/Sat:	0.06	0.30	0.14	0.07	0.28	0.09	0.07	0.27	0.28	0.06	0.26	0.27
Crit Moves:		****			****			****				****

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #51 Main St and Civic Center Dr

Cycle (sec):	100	Critical Vol./Cap.(X):	0.965
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	152	Level Of Service:	E

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1	1 0	1 0	1	1 0	1 0	1	1 0	1 0	1	1 0
Volume Module:												
Base Vol:	92	1169	98	52	853	54	239	1322	158	38	384	39
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	92	1169	98	52	853	54	239	1322	158	38	384	39
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	92	1169	98	52	853	54	239	1322	158	38	384	39
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	92	1169	98	52	853	54	239	1322	158	38	384	39
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	92	1169	98	52	853	54	239	1322	158	38	384	39
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.03	1.00	1.00	1.03	1.00	1.00	1.03	1.00	1.00	1.03	1.00
Lanes:	1.00	1.85	0.15	1.00	1.88	0.12	1.00	1.79	0.21	1.00	1.82	0.18
Final Sat.:	1600	3052	248	1600	3109	191	1600	2958	342	1600	3005	295
Capacity Analysis Module:												
Vol/Sat:	0.06	0.38	0.40	0.03	0.27	0.28	0.15	0.45	0.46	0.02	0.13	0.13
Crit Moves:			****	****					****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #52 Main St and Santa Ana Blvd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.792
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	50	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 0	0	0 0	1 1	0	0 0	0 0	0	0 1	0 1	0
Volume Module:												
Base Vol:	51	1152	0	0	1083	53	0	0	0	92	924	120
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	51	1152	0	0	1083	53	0	0	0	92	924	120
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	51	1152	0	0	1083	53	0	0	0	92	924	120
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	51	1152	0	0	1083	53	0	0	0	92	924	120
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	51	1152	0	0	1083	53	0	0	0	92	924	120
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.03	1.00	1.00	1.06	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	0.00	0.00	1.91	0.09	0.00	0.00	0.00	0.16	1.63	0.21
Final Sat.:	1600	3400	0	0	3151	149	0	0	0	259	2603	338
Capacity Analysis Module:												
Vol/Sat:	0.03	0.34	0.00	0.00	0.34	0.36	0.00	0.00	0.00	0.06	0.36	0.35
Crit Moves:	****					****					****	

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #53 Main St and 4th St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.447
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	22	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	1	1 0	0 0	1	1 0	0 0	1	1 0	0 0	1	1 0
Volume Module:												
Base Vol:	0	950	45	0	864	39	0	70	39	0	229	58
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	950	45	0	864	39	0	70	39	0	229	58
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	950	45	0	864	39	0	70	39	0	229	58
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	950	45	0	864	39	0	70	39	0	229	58
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	950	45	0	864	39	0	70	39	0	229	58
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.03	1.00	1.00	1.03	1.00	1.00	1.05	1.00	1.00	1.04	1.00
Lanes:	0.00	1.91	0.09	0.00	1.91	0.09	0.00	1.28	0.72	0.00	1.60	0.40
Final Sat.:	0	3155	145	0	3162	138	0	2155	1145	0	2653	647
Capacity Analysis Module:												
Vol/Sat:	0.00	0.30	0.31	0.00	0.27	0.28	0.00	0.03	0.03	0.00	0.09	0.09
Crit Moves:		****	****				****				****	

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #54 Main St and 1st St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.744
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	43	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1	1 0	1 0	2	0 1	1 0	2	1 0	1 0	2	1 0
Volume Module:												
Base Vol:	152	745	65	146	559	119	116	1172	87	111	1244	87
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	152	745	65	146	559	119	116	1172	87	111	1244	87
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	152	745	65	146	559	119	116	1172	87	111	1244	87
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	152	745	65	146	559	119	116	1172	87	111	1244	87
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	152	745	65	146	559	119	116	1172	87	111	1244	87
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.03	1.00	1.00	1.06	1.00	1.00	1.04	1.00	1.00	1.04	1.00
Lanes:	1.00	1.84	0.16	1.00	2.00	1.00	1.00	2.79	0.21	1.00	2.80	0.20
Final Sat.:	1600	3043	257	1600	3400	1600	1600	4668	332	1600	4686	314
Capacity Analysis Module:												
Vol/Sat:	0.10	0.24	0.25	0.09	0.16	0.07	0.07	0.25	0.26	0.07	0.27	0.28
Crit Moves:			****	****			****					****

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #55 Main St and McFadden Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.925
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	104	Level Of Service:	E

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Prot+Permit			Prot+Permit			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1	1 0	1 0	1	1 0	1 0	1	1 0	1 0	1	1 0
Volume Module:												
Base Vol:	132	1037	64	123	834	61	182	805	98	133	752	338
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	132	1037	64	123	834	61	182	805	98	133	752	338
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	132	1037	64	123	834	61	182	805	98	133	752	338
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	132	1037	64	123	834	61	182	805	98	133	752	338
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	132	1037	64	123	834	61	182	805	98	133	752	338
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.03	1.00	1.00	1.03	1.00	1.00	1.04	1.00	1.00	1.05	1.00
Lanes:	1.00	1.88	0.12	1.00	1.86	0.14	1.00	1.78	0.22	1.00	1.38	0.62
Final Sat.:	1600	3114	186	1600	3082	218	1600	2953	347	1600	2308	992
Capacity Analysis Module:												
Vol/Sat:	0.08	0.33	0.34	0.08	0.27	0.28	0.11	0.27	0.28	0.08	0.33	0.34
Crit Moves:			****	****			****					****

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #56 Main St and Edinger Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.867
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	71	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1	1 0	1 0	1	1 0	1 0	2	1 0	1 0	2	1 0
Volume Module:												
Base Vol:	101	1069	49	129	646	88	118	698	78	102	1364	141
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	101	1069	49	129	646	88	118	698	78	102	1364	141
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	101	1069	49	129	646	88	118	698	78	102	1364	141
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	101	1069	49	129	646	88	118	698	78	102	1364	141
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	101	1069	49	129	646	88	118	698	78	102	1364	141
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.03	1.00	1.00	1.04	1.00	1.00	1.05	1.00	1.00	1.05	1.00
Lanes:	1.00	1.91	0.09	1.00	1.76	0.24	1.00	2.70	0.30	1.00	2.72	0.28
Final Sat.:	1600	3160	140	1600	2916	384	1600	4518	482	1600	4550	450
Capacity Analysis Module:												
Vol/Sat:	0.06	0.34	0.35	0.08	0.22	0.23	0.07	0.15	0.16	0.06	0.30	0.31
Crit Moves:			****	****			****					****

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #57 Main St and MacArthur Blvd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.749
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	43	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	3 0	1	2 0	3 0	1	2 0	3 0	1	2 0	3 0	1
Volume Module:												
Base Vol:	446	1067	293	265	345	260	313	643	62	193	1529	444
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	446	1067	293	265	345	260	313	643	62	193	1529	444
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	446	1067	293	265	345	260	313	643	62	193	1529	444
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	446	1067	293	265	345	260	313	643	62	193	1529	444
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	446	1067	293	265	345	260	313	643	62	193	1529	444
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3200	5100	1600	3200	5100	1600	3200	5100	1600	3200	5100	1600
Capacity Analysis Module:												
Vol/Sat:	0.14	0.21	0.18	0.08	0.07	0.16	0.10	0.13	0.04	0.06	0.30	0.28
Crit Moves:	****					****	****				****	

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Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #58 Penn Wy and 17th St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.872
Loss Time (sec):	5	Average Delay (sec/veh):	25.5
Optimal Cycle:	76	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	0	0 2	0 0	0	0 0	0 0	2	1 0	1 0	3	0 0
Volume Module:												
Base Vol:	1113	0	543	0	0	0	0	1672	539	123	1440	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	1113	0	543	0	0	0	0	1672	539	123	1440	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	1113	0	543	0	0	0	0	1672	539	123	1440	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	1113	0	543	0	0	0	0	1672	539	123	1440	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	1113	0	543	0	0	0	0	1672	539	123	1440	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.75	1.00	1.00	1.00	1.00	0.88	0.88	0.95	0.91	1.00
Lanes:	2.00	0.00	2.00	0.00	0.00	0.00	0.00	2.27	0.73	1.00	3.00	0.00
Final Sat.:	3502	0	2842	0	0	0	0	3777	1218	1805	5187	0
Capacity Analysis Module:												
Vol/Sat:	0.32	0.00	0.19	0.00	0.00	0.00	0.00	0.44	0.44	0.07	0.28	0.00
Crit Moves:	****							****		****		
Green/Cycle:	0.36	0.00	0.36	0.00	0.00	0.00	0.00	0.51	0.51	0.08	0.59	0.00
Volume/Cap:	0.87	0.00	0.52	0.00	0.00	0.00	0.00	0.87	0.87	0.87	0.47	0.00
Delay/Veh:	36.5	0.0	25.5	0.0	0.0	0.0	0.0	25.4	25.4	86.2	12.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	36.5	0.0	25.5	0.0	0.0	0.0	0.0	25.4	25.4	86.2	12.0	0.0
LOS by Move:	D	A	C	A	A	A	A	C	C	F	B	A
HCM2k85thQ:	28	0	12	0	0	0	0	36	36	10	14	0

Note: Queue reported is the number of cars per lane.

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Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #59 I-5 NB Off Ramps/17th Street

Cycle (sec):	100	Critical Vol./Cap.(X):	0.587
Loss Time (sec):	5	Average Delay (sec/veh):	19.0
Optimal Cycle:	29	Level Of Service:	B

Street Name:	I-5 NB Off Ramps						17th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Permitted		
Rights:	Include			Include			Ignore			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 1	0	0 1	1	0 0	0 1	1	0 3	0 1	0	0 2	1 0
Volume Module:												
Base Vol:	330	44	17	50	0	130	114	1047	688	0	1564	42
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	330	44	17	50	0	130	114	1047	688	0	1564	42
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Volume:	330	44	17	50	0	130	114	1047	0	0	1564	42
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	330	44	17	50	0	130	114	1047	0	0	1564	42
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
FinalVolume:	330	44	17	50	0	130	114	1047	0	0	1564	42
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.96	0.96	0.85	0.95	1.00	0.85	0.95	0.91	1.00	1.00	0.91	0.91
Lanes:	1.76	0.24	1.00	1.00	0.00	1.00	1.00	3.00	1.00	0.00	2.92	0.08
Final Sat.:	3212	428	1615	1805	0	1615	1805	5187	1900	0	5031	135
Capacity Analysis Module:												
Vol/Sat:	0.10	0.10	0.01	0.03	0.00	0.08	0.06	0.20	0.00	0.00	0.31	0.31
Crit Moves:		****				****	****				****	
Green/Cycle:	0.18	0.18	0.18	0.14	0.00	0.14	0.11	0.64	0.00	0.00	0.53	0.53
Volume/Cap:	0.59	0.59	0.06	0.20	0.00	0.59	0.59	0.32	0.00	0.00	0.59	0.59
Delay/Veh:	39.3	39.3	34.5	38.7	0.0	44.5	47.1	8.3	0.0	0.0	16.4	16.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	39.3	39.3	34.5	38.7	0.0	44.5	47.1	8.3	0.0	0.0	16.4	16.4
LOS by Move:	D	D	C	D	A	D	D	A	A	A	B	B
HCM2k85thQ:	9	9	1	2	0	7	7	8	0	0	19	19

Note: Queue reported is the number of cars per lane.

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Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #60 Penn Wy and I-5 SB Ramps

Cycle (sec):	100	Critical Vol./Cap.(X):	0.573
Loss Time (sec):	5	Average Delay (sec/veh):	23.0
Optimal Cycle:	29	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	2	0 1	2 0	2	0 0	0 0	0	0 0	1 0	0	0 2
Volume Module:												
Base Vol:	0	631	414	592	137	0	0	0	0	214	0	183
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	631	414	592	137	0	0	0	0	214	0	183
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	631	414	592	137	0	0	0	0	214	0	183
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	631	414	592	137	0	0	0	0	214	0	183
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	631	414	592	137	0	0	0	0	214	0	183
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.95	0.85	0.92	0.95	1.00	1.00	1.00	1.00	0.95	1.00	0.75
Lanes:	0.00	2.00	1.00	2.00	2.00	0.00	0.00	0.00	0.00	1.00	0.00	2.00
Final Sat.:	0	3610	1615	3502	3610	0	0	0	0	1805	0	2842
Capacity Analysis Module:												
Vol/Sat:	0.00	0.17	0.26	0.17	0.04	0.00	0.00	0.00	0.00	0.12	0.00	0.06
Crit Moves:			****	****						****		
Green/Cycle:	0.00	0.45	0.45	0.30	0.74	0.00	0.00	0.00	0.00	0.21	0.00	0.50
Volume/Cap:	0.00	0.39	0.57	0.57	0.05	0.00	0.00	0.00	0.00	0.57	0.00	0.13
Delay/Veh:	0.0	18.6	21.6	30.7	3.4	0.0	0.0	0.0	0.0	37.8	0.0	13.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	18.6	21.6	30.7	3.4	0.0	0.0	0.0	0.0	37.8	0.0	13.3
LOS by Move:	A	B	C	C	A	A	A	A	A	D	A	B
HCM2k85thQ:	0	10	15	13	1	0	0	0	0	10	0	3

Note: Queue reported is the number of cars per lane.

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Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Base Volume Alternative)

Intersection #61 Santiago St and Civic Center Dr

Cycle (sec):	100	Critical Vol./Cap.(X):	1.369
Loss Time (sec):	5	Average Delay (sec/veh):	110.0
Optimal Cycle:	0	Level Of Service:	F

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	0 1	0	1 0	0 1	0	0 1	0 0	1	0 0	1! 0	0
Volume Module:												
Base Vol:	194	598	60	32	456	117	266	76	269	14	19	18
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	194	598	60	32	456	117	266	76	269	14	19	18
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	194	598	60	32	456	117	266	76	269	14	19	18
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	194	598	60	32	456	117	266	76	269	14	19	18
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	194	598	60	32	456	117	266	76	269	14	19	18
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.91	0.09	1.00	0.80	0.20	0.78	0.22	1.00	0.27	0.38	0.35
Final Sat.:	446	437	44	428	375	96	342	98	507	104	141	134
Capacity Analysis Module:												
Vol/Sat:	0.44	1.37	1.37	0.07	1.22	1.22	0.78	0.78	0.53	0.13	0.13	0.13
Crit Moves:		****			****			****			****	
Delay/Veh:	16.8	201	200.6	11.6	140	140.1	34.1	34.1	17.5	13.7	13.7	13.7
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	16.8	201	200.6	11.6	140	140.1	34.1	34.1	17.5	13.7	13.7	13.7
LOS by Move:	C	F	F	B	F	F	D	D	C	B	B	B
ApproachDel:	158.8			133.3			26.8			13.7		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	158.8			133.3			26.8			13.7		
LOS by Appr:	F			F			D			B		
AllWayAvgQ:	0.7	25.4	25.4	0.1	17.0	17.0	2.8	2.8	1.1	0.1	0.1	0.1

Note: Queue reported is the number of cars per lane.

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #62 Santiago St and Santa Ana Blvd

Cycle (sec):	100	Critical Vol./Cap.(X):	1.017
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	180	Level Of Service:	F

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1	1 0	1 0	1	1 0	1 0	1	1 0	1 0	2	0 1
Volume Module:												
Base Vol:	135	833	236	378	639	103	164	673	87	255	546	347
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	135	833	236	378	639	103	164	673	87	255	546	347
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	135	833	236	378	639	103	164	673	87	255	546	347
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	135	833	236	378	639	103	164	673	87	255	546	347
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	135	833	236	378	639	103	164	673	87	255	546	347
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.04	1.00	1.00	1.04	1.00	1.00	1.04	1.00	1.00	1.06	1.00
Lanes:	1.00	1.56	0.44	1.00	1.72	0.28	1.00	1.77	0.23	1.00	2.00	1.00
Final Sat.:	1600	2594	706	1600	2856	444	1600	2934	366	1600	3400	1600
Capacity Analysis Module:												
Vol/Sat:	0.08	0.32	0.33	0.24	0.22	0.23	0.10	0.23	0.24	0.16	0.16	0.22
Crit Moves:			****	****					****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #63 Standard Ave and 4th St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.893
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	83	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 0	1	1 0	2 0	1	1 0	1 1	0	1 0	1 1	0
Volume Module:												
Base Vol:	251	543	214	254	428	297	302	477	201	233	648	351
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	251	543	214	254	428	297	302	477	201	233	648	351
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	251	543	214	254	428	297	302	477	201	233	648	351
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	251	543	214	254	428	297	302	477	201	233	648	351
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	251	543	214	254	428	297	302	477	201	233	648	351
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.04	1.00	1.00	1.05	1.00
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	1.41	0.59	1.00	1.30	0.70
Final Sat.:	1600	3400	1600	1600	3400	1600	1600	2351	949	1600	2176	1124
Capacity Analysis Module:												
Vol/Sat:	0.16	0.16	0.13	0.16	0.13	0.19	0.19	0.20	0.21	0.15	0.30	0.31
Crit Moves:	****					****	****					****

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #64 Standard Ave and 1st St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.968
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	159	Level Of Service:	E

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Control:	Permitted				Permitted				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Y+R:	4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	
Lanes:	1	0	1	1	0	1	0	1	1	0	1	0	2	1	0	
Volume Module:																
Base Vol:	109	724	259		142	679	47		168	1279	65		264	1888	116	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	109	724	259		142	679	47		168	1279	65		264	1888	116	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	109	724	259		142	679	47		168	1279	65		264	1888	116	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	109	724	259		142	679	47		168	1279	65		264	1888	116	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	109	724	259		142	679	47		168	1279	65		264	1888	116	
Saturation Flow Module:																
Sat/Lane:	1600	1600	1600		1600	1600	1600		1600	1600	1600		1600	1600	1600	
Adjustment:	1.00	1.04	1.00		1.00	1.03	1.00		1.00	1.04	1.00		1.00	1.04	1.00	
Lanes:	1.00	1.47	0.53		1.00	1.87	0.13		1.00	2.85	0.15		1.00	2.83	0.17	
Final Sat.:	1600	2457	843		1600	3093	207		1600	4768	232		1600	4722	278	
Capacity Analysis Module:																
Vol/Sat:	0.07	0.29	0.31		0.09	0.22	0.23		0.11	0.27	0.28		0.17	0.40	0.42	
Crit Moves:			****		****				****						****	

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #65 Standard Ave and Mcfadden Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.828
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	59	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1	1 0	1 0	1	1 0	1 0	1	1 0	1 0	1	1 0
Volume Module:												
Base Vol:	194	765	94	237	520	90	95	632	108	123	749	217
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	194	765	94	237	520	90	95	632	108	123	749	217
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	194	765	94	237	520	90	95	632	108	123	749	217
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	194	765	94	237	520	90	95	632	108	123	749	217
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	194	765	94	237	520	90	95	632	108	123	749	217
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.04	1.00	1.00	1.04	1.00	1.00	1.04	1.00	1.00	1.04	1.00
Lanes:	1.00	1.78	0.22	1.00	1.70	0.30	1.00	1.71	0.29	1.00	1.55	0.45
Final Sat.:	1600	2950	350	1600	2828	472	1600	2833	467	1600	2581	719
Capacity Analysis Module:												
Vol/Sat:	0.12	0.26	0.27	0.15	0.18	0.19	0.06	0.22	0.23	0.08	0.29	0.30
Crit Moves:			****	****			****					****

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #66 Halladay St and Warner Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.975
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	173	Level Of Service:	E

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	0	0 1	0 0	0	0 0	0 1	1	1 0	0 1	2	0 0
Volume Module:												
Base Vol:	338	0	704	0	0	0	2	868	87	272	2159	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	338	0	704	0	0	0	2	868	87	272	2159	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	338	0	704	0	0	0	2	868	87	272	2159	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	338	0	704	0	0	0	2	868	87	272	2159	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	338	0	704	0	0	0	2	868	87	272	2159	0
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.02	1.00	1.00	1.05	1.00
Lanes:	1.00	0.00	1.00	0.00	0.00	0.00	0.01	2.72	0.27	0.34	2.66	0.00
Final Sat.:	1600	0	1600	0	0	0	10	4454	436	537	4463	0
Capacity Analysis Module:												
Vol/Sat:	0.21	0.00	0.44	0.00	0.00	0.00	0.00	0.19	0.20	0.17	0.48	0.00
Crit Moves:			****				****				****	

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #67 Halladay St and Dyer Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	1.057
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	180	Level Of Service:	F

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	0	1 0	1 0	0	1 0	1 0	2	1 0	1 0	2	1 0
Volume Module:												
Base Vol:	61	266	307	296	39	83	147	1271	9	51	1655	132
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	61	266	307	296	39	83	147	1271	9	51	1655	132
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	61	266	307	296	39	83	147	1271	9	51	1655	132
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	61	266	307	296	39	83	147	1271	9	51	1655	132
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	61	266	307	296	39	83	147	1271	9	51	1655	132
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.04	1.00	1.00	1.04	1.00
Lanes:	1.00	0.46	0.54	1.00	0.32	0.68	1.00	2.98	0.02	1.00	2.78	0.22
Final Sat.:	1600	743	857	1600	511	1089	1600	4966	34	1600	4645	355
Capacity Analysis Module:												
Vol/Sat:	0.04	0.36	0.36	0.19	0.08	0.08	0.09	0.26	0.27	0.03	0.36	0.37
Crit Moves:		****	****				****					****

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Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #68 SR-55 SB Ramps and MacArthur Blvd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.567
Loss Time (sec):	5	Average Delay (sec/veh):	17.8
Optimal Cycle:	28	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Ignore			Ignore		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	0	0 0	2 0	0	0 2	0 0	2	1 1	0 0	3	0 1
Volume Module:												
Base Vol:	0	0	0	299	0	724	0	1187	1058	0	1474	579
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	299	0	724	0	1187	1058	0	1474	579
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Volume:	0	0	0	299	0	724	0	1187	0	0	1474	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	299	0	724	0	1187	0	0	1474	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
FinalVolume:	0	0	0	299	0	724	0	1187	0	0	1474	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	0.92	1.00	0.75	1.00	0.91	0.91	1.00	0.91	1.00
Lanes:	0.00	0.00	0.00	2.00	0.00	2.00	0.00	3.00	1.00	0.00	3.00	1.00
Final Sat.:	0	0	0	3502	0	2842	0	5187	1729	0	5187	1900
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.09	0.00	0.25	0.00	0.23	0.00	0.00	0.28	0.00
Crit Moves:						****	****				****	
Green/Cycle:	0.00	0.00	0.00	0.45	0.00	0.45	0.00	0.50	0.00	0.00	0.50	0.00
Volume/Cap:	0.00	0.00	0.00	0.19	0.00	0.57	0.00	0.46	0.00	0.00	0.57	0.00
Delay/Veh:	0.0	0.0	0.0	16.7	0.0	21.0	0.0	16.3	0.0	0.0	17.7	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	16.7	0.0	21.0	0.0	16.3	0.0	0.0	17.7	0.0
LOS by Move:	A	A	A	B	A	C	A	B	A	A	B	A
HCM2k85thQ:	0	0	0	4	0	15	0	13	0	0	18	0

Note: Queue reported is the number of cars per lane.

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Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #69 SR-55 NB Ramps and MacArthur Blvd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.484
Loss Time (sec):	5	Average Delay (sec/veh):	14.6
Optimal Cycle:	24	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Ignore			Include			Ignore			Ignore		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	0	0 1	0 0	0	0 0	0 0	2	0 2	0 0	3	0 1
Volume Module:												
Base Vol:	620	0	412	0	0	0	0	711	731	0	1467	1056
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	620	0	412	0	0	0	0	711	731	0	1467	1056
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Volume:	620	0	0	0	0	0	0	711	0	0	1467	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	620	0	0	0	0	0	0	711	0	0	1467	0
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
FinalVolume:	620	0	0	0	0	0	0	711	0	0	1467	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.88	1.00	0.91	1.00
Lanes:	2.00	0.00	1.00	0.00	0.00	0.00	0.00	2.00	2.00	0.00	3.00	1.00
Final Sat.:	3502	0	1900	0	0	0	0	3610	3344	0	5187	1900
Capacity Analysis Module:												
Vol/Sat:	0.18	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.00	0.00	0.28	0.00
Crit Moves:	****						****				****	
Green/Cycle:	0.37	0.00	0.00	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.58	0.00
Volume/Cap:	0.48	0.00	0.00	0.00	0.00	0.00	0.00	0.34	0.00	0.00	0.48	0.00
Delay/Veh:	24.7	0.0	0.0	0.0	0.0	0.0	0.0	10.9	0.0	0.0	12.2	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	24.7	0.0	0.0	0.0	0.0	0.0	0.0	10.9	0.0	0.0	12.2	0.0
LOS by Move:	C	A	A	A	A	A	A	B	A	A	B	A
HCM2k85thQ:	12	0	0	0	0	0	0	9	0	0	15	0

Note: Queue reported is the number of cars per lane.

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Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #70 SR-55 SB Ramps and Dyer Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.663
Loss Time (sec):	5	Average Delay (sec/veh):	26.5
Optimal Cycle:	35	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Ovl			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 1	0	0 2	0 1	1	0 1	1 0	3	0 1	2 0	3	0 1
Volume Module:												
Base Vol:	386	12	291	103	226	110	59	1379	187	566	1008	65
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	386	12	291	103	226	110	59	1379	187	566	1008	65
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	386	12	291	103	226	110	59	1379	187	566	1008	65
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	386	12	291	103	226	110	59	1379	187	566	1008	65
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	386	12	291	103	226	110	59	1379	187	566	1008	65
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.75	0.94	0.94	0.85	0.95	0.91	0.85	0.92	0.91	0.85
Lanes:	1.94	0.06	2.00	0.63	1.37	1.00	1.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3516	109	2842	1113	2443	1615	1805	5187	1615	3502	5187	1615
Capacity Analysis Module:												
Vol/Sat:	0.11	0.11	0.10	0.09	0.09	0.07	0.03	0.27	0.12	0.16	0.19	0.04
Crit Moves:		****			****			****			****	
Green/Cycle:	0.17	0.17	0.41	0.14	0.14	0.14	0.09	0.40	0.40	0.24	0.55	0.55
Volume/Cap:	0.66	0.66	0.25	0.66	0.66	0.49	0.35	0.66	0.29	0.66	0.35	0.07
Delay/Veh:	41.9	41.9	19.5	44.1	44.1	41.4	43.8	25.2	20.5	36.1	12.5	10.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	41.9	41.9	19.5	44.1	44.1	41.4	43.8	25.2	20.5	36.1	12.5	10.5
LOS by Move:	D	D	B	D	D	D	D	C	C	D	B	B
HCM2k85thQ:	11	11	5	10	10	6	3	20	6	14	10	1

Note: Queue reported is the number of cars per lane.

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #71 Glassell St and La Veta Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.744
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	43	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ovl			Include			Ovl			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	1 0	1	1 0	1 1	0	1 0	1 0	1	1 0	1 1	0
Volume Module:												
Base Vol:	573	595	194	14	471	35	106	346	594	211	382	15
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	573	595	194	14	471	35	106	346	594	211	382	15
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	573	595	194	14	471	35	106	346	594	211	382	15
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	573	595	194	14	471	35	106	346	594	211	382	15
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	573	595	194	14	471	35	106	346	594	211	382	15
OvlAdjVol:			0						308			
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.03	1.00	1.00	1.06	1.00	1.00	1.03	1.00
Lanes:	2.00	1.00	1.00	1.00	1.86	0.14	1.00	1.00	1.00	1.00	1.92	0.08
Final Sat.:	3200	1700	1600	1600	3079	221	1600	1700	1600	1600	3179	121
Capacity Analysis Module:												
Vol/Sat:	0.18	0.35	0.12	0.01	0.15	0.16	0.07	0.20	0.37	0.13	0.12	0.12
OvlAdjV/S:			0.00						0.19			
Crit Moves:	****			****				****		****		

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Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #72 Glassell St and SR-22 WB Ramps

Cycle (sec):	100	Critical Vol./Cap.(X):	0.910
Loss Time (sec):	5	Average Delay (sec/veh):	30.5
Optimal Cycle:	96	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Permitted			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 0	0	0 0	2 0	1	0 0	0 0	0	1 0	1! 0	1
Volume Module:												
Base Vol:	660	1079	0	0	1007	293	0	0	0	251	9	446
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	660	1079	0	0	1007	293	0	0	0	251	9	446
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	660	1079	0	0	1007	293	0	0	0	251	9	446
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	660	1079	0	0	1007	293	0	0	0	251	9	446
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	660	1079	0	0	1007	293	0	0	0	251	9	446
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	1.00	1.00	0.95	0.85	1.00	1.00	1.00	0.86	0.86	0.86
Lanes:	1.00	2.00	0.00	0.00	2.00	1.00	0.00	0.00	0.00	1.35	0.03	1.62
Final Sat.:	1805	3610	0	0	3610	1615	0	0	0	2200	41	2644
Capacity Analysis Module:												
Vol/Sat:	0.37	0.30	0.00	0.00	0.28	0.18	0.00	0.00	0.00	0.11	0.22	0.17
Crit Moves:	****				****						****	
Green/Cycle:	0.40	0.71	0.00	0.00	0.31	0.31	0.00	0.00	0.00	0.24	0.24	0.24
Volume/Cap:	0.91	0.42	0.00	0.00	0.91	0.59	0.00	0.00	0.00	0.47	0.91	0.70
Delay/Veh:	43.7	6.2	0.0	0.0	44.3	31.3	0.0	0.0	0.0	32.7	51.5	36.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	43.7	6.2	0.0	0.0	44.3	31.3	0.0	0.0	0.0	32.7	51.5	36.8
LOS by Move:	D	A	A	A	D	C	A	A	A	C	D	D
HCM2k85thQ:	33	11	0	0	29	13	0	0	0	8	21	14

Note: Queue reported is the number of cars per lane.

Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #73 Grand Ave / Glassell St and SR-22 EB Ramps

Cycle (sec):	100	Critical Vol./Cap.(X):	0.931
Loss Time (sec):	5	Average Delay (sec/veh):	31.6
Optimal Cycle:	113	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	2	0 1	1 0	2	0 0	1 0	1!	0 1	0 0	0	0 0
Volume Module:												
Base Vol:	0	1450	370	461	824	0	229	4	503	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1450	370	461	824	0	229	4	503	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1450	370	461	824	0	229	4	503	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1450	370	461	824	0	229	4	503	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1450	370	461	824	0	229	4	503	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.95	0.85	0.95	0.95	1.00	0.86	0.86	0.86	1.00	1.00	1.00
Lanes:	0.00	2.00	1.00	1.00	2.00	0.00	1.31	0.01	1.68	0.00	0.00	0.00
Final Sat.:	0	3610	1615	1805	3610	0	2129	18	2731	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.40	0.23	0.26	0.23	0.00	0.11	0.23	0.18	0.00	0.00	0.00
Crit Moves:		****		****				****				
Green/Cycle:	0.00	0.43	0.43	0.27	0.71	0.00	0.24	0.24	0.24	0.00	0.00	0.00
Volume/Cap:	0.00	0.93	0.53	0.93	0.32	0.00	0.44	0.93	0.75	0.00	0.00	0.00
Delay/Veh:	0.0	37.4	21.8	59.8	5.7	0.0	32.2	54.5	38.4	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	37.4	21.8	59.8	5.7	0.0	32.2	54.5	38.4	0.0	0.0	0.0
LOS by Move:	A	D	C	E	A	A	C	D	D	A	A	A
HCM2k85thQ:	0	38	13	27	8	0	8	23	15	0	0	0

Note: Queue reported is the number of cars per lane.

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #74 Grand Ave and Fairhaven Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.717
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	39	Level Of Service:	C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Permitted				Permitted			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Y+R:	4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	
Lanes:	1	0 2	1	0	1	0 2	1	0	1	0 1	1	0	1	0 1	0	1
Volume Module:																
Base Vol:	54	1420	284		242	974	89		79	45	33		221	42	157	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	54	1420	284		242	974	89		79	45	33		221	42	157	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	54	1420	284		242	974	89		79	45	33		221	42	157	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	54	1420	284		242	974	89		79	45	33		221	42	157	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	54	1420	284		242	974	89		79	45	33		221	42	157	
Saturation Flow Module:																
Sat/Lane:	1600	1600	1600		1600	1600	1600		1600	1600	1600		1600	1600	1600	
Adjustment:	1.00	1.05	1.00		1.00	1.05	1.00		1.00	1.05	1.00		1.00	1.06	1.00	
Lanes:	1.00	2.50	0.50		1.00	2.75	0.25		1.00	1.15	0.85		1.00	1.00	1.00	
Final Sat.:	1600	4200	800		1600	4598	402		1600	1946	1354		1600	1700	1600	
Capacity Analysis Module:																
Vol/Sat:	0.03	0.34	0.36		0.15	0.21	0.22		0.05	0.02	0.02		0.14	0.02	0.10	
Crit Moves:			****		****					****			****			

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #75 Grand Ave and Santa Clara Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.808
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	54	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			WideBypass			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 1	0	1 0	2 1	0	1 0	0 1	0	1 0	1 0	1
Volume Module:												
Base Vol:	103	1386	288	240	946	240	114	139	26	157	282	300
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	103	1386	288	240	946	240	114	139	26	157	282	300
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	103	1386	288	240	946	240	114	139	26	157	282	300
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	103	1386	288	240	946	240	114	139	26	157	282	300
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	103	1386	288	240	946	240	114	139	26	157	282	300
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.05	1.00	1.00	1.00	1.00	1.00	1.06	1.00
Lanes:	1.00	2.48	0.52	1.00	2.39	0.61	1.00	0.84	0.16	1.00	1.00	1.00
Final Sat.:	1600	4174	826	1600	4029	971	1600	1348	252	1600	1700	1600
Capacity Analysis Module:												
Vol/Sat:	0.06	0.33	0.35	0.15	0.23	0.25	0.07	0.10	0.10	0.10	0.17	0.19
Crit Moves:		****	****				****					****

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #76 Grand Ave and 17th St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.856
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	67	Level Of Service:	D

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Y+R:	4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	
Lanes:	1	0 2	1	0	1	0 2	1	0	2	0 2	1	0	2	0 2	1	0
Volume Module:																
Base Vol:	288	1026	259		294	634	140		321	823	138		279	1031	187	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	288	1026	259		294	634	140		321	823	138		279	1031	187	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	288	1026	259		294	634	140		321	823	138		279	1031	187	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	288	1026	259		294	634	140		321	823	138		279	1031	187	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	288	1026	259		294	634	140		321	823	138		279	1031	187	
Saturation Flow Module:																
Sat/Lane:	1600	1600	1600		1600	1600	1600		1600	1600	1600		1600	1600	1600	
Adjustment:	1.00	1.05	1.00		1.00	1.05	1.00		1.00	1.05	1.00		1.00	1.05	1.00	
Lanes:	1.00	2.40	0.60		1.00	2.46	0.54		2.00	2.57	0.43		2.00	2.54	0.46	
Final Sat.:	1600	4033	967		1600	4132	868		3200	4311	689		3200	4263	737	
Capacity Analysis Module:																
Vol/Sat:	0.18	0.25	0.27		0.18	0.15	0.16		0.10	0.19	0.20		0.09	0.24	0.25	
Crit Moves:			****		****				****						****	

Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #77 Grand Ave and I-5 NB Ramps

Cycle (sec):	100	Critical Vol./Cap.(X):	0.696
Loss Time (sec):	5	Average Delay (sec/veh):	10.1
Optimal Cycle:	38	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Ignore			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	2 0	1	1 0	3 0	0	0 0	0 0	0 0	2 0	0 0	1
Volume Module:												
Base Vol:	0	1855	1432	62	1501	0	0	0	0	151	0	182
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1855	1432	62	1501	0	0	0	0	151	0	182
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1855	0	62	1501	0	0	0	0	151	0	182
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1855	0	62	1501	0	0	0	0	151	0	182
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1855	0	62	1501	0	0	0	0	151	0	182
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.95	1.00	0.95	0.91	1.00	1.00	1.00	1.00	0.92	1.00	0.85
Lanes:	0.00	2.00	1.00	1.00	3.00	0.00	0.00	0.00	0.00	2.00	0.00	1.00
Final Sat.:	0	3610	1900	1805	5187	0	0	0	0	3502	0	1615
Capacity Analysis Module:												
Vol/Sat:	0.00	0.51	0.00	0.03	0.29	0.00	0.00	0.00	0.00	0.04	0.00	0.11
Crit Moves:		****		****								****
Green/Cycle:	0.00	0.74	0.00	0.05	0.79	0.00	0.00	0.00	0.00	0.16	0.00	0.16
Volume/Cap:	0.00	0.70	0.00	0.70	0.37	0.00	0.00	0.00	0.00	0.27	0.00	0.70
Delay/Veh:	0.0	7.8	0.0	68.1	3.2	0.0	0.0	0.0	0.0	36.9	0.0	47.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	7.8	0.0	68.1	3.2	0.0	0.0	0.0	0.0	36.9	0.0	47.5
LOS by Move:	A	A	A	E	A	A	A	A	A	D	A	D
HCM2k85thQ:	0	25	0	5	8	0	0	0	0	4	0	10

Note: Queue reported is the number of cars per lane.

Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #78 Grand Ave and Santa Ana Blvd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.721
Loss Time (sec):	5	Average Delay (sec/veh):	25.3
Optimal Cycle:	41	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Ovl			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 1	0	1 0	2 0	2	2 0	1 0	2	0 1	0 1	0
Volume Module:												
Base Vol:	185	2091	34	38	839	595	377	230	363	34	228	165
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	185	2091	34	38	839	595	377	230	363	34	228	165
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	185	2091	34	38	839	595	377	230	363	34	228	165
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	185	2091	34	38	839	595	377	230	363	34	228	165
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	185	2091	34	38	839	595	377	230	363	34	228	165
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.91	0.91	0.95	0.95	0.75	0.92	1.00	0.75	0.89	0.89	0.89
Lanes:	1.00	2.95	0.05	1.00	2.00	2.00	2.00	1.00	2.00	0.16	1.07	0.77
Final Sat.:	1805	5094	83	1805	3610	2842	3502	1900	2842	270	1809	1309
Capacity Analysis Module:												
Vol/Sat:	0.10	0.41	0.41	0.02	0.23	0.21	0.11	0.12	0.13	0.13	0.13	0.13
Crit Moves:		****		****					****	****		
Green/Cycle:	0.18	0.57	0.57	0.03	0.42	0.59	0.18	0.18	0.18	0.17	0.17	0.17
Volume/Cap:	0.56	0.72	0.72	0.72	0.56	0.35	0.61	0.68	0.72	0.72	0.72	0.72
Delay/Veh:	39.3	16.6	16.6	86.7	22.8	10.6	39.7	44.2	43.9	43.3	43.3	43.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	39.3	16.6	16.6	86.7	22.8	10.6	39.7	44.2	43.9	43.3	43.3	43.3
LOS by Move:	D	B	B	F	C	B	D	D	D	D	D	D
HCM2k85thQ:	9	27	27	4	16	8	10	12	12	12	12	12

Note: Queue reported is the number of cars per lane.

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #79 Grand Ave and 1st St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.731
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	41	Level Of Service:	C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Y+R:	4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	
Lanes:	2	0 2	1	0	2	0 3	0	1	2	0 2	1	0	2	0 2	1	0
Volume Module:																
Base Vol:	188	1435	43		113	667	266		326	1080	107		154	958	176	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	188	1435	43		113	667	266		326	1080	107		154	958	176	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	188	1435	43		113	667	266		326	1080	107		154	958	176	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	188	1435	43		113	667	266		326	1080	107		154	958	176	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	188	1435	43		113	667	266		326	1080	107		154	958	176	
Saturation Flow Module:																
Sat/Lane:	1600	1600	1600		1600	1600	1600		1600	1600	1600		1600	1600	1600	
Adjustment:	1.00	1.04	1.00		1.00	1.06	1.00		1.00	1.05	1.00		1.00	1.05	1.00	
Lanes:	2.00	2.91	0.09		2.00	3.00	1.00		2.00	2.73	0.27		2.00	2.53	0.47	
Final Sat.:	3200	4860	140		3200	5100	1600		3200	4567	433		3200	4255	745	
Capacity Analysis Module:																
Vol/Sat:	0.06	0.30	0.31		0.04	0.13	0.17		0.10	0.24	0.25		0.05	0.23	0.24	
Crit Moves:			****		****				****						****	

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #80 Grand Ave and Chestnut Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.688
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	36	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2	1 0	1 0	2	1 0	1 0	1	1 0	1 0	1	1 0
Volume Module:												
Base Vol:	152	1142	198	161	716	121	70	214	47	139	433	252
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	152	1142	198	161	716	121	70	214	47	139	433	252
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	152	1142	198	161	716	121	70	214	47	139	433	252
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	152	1142	198	161	716	121	70	214	47	139	433	252
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	152	1142	198	161	716	121	70	214	47	139	433	252
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.05	1.00	1.00	1.04	1.00	1.00	1.05	1.00
Lanes:	1.00	2.56	0.44	1.00	2.57	0.43	1.00	1.64	0.36	1.00	1.26	0.74
Final Sat.:	1600	4291	709	1600	4306	694	1600	2724	576	1600	2123	1177
Capacity Analysis Module:												
Vol/Sat:	0.10	0.27	0.28	0.10	0.17	0.17	0.04	0.08	0.08	0.09	0.20	0.21
Crit Moves:		****	****				****					****

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #81 Grand Ave and McFadden Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.821
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	57	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 1	0	1 0	2 1	0	1 0	1 1	0	1 0	1 1	0
Volume Module:												
Base Vol:	222	1264	218	153	696	187	122	454	79	96	762	168
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	222	1264	218	153	696	187	122	454	79	96	762	168
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	222	1264	218	153	696	187	122	454	79	96	762	168
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	222	1264	218	153	696	187	122	454	79	96	762	168
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	222	1264	218	153	696	187	122	454	79	96	762	168
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.05	1.00	1.00	1.04	1.00	1.00	1.04	1.00
Lanes:	1.00	2.56	0.44	1.00	2.36	0.64	1.00	1.70	0.30	1.00	1.64	0.36
Final Sat.:	1600	4294	706	1600	3983	1017	1600	2826	474	1600	2722	578
Capacity Analysis Module:												
Vol/Sat:	0.14	0.29	0.31	0.10	0.17	0.18	0.08	0.16	0.17	0.06	0.28	0.29
Crit Moves:		****	****				****					****

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #82 Grand Ave and Edinger Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	1.004
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	180	Level Of Service:	F

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 1	0	1 0	2 1	0	1 0	2 1	0	1 0	2 1	0
Volume Module:												
Base Vol:	244	1411	122	203	501	281	182	787	63	93	1673	217
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	244	1411	122	203	501	281	182	787	63	93	1673	217
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	244	1411	122	203	501	281	182	787	63	93	1673	217
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	244	1411	122	203	501	281	182	787	63	93	1673	217
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	244	1411	122	203	501	281	182	787	63	93	1673	217
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.06	1.00	1.00	1.05	1.00	1.00	1.05	1.00
Lanes:	1.00	2.76	0.24	1.00	2.00	1.00	1.00	2.78	0.22	1.00	2.66	0.34
Final Sat.:	1600	4618	382	1600	3400	1600	1600	4644	356	1600	4449	551
Capacity Analysis Module:												
Vol/Sat:	0.15	0.31	0.32	0.13	0.15	0.18	0.11	0.17	0.18	0.06	0.38	0.39
Crit Moves:		****	****				****					****

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #83 Grand Ave and Warner Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.827
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	58	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 1	0	1 0	2 1	0	2 0	3 0	1	2 0	2 1	0
Volume Module:												
Base Vol:	183	660	146	140	452	208	306	587	127	241	1539	504
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	183	660	146	140	452	208	306	587	127	241	1539	504
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	183	660	146	140	452	208	306	587	127	241	1539	504
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	183	660	146	140	452	208	306	587	127	241	1539	504
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	183	660	146	140	452	208	306	587	127	241	1539	504
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	1.00	2.46	0.54	1.00	2.05	0.95	2.00	3.00	1.00	2.00	2.26	0.74
Final Sat.:	1600	4131	869	1600	3487	1513	3200	5100	1600	3200	3816	1184
Capacity Analysis Module:												
Vol/Sat:	0.11	0.16	0.17	0.09	0.13	0.14	0.10	0.12	0.08	0.08	0.40	0.43
Crit Moves:		****	****				****					****

Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #84 SR-55 NB Ramps and Dyer Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.362
Loss Time (sec):	5	Average Delay (sec/veh):	5.7
Optimal Cycle:	20	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Ignore			Ignore		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1! 0	1	0	0	0	0	0	3	0	1
Volume Module:												
Base Vol:	181	0	49	0	0	0	0	1183	602	0	1488	929
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	181	0	49	0	0	0	0	1183	602	0	1488	929
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Volume:	181	0	49	0	0	0	0	1183	0	0	1488	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	181	0	49	0	0	0	0	1183	0	0	1488	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
FinalVolume:	181	0	49	0	0	0	0	1183	0	0	1488	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	1.00	0.93	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	0.91
Lanes:	1.79	0.00	1.21	0.00	0.00	0.00	0.00	3.00	1.00	0.00	3.00	0.00
Final Sat.:	3162	0	2146	0	0	0	0	5187	1900	0	5187	0
Capacity Analysis Module:												
Vol/Sat:	0.06	0.00	0.02	0.00	0.00	0.00	0.00	0.23	0.00	0.00	0.29	0.00
Crit Moves:	****						****				****	
Green/Cycle:	0.16	0.00	0.16	0.00	0.00	0.00	0.00	0.79	0.00	0.00	0.79	0.00
Volume/Cap:	0.36	0.00	0.14	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.36	0.00
Delay/Veh:	38.0	0.0	36.3	0.0	0.0	0.0	0.0	2.8	0.0	0.0	3.1	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	38.0	0.0	36.3	0.0	0.0	0.0	0.0	2.8	0.0	0.0	3.1	0.0
LOS by Move:	D	A	D	A	A	A	A	A	A	A	A	A
HCM2k85thQ:	5	0	2	0	0	0	0	6	0	0	8	0

Note: Queue reported is the number of cars per lane.

Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Base Volume Alternative)

Intersection #85 Cambridge St and La Veta Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.779
Loss Time (sec):	5	Average Delay (sec/veh):	19.7
Optimal Cycle:	0	Level Of Service:	C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Control:	Stop Sign				Stop Sign				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Lanes:	1	0	1	0	0	0	0	1	0	1	1	0	0	0	1	0
Volume Module:																
Base Vol:	235	327	0		0	206	191		375	0	247		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	235	327	0		0	206	191		375	0	247		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	235	327	0		0	206	191		375	0	247		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	235	327	0		0	206	191		375	0	247		0	0	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	235	327	0		0	206	191		375	0	247		0	0	0	
Saturation Flow Module:																
Adjustment:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Lanes:	1.00	1.00	0.00		0.00	1.00	1.00		1.00	0.00	1.00		0.00	0.00	0.00	
Final Sat.:	474	510	0		0	485	534		482	0	567		0	0	0	
Capacity Analysis Module:																
Vol/Sat:	0.50	0.64	xxxx		xxxx	0.42	0.36		0.78	xxxx	0.44		xxxx	xxxx	xxxx	
Crit Moves:		****				****			****							
Delay/Veh:	17.0	20.9	0.0		0.0	14.9	12.6		30.8	0.0	13.4		0.0	0.0	0.0	
Delay Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	17.0	20.9	0.0		0.0	14.9	12.6		30.8	0.0	13.4		0.0	0.0	0.0	
LOS by Move:	C	C	*		*	B	B		D	*	B		*	*	*	
ApproachDel:	19.3				13.8				23.9				xxxxxx			
Delay Adj:	1.00				1.00				1.00				xxxxx			
ApprAdjDel:	19.3				13.8				23.9				xxxxxx			
LOS by Appr:	C				B				C				*			
AllWayAvgQ:	0.9	1.6	0.0		0.0	0.7	0.5		2.8	0.0	0.7		0.0	0.0	0.0	

Note: Queue reported is the number of cars per lane.

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #86 Cambridge St and Fairhaven Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.454
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	22	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	0 0	0	1 0	0 0	1	1 0	2 0	0	0 0	1 1	0
Volume Module:												
Base Vol:	0	0	0	219	0	76	132	230	0	0	237	295
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	219	0	76	132	230	0	0	237	295
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	219	0	76	132	230	0	0	237	295
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	219	0	76	132	230	0	0	237	295
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	219	0	76	132	230	0	0	237	295
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	2.00	0.00	0.00	1.00	1.00
Final Sat.:	0	0	0	1600	0	1600	1600	3400	0	0	1700	1600
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.14	0.00	0.05	0.08	0.07	0.00	0.00	0.14	0.18
Crit Moves:				****			****					****

Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #87 Mabury St and 1st Street

Cycle (sec):	100	Critical Vol./Cap.(X):	0.674
Loss Time (sec):	5	Average Delay (sec/veh):	27.1
Optimal Cycle:	36	Level Of Service:	C

Street Name:	Mabury						1st Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	0	0 1	1 0	1! 0	1	0 0	2	1 0	1 0	2	1 0
Volume Module:												
Base Vol:	23	0	233	195	83	367	0	1334	21	40	549	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	23	0	233	195	83	367	0	1334	21	40	549	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	23	0	233	195	83	367	0	1334	21	40	549	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	23	0	233	195	83	367	0	1334	21	40	549	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	23	0	233	195	83	367	0	1334	21	40	549	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	1.00	0.85	0.90	0.90	0.90	1.00	0.91	0.91	0.95	0.91	0.91
Lanes:	1.00	0.00	1.00	1.27	0.23	1.50	0.00	2.95	0.05	1.00	3.00	0.00
Final Sat.:	1805	0	1615	2171	390	2576	0	5096	80	1805	5187	0
Capacity Analysis Module:												
Vol/Sat:	0.01	0.00	0.14	0.09	0.21	0.14	0.00	0.26	0.26	0.02	0.11	0.00
Crit Moves:			****		****			****		****		
Green/Cycle:	0.21	0.00	0.21	0.32	0.32	0.32	0.00	0.39	0.39	0.03	0.42	0.00
Volume/Cap:	0.06	0.00	0.67	0.28	0.67	0.45	0.00	0.67	0.67	0.67	0.25	0.00
Delay/Veh:	31.4	0.0	41.3	25.8	31.7	27.6	0.0	26.3	26.3	74.4	18.8	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	31.4	0.0	41.3	25.8	31.7	27.6	0.0	26.3	26.3	74.4	18.8	0.0
LOS by Move:	C	A	D	C	C	C	A	C	C	E	B	A
HCM2k85thQ:	1	0	12	6	16	10	0	20	20	4	6	0

Note: Queue reported is the number of cars per lane.

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #88 Tustin St and La Veta Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.381
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	19	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2	1 0	1 0	2	1 0	1 0	1	1 0	1 1	0 0	1
Volume Module:												
Base Vol:	38	863	205	79	701	13	13	5	20	146	4	90
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	38	863	205	79	701	13	13	5	20	146	4	90
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	38	863	205	79	701	13	13	5	20	146	4	90
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	38	863	205	79	701	13	13	5	20	146	4	90
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	38	863	205	79	701	13	13	5	20	146	4	90
OvlAdjVol:												11
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.04	1.00	1.00	1.06	1.00	1.00	1.00	1.00
Lanes:	1.00	2.42	0.58	1.00	2.95	0.05	1.00	1.00	1.00	1.95	0.05	1.00
Final Sat.:	1600	4079	921	1600	4913	87	1600	1700	1600	3115	85	1600
Capacity Analysis Module:												
Vol/Sat:	0.02	0.21	0.22	0.05	0.14	0.15	0.01	0.00	0.01	0.05	0.05	0.06
OvlAdjV/S:												0.01
Crit Moves:		****	****					****		****		

Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #89 Tustin St and SR-22 WB On-Ramp

Cycle (sec):	100	Critical Vol./Cap.(X):	0.391
Loss Time (sec):	5	Average Delay (sec/veh):	11.1
Optimal Cycle:	29	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0 2		0 0	0 0 2		1 0	0 0 0		0 0	0 0 0		0 0
Volume Module:												
Base Vol:	466	1340	0	0	573	294	0	0	0	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	466	1340	0	0	573	294	0	0	0	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	466	1340	0	0	573	294	0	0	0	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	466	1340	0	0	573	294	0	0	0	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	466	1340	0	0	573	294	0	0	0	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.95	1.00	1.00	0.86	0.86	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	2.00	0.00	0.00	2.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
Final Sat.:	3502	3610	0	0	3282	1641	0	0	0	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.13	0.37	0.00	0.00	0.17	0.18	0.00	0.00	0.00	0.00	0.00	0.00
Crit Moves:		****										
Green/Cycle:	0.65	0.95	0.00	0.00	0.30	0.30	0.00	0.00	0.00	0.00	0.00	0.00
Volume/Cap:	0.21	0.39	0.00	0.00	0.57	0.59	0.00	0.00	0.00	0.00	0.00	0.00
Delay/Veh:	7.3	0.3	0.0	0.0	29.9	30.2	0.0	0.0	0.0	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	7.3	0.3	0.0	0.0	29.9	30.2	0.0	0.0	0.0	0.0	0.0	0.0
LOS by Move:	A	A	A	A	C	C	A	A	A	A	A	A
HCM2k85thQ:	5	3	0	0	13	14	0	0	0	0	0	0

Note: Queue reported is the number of cars per lane.

Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #90 Tustin St and SR-22 EB Off-Ramp / Seba Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.679
Loss Time (sec):	5	Average Delay (sec/veh):	23.1
Optimal Cycle:	37	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0 2	1 0	1	0 3	0 0	1	0 1!	0 1	0	0 1!	0 0
Volume Module:												
Base Vol:	0	1416	4	40	550	0	440	39	558	28	0	67
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1416	4	40	550	0	440	39	558	28	0	67
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1416	4	40	550	0	440	39	558	28	0	67
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1416	4	40	550	0	440	39	558	28	0	67
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1416	4	40	550	0	440	39	558	28	0	67
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.91	0.91	0.10	0.91	1.00	0.90	0.90	0.90	0.89	1.00	0.89
Lanes:	0.00	2.99	0.01	1.00	3.00	0.00	1.41	0.07	1.52	0.29	0.00	0.71
Final Sat.:	0	5172	15	188	5187	0	2408	124	2596	499	0	1195
Capacity Analysis Module:												
Vol/Sat:	0.00	0.27	0.27	0.21	0.11	0.00	0.18	0.31	0.21	0.06	0.00	0.06
Crit Moves:		****						****		****		
Green/Cycle:	0.00	0.40	0.40	0.40	0.40	0.00	0.46	0.46	0.46	0.08	0.00	0.08
Volume/Cap:	0.00	0.68	0.68	0.53	0.26	0.00	0.39	0.68	0.46	0.68	0.00	0.68
Delay/Veh:	0.0	25.4	25.4	29.3	20.0	0.0	17.7	22.2	18.5	57.2	0.0	57.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	25.4	25.4	29.3	20.0	0.0	17.7	22.2	18.5	57.2	0.0	57.2
LOS by Move:	A	C	C	C	B	A	B	C	B	E	A	E
HCM2k85thQ:	0	21	21	3	6	0	10	20	12	7	0	7

Note: Queue reported is the number of cars per lane.

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #91 Tustin Ave and Fairhaven Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.685
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	36	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2	1 0	2 0	2	1 0	1 0	1	1 0	1 0	1	0 1
Volume Module:												
Base Vol:	280	1492	132	356	940	108	89	200	163	100	220	208
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	280	1492	132	356	940	108	89	200	163	100	220	208
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	280	1492	132	356	940	108	89	200	163	100	220	208
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	280	1492	132	356	940	108	89	200	163	100	220	208
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	280	1492	132	356	940	108	89	200	163	100	220	208
OvlAdjVol:												30
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.05	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	2.00	2.76	0.24	2.00	2.69	0.31	1.00	1.10	0.90	1.00	1.00	1.00
Final Sat.:	3200	4610	390	3200	4505	495	1600	1863	1437	1600	1700	1600
Capacity Analysis Module:												
Vol/Sat:	0.09	0.32	0.34	0.11	0.21	0.22	0.06	0.11	0.11	0.06	0.13	0.13
OvlAdjV/S:												0.02
Crit Moves:		****	****				****				****	

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #92 Tustin Ave and Santa Clara Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.709
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	38	Level Of Service:	C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Permitted				Permitted			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Y+R:	4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	
Lanes:	1	0 2	1	0	2	0 2	1	0	1	0 1	1	0	1	0 1	1	0
Volume Module:																
Base Vol:	191	923	142		199	1574	109		68	213	125		133	166	157	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	191	923	142		199	1574	109		68	213	125		133	166	157	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	191	923	142		199	1574	109		68	213	125		133	166	157	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	191	923	142		199	1574	109		68	213	125		133	166	157	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	191	923	142		199	1574	109		68	213	125		133	166	157	
Saturation Flow Module:																
Sat/Lane:	1600	1600	1600		1600	1600	1600		1600	1600	1600		1600	1600	1600	
Adjustment:	1.00	1.05	1.00		1.00	1.04	1.00		1.00	1.05	1.00		1.00	1.06	1.00	
Lanes:	1.00	2.60	0.40		2.00	2.81	0.19		1.00	1.26	0.74		1.00	1.03	0.97	
Final Sat.:	1600	4360	640		3200	4689	311		1600	2117	1183		1600	1745	1555	
Capacity Analysis Module:																
Vol/Sat:	0.12	0.21	0.22		0.06	0.34	0.35		0.04	0.10	0.11		0.08	0.10	0.10	
Crit Moves:	****						****				****	****				

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #93 Tustin Ave and 17th St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.797
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	51	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ovl			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 0	1	2 0	2 1	0	2 0	3 0	1	2 0	3 0	1
Volume Module:												
Base Vol:	253	1083	557	377	404	40	493	968	131	243	798	444
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	253	1083	557	377	404	40	493	968	131	243	798	444
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	253	1083	557	377	404	40	493	968	131	243	798	444
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	253	1083	557	377	404	40	493	968	131	243	798	444
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	253	1083	557	377	404	40	493	968	131	243	798	444
OvlAdjVol:			436									256
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.05	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	2.00	2.00	1.00	2.00	2.73	0.27	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3200	3400	1600	3200	4568	432	3200	5100	1600	3200	5100	1600
Capacity Analysis Module:												
Vol/Sat:	0.08	0.32	0.35	0.12	0.09	0.09	0.15	0.19	0.08	0.08	0.16	0.28
OvlAdjV/S:			0.27									0.16
Crit Moves:	****			****			****				****	

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #94 Tustin Ave and 4th St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.708
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	38	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2	1 0	2 0	2	0 1	1 0	2	1 1	1 0	2	1 0
Volume Module:												
Base Vol:	28	299	97	459	339	124	208	743	38	118	798	491
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	28	299	97	459	339	124	208	743	38	118	798	491
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	28	299	97	459	339	124	208	743	38	118	798	491
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	28	299	97	459	339	124	208	743	38	118	798	491
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	28	299	97	459	339	124	208	743	38	118	798	491
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	1.00	2.27	0.73	2.00	2.00	1.00	1.00	3.00	1.00	1.00	2.00	1.00
Final Sat.:	1600	3824	1176	3200	3400	1600	1600	5100	1600	1600	3400	1600
Capacity Analysis Module:												
Vol/Sat:	0.02	0.08	0.08	0.14	0.10	0.08	0.13	0.15	0.02	0.07	0.23	0.31
Crit Moves:		****			****			****				****

Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #95 SR-55 SB Ramps / Auto Mall Dr and Edinger Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.702
Loss Time (sec):	5	Average Delay (sec/veh):	25.5
Optimal Cycle:	39	Level Of Service:	C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Split Phase				Split Phase				Protected				Protected			
Rights:	Include				Include				Ignore				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Y+R:	4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	
Lanes:	1	1 0	0	2	1	0 1	0	1	1	0 3	0	1	2	0 2	1	0
Volume Module:																
Base Vol:	401	32	423		110	50	37		47	1677	472		468	1220	146	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	401	32	423		110	50	37		47	1677	472		468	1220	146	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	0.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	0.00		1.00	1.00	1.00	
PHF Volume:	401	32	423		110	50	37		47	1677	0		468	1220	146	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	401	32	423		110	50	37		47	1677	0		468	1220	146	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	0.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	0.00		1.00	1.00	1.00	
FinalVolume:	401	32	423		110	50	37		47	1677	0		468	1220	146	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.96	0.96	0.75		0.95	1.00	0.85		0.95	0.91	1.00		0.92	0.90	0.90	
Lanes:	1.85	0.15	2.00		1.00	1.00	1.00		1.00	3.00	1.00		2.00	2.68	0.32	
Final Sat.:	3364	268	2842		1805	1900	1615		1805	5187	1900		3502	4558	546	
Capacity Analysis Module:																
Vol/Sat:	0.12	0.12	0.15		0.06	0.03	0.02		0.03	0.32	0.00		0.13	0.27	0.27	
Crit Moves:			****		****					****			****			
Green/Cycle:	0.21	0.21	0.21		0.09	0.09	0.09		0.06	0.46	0.00		0.19	0.59	0.59	
Volume/Cap:	0.56	0.56	0.70		0.70	0.30	0.26		0.45	0.70	0.00		0.70	0.45	0.45	
Delay/Veh:	36.2	36.2	40.2		57.7	43.9	43.7		48.7	22.4	0.0		41.2	11.4	11.4	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	36.2	36.2	40.2		57.7	43.9	43.7		48.7	22.4	0.0		41.2	11.4	11.4	
LOS by Move:	D	D	D		E	D	D		D	C	A		D	B	B	
HCM2k85thQ:	10	10	13		7	3	2		3	23	0		13	13	13	

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Note: Queue reported is the number of cars per lane.
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Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #96 SR-55 NB Ramps / Del Amo Ave and Newport Avenue

Cycle (sec):	100	Critical Vol./Cap.(X):	0.895
Loss Time (sec):	5	Average Delay (sec/veh):	39.1
Optimal Cycle:	87	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Ovl			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0 2	1 0		1 0 3	0 1		2 0 1	1 0		1 0 1	1 0	
Volume Module:												
Base Vol:	879	262	51	17	209	803	156	54	32	23	348	16
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	879	262	51	17	209	803	156	54	32	23	348	16
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	879	262	51	17	209	803	156	54	32	23	348	16
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	879	262	51	17	209	803	156	54	32	23	348	16
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	879	262	51	17	209	803	156	54	32	23	348	16
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.89	0.89	0.95	0.91	0.85	0.92	0.90	0.90	0.95	0.94	0.94
Lanes:	2.00	2.51	0.49	1.00	3.00	1.00	2.00	1.26	0.74	1.00	1.91	0.09
Final Sat.:	3502	4238	825	1805	5187	1615	3502	2140	1268	1805	3427	158
Capacity Analysis Module:												
Vol/Sat:	0.25	0.06	0.06	0.01	0.04	0.50	0.04	0.03	0.03	0.01	0.10	0.10
Crit Moves:	****					****	****				****	
Green/Cycle:	0.28	0.68	0.68	0.10	0.51	0.56	0.05	0.11	0.11	0.05	0.11	0.11
Volume/Cap:	0.89	0.09	0.09	0.09	0.08	0.89	0.89	0.23	0.23	0.23	0.89	0.89
Delay/Veh:	45.1	5.4	5.4	40.7	12.7	31.0	86.9	41.1	41.1	46.5	65.2	65.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	45.1	5.4	5.4	40.7	12.7	31.0	86.9	41.1	41.1	46.5	65.2	65.2
LOS by Move:	D	A	A	D	B	C	F	D	D	D	E	E
HCM2k85thQ:	25	2	2	1	2	36	8	2	2	1	14	14

Note: Queue reported is the number of cars per lane.

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #97 Red Hill Ave and Edinger Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.853
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	66	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Ovl			Ovl			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0 3	0 1	2	0 3	0 1	2	0 3	0 1	2	0 3	0 1
Volume Module:												
Base Vol:	204	1469	233	105	209	169	410	1051	128	90	1161	567
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	204	1469	233	105	209	169	410	1051	128	90	1161	567
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	204	1469	233	105	209	169	410	1051	128	90	1161	567
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	204	1469	233	105	209	169	410	1051	128	90	1161	567
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	204	1469	233	105	209	169	410	1051	128	90	1161	567
OvlAdjVol:						0			26			
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3200	5100	1600	3200	5100	1600	3200	5100	1600	3200	5100	1600
Capacity Analysis Module:												
Vol/Sat:	0.06	0.29	0.15	0.03	0.04	0.11	0.13	0.21	0.08	0.03	0.23	0.35
OvlAdjV/S:						0.00			0.02			
Crit Moves:	****			****			****					****

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #98 Red Hill Ave and Warner Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.875
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	74	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0 3	1 0	2	0 2	1 0	1	0 2	1 0	2	0 3	0 1
Volume Module:												
Base Vol:	374	1281	147	79	304	385	246	668	104	76	1598	210
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	374	1281	147	79	304	385	246	668	104	76	1598	210
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	374	1281	147	79	304	385	246	668	104	76	1598	210
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	374	1281	147	79	304	385	246	668	104	76	1598	210
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	374	1281	147	79	304	385	246	668	104	76	1598	210
OvlAdjVol:												171
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.06	1.00	1.00	1.05	1.00	1.00	1.06	1.00
Lanes:	2.00	3.59	0.41	2.00	2.00	1.00	1.00	2.60	0.40	2.00	3.00	1.00
Final Sat.:	3200	6041	659	3200	3400	1600	1600	4353	647	3200	5100	1600
Capacity Analysis Module:												
Vol/Sat:	0.12	0.21	0.22	0.02	0.09	0.24	0.15	0.15	0.16	0.02	0.31	0.13
OvlAdjV/S:												0.11
Crit Moves:	****					****	****				****	

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #99 Red Hill Ave and Dyer Rd / barranca Pkwy

Cycle (sec):	100	Critical Vol./Cap.(X):	0.537
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	25	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	4 0	1	2 0	4 0	1	2 0	3 1	0	2 0	4 0	1
Volume Module:												
Base Vol:	338	1270	327	241	408	192	172	637	84	110	839	245
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	338	1270	327	241	408	192	172	637	84	110	839	245
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	338	1270	327	241	408	192	172	637	84	110	839	245
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	338	1270	327	241	408	192	172	637	84	110	839	245
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	338	1270	327	241	408	192	172	637	84	110	839	245
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.05	1.00	1.00	1.06	1.00
Lanes:	2.00	4.00	1.00	2.00	4.00	1.00	2.00	3.53	0.47	2.00	4.00	1.00
Final Sat.:	3200	6800	1600	3200	6800	1600	3200	5954	746	3200	6800	1600
Capacity Analysis Module:												
Vol/Sat:	0.11	0.19	0.20	0.08	0.06	0.12	0.05	0.11	0.11	0.03	0.12	0.15
Crit Moves:			****	****			****					****

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #100 Red Hill Ave and Alton Pkwy

Cycle (sec):	100	Critical Vol./Cap.(X):	1.184
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	180	Level Of Service:	F

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 0	1	1 0	3 0	1	1 0	2 0	1	2 0	1 0	1
Volume Module:												
Base Vol:	26	1458	211	122	519	4	434	1065	545	1299	222	801
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	26	1458	211	122	519	4	434	1065	545	1299	222	801
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	26	1458	211	122	519	4	434	1065	545	1299	222	801
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	26	1458	211	122	519	4	434	1065	545	1299	222	801
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	26	1458	211	122	519	4	434	1065	545	1299	222	801
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	1.00	2.00	1.00	2.00	1.00	1.00
Final Sat.:	1600	5100	1600	1600	5100	1600	1600	3400	1600	3200	1700	1600
Capacity Analysis Module:												
Vol/Sat:	0.02	0.29	0.13	0.08	0.10	0.00	0.27	0.31	0.34	0.41	0.13	0.50
Crit Moves:		****			****			****				****

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #101 Red Hill Ave and MacArthur Blvd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.702	
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx	
Optimal Cycle:	37	Level Of Service:	C	

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Ignore			Include			Ignore		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0 2	1 0		2 0 3	0 1		2 0 3	0 1		1 0 3	0 1	
Volume Module:												
Base Vol:	175	1133	14	315	654	1148	499	230	35	39	810	568
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	175	1133	14	315	654	1148	499	230	35	39	810	568
User Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Volume:	175	1133	14	315	654	0	499	230	35	39	810	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	175	1133	14	315	654	0	499	230	35	39	810	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
FinalVolume:	175	1133	14	315	654	0	499	230	35	39	810	0
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.04	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	2.00	2.96	0.04	2.00	3.00	1.00	2.00	3.00	1.00	1.00	3.00	1.00
Final Sat.:	3200	4941	59	3200	5100	1600	3200	5100	1600	1600	5100	1600
Capacity Analysis Module:												
Vol/Sat:	0.05	0.23	0.24	0.10	0.13	0.00	0.16	0.05	0.02	0.02	0.16	0.00
Crit Moves:			****	****			****				****	

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #102 Red Hill Ave and Main St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.813
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	55	Level Of Service:	D

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Y+R:	4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	
Lanes:	2	0 2	0	1	2	0 2	0	1	2	0 2	1	0	2	0 2	1	0
Volume Module:																
Base Vol:	436	941	254		88	640	348		200	714	193		277	1575	88	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	436	941	254		88	640	348		200	714	193		277	1575	88	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	436	941	254		88	640	348		200	714	193		277	1575	88	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	436	941	254		88	640	348		200	714	193		277	1575	88	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	436	941	254		88	640	348		200	714	193		277	1575	88	
Saturation Flow Module:																
Sat/Lane:	1600	1600	1600		1600	1600	1600		1600	1600	1600		1600	1600	1600	
Adjustment:	1.00	1.06	1.00		1.00	1.06	1.00		1.00	1.05	1.00		1.00	1.04	1.00	
Lanes:	2.00	2.00	1.00		2.00	2.00	1.00		2.00	2.36	0.64		2.00	2.84	0.16	
Final Sat.:	3200	3400	1600		3200	3400	1600		3200	3979	1021		3200	4746	254	
Capacity Analysis Module:																
Vol/Sat:	0.14	0.28	0.16		0.03	0.19	0.22		0.06	0.18	0.19		0.09	0.33	0.35	
Crit Moves:	****						****		****						****	

Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #103 I-5 SB Ramps and Santa Ana Blvd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.487
Loss Time (sec):	5	Average Delay (sec/veh):	18.4
Optimal Cycle:	24	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Ovl			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0	0	2	0	0	2	0	3	0	2	1
Volume Module:												
Base Vol:	0	0	0	304	0	67	765	865	0	621		170
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	304	0	67	765	865	0	621		170
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	304	0	67	765	865	0	621		170
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	304	0	67	765	865	0	621		170
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	304	0	67	765	865	0	621		170
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	0.92	1.00	0.85	0.92	0.91	1.00	1.00	0.88	0.88
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	2.00	3.00	0.00	0.00	2.36	0.64
Final Sat.:	0	0	0	3502	0	1615	3502	5187	0	0	3942	1079
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.09	0.00	0.04	0.22	0.17	0.00	0.00	0.16	0.16
Crit Moves:				****			****				****	
Green/Cycle:	0.00	0.00	0.00	0.18	0.00	0.63	0.45	0.77	0.00	0.00	0.32	0.32
Volume/Cap:	0.00	0.00	0.00	0.49	0.00	0.07	0.49	0.22	0.00	0.00	0.49	0.49
Delay/Veh:	0.0	0.0	0.0	37.6	0.0	7.3	19.7	3.2	0.0	0.0	27.4	27.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

AdjDel/Veh:	0.0	0.0	0.0	37.6	0.0	7.3	19.7	3.2	0.0	0.0	27.4	27.4
LOS by Move:	A	A	A	D	A	A	B	A	A	A	C	C
HCM2k85thQ:	0	0	0	8	0	1	13	4	0	0	11	11

****

Note: Queue reported is the number of cars per lane.

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #104 Tustin Ranch Rd and Warner Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.645
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	32	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	0 0	0	2 0	0 0	1	2 0	3 0	0	0 0	3 0	1
Volume Module:												
Base Vol:	0	0	0	553	0	38	65	2154	0	0	856	369
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	553	0	38	65	2154	0	0	856	369
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	553	0	38	65	2154	0	0	856	369
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	553	0	38	65	2154	0	0	856	369
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	553	0	38	65	2154	0	0	856	369
OvlAdjVol:												92
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	2.00	3.00	0.00	0.00	3.00	1.00
Final Sat.:	0	0	0	3200	0	1600	3200	5100	0	0	5100	1600
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.17	0.00	0.02	0.02	0.42	0.00	0.00	0.17	0.23
OvlAdjV/S:												0.06
Crit Moves:				****				****		****		

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #105 Von Karman Ave and Barranca Pkwy

Cycle (sec):	100	Critical Vol./Cap.(X):	1.228	
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx	
Optimal Cycle:	180	Level Of Service:	F	

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Ovl			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0 1	1 0		2 0 2			2 0 3	0 1		2 0 4	0 1	
Volume Module:												
Base Vol:	346	1992	434	80	407	280	765	1397	195	232	734	250
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	346	1992	434	80	407	280	765	1397	195	232	734	250
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	346	1992	434	80	407	280	765	1397	195	232	734	250
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	346	1992	434	80	407	280	765	1397	195	232	734	250
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	346	1992	434	80	407	280	765	1397	195	232	734	250
OvlAdjVol:						0						
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.04	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	2.00	1.64	0.36	2.00	2.00	2.00	2.00	3.00	1.00	2.00	4.00	1.00
Final Sat.:	3200	2728	572	3200	3400	3200	3200	5100	1600	3200	6800	1600
Capacity Analysis Module:												
Vol/Sat:	0.11	0.73	0.76	0.03	0.12	0.09	0.24	0.27	0.12	0.07	0.11	0.16
OvlAdjV/S:						0.00						
Crit Moves:		****	****				****					****

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #106 Red Hill Avenue and El Camino Real

Cycle (sec):	100	Critical Vol./Cap.(X):	0.779
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	48	Level Of Service:	C

Street Name:	Red Hill Avenue						El Camino Real					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	3 0	1	1 0	2 1	0	1 0	1 0	1	1 0	0 1	0
Volume Module:												
Base Vol:	421	1334	246	20	728	96	70	153	201	332	548	63
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	421	1334	246	20	728	96	70	153	201	332	548	63
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	421	1334	246	20	728	96	70	153	201	332	548	63
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	421	1334	246	20	728	96	70	153	201	332	548	63
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	421	1334	246	20	728	96	70	153	201	332	548	63
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.05	1.00	1.00	1.06	1.00	1.00	1.00	1.00
Lanes:	2.00	3.00	1.00	1.00	2.65	0.35	1.00	1.00	1.00	1.00	0.90	0.10
Final Sat.:	3200	5100	1600	1600	4441	559	1600	1700	1600	1600	1435	165
Capacity Analysis Module:												
Vol/Sat:	0.13	0.26	0.15	0.01	0.16	0.17	0.04	0.09	0.13	0.21	0.38	0.38
Crit Moves:	****					****	****				****	

Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #107 Red Hill Avenue and I-5 NB Ramps

Cycle (sec):	100	Critical Vol./Cap.(X):	0.634
Loss Time (sec):	5	Average Delay (sec/veh):	23.7
Optimal Cycle:	33	Level Of Service:	C

Street Name:	Red Hill Avenue						I-5 NB Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	3	0	0	3	0	1	0	0	0	0	1	1	0	1	0
Volume Module:												
Base Vol:	277	1585	0	0	921	186	0	0	0	264	99	428
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	277	1585	0	0	921	186	0	0	0	264	99	428
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	277	1585	0	0	921	186	0	0	0	264	99	428
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	277	1585	0	0	921	186	0	0	0	264	99	428
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	277	1585	0	0	921	186	0	0	0	264	99	428
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.91	1.00	1.00	0.91	0.85	1.00	1.00	1.00	0.83	0.83	0.83
Lanes:	1.00	3.00	0.00	0.00	3.00	1.00	0.00	0.00	0.00	1.45	0.55	1.00
Final Sat.:	1805	5187	0	0	5187	1615	0	0	0	2292	860	1576
Capacity Analysis Module:												
Vol/Sat:	0.15	0.31	0.00	0.00	0.18	0.12	0.00	0.00	0.00	0.12	0.12	0.27
Crit Moves:	****				****							****
Green/Cycle:	0.24	0.52	0.00	0.00	0.28	0.28	0.00	0.00	0.00	0.43	0.43	0.43
Volume/Cap:	0.63	0.59	0.00	0.00	0.63	0.41	0.00	0.00	0.00	0.27	0.27	0.63
Delay/Veh:	37.0	16.8	0.0	0.0	32.5	29.9	0.0	0.0	0.0	18.5	18.5	23.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

AdjDel/Veh:	37.0	16.8	0.0	0.0	32.5	29.9	0.0	0.0	0.0	18.5	18.5	23.5
LOS by Move:	D	B	A	A	C	C	A	A	A	B	B	C
HCM2k85thQ:	13	19	0	0	15	8	0	0	0	6	6	17

****

Note: Queue reported is the number of cars per lane.

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Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #108 Red Hill Avenue and I-5 SB Ramps

Cycle (sec):	100	Critical Vol./Cap.(X):	0.695
Loss Time (sec):	5	Average Delay (sec/veh):	22.2
Optimal Cycle:	38	Level Of Service:	C

Street Name:	Red Hill Avenue						I-5 SB Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0 4	0 1	1	0 3	0 0	0	1 0	0 1	0	0 0	0 0
Volume Module:												
Base Vol:	0	1551	492	334	802	0	296	3	265	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1551	492	334	802	0	296	3	265	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1551	492	334	802	0	296	3	265	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1551	492	334	802	0	296	3	265	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1551	492	334	802	0	296	3	265	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.91	0.85	0.95	0.91	1.00	0.92	0.92	0.85	1.00	1.00	1.00
Lanes:	0.00	4.00	1.00	1.00	3.00	0.00	0.99	0.01	1.00	0.00	0.00	0.00
Final Sat.:	0	6916	1615	1805	5187	0	1732	18	1615	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.22	0.30	0.19	0.15	0.00	0.17	0.17	0.16	0.00	0.00	0.00
Crit Moves:			****	****				****				
Green/Cycle:	0.00	0.44	0.44	0.27	0.70	0.00	0.25	0.25	0.25	0.00	0.00	0.00
Volume/Cap:	0.00	0.51	0.70	0.70	0.22	0.00	0.70	0.70	0.67	0.00	0.00	0.00
Delay/Veh:	0.0	20.5	25.7	37.5	5.2	0.0	39.2	39.2	38.4	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	20.5	25.7	37.5	5.2	0.0	39.2	39.2	38.4	0.0	0.0	0.0
LOS by Move:	A	C	C	D	A	A	D	D	D	A	A	A
HCM2k85thQ:	0	15	20	16	5	0	15	15	13	0	0	0

Note: Queue reported is the number of cars per lane.

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #109 Red Hill Avenue and Nisson Road

Cycle (sec):	100	Critical Vol./Cap.(X):	0.693
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	36	Level Of Service:	B

Street Name:	Red Hill Avenue						Nisson Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 1	0	1 0	2 1	0	1 0	0 1	0	1 0	0 1	0
Volume Module:												
Base Vol:	31	1614	33	146	750	75	247	90	40	48	83	141
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	31	1614	33	146	750	75	247	90	40	48	83	141
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	31	1614	33	146	750	75	247	90	40	48	83	141
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	31	1614	33	146	750	75	247	90	40	48	83	141
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	31	1614	33	146	750	75	247	90	40	48	83	141
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.05	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	3.92	0.08	1.00	2.73	0.27	1.00	0.69	0.31	1.00	0.37	0.63
Final Sat.:	1600	6572	128	1600	4564	436	1600	1108	492	1600	593	1007
Capacity Analysis Module:												
Vol/Sat:	0.02	0.25	0.26	0.09	0.16	0.17	0.15	0.08	0.08	0.03	0.14	0.14
Crit Moves:			****	****			****				****	

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #110 Red Hill Avenue and Walnut Avenue

Cycle (sec):	100	Critical Vol./Cap.(X):	0.739
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	42	Level Of Service:	C

Street Name:	Red Hill Avenue						Walnut Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	2	1	0	1	0	2	1	0	1	0	1	0	2	0	1	1	0
Volume Module:												
Base Vol:	273	1325	95	128	396	165	88	211	87	196	654	171
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	273	1325	95	128	396	165	88	211	87	196	654	171
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	273	1325	95	128	396	165	88	211	87	196	654	171
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	273	1325	95	128	396	165	88	211	87	196	654	171
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	273	1325	95	128	396	165	88	211	87	196	654	171
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.04	1.00	1.00	1.06	1.00	1.00	1.04	1.00	1.00	1.04	1.00
Lanes:	1.00	2.80	0.20	1.00	2.12	0.88	1.00	1.42	0.58	2.00	1.59	0.41
Final Sat.:	1600	4679	321	1600	3588	1412	1600	2366	934	3200	2637	663
Capacity Analysis Module:												
Vol/Sat:	0.17	0.28	0.30	0.08	0.11	0.12	0.06	0.09	0.09	0.06	0.25	0.26
Crit Moves:			****	****			****					****

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #111 Red Hill Avenue and Valencia Avenue

Cycle (sec):	100	Critical Vol./Cap.(X):	0.738
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	42	Level Of Service:	C

Street Name:	Red Hill Avenue						Valencia Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ovl			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0 3	1 0	1	0 2	1 0	1	0 1	0 1	2	0 1	0 1
Volume Module:												
Base Vol:	241	1791	295	109	438	49	100	270	119	291	422	279
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	241	1791	295	109	438	49	100	270	119	291	422	279
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	241	1791	295	109	438	49	100	270	119	291	422	279
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	241	1791	295	109	438	49	100	270	119	291	422	279
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	241	1791	295	109	438	49	100	270	119	291	422	279
OvlAdjVol:			213									170
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.05	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	1.00	3.43	0.57	1.00	2.70	0.30	1.00	1.00	1.00	2.00	1.00	1.00
Final Sat.:	1600	5795	905	1600	4517	483	1600	1700	1600	3200	1700	1600
Capacity Analysis Module:												
Vol/Sat:	0.15	0.31	0.33	0.07	0.10	0.10	0.06	0.16	0.07	0.09	0.25	0.17
OvlAdjV/S:			0.23									0.11
Crit Moves:	****			****			****				****	

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #112 Tustin Ranch Road and Warner Avenue North

Cycle (sec):	100	Critical Vol./Cap.(X):	0.885
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	79	Level Of Service:	D

Street Name:	Tustin Ranch Road						Warner Avenue North					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Ovl			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0	3 0 1	2	0	3 0 0	0	0	0 0 0	3	0	0 0 2
Volume Module:												
Base Vol:	0	1916	1128	415	610	0	0	0	0	682	0	616
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1916	1128	415	610	0	0	0	0	682	0	616
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1916	1128	415	610	0	0	0	0	682	0	616
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1916	1128	415	610	0	0	0	0	682	0	616
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1916	1128	415	610	0	0	0	0	682	0	616
OvlAdjVol:			901									201
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	0.00	3.00	1.00	2.00	3.00	0.00	0.00	0.00	0.00	3.00	0.00	2.00
Final Sat.:	0	5100	1600	3200	5100	0	0	0	0	4800	0	3200
Capacity Analysis Module:												
Vol/Sat:	0.00	0.38	0.71	0.13	0.12	0.00	0.00	0.00	0.00	0.14	0.00	0.19
OvlAdjV/S:			0.56									0.06
Crit Moves:			****	****						****		

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #113 Tustin Ranch Road and Walnut Avenue

Cycle (sec):	100	Critical Vol./Cap.(X):	1.715
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	180	Level Of Service:	F

Street Name:	Tustin Ranch Road						Walnut Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ovl			Ovl			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	3	0	1	2	0	3	0	1	2	0	1	1	0	2	0	2	0	1
Volume Module:																				
Base Vol:	842	3666	385	550	1460	947	329	402	230	297	1703	1349
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	842	3666	385	550	1460	947	329	402	230	297	1703	1349
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	842	3666	385	550	1460	947	329	402	230	297	1703	1349
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	842	3666	385	550	1460	947	329	402	230	297	1703	1349
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	842	3666	385	550	1460	947	329	402	230	297	1703	1349
OvlAdjVol:			237			783						1074
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.05	1.00	1.00	1.06	1.00
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	1.27	0.73	2.00	2.00	1.00
Final Sat.:	3200	5100	1600	3200	5100	1600	3200	2135	1165	3200	3400	1600
Capacity Analysis Module:												
Vol/Sat:	0.26	0.72	0.24	0.17	0.29	0.59	0.10	0.19	0.20	0.09	0.50	0.84
OvlAdjV/S:			0.15			0.49						0.67
Crit Moves:	****			****			****					****

Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #114 SR-55 SB Ramps and Irvine Boulevard

Cycle (sec):	100	Critical Vol./Cap.(X):	0.915
Loss Time (sec):	5	Average Delay (sec/veh):	25.6
Optimal Cycle:	100	Level Of Service:	C

Street Name:	SR-55 SB Ramps						Irvine Boulevard					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0	0	1	0	1! 0	1	0	0	2	1	0
Volume Module:												
Base Vol:	0	0	0	467	0	279	0	987	665	461	1324	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	467	0	279	0	987	665	461	1324	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	467	0	279	0	987	665	461	1324	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	467	0	279	0	987	665	461	1324	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	467	0	279	0	987	665	461	1324	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	0.74	1.00	0.73	1.00	0.86	0.86	0.95	0.91	1.00
Lanes:	0.00	0.00	0.00	1.62	0.00	1.38	0.00	2.00	1.00	1.00	3.00	0.00
Final Sat.:	0	0	0	2278	0	1915	0	3251	1625	1805	5187	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.20	0.00	0.15	0.00	0.30	0.41	0.26	0.26	0.00
Crit Moves:				****					****	****		
Green/Cycle:	0.00	0.00	0.00	0.22	0.00	0.45	0.00	0.45	0.45	0.28	0.73	0.00
Volume/Cap:	0.00	0.00	0.00	0.92	0.00	0.33	0.00	0.68	0.92	0.92	0.35	0.00
Delay/Veh:	0.0	0.0	0.0	52.8	0.0	17.9	0.0	22.7	33.6	56.2	5.1	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	52.8	0.0	17.9	0.0	22.7	33.6	56.2	5.1	0.0
LOS by Move:	A	A	A	D	A	B	A	C	C	E	A	A

```
HCM2k85thQ:     0    0     0    19    0     6     0   21    36    26    9     0
********************************************************************************
Note: Queue reported is the number of cars per lane.
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Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #115 SR-55 NB Ramps and Irvine Boulevard

Cycle (sec):	100	Critical Vol./Cap.(X):	0.932
Loss Time (sec):	5	Average Delay (sec/veh):	22.9
Optimal Cycle:	113	Level Of Service:	C

Street Name:	SR-55 NB Ramps						Irvine Boulevard					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1! 0	1	0	0	0	0	1	0	3	0
Volume Module:												
Base Vol:	367	18	333	0	0	0	254	1163	0	0	1336	845
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	367	18	333	0	0	0	254	1163	0	0	1336	845
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	367	18	333	0	0	0	254	1163	0	0	1336	845
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	367	18	333	0	0	0	254	1163	0	0	1336	845
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	367	18	333	0	0	0	254	1163	0	0	1336	845
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.86	0.86	0.86	1.00	1.00	1.00	0.95	0.91	1.00	1.00	0.86	0.86
Lanes:	1.50	0.05	1.45	0.00	0.00	0.00	1.00	3.00	0.00	0.00	2.00	1.00
Final Sat.:	2444	80	2369	0	0	0	1805	5187	0	0	3257	1629
Capacity Analysis Module:												
Vol/Sat:	0.15	0.23	0.14	0.00	0.00	0.00	0.14	0.22	0.00	0.00	0.41	0.52
Crit Moves:	****						****					****
Green/Cycle:	0.24	0.24	0.24	0.00	0.00	0.00	0.15	0.71	0.00	0.00	0.56	0.56
Volume/Cap:	0.62	0.93	0.58	0.00	0.00	0.00	0.93	0.32	0.00	0.00	0.74	0.93
Delay/Veh:	34.8	55.0	34.1	0.0	0.0	0.0	78.6	5.6	0.0	0.0	17.6	27.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	34.8	55.0	34.1	0.0	0.0	0.0	78.6	5.6	0.0	0.0	17.6	27.9
LOS by Move:	C	D	C	A	A	A	E	A	A	A	B	C
HCM2k85thQ:	12	23	11	0	0	0	17	8	0	0	26	44

Note: Queue reported is the number of cars per lane.

APPENDIX D.5

ANALYSIS WORKSHEETS –
2045 WP (AM Peak Hour)

Santa Ana Circulation Element

Scenario Report

Scenario:	2045 WP AM Peak Hour
Command:	Default Command
Volume:	2045 AM
Geometry:	SACE
Impact Fee:	Default Impact Fee
Trip Generation:	Default Trip Generation
Trip Distribution:	Default Trip Distribution
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

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Santa Ana Circulation Element

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in V/C
# 1 Euclid St and 1st St	C	xxxxx	0.789	C	xxxxx	0.789	+ 0.000 V/C
# 2 Euclid St and McFadden Ave	E	xxxxx	0.906	E	xxxxx	0.906	+ 0.000 V/C
# 3 Euclid St and Edinger Ave	F	xxxxx	1.008	F	xxxxx	1.008	+ 0.000 V/C
# 4 Newhope St and Hazard Ave	A	xxxxx	0.600	A	xxxxx	0.600	+ 0.000 V/C
# 5 Newhope St and McFadden Ave	C	xxxxx	0.728	C	xxxxx	0.728	+ 0.000 V/C
# 6 Harbor Blvd and SR-22 WB Off-R	C	28.5	0.715	C	28.5	0.715	+ 0.000 D/V
# 7 Trask Avenue and SR-22 EB On-R	B	11.0	0.389	B	11.0	0.389	+ 0.000 D/V
# 8 Harbor Blvd and Westminster Av	E	xxxxx	0.936	E	xxxxx	0.936	+ 0.000 V/C
# 9 Harbor Blvd and 1st St	C	xxxxx	0.749	C	xxxxx	0.749	+ 0.000 V/C
# 10 Harbor Blvd and McFadden Ave	C	xxxxx	0.729	C	xxxxx	0.729	+ 0.000 V/C
# 11 Harbor Blvd and Edinger Ave	D	xxxxx	0.857	D	xxxxx	0.857	+ 0.000 V/C
# 12 Harbor Blvd and Warner Ave	C	xxxxx	0.800	C	xxxxx	0.800	+ 0.000 V/C
# 13 Harbor Blvd and Segerstrom Ave	F	xxxxx	1.007	F	xxxxx	1.007	+ 0.000 V/C
# 14 MacArthur Blvd and Hyland Ave	B	xxxxx	0.615	B	xxxxx	0.615	+ 0.000 V/C
# 15 MacArthur Blvd and Harbor Blvd	C	xxxxx	0.747	C	xxxxx	0.747	+ 0.000 V/C
# 16 Harbor Blvd and Sunflower Ave	C	xxxxx	0.705	C	xxxxx	0.705	+ 0.000 V/C
# 17 Harbor Blvd and I-405 NB Off-R	B	17.9	0.573	B	17.9	0.573	+ 0.000 D/V
# 18 Harbor Blvd and I-405 SB Off-R	B	15.0	0.618	B	15.0	0.618	+ 0.000 D/V
# 19 Fairview St and Civic Center D	B	xxxxx	0.676	B	xxxxx	0.676	+ 0.000 V/C
# 20 Fairview St and 1st St	D	xxxxx	0.887	D	xxxxx	0.887	+ 0.000 V/C
# 21 Fairview St and McFadden Ave	D	xxxxx	0.800	D	xxxxx	0.800	+ 0.000 V/C
# 22 Fairview St and Edinger Ave	D	xxxxx	0.882	D	xxxxx	0.882	+ 0.000 V/C
# 23 Fairview St and Warner Ave	D	xxxxx	0.847	D	xxxxx	0.847	+ 0.000 V/C
# 24 Fairview St and MacArthur Blvd	B	xxxxx	0.690	B	xxxxx	0.690	+ 0.000 V/C

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Santa Ana Circulation Element

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 25 Fairview Rd and Sunflower Ave	B	xxxxx	0.687	B	xxxxx	0.687	+ 0.000 V/C
# 26 Greenville St and Edinger Ave	C	xxxxx	0.742	C	xxxxx	0.742	+ 0.000 V/C
# 27 Greenville St and Segerstrom A	D	xxxxx	0.878	D	xxxxx	0.878	+ 0.000 V/C
# 28 Raitt St and McFadden Ave	C	xxxxx	0.704	C	xxxxx	0.704	+ 0.000 V/C
# 29 Raitt St and Edinger Ave	E	xxxxx	0.926	E	xxxxx	0.926	+ 0.000 V/C
# 30 Bear St and MacArthur Blvd	C	xxxxx	0.756	C	xxxxx	0.756	+ 0.000 V/C
# 31 Bristol St and 17th St	D	xxxxx	0.853	D	xxxxx	0.853	+ 0.000 V/C
# 32 Bristol St and Civic Center Dr	E	xxxxx	0.931	E	xxxxx	0.931	+ 0.000 V/C
# 33 Bristol St and Santa Ana Blvd	C	xxxxx	0.721	C	xxxxx	0.721	+ 0.000 V/C
# 34 Bristol St and 1st St	E	xxxxx	0.902	E	xxxxx	0.902	+ 0.000 V/C
# 35 Bristol St and McFadden Ave	E	xxxxx	0.947	E	xxxxx	0.947	+ 0.000 V/C
# 36 Bristol St and Warner Ave	E	xxxxx	0.956	E	xxxxx	0.956	+ 0.000 V/C
# 37 Bristol St and Segerstrom Ave	D	xxxxx	0.854	D	xxxxx	0.854	+ 0.000 V/C
# 38 Bristol St and Alton Ave	A	xxxxx	0.553	A	xxxxx	0.553	+ 0.000 V/C
# 39 Bristol St and MacArthur Blvd	C	xxxxx	0.759	C	xxxxx	0.759	+ 0.000 V/C
# 40 Bristol St and Sunflower Ave	B	xxxxx	0.682	B	xxxxx	0.682	+ 0.000 V/C
# 41 Bristol St and I-405 NB Ramps	C	20.9	0.568	C	20.9	0.568	+ 0.000 D/V
# 42 Bristol St and I-405 SB Ramps	C	23.6	0.697	C	23.6	0.697	+ 0.000 D/V
# 43 Flower St and Santa Ana Blvd	A	xxxxx	0.586	A	xxxxx	0.586	+ 0.000 V/C
# 44 Flower St and 1st St	E	xxxxx	0.926	E	xxxxx	0.926	+ 0.000 V/C
# 45 Flower St and McFadden Ave	D	xxxxx	0.807	D	xxxxx	0.807	+ 0.000 V/C
# 46 Flower St and Segerstrom Ave	D	xxxxx	0.818	D	xxxxx	0.818	+ 0.000 V/C
# 47 Flower St and MacArthur Blvd	C	xxxxx	0.710	C	xxxxx	0.710	+ 0.000 V/C
# 48 Main St and La Veta Ave	A	xxxxx	0.536	A	xxxxx	0.536	+ 0.000 V/C
# 49 Main St and Mainplace Dr / Mem	A	xxxxx	0.456	A	xxxxx	0.456	+ 0.000 V/C
# 50 Main St and 17th St	D	xxxxx	0.845	D	xxxxx	0.845	+ 0.000 V/C

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Santa Ana Circulation Element

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 51 Main St and Civic Center Dr	D	xxxxx	0.848	D	xxxxx	0.848	+ 0.000 V/C
# 52 Main St and Santa Ana Blvd	C	xxxxx	0.791	C	xxxxx	0.791	+ 0.000 V/C
# 53 Main St and 4th St	A	xxxxx	0.441	A	xxxxx	0.441	+ 0.000 V/C
# 54 Main St and 1st St	C	xxxxx	0.754	C	xxxxx	0.754	+ 0.000 V/C
# 55 Main St and McFadden Ave	E	xxxxx	0.916	E	xxxxx	0.916	+ 0.000 V/C
# 56 Main St and Edinger Ave	D	xxxxx	0.876	D	xxxxx	0.876	+ 0.000 V/C
# 57 Main St and MacArthur Blvd	C	xxxxx	0.721	C	xxxxx	0.721	+ 0.000 V/C
# 58 Penn Wy and 17th St	B	12.1	0.648	B	12.1	0.648	+ 0.000 D/V
# 59 I-5 NB Off Ramps/17th Street	C	31.4	0.792	C	31.4	0.792	+ 0.000 D/V
# 60 Penn Wy and I-5 SB Ramps	B	19.5	0.462	B	19.5	0.462	+ 0.000 D/V
# 61 Santiago St and Civic Center D	F	62.6	1.147	F	62.6	1.147	+ 0.000 V/C
# 62 Santiago St and Santa Ana Blvd	F	xxxxx	1.444	F	xxxxx	1.444	+ 0.000 V/C
# 63 Standard Ave and 4th St	F	xxxxx	1.340	F	xxxxx	1.340	+ 0.000 V/C
# 64 Standard Ave and 1st St	F	xxxxx	1.515	F	xxxxx	1.515	+ 0.000 V/C
# 65 Standard Ave and Mcfadden Ave	D	xxxxx	0.843	D	xxxxx	0.843	+ 0.000 V/C
# 66 Halladay St and Warner Ave	B	xxxxx	0.692	B	xxxxx	0.692	+ 0.000 V/C
# 67 Halladay St and Dyer Rd	B	xxxxx	0.668	B	xxxxx	0.668	+ 0.000 V/C
# 68 SR-55 SB Ramps and MacArthur B	C	20.2	0.623	C	20.2	0.623	+ 0.000 D/V
# 69 SR-55 NB Ramps and MacArthur B	B	19.5	0.728	B	19.5	0.728	+ 0.000 D/V
# 70 SR-55 SB Ramps and Dyer Rd	C	25.9	0.610	C	25.9	0.610	+ 0.000 D/V
# 71 Glassell St and La Veta Ave	D	xxxxx	0.826	D	xxxxx	0.826	+ 0.000 V/C
# 72 Glassell St and SR-22 WB Ramps	C	30.1	0.841	C	30.1	0.841	+ 0.000 D/V
# 73 Grand Ave / Glassell St and SR	C	29.6	0.842	C	29.6	0.842	+ 0.000 D/V
# 74 Grand Ave and Fairhaven Ave	A	xxxxx	0.569	A	xxxxx	0.569	+ 0.000 V/C
# 75 Grand Ave and Santa Clara Ave	C	xxxxx	0.798	C	xxxxx	0.798	+ 0.000 V/C

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Santa Ana Circulation Element

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 76 Grand Ave and 17th St	D	xxxxx	0.856	D	xxxxx	0.856	+ 0.000 V/C
# 77 Grand Ave and I-5 NB Ramps	B	15.3	0.845	B	15.3	0.845	+ 0.000 D/V
# 78 Grand Ave and Santa Ana Blvd	C	26.3	0.881	C	26.3	0.881	+ 0.000 D/V
# 79 Grand Ave and 1st St	D	xxxxx	0.827	D	xxxxx	0.827	+ 0.000 V/C
# 80 Grand Ave and Chestnut Ave	E	xxxxx	0.935	E	xxxxx	0.935	+ 0.000 V/C
# 81 Grand Ave and McFadden Ave	F	xxxxx	1.011	F	xxxxx	1.011	+ 0.000 V/C
# 82 Grand Ave and Edinger Ave	D	xxxxx	0.897	D	xxxxx	0.897	+ 0.000 V/C
# 83 Grand Ave and Warner Ave	B	xxxxx	0.664	B	xxxxx	0.664	+ 0.000 V/C
# 84 SR-55 NB Ramps and Dyer Rd	B	17.3	0.565	B	17.3	0.565	+ 0.000 D/V
# 85 Cambridge St and La Veta Ave	C	23.4	0.900	C	23.4	0.900	+ 0.000 V/C
# 86 Cambridge St and Fairhaven Ave	B	xxxxx	0.624	B	xxxxx	0.624	+ 0.000 V/C
# 87 Mabury St and 1st Street	C	27.4	0.755	C	27.4	0.755	+ 0.000 D/V
# 88 Tustin St and La Veta Ave	A	xxxxx	0.362	A	xxxxx	0.362	+ 0.000 V/C
# 89 Tustin St and SR-22 WB On-Ramp	B	13.2	0.575	B	13.2	0.575	+ 0.000 D/V
# 90 Tustin St and SR-22 EB Off-Ram	C	23.8	0.718	C	23.8	0.718	+ 0.000 D/V
# 91 Tustin Ave and Fairhaven Ave	F	xxxxx	1.242	F	xxxxx	1.242	+ 0.000 V/C
# 92 Tustin Ave and Santa Clara Ave	F	xxxxx	1.097	F	xxxxx	1.097	+ 0.000 V/C
# 93 Tustin Ave and 17th St	D	xxxxx	0.805	D	xxxxx	0.805	+ 0.000 V/C
# 94 Tustin Ave and 4th St	C	xxxxx	0.791	C	xxxxx	0.791	+ 0.000 V/C
# 95 SR-55 SB Ramps / Auto Mall Dr	C	25.1	0.653	C	25.1	0.653	+ 0.000 D/V
# 96 SR-55 NB Ramps / Del Amo Ave a	C	25.6	0.665	C	25.6	0.665	+ 0.000 D/V
# 97 Red Hill Ave and Edinger Ave	B	xxxxx	0.619	B	xxxxx	0.619	+ 0.000 V/C
# 98 Red Hill Ave and Warner Ave	A	xxxxx	0.580	A	xxxxx	0.580	+ 0.000 V/C
# 99 Red Hill Ave and Dyer Rd / bar	A	xxxxx	0.577	A	xxxxx	0.577	+ 0.000 V/C
#100 Red Hill Ave and Alton Pkwy	E	xxxxx	0.930	E	xxxxx	0.930	+ 0.000 V/C
#101 Red Hill Ave and MacArthur Blv	C	xxxxx	0.709	C	xxxxx	0.709	+ 0.000 V/C

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Santa Ana Circulation Element

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
#102 Red Hill Ave and Main St	C	xxxxx	0.733	C	xxxxx	0.733	+ 0.000 V/C
#103 I-5 SB Ramps and Santa Ana Blv	B	17.8	0.480	B	17.8	0.480	+ 0.000 D/V
#104 Tustin Ranch Rd and Warner Ave	A	xxxxx	0.530	A	xxxxx	0.530	+ 0.000 V/C
#105 Von Karman Ave and Barranca Pk	E	xxxxx	0.930	E	xxxxx	0.930	+ 0.000 V/C
#106 Red Hill Avenue and El Camino	B	xxxxx	0.640	B	xxxxx	0.640	+ 0.000 V/C
#107 Red Hill Avenue and I-5 NB Ram	C	20.1	0.631	C	20.1	0.631	+ 0.000 D/V
#108 Red Hill Avenue and I-5 SB Ram	C	24.7	0.824	C	24.7	0.824	+ 0.000 D/V
#109 Red Hill Avenue and Nisson Roa	B	xxxxx	0.655	B	xxxxx	0.655	+ 0.000 V/C
#110 Red Hill Avenue and Walnut Ave	B	xxxxx	0.643	B	xxxxx	0.643	+ 0.000 V/C
#111 Red Hill Avenue and Valencia A	B	xxxxx	0.677	B	xxxxx	0.677	+ 0.000 V/C
#112 Tustin Ranch Road and Warner A	A	xxxxx	0.459	A	xxxxx	0.459	+ 0.000 V/C
#113 Tustin Ranch Road and Walnut A	F	xxxxx	1.313	F	xxxxx	1.313	+ 0.000 V/C
#114 SR-55 SB Ramps and Irvine Boul	E	55.4	1.176	E	55.4	1.176	+ 0.000 D/V
#115 SR-55 NB Ramps and Irvine Boul	C	20.3	0.824	C	20.3	0.824	+ 0.000 D/V

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #1 Euclid St and 1st St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.789
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	50	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			WideBypass			WideBypass		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2	1 0	1 0	2	1 0	1 0	2	1 0	1 0	2	1 0
Volume Module:												
Base Vol:	100	845	145	194	1725	97	194	721	136	190	606	194
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	100	845	145	194	1725	97	194	721	136	190	606	194
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	100	845	145	194	1725	97	194	721	136	190	606	194
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	100	845	145	194	1725	97	194	721	136	190	606	194
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	100	845	145	194	1725	97	194	721	136	190	606	194
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.04	1.00	1.00	1.05	1.00	1.00	1.06	1.00
Lanes:	1.00	2.56	0.44	1.00	2.84	0.16	1.00	2.52	0.48	1.00	2.27	0.73
Final Sat.:	1600	4297	703	1600	4744	256	1600	4238	762	1600	3836	1164
Capacity Analysis Module:												
Vol/Sat:	0.06	0.20	0.21	0.12	0.36	0.38	0.12	0.17	0.18	0.12	0.16	0.17
Crit Moves:	****					****			****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #2 Euclid St and McFadden Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.906
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	90	Level Of Service:	E

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Prot+Permit			Prot+Permit		
Rights:	WideBypass			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2	1 0	1 0	2	1 0	1 0	1	1 0	1 0	1	1 0
Volume Module:												
Base Vol:	156	1185	141	146	2031	168	227	463	287	106	234	89
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	156	1185	141	146	2031	168	227	463	287	106	234	89
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	156	1185	141	146	2031	168	227	463	287	106	234	89
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	156	1185	141	146	2031	168	227	463	287	106	234	89
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	156	1185	141	146	2031	168	227	463	287	106	234	89
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.05	1.00	1.00	1.05	1.00	1.00	1.04	1.00
Lanes:	1.00	2.68	0.32	1.00	2.77	0.23	1.00	1.23	0.77	1.00	1.45	0.55
Final Sat.:	1600	4490	510	1600	4633	367	1600	2075	1225	1600	2418	882
Capacity Analysis Module:												
Vol/Sat:	0.10	0.26	0.28	0.09	0.44	0.46	0.14	0.22	0.23	0.07	0.10	0.10
Crit Moves:	****					****			****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #3 Euclid St and Edinger Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	1.008
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	180	Level Of Service:	F

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 1	0	2 0	2 1	0	1 0	2 0	1	1 0	2 0	1
Volume Module:												
Base Vol:	127	801	68	180	2613	240	136	595	364	133	812	148
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	127	801	68	180	2613	240	136	595	364	133	812	148
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	127	801	68	180	2613	240	136	595	364	133	812	148
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	127	801	68	180	2613	240	136	595	364	133	812	148
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	127	801	68	180	2613	240	136	595	364	133	812	148
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.05	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	2.00	2.77	0.23	2.00	2.75	0.25	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	3200	4624	376	3200	4596	404	1600	3400	1600	1600	3400	1600
Capacity Analysis Module:												
Vol/Sat:	0.04	0.17	0.18	0.06	0.57	0.59	0.09	0.17	0.23	0.08	0.24	0.09
Crit Moves:	****					****	****				****	

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #4 Newhope St and Hazard Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.600
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	29	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Prot+Permit			Prot+Permit			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1	1 0	1 0	1	1 0	1 0	0 1	0	1 0	0 1	0
Volume Module:												
Base Vol:	94	708	101	86	1262	116	17	44	33	17	57	23
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	94	708	101	86	1262	116	17	44	33	17	57	23
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	94	708	101	86	1262	116	17	44	33	17	57	23
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	94	708	101	86	1262	116	17	44	33	17	57	23
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	94	708	101	86	1262	116	17	44	33	17	57	23
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.04	1.00	1.00	1.03	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.75	0.25	1.00	1.83	0.17	1.00	0.57	0.43	1.00	0.71	0.29
Final Sat.:	1600	2900	400	1600	3031	269	1600	914	686	1600	1140	460
Capacity Analysis Module:												
Vol/Sat:	0.06	0.24	0.25	0.05	0.42	0.43	0.01	0.05	0.05	0.01	0.05	0.05
Crit Moves:	****					****	****				****	

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #5 Newhope St and McFadden Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.728
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	40	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Prot+Permit			Prot+Permit		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1	1 0	1 0	1	1 0	1 0	1	1 0	1 0	1	1 0
Volume Module:												
Base Vol:	77	342	120	116	1153	107	106	386	125	122	311	69
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	77	342	120	116	1153	107	106	386	125	122	311	69
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	77	342	120	116	1153	107	106	386	125	122	311	69
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	77	342	120	116	1153	107	106	386	125	122	311	69
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	77	342	120	116	1153	107	106	386	125	122	311	69
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.04	1.00	1.00	1.03	1.00	1.00	1.04	1.00	1.00	1.04	1.00
Lanes:	1.00	1.48	0.52	1.00	1.83	0.17	1.00	1.51	0.49	1.00	1.64	0.36
Final Sat.:	1600	2469	831	1600	3028	272	1600	2517	783	1600	2719	581
Capacity Analysis Module:												
Vol/Sat:	0.05	0.14	0.14	0.07	0.38	0.39	0.07	0.15	0.16	0.08	0.11	0.12
Crit Moves:	****					****			****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #6 Harbor Blvd and SR-22 WB Off-Ramp / Banner Dr

Cycle (sec):	100	Critical Vol./Cap.(X):	0.715
Loss Time (sec):	5	Average Delay (sec/veh):	28.5
Optimal Cycle:	40	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 0	0	0 0	2	1 0	0 0	1! 0	0	1 1	0 0	1
Volume Module:												
Base Vol:	83	1508	0	0	1354	18	81	0	133	836	44	117
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	83	1508	0	0	1354	18	81	0	133	836	44	117
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	83	1508	0	0	1354	18	81	0	133	836	44	117
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	83	1508	0	0	1354	18	81	0	133	836	44	117
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	83	1508	0	0	1354	18	81	0	133	836	44	117
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.91	1.00	1.00	0.91	0.91	0.90	1.00	0.90	0.96	0.96	0.85
Lanes:	1.00	3.00	0.00	0.00	2.96	0.04	0.38	0.00	0.62	1.90	0.10	1.00
Final Sat.:	1805	5187	0	0	5109	68	646	0	1061	3448	181	1615
Capacity Analysis Module:												
Vol/Sat:	0.05	0.29	0.00	0.00	0.27	0.27	0.13	0.00	0.13	0.24	0.24	0.07
Crit Moves:	****				****		****				****	
Green/Cycle:	0.06	0.44	0.00	0.00	0.37	0.37	0.18	0.00	0.18	0.34	0.34	0.34
Volume/Cap:	0.71	0.67	0.00	0.00	0.71	0.71	0.71	0.00	0.71	0.71	0.71	0.21
Delay/Veh:	64.8	23.3	0.0	0.0	28.2	28.2	46.8	0.0	46.8	30.8	30.8	23.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	64.8	23.3	0.0	0.0	28.2	28.2	46.8	0.0	46.8	30.8	30.8	23.7
LOS by Move:	E	C	A	A	C	C	D	A	D	C	C	C
HCM2k85thQ:	6	21	0	0	21	21	12	0	12	19	19	4

Note: Queue reported is the number of cars per lane.

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Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #7 Trask Avenue and SR-22 EB On-Ramp

Cycle (sec):	100	Critical Vol./Cap.(X):	0.389
Loss Time (sec):	5	Average Delay (sec/veh):	11.0
Optimal Cycle:	21	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	0 0	0	0 0	0 0	0	2	0 1	0 0	0	0 1	1 0
Volume Module:												
Base Vol:	0	0	0	0	0	0	558	699	0	0	624	117
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	558	699	0	0	624	117
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	0	0	0	558	699	0	0	624	117
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	0	0	0	558	699	0	0	624	117
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	0	0	0	558	699	0	0	624	117
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	0.92	1.00	1.00	1.00	0.93	0.93
Lanes:	0.00	0.00	0.00	0.00	0.00	0.00	2.00	1.00	0.00	0.00	1.68	0.32
Final Sat.:	0	0	0	0	0	0	3502	1900	0	0	2967	556
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.00	0.00	0.00	0.16	0.37	0.00	0.00	0.21	0.21
Crit Moves:							****				****	
Green/Cycle:	0.00	0.00	0.00	0.00	0.00	0.00	0.41	0.95	0.00	0.00	0.54	0.54
Volume/Cap:	0.00	0.00	0.00	0.00	0.00	0.00	0.39	0.39	0.00	0.00	0.39	0.39
Delay/Veh:	0.0	0.0	0.0	0.0	0.0	0.0	20.9	0.3	0.0	0.0	13.5	13.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	0.0	0.0	0.0	20.9	0.3	0.0	0.0	13.5	13.5
LOS by Move:	A	A	A	A	A	A	C	A	A	A	B	B
HCM2k85thQ:	0	0	0	0	0	0	10	3	0	0	11	11

Note: Queue reported is the number of cars per lane.

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #8 Harbor Blvd and Westminster Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.936
Loss Time (sec):	0	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	180	Level Of Service:	E

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	WideBypass			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 0	1	1 0	3 0	1	1 0	2 1	0	1 0	3 0	1
Volume Module:												
Base Vol:	159	1045	224	251	1970	113	173	910	32	406	1100	299
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	159	1045	224	251	1970	113	173	910	32	406	1100	299
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	159	1045	224	251	1970	113	173	910	32	406	1100	299
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	159	1045	224	251	1970	113	173	910	32	406	1100	299
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	159	1045	224	251	1970	113	173	910	32	406	1100	299
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.04	1.00	1.00	1.06	1.00
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	1.00	2.90	0.10	1.00	3.00	1.00
Final Sat.:	1600	5100	1600	1600	5100	1600	1600	4837	163	1600	5100	1600
Capacity Analysis Module:												
Vol/Sat:	0.10	0.20	0.14	0.16	0.39	0.07	0.11	0.19	0.20	0.25	0.22	0.19
Crit Moves:	****				****				****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #9 Harbor Blvd and 1st St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.749
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	43	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 0	1	1 0	3 0	1	2 0	2 1	0	2 0	2 1	0
Volume Module:												
Base Vol:	102	816	176	223	1876	122	118	788	153	229	580	135
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	102	816	176	223	1876	122	118	788	153	229	580	135
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	102	816	176	223	1876	122	118	788	153	229	580	135
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	102	816	176	223	1876	122	118	788	153	229	580	135
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	102	816	176	223	1876	122	118	788	153	229	580	135
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.05	1.00	1.00	1.05	1.00
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	2.00	2.51	0.49	2.00	2.43	0.57
Final Sat.:	1600	5100	1600	1600	5100	1600	3200	4220	780	3200	4094	906
Capacity Analysis Module:												
Vol/Sat:	0.06	0.16	0.11	0.14	0.37	0.08	0.04	0.19	0.20	0.07	0.14	0.15
Crit Moves:	****				****				****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #10 Harbor Blvd and McFadden Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.729
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	40	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	3 0	1	2 0	2 1	0	1 0	1 1	0	1 0	0 1	0
Volume Module:												
Base Vol:	101	1026	98	179	1891	63	136	353	106	85	193	55
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	101	1026	98	179	1891	63	136	353	106	85	193	55
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	101	1026	98	179	1891	63	136	353	106	85	193	55
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	101	1026	98	179	1891	63	136	353	106	85	193	55
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	101	1026	98	179	1891	63	136	353	106	85	193	55
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.04	1.00	1.00	1.04	1.00	1.00	1.00	1.00
Lanes:	2.00	3.00	1.00	2.00	2.90	0.10	1.00	1.54	0.46	1.00	0.78	0.22
Final Sat.:	3200	5100	1600	3200	4845	155	1600	2561	739	1600	1245	355
Capacity Analysis Module:												
Vol/Sat:	0.03	0.20	0.06	0.06	0.39	0.41	0.09	0.14	0.14	0.05	0.16	0.15
Crit Moves:	****					****	****				****	

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #11 Harbor Blvd and Edinger Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.857
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	67	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	3 0	1	2 0	3 0	1	2 0	2 1	0	2 0	3 0	1
Volume Module:												
Base Vol:	95	713	135	212	2441	71	123	743	373	211	469	195
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	95	713	135	212	2441	71	123	743	373	211	469	195
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	95	713	135	212	2441	71	123	743	373	211	469	195
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	95	713	135	212	2441	71	123	743	373	211	469	195
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	95	713	135	212	2441	71	123	743	373	211	469	195
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	2.00	1.00	2.00	3.00	1.00
Final Sat.:	3200	5100	1600	3200	5100	1600	3200	3400	1600	3200	5100	1600
Capacity Analysis Module:												
Vol/Sat:	0.03	0.14	0.08	0.07	0.48	0.04	0.04	0.22	0.23	0.07	0.09	0.12
Crit Moves:	****			****					****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #12 Harbor Blvd and Warner Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.800
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	52	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 1	0	2 0	3 0	1	2 0	3 0	1	2 0	3 0	1
Volume Module:												
Base Vol:	106	647	164	451	2034	122	100	1422	374	125	654	111
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	106	647	164	451	2034	122	100	1422	374	125	654	111
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	106	647	164	451	2034	122	100	1422	374	125	654	111
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	106	647	164	451	2034	122	100	1422	374	125	654	111
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	106	647	164	451	2034	122	100	1422	374	125	654	111
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	2.00	2.39	0.61	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3200	4029	971	3200	5100	1600	3200	5100	1600	3200	5100	1600
Capacity Analysis Module:												
Vol/Sat:	0.03	0.16	0.17	0.14	0.40	0.08	0.03	0.28	0.23	0.04	0.13	0.07
Crit Moves:	****			****			****			****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #13 Harbor Blvd and Segerstrom Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	1.007
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	180	Level Of Service:	F

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Prot+Permit			Prot+Permit		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2	1 0	1 0	2	1 0	1 0	1	1 0	1 0	2	0 1
Volume Module:												
Base Vol:	107	759	48	173	2324	87	90	753	303	146	453	103
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	107	759	48	173	2324	87	90	753	303	146	453	103
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	107	759	48	173	2324	87	90	753	303	146	453	103
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	107	759	48	173	2324	87	90	753	303	146	453	103
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	107	759	48	173	2324	87	90	753	303	146	453	103
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.04	1.00	1.00	1.04	1.00	1.00	1.04	1.00	1.00	1.06	1.00
Lanes:	2.00	2.82	0.18	1.00	2.89	0.11	1.00	1.43	0.57	1.00	2.00	1.00
Final Sat.:	3200	4714	286	1600	4827	173	1600	2382	918	1600	3400	1600
Capacity Analysis Module:												
Vol/Sat:	0.03	0.16	0.17	0.11	0.48	0.50	0.06	0.32	0.33	0.09	0.13	0.06
Crit Moves:	****					****			****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #14 MacArthur Blvd and Hyland Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.615
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	30	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Prot+Permit			Prot+Permit		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	0 1	0	1 0	1 0	1	1 0	3 0	1	1 0	3 0	1
Volume Module:												
Base Vol:	86	4	24	8	2	19	7	1915	760	82	626	26
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	86	4	24	8	2	19	7	1915	760	82	626	26
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	86	4	24	8	2	19	7	1915	760	82	626	26
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	86	4	24	8	2	19	7	1915	760	82	626	26
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	86	4	24	8	2	19	7	1915	760	82	626	26
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	2.00	0.14	0.86	1.00	1.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00
Final Sat.:	3200	229	1371	1600	1700	1600	1600	5100	1600	1600	5100	1600
Capacity Analysis Module:												
Vol/Sat:	0.03	0.02	0.02	0.01	0.00	0.01	0.00	0.38	0.48	0.05	0.12	0.02
Crit Moves:	****					****			****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #15 MacArthur Blvd and Harbor Blvd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.747
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	43	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	3 0	1	2 0	3 0	1	1 0	3 0	1	1 0	3 0	1
Volume Module:												
Base Vol:	128	898	92	289	1662	115	133	1204	363	152	506	151
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	128	898	92	289	1662	115	133	1204	363	152	506	151
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	128	898	92	289	1662	115	133	1204	363	152	506	151
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	128	898	92	289	1662	115	133	1204	363	152	506	151
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	128	898	92	289	1662	115	133	1204	363	152	506	151
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00
Final Sat.:	3200	5100	1600	3200	5100	1600	1600	5100	1600	1600	5100	1600
Capacity Analysis Module:												
Vol/Sat:	0.04	0.18	0.06	0.09	0.33	0.07	0.08	0.24	0.23	0.10	0.10	0.09
Crit Moves:	****			****			****			****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #16 Harbor Blvd and Sunflower Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.705
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	38	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	3 0	1	2 0	3 0	1	1 0	1 1	0	1 1	0 1	0
Volume Module:												
Base Vol:	221	1128	209	242	2284	56	9	109	42	149	190	107
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	221	1128	209	242	2284	56	9	109	42	149	190	107
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	221	1128	209	242	2284	56	9	109	42	149	190	107
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	221	1128	209	242	2284	56	9	109	42	149	190	107
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	221	1128	209	242	2284	56	9	109	42	149	190	107
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.04	1.00	1.00	1.00	1.00
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	1.00	1.44	0.56	1.00	1.28	0.72
Final Sat.:	3200	5100	1600	3200	5100	1600	1600	2410	890	1604	2045	1151
Capacity Analysis Module:												
Vol/Sat:	0.07	0.22	0.13	0.08	0.45	0.04	0.01	0.05	0.05	0.09	0.09	0.09
Crit Moves:	****			****			****			****		

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Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #17 Harbor Blvd and I-405 NB Off-Ramp

Cycle (sec):	100	Critical Vol./Cap.(X):	0.573
Loss Time (sec):	5	Average Delay (sec/veh):	17.9
Optimal Cycle:	29	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	4 0	0	0 0	4 0	0	0 0	0 0	0	1 0	1! 0	1
Volume Module:												
Base Vol:	0	1915	0	0	2007	0	0	0	0	399	0	702
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1915	0	0	2007	0	0	0	0	399	0	702
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1915	0	0	2007	0	0	0	0	399	0	702
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1915	0	0	2007	0	0	0	0	399	0	702
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1915	0	0	2007	0	0	0	0	399	0	702
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	0.89	1.00	0.89
Lanes:	0.00	4.00	0.00	0.00	4.00	0.00	0.00	0.00	0.00	1.36	0.00	1.64
Final Sat.:	0	6916	0	0	6916	0	0	0	0	2298	0	2762
Capacity Analysis Module:												
Vol/Sat:	0.00	0.28	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.17	0.00	0.25
Crit Moves:	****				****							****
Green/Cycle:	0.00	0.51	0.00	0.00	0.51	0.00	0.00	0.00	0.00	0.44	0.00	0.44
Volume/Cap:	0.00	0.55	0.00	0.00	0.57	0.00	0.00	0.00	0.00	0.39	0.00	0.57
Delay/Veh:	0.0	17.0	0.0	0.0	17.4	0.0	0.0	0.0	0.0	18.8	0.0	21.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	17.0	0.0	0.0	17.4	0.0	0.0	0.0	0.0	18.8	0.0	21.2
LOS by Move:	A	B	A	A	B	A	A	A	A	B	A	C
HCM2k85thQ:	0	17	0	0	18	0	0	0	0	9	0	15

Note: Queue reported is the number of cars per lane.

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Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #18 Harbor Blvd and I-405 SB Off-Ramp

Cycle (sec):	100	Critical Vol./Cap.(X):	0.618
Loss Time (sec):	5	Average Delay (sec/veh):	15.0
Optimal Cycle:	31	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Ignore			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0 3	0 1	0	0 4	0 0	1	0 1!	0 1	0	0 0	0 0
Volume Module:												
Base Vol:	0	1993	0	0	1278	0	475	0	529	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1993	0	0	1278	0	475	0	529	0	0	0
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1993	0	0	1278	0	475	0	529	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1993	0	0	1278	0	475	0	529	0	0	0
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1993	0	0	1278	0	475	0	529	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.91	1.00	1.00	0.91	1.00	0.90	1.00	0.90	1.00	1.00	1.00
Lanes:	0.00	3.00	1.00	0.00	4.00	0.00	1.47	0.00	1.53	0.00	0.00	0.00
Final Sat.:	0	5187	1900	0	6916	0	2519	0	2610	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.38	0.00	0.00	0.18	0.00	0.19	0.00	0.20	0.00	0.00	0.00
Crit Moves:		****		****					****			
Green/Cycle:	0.00	0.62	0.00	0.00	0.62	0.00	0.33	0.00	0.33	0.00	0.00	0.00
Volume/Cap:	0.00	0.62	0.00	0.00	0.30	0.00	0.57	0.00	0.62	0.00	0.00	0.00
Delay/Veh:	0.0	12.0	0.0	0.0	8.8	0.0	28.3	0.0	29.0	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	12.0	0.0	0.0	8.8	0.0	28.3	0.0	29.0	0.0	0.0	0.0
LOS by Move:	A	B	A	A	A	A	C	A	C	A	A	A
HCM2k85thQ:	0	21	0	0	8	0	13	0	15	0	0	0

Note: Queue reported is the number of cars per lane.

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #19 Fairview St and Civic Center Dr

Cycle (sec):	100	Critical Vol./Cap.(X):	0.676
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	35	Level Of Service:	B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Split Phase				Split Phase			
Rights:	Wide	Bypass			Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Y+R:	4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	
Lanes:	1	0 2	1	0	1	0 2	1	0	0	1 0	1	0	1	1 0	0	1
Volume Module:																
Base Vol:	7	1435	465		314	1812	8		7	25	25		50	2	26	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	7	1435	465		314	1812	8		7	25	25		50	2	26	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	7	1435	465		314	1812	8		7	25	25		50	2	26	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	7	1435	465		314	1812	8		7	25	25		50	2	26	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	7	1435	465		314	1812	8		7	25	25		50	2	26	
Saturation Flow Module:																
Sat/Lane:	1600	1600	1600		1600	1600	1600		1600	1600	1600		1600	1600	1600	
Adjustment:	1.00	1.06	1.00		1.00	1.04	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Lanes:	1.00	2.27	0.73		1.00	2.99	0.01		0.24	0.88	0.88		1.92	0.08	1.00	
Final Sat.:	1600	3825	1175		1600	4979	21		393	1404	1404		3077	123	1600	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.38	0.40		0.20	0.36	0.38		0.02	0.02	0.02		0.02	0.02	0.02	
Crit Moves:			****		****					****				****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #20 Fairview St and 1st St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.887
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	80	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 0	1	1 0	2 1	0	1 0	2 1	0	1 0	2 1	0
Volume Module:												
Base Vol:	196	1508	284	272	1579	181	170	977	151	180	809	271
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	196	1508	284	272	1579	181	170	977	151	180	809	271
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	196	1508	284	272	1579	181	170	977	151	180	809	271
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	196	1508	284	272	1579	181	170	977	151	180	809	271
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	196	1508	284	272	1579	181	170	977	151	180	809	271
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.05	1.00	1.00	1.05	1.00	1.00	1.06	1.00
Lanes:	1.00	3.00	1.00	1.00	2.69	0.31	1.00	2.60	0.40	1.00	2.25	0.75
Final Sat.:	1600	5100	1600	1600	4506	494	1600	4357	643	1600	3796	1204
Capacity Analysis Module:												
Vol/Sat:	0.12	0.30	0.18	0.17	0.35	0.37	0.11	0.22	0.24	0.11	0.21	0.23
Crit Moves:	****					****			****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #21 Fairview St and McFadden Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.800
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	52	Level Of Service:	D

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Y+R:	4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	
Lanes:	1	0 3	0	1	1	0 3	0	1	1	0	0 1	0	1	0	0 1	0
Volume Module:																
Base Vol:	138	1479	198		184	2242	162		92	216	50		93	240	19	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	138	1479	198		184	2242	162		92	216	50		93	240	19	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	138	1479	198		184	2242	162		92	216	50		93	240	19	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	138	1479	198		184	2242	162		92	216	50		93	240	19	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	138	1479	198		184	2242	162		92	216	50		93	240	19	
Saturation Flow Module:																
Sat/Lane:	1600	1600	1600		1600	1600	1600		1600	1600	1600		1600	1600	1600	
Adjustment:	1.00	1.06	1.00		1.00	1.06	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Lanes:	1.00	3.00	1.00		1.00	3.00	1.00		1.00	0.81	0.19		1.00	0.93	0.07	
Final Sat.:	1600	5100	1600		1600	5100	1600		1600	1299	301		1600	1483	117	
Capacity Analysis Module:																
Vol/Sat:	0.09	0.29	0.12		0.12	0.44	0.10		0.06	0.17	0.17		0.06	0.16	0.16	
Crit Moves:	****					****				****				****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #22 Fairview St and Edinger Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.882
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	77	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 1	0	2 0	2 1	0	2 0	2 1	0	2 0	2 1	0
Volume Module:												
Base Vol:	212	935	131	225	1576	133	361	1002	268	463	608	121
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	212	935	131	225	1576	133	361	1002	268	463	608	121
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	212	935	131	225	1576	133	361	1002	268	463	608	121
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	212	935	131	225	1576	133	361	1002	268	463	608	121
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	212	935	131	225	1576	133	361	1002	268	463	608	121
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.05	1.00	1.00	1.05	1.00	1.00	1.05	1.00
Lanes:	2.00	2.63	0.37	2.00	2.77	0.23	2.00	2.37	0.63	2.00	2.50	0.50
Final Sat.:	3200	4410	590	3200	4626	374	3200	3987	1013	3200	4203	797
Capacity Analysis Module:												
Vol/Sat:	0.07	0.21	0.22	0.07	0.34	0.36	0.11	0.25	0.26	0.14	0.14	0.15
Crit Moves:	****					****			****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #23 Fairview St and Warner Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.847
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	64	Level Of Service:	D

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Y+R:	4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	
Lanes:	2	0 2	1	0	2	0 2	1	0	2	0 2	1	0	2	0 2	1	0
Volume Module:																
Base Vol:	235	1039	136		205	1628	119		69	1010	301		277	836	271	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	235	1039	136		205	1628	119		69	1010	301		277	836	271	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	235	1039	136		205	1628	119		69	1010	301		277	836	271	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	235	1039	136		205	1628	119		69	1010	301		277	836	271	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	235	1039	136		205	1628	119		69	1010	301		277	836	271	
Saturation Flow Module:																
Sat/Lane:	1600	1600	1600		1600	1600	1600		1600	1600	1600		1600	1600	1600	
Adjustment:	1.00	1.05	1.00		1.00	1.04	1.00		1.00	1.05	1.00		1.00	1.06	1.00	
Lanes:	2.00	2.65	0.35		2.00	2.80	0.20		2.00	2.31	0.69		2.00	2.27	0.73	
Final Sat.:	3200	4444	556		3200	4673	327		3200	3898	1102		3200	3825	1175	
Capacity Analysis Module:																
Vol/Sat:	0.07	0.23	0.24		0.06	0.35	0.36		0.02	0.26	0.27		0.09	0.22	0.23	
Crit Moves:	****						****				****	****				

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #24 Fairview St and MacArthur Blvd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.690
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	36	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 1	0	2 0	3 0	1	2 0	3 0	1	2 0	3 0	1
Volume Module:												
Base Vol:	280	870	100	269	1357	152	121	984	145	298	627	178
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	280	870	100	269	1357	152	121	984	145	298	627	178
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	280	870	100	269	1357	152	121	984	145	298	627	178
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	280	870	100	269	1357	152	121	984	145	298	627	178
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	280	870	100	269	1357	152	121	984	145	298	627	178
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	2.00	2.69	0.31	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3200	4505	495	3200	5100	1600	3200	5100	1600	3200	5100	1600
Capacity Analysis Module:												
Vol/Sat:	0.09	0.19	0.20	0.08	0.27	0.10	0.04	0.19	0.09	0.09	0.12	0.11
Crit Moves:	****			****			****			****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #25 Fairview Rd and Sunflower Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.687
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	36	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	3 0	1	2 0	2 1	0	2 0	1 1	0	2 0	2 0	1
Volume Module:												
Base Vol:	182	1051	160	191	1627	104	44	286	58	357	299	154
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	182	1051	160	191	1627	104	44	286	58	357	299	154
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	182	1051	160	191	1627	104	44	286	58	357	299	154
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	182	1051	160	191	1627	104	44	286	58	357	299	154
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	182	1051	160	191	1627	104	44	286	58	357	299	154
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.04	1.00	1.00	1.04	1.00	1.00	1.06	1.00
Lanes:	2.00	3.00	1.00	2.00	2.82	0.18	2.00	1.66	0.34	2.00	2.00	1.00
Final Sat.:	3200	5100	1600	3200	4712	288	3200	2760	540	3200	3400	1600
Capacity Analysis Module:												
Vol/Sat:	0.06	0.21	0.10	0.06	0.35	0.36	0.01	0.10	0.11	0.11	0.09	0.10
Crit Moves:	****					****			****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #26 Greenville St and Edinger Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.742
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	42	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	0	0 1	0 0	0	0 0	0 0	2	1 0	1 0	3	0 0
Volume Module:												
Base Vol:	140	0	188	0	0	0	0	1788	436	178	949	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	140	0	188	0	0	0	0	1788	436	178	949	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	140	0	188	0	0	0	0	1788	436	178	949	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	140	0	188	0	0	0	0	1788	436	178	949	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	140	0	188	0	0	0	0	1788	436	178	949	0
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.05	1.00	1.00	1.06	1.00
Lanes:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	2.41	0.59	1.00	3.00	0.00
Final Sat.:	1600	0	1600	0	0	0	0	4059	941	1600	5100	0
Capacity Analysis Module:												
Vol/Sat:	0.09	0.00	0.12	0.00	0.00	0.00	0.00	0.44	0.46	0.11	0.19	0.00
Crit Moves:			****						****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #27 Greenville St and Segerstrom Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.878
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	76	Level Of Service:	D

Approach:	North Bound				South Bound				East Bound					West Bound				
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	-	R	L	-	T	-	R
Control:	Permitted				Permitted				Permitted					Permitted				
Rights:	Include				Include				Include					Include				
Min. Green:	0	0	0		0	0	0		0	0	0			0	0	0		
Y+R:	4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0			4.0	4.0	4.0		
Lanes:	1	0	0	1 0	1	0	0	1 0	1	0	2	1	0	1	0	2	1	0
Volume Module:																		
Base Vol:	47	193	78		154	472	160		50	1127	180			210	847	97		
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00			1.00	1.00	1.00		
Initial Bse:	47	193	78		154	472	160		50	1127	180			210	847	97		
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00			1.00	1.00	1.00		
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00			1.00	1.00	1.00		
PHF Volume:	47	193	78		154	472	160		50	1127	180			210	847	97		
Reduct Vol:	0	0	0		0	0	0		0	0	0			0	0	0		
Reduced Vol:	47	193	78		154	472	160		50	1127	180			210	847	97		
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00			1.00	1.00	1.00		
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00			1.00	1.00	1.00		
FinalVolume:	47	193	78		154	472	160		50	1127	180			210	847	97		
Saturation Flow Module:																		
Sat/Lane:	1600	1600	1600		1600	1600	1600		1600	1600	1600			1600	1600	1600		
Adjustment:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.05	1.00			1.00	1.05	1.00		
Lanes:	1.00	0.71	0.29		1.00	0.75	0.25		1.00	2.59	0.41			1.00	2.69	0.31		
Final Sat.:	1600	1139	461		1600	1195	405		1600	4339	661			1600	4507	493		
Capacity Analysis Module:																		
Vol/Sat:	0.03	0.17	0.17		0.10	0.39	0.40		0.03	0.26	0.27			0.13	0.19	0.20		
Crit Moves:	****						****				****	****						

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #28 Raitt St and McFadden Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.704
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	38	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	0	1 0	1 0	0	1 0	1 0	0	1 0	1 0	0	1 0
Volume Module:												
Base Vol:	34	309	49	69	528	72	52	313	40	60	190	34
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	34	309	49	69	528	72	52	313	40	60	190	34
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	34	309	49	69	528	72	52	313	40	60	190	34
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	34	309	49	69	528	72	52	313	40	60	190	34
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	34	309	49	69	528	72	52	313	40	60	190	34
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.86	0.14	1.00	0.88	0.12	1.00	0.89	0.11	1.00	0.85	0.15
Final Sat.:	1600	1381	219	1600	1408	192	1600	1419	181	1600	1357	243
Capacity Analysis Module:												
Vol/Sat:	0.02	0.22	0.22	0.04	0.38	0.38	0.03	0.22	0.22	0.04	0.14	0.14
Crit Moves:	****			****			****			****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #29 Raitt St and Edinger Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.926
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	105	Level Of Service:	E

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	0 1	0	1 0	0 1	0	1 0	2 1	0	1 0	2 1	0
Volume Module:												
Base Vol:	85	228	82	80	376	45	330	2016	290	127	992	59
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	85	228	82	80	376	45	330	2016	290	127	992	59
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	85	228	82	80	376	45	330	2016	290	127	992	59
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	85	228	82	80	376	45	330	2016	290	127	992	59
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	85	228	82	80	376	45	330	2016	290	127	992	59
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.05	1.00	1.00	1.04	1.00
Lanes:	1.00	0.74	0.26	1.00	0.89	0.11	1.00	2.62	0.38	1.00	2.83	0.17
Final Sat.:	1600	1177	423	1600	1429	171	1600	4396	604	1600	4731	269
Capacity Analysis Module:												
Vol/Sat:	0.05	0.19	0.19	0.05	0.26	0.26	0.21	0.46	0.48	0.08	0.21	0.22
Crit Moves:	****			****					****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #30 Bear St and MacArthur Blvd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.756
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	44	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 0	1	1 0	2 0	1	1 0	2 1	0	1 0	2 1	0
Volume Module:												
Base Vol:	61	210	89	192	728	289	99	1690	116	103	1735	147
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	61	210	89	192	728	289	99	1690	116	103	1735	147
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	61	210	89	192	728	289	99	1690	116	103	1735	147
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	61	210	89	192	728	289	99	1690	116	103	1735	147
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	61	210	89	192	728	289	99	1690	116	103	1735	147
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.04	1.00	1.00	1.05	1.00
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	2.81	0.19	1.00	2.77	0.23
Final Sat.:	1600	3400	1600	1600	3400	1600	1600	4692	308	1600	4625	375
Capacity Analysis Module:												
Vol/Sat:	0.04	0.06	0.06	0.12	0.21	0.18	0.06	0.36	0.38	0.06	0.38	0.39
Crit Moves:	****			****			****					****

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #31 Bristol St and 17th St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.853
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	66	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	3 0	1	2 0	3 0	1	2 0	2 1	0	2 0	3 0	1
Volume Module:												
Base Vol:	241	1241	210	449	1845	243	341	1015	164	386	886	293
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	241	1241	210	449	1845	243	341	1015	164	386	886	293
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	241	1241	210	449	1845	243	341	1015	164	386	886	293
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	241	1241	210	449	1845	243	341	1015	164	386	886	293
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	241	1241	210	449	1845	243	341	1015	164	386	886	293
OvlAdjVol:												69
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.05	1.00	1.00	1.06	1.00
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	2.58	0.42	2.00	3.00	1.00
Final Sat.:	3200	5100	1600	3200	5100	1600	3200	4332	668	3200	5100	1600
Capacity Analysis Module:												
Vol/Sat:	0.08	0.24	0.13	0.14	0.36	0.15	0.11	0.23	0.25	0.12	0.17	0.18
OvlAdjV/S:												0.04
Crit Moves:	****			****					****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #32 Bristol St and Civic Center Dr

Cycle (sec):	100	Critical Vol./Cap.(X):	0.931
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	109	Level Of Service:	E

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Prot+Permit			Prot+Permit		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2	1 0	1 0	2	1 0	1 0	0	1 0	1 0	1	1 0
Volume Module:												
Base Vol:	129	1141	101	396	1597	100	80	404	50	145	481	100
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	129	1141	101	396	1597	100	80	404	50	145	481	100
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	129	1141	101	396	1597	100	80	404	50	145	481	100
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	129	1141	101	396	1597	100	80	404	50	145	481	100
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	129	1141	101	396	1597	100	80	404	50	145	481	100
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.04	1.00	1.00	1.00	1.00	1.00	1.04	1.00
Lanes:	1.00	2.76	0.24	1.00	2.82	0.18	1.00	0.89	0.11	1.00	1.66	0.34
Final Sat.:	1600	4610	390	1600	4717	283	1600	1424	176	1600	2749	551
Capacity Analysis Module:												
Vol/Sat:	0.08	0.25	0.26	0.25	0.34	0.35	0.05	0.28	0.28	0.09	0.17	0.18
Crit Moves:			****	****				****		****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #33 Bristol St and Santa Ana Blvd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.721
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	40	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Prot+Permit			Prot+Permit		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2	1 0	1 0	2	1 0	1 0	0	1 0	1 0	0	1 0
Volume Module:												
Base Vol:	68	1482	206	172	1891	51	54	264	23	52	129	22
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	68	1482	206	172	1891	51	54	264	23	52	129	22
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	68	1482	206	172	1891	51	54	264	23	52	129	22
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	68	1482	206	172	1891	51	54	264	23	52	129	22
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	68	1482	206	172	1891	51	54	264	23	52	129	22
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.04	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.63	0.37	1.00	2.92	0.08	1.00	0.92	0.08	1.00	0.85	0.15
Final Sat.:	1600	4414	586	1600	4874	126	1600	1472	128	1600	1367	233
Capacity Analysis Module:												
Vol/Sat:	0.04	0.34	0.35	0.11	0.39	0.40	0.03	0.18	0.18	0.03	0.09	0.09
Crit Moves:			****	****				****		****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #34 Bristol St and 1st St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.902
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	88	Level Of Service:	E

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	3 0	1	2 0	3 0	1	1 0	2 1	0	1 0	1 1	0
Volume Module:												
Base Vol:	208	1451	184	315	1298	183	206	1268	128	126	949	139
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	208	1451	184	315	1298	183	206	1268	128	126	949	139
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	208	1451	184	315	1298	183	206	1268	128	126	949	139
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	208	1451	184	315	1298	183	206	1268	128	126	949	139
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	208	1451	184	315	1298	183	206	1268	128	126	949	139
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.05	1.00	1.00	1.04	1.00
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	1.00	2.72	0.28	1.00	1.74	0.26
Final Sat.:	3200	5100	1600	3200	5100	1600	1600	4560	440	1600	2891	409
Capacity Analysis Module:												
Vol/Sat:	0.07	0.28	0.12	0.10	0.25	0.11	0.13	0.28	0.29	0.08	0.33	0.34
Crit Moves:		****			****			****				****

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #35 Bristol St and McFadden Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.947
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	126	Level Of Service:	E

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Prot+Permit			Prot+Permit		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 0	1	1 0	3 0	1	1 0	0 1	0	1 0	0 1	0
Volume Module:												
Base Vol:	130	1159	58	228	2223	229	155	266	131	145	405	47
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	130	1159	58	228	2223	229	155	266	131	145	405	47
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	130	1159	58	228	2223	229	155	266	131	145	405	47
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	130	1159	58	228	2223	229	155	266	131	145	405	47
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	130	1159	58	228	2223	229	155	266	131	145	405	47
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	1.00	0.67	0.33	1.00	0.90	0.10
Final Sat.:	1600	5100	1600	1600	5100	1600	1600	1072	528	1600	1434	166
Capacity Analysis Module:												
Vol/Sat:	0.08	0.23	0.04	0.14	0.44	0.14	0.10	0.25	0.25	0.09	0.28	0.28
Crit Moves:	****			****			****			****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #36 Bristol St and Warner Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.956
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	139	Level Of Service:	E

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 1	0	2 0	2 1	0	1 0	3 0	1	1 0	3 0	1
Volume Module:												
Base Vol:	221	993	183	643	2178	247	172	958	238	231	1058	180
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	221	993	183	643	2178	247	172	958	238	231	1058	180
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	221	993	183	643	2178	247	172	958	238	231	1058	180
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	221	993	183	643	2178	247	172	958	238	231	1058	180
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	221	993	183	643	2178	247	172	958	238	231	1058	180
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.05	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	2.00	2.53	0.47	2.00	2.69	0.31	1.00	3.00	1.00	1.00	3.00	1.00
Final Sat.:	3200	4253	747	3200	4511	489	1600	5100	1600	1600	5100	1600
Capacity Analysis Module:												
Vol/Sat:	0.07	0.23	0.24	0.20	0.48	0.51	0.11	0.19	0.15	0.14	0.21	0.11
Crit Moves:	****					****		****		****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #37 Bristol St and Segerstrom Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.854
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	66	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	WideBypass			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2	1 0	1 0	2	1 0	1 0	2	1 0	1 0	2	1 0
Volume Module:												
Base Vol:	70	778	146	283	1011	119	306	1480	136	157	712	91
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	70	778	146	283	1011	119	306	1480	136	157	712	91
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	70	778	146	283	1011	119	306	1480	136	157	712	91
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	70	778	146	283	1011	119	306	1480	136	157	712	91
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	70	778	146	283	1011	119	306	1480	136	157	712	91
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.05	1.00	1.00	1.05	1.00	1.00	1.05	1.00
Lanes:	1.00	2.53	0.47	1.00	2.68	0.32	1.00	2.75	0.25	1.00	2.66	0.34
Final Sat.:	1600	4242	758	1600	4495	505	1600	4596	404	1600	4456	544
Capacity Analysis Module:												
Vol/Sat:	0.04	0.18	0.19	0.18	0.22	0.24	0.19	0.32	0.34	0.10	0.16	0.17
Crit Moves:			****	****					****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #38 Bristol St and Alton Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.553
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	26	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	WideBypass			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 1	0	1 0	3 0	1	1 0	1 1	0	1 0	0 1	0
Volume Module:												
Base Vol:	10	702	53	224	1551	36	190	117	244	41	87	31
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	10	702	53	224	1551	36	190	117	244	41	87	31
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	10	702	53	224	1551	36	190	117	244	41	87	31
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	10	702	53	224	1551	36	190	117	244	41	87	31
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	10	702	53	224	1551	36	190	117	244	41	87	31
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.04	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.00	1.00
Lanes:	1.00	2.79	0.21	1.00	3.00	1.00	1.00	1.00	1.00	1.00	0.74	0.26
Final Sat.:	1600	4663	337	1600	5100	1600	1600	1700	1600	1600	1180	420
Capacity Analysis Module:												
Vol/Sat:	0.01	0.15	0.16	0.14	0.30	0.02	0.12	0.07	0.15	0.03	0.07	0.07
Crit Moves:	****			****			****			****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #39 Bristol St and MacArthur Blvd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.759
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	45	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	3 0	1	2 0	2 1	0	2 0	3 0	1	2 0	3 0	1
Volume Module:												
Base Vol:	95	491	123	319	1389	145	211	1531	311	191	910	132
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	95	491	123	319	1389	145	211	1531	311	191	910	132
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	95	491	123	319	1389	145	211	1531	311	191	910	132
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	95	491	123	319	1389	145	211	1531	311	191	910	132
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	95	491	123	319	1389	145	211	1531	311	191	910	132
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.05	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	2.00	3.00	1.00	2.00	2.72	0.28	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3200	5100	1600	3200	4546	454	3200	5100	1600	3200	5100	1600
Capacity Analysis Module:												
Vol/Sat:	0.03	0.10	0.08	0.10	0.31	0.32	0.07	0.30	0.19	0.06	0.18	0.08
Crit Moves:	****					****		****		****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #40 Bristol St and Sunflower Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.682
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	35	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 1	1	2 0	3 0	1	2 0	2 1	1	2 0	3 0	1
Volume Module:												
Base Vol:	119	583	172	232	1316	99	135	1115	451	295	480	166
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	119	583	172	232	1316	99	135	1115	451	295	480	166
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	119	583	172	232	1316	99	135	1115	451	295	480	166
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	119	583	172	232	1316	99	135	1115	451	295	480	166
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	119	583	172	232	1316	99	135	1115	451	295	480	166
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.04	1.00	1.00	1.06	1.00
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	2.85	1.15	2.00	3.00	1.00
Final Sat.:	3200	5100	1600	3200	5100	1600	3200	4757	1843	3200	5100	1600
Capacity Analysis Module:												
Vol/Sat:	0.04	0.11	0.11	0.07	0.26	0.06	0.04	0.23	0.24	0.09	0.09	0.10
Crit Moves:	****			****					****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #41 Bristol St and I-405 NB Ramps

Cycle (sec):	100	Critical Vol./Cap.(X):	0.568
Loss Time (sec):	5	Average Delay (sec/veh):	20.9
Optimal Cycle:	28	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0 4	0 1	0	0 4	1 0	0	0 0	0 2	1	1 1	0 2
Volume Module:												
Base Vol:	0	1638	210	0	2088	8	0	0	36	147	89	807
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1638	210	0	2088	8	0	0	36	147	89	807
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1638	210	0	2088	8	0	0	36	147	89	807
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1638	210	0	2088	8	0	0	36	147	89	807
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1638	210	0	2088	8	0	0	36	147	89	807
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.91	0.85	1.00	0.91	0.91	1.00	1.00	0.75	0.92	0.92	0.75
Lanes:	0.00	4.00	1.00	0.00	4.98	0.02	0.00	0.00	2.00	1.87	1.13	2.00
Final Sat.:	0	6916	1615	0	8603	33	0	0	2842	3272	1981	2842
Capacity Analysis Module:												
Vol/Sat:	0.00	0.24	0.13	0.00	0.24	0.24	0.00	0.00	0.01	0.04	0.04	0.28
Crit Moves:	****				****				****			****
Green/Cycle:	0.00	0.43	0.43	0.00	0.43	0.43	0.00	0.00	0.02	0.50	0.50	0.50
Volume/Cap:	0.00	0.55	0.30	0.00	0.57	0.57	0.00	0.00	0.57	0.09	0.09	0.57
Delay/Veh:	0.0	21.7	19.1	0.0	21.8	21.8	0.0	0.0	60.0	13.1	13.1	18.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	21.7	19.1	0.0	21.8	21.8	0.0	0.0	60.0	13.1	13.1	18.0
LOS by Move:	A	C	B	A	C	C	A	A	E	B	B	B
HCM2k85thQ:	0	16	7	0	17	17	0	0	2	2	2	15

Note: Queue reported is the number of cars per lane.

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Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #42 Bristol St and I-405 SB Ramps

Cycle (sec):	100	Critical Vol./Cap.(X):	0.697
Loss Time (sec):	5	Average Delay (sec/veh):	23.6
Optimal Cycle:	38	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Ignore			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	4 0	0	0 0	2 1	1	3 0	0 0	1	0 0	0 0	0
Volume Module:												
Base Vol:	122	1195	0	0	1097	943	675	0	618	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	122	1195	0	0	1097	943	675	0	618	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	122	1195	0	0	1097	0	675	0	618	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	122	1195	0	0	1097	0	675	0	618	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	122	1195	0	0	1097	0	675	0	618	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.91	1.00	1.00	0.91	0.91	0.92	1.00	0.85	1.00	1.00	1.00
Lanes:	1.00	4.00	0.00	0.00	3.00	1.00	3.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	1805	6916	0	0	5187	1729	5253	0	1615	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.07	0.17	0.00	0.00	0.21	0.00	0.13	0.00	0.38	0.00	0.00	0.00
Crit Moves:	****				****				****			
Green/Cycle:	0.10	0.40	0.00	0.00	0.30	0.00	0.55	0.00	0.55	0.00	0.00	0.00
Volume/Cap:	0.70	0.43	0.00	0.00	0.70	0.00	0.23	0.00	0.70	0.00	0.00	0.00
Delay/Veh:	55.3	21.8	0.0	0.0	32.1	0.0	11.7	0.0	18.9	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	55.3	21.8	0.0	0.0	32.1	0.0	11.7	0.0	18.9	0.0	0.0	0.0
LOS by Move:	E	C	A	A	C	A	B	A	B	A	A	A
HCM2k85thQ:	8	11	0	0	18	0	6	0	22	0	0	0

Note: Queue reported is the number of cars per lane.

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #43 Flower St and Santa Ana Blvd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.586
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	28	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Prot+Permit			Prot+Permit			Prot+Permit			Prot+Permit		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 0	1	1 0	2 0	1	1 0	2 0	1	1 0	2 0	1
Volume Module:												
Base Vol:	64	593	86	275	929	124	63	394	45	118	377	158
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	64	593	86	275	929	124	63	394	45	118	377	158
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	64	593	86	275	929	124	63	394	45	118	377	158
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	64	593	86	275	929	124	63	394	45	118	377	158
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	64	593	86	275	929	124	63	394	45	118	377	158
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1600	3400	1600	1600	3400	1600	1600	3400	1600	1600	3400	1600
Capacity Analysis Module:												
Vol/Sat:	0.04	0.17	0.05	0.17	0.27	0.08	0.04	0.12	0.03	0.07	0.11	0.10
Crit Moves:		****		****				****		****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #44 Flower St and 1st St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.926
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	105	Level Of Service:	E

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1 0	1	1 0	1 1	0	1 0	1 1	0	1 0	1 1	0
Volume Module:												
Base Vol:	89	387	102	366	1158	121	107	983	39	161	664	95
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	89	387	102	366	1158	121	107	983	39	161	664	95
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	89	387	102	366	1158	121	107	983	39	161	664	95
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	89	387	102	366	1158	121	107	983	39	161	664	95
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	89	387	102	366	1158	121	107	983	39	161	664	95
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.03	1.00	1.00	1.03	1.00	1.00	1.04	1.00
Lanes:	1.00	1.00	1.00	1.00	1.81	0.19	1.00	1.92	0.08	1.00	1.75	0.25
Final Sat.:	1600	1700	1600	1600	2997	303	1600	3178	122	1600	2899	401
Capacity Analysis Module:												
Vol/Sat:	0.06	0.23	0.06	0.23	0.39	0.40	0.07	0.31	0.32	0.10	0.23	0.24
Crit Moves:		****		****					****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #45 Flower St and McFadden Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.807
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	54	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	0	1 0	1 0	0	1 0	1 0	0	1 0	1 0	0	1 0
Volume Module:												
Base Vol:	30	219	19	66	367	53	58	658	50	54	366	49
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	30	219	19	66	367	53	58	658	50	54	366	49
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	30	219	19	66	367	53	58	658	50	54	366	49
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	30	219	19	66	367	53	58	658	50	54	366	49
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	30	219	19	66	367	53	58	658	50	54	366	49
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.92	0.08	1.00	0.87	0.13	1.00	0.93	0.07	1.00	0.88	0.12
Final Sat.:	1600	1472	128	1600	1398	202	1600	1487	113	1600	1411	189
Capacity Analysis Module:												
Vol/Sat:	0.02	0.15	0.15	0.04	0.26	0.26	0.04	0.44	0.44	0.03	0.26	0.26
Crit Moves:	****			****			****			****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #46 Flower St and Segerstrom Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.818
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	56	Level Of Service:	D

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Permitted				Permitted				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Y+R:	4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	
Lanes:	1	0 1	1	0	1	0 1	1	0	1	0 2	1	0	1	0 2	1	0
Volume Module:																
Base Vol:	86	451	100		98	544	120		237	1631	455		115	846	93	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	86	451	100		98	544	120		237	1631	455		115	846	93	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	86	451	100		98	544	120		237	1631	455		115	846	93	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	86	451	100		98	544	120		237	1631	455		115	846	93	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	86	451	100		98	544	120		237	1631	455		115	846	93	
Saturation Flow Module:																
Sat/Lane:	1600	1600	1600		1600	1600	1600		1600	1600	1600		1600	1600	1600	
Adjustment:	1.00	1.04	1.00		1.00	1.04	1.00		1.00	1.05	1.00		1.00	1.05	1.00	
Lanes:	1.00	1.64	0.36		1.00	1.64	0.36		1.00	2.35	0.65		1.00	2.70	0.30	
Final Sat.:	1600	2719	581		1600	2722	578		1600	3953	1047		1600	4525	475	
Capacity Analysis Module:																
Vol/Sat:	0.05	0.17	0.17		0.06	0.20	0.21		0.15	0.41	0.43		0.07	0.19	0.20	
Crit Moves:	****						****				****	****				

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #47 Flower St and MacArthur Blvd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.710
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	38	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1	1 0	1 0	1	1 0	1 0	2	1 0	1 0	2	1 0
Volume Module:												
Base Vol:	26	170	88	163	352	264	163	1852	79	79	1329	85
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	26	170	88	163	352	264	163	1852	79	79	1329	85
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	26	170	88	163	352	264	163	1852	79	79	1329	85
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	26	170	88	163	352	264	163	1852	79	79	1329	85
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	26	170	88	163	352	264	163	1852	79	79	1329	85
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.05	1.00	1.00	1.04	1.00	1.00	1.04	1.00
Lanes:	1.00	1.32	0.68	1.00	1.14	0.86	1.00	2.88	0.12	1.00	2.82	0.18
Final Sat.:	1600	2209	1091	1600	1929	1371	1600	4804	196	1600	4711	289
Capacity Analysis Module:												
Vol/Sat:	0.02	0.08	0.08	0.10	0.18	0.19	0.10	0.39	0.40	0.05	0.28	0.29
Crit Moves:	****					****			****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #48 Main St and La Veta Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.536
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	25	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ovl			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	3 0	1	2 0	2 1	0	2 0	2 1	0	2 0	2 0	1
Volume Module:												
Base Vol:	123	844	438	161	843	141	350	495	215	334	291	243
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	123	844	438	161	843	141	350	495	215	334	291	243
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	123	844	438	161	843	141	350	495	215	334	291	243
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	123	844	438	161	843	141	350	495	215	334	291	243
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	123	844	438	161	843	141	350	495	215	334	291	243
OvlAdjVol:			271									163
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.05	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	2.00	3.00	1.00	2.00	2.57	0.43	2.00	2.09	0.91	2.00	2.00	1.00
Final Sat.:	3200	5100	1600	3200	4312	688	3200	3546	1454	3200	3400	1600
Capacity Analysis Module:												
Vol/Sat:	0.04	0.17	0.27	0.05	0.20	0.20	0.11	0.14	0.15	0.10	0.09	0.15
OvlAdjV/S:			0.17									0.10
Crit Moves:	****			****					****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #49 Main St and Mainplace Dr / Memory Ln

Cycle (sec):	100	Critical Vol./Cap.(X):	0.456
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	22	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2	1 0	2 0	2	1 0	2 0	2	1 0	2 0	2	0 1
Volume Module:												
Base Vol:	35	955	313	27	1066	223	123	194	13	264	301	20
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	35	955	313	27	1066	223	123	194	13	264	301	20
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	35	955	313	27	1066	223	123	194	13	264	301	20
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	35	955	313	27	1066	223	123	194	13	264	301	20
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	35	955	313	27	1066	223	123	194	13	264	301	20
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.05	1.00	1.00	1.04	1.00	1.00	1.06	1.00
Lanes:	2.00	2.26	0.74	2.00	2.48	0.52	2.00	2.81	0.19	2.00	2.00	1.00
Final Sat.:	3200	3815	1185	3200	4170	830	3200	4699	301	3200	3400	1600
Capacity Analysis Module:												
Vol/Sat:	0.01	0.25	0.26	0.01	0.26	0.27	0.04	0.04	0.04	0.08	0.09	0.01
Crit Moves:	****					****	****				****	

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #50 Main St and 17th St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.845
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	63	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 0	1	2 0	2 0	1	2 0	2 1	0	2 0	2 1	0
Volume Module:												
Base Vol:	156	929	199	225	1251	81	114	1203	60	369	1475	22
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	156	929	199	225	1251	81	114	1203	60	369	1475	22
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	156	929	199	225	1251	81	114	1203	60	369	1475	22
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	156	929	199	225	1251	81	114	1203	60	369	1475	22
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	156	929	199	225	1251	81	114	1203	60	369	1475	22
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.04	1.00	1.00	1.04	1.00
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	2.00	2.86	0.14	2.00	2.96	0.04
Final Sat.:	3200	3400	1600	3200	3400	1600	3200	4772	228	3200	4929	71
Capacity Analysis Module:												
Vol/Sat:	0.05	0.27	0.12	0.07	0.37	0.05	0.04	0.25	0.26	0.12	0.30	0.31
Crit Moves:	****			****					****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #51 Main St and Civic Center Dr

Cycle (sec):	100	Critical Vol./Cap.(X):	0.848
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	64	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1	1 0	1 0	1	1 0	1 0	1	1 0	1 0	1	1 0
Volume Module:												
Base Vol:	138	901	79	69	1222	186	75	454	83	52	679	41
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	138	901	79	69	1222	186	75	454	83	52	679	41
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	138	901	79	69	1222	186	75	454	83	52	679	41
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	138	901	79	69	1222	186	75	454	83	52	679	41
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	138	901	79	69	1222	186	75	454	83	52	679	41
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.03	1.00	1.00	1.04	1.00	1.00	1.04	1.00	1.00	1.03	1.00
Lanes:	1.00	1.84	0.16	1.00	1.74	0.26	1.00	1.69	0.31	1.00	1.89	0.11
Final Sat.:	1600	3042	258	1600	2877	423	1600	2805	495	1600	3118	182
Capacity Analysis Module:												
Vol/Sat:	0.09	0.30	0.31	0.04	0.42	0.44	0.05	0.16	0.17	0.03	0.22	0.23
Crit Moves:	****					****	****					****

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #52 Main St and Santa Ana Blvd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.791
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	50	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 0	0	0 0	1 1	0	0 0	0 0	0	0 1	0 1	0
Volume Module:												
Base Vol:	66	1050	0	0	1162	103	0	0	0	61	848	65
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	66	1050	0	0	1162	103	0	0	0	61	848	65
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	66	1050	0	0	1162	103	0	0	0	61	848	65
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	66	1050	0	0	1162	103	0	0	0	61	848	65
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	66	1050	0	0	1162	103	0	0	0	61	848	65
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.03	1.00	1.00	1.06	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	0.00	0.00	1.84	0.16	0.00	0.00	0.00	0.13	1.74	0.13
Final Sat.:	1600	3400	0	0	3039	261	0	0	0	200	2786	214
Capacity Analysis Module:												
Vol/Sat:	0.04	0.31	0.00	0.00	0.38	0.40	0.00	0.00	0.00	0.04	0.30	0.30
Crit Moves:	****					****					****	

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #53 Main St and 4th St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.441
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	21	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	1 1	0	0 0	1 1	0	0 0	1 1	0	0 0	1 1	0
Volume Module:												
Base Vol:	0	1052	25	0	1098	27	0	93	14	0	105	26
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1052	25	0	1098	27	0	93	14	0	105	26
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1052	25	0	1098	27	0	93	14	0	105	26
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1052	25	0	1098	27	0	93	14	0	105	26
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1052	25	0	1098	27	0	93	14	0	105	26
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.03	1.00	1.00	1.03	1.00	1.00	1.04	1.00	1.00	1.04	1.00
Lanes:	0.00	1.95	0.05	0.00	1.95	0.05	0.00	1.74	0.26	0.00	1.60	0.40
Final Sat.:	0	3226	74	0	3223	77	0	2881	419	0	2665	635
Capacity Analysis Module:												
Vol/Sat:	0.00	0.33	0.34	0.00	0.34	0.35	0.00	0.03	0.03	0.00	0.04	0.04
Crit Moves:	****					****	****				****	

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #54 Main St and 1st St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.754
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	44	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1	1 0	1 0	2	0 1	1 0	1	1 0	1 0	1	1 0
Volume Module:												
Base Vol:	103	532	54	94	937	69	69	805	85	78	972	54
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	103	532	54	94	937	69	69	805	85	78	972	54
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	103	532	54	94	937	69	69	805	85	78	972	54
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	103	532	54	94	937	69	69	805	85	78	972	54
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	103	532	54	94	937	69	69	805	85	78	972	54
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.03	1.00	1.00	1.06	1.00	1.00	1.03	1.00	1.00	1.03	1.00
Lanes:	1.00	1.82	0.18	1.00	2.00	1.00	1.00	1.81	0.19	1.00	1.89	0.11
Final Sat.:	1600	3005	295	1600	3400	1600	1600	2994	306	1600	3132	168
Capacity Analysis Module:												
Vol/Sat:	0.06	0.18	0.18	0.06	0.28	0.04	0.04	0.27	0.28	0.05	0.31	0.32
Crit Moves:	****				****		****					****

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #55 Main St and McFadden Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.916
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	97	Level Of Service:	E

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Prot+Permit			Prot+Permit			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1	1 0	1 0	1	1 0	1 0	0 1	0	1 0	0 1	0
Volume Module:												
Base Vol:	93	874	44	184	1434	28	44	419	46	97	259	74
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	93	874	44	184	1434	28	44	419	46	97	259	74
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	93	874	44	184	1434	28	44	419	46	97	259	74
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	93	874	44	184	1434	28	44	419	46	97	259	74
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	93	874	44	184	1434	28	44	419	46	97	259	74
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.03	1.00	1.00	1.03	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.90	0.10	1.00	1.96	0.04	1.00	0.90	0.10	1.00	0.78	0.22
Final Sat.:	1600	3147	153	1600	3239	61	1600	1442	158	1600	1244	356
Capacity Analysis Module:												
Vol/Sat:	0.06	0.28	0.29	0.12	0.44	0.46	0.03	0.29	0.29	0.06	0.21	0.21
Crit Moves:	****					****		****		****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #56 Main St and Edinger Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.876
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	75	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1	1 0	1 0	1	1 0	1 0	2	1 0	1 0	2	1 0
Volume Module:												
Base Vol:	104	589	64	239	1103	58	99	1288	174	149	867	106
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	104	589	64	239	1103	58	99	1288	174	149	867	106
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	104	589	64	239	1103	58	99	1288	174	149	867	106
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	104	589	64	239	1103	58	99	1288	174	149	867	106
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	104	589	64	239	1103	58	99	1288	174	149	867	106
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.03	1.00	1.00	1.03	1.00	1.00	1.05	1.00	1.00	1.05	1.00
Lanes:	1.00	1.80	0.20	1.00	1.90	0.10	1.00	2.64	0.36	1.00	2.67	0.33
Final Sat.:	1600	2986	314	1600	3140	160	1600	4429	571	1600	4477	523
Capacity Analysis Module:												
Vol/Sat:	0.07	0.20	0.20	0.15	0.35	0.36	0.06	0.29	0.30	0.09	0.19	0.20
Crit Moves:	****					****			****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #57 Main St and MacArthur Blvd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.721
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	40	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	3 0	1	2 0	3 0	1	2 0	3 0	1	2 0	3 0	1
Volume Module:												
Base Vol:	60	344	292	539	709	160	230	1336	242	187	556	279
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	60	344	292	539	709	160	230	1336	242	187	556	279
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	60	344	292	539	709	160	230	1336	242	187	556	279
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	60	344	292	539	709	160	230	1336	242	187	556	279
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	60	344	292	539	709	160	230	1336	242	187	556	279
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3200	5100	1600	3200	5100	1600	3200	5100	1600	3200	5100	1600
Capacity Analysis Module:												
Vol/Sat:	0.02	0.07	0.18	0.17	0.14	0.10	0.07	0.26	0.15	0.06	0.11	0.17
Crit Moves:			****	****				****		****		

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Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #58 Penn Wy and 17th St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.648
Loss Time (sec):	5	Average Delay (sec/veh):	12.1
Optimal Cycle:	34	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	0	0 2	0 0	0	0 0	0 0	2	1 0	1 0	3	0 0
Volume Module:												
Base Vol:	49	0	250	0	0	0	0	1279	652	236	1901	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	49	0	250	0	0	0	0	1279	652	236	1901	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	49	0	250	0	0	0	0	1279	652	236	1901	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	49	0	250	0	0	0	0	1279	652	236	1901	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	49	0	250	0	0	0	0	1279	652	236	1901	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.75	1.00	1.00	1.00	1.00	0.86	0.86	0.95	0.91	1.00
Lanes:	2.00	0.00	2.00	0.00	0.00	0.00	0.00	2.00	1.00	1.00	3.00	0.00
Final Sat.:	3502	0	2842	0	0	0	0	3282	1641	1805	5187	0
Capacity Analysis Module:												
Vol/Sat:	0.01	0.00	0.09	0.00	0.00	0.00	0.00	0.39	0.40	0.13	0.37	0.00
Crit Moves:			****						****	****		
Green/Cycle:	0.14	0.00	0.14	0.00	0.00	0.00	0.00	0.61	0.61	0.20	0.81	0.00
Volume/Cap:	0.10	0.00	0.65	0.00	0.00	0.00	0.00	0.64	0.65	0.65	0.45	0.00
Delay/Veh:	38.0	0.0	44.8	0.0	0.0	0.0	0.0	12.7	13.0	40.7	2.8	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	38.0	0.0	44.8	0.0	0.0	0.0	0.0	12.7	13.0	40.7	2.8	0.0
LOS by Move:	D	A	D	A	A	A	A	B	B	D	A	A
HCM2k85thQ:	1	0	8	0	0	0	0	21	22	12	10	0

Note: Queue reported is the number of cars per lane.

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Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #59 I-5 NB Off Ramps/17th Street

Cycle (sec):	100	Critical Vol./Cap.(X):	0.792
Loss Time (sec):	5	Average Delay (sec/veh):	31.4
Optimal Cycle:	53	Level Of Service:	C

Street Name:	I-5 NB Off Ramps						17th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Permitted		
Rights:	Include			Include			Ignore			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 1	0	0 1	1	0 0	0 1	1	0	3 0 1	0	0 2	1 0
Volume Module:												
Base Vol:	720	33	21	60	0	312	101	1062	384	0	1508	24
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	720	33	21	60	0	312	101	1062	384	0	1508	24
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Volume:	720	33	21	60	0	312	101	1062	0	0	1508	24
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	720	33	21	60	0	312	101	1062	0	0	1508	24
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
FinalVolume:	720	33	21	60	0	312	101	1062	0	0	1508	24
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.85	0.95	1.00	0.85	0.95	0.91	1.00	1.00	0.91	0.91
Lanes:	1.91	0.09	1.00	1.00	0.00	1.00	1.00	3.00	1.00	0.00	2.95	0.05
Final Sat.:	3466	159	1615	1805	0	1615	1805	5187	1900	0	5096	81
Capacity Analysis Module:												
Vol/Sat:	0.21	0.21	0.01	0.03	0.00	0.19	0.06	0.20	0.00	0.00	0.30	0.30
Crit Moves:	****					****	****				****	
Green/Cycle:	0.26	0.26	0.26	0.24	0.00	0.24	0.07	0.44	0.00	0.00	0.37	0.37
Volume/Cap:	0.79	0.79	0.05	0.14	0.00	0.79	0.79	0.46	0.00	0.00	0.79	0.79
Delay/Veh:	39.0	39.0	27.6	29.7	0.0	45.9	73.6	19.6	0.0	0.0	30.2	30.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	39.0	39.0	27.6	29.7	0.0	45.9	73.6	19.6	0.0	0.0	30.2	30.2
LOS by Move:	D	D	C	C	A	D	E	B	A	A	C	C
HCM2k85thQ:	19	19	1	2	0	17	8	13	0	0	25	25

Note: Queue reported is the number of cars per lane.

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Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #60 Penn Wy and I-5 SB Ramps

Cycle (sec):	100	Critical Vol./Cap.(X):	0.462
Loss Time (sec):	5	Average Delay (sec/veh):	19.5
Optimal Cycle:	23	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	2	0 1	2 0	2	0 0	0 0	0	0 0	1 0	0	0 2
Volume Module:												
Base Vol:	0	192	170	837	173	0	0	0	0	170	0	95
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	192	170	837	173	0	0	0	0	170	0	95
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	192	170	837	173	0	0	0	0	170	0	95
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	192	170	837	173	0	0	0	0	170	0	95
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	192	170	837	173	0	0	0	0	170	0	95
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.95	0.85	0.92	0.95	1.00	1.00	1.00	1.00	0.95	1.00	0.75
Lanes:	0.00	2.00	1.00	2.00	2.00	0.00	0.00	0.00	0.00	1.00	0.00	2.00
Final Sat.:	0	3610	1615	3502	3610	0	0	0	0	1805	0	2842
Capacity Analysis Module:												
Vol/Sat:	0.00	0.05	0.11	0.24	0.05	0.00	0.00	0.00	0.00	0.09	0.00	0.03
Crit Moves:			****	****						****		
Green/Cycle:	0.00	0.23	0.23	0.52	0.75	0.00	0.00	0.00	0.00	0.20	0.00	0.72
Volume/Cap:	0.00	0.23	0.46	0.46	0.06	0.00	0.00	0.00	0.00	0.46	0.00	0.05
Delay/Veh:	0.0	31.6	34.2	15.5	3.4	0.0	0.0	0.0	0.0	35.9	0.0	4.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	31.6	34.2	15.5	3.4	0.0	0.0	0.0	0.0	35.9	0.0	4.0
LOS by Move:	A	C	C	B	A	A	A	A	A	D	A	A
HCM2k85thQ:	0	4	8	13	1	0	0	0	0	8	0	1

Note: Queue reported is the number of cars per lane.

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Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Base Volume Alternative)

Intersection #61 Santiago St and Civic Center Dr

Cycle (sec):	100	Critical Vol./Cap.(X):	1.147
Loss Time (sec):	5	Average Delay (sec/veh):	62.6
Optimal Cycle:	0	Level Of Service:	F

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	0 1	0	1 0	0 1	0	1 0	0 1	0	0 0	1! 0	0
Volume Module:												
Base Vol:	318	221	31	6	335	82	212	81	431	126	116	23
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	318	221	31	6	335	82	212	81	431	126	116	23
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	318	221	31	6	335	82	212	81	431	126	116	23
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	318	221	31	6	335	82	212	81	431	126	116	23
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	318	221	31	6	335	82	212	81	431	126	116	23
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.88	0.12	1.00	0.80	0.20	1.00	0.16	0.84	0.47	0.44	0.09
Final Sat.:	387	362	51	383	333	81	393	71	376	177	163	32
Capacity Analysis Module:												
Vol/Sat:	0.82	0.61	0.61	0.02	1.01	1.01	0.54	1.15	1.15	0.71	0.71	0.71
Crit Moves:	****				****			****				****
Delay/Veh:	42.6	24.0	24.0	12.2	75.9	75.9	22.0	116	116.2	32.7	32.7	32.7
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	42.6	24.0	24.0	12.2	75.9	75.9	22.0	116	116.2	32.7	32.7	32.7
LOS by Move:	E	C	C	B	F	F	C	F	F	D	D	D
ApproachDel:	34.4			75.0			88.6			32.7		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	34.4			75.0			88.6			32.7		
LOS by Appr:	D			F			F			D		
AllWayAvgQ:	3.3	1.4	1.4	0.0	7.4	7.4	1.1	13.1	13.1	2.1	2.1	2.1

Note: Queue reported is the number of cars per lane.

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #62 Santiago St and Santa Ana Blvd

Cycle (sec):	100	Critical Vol./Cap.(X):	1.444
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	180	Level Of Service:	F

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Permitted				Permitted				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Y+R:	4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	
Lanes:	1	0 1	0	1	1	0 1	0	1	1	0	0 1	0	1	0 2	0	1
Volume Module:																
Base Vol:	188	611	303		409	972	253		118	732	99		297	699	258	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	188	611	303		409	972	253		118	732	99		297	699	258	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	188	611	303		409	972	253		118	732	99		297	699	258	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	188	611	303		409	972	253		118	732	99		297	699	258	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	188	611	303		409	972	253		118	732	99		297	699	258	
Saturation Flow Module:																
Sat/Lane:	1600	1600	1600		1600	1600	1600		1600	1600	1600		1600	1600	1600	
Adjustment:	1.00	1.06	1.00		1.00	1.06	1.00		1.00	1.00	1.00		1.00	1.06	1.00	
Lanes:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	0.88	0.12		1.00	2.00	1.00	
Final Sat.:	1600	1700	1600		1600	1700	1600		1600	1409	191		1600	3400	1600	
Capacity Analysis Module:																
Vol/Sat:	0.12	0.36	0.19		0.26	0.57	0.16		0.07	0.52	0.52		0.19	0.21	0.16	
Crit Moves:	****				****				****				****			

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #63 Standard Ave and 4th St

Cycle (sec):	100	Critical Vol./Cap.(X):	1.340
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	180	Level Of Service:	F

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1 0	1	1 0	1 0	1	1 0	0 1	0	1 0	0 1	0
Volume Module:												
Base Vol:	191	473	248	431	604	332	298	624	219	250	550	340
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	191	473	248	431	604	332	298	624	219	250	550	340
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	191	473	248	431	604	332	298	624	219	250	550	340
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	191	473	248	431	604	332	298	624	219	250	550	340
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	191	473	248	431	604	332	298	624	219	250	550	340
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.74	0.26	1.00	0.62	0.38
Final Sat.:	1600	1700	1600	1600	1700	1600	1600	1184	416	1600	989	611
Capacity Analysis Module:												
Vol/Sat:	0.12	0.28	0.16	0.27	0.36	0.21	0.19	0.53	0.53	0.16	0.56	0.56
Crit Moves:		****			****			****			****	

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #64 Standard Ave and 1st St

Cycle (sec):	100	Critical Vol./Cap.(X):	1.515
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	180	Level Of Service:	F

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	0 1	0	0 0	1! 0	0	1 0	1 1	0	1 0	1 1	0
Volume Module:												
Base Vol:	45	631	312	123	901	41	161	1959	121	194	1282	120
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	45	631	312	123	901	41	161	1959	121	194	1282	120
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	45	631	312	123	901	41	161	1959	121	194	1282	120
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	45	631	312	123	901	41	161	1959	121	194	1282	120
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	45	631	312	123	901	41	161	1959	121	194	1282	120
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.03	1.00	1.00	1.03	1.00
Lanes:	1.00	0.67	0.33	0.11	0.85	0.04	1.00	1.88	0.12	1.00	1.83	0.17
Final Sat.:	1600	1071	529	185	1354	62	1600	3114	186	1600	3026	274
Capacity Analysis Module:												
Vol/Sat:	0.03	0.59	0.59	0.08	0.67	0.67	0.10	0.63	0.65	0.12	0.42	0.44
Crit Moves:	****			****					****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #65 Standard Ave and Mcfadden Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.843
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	63	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	0	1 0	1 0	0	1 0	1 0	0	1 0	1 0	0	1 0
Volume Module:												
Base Vol:	44	170	77	123	297	21	21	736	89	81	214	48
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	44	170	77	123	297	21	21	736	89	81	214	48
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	44	170	77	123	297	21	21	736	89	81	214	48
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	44	170	77	123	297	21	21	736	89	81	214	48
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	44	170	77	123	297	21	21	736	89	81	214	48
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.69	0.31	1.00	0.93	0.07	1.00	0.89	0.11	1.00	0.82	0.18
Final Sat.:	1600	1101	499	1600	1494	106	1600	1427	173	1600	1307	293
Capacity Analysis Module:												
Vol/Sat:	0.03	0.15	0.15	0.08	0.20	0.20	0.01	0.52	0.52	0.05	0.16	0.16
Crit Moves:	****			****			****			****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #66 Halladay St and Warner Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.692
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	36	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	0	0 1	0	0	0 0 0	0	0	2 1 0	0	1	2 0 0
Volume Module:												
Base Vol:	69	0	160	0	0	0	0	1772	200	210	797	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	69	0	160	0	0	0	0	1772	200	210	797	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	69	0	160	0	0	0	0	1772	200	210	797	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	69	0	160	0	0	0	0	1772	200	210	797	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	69	0	160	0	0	0	0	1772	200	210	797	0
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.05	1.00	1.00	1.05	1.00
Lanes:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	2.70	0.30	0.63	2.37	0.00
Final Sat.:	1600	0	1600	0	0	0	0	4513	487	1001	3999	0
Capacity Analysis Module:												
Vol/Sat:	0.04	0.00	0.10	0.00	0.00	0.00	0.00	0.39	0.41	0.13	0.20	0.00
Crit Moves:			****						****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #67 Halladay St and Dyer Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.668
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	34	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	0	1 0	1 0	0	1 0	1 0	2	1 0	1 0	2	1 0
Volume Module:												
Base Vol:	16	26	71	155	31	33	54	1820	13	126	686	111
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	16	26	71	155	31	33	54	1820	13	126	686	111
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	16	26	71	155	31	33	54	1820	13	126	686	111
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	16	26	71	155	31	33	54	1820	13	126	686	111
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	16	26	71	155	31	33	54	1820	13	126	686	111
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.04	1.00	1.00	1.05	1.00
Lanes:	1.00	0.27	0.73	1.00	0.48	0.52	1.00	2.98	0.02	1.00	2.58	0.42
Final Sat.:	1600	429	1171	1600	775	825	1600	4966	34	1600	4331	669
Capacity Analysis Module:												
Vol/Sat:	0.01	0.06	0.06	0.10	0.04	0.04	0.03	0.37	0.38	0.08	0.16	0.17
Crit Moves:			****	****					****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #68 SR-55 SB Ramps and MacArthur Blvd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.623
Loss Time (sec):	5	Average Delay (sec/veh):	20.2
Optimal Cycle:	32	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Ignore			Ignore		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0	0	2	0	0	0	2	0	0	2	1	1	0	0	3	0	1
Volume Module:																		
Base Vol:	0	0	0	998	0	903	0	1423	1014	0	1363	155
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	998	0	903	0	1423	1014	0	1363	155
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Volume:	0	0	0	998	0	903	0	1423	0	0	1363	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	998	0	903	0	1423	0	0	1363	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
FinalVolume:	0	0	0	998	0	903	0	1423	0	0	1363	0
Saturation Flow Module:																		
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	0.92	1.00	0.75	1.00	0.91	0.91	1.00	0.91	1.00
Lanes:	0.00	0.00	0.00	2.00	0.00	2.00	0.00	3.00	1.00	0.00	3.00	1.00
Final Sat.:	0	0	0	3502	0	2842	0	5187	1729	0	5187	1900
Capacity Analysis Module:																		
Vol/Sat:	0.00	0.00	0.00	0.29	0.00	0.32	0.00	0.27	0.00	0.00	0.26	0.00
Crit Moves:						****		****		****		
Green/Cycle:	0.00	0.00	0.00	0.51	0.00	0.51	0.00	0.44	0.00	0.00	0.44	0.00
Volume/Cap:	0.00	0.00	0.00	0.56	0.00	0.62	0.00	0.62	0.00	0.00	0.60	0.00
Delay/Veh:	0.0	0.0	0.0	17.2	0.0	18.5	0.0	22.1	0.0	0.0	21.7	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	17.2	0.0	18.5	0.0	22.1	0.0	0.0	21.7	0.0
LOS by Move:	A	A	A	B	A	B	A	C	A	A	C	A
HCM2k85thQ:	0	0	0	17	0	18	0	19	0	0	18	0

Note: Queue reported is the number of cars per lane.

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Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #69 SR-55 NB Ramps and MacArthur Blvd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.728
Loss Time (sec):	5	Average Delay (sec/veh):	19.5
Optimal Cycle:	42	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Ignore			Include			Ignore			Ignore		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	0	0 1	0 0	0	0 0	0 0	2	0 2	0 0	3	0 1
Volume Module:												
Base Vol:	965	0	1037	0	0	0	0	1503	744	0	591	279
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	965	0	1037	0	0	0	0	1503	744	0	591	279
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Volume:	965	0	0	0	0	0	0	1503	0	0	591	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	965	0	0	0	0	0	0	1503	0	0	591	0
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
FinalVolume:	965	0	0	0	0	0	0	1503	0	0	591	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.88	1.00	0.91	1.00
Lanes:	2.00	0.00	1.00	0.00	0.00	0.00	0.00	2.00	2.00	0.00	3.00	1.00
Final Sat.:	3502	0	1900	0	0	0	0	3610	3344	0	5187	1900
Capacity Analysis Module:												
Vol/Sat:	0.28	0.00	0.00	0.00	0.00	0.00	0.00	0.42	0.00	0.00	0.11	0.00
Crit Moves:	****							****		****		
Green/Cycle:	0.38	0.00	0.00	0.00	0.00	0.00	0.00	0.57	0.00	0.00	0.57	0.00
Volume/Cap:	0.73	0.00	0.00	0.00	0.00	0.00	0.00	0.73	0.00	0.00	0.20	0.00
Delay/Veh:	28.7	0.0	0.0	0.0	0.0	0.0	0.0	17.1	0.0	0.0	10.4	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	28.7	0.0	0.0	0.0	0.0	0.0	0.0	17.1	0.0	0.0	10.4	0.0
LOS by Move:	C	A	A	A	A	A	A	B	A	A	B	A
HCM2k85thQ:	21	0	0	0	0	0	0	27	0	0	5	0

Note: Queue reported is the number of cars per lane.

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Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #70 SR-55 SB Ramps and Dyer Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.610
Loss Time (sec):	5	Average Delay (sec/veh):	25.9
Optimal Cycle:	31	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Ovl			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 1	0 0	2	0 1	1 0	1	1 0	3 0	1	2 0	3 0	1
Volume Module:												
Base Vol:	312	37	713	50	242	60	34	1282	273	418	663	111
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	312	37	713	50	242	60	34	1282	273	418	663	111
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	312	37	713	50	242	60	34	1282	273	418	663	111
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	312	37	713	50	242	60	34	1282	273	418	663	111
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	312	37	713	50	242	60	34	1282	273	418	663	111
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.96	0.96	0.75	0.94	0.94	0.85	0.95	0.91	0.85	0.92	0.91	0.85
Lanes:	1.79	0.21	2.00	0.34	1.66	1.00	1.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3251	386	2842	613	2968	1615	1805	5187	1615	3502	5187	1615
Capacity Analysis Module:												
Vol/Sat:	0.10	0.10	0.25	0.08	0.08	0.04	0.02	0.25	0.17	0.12	0.13	0.07
Crit Moves:			****		****			****		****		
Green/Cycle:	0.22	0.22	0.41	0.13	0.13	0.13	0.08	0.41	0.41	0.20	0.52	0.52
Volume/Cap:	0.45	0.45	0.61	0.61	0.61	0.28	0.24	0.61	0.42	0.61	0.24	0.13
Delay/Veh:	34.4	34.4	24.1	43.2	43.2	39.7	44.3	24.0	21.7	38.3	13.1	12.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	34.4	34.4	24.1	43.2	43.2	39.7	44.3	24.0	21.7	38.3	13.1	12.3
LOS by Move:	C	C	C	D	D	D	D	C	C	D	B	B
HCM2k85thQ:	8	8	16	8	8	3	2	18	9	11	6	3

Note: Queue reported is the number of cars per lane.

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #71 Glassell St and La Veta Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.826
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	58	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ovl			Include			Ovl			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	1 0	1	1 0	1 1	0	1 0	1 0	1	1 0	1 1	0
Volume Module:												
Base Vol:	292	458	139	13	274	60	57	293	563	380	401	10
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	292	458	139	13	274	60	57	293	563	380	401	10
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	292	458	139	13	274	60	57	293	563	380	401	10
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	292	458	139	13	274	60	57	293	563	380	401	10
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	292	458	139	13	274	60	57	293	563	380	401	10
OvlAdjVol:			0						417			
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.04	1.00	1.00	1.06	1.00	1.00	1.03	1.00
Lanes:	2.00	1.00	1.00	1.00	1.64	0.36	1.00	1.00	1.00	1.00	1.95	0.05
Final Sat.:	3200	1700	1600	1600	2725	575	1600	1700	1600	1600	3222	78
Capacity Analysis Module:												
Vol/Sat:	0.09	0.27	0.09	0.01	0.10	0.10	0.04	0.17	0.35	0.24	0.12	0.13
OvlAdjV/S:			0.00						0.26			
Crit Moves:		****			****				****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #72 Glassell St and SR-22 WB Ramps

Cycle (sec):	100	Critical Vol./Cap.(X):	0.841
Loss Time (sec):	5	Average Delay (sec/veh):	30.1
Optimal Cycle:	65	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Permitted			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 0	0	0 0	2 0	1	0 0	0 0	0	1 0	1! 0	1
Volume Module:												
Base Vol:	568	638	0	0	1017	473	0	0	0	247	4	369
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	568	638	0	0	1017	473	0	0	0	247	4	369
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	568	638	0	0	1017	473	0	0	0	247	4	369
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	568	638	0	0	1017	473	0	0	0	247	4	369
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	568	638	0	0	1017	473	0	0	0	247	4	369
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	1.00	1.00	0.95	0.85	1.00	1.00	1.00	0.86	0.86	0.86
Lanes:	1.00	2.00	0.00	0.00	2.00	1.00	0.00	0.00	0.00	1.40	0.01	1.59
Final Sat.:	1805	3610	0	0	3610	1615	0	0	0	2271	21	2589
Capacity Analysis Module:												
Vol/Sat:	0.31	0.18	0.00	0.00	0.28	0.29	0.00	0.00	0.00	0.11	0.19	0.14
Crit Moves:	****					****					****	
Green/Cycle:	0.37	0.72	0.00	0.00	0.35	0.35	0.00	0.00	0.00	0.23	0.23	0.23
Volume/Cap:	0.84	0.24	0.00	0.00	0.81	0.84	0.00	0.00	0.00	0.48	0.84	0.63
Delay/Veh:	37.9	4.7	0.0	0.0	33.6	41.0	0.0	0.0	0.0	33.7	45.5	36.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	37.9	4.7	0.0	0.0	33.6	41.0	0.0	0.0	0.0	33.7	45.5	36.0
LOS by Move:	D	A	A	A	C	D	A	A	A	C	D	D
HCM2k85thQ:	27	5	0	0	25	24	0	0	0	8	18	11

Note: Queue reported is the number of cars per lane.

Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #73 Grand Ave / Glassell St and SR-22 EB Ramps

Cycle (sec):	100	Critical Vol./Cap.(X):	0.842
Loss Time (sec):	5	Average Delay (sec/veh):	29.6
Optimal Cycle:	65	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	2	0 1	1 0	2	0 0	1 0	1!	0 1	0 0	0	0 0
Volume Module:												
Base Vol:	0	968	258	345	904	0	258	0	1012	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	968	258	345	904	0	258	0	1012	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	968	258	345	904	0	258	0	1012	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	968	258	345	904	0	258	0	1012	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	968	258	345	904	0	258	0	1012	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.95	0.85	0.95	0.95	1.00	0.87	1.00	0.87	1.00	1.00	1.00
Lanes:	0.00	2.00	1.00	1.00	2.00	0.00	1.20	0.00	1.80	0.00	0.00	0.00
Final Sat.:	0	3610	1615	1805	3610	0	1992	0	2974	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.27	0.16	0.19	0.25	0.00	0.13	0.00	0.34	0.00	0.00	0.00
Crit Moves:		****		****					****			
Green/Cycle:	0.00	0.32	0.32	0.23	0.55	0.00	0.40	0.00	0.40	0.00	0.00	0.00
Volume/Cap:	0.00	0.84	0.50	0.84	0.46	0.00	0.32	0.00	0.84	0.00	0.00	0.00
Delay/Veh:	0.0	37.5	28.4	51.4	13.9	0.0	20.4	0.0	31.3	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	37.5	28.4	51.4	13.9	0.0	20.4	0.0	31.3	0.0	0.0	0.0
LOS by Move:	A	D	C	D	B	A	C	A	C	A	A	A
HCM2k85thQ:	0	25	10	19	13	0	7	0	27	0	0	0

Note: Queue reported is the number of cars per lane.

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #74 Grand Ave and Fairhaven Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.569
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	27	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 1	0	1 0	2 1	0	1 0	1 1	0	1 0	0 1	0
Volume Module:												
Base Vol:	25	1032	148	184	1531	34	99	60	59	152	17	137
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	25	1032	148	184	1531	34	99	60	59	152	17	137
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	25	1032	148	184	1531	34	99	60	59	152	17	137
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	25	1032	148	184	1531	34	99	60	59	152	17	137
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	25	1032	148	184	1531	34	99	60	59	152	17	137
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.04	1.00	1.00	1.06	1.00	1.00	1.00	1.00
Lanes:	1.00	2.62	0.38	1.00	2.93	0.07	1.00	1.01	0.99	1.00	0.11	0.89
Final Sat.:	1600	4398	602	1600	4896	104	1600	1713	1587	1600	177	1423
Capacity Analysis Module:												
Vol/Sat:	0.02	0.23	0.25	0.12	0.31	0.33	0.06	0.04	0.04	0.10	0.10	0.10
Crit Moves:			****	****			****				****	

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #75 Grand Ave and Santa Clara Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.798
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	52	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			WideBypass			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 1	0	1 0	2 1	0	1 0	0 1	0	1 0	1 0	1
Volume Module:												
Base Vol:	92	648	167	307	1503	338	179	291	60	140	270	246
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	92	648	167	307	1503	338	179	291	60	140	270	246
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	92	648	167	307	1503	338	179	291	60	140	270	246
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	92	648	167	307	1503	338	179	291	60	140	270	246
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	92	648	167	307	1503	338	179	291	60	140	270	246
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.05	1.00	1.00	1.00	1.00	1.00	1.06	1.00
Lanes:	1.00	2.39	0.61	1.00	2.45	0.55	1.00	0.83	0.17	1.00	1.00	1.00
Final Sat.:	1600	4016	984	1600	4119	881	1600	1326	274	1600	1700	1600
Capacity Analysis Module:												
Vol/Sat:	0.06	0.16	0.17	0.19	0.36	0.38	0.11	0.22	0.22	0.09	0.16	0.15
Crit Moves:	****					****		****		****		

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #76 Grand Ave and 17th St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.856
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	67	Level Of Service:	D

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Y+R:	4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	
Lanes:	1	0 2	1	0	1	0 2	1	0	2	0 2	1	0	2	0 2	1	0
Volume Module:																
Base Vol:	228	666	458		303	1270	249		246	915	116		401	1047	114	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	228	666	458		303	1270	249		246	915	116		401	1047	114	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	228	666	458		303	1270	249		246	915	116		401	1047	114	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	228	666	458		303	1270	249		246	915	116		401	1047	114	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	228	666	458		303	1270	249		246	915	116		401	1047	114	
Saturation Flow Module:																
Sat/Lane:	1600	1600	1600		1600	1600	1600		1600	1600	1600		1600	1600	1600	
Adjustment:	1.00	1.06	1.00		1.00	1.05	1.00		1.00	1.05	1.00		1.00	1.05	1.00	
Lanes:	1.00	2.00	1.00		1.00	2.51	0.49		2.00	2.66	0.34		2.00	2.71	0.29	
Final Sat.:	1600	3400	1600		1600	4213	787		3200	4460	540		3200	4529	471	
Capacity Analysis Module:																
Vol/Sat:	0.14	0.20	0.29		0.19	0.30	0.32		0.08	0.21	0.21		0.13	0.23	0.24	
Crit Moves:			****		****					****			****			

Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #77 Grand Ave and I-5 NB Ramps

Cycle (sec):	100	Critical Vol./Cap.(X):	0.845
Loss Time (sec):	5	Average Delay (sec/veh):	15.3
Optimal Cycle:	66	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Ignore			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	2 0	1	1 0	3 0	0	0 0	0 0	0 0	2 0	0 0	1
Volume Module:												
Base Vol:	0	1145	662	104	3338	0	0	0	0	557	0	154
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1145	662	104	3338	0	0	0	0	557	0	154
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1145	0	104	3338	0	0	0	0	557	0	154
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1145	0	104	3338	0	0	0	0	557	0	154
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1145	0	104	3338	0	0	0	0	557	0	154
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.95	1.00	0.95	0.91	1.00	1.00	1.00	1.00	0.92	1.00	0.85
Lanes:	0.00	2.00	1.00	1.00	3.00	0.00	0.00	0.00	0.00	2.00	0.00	1.00
Final Sat.:	0	3610	1900	1805	5187	0	0	0	0	3502	0	1615
Capacity Analysis Module:												
Vol/Sat:	0.00	0.32	0.00	0.06	0.64	0.00	0.00	0.00	0.00	0.16	0.00	0.10
Crit Moves:	****				****					****		
Green/Cycle:	0.00	0.64	0.00	0.12	0.76	0.00	0.00	0.00	0.00	0.19	0.00	0.19
Volume/Cap:	0.00	0.49	0.00	0.49	0.84	0.00	0.00	0.00	0.00	0.84	0.00	0.51
Delay/Veh:	0.0	9.4	0.0	43.2	9.8	0.0	0.0	0.0	0.0	49.0	0.0	37.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	9.4	0.0	43.2	9.8	0.0	0.0	0.0	0.0	49.0	0.0	37.8
LOS by Move:	A	A	A	D	A	A	A	A	A	D	A	D
HCM2k85thQ:	0	15	0	6	39	0	0	0	0	17	0	7

Note: Queue reported is the number of cars per lane.

Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #78 Grand Ave and Santa Ana Blvd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.881
Loss Time (sec):	5	Average Delay (sec/veh):	26.3
Optimal Cycle:	80	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Ovl			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0 2	1 0		1 0 2	0 2		2 0 1	0 2		0 1	0 1	0
Volume Module:												
Base Vol:	79	1119	57	231	1908	1684	242	200	394	5	407	37
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	79	1119	57	231	1908	1684	242	200	394	5	407	37
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	79	1119	57	231	1908	1684	242	200	394	5	407	37
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	79	1119	57	231	1908	1684	242	200	394	5	407	37
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	79	1119	57	231	1908	1684	242	200	394	5	407	37
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.90	0.90	0.95	0.95	0.75	0.92	1.00	0.75	0.94	0.94	0.94
Lanes:	1.00	2.85	0.15	1.00	2.00	2.00	2.00	1.00	2.00	0.02	1.82	0.16
Final Sat.:	1805	4901	250	1805	3610	2842	3502	1900	2842	40	3230	294
Capacity Analysis Module:												
Vol/Sat:	0.04	0.23	0.23	0.13	0.53	0.59	0.07	0.11	0.14	0.13	0.13	0.13
Crit Moves:	****				****				****	****		
Green/Cycle:	0.05	0.42	0.42	0.23	0.60	0.76	0.16	0.16	0.16	0.14	0.14	0.14
Volume/Cap:	0.88	0.55	0.55	0.55	0.88	0.78	0.44	0.67	0.88	0.88	0.88	0.88
Delay/Veh:	105.1	22.4	22.4	35.2	21.6	9.2	38.7	45.4	59.3	58.3	58.3	58.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	105.1	22.4	22.4	35.2	21.6	9.2	38.7	45.4	59.3	58.3	58.3	58.3
LOS by Move:	F	C	C	D	C	A	D	D	E	E	E	E
HCM2k85thQ:	7	15	15	10	41	28	6	11	15	15	15	15

Note: Queue reported is the number of cars per lane.

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #79 Grand Ave and 1st St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.827
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	58	Level Of Service:	D

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Y+R:	4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	
Lanes:	2	0 2	1	0	2	0 3	0	1	2	0 2	0	1	2	0 2	0	1
Volume Module:																
Base Vol:	186	655	31		121	1753	213		318	760	216		268	939	107	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	186	655	31		121	1753	213		318	760	216		268	939	107	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	186	655	31		121	1753	213		318	760	216		268	939	107	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	186	655	31		121	1753	213		318	760	216		268	939	107	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	186	655	31		121	1753	213		318	760	216		268	939	107	
Saturation Flow Module:																
Sat/Lane:	1600	1600	1600		1600	1600	1600		1600	1600	1600		1600	1600	1600	
Adjustment:	1.00	1.04	1.00		1.00	1.06	1.00		1.00	1.06	1.00		1.00	1.06	1.00	
Lanes:	2.00	2.86	0.14		2.00	3.00	1.00		2.00	2.00	1.00		2.00	2.00	1.00	
Final Sat.:	3200	4783	217		3200	5100	1600		3200	3400	1600		3200	3400	1600	
Capacity Analysis Module:																
Vol/Sat:	0.06	0.14	0.14		0.04	0.34	0.13		0.10	0.22	0.14		0.08	0.28	0.07	
Crit Moves:	****					****			****					****		

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #80 Grand Ave and Chestnut Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.935
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	113	Level Of Service:	E

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2	1 0	1 0	2	1 0	1 0	0	1 0	1 0	0	1 0
Volume Module:												
Base Vol:	53	737	163	174	2086	57	64	449	118	81	237	148
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	53	737	163	174	2086	57	64	449	118	81	237	148
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	53	737	163	174	2086	57	64	449	118	81	237	148
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	53	737	163	174	2086	57	64	449	118	81	237	148
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	53	737	163	174	2086	57	64	449	118	81	237	148
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.04	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.46	0.54	1.00	2.92	0.08	1.00	0.79	0.21	1.00	0.62	0.38
Final Sat.:	1600	4131	869	1600	4872	128	1600	1267	333	1600	985	615
Capacity Analysis Module:												
Vol/Sat:	0.03	0.18	0.19	0.11	0.43	0.45	0.04	0.35	0.35	0.05	0.24	0.24
Crit Moves:	****					****		****		****		

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #81 Grand Ave and McFadden Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	1.011
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	180	Level Of Service:	F

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 1	0	1 0	2 1	0	1 0	0 1	0	1 0	1 1	0
Volume Module:												
Base Vol:	262	1104	165	294	1974	192	109	352	107	95	340	86
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	262	1104	165	294	1974	192	109	352	107	95	340	86
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	262	1104	165	294	1974	192	109	352	107	95	340	86
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	262	1104	165	294	1974	192	109	352	107	95	340	86
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	262	1104	165	294	1974	192	109	352	107	95	340	86
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.05	1.00	1.00	1.00	1.00	1.00	1.04	1.00
Lanes:	1.00	2.61	0.39	1.00	2.73	0.27	1.00	0.77	0.23	1.00	1.60	0.40
Final Sat.:	1600	4376	624	1600	4575	425	1600	1227	373	1600	2654	646
Capacity Analysis Module:												
Vol/Sat:	0.16	0.25	0.26	0.18	0.43	0.45	0.07	0.29	0.29	0.06	0.13	0.13
Crit Moves:	****					****		****		****		

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #82 Grand Ave and Edinger Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.897
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	85	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 1	0	1 0	2 1	0	1 0	2 1	0	1 0	2 1	0
Volume Module:												
Base Vol:	65	649	127	253	1293	253	396	1654	159	170	651	142
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	65	649	127	253	1293	253	396	1654	159	170	651	142
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	65	649	127	253	1293	253	396	1654	159	170	651	142
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	65	649	127	253	1293	253	396	1654	159	170	651	142
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	65	649	127	253	1293	253	396	1654	159	170	651	142
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.05	1.00	1.00	1.05	1.00	1.00	1.05	1.00
Lanes:	1.00	2.51	0.49	1.00	2.51	0.49	1.00	2.74	0.26	1.00	2.46	0.54
Final Sat.:	1600	4214	786	1600	4214	786	1600	4579	421	1600	4140	860
Capacity Analysis Module:												
Vol/Sat:	0.04	0.15	0.16	0.16	0.31	0.32	0.25	0.36	0.38	0.11	0.16	0.17
Crit Moves:	****					****			****	****		

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #83 Grand Ave and Warner Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.664
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	34	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 1	0	1 0	2 1	0	2 0	3 0	1	2 0	2 1	0
Volume Module:												
Base Vol:	187	564	241	204	589	199	314	1120	440	140	617	208
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	187	564	241	204	589	199	314	1120	440	140	617	208
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	187	564	241	204	589	199	314	1120	440	140	617	208
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	187	564	241	204	589	199	314	1120	440	140	617	208
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	187	564	241	204	589	199	314	1120	440	140	617	208
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	1.00	2.10	0.90	1.00	2.24	0.76	2.00	3.00	1.00	2.00	2.24	0.76
Final Sat.:	1600	3563	1437	1600	3788	1212	3200	5100	1600	3200	3790	1210
Capacity Analysis Module:												
Vol/Sat:	0.12	0.16	0.17	0.13	0.16	0.16	0.10	0.22	0.28	0.04	0.16	0.17
Crit Moves:		****	****						****	****		

Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #84 SR-55 NB Ramps and Dyer Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.565
Loss Time (sec):	5	Average Delay (sec/veh):	17.3
Optimal Cycle:	28	Level Of Service:	B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	T	R	L	T	T	R	L	T	T	R	L	T	T	R
Control:	Split Phase				Split Phase				Protected				Protected			
Rights:	Include				Include				Ignore				Ignore			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Y+R:	4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	
Lanes:	1	0	1!	0	1	0	0	0	0	0	0	3	0	1	0	0
Volume Module:																
Base Vol:	637	0	521		0	0	0		0	1550	620		0	859	517	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	637	0	521		0	0	0		0	1550	620		0	859	517	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	0.00		1.00	1.00	0.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	0.00		1.00	1.00	0.00	
PHF Volume:	637	0	521		0	0	0		0	1550	0		0	859	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	637	0	521		0	0	0		0	1550	0		0	859	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	0.00		1.00	1.00	0.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	0.00		1.00	1.00	0.00	
FinalVolume:	637	0	521		0	0	0		0	1550	0		0	859	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.91	1.00	0.91		1.00	1.00	1.00		1.00	0.91	1.00		1.00	0.91	0.91	
Lanes:	1.55	0.00	1.45		0.00	0.00	0.00		0.00	3.00	1.00		0.00	3.00	0.00	
Final Sat.:	2674	0	2501		0	0	0		0	5187	1900		0	5187	0	
Capacity Analysis Module:																
Vol/Sat:	0.24	0.00	0.21		0.00	0.00	0.00		0.00	0.30	0.00		0.00	0.17	0.00	
Crit Moves:	****									****			****			
Green/Cycle:	0.42	0.00	0.42		0.00	0.00	0.00		0.00	0.53	0.00		0.00	0.53	0.00	
Volume/Cap:	0.57	0.00	0.49		0.00	0.00	0.00		0.00	0.57	0.00		0.00	0.31	0.00	
Delay/Veh:	22.3	0.0	21.3		0.0	0.0	0.0		0.0	16.1	0.0		0.0	13.4	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	22.3	0.0	21.3		0.0	0.0	0.0		0.0	16.1	0.0		0.0	13.4	0.0	
LOS by Move:	C	A	C		A	A	A		A	B	A		A	B	A	
HCM2k85thQ:	15	0	13		0	0	0		0	18	0		0	8	0	

Note: Queue reported is the number of cars per lane.

Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Base Volume Alternative)

Intersection #85 Cambridge St and La Veta Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.900
Loss Time (sec):	5	Average Delay (sec/veh):	23.4
Optimal Cycle:	0	Level Of Service:	C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Control:	Stop Sign				Stop Sign				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Lanes:	1	0	1	0	0	0	0	1	0	1	0	0	0	1	0	0
Volume Module:																
Base Vol:	185	235	0		0	480	245		195	0	312		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	185	235	0		0	480	245		195	0	312		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	185	235	0		0	480	245		195	0	312		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	185	235	0		0	480	245		195	0	312		0	0	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	185	235	0		0	480	245		195	0	312		0	0	0	
Saturation Flow Module:																
Adjustment:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Lanes:	1.00	1.00	0.00		0.00	1.00	1.00		1.00	0.00	1.00		0.00	0.00	0.00	
Final Sat.:	465	498	0		0	534	586		459	0	541		0	0	0	
Capacity Analysis Module:																
Vol/Sat:	0.40	0.47	xxxx		xxxx	0.90	0.42		0.43	xxxx	0.58		xxxx	xxxx	xxxx	
Crit Moves:		****				****					****					
Delay/Veh:	15.0	15.6	0.0		0.0	42.9	12.8		15.7	0.0	17.1		0.0	0.0	0.0	
Delay Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	15.0	15.6	0.0		0.0	42.9	12.8		15.7	0.0	17.1		0.0	0.0	0.0	
LOS by Move:	B	C	*		*	E	B		C	*	C		*	*	*	
ApproachDel:	15.3				32.8				16.6				xxxxxx			
Delay Adj:	1.00				1.00				1.00				xxxxx			
ApprAdjDel:	15.3				32.8				16.6				xxxxxx			
LOS by Appr:	C				D				C				*			
AllWayAvgQ:	0.6	0.8	0.0		0.0	5.0	0.7		0.7	0.0	1.2		0.0	0.0	0.0	

Note: Queue reported is the number of cars per lane.

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #86 Cambridge St and Fairhaven Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.624
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	30	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	0 0	0	1 0	0 0	1	1 0	1 0	0	0 0	0 1	0
Volume Module:												
Base Vol:	0	0	0	618	0	199	69	185	0	0	130	101
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	618	0	199	69	185	0	0	130	101
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	618	0	199	69	185	0	0	130	101
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	618	0	199	69	185	0	0	130	101
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	618	0	199	69	185	0	0	130	101
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.00	1.00
Lanes:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	0.56	0.44
Final Sat.:	0	0	0	1600	0	1600	1600	1700	0	0	900	700
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.39	0.00	0.12	0.04	0.11	0.00	0.00	0.14	0.14
Crit Moves:				****			****				****	

Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #87 Mabury St and 1st Street

Cycle (sec):	100	Critical Vol./Cap.(X):	0.755
Loss Time (sec):	5	Average Delay (sec/veh):	27.4
Optimal Cycle:	46	Level Of Service:	C

Street Name:	Mabury						1st Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	0	0 1	1 0	1! 0	1	0 0	1	1 0	1 0	1	1 0
Volume Module:												
Base Vol:	5	0	122	276	164	618	0	922	10	46	701	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	5	0	122	276	164	618	0	922	10	46	701	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	5	0	122	276	164	618	0	922	10	46	701	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	5	0	122	276	164	618	0	922	10	46	701	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	5	0	122	276	164	618	0	922	10	46	701	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	1.00	0.85	0.90	0.90	0.90	1.00	0.95	0.95	0.95	0.95	0.95
Lanes:	1.00	0.00	1.00	1.23	0.27	1.50	0.00	1.98	0.02	1.00	2.00	0.00
Final Sat.:	1805	0	1615	2097	459	2575	0	3564	39	1805	3610	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.08	0.13	0.36	0.24	0.00	0.26	0.26	0.03	0.19	0.00
Crit Moves:			****		****			****		****		
Green/Cycle:	0.10	0.00	0.10	0.47	0.47	0.47	0.00	0.34	0.34	0.03	0.38	0.00
Volume/Cap:	0.03	0.00	0.75	0.28	0.75	0.51	0.00	0.75	0.75	0.75	0.52	0.00
Delay/Veh:	40.7	0.0	61.9	16.0	24.0	18.5	0.0	31.8	31.8	88.8	24.5	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	40.7	0.0	61.9	16.0	24.0	18.5	0.0	31.8	31.8	88.8	24.5	0.0
LOS by Move:	D	A	E	B	C	B	A	C	C	F	C	A
HCM2k85thQ:	0	0	8	7	25	14	0	22	22	5	14	0

Note: Queue reported is the number of cars per lane.

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #88 Tustin St and La Veta Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.362
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	19	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0 2	1	0	1 0 2	1	0	1 0 1	1	0	1 1 0	0	1
Volume Module:												
Base Vol:	9	365	105	48	944	3	9	11	35	279	1	43
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	9	365	105	48	944	3	9	11	35	279	1	43
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	9	365	105	48	944	3	9	11	35	279	1	43
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	9	365	105	48	944	3	9	11	35	279	1	43
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	9	365	105	48	944	3	9	11	35	279	1	43
OvlAdjVol:												0
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.04	1.00	1.00	1.06	1.00	1.00	1.00	1.00
Lanes:	1.00	2.33	0.67	1.00	2.99	0.01	1.00	1.00	1.00	1.99	0.01	1.00
Final Sat.:	1600	3928	1072	1600	4985	15	1600	1700	1600	3189	11	1600
Capacity Analysis Module:												
Vol/Sat:	0.01	0.09	0.10	0.03	0.19	0.20	0.01	0.01	0.02	0.09	0.09	0.03
OvlAdjV/S:												0.00
Crit Moves:	****					****			****		****	

Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #89 Tustin St and SR-22 WB On-Ramp

Cycle (sec):	100	Critical Vol./Cap.(X):	0.575
Loss Time (sec):	5	Average Delay (sec/veh):	13.2
Optimal Cycle:	29	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 0	0	0 0	2	1 0	0 0	0 0	0 0	0 0	0 0	0 0
Volume Module:												
Base Vol:	762	708	0	0	897	536	0	0	0	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	762	708	0	0	897	536	0	0	0	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	762	708	0	0	897	536	0	0	0	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	762	708	0	0	897	536	0	0	0	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	762	708	0	0	897	536	0	0	0	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.95	1.00	1.00	0.86	0.86	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	2.00	0.00	0.00	2.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
Final Sat.:	3502	3610	0	0	3264	1632	0	0	0	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.22	0.20	0.00	0.00	0.27	0.33	0.00	0.00	0.00	0.00	0.00	0.00
Crit Moves:	****					****						
Green/Cycle:	0.38	0.95	0.00	0.00	0.57	0.57	0.00	0.00	0.00	0.00	0.00	0.00
Volume/Cap:	0.57	0.21	0.00	0.00	0.48	0.57	0.00	0.00	0.00	0.00	0.00	0.00
Delay/Veh:	25.3	0.2	0.0	0.0	12.8	14.0	0.0	0.0	0.0	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	25.3	0.2	0.0	0.0	12.8	14.0	0.0	0.0	0.0	0.0	0.0	0.0
LOS by Move:	C	A	A	A	B	B	A	A	A	A	A	A
HCM2k85thQ:	15	1	0	0	14	18	0	0	0	0	0	0

Note: Queue reported is the number of cars per lane.

Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #90 Tustin St and SR-22 EB Off-Ramp / Seba Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.718
Loss Time (sec):	5	Average Delay (sec/veh):	23.8
Optimal Cycle:	41	Level Of Service:	C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Permitted				Permitted				Split Phase				Split Phase			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Y+R:	4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	
Lanes:	0	0 2	1 0		1	0 3	0 0		1	0 1!	0 1		0	0 1!	0 0	
Volume Module:																
Base Vol:	0	1213	6		13	779	0		252	25	1084		6	0	43	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	1213	6		13	779	0		252	25	1084		6	0	43	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	1213	6		13	779	0		252	25	1084		6	0	43	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	1213	6		13	779	0		252	25	1084		6	0	43	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	0	1213	6		13	779	0		252	25	1084		6	0	43	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	1.00	0.91	0.91		0.12	0.91	1.00		0.87	0.87	0.87		0.88	1.00	0.88	
Lanes:	0.00	2.99	0.01		1.00	3.00	0.00		1.18	0.04	1.78		0.12	0.00	0.88	
Final Sat.:	0	5156	26		232	5187	0		1960	60	2956		204	0	1460	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.24	0.24		0.06	0.15	0.00		0.13	0.42	0.37		0.03	0.00	0.03	
Crit Moves:		****								****			****			
Green/Cycle:	0.00	0.33	0.33		0.33	0.33	0.00		0.58	0.58	0.58		0.04	0.00	0.04	
Volume/Cap:	0.00	0.72	0.72		0.17	0.46	0.00		0.22	0.72	0.63		0.72	0.00	0.72	
Delay/Veh:	0.0	31.1	31.1		25.0	26.8	0.0		10.1	16.4	14.4		78.0	0.0	78.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	0.0	31.1	31.1		25.0	26.8	0.0		10.1	16.4	14.4		78.0	0.0	78.0	
LOS by Move:	A	C	C		C	C	A		B	B	B		E	A	E	
HCM2k85thQ:	0	20	20		1	11	0		5	24	19		5	0	5	

Note: Queue reported is the number of cars per lane.

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #91 Tustin Ave and Fairhaven Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	1.242
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	180	Level Of Service:	F

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 1	0	2 0	2 1	0	1 0	0 1	0	1 0	0 1	0
Volume Module:												
Base Vol:	125	720	126	249	2148	42	78	297	511	306	338	442
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	125	720	126	249	2148	42	78	297	511	306	338	442
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	125	720	126	249	2148	42	78	297	511	306	338	442
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	125	720	126	249	2148	42	78	297	511	306	338	442
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	125	720	126	249	2148	42	78	297	511	306	338	442
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.04	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	2.55	0.45	2.00	2.94	0.06	1.00	0.37	0.63	1.00	0.43	0.57
Final Sat.:	3200	4285	715	3200	4908	92	1600	588	1012	1600	693	907
Capacity Analysis Module:												
Vol/Sat:	0.04	0.17	0.18	0.08	0.44	0.46	0.05	0.51	0.50	0.19	0.49	0.49
Crit Moves:	****					****		****		****		

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #92 Tustin Ave and Santa Clara Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	1.097
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	180	Level Of Service:	F

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Permitted				Permitted			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Y+R:	4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	
Lanes:	1	0 2	1	0	2	0 2	1	0	1	0 0	1	0	1	0 0	1	0
Volume Module:																
Base Vol:	102	556	104		135	2756	87		116	293	214		118	244	122	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	102	556	104		135	2756	87		116	293	214		118	244	122	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	102	556	104		135	2756	87		116	293	214		118	244	122	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	102	556	104		135	2756	87		116	293	214		118	244	122	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	102	556	104		135	2756	87		116	293	214		118	244	122	
Saturation Flow Module:																
Sat/Lane:	1600	1600	1600		1600	1600	1600		1600	1600	1600		1600	1600	1600	
Adjustment:	1.00	1.05	1.00		1.00	1.04	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Lanes:	1.00	2.53	0.47		2.00	2.91	0.09		1.00	0.58	0.42		1.00	0.67	0.33	
Final Sat.:	1600	4244	756		3200	4853	147		1600	925	675		1600	1067	533	
Capacity Analysis Module:																
Vol/Sat:	0.06	0.13	0.14		0.04	0.57	0.59		0.07	0.32	0.32		0.07	0.23	0.23	
Crit Moves:	****						****			****				****		

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #93 Tustin Ave and 17th St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.805
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	53	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ovl			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 0	1	2 0	2 1	0	2 0	3 0	1	2 0	3 0	1
Volume Module:												
Base Vol:	155	277	330	638	1841	20	215	849	145	488	770	188
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	155	277	330	638	1841	20	215	849	145	488	770	188
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	155	277	330	638	1841	20	215	849	145	488	770	188
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	155	277	330	638	1841	20	215	849	145	488	770	188
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	155	277	330	638	1841	20	215	849	145	488	770	188
OvlAdjVol:			86									0
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.04	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	2.00	2.00	1.00	2.00	2.97	0.03	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3200	3400	1600	3200	4948	52	3200	5100	1600	3200	5100	1600
Capacity Analysis Module:												
Vol/Sat:	0.05	0.08	0.21	0.20	0.37	0.39	0.07	0.17	0.09	0.15	0.15	0.12
OvlAdjV/S:			0.05									0.00
Crit Moves:	****					****		****			****	

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #94 Tustin Ave and 4th St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.791
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	50	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2	1 0	2 0	2	0 1	1 0	2	1 1	1 0	2	1 0
Volume Module:												
Base Vol:	40	204	183	743	946	293	159	942	39	129	727	472
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	40	204	183	743	946	293	159	942	39	129	727	472
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	40	204	183	743	946	293	159	942	39	129	727	472
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	40	204	183	743	946	293	159	942	39	129	727	472
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	40	204	183	743	946	293	159	942	39	129	727	472
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	1.00	2.00	1.00	2.00	2.00	1.00	1.00	3.00	1.00	1.00	2.00	1.00
Final Sat.:	1600	3400	1600	3200	3400	1600	1600	5100	1600	1600	3400	1600
Capacity Analysis Module:												
Vol/Sat:	0.03	0.06	0.11	0.23	0.28	0.18	0.10	0.18	0.02	0.08	0.21	0.30
Crit Moves:			****	****			****					****

Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #95 SR-55 SB Ramps / Auto Mall Dr and Edinger Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.653
Loss Time (sec):	5	Average Delay (sec/veh):	25.1
Optimal Cycle:	34	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Ignore			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 1	0	0 2	1	0 1	0 1	1	0 3	0 1	2	0 2	1 0
Volume Module:												
Base Vol:	456	68	540	50	30	8	34	1334	493	510	1202	157
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	456	68	540	50	30	8	34	1334	493	510	1202	157
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Volume:	456	68	540	50	30	8	34	1334	0	510	1202	157
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	456	68	540	50	30	8	34	1334	0	510	1202	157
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
FinalVolume:	456	68	540	50	30	8	34	1334	0	510	1202	157
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.96	0.96	0.75	0.95	1.00	0.85	0.95	0.91	1.00	0.92	0.89	0.89
Lanes:	1.74	0.26	2.00	1.00	1.00	1.00	1.00	3.00	1.00	2.00	2.65	0.35
Final Sat.:	3168	472	2842	1805	1900	1615	1805	5187	1900	3502	4510	589
Capacity Analysis Module:												
Vol/Sat:	0.14	0.14	0.19	0.03	0.02	0.00	0.02	0.26	0.00	0.15	0.27	0.27
Crit Moves:			****	****				****		****		
Green/Cycle:	0.29	0.29	0.29	0.04	0.04	0.04	0.04	0.39	0.00	0.22	0.58	0.58
Volume/Cap:	0.49	0.49	0.65	0.65	0.37	0.12	0.46	0.65	0.00	0.65	0.46	0.46
Delay/Veh:	29.7	29.7	32.9	65.6	49.5	46.8	51.5	25.5	0.0	37.3	12.4	12.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	29.7	29.7	32.9	65.6	49.5	46.8	51.5	25.5	0.0	37.3	12.4	12.4
LOS by Move:	C	C	C	E	D	D	D	C	A	D	B	B
HCM2k85thQ:	11	11	14	4	2	1	3	19	0	13	13	13

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Note: Queue reported is the number of cars per lane.
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Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #96 SR-55 NB Ramps / Del Amo Ave and Newport Avenue

Cycle (sec):	100	Critical Vol./Cap.(X):	0.665
Loss Time (sec):	5	Average Delay (sec/veh):	25.6
Optimal Cycle:	35	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Ovl			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0 2	1 0		1 0 3	0 1		2 0 1	1 0		1 0 1	1 0	
Volume Module:												
Base Vol:	413	109	69	20	497	728	269	163	155	8	223	4
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	413	109	69	20	497	728	269	163	155	8	223	4
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	413	109	69	20	497	728	269	163	155	8	223	4
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	413	109	69	20	497	728	269	163	155	8	223	4
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	413	109	69	20	497	728	269	163	155	8	223	4
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.86	0.86	0.95	0.91	0.85	0.92	0.88	0.88	0.95	0.95	0.95
Lanes:	2.00	2.00	1.00	1.00	3.00	1.00	2.00	1.03	0.97	1.00	1.96	0.04
Final Sat.:	3502	3257	1629	1805	5187	1615	3502	1715	1631	1805	3536	63
Capacity Analysis Module:												
Vol/Sat:	0.12	0.03	0.04	0.01	0.10	0.45	0.08	0.10	0.10	0.00	0.06	0.06
Crit Moves:	****					****	****				****	
Green/Cycle:	0.18	0.59	0.59	0.15	0.56	0.68	0.12	0.20	0.20	0.01	0.09	0.09
Volume/Cap:	0.67	0.06	0.07	0.07	0.17	0.67	0.67	0.47	0.47	0.47	0.67	0.67
Delay/Veh:	41.1	8.9	8.9	36.4	10.6	11.0	46.5	35.8	35.8	68.7	48.6	48.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	41.1	8.9	8.9	36.4	10.6	11.0	46.5	35.8	35.8	68.7	48.6	48.6
LOS by Move:	D	A	A	D	B	B	D	D	D	E	D	D
HCM2k85thQ:	11	1	2	1	4	21	8	8	8	1	8	8

Note: Queue reported is the number of cars per lane.

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #97 Red Hill Ave and Edinger Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.619
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	30	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Ovl			Ovl			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0 3	0 1	2	0 3	0 1	2	0 3	0 1	2	0 3	0 1
Volume Module:												
Base Vol:	122	449	128	203	861	403	397	1276	271	250	1213	170
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	122	449	128	203	861	403	397	1276	271	250	1213	170
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	122	449	128	203	861	403	397	1276	271	250	1213	170
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	122	449	128	203	861	403	397	1276	271	250	1213	170
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	122	449	128	203	861	403	397	1276	271	250	1213	170
OvlAdjVol:						205			210			
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3200	5100	1600	3200	5100	1600	3200	5100	1600	3200	5100	1600
Capacity Analysis Module:												
Vol/Sat:	0.04	0.09	0.08	0.06	0.17	0.25	0.12	0.25	0.17	0.08	0.24	0.11
OvlAdjV/S:						0.13			0.13			
Crit Moves:	****				****		****				****	

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #98 Red Hill Ave and Warner Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.580
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	28	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	3 1	0	2 0	2 1	0	1 0	2 1	0	2 0	3 0	1
Volume Module:												
Base Vol:	118	716	97	20	949	191	239	407	300	152	543	96
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	118	716	97	20	949	191	239	407	300	152	543	96
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	118	716	97	20	949	191	239	407	300	152	543	96
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	118	716	97	20	949	191	239	407	300	152	543	96
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	118	716	97	20	949	191	239	407	300	152	543	96
OvlAdjVol:												86
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.05	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	2.00	3.52	0.48	2.00	2.50	0.50	1.00	2.00	1.00	2.00	3.00	1.00
Final Sat.:	3200	5936	764	3200	4196	804	1600	3400	1600	3200	5100	1600
Capacity Analysis Module:												
Vol/Sat:	0.04	0.12	0.13	0.01	0.23	0.24	0.15	0.12	0.19	0.05	0.11	0.06
OvlAdjV/S:												0.05
Crit Moves:	****					****	****				****	

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #99 Red Hill Ave and Dyer Rd / barranca Pkwy

Cycle (sec):	100	Critical Vol./Cap.(X):	0.577
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	27	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	4 0	1	2 0	4 0	1	2 0	3 1	0	2 0	4 0	1
Volume Module:												
Base Vol:	184	458	151	184	809	106	126	758	300	522	583	114
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	184	458	151	184	809	106	126	758	300	522	583	114
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	184	458	151	184	809	106	126	758	300	522	583	114
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	184	458	151	184	809	106	126	758	300	522	583	114
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	184	458	151	184	809	106	126	758	300	522	583	114
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	2.00	4.00	1.00	2.00	4.00	1.00	2.00	3.00	1.00	2.00	4.00	1.00
Final Sat.:	3200	6800	1600	3200	6800	1600	3200	5100	1600	3200	6800	1600
Capacity Analysis Module:												
Vol/Sat:	0.06	0.07	0.09	0.06	0.12	0.07	0.04	0.15	0.19	0.16	0.09	0.07
Crit Moves:	****				****				****	****		

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #100 Red Hill Ave and Alton Pkwy

Cycle (sec):	100	Critical Vol./Cap.(X):	0.930
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	109	Level Of Service:	E

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 0	1	1 0	3 0	1	1 0	2 0	1	2 0	1 0	1
Volume Module:												
Base Vol:	235	693	434	233	1059	170	185	574	574	335	284	159
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	235	693	434	233	1059	170	185	574	574	335	284	159
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	235	693	434	233	1059	170	185	574	574	335	284	159
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	235	693	434	233	1059	170	185	574	574	335	284	159
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	235	693	434	233	1059	170	185	574	574	335	284	159
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	1.00	2.00	1.00	2.00	1.00	1.00
Final Sat.:	1600	5100	1600	1600	5100	1600	1600	3400	1600	3200	1700	1600
Capacity Analysis Module:												
Vol/Sat:	0.15	0.14	0.27	0.15	0.21	0.11	0.12	0.17	0.36	0.10	0.17	0.10
Crit Moves:			****	****					****	****		

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #101 Red Hill Ave and MacArthur Blvd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.709
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	38	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Ignore			Include			Ignore		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0 2	1 0		2 0 3	0 1		2 0 3	0 1		1 0 3	0 1	
Volume Module:												
Base Vol:	83	742	13	205	529	485	1194	617	101	34	329	843
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	83	742	13	205	529	485	1194	617	101	34	329	843
User Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Volume:	83	742	13	205	529	0	1194	617	101	34	329	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	83	742	13	205	529	0	1194	617	101	34	329	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
FinalVolume:	83	742	13	205	529	0	1194	617	101	34	329	0
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.04	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	2.00	2.95	0.05	2.00	3.00	1.00	2.00	3.00	1.00	1.00	3.00	1.00
Final Sat.:	3200	4917	83	3200	5100	1600	3200	5100	1600	1600	5100	1600
Capacity Analysis Module:												
Vol/Sat:	0.03	0.15	0.16	0.06	0.10	0.00	0.37	0.12	0.06	0.02	0.06	0.00
Crit Moves:			****	****			****				****	

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #102 Red Hill Ave and Main St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.733
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	41	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 0	1	2 0	2 0	1	2 0	2 1	0	2 0	2 1	0
Volume Module:												
Base Vol:	201	691	449	78	365	126	139	1309	254	167	335	79
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	201	691	449	78	365	126	139	1309	254	167	335	79
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	201	691	449	78	365	126	139	1309	254	167	335	79
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	201	691	449	78	365	126	139	1309	254	167	335	79
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	201	691	449	78	365	126	139	1309	254	167	335	79
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.05	1.00	1.00	1.05	1.00
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	2.00	2.51	0.49	2.00	2.43	0.57
Final Sat.:	3200	3400	1600	3200	3400	1600	3200	4220	780	3200	4084	916
Capacity Analysis Module:												
Vol/Sat:	0.06	0.20	0.28	0.02	0.11	0.08	0.04	0.31	0.33	0.05	0.08	0.09
Crit Moves:			****	****					****	****		

Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #103 I-5 SB Ramps and Santa Ana Blvd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.480
Loss Time (sec):	5	Average Delay (sec/veh):	17.8
Optimal Cycle:	24	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Ovl			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0	0	2	0	0	2	0	3	0	2	1
Volume Module:												
Base Vol:	0	0	0	382	0	38	287	492	0	0	1027	300
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	382	0	38	287	492	0	0	1027	300
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	382	0	38	287	492	0	0	1027	300
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	382	0	38	287	492	0	0	1027	300
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	382	0	38	287	492	0	0	1027	300
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	0.92	1.00	0.85	0.92	0.91	1.00	1.00	0.88	0.88
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	2.00	3.00	0.00	0.00	2.32	0.68
Final Sat.:	0	0	0	3502	0	1615	3502	5187	0	0	3878	1133
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.11	0.00	0.02	0.08	0.09	0.00	0.00	0.26	0.26
Crit Moves:				****			****				****	
Green/Cycle:	0.00	0.00	0.00	0.23	0.00	0.40	0.17	0.72	0.00	0.00	0.55	0.55
Volume/Cap:	0.00	0.00	0.00	0.48	0.00	0.06	0.48	0.13	0.00	0.00	0.48	0.48
Delay/Veh:	0.0	0.0	0.0	34.0	0.0	18.6	38.1	4.3	0.0	0.0	13.8	13.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

AdjDel/Veh:	0.0	0.0	0.0	34.0	0.0	18.6	38.1	4.3	0.0	0.0	13.8	13.8
LOS by Move:	A	A	A	C	A	B	D	A	A	A	B	B
HCM2k85thQ:	0	0	0	9	0	1	7	3	0	0	14	14

****

Note: Queue reported is the number of cars per lane.

****

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #104 Tustin Ranch Rd and Warner Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.530
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	25	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	0 0	0	2 0	0 0	1	2 0	3 0	0	0 0	3 0	1
Volume Module:												
Base Vol:	0	0	0	174	0	22	27	357	0	0	2130	490
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	174	0	22	27	357	0	0	2130	490
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	174	0	22	27	357	0	0	2130	490
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	174	0	22	27	357	0	0	2130	490
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	174	0	22	27	357	0	0	2130	490
OvlAdjVol:												403
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	2.00	3.00	0.00	0.00	3.00	1.00
Final Sat.:	0	0	0	3200	0	1600	3200	5100	0	0	5100	1600
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.05	0.00	0.01	0.01	0.07	0.00	0.00	0.42	0.31
OvlAdjV/S:												0.25
Crit Moves:				****			****				****	

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #105 Von Karman Ave and Barranca Pkwy

Cycle (sec):	100	Critical Vol./Cap.(X):	0.930
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	108	Level Of Service:	E

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Ovl			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0 1	1 0		2 0 2			2 0 3	0 1		2 0 4	0 1	
Volume Module:												
Base Vol:	375	497	298	98	960	420	247	928	310	917	1506	47
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	375	497	298	98	960	420	247	928	310	917	1506	47
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	375	497	298	98	960	420	247	928	310	917	1506	47
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	375	497	298	98	960	420	247	928	310	917	1506	47
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	375	497	298	98	960	420	247	928	310	917	1506	47
OvlAdjVol:						173						
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	2.00	1.25	0.75	2.00	2.00	2.00	2.00	3.00	1.00	2.00	4.00	1.00
Final Sat.:	3200	2101	1199	3200	3400	3200	3200	5100	1600	3200	6800	1600
Capacity Analysis Module:												
Vol/Sat:	0.12	0.24	0.25	0.03	0.28	0.13	0.08	0.18	0.19	0.29	0.22	0.03
OvlAdjV/S:						0.05						
Crit Moves:	****			****					****	****		

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #106 Red Hill Avenue and El Camino Real

Cycle (sec):	100	Critical Vol./Cap.(X):	0.640
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	32	Level Of Service:	B

Street Name:	Red Hill Avenue						El Camino Real					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	3 0	1	1 0	2 1	0	1 0	1 0	1	1 0	0 1	0
Volume Module:												
Base Vol:	222	569	183	20	1440	88	53	120	126	197	161	12
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	222	569	183	20	1440	88	53	120	126	197	161	12
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	222	569	183	20	1440	88	53	120	126	197	161	12
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	222	569	183	20	1440	88	53	120	126	197	161	12
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	222	569	183	20	1440	88	53	120	126	197	161	12
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.04	1.00	1.00	1.06	1.00	1.00	1.00	1.00
Lanes:	2.00	3.00	1.00	1.00	2.83	0.17	1.00	1.00	1.00	1.00	0.93	0.07
Final Sat.:	3200	5100	1600	1600	4724	276	1600	1700	1600	1600	1489	111
Capacity Analysis Module:												
Vol/Sat:	0.07	0.11	0.11	0.01	0.30	0.32	0.03	0.07	0.08	0.12	0.11	0.11
Crit Moves:	****					****			****	****		

Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #107 Red Hill Avenue and I-5 NB Ramps

Cycle (sec):	100	Critical Vol./Cap.(X):	0.631
Loss Time (sec):	5	Average Delay (sec/veh):	20.1
Optimal Cycle:	32	Level Of Service:	C

Street Name:	Red Hill Avenue						I-5 NB Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0 3	0 0	0	0 3	0 1	0	0 0	0 0	2	0 0	0 1
Volume Module:												
Base Vol:	266	883	0	0	1217	458	0	0	0	238	0	272
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	266	883	0	0	1217	458	0	0	0	238	0	272
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	266	883	0	0	1217	458	0	0	0	238	0	272
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	266	883	0	0	1217	458	0	0	0	238	0	272
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	266	883	0	0	1217	458	0	0	0	238	0	272
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.91	1.00	1.00	0.91	0.85	1.00	1.00	1.00	0.60	1.00	0.85
Lanes:	1.00	3.00	0.00	0.00	3.00	1.00	0.00	0.00	0.00	2.00	0.00	1.00
Final Sat.:	1805	5187	0	0	5187	1615	0	0	0	2271	0	1615
Capacity Analysis Module:												
Vol/Sat:	0.15	0.17	0.00	0.00	0.23	0.28	0.00	0.00	0.00	0.10	0.00	0.17
Crit Moves:	****					****						****
Green/Cycle:	0.23	0.68	0.00	0.00	0.45	0.45	0.00	0.00	0.00	0.27	0.00	0.27
Volume/Cap:	0.63	0.25	0.00	0.00	0.52	0.63	0.00	0.00	0.00	0.39	0.00	0.63
Delay/Veh:	37.5	6.1	0.0	0.0	20.0	23.0	0.0	0.0	0.0	30.4	0.0	35.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

AdjDel/Veh:	37.5	6.1	0.0	0.0	20.0	23.0	0.0	0.0	0.0	30.4	0.0	35.3
LOS by Move:	D	A	A	A	C	C	A	A	A	C	A	D
HCM2k85thQ:	13	6	0	0	15	17	0	0	0	5	0	13

****

Note: Queue reported is the number of cars per lane.

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Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #108 Red Hill Avenue and I-5 SB Ramps

Cycle (sec):	100	Critical Vol./Cap.(X):	0.824
Loss Time (sec):	5	Average Delay (sec/veh):	24.7
Optimal Cycle:	60	Level Of Service:	C

Street Name:	Red Hill Avenue						I-5 SB Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	4 0	1	1 0	3 0	0	0 1	0 0	1	0 0	0 0	0
Volume Module:												
Base Vol:	0	1191	527	392	1125	0	210	5	386	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1191	527	392	1125	0	210	5	386	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1191	527	392	1125	0	210	5	386	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1191	527	392	1125	0	210	5	386	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1191	527	392	1125	0	210	5	386	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.91	0.85	0.95	0.91	1.00	0.95	0.95	0.85	1.00	1.00	1.00
Lanes:	0.00	4.00	1.00	1.00	3.00	0.00	0.98	0.02	1.00	0.00	0.00	0.00
Final Sat.:	0	6916	1615	1805	5187	0	1759	42	1615	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.17	0.33	0.22	0.22	0.00	0.12	0.12	0.24	0.00	0.00	0.00
Crit Moves:			****	****					****			
Green/Cycle:	0.00	0.40	0.40	0.26	0.66	0.00	0.29	0.29	0.29	0.00	0.00	0.00
Volume/Cap:	0.00	0.43	0.82	0.82	0.33	0.00	0.41	0.41	0.82	0.00	0.00	0.00
Delay/Veh:	0.0	22.1	35.6	45.8	7.4	0.0	29.1	29.1	44.4	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	22.1	35.6	45.8	7.4	0.0	29.1	29.1	44.4	0.0	0.0	0.0
LOS by Move:	A	C	D	D	A	A	C	C	D	A	A	A
HCM2k85thQ:	0	11	25	20	8	0	9	9	20	0	0	0

Note: Queue reported is the number of cars per lane.

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #109 Red Hill Avenue and Nisson Road

Cycle (sec):	100	Critical Vol./Cap.(X):	0.655
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	33	Level Of Service:	B

Street Name:	Red Hill Avenue						Nisson Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 1	0	1 0	2 1	0	1 0	0 1	0	1 0	0 1	0
Volume Module:												
Base Vol:	16	1244	23	169	1274	134	242	59	48	49	26	215
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	16	1244	23	169	1274	134	242	59	48	49	26	215
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	16	1244	23	169	1274	134	242	59	48	49	26	215
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	16	1244	23	169	1274	134	242	59	48	49	26	215
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	16	1244	23	169	1274	134	242	59	48	49	26	215
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.05	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	3.93	0.07	1.00	2.71	0.29	1.00	0.55	0.45	1.00	0.11	0.89
Final Sat.:	1600	6584	116	1600	4543	457	1600	882	718	1600	173	1427
Capacity Analysis Module:												
Vol/Sat:	0.01	0.19	0.20	0.11	0.28	0.29	0.15	0.07	0.07	0.03	0.15	0.15
Crit Moves:			****	****			****					****

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #110 Red Hill Avenue and Walnut Avenue

Cycle (sec):	100	Critical Vol./Cap.(X):	0.643
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	32	Level Of Service:	B

Street Name:	Red Hill Avenue						Walnut Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	2	1	0	1	0	2	1	0	1	0	1	0	2	0	1	1	0
Volume Module:												
Base Vol:	135	525	99	117	1180	132	99	247	244	263	348	166
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	135	525	99	117	1180	132	99	247	244	263	348	166
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	135	525	99	117	1180	132	99	247	244	263	348	166
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	135	525	99	117	1180	132	99	247	244	263	348	166
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	135	525	99	117	1180	132	99	247	244	263	348	166
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.05	1.00	1.00	1.06	1.00	1.00	1.05	1.00
Lanes:	1.00	2.52	0.48	1.00	2.70	0.30	1.00	1.01	0.99	2.00	1.35	0.65
Final Sat.:	1600	4238	762	1600	4517	483	1600	1710	1590	3200	2267	1033
Capacity Analysis Module:												
Vol/Sat:	0.08	0.12	0.13	0.07	0.26	0.27	0.06	0.14	0.15	0.08	0.15	0.16
Crit Moves:	****					****			****	****		

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #111 Red Hill Avenue and Valencia Avenue

Cycle (sec):	100	Critical Vol./Cap.(X):	0.677
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	35	Level Of Service:	B

Street Name:	Red Hill Avenue						Valencia Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ovl			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	3	1	0	1	0	2	1	0	1	0	1	2	0	1	0	1
Volume Module:												
Base Vol:	128	542	175	132	1132	76	48	335	130	315	433	153
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	128	542	175	132	1132	76	48	335	130	315	433	153
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	128	542	175	132	1132	76	48	335	130	315	433	153
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	128	542	175	132	1132	76	48	335	130	315	433	153
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	128	542	175	132	1132	76	48	335	130	315	433	153
OvlAdjVol:			21									21
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.04	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	1.00	3.02	0.98	1.00	2.81	0.19	1.00	1.00	1.00	2.00	1.00	1.00
Final Sat.:	1600	5138	1562	1600	4698	302	1600	1700	1600	3200	1700	1600
Capacity Analysis Module:												
Vol/Sat:	0.08	0.11	0.11	0.08	0.24	0.25	0.03	0.20	0.08	0.10	0.25	0.10
OvlAdjV/S:			0.01									0.01
Crit Moves:	****					****		****		****		

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #112 Tustin Ranch Road and Warner Avenue North

Cycle (sec):	100	Critical Vol./Cap.(X):	0.459
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	22	Level Of Service:	A

Street Name:	Tustin Ranch Road						Warner Avenue North					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Ovl			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0	3 0 1	2	0	3 0 0	0	0	0 0 0	3	0	0 0 2
Volume Module:												
Base Vol:	0	396	383	412	1165	0	0	0	0	865	0	255
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	396	383	412	1165	0	0	0	0	865	0	255
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	396	383	412	1165	0	0	0	0	865	0	255
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	396	383	412	1165	0	0	0	0	865	0	255
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	396	383	412	1165	0	0	0	0	865	0	255
OvlAdjVol:			95									0
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	0.00	3.00	1.00	2.00	3.00	0.00	0.00	0.00	0.00	3.00	0.00	2.00
Final Sat.:	0	5100	1600	3200	5100	0	0	0	0	4800	0	3200
Capacity Analysis Module:												
Vol/Sat:	0.00	0.08	0.24	0.13	0.23	0.00	0.00	0.00	0.00	0.18	0.00	0.08
OvlAdjV/S:			0.06									0.00
Crit Moves:	****			****					****			

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #113 Tustin Ranch Road and Walnut Avenue

Cycle (sec):	100	Critical Vol./Cap.(X):	1.313
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	180	Level Of Service:	F

Street Name:	Tustin Ranch Road						Walnut Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ovl			Ovl			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	3	0	1	2	0	3	0	1	2	0	1	1	0	2	0	2	0	1
Volume Module:																				
Base Vol:	103	630	314	1123	3139	418	856	1118	675	176	260	219								
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
Initial Bse:	103	630	314	1123	3139	418	856	1118	675	176	260	219								
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
PHF Volume:	103	630	314	1123	3139	418	856	1118	675	176	260	219								
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0								
Reduced Vol:	103	630	314	1123	3139	418	856	1118	675	176	260	219								
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
FinalVolume:	103	630	314	1123	3139	418	856	1118	675	176	260	219								
OvlAdjVol:			226			0						0								
Saturation Flow Module:																				
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600								
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.05	1.00	1.00	1.06	1.00								
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	1.25	0.75	2.00	2.00	1.00								
Final Sat.:	3200	5100	1600	3200	5100	1600	3200	2095	1205	3200	3400	1600								
Capacity Analysis Module:																				
Vol/Sat:	0.03	0.12	0.20	0.35	0.62	0.26	0.27	0.53	0.56	0.06	0.08	0.14								
OvlAdjV/S:			0.14			0.00						0.00								
Crit Moves:	****			****					****	****										

Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #114 SR-55 SB Ramps and Irvine Boulevard

Cycle (sec):	100	Critical Vol./Cap.(X):	1.176
Loss Time (sec):	5	Average Delay (sec/veh):	55.4
Optimal Cycle:	180	Level Of Service:	E

Street Name:	SR-55 SB Ramps						Irvine Boulevard					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0	0	1	0	1! 0	1	0	0	2	1	0	1	0	3	0	0
Volume Module:																	
Base Vol:	0	0	0	64	0	70	0	719	1290	480	1201	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	64	0	70	0	719	1290	480	1201	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	64	0	70	0	719	1290	480	1201	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	64	0	70	0	719	1290	480	1201	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	64	0	70	0	719	1290	480	1201	0
Saturation Flow Module:																	
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	0.88	1.00	0.79	1.00	0.82	0.82	0.95	0.91	1.00
Lanes:	0.00	0.00	0.00	1.45	0.00	1.55	0.00	2.00	1.00	1.00	3.00	0.00
Final Sat.:	0	0	0	2426	0	2321	0	3126	1563	1805	5187	0
Capacity Analysis Module:																	
Vol/Sat:	0.00	0.00	0.00	0.03	0.00	0.03	0.00	0.23	0.83	0.27	0.23	0.00
Crit Moves:				****					****	****		
Green/Cycle:	0.00	0.00	0.00	0.02	0.00	0.04	0.00	0.70	0.70	0.23	0.93	0.00
Volume/Cap:	0.00	0.00	0.00	0.89	0.00	0.69	0.00	0.33	1.18	1.18	0.25	0.00
Delay/Veh:	0.0	0.0	0.0	91.2	0.0	56.8	0.0	5.8	100.6	140.8	0.4	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	91.2	0.0	56.8	0.0	5.8	100.6	140.8	0.4	0.0
LOS by Move:	A	A	A	F	A	E	A	A	F	F	A	A

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HCM2k85thQ:     0    0     0     5    0     4     0    7    95    38    2     0
********************************************************************************
Note: Queue reported is the number of cars per lane.
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Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #115 SR-55 NB Ramps and Irvine Boulevard

Cycle (sec):	100	Critical Vol./Cap.(X):	0.824
Loss Time (sec):	5	Average Delay (sec/veh):	20.3
Optimal Cycle:	60	Level Of Service:	C

Street Name:	SR-55 NB Ramps						Irvine Boulevard					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1! 0	1	0	0	0	0	1	0	3	0	0	0	0	2	1	0
Volume Module:												
Base Vol:	395	0	379	0	0	0	204	485	0	0	1133	788
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	395	0	379	0	0	0	204	485	0	0	1133	788
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	395	0	379	0	0	0	204	485	0	0	1133	788
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	395	0	379	0	0	0	204	485	0	0	1133	788
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	395	0	379	0	0	0	204	485	0	0	1133	788
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.75	1.00	0.74	1.00	1.00	1.00	0.95	0.91	1.00	1.00	0.85	0.85
Lanes:	1.51	0.00	1.49	0.00	0.00	0.00	1.00	3.00	0.00	0.00	2.00	1.00
Final Sat.:	2138	0	2097	0	0	0	1805	5187	0	0	3247	1624
Capacity Analysis Module:												
Vol/Sat:	0.18	0.00	0.18	0.00	0.00	0.00	0.11	0.09	0.00	0.00	0.35	0.49
Crit Moves:	****						****					****
Green/Cycle:	0.22	0.00	0.45	0.00	0.00	0.00	0.14	0.73	0.00	0.00	0.59	0.59
Volume/Cap:	0.83	0.00	0.40	0.00	0.00	0.00	0.82	0.13	0.00	0.00	0.59	0.82
Delay/Veh:	43.0	0.0	18.8	0.0	0.0	0.0	61.5	4.2	0.0	0.0	13.3	18.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	43.0	0.0	18.8	0.0	0.0	0.0	61.5	4.2	0.0	0.0	13.3	18.9
LOS by Move:	D	A	B	A	A	A	E	A	A	A	B	B
HCM2k85thQ:	15	0	8	0	0	0	13	3	0	0	18	33

Note: Queue reported is the number of cars per lane.

APPENDIX D.6

ANALYSIS WORKSHEETS –
2045 WP (PM Peak Hour)

Santa Ana Circulation Element

Scenario Report

Scenario:	2045 WP PM Peak Hour
Command:	Default Command
Volume:	2045 PM
Geometry:	SACE
Impact Fee:	Default Impact Fee
Trip Generation:	Default Trip Generation
Trip Distribution:	Default Trip Distribution
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

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Santa Ana Circulation Element

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in V/C
# 1 Euclid St and 1st St	C	xxxxx	0.787	C	xxxxx	0.787	+ 0.000 V/C
# 2 Euclid St and McFadden Ave	C	xxxxx	0.793	C	xxxxx	0.793	+ 0.000 V/C
# 3 Euclid St and Edinger Ave	D	xxxxx	0.860	D	xxxxx	0.860	+ 0.000 V/C
# 4 Newhope St and Hazard Ave	A	xxxxx	0.516	A	xxxxx	0.516	+ 0.000 V/C
# 5 Newhope St and McFadden Ave	B	xxxxx	0.684	B	xxxxx	0.684	+ 0.000 V/C
# 6 Harbor Blvd and SR-22 WB Off-R	C	23.8	0.769	C	23.8	0.769	+ 0.000 D/V
# 7 Trask Avenue and SR-22 EB On-R	B	11.0	0.381	B	11.0	0.381	+ 0.000 D/V
# 8 Harbor Blvd and Westminster Av	D	xxxxx	0.842	D	xxxxx	0.842	+ 0.000 V/C
# 9 Harbor Blvd and 1st St	C	xxxxx	0.753	C	xxxxx	0.753	+ 0.000 V/C
# 10 Harbor Blvd and McFadden Ave	C	xxxxx	0.711	C	xxxxx	0.711	+ 0.000 V/C
# 11 Harbor Blvd and Edinger Ave	C	xxxxx	0.722	C	xxxxx	0.722	+ 0.000 V/C
# 12 Harbor Blvd and Warner Ave	F	xxxxx	1.539	F	xxxxx	1.539	+ 0.000 V/C
# 13 Harbor Blvd and Segerstrom Ave	E	xxxxx	0.934	E	xxxxx	0.934	+ 0.000 V/C
# 14 MacArthur Blvd and Hyland Ave	D	xxxxx	0.891	D	xxxxx	0.891	+ 0.000 V/C
# 15 MacArthur Blvd and Harbor Blvd	C	xxxxx	0.788	C	xxxxx	0.788	+ 0.000 V/C
# 16 Harbor Blvd and Sunflower Ave	C	xxxxx	0.711	C	xxxxx	0.711	+ 0.000 V/C
# 17 Harbor Blvd and I-405 NB Off-R	B	18.8	0.710	B	18.8	0.710	+ 0.000 D/V
# 18 Harbor Blvd and I-405 SB Off-R	B	18.1	0.673	B	18.1	0.673	+ 0.000 D/V
# 19 Fairview St and Civic Center D	C	xxxxx	0.707	C	xxxxx	0.707	+ 0.000 V/C
# 20 Fairview St and 1st St	D	xxxxx	0.894	D	xxxxx	0.894	+ 0.000 V/C
# 21 Fairview St and McFadden Ave	B	xxxxx	0.684	B	xxxxx	0.684	+ 0.000 V/C
# 22 Fairview St and Edinger Ave	E	xxxxx	0.920	E	xxxxx	0.920	+ 0.000 V/C
# 23 Fairview St and Warner Ave	D	xxxxx	0.805	D	xxxxx	0.805	+ 0.000 V/C
# 24 Fairview St and MacArthur Blvd	C	xxxxx	0.761	C	xxxxx	0.761	+ 0.000 V/C

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Santa Ana Circulation Element

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 25 Fairview Rd and Sunflower Ave	B	xxxxx	0.691	B	xxxxx	0.691	+ 0.000 V/C
# 26 Greenville St and Edinger Ave	B	xxxxx	0.647	B	xxxxx	0.647	+ 0.000 V/C
# 27 Greenville St and Segerstrom A	C	xxxxx	0.797	C	xxxxx	0.797	+ 0.000 V/C
# 28 Raitt St and McFadden Ave	B	xxxxx	0.676	B	xxxxx	0.676	+ 0.000 V/C
# 29 Raitt St and Edinger Ave	E	xxxxx	0.988	E	xxxxx	0.988	+ 0.000 V/C
# 30 Bear St and MacArthur Blvd	E	xxxxx	0.904	E	xxxxx	0.904	+ 0.000 V/C
# 31 Bristol St and 17th St	D	xxxxx	0.811	D	xxxxx	0.811	+ 0.000 V/C
# 32 Bristol St and Civic Center Dr	D	xxxxx	0.898	D	xxxxx	0.898	+ 0.000 V/C
# 33 Bristol St and Santa Ana Blvd	C	xxxxx	0.732	C	xxxxx	0.732	+ 0.000 V/C
# 34 Bristol St and 1st St	E	xxxxx	0.972	E	xxxxx	0.972	+ 0.000 V/C
# 35 Bristol St and McFadden Ave	D	xxxxx	0.890	D	xxxxx	0.890	+ 0.000 V/C
# 36 Bristol St and Warner Ave	D	xxxxx	0.871	D	xxxxx	0.871	+ 0.000 V/C
# 37 Bristol St and Segerstrom Ave	E	xxxxx	0.915	E	xxxxx	0.915	+ 0.000 V/C
# 38 Bristol St and Alton Ave	A	xxxxx	0.583	A	xxxxx	0.583	+ 0.000 V/C
# 39 Bristol St and MacArthur Blvd	C	xxxxx	0.796	C	xxxxx	0.796	+ 0.000 V/C
# 40 Bristol St and Sunflower Ave	C	xxxxx	0.744	C	xxxxx	0.744	+ 0.000 V/C
# 41 Bristol St and I-405 NB Ramps	C	29.0	0.854	C	29.0	0.854	+ 0.000 D/V
# 42 Bristol St and I-405 SB Ramps	B	18.2	0.631	B	18.2	0.631	+ 0.000 D/V
# 43 Flower St and Santa Ana Blvd	B	xxxxx	0.668	B	xxxxx	0.668	+ 0.000 V/C
# 44 Flower St and 1st St	F	xxxxx	1.215	F	xxxxx	1.215	+ 0.000 V/C
# 45 Flower St and McFadden Ave	E	xxxxx	0.968	E	xxxxx	0.968	+ 0.000 V/C
# 46 Flower St and Segerstrom Ave	E	xxxxx	0.916	E	xxxxx	0.916	+ 0.000 V/C
# 47 Flower St and MacArthur Blvd	E	xxxxx	0.908	E	xxxxx	0.908	+ 0.000 V/C
# 48 Main St and La Veta Ave	C	xxxxx	0.764	C	xxxxx	0.764	+ 0.000 V/C
# 49 Main St and Mainplace Dr / Mem	A	xxxxx	0.504	A	xxxxx	0.504	+ 0.000 V/C
# 50 Main St and 17th St	C	xxxxx	0.799	C	xxxxx	0.799	+ 0.000 V/C

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Santa Ana Circulation Element

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 51 Main St and Civic Center Dr	D	xxxxx	0.856	D	xxxxx	0.856	+ 0.000 V/C
# 52 Main St and Santa Ana Blvd	C	xxxxx	0.700	C	xxxxx	0.700	+ 0.000 V/C
# 53 Main St and 4th St	A	xxxxx	0.472	A	xxxxx	0.472	+ 0.000 V/C
# 54 Main St and 1st St	D	xxxxx	0.803	D	xxxxx	0.803	+ 0.000 V/C
# 55 Main St and McFadden Ave	E	xxxxx	0.935	E	xxxxx	0.935	+ 0.000 V/C
# 56 Main St and Edinger Ave	E	xxxxx	0.977	E	xxxxx	0.977	+ 0.000 V/C
# 57 Main St and MacArthur Blvd	C	xxxxx	0.781	C	xxxxx	0.781	+ 0.000 V/C
# 58 Penn Wy and 17th St	C	20.3	0.790	C	20.3	0.790	+ 0.000 D/V
# 59 I-5 NB Off Ramps/17th Street	C	20.3	0.630	C	20.3	0.630	+ 0.000 D/V
# 60 Penn Wy and I-5 SB Ramps	C	22.8	0.433	C	22.8	0.433	+ 0.000 D/V
# 61 Santiago St and Civic Center D	D	27.6	0.896	D	27.6	0.896	+ 0.000 V/C
# 62 Santiago St and Santa Ana Blvd	F	xxxxx	1.411	F	xxxxx	1.411	+ 0.000 V/C
# 63 Standard Ave and 4th St	F	xxxxx	1.341	F	xxxxx	1.341	+ 0.000 V/C
# 64 Standard Ave and 1st St	F	xxxxx	1.484	F	xxxxx	1.484	+ 0.000 V/C
# 65 Standard Ave and Mcfadden Ave	C	xxxxx	0.769	C	xxxxx	0.769	+ 0.000 V/C
# 66 Halladay St and Warner Ave	D	xxxxx	0.824	D	xxxxx	0.824	+ 0.000 V/C
# 67 Halladay St and Dyer Rd	E	xxxxx	0.945	E	xxxxx	0.945	+ 0.000 V/C
# 68 SR-55 SB Ramps and MacArthur B	B	18.4	0.602	B	18.4	0.602	+ 0.000 D/V
# 69 SR-55 NB Ramps and MacArthur B	B	16.2	0.511	B	16.2	0.511	+ 0.000 D/V
# 70 SR-55 SB Ramps and Dyer Rd	C	26.5	0.679	C	26.5	0.679	+ 0.000 D/V
# 71 Glassell St and La Veta Ave	C	xxxxx	0.766	C	xxxxx	0.766	+ 0.000 V/C
# 72 Glassell St and SR-22 WB Ramps	C	33.4	0.943	C	33.4	0.943	+ 0.000 D/V
# 73 Grand Ave / Glassell St and SR	C	31.8	0.927	C	31.8	0.927	+ 0.000 D/V
# 74 Grand Ave and Fairhaven Ave	B	xxxxx	0.665	B	xxxxx	0.665	+ 0.000 V/C
# 75 Grand Ave and Santa Clara Ave	C	xxxxx	0.731	C	xxxxx	0.731	+ 0.000 V/C

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Santa Ana Circulation Element

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 76 Grand Ave and 17th St	D	xxxxx	0.854	D	xxxxx	0.854	+ 0.000 V/C
# 77 Grand Ave and I-5 NB Ramps	B	11.3	0.764	B	11.3	0.764	+ 0.000 D/V
# 78 Grand Ave and Santa Ana Blvd	C	28.5	0.827	C	28.5	0.827	+ 0.000 D/V
# 79 Grand Ave and 1st St	C	xxxxx	0.718	C	xxxxx	0.718	+ 0.000 V/C
# 80 Grand Ave and Chestnut Ave	C	xxxxx	0.783	C	xxxxx	0.783	+ 0.000 V/C
# 81 Grand Ave and McFadden Ave	D	xxxxx	0.813	D	xxxxx	0.813	+ 0.000 V/C
# 82 Grand Ave and Edinger Ave	F	xxxxx	1.079	F	xxxxx	1.079	+ 0.000 V/C
# 83 Grand Ave and Warner Ave	D	xxxxx	0.899	D	xxxxx	0.899	+ 0.000 V/C
# 84 SR-55 NB Ramps and Dyer Rd	A	6.0	0.349	A	6.0	0.349	+ 0.000 D/V
# 85 Cambridge St and La Veta Ave	D	26.1	0.938	D	26.1	0.938	+ 0.000 V/C
# 86 Cambridge St and Fairhaven Ave	A	xxxxx	0.531	A	xxxxx	0.531	+ 0.000 V/C
# 87 Mabury St and 1st Street	C	27.2	0.752	C	27.2	0.752	+ 0.000 D/V
# 88 Tustin St and La Veta Ave	A	xxxxx	0.344	A	xxxxx	0.344	+ 0.000 V/C
# 89 Tustin St and SR-22 WB On-Ramp	A	7.7	0.321	A	7.7	0.321	+ 0.000 D/V
# 90 Tustin St and SR-22 EB Off-Ram	C	23.3	0.625	C	23.3	0.625	+ 0.000 D/V
# 91 Tustin Ave and Fairhaven Ave	C	xxxxx	0.757	C	xxxxx	0.757	+ 0.000 V/C
# 92 Tustin Ave and Santa Clara Ave	C	xxxxx	0.779	C	xxxxx	0.779	+ 0.000 V/C
# 93 Tustin Ave and 17th St	C	xxxxx	0.741	C	xxxxx	0.741	+ 0.000 V/C
# 94 Tustin Ave and 4th St	C	xxxxx	0.784	C	xxxxx	0.784	+ 0.000 V/C
# 95 SR-55 SB Ramps / Auto Mall Dr	C	25.4	0.687	C	25.4	0.687	+ 0.000 D/V
# 96 SR-55 NB Ramps / Del Amo Ave a	D	46.2	0.951	D	46.2	0.951	+ 0.000 D/V
# 97 Red Hill Ave and Edinger Ave	D	xxxxx	0.865	D	xxxxx	0.865	+ 0.000 V/C
# 98 Red Hill Ave and Warner Ave	E	xxxxx	0.952	E	xxxxx	0.952	+ 0.000 V/C
# 99 Red Hill Ave and Dyer Rd / bar	A	xxxxx	0.591	A	xxxxx	0.591	+ 0.000 V/C
#100 Red Hill Ave and Alton Pkwy	F	xxxxx	1.494	F	xxxxx	1.494	+ 0.000 V/C
#101 Red Hill Ave and MacArthur Blv	C	xxxxx	0.722	C	xxxxx	0.722	+ 0.000 V/C

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Santa Ana Circulation Element

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
#102 Red Hill Ave and Main St	D	xxxxx	0.836	D	xxxxx	0.836	+ 0.000 V/C
#103 I-5 SB Ramps and Santa Ana Blv	B	19.9	0.444	B	19.9	0.444	+ 0.000 D/V
#104 Tustin Ranch Rd and Warner Ave	B	xxxxx	0.671	B	xxxxx	0.671	+ 0.000 V/C
#105 Von Karman Ave and Barranca Pk	F	xxxxx	1.284	F	xxxxx	1.284	+ 0.000 V/C
#106 Red Hill Avenue and El Camino	B	xxxxx	0.696	B	xxxxx	0.696	+ 0.000 V/C
#107 Red Hill Avenue and I-5 NB Ram	C	23.6	0.623	C	23.6	0.623	+ 0.000 D/V
#108 Red Hill Avenue and I-5 SB Ram	C	21.8	0.713	C	21.8	0.713	+ 0.000 D/V
#109 Red Hill Avenue and Nisson Roa	C	xxxxx	0.715	C	xxxxx	0.715	+ 0.000 V/C
#110 Red Hill Avenue and Walnut Ave	C	xxxxx	0.749	C	xxxxx	0.749	+ 0.000 V/C
#111 Red Hill Avenue and Valencia A	C	xxxxx	0.753	C	xxxxx	0.753	+ 0.000 V/C
#112 Tustin Ranch Road and Warner A	E	xxxxx	0.924	E	xxxxx	0.924	+ 0.000 V/C
#113 Tustin Ranch Road and Walnut A	F	xxxxx	1.772	F	xxxxx	1.772	+ 0.000 V/C
#114 SR-55 SB Ramps and Irvine Boul	C	26.5	0.929	C	26.5	0.929	+ 0.000 D/V
#115 SR-55 NB Ramps and Irvine Boul	C	22.3	0.841	C	22.3	0.841	+ 0.000 D/V

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #1 Euclid St and 1st St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.787
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	49	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			WideBypass			WideBypass		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2	1 0	1 0	2	1 0	1 0	2	1 0	1 0	2	1 0
Volume Module:												
Base Vol:	165	1532	123	137	781	148	201	641	100	168	702	168
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	165	1532	123	137	781	148	201	641	100	168	702	168
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	165	1532	123	137	781	148	201	641	100	168	702	168
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	165	1532	123	137	781	148	201	641	100	168	702	168
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	165	1532	123	137	781	148	201	641	100	168	702	168
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.05	1.00	1.00	1.05	1.00	1.00	1.05	1.00
Lanes:	1.00	2.78	0.22	1.00	2.52	0.48	1.00	2.60	0.40	1.00	2.42	0.58
Final Sat.:	1600	4643	357	1600	4235	765	1600	4352	648	1600	4073	927
Capacity Analysis Module:												
Vol/Sat:	0.10	0.33	0.34	0.09	0.18	0.19	0.13	0.15	0.15	0.11	0.17	0.18
Crit Moves:			****	****			****					****

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #2 Euclid St and McFadden Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.793
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	51	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Prot+Permit			Prot+Permit		
Rights:	WideBypass			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2	1 0	1 0	2	1 0	1 0	1	1 0	1 0	1	1 0
Volume Module:												
Base Vol:	248	2020	130	87	1070	130	134	307	136	86	359	166
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	248	2020	130	87	1070	130	134	307	136	86	359	166
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	248	2020	130	87	1070	130	134	307	136	86	359	166
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	248	2020	130	87	1070	130	134	307	136	86	359	166
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	248	2020	130	87	1070	130	134	307	136	86	359	166
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.04	1.00	1.00	1.05	1.00	1.00	1.05	1.00	1.00	1.05	1.00
Lanes:	1.00	2.82	0.18	1.00	2.68	0.32	1.00	1.39	0.61	1.00	1.37	0.63
Final Sat.:	1600	4710	290	1600	4480	520	1600	2318	982	1600	2288	1012
Capacity Analysis Module:												
Vol/Sat:	0.16	0.43	0.45	0.05	0.24	0.25	0.08	0.13	0.14	0.05	0.16	0.16
Crit Moves:			****	****			****				****	

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #3 Euclid St and Edinger Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.860
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	69	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 1	0	2 0	2 1	0	1 0	2 0	1	1 0	2 0	1
Volume Module:												
Base Vol:	551	1648	117	136	897	228	121	467	140	119	1103	179
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	551	1648	117	136	897	228	121	467	140	119	1103	179
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	551	1648	117	136	897	228	121	467	140	119	1103	179
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	551	1648	117	136	897	228	121	467	140	119	1103	179
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	551	1648	117	136	897	228	121	467	140	119	1103	179
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.04	1.00	1.00	1.05	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	2.00	2.80	0.20	2.00	2.39	0.61	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	3200	4682	318	3200	4027	973	1600	3400	1600	1600	3400	1600
Capacity Analysis Module:												
Vol/Sat:	0.17	0.35	0.37	0.04	0.22	0.23	0.08	0.14	0.09	0.07	0.32	0.11
Crit Moves:			****	****			****				****	

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #4 Newhope St and Hazard Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.516
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	24	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Prot+Permit			Prot+Permit			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1	1 0	1 0	1	1 0	1 0	0 1	0	1 0	0 1	0
Volume Module:												
Base Vol:	102	1129	44	45	954	114	33	66	40	8	51	15
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	102	1129	44	45	954	114	33	66	40	8	51	15
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	102	1129	44	45	954	114	33	66	40	8	51	15
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	102	1129	44	45	954	114	33	66	40	8	51	15
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	102	1129	44	45	954	114	33	66	40	8	51	15
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.03	1.00	1.00	1.03	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.92	0.08	1.00	1.79	0.21	1.00	0.62	0.38	1.00	0.77	0.23
Final Sat.:	1600	3180	120	1600	2958	342	1600	996	604	1600	1236	364
Capacity Analysis Module:												
Vol/Sat:	0.06	0.36	0.37	0.03	0.32	0.33	0.02	0.07	0.07	0.01	0.04	0.04
Crit Moves:			****	****				****		****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #5 Newhope St and McFadden Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.684
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	36	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Prot+Permit			Prot+Permit		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1	1 0	1 0	1	1 0	1 0	1	1 0	1 0	1	1 0
Volume Module:												
Base Vol:	188	1009	177	121	539	104	45	273	40	72	398	113
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	188	1009	177	121	539	104	45	273	40	72	398	113
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	188	1009	177	121	539	104	45	273	40	72	398	113
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	188	1009	177	121	539	104	45	273	40	72	398	113
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	188	1009	177	121	539	104	45	273	40	72	398	113
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.04	1.00	1.00	1.04	1.00	1.00	1.04	1.00	1.00	1.04	1.00
Lanes:	1.00	1.70	0.30	1.00	1.68	0.32	1.00	1.74	0.26	1.00	1.56	0.44
Final Sat.:	1600	2822	478	1600	2782	518	1600	2891	409	1600	2592	708
Capacity Analysis Module:												
Vol/Sat:	0.12	0.36	0.37	0.08	0.19	0.20	0.03	0.09	0.10	0.05	0.15	0.16
Crit Moves:			****	****			****					****

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Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #6 Harbor Blvd and SR-22 WB Off-Ramp / Banner Dr

Cycle (sec):	100	Critical Vol./Cap.(X):	0.769
Loss Time (sec):	5	Average Delay (sec/veh):	23.8
Optimal Cycle:	48	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 0	0	0 0	2 1	0	0 0	1! 0	0	1 1	0 0	1
Volume Module:												
Base Vol:	103	2324	0	0	1823	59	102	0	86	558	75	160
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	103	2324	0	0	1823	59	102	0	86	558	75	160
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	103	2324	0	0	1823	59	102	0	86	558	75	160
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	103	2324	0	0	1823	59	102	0	86	558	75	160
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	103	2324	0	0	1823	59	102	0	86	558	75	160
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.91	1.00	1.00	0.91	0.91	0.91	1.00	0.91	0.96	0.96	0.85
Lanes:	1.00	3.00	0.00	0.00	2.91	0.09	0.54	0.00	0.46	1.76	0.24	1.00
Final Sat.:	1805	5187	0	0	4999	162	942	0	794	3209	431	1615
Capacity Analysis Module:												
Vol/Sat:	0.06	0.45	0.00	0.00	0.36	0.36	0.11	0.00	0.11	0.17	0.17	0.10
Crit Moves:		****		****			****				****	
Green/Cycle:	0.08	0.58	0.00	0.00	0.50	0.50	0.14	0.00	0.14	0.23	0.23	0.23
Volume/Cap:	0.72	0.77	0.00	0.00	0.72	0.72	0.77	0.00	0.77	0.77	0.77	0.44
Delay/Veh:	61.7	17.0	0.0	0.0	20.4	20.4	55.1	0.0	55.1	40.7	40.7	34.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	61.7	17.0	0.0	0.0	20.4	20.4	55.1	0.0	55.1	40.7	40.7	34.1
LOS by Move:	E	B	A	A	C	C	E	A	E	D	D	C
HCM2k85thQ:	7	30	0	0	26	26	11	0	11	17	17	7

Note: Queue reported is the number of cars per lane.

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Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #7 Trask Avenue and SR-22 EB On-Ramp

Cycle (sec):	100	Critical Vol./Cap.(X):	0.381
Loss Time (sec):	5	Average Delay (sec/veh):	11.0
Optimal Cycle:	20	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	0 0	0	0 0	0 0	0	2 0	1 0	0	0 0	1 1	0
Volume Module:												
Base Vol:	0	0	0	0	0	0	785	588	0	0	449	42
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	785	588	0	0	449	42
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	0	0	0	785	588	0	0	449	42
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	0	0	0	785	588	0	0	449	42
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	0	0	0	785	588	0	0	449	42
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	0.92	1.00	1.00	1.00	0.94	0.94
Lanes:	0.00	0.00	0.00	0.00	0.00	0.00	2.00	1.00	0.00	0.00	1.83	0.17
Final Sat.:	0	0	0	0	0	0	3502	1900	0	0	3258	305
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.00	0.00	0.00	0.22	0.31	0.00	0.00	0.14	0.14
Crit Moves:							****				****	
Green/Cycle:	0.00	0.00	0.00	0.00	0.00	0.00	0.59	0.95	0.00	0.00	0.36	0.36
Volume/Cap:	0.00	0.00	0.00	0.00	0.00	0.00	0.38	0.33	0.00	0.00	0.38	0.38
Delay/Veh:	0.0	0.0	0.0	0.0	0.0	0.0	11.0	0.3	0.0	0.0	23.8	23.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	0.0	0.0	0.0	11.0	0.3	0.0	0.0	23.8	23.8
LOS by Move:	A	A	A	A	A	A	B	A	A	A	C	C
HCM2k85thQ:	0	0	0	0	0	0	10	3	0	0	9	9

Note: Queue reported is the number of cars per lane.

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #8 Harbor Blvd and Westminster Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.842
Loss Time (sec):	0	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	145	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	WideBypass			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 0	1	1 0	3 0	1	1 0	2 1	0	1 0	3 0	1
Volume Module:												
Base Vol:	222	1106	262	254	1752	202	227	808	39	294	1018	231
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	222	1106	262	254	1752	202	227	808	39	294	1018	231
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	222	1106	262	254	1752	202	227	808	39	294	1018	231
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	222	1106	262	254	1752	202	227	808	39	294	1018	231
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	222	1106	262	254	1752	202	227	808	39	294	1018	231
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.04	1.00	1.00	1.06	1.00
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	1.00	2.86	0.14	1.00	3.00	1.00
Final Sat.:	1600	5100	1600	1600	5100	1600	1600	4779	221	1600	5100	1600
Capacity Analysis Module:												
Vol/Sat:	0.14	0.22	0.16	0.16	0.34	0.13	0.14	0.17	0.18	0.18	0.20	0.14
Crit Moves:	****			****					****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #9 Harbor Blvd and 1st St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.753
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	44	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 0	1	1 0	3 0	1	2 0	2 1	0	2 0	2 1	0
Volume Module:												
Base Vol:	280	1446	160	240	1053	142	192	784	148	185	865	141
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	280	1446	160	240	1053	142	192	784	148	185	865	141
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	280	1446	160	240	1053	142	192	784	148	185	865	141
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	280	1446	160	240	1053	142	192	784	148	185	865	141
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	280	1446	160	240	1053	142	192	784	148	185	865	141
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.05	1.00	1.00	1.05	1.00
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	2.00	2.52	0.48	2.00	2.58	0.42
Final Sat.:	1600	5100	1600	1600	5100	1600	3200	4238	762	3200	4327	673
Capacity Analysis Module:												
Vol/Sat:	0.17	0.28	0.10	0.15	0.21	0.09	0.06	0.19	0.19	0.06	0.20	0.21
Crit Moves:		****			****			****				****

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #10 Harbor Blvd and McFadden Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.711
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	38	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	3 0	1	2 0	2 1	0	1 0	1 1	0	1 0	0 1	0
Volume Module:												
Base Vol:	182	1866	136	261	1114	101	147	358	45	63	151	43
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	182	1866	136	261	1114	101	147	358	45	63	151	43
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	182	1866	136	261	1114	101	147	358	45	63	151	43
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	182	1866	136	261	1114	101	147	358	45	63	151	43
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	182	1866	136	261	1114	101	147	358	45	63	151	43
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.05	1.00	1.00	1.04	1.00	1.00	1.00	1.00
Lanes:	2.00	3.00	1.00	2.00	2.75	0.25	1.00	1.78	0.22	1.00	0.78	0.22
Final Sat.:	3200	5100	1600	3200	4601	399	1600	2943	357	1600	1245	355
Capacity Analysis Module:												
Vol/Sat:	0.06	0.37	0.09	0.08	0.24	0.25	0.09	0.12	0.13	0.04	0.12	0.12
Crit Moves:		****			****			****			****	

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #11 Harbor Blvd and Edinger Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.722
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	40	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	3 0	1	2 0	3 0	1	2 0	2 1	0	2 0	3 0	1
Volume Module:												
Base Vol:	262	1645	199	283	822	75	109	460	81	188	1089	363
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	262	1645	199	283	822	75	109	460	81	188	1089	363
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	262	1645	199	283	822	75	109	460	81	188	1089	363
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	262	1645	199	283	822	75	109	460	81	188	1089	363
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	262	1645	199	283	822	75	109	460	81	188	1089	363
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.05	1.00	1.00	1.06	1.00
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	2.55	0.45	2.00	3.00	1.00
Final Sat.:	3200	5100	1600	3200	5100	1600	3200	4281	719	3200	5100	1600
Capacity Analysis Module:												
Vol/Sat:	0.08	0.32	0.12	0.09	0.16	0.05	0.03	0.11	0.11	0.06	0.21	0.23
Crit Moves:		****			****			****				****

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #12 Harbor Blvd and Warner Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	1.539
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	180	Level Of Service:	F

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 1	0	2 0	3 0	1	2 0	3 0	1	2 0	3 0	1
Volume Module:												
Base Vol:	768	3685	277	250	1389	166	198	1399	320	253	2626	838
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	768	3685	277	250	1389	166	198	1399	320	253	2626	838
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	768	3685	277	250	1389	166	198	1399	320	253	2626	838
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	768	3685	277	250	1389	166	198	1399	320	253	2626	838
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	768	3685	277	250	1389	166	198	1399	320	253	2626	838
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.04	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	2.00	2.79	0.21	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3200	4664	336	3200	5100	1600	3200	5100	1600	3200	5100	1600
Capacity Analysis Module:												
Vol/Sat:	0.24	0.79	0.83	0.08	0.27	0.10	0.06	0.27	0.20	0.08	0.51	0.52
Crit Moves:			****	****			****					****

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #13 Harbor Blvd and Segerstrom Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.934
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	113	Level Of Service:	E

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Prot+Permit			Prot+Permit		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 1	0	1 0	2 1	0	1 0	1 1	0	1 0	2 0	1
Volume Module:												
Base Vol:	275	1732	55	86	973	86	118	585	192	121	1308	475
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	275	1732	55	86	973	86	118	585	192	121	1308	475
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	275	1732	55	86	973	86	118	585	192	121	1308	475
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	275	1732	55	86	973	86	118	585	192	121	1308	475
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	275	1732	55	86	973	86	118	585	192	121	1308	475
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.04	1.00	1.00	1.05	1.00	1.00	1.04	1.00	1.00	1.06	1.00
Lanes:	2.00	2.91	0.09	1.00	2.76	0.24	1.00	1.51	0.49	1.00	2.00	1.00
Final Sat.:	3200	4852	148	1600	4610	390	1600	2509	791	1600	3400	1600
Capacity Analysis Module:												
Vol/Sat:	0.09	0.36	0.37	0.05	0.21	0.22	0.07	0.23	0.24	0.08	0.38	0.30
Crit Moves:			****	****			****				****	

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #14 MacArthur Blvd and Hyland Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.891
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	82	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Prot+Permit			Prot+Permit		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	0 1	0	1 0	1 0	1	1 0	3 0	1	1 0	3 0	1
Volume Module:												
Base Vol:	1139	7	66	12	4	14	35	869	156	25	2320	12
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	1139	7	66	12	4	14	35	869	156	25	2320	12
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	1139	7	66	12	4	14	35	869	156	25	2320	12
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	1139	7	66	12	4	14	35	869	156	25	2320	12
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	1139	7	66	12	4	14	35	869	156	25	2320	12
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	2.00	0.10	0.90	1.00	1.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00
Final Sat.:	3200	153	1447	1600	1700	1600	1600	5100	1600	1600	5100	1600
Capacity Analysis Module:												
Vol/Sat:	0.36	0.05	0.05	0.01	0.00	0.01	0.02	0.17	0.10	0.02	0.45	0.01
Crit Moves:	****					****	****				****	

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #15 MacArthur Blvd and Harbor Blvd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.788
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	50	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	3 0	1	2 0	3 0	1	1 0	3 0	1	1 0	3 0	1
Volume Module:												
Base Vol:	527	1362	79	206	1039	170	143	501	185	85	1429	269
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	527	1362	79	206	1039	170	143	501	185	85	1429	269
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	527	1362	79	206	1039	170	143	501	185	85	1429	269
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	527	1362	79	206	1039	170	143	501	185	85	1429	269
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	527	1362	79	206	1039	170	143	501	185	85	1429	269
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00
Final Sat.:	3200	5100	1600	3200	5100	1600	1600	5100	1600	1600	5100	1600
Capacity Analysis Module:												
Vol/Sat:	0.16	0.27	0.05	0.06	0.20	0.11	0.09	0.10	0.12	0.05	0.28	0.17
Crit Moves:	****				****		****				****	

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #16 Harbor Blvd and Sunflower Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.711
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	38	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	3 0	1	2 0	3 0	1	1 0	1 1	0	1 1	0 1	0
Volume Module:												
Base Vol:	156	1552	230	118	1464	44	85	230	239	282	592	221
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	156	1552	230	118	1464	44	85	230	239	282	592	221
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	156	1552	230	118	1464	44	85	230	239	282	592	221
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	156	1552	230	118	1464	44	85	230	239	282	592	221
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	156	1552	230	118	1464	44	85	230	239	282	592	221
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.04	1.00
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	1.00	1.00	1.00	1.00	1.39	0.61
Final Sat.:	3200	5100	1600	3200	5100	1600	1600	1700	1600	1600	2322	974
Capacity Analysis Module:												
Vol/Sat:	0.05	0.30	0.14	0.04	0.29	0.03	0.05	0.14	0.15	0.18	0.25	0.23
Crit Moves:	****			****					****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #17 Harbor Blvd and I-405 NB Off-Ramp

Cycle (sec):	100	Critical Vol./Cap.(X):	0.710
Loss Time (sec):	5	Average Delay (sec/veh):	18.8
Optimal Cycle:	40	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0 4	0 0	0	0 4	0 0	0	0 0	0 0	1	0 1!	0 1
Volume Module:												
Base Vol:	0	1488	0	0	2570	0	0	0	0	513	0	828
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1488	0	0	2570	0	0	0	0	513	0	828
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1488	0	0	2570	0	0	0	0	513	0	828
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1488	0	0	2570	0	0	0	0	513	0	828
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1488	0	0	2570	0	0	0	0	513	0	828
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	0.89	1.00	0.89
Lanes:	0.00	4.00	0.00	0.00	4.00	0.00	0.00	0.00	0.00	1.38	0.00	1.62
Final Sat.:	0	6916	0	0	6916	0	0	0	0	2337	0	2734
Capacity Analysis Module:												
Vol/Sat:	0.00	0.22	0.00	0.00	0.37	0.00	0.00	0.00	0.00	0.22	0.00	0.30
Crit Moves:	****				****							****
Green/Cycle:	0.00	0.52	0.00	0.00	0.52	0.00	0.00	0.00	0.00	0.43	0.00	0.43
Volume/Cap:	0.00	0.41	0.00	0.00	0.71	0.00	0.00	0.00	0.00	0.51	0.00	0.71
Delay/Veh:	0.0	14.5	0.0	0.0	18.7	0.0	0.0	0.0	0.0	21.2	0.0	24.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	14.5	0.0	0.0	18.7	0.0	0.0	0.0	0.0	21.2	0.0	24.9
LOS by Move:	A	B	A	A	B	A	A	A	A	C	A	C
HCM2k85thQ:	0	12	0	0	25	0	0	0	0	13	0	21

Note: Queue reported is the number of cars per lane.

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Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #18 Harbor Blvd and I-405 SB Off-Ramp

Cycle (sec):	100	Critical Vol./Cap.(X):	0.673
Loss Time (sec):	5	Average Delay (sec/veh):	18.1
Optimal Cycle:	36	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Ignore			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0 3	0 1	0	0 4	0 0	1	0 1!	0 1	0	0 0	0 0
Volume Module:												
Base Vol:	0	1881	0	0	2254	0	181	0	833	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1881	0	0	2254	0	181	0	833	0	0	0
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1881	0	0	2254	0	181	0	833	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1881	0	0	2254	0	181	0	833	0	0	0
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1881	0	0	2254	0	181	0	833	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.91	1.00	1.00	0.91	1.00	0.87	1.00	0.87	1.00	1.00	1.00
Lanes:	0.00	3.00	1.00	0.00	4.00	0.00	1.18	0.00	1.82	0.00	0.00	0.00
Final Sat.:	0	5187	1900	0	6916	0	1946	0	3008	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.36	0.00	0.00	0.33	0.00	0.09	0.00	0.28	0.00	0.00	0.00
Crit Moves:		****			****				****			
Green/Cycle:	0.00	0.54	0.00	0.00	0.54	0.00	0.41	0.00	0.41	0.00	0.00	0.00
Volume/Cap:	0.00	0.67	0.00	0.00	0.61	0.00	0.23	0.00	0.67	0.00	0.00	0.00
Delay/Veh:	0.0	17.4	0.0	0.0	16.1	0.0	19.1	0.0	25.2	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	17.4	0.0	0.0	16.1	0.0	19.1	0.0	25.2	0.0	0.0	0.0
LOS by Move:	A	B	A	A	B	A	B	A	C	A	A	A
HCM2k85thQ:	0	23	0	0	20	0	5	0	18	0	0	0

Note: Queue reported is the number of cars per lane.

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #19 Fairview St and Civic Center Dr

Cycle (sec):	100	Critical Vol./Cap.(X):	0.707
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	38	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	WideBypass			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2	1 0	1 0	2	1 0	0 1	0	1 0	1 1	0	0 1
Volume Module:												
Base Vol:	6	1777	499	205	1903	0	2	6	4	164	0	61
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	6	1777	499	205	1903	0	2	6	4	164	0	61
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	6	1777	499	205	1903	0	2	6	4	164	0	61
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	6	1777	499	205	1903	0	2	6	4	164	0	61
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	6	1777	499	205	1903	0	2	6	4	164	0	61
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.04	1.00	1.00	1.00	1.00	1.00	1.06	1.00
Lanes:	1.00	2.34	0.66	1.00	3.00	0.00	0.33	1.00	0.67	2.00	0.00	1.00
Final Sat.:	1600	3948	1052	1600	5000	0	533	1600	1067	3200	0	1600
Capacity Analysis Module:												
Vol/Sat:	0.00	0.45	0.47	0.13	0.38	0.00	0.00	0.00	0.00	0.05	0.00	0.04
Crit Moves:			****	****			****			****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #20 Fairview St and 1st St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.894
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	83	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 0	1	1 0	2 1	0	1 0	2 1	0	1 0	2 1	0
Volume Module:												
Base Vol:	182	1339	121	236	1468	291	215	870	151	126	952	147
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	182	1339	121	236	1468	291	215	870	151	126	952	147
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	182	1339	121	236	1468	291	215	870	151	126	952	147
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	182	1339	121	236	1468	291	215	870	151	126	952	147
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	182	1339	121	236	1468	291	215	870	151	126	952	147
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.05	1.00	1.00	1.05	1.00	1.00	1.05	1.00
Lanes:	1.00	3.00	1.00	1.00	2.50	0.50	1.00	2.56	0.44	1.00	2.60	0.40
Final Sat.:	1600	5100	1600	1600	4206	794	1600	4290	710	1600	4358	642
Capacity Analysis Module:												
Vol/Sat:	0.11	0.26	0.08	0.15	0.35	0.37	0.13	0.20	0.21	0.08	0.22	0.23
Crit Moves:	****					****	****					****

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #21 Fairview St and McFadden Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.684
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	35	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 0	1	1 0	3 0	1	1 0	0 1	0	1 0	0 1	0
Volume Module:												
Base Vol:	174	1596	139	195	1577	246	79	214	53	51	177	43
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	174	1596	139	195	1577	246	79	214	53	51	177	43
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	174	1596	139	195	1577	246	79	214	53	51	177	43
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	174	1596	139	195	1577	246	79	214	53	51	177	43
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	174	1596	139	195	1577	246	79	214	53	51	177	43
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	1.00	0.80	0.20	1.00	0.80	0.20
Final Sat.:	1600	5100	1600	1600	5100	1600	1600	1282	318	1600	1287	313
Capacity Analysis Module:												
Vol/Sat:	0.11	0.31	0.09	0.12	0.31	0.15	0.05	0.17	0.17	0.03	0.14	0.14
Crit Moves:		****			****			****			****	

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #22 Fairview St and Edinger Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.920
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	100	Level Of Service:	E

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 1	0	2 0	2 1	0	2 0	2 1	0	2 0	2 1	0
Volume Module:												
Base Vol:	190	1810	111	198	616	151	205	628	168	639	1353	297
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	190	1810	111	198	616	151	205	628	168	639	1353	297
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	190	1810	111	198	616	151	205	628	168	639	1353	297
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	190	1810	111	198	616	151	205	628	168	639	1353	297
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	190	1810	111	198	616	151	205	628	168	639	1353	297
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.04	1.00	1.00	1.05	1.00	1.00	1.05	1.00	1.00	1.05	1.00
Lanes:	2.00	2.83	0.17	2.00	2.41	0.59	2.00	2.37	0.63	2.00	2.46	0.54
Final Sat.:	3200	4723	277	3200	4055	945	3200	3987	1013	3200	4136	864
Capacity Analysis Module:												
Vol/Sat:	0.06	0.38	0.40	0.06	0.15	0.16	0.06	0.16	0.17	0.20	0.33	0.34
Crit Moves:			****	****			****					****

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #23 Fairview St and Warner Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.805
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	53	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 1	0	2 0	2 1	0	2 0	2 1	0	2 0	2 1	0
Volume Module:												
Base Vol:	211	1679	156	179	906	92	163	792	123	178	1049	227
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	211	1679	156	179	906	92	163	792	123	178	1049	227
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	211	1679	156	179	906	92	163	792	123	178	1049	227
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	211	1679	156	179	906	92	163	792	123	178	1049	227
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	211	1679	156	179	906	92	163	792	123	178	1049	227
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.05	1.00	1.00	1.05	1.00	1.00	1.05	1.00
Lanes:	2.00	2.74	0.26	2.00	2.72	0.28	2.00	2.60	0.40	2.00	2.47	0.53
Final Sat.:	3200	4592	408	3200	4558	442	3200	4355	645	3200	4146	854
Capacity Analysis Module:												
Vol/Sat:	0.07	0.37	0.38	0.06	0.20	0.21	0.05	0.18	0.19	0.06	0.25	0.27
Crit Moves:			****	****			****					****

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #24 Fairview St and MacArthur Blvd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.761
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	45	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 1	0	2 0	3 0	1	2 0	3 0	1	2 0	3 0	1
Volume Module:												
Base Vol:	228	1568	85	162	902	83	253	661	223	159	1210	212
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	228	1568	85	162	902	83	253	661	223	159	1210	212
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	228	1568	85	162	902	83	253	661	223	159	1210	212
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	228	1568	85	162	902	83	253	661	223	159	1210	212
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	228	1568	85	162	902	83	253	661	223	159	1210	212
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.04	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	2.00	2.85	0.15	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3200	4753	247	3200	5100	1600	3200	5100	1600	3200	5100	1600
Capacity Analysis Module:												
Vol/Sat:	0.07	0.33	0.34	0.05	0.18	0.05	0.08	0.13	0.14	0.05	0.24	0.13
Crit Moves:			****	****			****				****	

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #25 Fairview Rd and Sunflower Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.691
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	36	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	3 0	1	2 0	2 1	0	2 0	1 1	0	2 0	2 0	1
Volume Module:												
Base Vol:	190	1705	371	138	1145	79	245	520	115	208	522	136
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	190	1705	371	138	1145	79	245	520	115	208	522	136
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	190	1705	371	138	1145	79	245	520	115	208	522	136
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	190	1705	371	138	1145	79	245	520	115	208	522	136
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	190	1705	371	138	1145	79	245	520	115	208	522	136
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.04	1.00	1.00	1.04	1.00	1.00	1.06	1.00
Lanes:	2.00	3.00	1.00	2.00	2.81	0.19	2.00	1.64	0.36	2.00	2.00	1.00
Final Sat.:	3200	5100	1600	3200	4690	310	3200	2720	580	3200	3400	1600
Capacity Analysis Module:												
Vol/Sat:	0.06	0.33	0.23	0.04	0.24	0.26	0.08	0.19	0.20	0.07	0.15	0.09
Crit Moves:		****		****					****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #26 Greenville St and Edinger Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.647
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	32	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	0	0 1	0 0	0	0 0	0 0	2	1 0	1 0	3	0 0
Volume Module:												
Base Vol:	327	0	218	0	0	0	0	1178	240	155	1840	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	327	0	218	0	0	0	0	1178	240	155	1840	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	327	0	218	0	0	0	0	1178	240	155	1840	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	327	0	218	0	0	0	0	1178	240	155	1840	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	327	0	218	0	0	0	0	1178	240	155	1840	0
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.05	1.00	1.00	1.06	1.00
Lanes:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	2.49	0.51	1.00	3.00	0.00
Final Sat.:	1600	0	1600	0	0	0	0	4188	812	1600	5100	0
Capacity Analysis Module:												
Vol/Sat:	0.20	0.00	0.14	0.00	0.00	0.00	0.00	0.28	0.30	0.10	0.36	0.00
Crit Moves:	****								****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #27 Greenville St and Segerstrom Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.797
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	51	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	0 1	0	1 0	0 1	0	1 0	2 1	0	1 0	2 1	0
Volume Module:												
Base Vol:	50	414	31	44	143	44	138	1049	60	39	1490	213
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	50	414	31	44	143	44	138	1049	60	39	1490	213
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	50	414	31	44	143	44	138	1049	60	39	1490	213
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	50	414	31	44	143	44	138	1049	60	39	1490	213
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	50	414	31	44	143	44	138	1049	60	39	1490	213
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.04	1.00	1.00	1.05	1.00
Lanes:	1.00	0.93	0.07	1.00	0.76	0.24	1.00	2.84	0.16	1.00	2.62	0.38
Final Sat.:	1600	1489	111	1600	1224	376	1600	4740	260	1600	4400	600
Capacity Analysis Module:												
Vol/Sat:	0.03	0.28	0.28	0.03	0.12	0.12	0.09	0.22	0.23	0.02	0.34	0.35
Crit Moves:		****			****			****				****

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #28 Raitt St and McFadden Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.676
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	35	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	0	1 0	1 0	0	1 0	1 0	0	1 0	1 0	0	1 0
Volume Module:												
Base Vol:	34	482	75	24	252	40	59	347	30	38	318	44
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	34	482	75	24	252	40	59	347	30	38	318	44
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	34	482	75	24	252	40	59	347	30	38	318	44
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	34	482	75	24	252	40	59	347	30	38	318	44
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	34	482	75	24	252	40	59	347	30	38	318	44
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.87	0.13	1.00	0.86	0.14	1.00	0.92	0.08	1.00	0.88	0.12
Final Sat.:	1600	1385	215	1600	1381	219	1600	1473	127	1600	1406	194
Capacity Analysis Module:												
Vol/Sat:	0.02	0.35	0.35	0.02	0.18	0.18	0.04	0.24	0.24	0.02	0.23	0.23
Crit Moves:		****			****			****			****	

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #29 Raitt St and Edinger Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.988
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	180	Level Of Service:	E

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	0 1	0	1 0	0 1	0	1 0	2 1	0	1 0	2 1	0
Volume Module:												
Base Vol:	84	361	101	61	209	52	177	1226	175	195	2203	197
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	84	361	101	61	209	52	177	1226	175	195	2203	197
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	84	361	101	61	209	52	177	1226	175	195	2203	197
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	84	361	101	61	209	52	177	1226	175	195	2203	197
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	84	361	101	61	209	52	177	1226	175	195	2203	197
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.05	1.00	1.00	1.05	1.00
Lanes:	1.00	0.78	0.22	1.00	0.80	0.20	1.00	2.63	0.37	1.00	2.75	0.25
Final Sat.:	1600	1250	350	1600	1281	319	1600	4400	600	1600	4606	394
Capacity Analysis Module:												
Vol/Sat:	0.05	0.29	0.29	0.04	0.16	0.16	0.11	0.28	0.29	0.12	0.48	0.50
Crit Moves:		****			****			****				****

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #30 Bear St and MacArthur Blvd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.904
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	89	Level Of Service:	E

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 0	1	1 0	2 0	1	1 0	2 1	0	1 0	2 1	0
Volume Module:												
Base Vol:	262	1258	328	115	278	84	90	847	88	82	1475	235
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	262	1258	328	115	278	84	90	847	88	82	1475	235
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	262	1258	328	115	278	84	90	847	88	82	1475	235
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	262	1258	328	115	278	84	90	847	88	82	1475	235
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	262	1258	328	115	278	84	90	847	88	82	1475	235
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.05	1.00	1.00	1.05	1.00
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	2.72	0.28	1.00	2.59	0.41
Final Sat.:	1600	3400	1600	1600	3400	1600	1600	4548	452	1600	4340	660
Capacity Analysis Module:												
Vol/Sat:	0.16	0.37	0.21	0.07	0.08	0.05	0.06	0.19	0.19	0.05	0.34	0.36
Crit Moves:		****			****			****				****

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #31 Bristol St and 17th St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.811
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	54	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	3 0	1	2 0	3 0	1	2 0	2 1	0	2 0	3 0	1
Volume Module:												
Base Vol:	370	1801	300	347	1847	314	243	543	98	280	1055	357
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	370	1801	300	347	1847	314	243	543	98	280	1055	357
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	370	1801	300	347	1847	314	243	543	98	280	1055	357
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	370	1801	300	347	1847	314	243	543	98	280	1055	357
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	370	1801	300	347	1847	314	243	543	98	280	1055	357
OvlAdjVol:												183
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.05	1.00	1.00	1.06	1.00
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	2.54	0.46	2.00	3.00	1.00
Final Sat.:	3200	5100	1600	3200	5100	1600	3200	4266	734	3200	5100	1600
Capacity Analysis Module:												
Vol/Sat:	0.12	0.35	0.19	0.11	0.36	0.20	0.08	0.13	0.13	0.09	0.21	0.22
OvlAdjV/S:												0.11
Crit Moves:	****				****		****				****	

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #32 Bristol St and Civic Center Dr

Cycle (sec):	100	Critical Vol./Cap.(X):	0.898
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	85	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Prot+Permit			Prot+Permit		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2	1 0	1 0	2	1 0	1 0	0	1 0	1 0	1	1 0
Volume Module:												
Base Vol:	214	1494	78	173	1589	163	130	366	43	149	635	72
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	214	1494	78	173	1589	163	130	366	43	149	635	72
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	214	1494	78	173	1589	163	130	366	43	149	635	72
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	214	1494	78	173	1589	163	130	366	43	149	635	72
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	214	1494	78	173	1589	163	130	366	43	149	635	72
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.04	1.00	1.00	1.05	1.00	1.00	1.00	1.00	1.00	1.03	1.00
Lanes:	1.00	2.85	0.15	1.00	2.72	0.28	1.00	0.89	0.11	1.00	1.80	0.20
Final Sat.:	1600	4762	238	1600	4553	447	1600	1432	168	1600	2974	326
Capacity Analysis Module:												
Vol/Sat:	0.13	0.31	0.33	0.11	0.35	0.37	0.08	0.26	0.26	0.09	0.21	0.22
Crit Moves:	****					****		****		****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #33 Bristol St and Santa Ana Blvd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.732
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	41	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Prot+Permit			Prot+Permit		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2	1 0	1 0	2	1 0	1 0	0	1 0	1 0	0	1 0
Volume Module:												
Base Vol:	85	1722	98	120	1597	60	70	194	45	125	199	54
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	85	1722	98	120	1597	60	70	194	45	125	199	54
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	85	1722	98	120	1597	60	70	194	45	125	199	54
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	85	1722	98	120	1597	60	70	194	45	125	199	54
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	85	1722	98	120	1597	60	70	194	45	125	199	54
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.04	1.00	1.00	1.04	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.84	0.16	1.00	2.89	0.11	1.00	0.81	0.19	1.00	0.79	0.21
Final Sat.:	1600	4742	258	1600	4826	174	1600	1299	301	1600	1258	342
Capacity Analysis Module:												
Vol/Sat:	0.05	0.36	0.38	0.08	0.33	0.35	0.04	0.15	0.15	0.08	0.16	0.16
Crit Moves:			****	****				****		****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #34 Bristol St and 1st St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.972
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	167	Level Of Service:	E

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	3 0	1	2 0	3 0	1	1 0	2 1	0	1 0	1 1	0
Volume Module:												
Base Vol:	434	1872	276	216	1169	264	259	1454	186	155	953	90
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	434	1872	276	216	1169	264	259	1454	186	155	953	90
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	434	1872	276	216	1169	264	259	1454	186	155	953	90
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	434	1872	276	216	1169	264	259	1454	186	155	953	90
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	434	1872	276	216	1169	264	259	1454	186	155	953	90
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.05	1.00	1.00	1.03	1.00
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	1.00	2.66	0.34	1.00	1.83	0.17
Final Sat.:	3200	5100	1600	3200	5100	1600	1600	4456	544	1600	3024	276
Capacity Analysis Module:												
Vol/Sat:	0.14	0.37	0.17	0.07	0.23	0.17	0.16	0.33	0.34	0.10	0.32	0.33
Crit Moves:		****			****			****				****

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #35 Bristol St and McFadden Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.890
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	81	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Prot+Permit			Prot+Permit		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 0	1	1 0	3 0	1	1 0	0 1	0	1 0	0 1	0
Volume Module:												
Base Vol:	249	1833	99	116	1618	373	114	222	44	82	424	50
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	249	1833	99	116	1618	373	114	222	44	82	424	50
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	249	1833	99	116	1618	373	114	222	44	82	424	50
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	249	1833	99	116	1618	373	114	222	44	82	424	50
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	249	1833	99	116	1618	373	114	222	44	82	424	50
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	1.00	0.83	0.17	1.00	0.89	0.11
Final Sat.:	1600	5100	1600	1600	5100	1600	1600	1335	265	1600	1431	169
Capacity Analysis Module:												
Vol/Sat:	0.16	0.36	0.06	0.07	0.32	0.23	0.07	0.17	0.17	0.05	0.30	0.30
Crit Moves:	****				****		****				****	

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #36 Bristol St and Warner Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.871
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	72	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 1	0	2 0	2 1	0	1 0	3 0	1	1 0	3 0	1
Volume Module:												
Base Vol:	312	1170	213	343	1144	223	159	715	126	282	1662	487
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	312	1170	213	343	1144	223	159	715	126	282	1662	487
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	312	1170	213	343	1144	223	159	715	126	282	1662	487
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	312	1170	213	343	1144	223	159	715	126	282	1662	487
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	312	1170	213	343	1144	223	159	715	126	282	1662	487
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.05	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	2.00	2.54	0.46	2.00	2.51	0.49	1.00	3.00	1.00	1.00	3.00	1.00
Final Sat.:	3200	4261	739	3200	4217	783	1600	5100	1600	1600	5100	1600
Capacity Analysis Module:												
Vol/Sat:	0.10	0.27	0.29	0.11	0.27	0.28	0.10	0.14	0.08	0.18	0.33	0.30
Crit Moves:		****	****				****				****	

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #37 Bristol St and Segerstrom Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.915
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	96	Level Of Service:	E

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	WideBypass			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 1	0	1 0	2 1	0	1 0	2 1	0	1 0	2 1	0
Volume Module:												
Base Vol:	177	1309	231	98	894	187	279	998	79	156	1408	71
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	177	1309	231	98	894	187	279	998	79	156	1408	71
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	177	1309	231	98	894	187	279	998	79	156	1408	71
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	177	1309	231	98	894	187	279	998	79	156	1408	71
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	177	1309	231	98	894	187	279	998	79	156	1408	71
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.05	1.00	1.00	1.04	1.00	1.00	1.04	1.00
Lanes:	1.00	2.55	0.45	1.00	2.48	0.52	1.00	2.78	0.22	1.00	2.86	0.14
Final Sat.:	1600	4280	720	1600	4170	830	1600	4648	352	1600	4770	230
Capacity Analysis Module:												
Vol/Sat:	0.11	0.31	0.32	0.06	0.21	0.23	0.17	0.21	0.22	0.10	0.30	0.31
Crit Moves:			****	****			****					****

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #38 Bristol St and Alton Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.583
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	28	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	WideBypass			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 1	0	1 0	3 0	1	1 0	1 1	0	1 0	0 1	0
Volume Module:												
Base Vol:	43	1667	157	114	858	54	50	70	130	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	43	1667	157	114	858	54	50	70	130	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	43	1667	157	114	858	54	50	70	130	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	43	1667	157	114	858	54	50	70	130	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	43	1667	157	114	858	54	50	70	130	0	0	0
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.00	1.00
Lanes:	1.00	2.74	0.26	1.00	3.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Final Sat.:	1600	4587	413	1600	5100	1600	1600	1700	1600	1600	1600	0
Capacity Analysis Module:												
Vol/Sat:	0.03	0.36	0.38	0.07	0.17	0.03	0.03	0.04	0.08	0.00	0.00	0.00
Crit Moves:			****	****					****			

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #39 Bristol St and MacArthur Blvd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.796
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	51	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	3 0	1	2 0	2 1	0	2 0	3 0	1	2 0	3 0	1
Volume Module:												
Base Vol:	335	1428	260	237	871	137	357	796	169	247	1432	270
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	335	1428	260	237	871	137	357	796	169	247	1432	270
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	335	1428	260	237	871	137	357	796	169	247	1432	270
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	335	1428	260	237	871	137	357	796	169	247	1432	270
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	335	1428	260	237	871	137	357	796	169	247	1432	270
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.05	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	2.00	3.00	1.00	2.00	2.59	0.41	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3200	5100	1600	3200	4348	652	3200	5100	1600	3200	5100	1600
Capacity Analysis Module:												
Vol/Sat:	0.10	0.28	0.16	0.07	0.20	0.21	0.11	0.16	0.11	0.08	0.28	0.17
Crit Moves:		****			****			****			****	

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #40 Bristol St and Sunflower Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.744
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	42	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 1	1	2 0	3 0	1	2 0	2 1	1	2 0	3 0	1
Volume Module:												
Base Vol:	687	1452	234	226	844	242	391	764	296	254	976	311
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	687	1452	234	226	844	242	391	764	296	254	976	311
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	687	1452	234	226	844	242	391	764	296	254	976	311
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	687	1452	234	226	844	242	391	764	296	254	976	311
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	687	1452	234	226	844	242	391	764	296	254	976	311
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.04	1.00	1.00	1.06	1.00
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	2.88	1.12	2.00	3.00	1.00
Final Sat.:	3200	5100	1600	3200	5100	1600	3200	4813	1787	3200	5100	1600
Capacity Analysis Module:												
Vol/Sat:	0.21	0.28	0.15	0.07	0.17	0.15	0.12	0.16	0.17	0.08	0.19	0.19
Crit Moves:	****				****		****				****	

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Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #41 Bristol St and I-405 NB Ramps

Cycle (sec):	100	Critical Vol./Cap.(X):	0.854
Loss Time (sec):	5	Average Delay (sec/veh):	29.0
Optimal Cycle:	69	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	4	0 1	0 0	4	1 0	0 0	0	0 2	1 1	1	0 2
Volume Module:												
Base Vol:	0	2235	195	0	2458	23	0	0	204	357	306	1184
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	2235	195	0	2458	23	0	0	204	357	306	1184
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	2235	195	0	2458	23	0	0	204	357	306	1184
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	2235	195	0	2458	23	0	0	204	357	306	1184
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	2235	195	0	2458	23	0	0	204	357	306	1184
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.91	0.85	1.00	0.91	0.91	1.00	1.00	0.75	0.93	0.93	0.75
Lanes:	0.00	4.00	1.00	0.00	4.95	0.05	0.00	0.00	2.00	1.62	1.38	2.00
Final Sat.:	0	6916	1615	0	8556	80	0	0	2842	2840	2434	2842
Capacity Analysis Module:												
Vol/Sat:	0.00	0.32	0.12	0.00	0.29	0.29	0.00	0.00	0.07	0.13	0.13	0.42
Crit Moves:		****			****				****			****
Green/Cycle:	0.00	0.38	0.38	0.00	0.38	0.38	0.00	0.00	0.08	0.49	0.49	0.49
Volume/Cap:	0.00	0.85	0.32	0.00	0.76	0.76	0.00	0.00	0.85	0.26	0.26	0.85
Delay/Veh:	0.0	31.5	22.3	0.0	28.2	28.2	0.0	0.0	69.8	15.1	15.1	27.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	31.5	22.3	0.0	28.2	28.2	0.0	0.0	69.8	15.1	15.1	27.9
LOS by Move:	A	C	C	A	C	C	A	A	E	B	B	C
HCM2k85thQ:	0	29	7	0	24	24	0	0	9	6	6	30

Note: Queue reported is the number of cars per lane.

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Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #42 Bristol St and I-405 SB Ramps

Cycle (sec):	100	Critical Vol./Cap.(X):	0.631
Loss Time (sec):	5	Average Delay (sec/veh):	18.2
Optimal Cycle:	32	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Ignore			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	4 0	0	0 0	2 1	1	3 0	0 0	1	0 0	0 0	0
Volume Module:												
Base Vol:	135	1647	0	0	1657	968	740	0	331	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	135	1647	0	0	1657	968	740	0	331	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	135	1647	0	0	1657	0	740	0	331	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	135	1647	0	0	1657	0	740	0	331	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	135	1647	0	0	1657	0	740	0	331	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.91	1.00	1.00	0.91	0.91	0.92	1.00	0.85	1.00	1.00	1.00
Lanes:	1.00	4.00	0.00	0.00	3.00	1.00	3.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	1805	6916	0	0	5187	1729	5253	0	1615	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.07	0.24	0.00	0.00	0.32	0.00	0.14	0.00	0.20	0.00	0.00	0.00
Crit Moves:	****				****				****			
Green/Cycle:	0.12	0.63	0.00	0.00	0.51	0.00	0.32	0.00	0.32	0.00	0.00	0.00
Volume/Cap:	0.63	0.38	0.00	0.00	0.63	0.00	0.43	0.00	0.63	0.00	0.00	0.00
Delay/Veh:	47.9	9.3	0.0	0.0	18.4	0.0	26.7	0.0	31.1	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	47.9	9.3	0.0	0.0	18.4	0.0	26.7	0.0	31.1	0.0	0.0	0.0
LOS by Move:	D	A	A	A	B	A	C	A	C	A	A	A
HCM2k85thQ:	8	10	0	0	21	0	10	0	14	0	0	0

Note: Queue reported is the number of cars per lane.

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #43 Flower St and Santa Ana Blvd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.668
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	34	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Prot+Permit			Prot+Permit			Prot+Permit			Prot+Permit		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 0	1	1 0	2 0	1	1 0	2 0	1	1 0	2 0	1
Volume Module:												
Base Vol:	215	1307	107	95	486	44	104	300	49	106	371	110
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	215	1307	107	95	486	44	104	300	49	106	371	110
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	215	1307	107	95	486	44	104	300	49	106	371	110
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	215	1307	107	95	486	44	104	300	49	106	371	110
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	215	1307	107	95	486	44	104	300	49	106	371	110
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1600	3400	1600	1600	3400	1600	1600	3400	1600	1600	3400	1600
Capacity Analysis Module:												
Vol/Sat:	0.13	0.38	0.07	0.06	0.14	0.03	0.07	0.09	0.03	0.07	0.11	0.07
Crit Moves:		****			****			****			****	

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #44 Flower St and 1st St

Cycle (sec):	100	Critical Vol./Cap.(X):	1.215
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	180	Level Of Service:	F

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1 0	1	1 0	1 1	0	1 0	1 1	0	1 0	1 1	0
Volume Module:												
Base Vol:	211	1000	238	140	383	111	135	1181	98	144	969	101
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	211	1000	238	140	383	111	135	1181	98	144	969	101
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	211	1000	238	140	383	111	135	1181	98	144	969	101
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	211	1000	238	140	383	111	135	1181	98	144	969	101
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	211	1000	238	140	383	111	135	1181	98	144	969	101
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.04	1.00	1.00	1.03	1.00	1.00	1.03	1.00
Lanes:	1.00	1.00	1.00	1.00	1.55	0.45	1.00	1.85	0.15	1.00	1.81	0.19
Final Sat.:	1600	1700	1600	1600	2581	719	1600	3055	245	1600	2998	302
Capacity Analysis Module:												
Vol/Sat:	0.13	0.59	0.15	0.09	0.15	0.15	0.08	0.39	0.40	0.09	0.32	0.33
Crit Moves:		****		****					****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #45 Flower St and McFadden Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.968
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	159	Level Of Service:	E

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	0	1 0	1 0	0	1 0	1 0	0	1 0	1 0	0	1 0
Volume Module:												
Base Vol:	54	734	45	26	201	33	56	422	17	43	532	76
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	54	734	45	26	201	33	56	422	17	43	532	76
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	54	734	45	26	201	33	56	422	17	43	532	76
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	54	734	45	26	201	33	56	422	17	43	532	76
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	54	734	45	26	201	33	56	422	17	43	532	76
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.94	0.06	1.00	0.86	0.14	1.00	0.96	0.04	1.00	0.88	0.12
Final Sat.:	1600	1508	92	1600	1374	226	1600	1538	62	1600	1400	200
Capacity Analysis Module:												
Vol/Sat:	0.03	0.49	0.49	0.02	0.15	0.15	0.04	0.27	0.27	0.03	0.38	0.38
Crit Moves:		****			****			****			****	

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #46 Flower St and Segerstrom Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.916
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	97	Level Of Service:	E

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1	1 0	1 0	1	1 0	1 0	2	1 0	1 0	2	1 0
Volume Module:												
Base Vol:	120	843	80	80	449	129	241	1198	126	101	1699	109
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	120	843	80	80	449	129	241	1198	126	101	1699	109
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	120	843	80	80	449	129	241	1198	126	101	1699	109
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	120	843	80	80	449	129	241	1198	126	101	1699	109
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	120	843	80	80	449	129	241	1198	126	101	1699	109
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.03	1.00	1.00	1.04	1.00	1.00	1.05	1.00	1.00	1.04	1.00
Lanes:	1.00	1.83	0.17	1.00	1.55	0.45	1.00	2.71	0.29	1.00	2.82	0.18
Final Sat.:	1600	3023	277	1600	2586	714	1600	4543	457	1600	4711	289
Capacity Analysis Module:												
Vol/Sat:	0.08	0.28	0.29	0.05	0.17	0.18	0.15	0.26	0.28	0.06	0.36	0.38
Crit Moves:			****	****			****					****

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #47 Flower St and MacArthur Blvd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.908
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	92	Level Of Service:	E

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1	1 0	1 0	1	1 0	1 0	2	1 0	1 0	2	1 0
Volume Module:												
Base Vol:	116	553	65	97	233	224	264	1254	80	61	1967	175
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	116	553	65	97	233	224	264	1254	80	61	1967	175
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	116	553	65	97	233	224	264	1254	80	61	1967	175
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	116	553	65	97	233	224	264	1254	80	61	1967	175
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	116	553	65	97	233	224	264	1254	80	61	1967	175
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.03	1.00	1.00	1.06	1.00	1.00	1.04	1.00	1.00	1.05	1.00
Lanes:	1.00	1.79	0.21	1.00	1.02	0.98	1.00	2.82	0.18	1.00	2.75	0.25
Final Sat.:	1600	2963	337	1600	1732	1568	1600	4712	288	1600	4608	392
Capacity Analysis Module:												
Vol/Sat:	0.07	0.19	0.19	0.06	0.13	0.14	0.17	0.27	0.28	0.04	0.43	0.45
Crit Moves:		****			****			****				****

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #48 Main St and La Veta Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.764
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	45	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ovl			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	3 0	1	2 0	2 1	0	2 0	2 1	0	2 0	2 0	1
Volume Module:												
Base Vol:	310	948	444	191	1199	309	347	495	222	332	662	266
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	310	948	444	191	1199	309	347	495	222	332	662	266
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	310	948	444	191	1199	309	347	495	222	332	662	266
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	310	948	444	191	1199	309	347	495	222	332	662	266
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	310	948	444	191	1199	309	347	495	222	332	662	266
OvlAdjVol:			278									171
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.05	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	2.00	3.00	1.00	2.00	2.39	0.61	2.00	2.07	0.93	2.00	2.00	1.00
Final Sat.:	3200	5100	1600	3200	4016	984	3200	3514	1486	3200	3400	1600
Capacity Analysis Module:												
Vol/Sat:	0.10	0.19	0.28	0.06	0.30	0.31	0.11	0.14	0.15	0.10	0.19	0.17
OvlAdjV/S:			0.17									0.11
Crit Moves:	****					****	****				****	

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #49 Main St and Mainplace Dr / Memory Ln

Cycle (sec):	100	Critical Vol./Cap.(X):	0.504
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	24	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2	1 0	2 0	2	1 0	2 0	2	1 0	2 0	2	0 1
Volume Module:												
Base Vol:	102	1075	204	48	999	132	195	217	58	370	302	146
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	102	1075	204	48	999	132	195	217	58	370	302	146
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	102	1075	204	48	999	132	195	217	58	370	302	146
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	102	1075	204	48	999	132	195	217	58	370	302	146
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	102	1075	204	48	999	132	195	217	58	370	302	146
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.05	1.00	1.00	1.05	1.00	1.00	1.06	1.00
Lanes:	2.00	2.52	0.48	2.00	2.65	0.35	2.00	2.37	0.63	2.00	2.00	1.00
Final Sat.:	3200	4234	766	3200	4440	560	3200	3988	1012	3200	3400	1600
Capacity Analysis Module:												
Vol/Sat:	0.03	0.25	0.27	0.02	0.23	0.24	0.06	0.05	0.06	0.12	0.09	0.09
Crit Moves:			****	****					****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #50 Main St and 17th St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.799
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	52	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 0	1	2 0	2 0	1	2 0	2 1	0	2 0	2 1	0
Volume Module:												
Base Vol:	239	1237	270	243	1062	164	174	975	58	187	1147	76
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	239	1237	270	243	1062	164	174	975	58	187	1147	76
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	239	1237	270	243	1062	164	174	975	58	187	1147	76
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	239	1237	270	243	1062	164	174	975	58	187	1147	76
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	239	1237	270	243	1062	164	174	975	58	187	1147	76
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.04	1.00	1.00	1.04	1.00
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	2.00	2.83	0.17	2.00	2.81	0.19
Final Sat.:	3200	3400	1600	3200	3400	1600	3200	4730	270	3200	4702	298
Capacity Analysis Module:												
Vol/Sat:	0.07	0.36	0.17	0.08	0.31	0.10	0.05	0.21	0.22	0.06	0.24	0.25
Crit Moves:		****			****			****				****

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #51 Main St and Civic Center Dr

Cycle (sec):	100	Critical Vol./Cap.(X):	0.856
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	67	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1	1 0	1 0	1	1 0	1 0	1	1 0	1 0	1	1 0
Volume Module:												
Base Vol:	98	1234	103	63	1031	65	168	930	111	38	384	39
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	98	1234	103	63	1031	65	168	930	111	38	384	39
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	98	1234	103	63	1031	65	168	930	111	38	384	39
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	98	1234	103	63	1031	65	168	930	111	38	384	39
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	98	1234	103	63	1031	65	168	930	111	38	384	39
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.03	1.00	1.00	1.03	1.00	1.00	1.03	1.00	1.00	1.03	1.00
Lanes:	1.00	1.85	0.15	1.00	1.88	0.12	1.00	1.79	0.21	1.00	1.82	0.18
Final Sat.:	1600	3053	247	1600	3110	190	1600	2959	341	1600	3005	295
Capacity Analysis Module:												
Vol/Sat:	0.06	0.40	0.42	0.04	0.33	0.34	0.11	0.31	0.33	0.02	0.13	0.13
Crit Moves:			****	****					****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #52 Main St and Santa Ana Blvd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.700
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	37	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 0	0	0 0	1 1	0	0 0	0 0	0	0 1	0 1	0
Volume Module:												
Base Vol:	56	1280	0	0	1108	54	0	0	0	65	656	85
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	56	1280	0	0	1108	54	0	0	0	65	656	85
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	56	1280	0	0	1108	54	0	0	0	65	656	85
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	56	1280	0	0	1108	54	0	0	0	65	656	85
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	56	1280	0	0	1108	54	0	0	0	65	656	85
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.03	1.00	1.00	1.06	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	0.00	0.00	1.91	0.09	0.00	0.00	0.00	0.16	1.63	0.21
Final Sat.:	1600	3400	0	0	3151	149	0	0	0	258	2604	337
Capacity Analysis Module:												
Vol/Sat:	0.04	0.38	0.00	0.00	0.35	0.36	0.00	0.00	0.00	0.04	0.25	0.25
Crit Moves:	****					****					****	

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #53 Main St and 4th St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.472
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	22	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	1 1	0	0 0	1 1	0	0 0	1 1	0	0 0	1 1	0
Volume Module:												
Base Vol:	0	1108	53	0	951	43	0	112	63	0	157	40
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1108	53	0	951	43	0	112	63	0	157	40
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1108	53	0	951	43	0	112	63	0	157	40
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1108	53	0	951	43	0	112	63	0	157	40
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1108	53	0	951	43	0	112	63	0	157	40
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.03	1.00	1.00	1.03	1.00	1.00	1.05	1.00	1.00	1.04	1.00
Lanes:	0.00	1.91	0.09	0.00	1.91	0.09	0.00	1.28	0.72	0.00	1.59	0.41
Final Sat.:	0	3154	146	0	3162	138	0	2148	1152	0	2650	650
Capacity Analysis Module:												
Vol/Sat:	0.00	0.35	0.36	0.00	0.30	0.31	0.00	0.05	0.05	0.00	0.06	0.06
Crit Moves:		****	****				****				****	

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #54 Main St and 1st St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.803
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	53	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1	1 0	1 0	2	0 1	1 0	1	1 0	1 0	1	1 0
Volume Module:												
Base Vol:	179	875	76	160	615	131	91	921	68	75	834	58
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	179	875	76	160	615	131	91	921	68	75	834	58
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	179	875	76	160	615	131	91	921	68	75	834	58
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	179	875	76	160	615	131	91	921	68	75	834	58
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	179	875	76	160	615	131	91	921	68	75	834	58
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.03	1.00	1.00	1.06	1.00	1.00	1.03	1.00	1.00	1.03	1.00
Lanes:	1.00	1.84	0.16	1.00	2.00	1.00	1.00	1.86	0.14	1.00	1.87	0.13
Final Sat.:	1600	3044	256	1600	3400	1600	1600	3080	220	1600	3092	208
Capacity Analysis Module:												
Vol/Sat:	0.11	0.29	0.30	0.10	0.18	0.08	0.06	0.30	0.31	0.05	0.27	0.28
Crit Moves:		****	****						****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #55 Main St and McFadden Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.935
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	113	Level Of Service:	E

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Prot+Permit			Prot+Permit			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1	1 0	1 0	1	1 0	1 0	0 1	0	1 0	0 1	0
Volume Module:												
Base Vol:	149	1169	72	138	933	68	78	345	42	71	400	180
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	149	1169	72	138	933	68	78	345	42	71	400	180
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	149	1169	72	138	933	68	78	345	42	71	400	180
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	149	1169	72	138	933	68	78	345	42	71	400	180
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	149	1169	72	138	933	68	78	345	42	71	400	180
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.03	1.00	1.00	1.03	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.88	0.12	1.00	1.86	0.14	1.00	0.89	0.11	1.00	0.69	0.31
Final Sat.:	1600	3114	186	1600	3083	217	1600	1426	174	1600	1103	497
Capacity Analysis Module:												
Vol/Sat:	0.09	0.38	0.39	0.09	0.30	0.31	0.05	0.24	0.24	0.04	0.36	0.36
Crit Moves:			****	****			****				****	

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #56 Main St and Edinger Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.977
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	177	Level Of Service:	E

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1	1 0	1 0	1	1 0	1 0	2	1 0	1 0	2	1 0
Volume Module:												
Base Vol:	111	1181	54	129	646	88	159	940	105	117	1569	162
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	111	1181	54	129	646	88	159	940	105	117	1569	162
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	111	1181	54	129	646	88	159	940	105	117	1569	162
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	111	1181	54	129	646	88	159	940	105	117	1569	162
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	111	1181	54	129	646	88	159	940	105	117	1569	162
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.03	1.00	1.00	1.04	1.00	1.00	1.05	1.00	1.00	1.05	1.00
Lanes:	1.00	1.91	0.09	1.00	1.76	0.24	1.00	2.70	0.30	1.00	2.72	0.28
Final Sat.:	1600	3160	140	1600	2916	384	1600	4518	482	1600	4551	449
Capacity Analysis Module:												
Vol/Sat:	0.07	0.37	0.39	0.08	0.22	0.23	0.10	0.21	0.22	0.07	0.34	0.36
Crit Moves:			****	****			****					****

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #57 Main St and MacArthur Blvd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.781
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	48	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	3 0	1	2 0	3 0	1	2 0	3 0	1	2 0	3 0	1
Volume Module:												
Base Vol:	488	1169	321	271	352	266	385	792	76	188	1488	432
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	488	1169	321	271	352	266	385	792	76	188	1488	432
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	488	1169	321	271	352	266	385	792	76	188	1488	432
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	488	1169	321	271	352	266	385	792	76	188	1488	432
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	488	1169	321	271	352	266	385	792	76	188	1488	432
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3200	5100	1600	3200	5100	1600	3200	5100	1600	3200	5100	1600
Capacity Analysis Module:												
Vol/Sat:	0.15	0.23	0.20	0.08	0.07	0.17	0.12	0.16	0.05	0.06	0.29	0.27
Crit Moves:	****					****	****				****	

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Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #58 Penn Wy and 17th St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.790
Loss Time (sec):	5	Average Delay (sec/veh):	20.3
Optimal Cycle:	52	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	0	0 2	0 0	0	0 0	0 0	2	1 0	1 0	3	0 0
Volume Module:												
Base Vol:	795	0	388	0	0	0	0	1712	552	126	1480	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	795	0	388	0	0	0	0	1712	552	126	1480	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	795	0	388	0	0	0	0	1712	552	126	1480	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	795	0	388	0	0	0	0	1712	552	126	1480	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	795	0	388	0	0	0	0	1712	552	126	1480	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.75	1.00	1.00	1.00	1.00	0.88	0.88	0.95	0.91	1.00
Lanes:	2.00	0.00	2.00	0.00	0.00	0.00	0.00	2.27	0.73	1.00	3.00	0.00
Final Sat.:	3502	0	2842	0	0	0	0	3777	1218	1805	5187	0
Capacity Analysis Module:												
Vol/Sat:	0.23	0.00	0.14	0.00	0.00	0.00	0.00	0.45	0.45	0.07	0.29	0.00
Crit Moves:	****							****		****		
Green/Cycle:	0.29	0.00	0.29	0.00	0.00	0.00	0.00	0.57	0.57	0.09	0.66	0.00
Volume/Cap:	0.79	0.00	0.47	0.00	0.00	0.00	0.00	0.79	0.79	0.79	0.43	0.00
Delay/Veh:	37.1	0.0	29.8	0.0	0.0	0.0	0.0	18.1	18.1	67.4	8.1	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	37.1	0.0	29.8	0.0	0.0	0.0	0.0	18.1	18.1	67.4	8.1	0.0
LOS by Move:	D	A	C	A	A	A	A	B	B	E	A	A
HCM2k85thQ:	20	0	9	0	0	0	0	31	31	9	12	0

Note: Queue reported is the number of cars per lane.

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Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #59 I-5 NB Off Ramps/17th Street

Cycle (sec):	100	Critical Vol./Cap.(X):	0.630
Loss Time (sec):	5	Average Delay (sec/veh):	20.3
Optimal Cycle:	32	Level Of Service:	C

Street Name:	I-5 NB Off Ramps						17th Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Permitted		
Rights:	Include			Include			Ignore			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 1	0	0 1	1	0 0	0 1	1	0 3	0 1	0	0 2	1 0
Volume Module:												
Base Vol:	375	50	20	55	0	142	128	1168	767	0	1622	44
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	375	50	20	55	0	142	128	1168	767	0	1622	44
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Volume:	375	50	20	55	0	142	128	1168	0	0	1622	44
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	375	50	20	55	0	142	128	1168	0	0	1622	44
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
FinalVolume:	375	50	20	55	0	142	128	1168	0	0	1622	44
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.96	0.96	0.85	0.95	1.00	0.85	0.95	0.91	1.00	1.00	0.91	0.91
Lanes:	1.76	0.24	1.00	1.00	0.00	1.00	1.00	3.00	1.00	0.00	2.92	0.08
Final Sat.:	3212	428	1615	1805	0	1615	1805	5187	1900	0	5030	136
Capacity Analysis Module:												
Vol/Sat:	0.12	0.12	0.01	0.03	0.00	0.09	0.07	0.23	0.00	0.00	0.32	0.32
Crit Moves:		****				****	****				****	
Green/Cycle:	0.19	0.19	0.19	0.14	0.00	0.14	0.11	0.62	0.00	0.00	0.51	0.51
Volume/Cap:	0.63	0.63	0.07	0.22	0.00	0.63	0.63	0.36	0.00	0.00	0.63	0.63
Delay/Veh:	39.5	39.5	33.7	38.6	0.0	46.2	48.6	9.1	0.0	0.0	18.1	18.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	39.5	39.5	33.7	38.6	0.0	46.2	48.6	9.1	0.0	0.0	18.1	18.1
LOS by Move:	D	D	C	D	A	D	D	A	A	A	B	B
HCM2k85thQ:	11	11	1	3	0	8	8	10	0	0	21	21

Note: Queue reported is the number of cars per lane.

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Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #60 Penn Wy and I-5 SB Ramps

Cycle (sec):	100	Critical Vol./Cap.(X):	0.433
Loss Time (sec):	5	Average Delay (sec/veh):	22.8
Optimal Cycle:	22	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	2	0 1	2 0	2	0 0	0 0	0	0 0	1 0	0	0 2
Volume Module:												
Base Vol:	0	363	238	508	117	0	0	0	0	214	0	183
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	363	238	508	117	0	0	0	0	214	0	183
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	363	238	508	117	0	0	0	0	214	0	183
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	363	238	508	117	0	0	0	0	214	0	183
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	363	238	508	117	0	0	0	0	214	0	183
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.95	0.85	0.92	0.95	1.00	1.00	1.00	1.00	0.95	1.00	0.75
Lanes:	0.00	2.00	1.00	2.00	2.00	0.00	0.00	0.00	0.00	1.00	0.00	2.00
Final Sat.:	0	3610	1615	3502	3610	0	0	0	0	1805	0	2842
Capacity Analysis Module:												
Vol/Sat:	0.00	0.10	0.15	0.15	0.03	0.00	0.00	0.00	0.00	0.12	0.00	0.06
Crit Moves:			****	****						****		
Green/Cycle:	0.00	0.34	0.34	0.34	0.68	0.00	0.00	0.00	0.00	0.27	0.00	0.61
Volume/Cap:	0.00	0.30	0.43	0.43	0.05	0.00	0.00	0.00	0.00	0.43	0.00	0.11
Delay/Veh:	0.0	24.3	26.0	26.1	5.4	0.0	0.0	0.0	0.0	30.5	0.0	8.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	24.3	26.0	26.1	5.4	0.0	0.0	0.0	0.0	30.5	0.0	8.2
LOS by Move:	A	C	C	C	A	A	A	A	A	C	A	A
HCM2k85thQ:	0	7	9	10	1	0	0	0	0	9	0	2

Note: Queue reported is the number of cars per lane.

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Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Base Volume Alternative)

Intersection #61 Santiago St and Civic Center Dr

Cycle (sec):	100	Critical Vol./Cap.(X):	0.896
Loss Time (sec):	5	Average Delay (sec/veh):	27.6
Optimal Cycle:	0	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	0 1	0	1 0	0 1	0	1 0	0 1	0	0 0	1! 0	0
Volume Module:												
Base Vol:	133	411	41	20	281	72	266	76	269	14	19	18
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	133	411	41	20	281	72	266	76	269	14	19	18
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	133	411	41	20	281	72	266	76	269	14	19	18
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	133	411	41	20	281	72	266	76	269	14	19	18
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	133	411	41	20	281	72	266	76	269	14	19	18
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.91	0.09	1.00	0.80	0.20	1.00	0.22	0.78	0.27	0.38	0.35
Final Sat.:	462	459	46	437	385	99	452	115	406	107	145	138
Capacity Analysis Module:												
Vol/Sat:	0.29	0.90	0.90	0.05	0.73	0.73	0.59	0.66	0.66	0.13	0.13	0.13
Crit Moves:			****		****				****		****	
Delay/Veh:	13.4	44.0	44.0	11.0	26.6	26.6	20.7	21.2	21.2	12.7	12.7	12.7
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	13.4	44.0	44.0	11.0	26.6	26.6	20.7	21.2	21.2	12.7	12.7	12.7
LOS by Move:	B	E	E	B	D	D	C	C	C	B	B	B
ApproachDel:	37.0			25.8			21.0			12.7		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	37.0			25.8			21.0			12.7		
LOS by Appr:	E			D			C			B		
AllWayAvgQ:	0.4	4.8	4.8	0.0	2.2	2.2	1.3	1.7	1.7	0.1	0.1	0.1

Note: Queue reported is the number of cars per lane.

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #62 Santiago St and Santa Ana Blvd

Cycle (sec):	100	Critical Vol./Cap.(X):	1.411
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	180	Level Of Service:	F

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1 0	1	1 0	1 0	1	1 0	0 1	0	1 0	2 0	1
Volume Module:												
Base Vol:	135	833	236	378	639	103	164	673	87	255	546	347
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	135	833	236	378	639	103	164	673	87	255	546	347
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	135	833	236	378	639	103	164	673	87	255	546	347
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	135	833	236	378	639	103	164	673	87	255	546	347
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	135	833	236	378	639	103	164	673	87	255	546	347
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.00	1.00	1.00	1.06	1.00
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.89	0.11	1.00	2.00	1.00
Final Sat.:	1600	1700	1600	1600	1700	1600	1600	1417	183	1600	3400	1600
Capacity Analysis Module:												
Vol/Sat:	0.08	0.49	0.15	0.24	0.38	0.06	0.10	0.47	0.48	0.16	0.16	0.22
Crit Moves:		****		****					****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #63 Standard Ave and 4th St

Cycle (sec):	100	Critical Vol./Cap.(X):	1.341
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	180	Level Of Service:	F

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1 0	1	1 0	1 0	1	1 0	0 1	0	1 0	0 1	0
Volume Module:												
Base Vol:	251	543	214	254	428	297	302	477	201	233	648	351
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	251	543	214	254	428	297	302	477	201	233	648	351
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	251	543	214	254	428	297	302	477	201	233	648	351
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	251	543	214	254	428	297	302	477	201	233	648	351
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	251	543	214	254	428	297	302	477	201	233	648	351
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.70	0.30	1.00	0.65	0.35
Final Sat.:	1600	1700	1600	1600	1700	1600	1600	1126	474	1600	1038	562
Capacity Analysis Module:												
Vol/Sat:	0.16	0.32	0.13	0.16	0.25	0.19	0.19	0.42	0.42	0.15	0.62	0.62
Crit Moves:		****			****			****			****	

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #64 Standard Ave and 1st St

Cycle (sec):	100	Critical Vol./Cap.(X):	1.484
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	180	Level Of Service:	F

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	0 1	0	0 0	1! 0	0	1 0	1 1	0	1 0	1 1	0
Volume Module:												
Base Vol:	109	724	259	142	679	47	168	1279	65	264	1888	116
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	109	724	259	142	679	47	168	1279	65	264	1888	116
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	109	724	259	142	679	47	168	1279	65	264	1888	116
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	109	724	259	142	679	47	168	1279	65	264	1888	116
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	109	724	259	142	679	47	168	1279	65	264	1888	116
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.03	1.00	1.00	1.03	1.00
Lanes:	1.00	0.74	0.26	0.16	0.79	0.05	1.00	1.90	0.10	1.00	1.88	0.12
Final Sat.:	1600	1178	422	262	1252	87	1600	3145	155	1600	3115	185
Capacity Analysis Module:												
Vol/Sat:	0.07	0.61	0.61	0.09	0.54	0.54	0.11	0.41	0.42	0.17	0.61	0.63
Crit Moves:		****			****			****				****

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #65 Standard Ave and Mcfadden Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.769
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	46	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	0 1	0	1 0	0 1	0	1 0	0 1	0	1 0	0 1	0
Volume Module:												
Base Vol:	103	407	50	110	240	42	53	351	60	68	412	119
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	103	407	50	110	240	42	53	351	60	68	412	119
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	103	407	50	110	240	42	53	351	60	68	412	119
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	103	407	50	110	240	42	53	351	60	68	412	119
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	103	407	50	110	240	42	53	351	60	68	412	119
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.89	0.11	1.00	0.85	0.15	1.00	0.85	0.15	1.00	0.78	0.22
Final Sat.:	1600	1425	175	1600	1362	238	1600	1366	234	1600	1241	359
Capacity Analysis Module:												
Vol/Sat:	0.06	0.29	0.29	0.07	0.18	0.18	0.03	0.26	0.26	0.04	0.33	0.33
Crit Moves:		****			****			****			****	

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #66 Halladay St and Warner Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.824
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	57	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	0	0 1	0 0	0	0 0	0 1	1	1 0	0 1	2	0 0
Volume Module:												
Base Vol:	200	0	417	0	0	0	2	955	96	287	2284	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	200	0	417	0	0	0	2	955	96	287	2284	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	200	0	417	0	0	0	2	955	96	287	2284	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	200	0	417	0	0	0	2	955	96	287	2284	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	200	0	417	0	0	0	2	955	96	287	2284	0
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.02	1.00	1.00	1.05	1.00
Lanes:	1.00	0.00	1.00	0.00	0.00	0.00	0.01	2.72	0.27	0.33	2.67	0.00
Final Sat.:	1600	0	1600	0	0	0	9	4453	438	536	4464	0
Capacity Analysis Module:												
Vol/Sat:	0.13	0.00	0.26	0.00	0.00	0.00	0.00	0.21	0.22	0.18	0.51	0.00
Crit Moves:			****				****				****	

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #67 Halladay St and Dyer Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.945
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	124	Level Of Service:	E

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	0	1 0	1 0	0	1 0	1 0	2	1 0	1 0	2	1 0
Volume Module:												
Base Vol:	57	249	287	125	17	35	166	1433	10	52	1680	134
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	57	249	287	125	17	35	166	1433	10	52	1680	134
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	57	249	287	125	17	35	166	1433	10	52	1680	134
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	57	249	287	125	17	35	166	1433	10	52	1680	134
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	57	249	287	125	17	35	166	1433	10	52	1680	134
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.04	1.00	1.00	1.04	1.00
Lanes:	1.00	0.46	0.54	1.00	0.33	0.67	1.00	2.98	0.02	1.00	2.78	0.22
Final Sat.:	1600	743	857	1600	523	1077	1600	4967	33	1600	4645	355
Capacity Analysis Module:												
Vol/Sat:	0.04	0.34	0.33	0.08	0.03	0.03	0.10	0.29	0.30	0.03	0.36	0.38
Crit Moves:		****			****			****				****

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Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #68 SR-55 SB Ramps and MacArthur Blvd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.602
Loss Time (sec):	5	Average Delay (sec/veh):	18.4
Optimal Cycle:	30	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Ignore			Ignore		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0	0	2	0	0	0	2	0	0	2	1	1	0	0	3	0	1
Volume Module:																		
Base Vol:	0	0	0	321	0	777	0	1305	1163	0	1547	608
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	321	0	777	0	1305	1163	0	1547	608
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Volume:	0	0	0	321	0	777	0	1305	0	0	1547	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	321	0	777	0	1305	0	0	1547	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
FinalVolume:	0	0	0	321	0	777	0	1305	0	0	1547	0
Saturation Flow Module:																		
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	0.92	1.00	0.75	1.00	0.91	0.91	1.00	0.91	1.00
Lanes:	0.00	0.00	0.00	2.00	0.00	2.00	0.00	3.00	1.00	0.00	3.00	1.00
Final Sat.:	0	0	0	3502	0	2842	0	5187	1729	0	5187	1900
Capacity Analysis Module:																		
Vol/Sat:	0.00	0.00	0.00	0.09	0.00	0.27	0.00	0.25	0.00	0.00	0.30	0.00
Crit Moves:						****	****				****	
Green/Cycle:	0.00	0.00	0.00	0.45	0.00	0.45	0.00	0.50	0.00	0.00	0.50	0.00
Volume/Cap:	0.00	0.00	0.00	0.20	0.00	0.60	0.00	0.51	0.00	0.00	0.60	0.00
Delay/Veh:	0.0	0.0	0.0	16.5	0.0	21.3	0.0	17.2	0.0	0.0	18.5	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	16.5	0.0	21.3	0.0	17.2	0.0	0.0	18.5	0.0
LOS by Move:	A	A	A	B	A	C	A	B	A	A	B	A
HCM2k85thQ:	0	0	0	5	0	16	0	15	0	0	19	0

Note: Queue reported is the number of cars per lane.

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Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #69 SR-55 NB Ramps and MacArthur Blvd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.511
Loss Time (sec):	5	Average Delay (sec/veh):	16.2
Optimal Cycle:	25	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Ignore			Include			Ignore			Ignore		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	0	0 1	0 0	0	0 0	0 0	2	0 2	0 0	3	0 1
Volume Module:												
Base Vol:	726	0	483	0	0	0	0	764	785	0	1444	1040
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	726	0	483	0	0	0	0	764	785	0	1444	1040
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Volume:	726	0	0	0	0	0	0	764	0	0	1444	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	726	0	0	0	0	0	0	764	0	0	1444	0
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
FinalVolume:	726	0	0	0	0	0	0	764	0	0	1444	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.88	1.00	0.91	1.00
Lanes:	2.00	0.00	1.00	0.00	0.00	0.00	0.00	2.00	2.00	0.00	3.00	1.00
Final Sat.:	3502	0	1900	0	0	0	0	3610	3344	0	5187	1900
Capacity Analysis Module:												
Vol/Sat:	0.21	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.00	0.00	0.28	0.00
Crit Moves:	****						****				****	
Green/Cycle:	0.41	0.00	0.00	0.00	0.00	0.00	0.00	0.54	0.00	0.00	0.54	0.00
Volume/Cap:	0.51	0.00	0.00	0.00	0.00	0.00	0.00	0.39	0.00	0.00	0.51	0.00
Delay/Veh:	22.6	0.0	0.0	0.0	0.0	0.0	0.0	13.3	0.0	0.0	14.5	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	22.6	0.0	0.0	0.0	0.0	0.0	0.0	13.3	0.0	0.0	14.5	0.0
LOS by Move:	C	A	A	A	A	A	A	B	A	A	B	A
HCM2k85thQ:	13	0	0	0	0	0	0	11	0	0	16	0

Note: Queue reported is the number of cars per lane.

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Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #70 SR-55 SB Ramps and Dyer Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.679
Loss Time (sec):	5	Average Delay (sec/veh):	26.5
Optimal Cycle:	37	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Ovl			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 1	0	2	0 1	1	0 1	1 0	3	0 1	2 0	3	0 1
Volume Module:												
Base Vol:	386	12	291	103	226	110	66	1544	210	507	904	58
Growth Adj:	1.00 1.00		1.00	1.00 1.00		1.00	1.00 1.00		1.00	1.00 1.00		1.00
Initial Bse:	386	12	291	103	226	110	66	1544	210	507	904	58
User Adj:	1.00 1.00		1.00	1.00 1.00		1.00	1.00 1.00		1.00	1.00 1.00		1.00
PHF Adj:	1.00 1.00		1.00	1.00 1.00		1.00	1.00 1.00		1.00	1.00 1.00		1.00
PHF Volume:	386	12	291	103	226	110	66	1544	210	507	904	58
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	386	12	291	103	226	110	66	1544	210	507	904	58
PCE Adj:	1.00 1.00		1.00	1.00 1.00		1.00	1.00 1.00		1.00	1.00 1.00		1.00
MLF Adj:	1.00 1.00		1.00	1.00 1.00		1.00	1.00 1.00		1.00	1.00 1.00		1.00
FinalVolume:	386	12	291	103	226	110	66	1544	210	507	904	58
Saturation Flow Module:												
Sat/Lane:	1900 1900		1900	1900 1900		1900	1900 1900		1900	1900 1900		1900
Adjustment:	0.95 0.95		0.75	0.94 0.94		0.85	0.95 0.91		0.85	0.92 0.91		0.85
Lanes:	1.94 0.06		2.00	0.63 1.37		1.00	1.00 3.00		1.00	2.00 3.00		1.00
Final Sat.:	3516	109	2842	1113 2443		1615	1805 5187		1615	3502 5187		1615
Capacity Analysis Module:												
Vol/Sat:	0.11 0.11		0.10	0.09 0.09		0.07	0.04 0.30		0.13	0.14 0.17		0.04
Crit Moves:	****			****			****			****		
Green/Cycle:	0.16 0.16		0.38	0.14 0.14		0.14	0.11 0.44		0.44	0.21 0.54		0.54
Volume/Cap:	0.68 0.68		0.27	0.68 0.68		0.50	0.32 0.68		0.30	0.68 0.32		0.07
Delay/Veh:	42.7 42.7		21.9	45.0 45.0		41.8	41.8 23.3		18.4	38.7 12.9		11.1
User DelAdj:	1.00 1.00		1.00	1.00 1.00		1.00	1.00 1.00		1.00	1.00 1.00		1.00
AdjDel/Veh:	42.7 42.7		21.9	45.0 45.0		41.8	41.8 23.3		18.4	38.7 12.9		11.1
LOS by Move:	D	D	C	D	D	D	D	C	B	D	B	B
HCM2k85thQ:	11	11	6	10	10	6	3	22	7	13	9	1

Note: Queue reported is the number of cars per lane.

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #71 Glassell St and La Veta Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.766
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	46	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ovl			Include			Ovl			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0 1	0 1		1 0 1	1 0		1 0 1	0 1		1 0 1	1 0	
Volume Module:												
Base Vol:	573	595	194	15	499	37	112	367	631	225	407	16
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	573	595	194	15	499	37	112	367	631	225	407	16
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	573	595	194	15	499	37	112	367	631	225	407	16
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	573	595	194	15	499	37	112	367	631	225	407	16
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	573	595	194	15	499	37	112	367	631	225	407	16
OvlAdjVol:			0						344			
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.03	1.00	1.00	1.06	1.00	1.00	1.03	1.00
Lanes:	2.00	1.00	1.00	1.00	1.86	0.14	1.00	1.00	1.00	1.00	1.92	0.08
Final Sat.:	3200	1700	1600	1600	3079	221	1600	1700	1600	1600	3179	121
Capacity Analysis Module:												
Vol/Sat:	0.18	0.35	0.12	0.01	0.16	0.17	0.07	0.22	0.39	0.14	0.13	0.13
OvlAdjV/S:			0.00						0.22			
Crit Moves:	****			****				****		****		

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Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #72 Glassell St and SR-22 WB Ramps

Cycle (sec):	100	Critical Vol./Cap.(X):	0.943
Loss Time (sec):	5	Average Delay (sec/veh):	33.4
Optimal Cycle:	125	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Permitted			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 0	0	0 0	2 0	1	0 0	0 0	0	1 0	1! 0	1
Volume Module:												
Base Vol:	640	1045	0	0	1110	323	0	0	0	268	9	476
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	640	1045	0	0	1110	323	0	0	0	268	9	476
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	640	1045	0	0	1110	323	0	0	0	268	9	476
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	640	1045	0	0	1110	323	0	0	0	268	9	476
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	640	1045	0	0	1110	323	0	0	0	268	9	476
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	1.00	1.00	0.95	0.85	1.00	1.00	1.00	0.86	0.86	0.86
Lanes:	1.00	2.00	0.00	0.00	2.00	1.00	0.00	0.00	0.00	1.35	0.02	1.63
Final Sat.:	1805	3610	0	0	3610	1615	0	0	0	2201	38	2646
Capacity Analysis Module:												
Vol/Sat:	0.35	0.29	0.00	0.00	0.31	0.20	0.00	0.00	0.00	0.12	0.23	0.18
Crit Moves:	****				****						****	
Green/Cycle:	0.38	0.70	0.00	0.00	0.33	0.33	0.00	0.00	0.00	0.25	0.25	0.25
Volume/Cap:	0.94	0.41	0.00	0.00	0.94	0.61	0.00	0.00	0.00	0.49	0.94	0.73
Delay/Veh:	51.9	6.4	0.0	0.0	47.5	30.5	0.0	0.0	0.0	32.4	56.2	37.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	51.9	6.4	0.0	0.0	47.5	30.5	0.0	0.0	0.0	32.4	56.2	37.0
LOS by Move:	D	A	A	A	D	C	A	A	A	C	E	D
HCM2k85thQ:	34	11	0	0	32	14	0	0	0	9	24	15

Note: Queue reported is the number of cars per lane.

Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #73 Grand Ave / Glassell St and SR-22 EB Ramps

Cycle (sec):	100	Critical Vol./Cap.(X):	0.927
Loss Time (sec):	5	Average Delay (sec/veh):	31.8
Optimal Cycle:	109	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0 2	0 1	1	0 2	0 0	1	0 1!	0 1	0	0 0	0 0
Volume Module:												
Base Vol:	0	1316	336	505	903	0	238	4	522	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1316	336	505	903	0	238	4	522	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1316	336	505	903	0	238	4	522	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1316	336	505	903	0	238	4	522	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1316	336	505	903	0	238	4	522	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.95	0.85	0.95	0.95	1.00	0.86	0.86	0.86	1.00	1.00	1.00
Lanes:	0.00	2.00	1.00	1.00	2.00	0.00	1.31	0.01	1.68	0.00	0.00	0.00
Final Sat.:	0	3610	1615	1805	3610	0	2130	17	2731	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.36	0.21	0.28	0.25	0.00	0.11	0.24	0.19	0.00	0.00	0.00
Crit Moves:		****		****				****				
Green/Cycle:	0.00	0.39	0.39	0.30	0.70	0.00	0.25	0.25	0.25	0.00	0.00	0.00
Volume/Cap:	0.00	0.93	0.53	0.93	0.36	0.00	0.44	0.93	0.75	0.00	0.00	0.00
Delay/Veh:	0.0	39.7	24.1	55.9	6.3	0.0	31.4	52.7	37.5	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	39.7	24.1	55.9	6.3	0.0	31.4	52.7	37.5	0.0	0.0	0.0
LOS by Move:	A	D	C	E	A	A	C	D	D	A	A	A
HCM2k85thQ:	0	36	13	28	9	0	8	23	16	0	0	0

Note: Queue reported is the number of cars per lane.

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #74 Grand Ave and Fairhaven Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.665
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	34	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 1	0	1 0	2 1	0	1 0	1 1	0	1 0	0 1	0
Volume Module:												
Base Vol:	50	1311	262	242	974	89	79	45	33	153	29	109
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	50	1311	262	242	974	89	79	45	33	153	29	109
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	50	1311	262	242	974	89	79	45	33	153	29	109
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	50	1311	262	242	974	89	79	45	33	153	29	109
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	50	1311	262	242	974	89	79	45	33	153	29	109
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.05	1.00	1.00	1.05	1.00	1.00	1.00	1.00
Lanes:	1.00	2.50	0.50	1.00	2.75	0.25	1.00	1.15	0.85	1.00	0.21	0.79
Final Sat.:	1600	4201	799	1600	4598	402	1600	1946	1354	1600	336	1264
Capacity Analysis Module:												
Vol/Sat:	0.03	0.31	0.33	0.15	0.21	0.22	0.05	0.02	0.02	0.10	0.09	0.09
Crit Moves:			****	****			****				****	

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #75 Grand Ave and Santa Clara Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.731
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	41	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			WideBypass			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2	1 0	1 0	2	1 0	1 0	0	1 0	1 0	1	0 1
Volume Module:												
Base Vol:	95	1280	266	240	946	240	114	139	26	115	206	220
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	95	1280	266	240	946	240	114	139	26	115	206	220
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	95	1280	266	240	946	240	114	139	26	115	206	220
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	95	1280	266	240	946	240	114	139	26	115	206	220
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	95	1280	266	240	946	240	114	139	26	115	206	220
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.05	1.00	1.00	1.00	1.00	1.00	1.06	1.00
Lanes:	1.00	2.48	0.52	1.00	2.39	0.61	1.00	0.84	0.16	1.00	1.00	1.00
Final Sat.:	1600	4174	826	1600	4029	971	1600	1348	252	1600	1700	1600
Capacity Analysis Module:												
Vol/Sat:	0.06	0.31	0.32	0.15	0.23	0.25	0.07	0.10	0.10	0.07	0.12	0.14
Crit Moves:			****	****			****					****

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #76 Grand Ave and 17th St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.854
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	66	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2	1 0	1 0	2	1 0	2 0	2	1 0	2 0	2	1 0
Volume Module:												
Base Vol:	266	947	239	294	634	140	371	949	160	284	1046	190
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	266	947	239	294	634	140	371	949	160	284	1046	190
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	266	947	239	294	634	140	371	949	160	284	1046	190
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	266	947	239	294	634	140	371	949	160	284	1046	190
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	266	947	239	294	634	140	371	949	160	284	1046	190
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.05	1.00	1.00	1.05	1.00	1.00	1.05	1.00
Lanes:	1.00	2.40	0.60	1.00	2.46	0.54	2.00	2.57	0.43	2.00	2.54	0.46
Final Sat.:	1600	4033	967	1600	4132	868	3200	4307	693	3200	4262	738
Capacity Analysis Module:												
Vol/Sat:	0.17	0.23	0.25	0.18	0.15	0.16	0.12	0.22	0.23	0.09	0.25	0.26
Crit Moves:			****	****			****					****

Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #77 Grand Ave and I-5 NB Ramps

Cycle (sec):	100	Critical Vol./Cap.(X):	0.764
Loss Time (sec):	5	Average Delay (sec/veh):	11.3
Optimal Cycle:	47	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Ignore			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	2	0 1	1 0	3	0 0	0 0	0	0 0	2 0	0	0 1
Volume Module:												
Base Vol:	0	2036	1571	67	1623	0	0	0	0	168	0	202
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	2036	1571	67	1623	0	0	0	0	168	0	202
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	2036	0	67	1623	0	0	0	0	168	0	202
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	2036	0	67	1623	0	0	0	0	168	0	202
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	2036	0	67	1623	0	0	0	0	168	0	202
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.95	1.00	0.95	0.91	1.00	1.00	1.00	1.00	0.92	1.00	0.85
Lanes:	0.00	2.00	1.00	1.00	3.00	0.00	0.00	0.00	0.00	2.00	0.00	1.00
Final Sat.:	0	3610	1900	1805	5187	0	0	0	0	3502	0	1615
Capacity Analysis Module:												
Vol/Sat:	0.00	0.56	0.00	0.04	0.31	0.00	0.00	0.00	0.00	0.05	0.00	0.13
Crit Moves:		****		****								****
Green/Cycle:	0.00	0.74	0.00	0.05	0.79	0.00	0.00	0.00	0.00	0.16	0.00	0.16
Volume/Cap:	0.00	0.76	0.00	0.76	0.40	0.00	0.00	0.00	0.00	0.29	0.00	0.76
Delay/Veh:	0.0	9.2	0.0	79.2	3.4	0.0	0.0	0.0	0.0	37.0	0.0	52.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	9.2	0.0	79.2	3.4	0.0	0.0	0.0	0.0	37.0	0.0	52.4
LOS by Move:	A	A	A	E	A	A	A	A	A	D	A	D
HCM2k85thQ:	0	30	0	6	9	0	0	0	0	4	0	12

Note: Queue reported is the number of cars per lane.

Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #78 Grand Ave and Santa Ana Blvd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.827
Loss Time (sec):	5	Average Delay (sec/veh):	28.5
Optimal Cycle:	61	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Ovl			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 1	0	1 0	2 0	2	2 0	1 0	2	0 1	0 1	0
Volume Module:												
Base Vol:	213	2411	40	44	964	684	370	226	356	44	295	213
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	213	2411	40	44	964	684	370	226	356	44	295	213
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	213	2411	40	44	964	684	370	226	356	44	295	213
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	213	2411	40	44	964	684	370	226	356	44	295	213
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	213	2411	40	44	964	684	370	226	356	44	295	213
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.91	0.91	0.95	0.95	0.75	0.92	1.00	0.75	0.89	0.89	0.89
Lanes:	1.00	2.95	0.05	1.00	2.00	2.00	2.00	1.00	2.00	0.16	1.07	0.77
Final Sat.:	1805	5092	84	1805	3610	2842	3502	1900	2842	270	1810	1307
Capacity Analysis Module:												
Vol/Sat:	0.12	0.47	0.47	0.02	0.27	0.24	0.11	0.12	0.13	0.16	0.16	0.16
Crit Moves:		****		****					****		****	
Green/Cycle:	0.18	0.57	0.57	0.03	0.42	0.57	0.15	0.15	0.15	0.20	0.20	0.20
Volume/Cap:	0.64	0.83	0.83	0.83	0.64	0.42	0.70	0.79	0.83	0.83	0.83	0.83
Delay/Veh:	41.9	19.4	19.4	112.6	24.1	12.4	44.4	54.2	53.7	47.0	47.0	47.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	41.9	19.4	19.4	112.6	24.1	12.4	44.4	54.2	53.7	47.0	47.0	47.0
LOS by Move:	D	B	B	F	C	B	D	D	D	D	D	D
HCM2k85thQ:	11	35	35	5	19	11	11	13	13	17	17	17

Note: Queue reported is the number of cars per lane.

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #79 Grand Ave and 1st St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.718
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	39	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 1	0	2 0	3 0	1	2 0	2 0	1	2 0	2 0	1
Volume Module:												
Base Vol:	195	1493	45	133	784	313	272	900	89	121	753	138
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	195	1493	45	133	784	313	272	900	89	121	753	138
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	195	1493	45	133	784	313	272	900	89	121	753	138
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	195	1493	45	133	784	313	272	900	89	121	753	138
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	195	1493	45	133	784	313	272	900	89	121	753	138
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.04	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	2.00	2.91	0.09	2.00	3.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3200	4860	140	3200	5100	1600	3200	3400	1600	3200	3400	1600
Capacity Analysis Module:												
Vol/Sat:	0.06	0.31	0.32	0.04	0.15	0.20	0.09	0.26	0.06	0.04	0.22	0.09
Crit Moves:			****	****			****				****	

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #80 Grand Ave and Chestnut Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.783
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	49	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 1	0	1 0	2 1	0	1 0	0 1	0	1 0	0 1	0
Volume Module:												
Base Vol:	180	1352	234	149	664	112	47	143	31	91	283	165
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	180	1352	234	149	664	112	47	143	31	91	283	165
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	180	1352	234	149	664	112	47	143	31	91	283	165
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	180	1352	234	149	664	112	47	143	31	91	283	165
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	180	1352	234	149	664	112	47	143	31	91	283	165
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.05	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.56	0.44	1.00	2.57	0.43	1.00	0.82	0.18	1.00	0.63	0.37
Final Sat.:	1600	4292	708	1600	4307	693	1600	1315	285	1600	1011	589
Capacity Analysis Module:												
Vol/Sat:	0.11	0.32	0.33	0.09	0.15	0.16	0.03	0.11	0.11	0.06	0.28	0.28
Crit Moves:		****	****				****				****	

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #81 Grand Ave and McFadden Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.813
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	55	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 1	0	1 0	2 1	0	1 0	0 1	0	1 0	1 1	0
Volume Module:												
Base Vol:	232	1320	227	176	800	215	64	238	42	96	762	168
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	232	1320	227	176	800	215	64	238	42	96	762	168
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	232	1320	227	176	800	215	64	238	42	96	762	168
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	232	1320	227	176	800	215	64	238	42	96	762	168
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	232	1320	227	176	800	215	64	238	42	96	762	168
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.05	1.00	1.00	1.00	1.00	1.00	1.04	1.00
Lanes:	1.00	2.56	0.44	1.00	2.36	0.64	1.00	0.85	0.15	1.00	1.64	0.36
Final Sat.:	1600	4296	704	1600	3983	1017	1600	1360	240	1600	2722	578
Capacity Analysis Module:												
Vol/Sat:	0.15	0.31	0.32	0.11	0.20	0.21	0.04	0.17	0.17	0.06	0.28	0.29
Crit Moves:		****	****				****					****

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #82 Grand Ave and Edinger Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	1.079
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	180	Level Of Service:	F

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 1	0	1 0	2 1	0	1 0	2 1	0	1 0	2 1	0
Volume Module:												
Base Vol:	259	1494	129	236	583	327	207	895	72	98	1758	228
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	259	1494	129	236	583	327	207	895	72	98	1758	228
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	259	1494	129	236	583	327	207	895	72	98	1758	228
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	259	1494	129	236	583	327	207	895	72	98	1758	228
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	259	1494	129	236	583	327	207	895	72	98	1758	228
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.06	1.00	1.00	1.05	1.00	1.00	1.05	1.00
Lanes:	1.00	2.76	0.24	1.00	2.00	1.00	1.00	2.78	0.22	1.00	2.66	0.34
Final Sat.:	1600	4618	382	1600	3400	1600	1600	4643	357	1600	4449	551
Capacity Analysis Module:												
Vol/Sat:	0.16	0.32	0.34	0.15	0.17	0.20	0.13	0.19	0.20	0.06	0.40	0.41
Crit Moves:		****	****				****					****

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #83 Grand Ave and Warner Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.899
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	86	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 1	0	1 0	2 1	0	2 0	3 0	1	2 0	2 1	0
Volume Module:												
Base Vol:	218	788	174	178	575	265	342	656	142	244	1556	510
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	218	788	174	178	575	265	342	656	142	244	1556	510
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	218	788	174	178	575	265	342	656	142	244	1556	510
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	218	788	174	178	575	265	342	656	142	244	1556	510
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	218	788	174	178	575	265	342	656	142	244	1556	510
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	1.00	2.46	0.54	1.00	2.05	0.95	2.00	3.00	1.00	2.00	2.26	0.74
Final Sat.:	1600	4132	868	1600	3486	1514	3200	5100	1600	3200	3815	1185
Capacity Analysis Module:												
Vol/Sat:	0.14	0.19	0.20	0.11	0.16	0.18	0.11	0.13	0.09	0.08	0.41	0.43
Crit Moves:	****					****	****					****

Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #84 SR-55 NB Ramps and Dyer Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.349
Loss Time (sec):	5	Average Delay (sec/veh):	6.0
Optimal Cycle:	19	Level Of Service:	A

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Control:	Split Phase				Split Phase				Protected				Protected			
Rights:	Include				Include				Ignore				Ignore			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Y+R:	4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	
Lanes:	1	0	1!	0	1	0	0	0	0	0	0	3	0	1	0	0
Volume Module:																
Base Vol:	188	0	51		0	0	0		0	1355	689		0	1411	882	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	188	0	51		0	0	0		0	1355	689		0	1411	882	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	0.00		1.00	1.00	0.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	0.00		1.00	1.00	0.00	
PHF Volume:	188	0	51		0	0	0		0	1355	0		0	1411	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	188	0	51		0	0	0		0	1355	0		0	1411	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	0.00		1.00	1.00	0.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	0.00		1.00	1.00	0.00	
FinalVolume:	188	0	51		0	0	0		0	1355	0		0	1411	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.93	1.00	0.93		1.00	1.00	1.00		1.00	0.91	1.00		1.00	0.91	0.91	
Lanes:	1.79	0.00	1.21		0.00	0.00	0.00		0.00	3.00	1.00		0.00	3.00	0.00	
Final Sat.:	3161	0	2147		0	0	0		0	5187	1900		0	5187	0	
Capacity Analysis Module:																
Vol/Sat:	0.06	0.00	0.02		0.00	0.00	0.00		0.00	0.26	0.00		0.00	0.27	0.00	
Crit Moves:	****								****					****		
Green/Cycle:	0.17	0.00	0.17		0.00	0.00	0.00		0.00	0.78	0.00		0.00	0.78	0.00	
Volume/Cap:	0.35	0.00	0.14		0.00	0.00	0.00		0.00	0.34	0.00		0.00	0.35	0.00	
Delay/Veh:	36.9	0.0	35.3		0.0	0.0	0.0		0.0	3.3	0.0		0.0	3.4	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	36.9	0.0	35.3		0.0	0.0	0.0		0.0	3.3	0.0		0.0	3.4	0.0	
LOS by Move:	D	A	D		A	A	A		A	A	A		A	A	A	
HCM2k85thQ:	5	0	2		0	0	0		0	7	0		0	8	0	

Note: Queue reported is the number of cars per lane.

Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Base Volume Alternative)

Intersection #85 Cambridge St and La Veta Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.938
Loss Time (sec):	5	Average Delay (sec/veh):	26.1
Optimal Cycle:	0	Level Of Service:	D

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R		L	T	R		L	T	R		L	T	R	
Control:	Stop Sign				Stop Sign				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Lanes:	1	0	1	0	0	0	0	1	0	1	0	0	0	1	0	0
Volume Module:																
Base Vol:	176	246	0		0	206	191		469	0	309		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	176	246	0		0	206	191		469	0	309		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	176	246	0		0	206	191		469	0	309		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	176	246	0		0	206	191		469	0	309		0	0	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	176	246	0		0	206	191		469	0	309		0	0	0	
Saturation Flow Module:																
Adjustment:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Lanes:	1.00	1.00	0.00		0.00	1.00	1.00		1.00	0.00	1.00		0.00	0.00	0.00	
Final Sat.:	454	486	0		0	479	528		500	0	592		0	0	0	
Capacity Analysis Module:																
Vol/Sat:	0.39	0.51	xxxx		xxxx	0.43	0.36		0.94	xxxx	0.52		xxxx	xxxx	xxxx	
Crit Moves:		****				****			****							
Delay/Veh:	15.1	16.9	0.0		0.0	15.3	12.9		52.4	0.0	14.9		0.0	0.0	0.0	
Delay Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	15.1	16.9	0.0		0.0	15.3	12.9		52.4	0.0	14.9		0.0	0.0	0.0	
LOS by Move:	C	C	*		*	C	B		F	*	B		*	*	*	
ApproachDel:		16.2				14.1				37.5				xxxxxx		
Delay Adj:		1.00				1.00				1.00				xxxxx		
ApprAdjDel:		16.2				14.1				37.5				xxxxxx		
LOS by Appr:		C				B				E				*		
AllWayAvgQ:	0.6	0.9	0.0		0.0	0.7	0.5		5.9	0.0	1.0		0.0	0.0	0.0	

Note: Queue reported is the number of cars per lane.

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #86 Cambridge St and Fairhaven Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.531
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	25	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	0 0	0	1 0	0 0	1	1 0	1 0	0	0 0	0 1	0
Volume Module:												
Base Vol:	0	0	0	195	0	68	85	148	0	0	218	272
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	195	0	68	85	148	0	0	218	272
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	195	0	68	85	148	0	0	218	272
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	195	0	68	85	148	0	0	218	272
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	195	0	68	85	148	0	0	218	272
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.00	1.00
Lanes:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	0.44	0.56
Final Sat.:	0	0	0	1600	0	1600	1600	1700	0	0	712	888
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.12	0.00	0.04	0.05	0.09	0.00	0.00	0.31	0.31
Crit Moves:				****			****				****	

Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #87 Mabury St and 1st Street

Cycle (sec):	100	Critical Vol./Cap.(X):	0.752
Loss Time (sec):	5	Average Delay (sec/veh):	27.2
Optimal Cycle:	46	Level Of Service:	C

Street Name:	Mabury								1st Street							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Split Phase				Split Phase				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	0	0 1	1	0	1!	0 1	0	0	1	1 0	1	0	1	1 0
Volume Module:																
Base Vol:	25	0	256	164	70	310	0	1275	20	31	423	0				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	25	0	256	164	70	310	0	1275	20	31	423	0				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Volume:	25	0	256	164	70	310	0	1275	20	31	423	0				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	25	0	256	164	70	310	0	1275	20	31	423	0				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
FinalVolume:	25	0	256	164	70	310	0	1275	20	31	423	0				
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	0.95	1.00	0.85	0.90	0.90	0.90	1.00	0.95	0.95	0.95	0.95	0.95				
Lanes:	1.00	0.00	1.00	1.27	0.23	1.50	0.00	1.97	0.03	1.00	2.00	0.00				
Final Sat.:	1805	0	1615	2170	390	2577	0	3547	56	1805	3610	0				
Capacity Analysis Module:																
Vol/Sat:	0.01	0.00	0.16	0.08	0.18	0.12	0.00	0.36	0.36	0.02	0.12	0.00				
Crit Moves:			****		****			****		****						
Green/Cycle:	0.21	0.00	0.21	0.24	0.24	0.24	0.00	0.48	0.48	0.02	0.50	0.00				
Volume/Cap:	0.07	0.00	0.75	0.32	0.75	0.50	0.00	0.75	0.75	0.75	0.23	0.00				
Delay/Veh:	31.7	0.0	46.1	31.5	39.8	33.4	0.0	23.2	23.2	103.1	14.2	0.0				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	31.7	0.0	46.1	31.5	39.8	33.4	0.0	23.2	23.2	103.1	14.2	0.0				
LOS by Move:	C	A	D	C	D	C	A	C	C	F	B	A				
HCM2k85thQ:	1	0	14	5	16	9	0	27	27	4	6	0				

Note: Queue reported is the number of cars per lane.

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #88 Tustin St and La Veta Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.344
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	18	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0 2	1	0	1 0 2	1	0	1 0 1	1	0	1 1 0	0	1
Volume Module:												
Base Vol:	31	693	164	96	851	16	13	5	20	134	4	82
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	31	693	164	96	851	16	13	5	20	134	4	82
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	31	693	164	96	851	16	13	5	20	134	4	82
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	31	693	164	96	851	16	13	5	20	134	4	82
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	31	693	164	96	851	16	13	5	20	134	4	82
OvlAdjVol:												0
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.04	1.00	1.00	1.06	1.00	1.00	1.00	1.00
Lanes:	1.00	2.43	0.57	1.00	2.94	0.06	1.00	1.00	1.00	1.94	0.06	1.00
Final Sat.:	1600	4081	919	1600	4911	89	1600	1700	1600	3107	93	1600
Capacity Analysis Module:												
Vol/Sat:	0.02	0.17	0.18	0.06	0.17	0.18	0.01	0.00	0.01	0.04	0.04	0.05
OvlAdjV/S:												0.00
Crit Moves:		****	****					****		****		

Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #89 Tustin St and SR-22 WB On-Ramp

Cycle (sec):	100	Critical Vol./Cap.(X):	0.321
Loss Time (sec):	5	Average Delay (sec/veh):	7.7
Optimal Cycle:	19	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0 2	0 0	0	0 2	1 0	0	0 0	0 0	0	0 0	0 0
Volume Module:												
Base Vol:	383	1100	0	0	642	330	0	0	0	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	383	1100	0	0	642	330	0	0	0	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	383	1100	0	0	642	330	0	0	0	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	383	1100	0	0	642	330	0	0	0	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	383	1100	0	0	642	330	0	0	0	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.95	1.00	1.00	0.86	0.86	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	2.00	0.00	0.00	2.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
Final Sat.:	3502	3610	0	0	3282	1641	0	0	0	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.11	0.30	0.00	0.00	0.20	0.20	0.00	0.00	0.00	0.00	0.00	0.00
Crit Moves:	****				****							
Green/Cycle:	0.34	0.95	0.00	0.00	0.61	0.61	0.00	0.00	0.00	0.00	0.00	0.00
Volume/Cap:	0.32	0.32	0.00	0.00	0.32	0.33	0.00	0.00	0.00	0.00	0.00	0.00
Delay/Veh:	24.6	0.2	0.0	0.0	9.6	9.6	0.0	0.0	0.0	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	24.6	0.2	0.0	0.0	9.6	9.6	0.0	0.0	0.0	0.0	0.0	0.0
LOS by Move:	C	A	A	A	A	A	A	A	A	A	A	A
HCM2k85thQ:	7	3	0	0	8	8	0	0	0	0	0	0

Note: Queue reported is the number of cars per lane.

Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #90 Tustin St and SR-22 EB Off-Ramp / Seba Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.625
Loss Time (sec):	5	Average Delay (sec/veh):	23.3
Optimal Cycle:	32	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0 2	1 0	1	0 3	0 0	1	0 1!	0 1	0	0 1!	0 0
Volume Module:												
Base Vol:	0	1155	3	43	589	0	440	39	558	28	0	67
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1155	3	43	589	0	440	39	558	28	0	67
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1155	3	43	589	0	440	39	558	28	0	67
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1155	3	43	589	0	440	39	558	28	0	67
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1155	3	43	589	0	440	39	558	28	0	67
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.91	0.91	0.11	0.91	1.00	0.90	0.90	0.90	0.89	1.00	0.89
Lanes:	0.00	2.99	0.01	1.00	3.00	0.00	1.41	0.07	1.52	0.29	0.00	0.71
Final Sat.:	0	5174	13	217	5187	0	2408	124	2596	499	0	1195
Capacity Analysis Module:												
Vol/Sat:	0.00	0.22	0.22	0.20	0.11	0.00	0.18	0.31	0.21	0.06	0.00	0.06
Crit Moves:		****						****		****		
Green/Cycle:	0.00	0.36	0.36	0.36	0.36	0.00	0.50	0.50	0.50	0.09	0.00	0.09
Volume/Cap:	0.00	0.63	0.63	0.56	0.32	0.00	0.36	0.63	0.43	0.63	0.00	0.63
Delay/Veh:	0.0	27.3	27.3	34.4	23.4	0.0	15.2	18.8	15.8	51.8	0.0	51.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	27.3	27.3	34.4	23.4	0.0	15.2	18.8	15.8	51.8	0.0	51.8
LOS by Move:	A	C	C	C	C	A	B	B	B	D	A	D
HCM2k85thQ:	0	17	17	3	7	0	9	19	11	6	0	6

Note: Queue reported is the number of cars per lane.

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #91 Tustin Ave and Fairhaven Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.757
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	44	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 1	0	2 0	2 1	0	1 0	0 1	0	1 0	0 1	0
Volume Module:												
Base Vol:	258	1377	122	356	940	108	82	185	151	86	191	180
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	258	1377	122	356	940	108	82	185	151	86	191	180
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	258	1377	122	356	940	108	82	185	151	86	191	180
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	258	1377	122	356	940	108	82	185	151	86	191	180
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	258	1377	122	356	940	108	82	185	151	86	191	180
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.05	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	2.76	0.24	2.00	2.69	0.31	1.00	0.55	0.45	1.00	0.51	0.49
Final Sat.:	3200	4609	391	3200	4505	495	1600	881	719	1600	824	776
Capacity Analysis Module:												
Vol/Sat:	0.08	0.30	0.31	0.11	0.21	0.22	0.05	0.21	0.21	0.05	0.23	0.23
Crit Moves:		****	****				****				****	

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #92 Tustin Ave and Santa Clara Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.779
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	48	Level Of Service:	C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Permitted				Permitted			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Y+R:	4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	
Lanes:	1	0 2	1	0	2	0 2	1	0	1	0 0	1	0	1	0 0	1	0
Volume Module:																
Base Vol:	176	852	131		199	1574	109		63	198	116		115	144	136	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	176	852	131		199	1574	109		63	198	116		115	144	136	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	176	852	131		199	1574	109		63	198	116		115	144	136	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	176	852	131		199	1574	109		63	198	116		115	144	136	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	176	852	131		199	1574	109		63	198	116		115	144	136	
Saturation Flow Module:																
Sat/Lane:	1600	1600	1600		1600	1600	1600		1600	1600	1600		1600	1600	1600	
Adjustment:	1.00	1.05	1.00		1.00	1.04	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Lanes:	1.00	2.60	0.40		2.00	2.81	0.19		1.00	0.63	0.37		1.00	0.51	0.49	
Final Sat.:	1600	4360	640		3200	4689	311		1600	1009	591		1600	823	777	
Capacity Analysis Module:																
Vol/Sat:	0.11	0.20	0.20		0.06	0.34	0.35		0.04	0.20	0.20		0.07	0.18	0.17	
Crit Moves:	****						****			****				****		

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #93 Tustin Ave and 17th St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.741
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	42	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ovl			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 0	1	2 0	2 1	0	2 0	3 0	1	2 0	3 0	1
Volume Module:												
Base Vol:	233	1000	514	377	404	40	457	898	122	211	693	385
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	233	1000	514	377	404	40	457	898	122	211	693	385
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	233	1000	514	377	404	40	457	898	122	211	693	385
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	233	1000	514	377	404	40	457	898	122	211	693	385
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	233	1000	514	377	404	40	457	898	122	211	693	385
OvlAdjVol:			409									197
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.05	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	2.00	2.00	1.00	2.00	2.73	0.27	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3200	3400	1600	3200	4568	432	3200	5100	1600	3200	5100	1600
Capacity Analysis Module:												
Vol/Sat:	0.07	0.29	0.32	0.12	0.09	0.09	0.14	0.18	0.08	0.07	0.14	0.24
OvlAdjV/S:			0.26									0.12
Crit Moves:	****			****			****				****	

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #94 Tustin Ave and 4th St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.784
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	49	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2	1 0	2 0	2	0 1	1 0	2	1 1	1 0	2	1 0
Volume Module:												
Base Vol:	35	381	123	536	396	145	226	806	41	123	833	513
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	35	381	123	536	396	145	226	806	41	123	833	513
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	35	381	123	536	396	145	226	806	41	123	833	513
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	35	381	123	536	396	145	226	806	41	123	833	513
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	35	381	123	536	396	145	226	806	41	123	833	513
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	1.00	2.27	0.73	2.00	2.00	1.00	1.00	3.00	1.00	1.00	2.00	1.00
Final Sat.:	1600	3829	1171	3200	3400	1600	1600	5100	1600	1600	3400	1600
Capacity Analysis Module:												
Vol/Sat:	0.02	0.10	0.11	0.17	0.12	0.09	0.14	0.16	0.03	0.08	0.25	0.32
Crit Moves:			****	****			****					****

Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #95 SR-55 SB Ramps / Auto Mall Dr and Edinger Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.687
Loss Time (sec):	5	Average Delay (sec/veh):	25.4
Optimal Cycle:	37	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Ignore			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 1	0	0 2	1	0 1	0 1	1	0 3	0 1	2	0 2	1 0
Volume Module:												
Base Vol:	401	32	423	110	50	37	46	1649	464	437	1139	136
Growth Adj:	1.00 1.00		1.00	1.00 1.00		1.00	1.00 1.00		1.00	1.00 1.00		1.00
Initial Bse:	401	32	423	110	50	37	46	1649	464	437	1139	136
User Adj:	1.00 1.00		1.00	1.00 1.00		1.00	1.00 1.00		0.00	1.00 1.00		1.00
PHF Adj:	1.00 1.00		1.00	1.00 1.00		1.00	1.00 1.00		0.00	1.00 1.00		1.00
PHF Volume:	401	32	423	110	50	37	46	1649	0	437	1139	136
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	401	32	423	110	50	37	46	1649	0	437	1139	136
PCE Adj:	1.00 1.00		1.00	1.00 1.00		1.00	1.00 1.00		0.00	1.00 1.00		1.00
MLF Adj:	1.00 1.00		1.00	1.00 1.00		1.00	1.00 1.00		0.00	1.00 1.00		1.00
FinalVolume:	401	32	423	110	50	37	46	1649	0	437	1139	136
Saturation Flow Module:												
Sat/Lane:	1900 1900		1900	1900 1900		1900	1900 1900		1900	1900 1900		1900
Adjustment:	0.96 0.96		0.75	0.95 1.00		0.85	0.95 0.91		1.00	0.92 0.90		0.90
Lanes:	1.85 0.15		2.00	1.00 1.00		1.00	1.00 3.00		1.00	2.00 2.68		0.32
Final Sat.:	3364	268	2842	1805 1900		1615	1805 5187		1900	3502 4560		544
Capacity Analysis Module:												
Vol/Sat:	0.12 0.12		0.15	0.06 0.03		0.02	0.03 0.32		0.00	0.12 0.25		0.25
Crit Moves:			****	****				****		****		
Green/Cycle:	0.22 0.22		0.22	0.09 0.09		0.09	0.06 0.46		0.00	0.18 0.58		0.58
Volume/Cap:	0.55 0.55		0.69	0.69 0.30		0.26	0.43 0.69		0.00	0.69 0.43		0.43
Delay/Veh:	35.7 35.7		39.3	56.0 43.6		43.5	48.1 22.0		0.0	41.4 11.6		11.6
User DelAdj:	1.00 1.00		1.00	1.00 1.00		1.00	1.00 1.00		1.00	1.00 1.00		1.00
AdjDel/Veh:	35.7 35.7		39.3	56.0 43.6		43.5	48.1 22.0		0.0	41.4 11.6		11.6
LOS by Move:	D	D	D	E	D	D	D	C	A	D	B	B
HCM2k85thQ:	10	10	12	7	3	2	3	23	0	12	12	12

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Note: Queue reported is the number of cars per lane.
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Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #96 SR-55 NB Ramps / Del Amo Ave and Newport Avenue

Cycle (sec):	100	Critical Vol./Cap.(X):	0.951
Loss Time (sec):	5	Average Delay (sec/veh):	46.2
Optimal Cycle:	134	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Ovl			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0 2	1 0		1 0 3	0 1		2 0 1	1 0		1 0 1	1 0	
Volume Module:												
Base Vol:	879	262	51	19	231	889	165	57	33	23	348	16
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	879	262	51	19	231	889	165	57	33	23	348	16
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	879	262	51	19	231	889	165	57	33	23	348	16
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	879	262	51	19	231	889	165	57	33	23	348	16
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	879	262	51	19	231	889	165	57	33	23	348	16
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.89	0.89	0.95	0.91	0.85	0.92	0.90	0.90	0.95	0.94	0.94
Lanes:	2.00	2.51	0.49	1.00	3.00	1.00	2.00	1.27	0.73	1.00	1.91	0.09
Final Sat.:	3502	4238	825	1805	5187	1615	3502	2161	1251	1805	3427	158
Capacity Analysis Module:												
Vol/Sat:	0.25	0.06	0.06	0.01	0.04	0.55	0.05	0.03	0.03	0.01	0.10	0.10
Crit Moves:	****					****	****				****	
Green/Cycle:	0.26	0.68	0.68	0.12	0.53	0.58	0.05	0.11	0.11	0.05	0.11	0.11
Volume/Cap:	0.95	0.09	0.09	0.09	0.08	0.95	0.95	0.25	0.25	0.25	0.95	0.95
Delay/Veh:	54.9	5.5	5.5	39.7	11.6	38.3	101.1	41.5	41.5	47.0	77.7	77.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	54.9	5.5	5.5	39.7	11.6	38.3	101.1	41.5	41.5	47.0	77.7	77.7
LOS by Move:	D	A	A	D	B	D	F	D	D	D	E	E
HCM2k85thQ:	27	2	2	1	2	44	8	2	2	1	15	15

Note: Queue reported is the number of cars per lane.

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #97 Red Hill Ave and Edinger Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.865
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	70	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Ovl			Ovl			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0 3	0 1	2	0 3	0 1	2	0 3	0 1	2	0 3	0 1
Volume Module:												
Base Vol:	208	1501	238	108	214	173	410	1051	128	91	1176	574
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	208	1501	238	108	214	173	410	1051	128	91	1176	574
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	208	1501	238	108	214	173	410	1051	128	91	1176	574
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	208	1501	238	108	214	173	410	1051	128	91	1176	574
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	208	1501	238	108	214	173	410	1051	128	91	1176	574
OvlAdjVol:						0			24			
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3200	5100	1600	3200	5100	1600	3200	5100	1600	3200	5100	1600
Capacity Analysis Module:												
Vol/Sat:	0.07	0.29	0.15	0.03	0.04	0.11	0.13	0.21	0.08	0.03	0.23	0.36
OvlAdjV/S:						0.00			0.02			
Crit Moves:	****			****			****					****

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #98 Red Hill Ave and Warner Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.952
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	132	Level Of Service:	E

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0 3	1 0	2	0 2	1 0	1	0 2	1 0	2	0 3	0 1
Volume Module:												
Base Vol:	343	1175	135	89	341	432	324	880	137	78	1643	216
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	343	1175	135	89	341	432	324	880	137	78	1643	216
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	343	1175	135	89	341	432	324	880	137	78	1643	216
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	343	1175	135	89	341	432	324	880	137	78	1643	216
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	343	1175	135	89	341	432	324	880	137	78	1643	216
OvlAdjVol:												172
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.06	1.00	1.00	1.05	1.00	1.00	1.06	1.00
Lanes:	2.00	3.59	0.41	2.00	2.00	1.00	1.00	2.60	0.40	2.00	3.00	1.00
Final Sat.:	3200	6040	660	3200	3400	1600	1600	4353	647	3200	5100	1600
Capacity Analysis Module:												
Vol/Sat:	0.11	0.19	0.20	0.03	0.10	0.27	0.20	0.20	0.21	0.02	0.32	0.14
OvlAdjV/S:												0.11
Crit Moves:	****					****	****				****	

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #99 Red Hill Ave and Dyer Rd / barranca Pkwy

Cycle (sec):	100	Critical Vol./Cap.(X):	0.591
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	28	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	4 0	1	2 0	4 0	1	2 0	3 1	0	2 0	4 0	1
Volume Module:												
Base Vol:	344	1293	333	314	531	249	178	662	87	129	979	286
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	344	1293	333	314	531	249	178	662	87	129	979	286
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	344	1293	333	314	531	249	178	662	87	129	979	286
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	344	1293	333	314	531	249	178	662	87	129	979	286
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	344	1293	333	314	531	249	178	662	87	129	979	286
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.05	1.00	1.00	1.06	1.00
Lanes:	2.00	4.00	1.00	2.00	4.00	1.00	2.00	3.54	0.46	2.00	4.00	1.00
Final Sat.:	3200	6800	1600	3200	6800	1600	3200	5957	743	3200	6800	1600
Capacity Analysis Module:												
Vol/Sat:	0.11	0.19	0.21	0.10	0.08	0.16	0.06	0.11	0.12	0.04	0.14	0.18
Crit Moves:			****	****			****					****

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #100 Red Hill Ave and Alton Pkwy

Cycle (sec):	100	Critical Vol./Cap.(X):	1.494
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	180	Level Of Service:	F

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 0	1	1 0	3 0	1	1 0	2 0	1	2 0	1 0	1
Volume Module:												
Base Vol:	27	1513	219	148	628	5	453	1111	569	2003	342	1235
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	27	1513	219	148	628	5	453	1111	569	2003	342	1235
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	27	1513	219	148	628	5	453	1111	569	2003	342	1235
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	27	1513	219	148	628	5	453	1111	569	2003	342	1235
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	27	1513	219	148	628	5	453	1111	569	2003	342	1235
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	1.00	2.00	1.00	2.00	1.00	1.00
Final Sat.:	1600	5100	1600	1600	5100	1600	1600	3400	1600	3200	1700	1600
Capacity Analysis Module:												
Vol/Sat:	0.02	0.30	0.14	0.09	0.12	0.00	0.28	0.33	0.36	0.63	0.20	0.77
Crit Moves:		****			****			****				****

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #101 Red Hill Ave and MacArthur Blvd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.722	
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx	
Optimal Cycle:	40	Level Of Service:	C	

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Ignore			Include			Ignore		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0 2	1 0		2 0 3	0 1		2 0 3	0 1		1 0 3	0 1	
Volume Module:												
Base Vol:	179	1160	14	340	707	1240	515	237	36	39	818	574
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	179	1160	14	340	707	1240	515	237	36	39	818	574
User Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Volume:	179	1160	14	340	707	0	515	237	36	39	818	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	179	1160	14	340	707	0	515	237	36	39	818	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
FinalVolume:	179	1160	14	340	707	0	515	237	36	39	818	0
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.04	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	2.00	2.96	0.04	2.00	3.00	1.00	2.00	3.00	1.00	1.00	3.00	1.00
Final Sat.:	3200	4943	57	3200	5100	1600	3200	5100	1600	1600	5100	1600
Capacity Analysis Module:												
Vol/Sat:	0.06	0.23	0.24	0.11	0.14	0.00	0.16	0.05	0.02	0.02	0.16	0.00
Crit Moves:			****	****			****				****	

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #102 Red Hill Ave and Main St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.836	
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx	
Optimal Cycle:	61	Level Of Service:	D	

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0 2	0 1	2	0 2	0 1	2	0 2	1 0	2	0 2	1 0
Volume Module:												
Base Vol:	467	1006	272	88	640	348	212	757	205	284	1617	91
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	467	1006	272	88	640	348	212	757	205	284	1617	91
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	467	1006	272	88	640	348	212	757	205	284	1617	91
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	467	1006	272	88	640	348	212	757	205	284	1617	91
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	467	1006	272	88	640	348	212	757	205	284	1617	91
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.05	1.00	1.00	1.04	1.00
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	2.00	2.36	0.64	2.00	2.84	0.16
Final Sat.:	3200	3400	1600	3200	3400	1600	3200	3977	1023	3200	4744	256
Capacity Analysis Module:												
Vol/Sat:	0.15	0.30	0.17	0.03	0.19	0.22	0.07	0.19	0.20	0.09	0.34	0.36
Crit Moves:	****					****	****					****

Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #103 I-5 SB Ramps and Santa Ana Blvd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.444
Loss Time (sec):	5	Average Delay (sec/veh):	19.9
Optimal Cycle:	22	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Ovl			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0	0	2	0	0	2	0	3	0	2	1
Volume Module:												
Base Vol:	0	0	0	357	0	78	595	672	0	0	590	162
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	357	0	78	595	672	0	0	590	162
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	357	0	78	595	672	0	0	590	162
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	357	0	78	595	672	0	0	590	162
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	357	0	78	595	672	0	0	590	162
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	0.92	1.00	0.85	0.92	0.91	1.00	1.00	0.88	0.88
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	2.00	3.00	0.00	0.00	2.35	0.65
Final Sat.:	0	0	0	3502	0	1615	3502	5187	0	0	3939	1082
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.10	0.00	0.05	0.17	0.13	0.00	0.00	0.15	0.15
Crit Moves:				****			****				****	
Green/Cycle:	0.00	0.00	0.00	0.23	0.00	0.61	0.38	0.72	0.00	0.00	0.34	0.34
Volume/Cap:	0.00	0.00	0.00	0.44	0.00	0.08	0.44	0.18	0.00	0.00	0.44	0.44
Delay/Veh:	0.0	0.0	0.0	33.4	0.0	7.9	23.2	4.5	0.0	0.0	26.0	26.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

AdjDel/Veh:	0.0	0.0	0.0	33.4	0.0	7.9	23.2	4.5	0.0	0.0	26.0	26.0
LOS by Move:	A	A	A	C	A	A	C	A	A	A	C	C
HCM2k85thQ:	0	0	0	8	0	2	11	4	0	0	10	10

****

Note: Queue reported is the number of cars per lane.

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #104 Tustin Ranch Rd and Warner Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.671
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	34	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	0 0	0	2 0	0 0	1	2 0	3 0	0	0 0	3 0	1
Volume Module:												
Base Vol:	0	0	0	653	0	45	64	2124	0	0	925	398
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	653	0	45	64	2124	0	0	925	398
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	653	0	45	64	2124	0	0	925	398
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	653	0	45	64	2124	0	0	925	398
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	653	0	45	64	2124	0	0	925	398
OvlAdjVol:												71
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	2.00	3.00	0.00	0.00	3.00	1.00
Final Sat.:	0	0	0	3200	0	1600	3200	5100	0	0	5100	1600
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.20	0.00	0.03	0.02	0.42	0.00	0.00	0.18	0.25
OvlAdjV/S:												0.04
Crit Moves:				****				****		****		

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #105 Von Karman Ave and Barranca Pkwy

Cycle (sec):	100	Critical Vol./Cap.(X):	1.284	
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx	
Optimal Cycle:	180	Level Of Service:	F	

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Ovl			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0 1	1 0		2 0 2			2 0 3	0 1		2 0 4	0 1	
Volume Module:												
Base Vol:	362	2082	454	80	407	280	785	1435	201	254	805	274
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	362	2082	454	80	407	280	785	1435	201	254	805	274
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	362	2082	454	80	407	280	785	1435	201	254	805	274
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	362	2082	454	80	407	280	785	1435	201	254	805	274
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	362	2082	454	80	407	280	785	1435	201	254	805	274
OvlAdjVol:						0						
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.04	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	2.00	1.64	0.36	2.00	2.00	2.00	2.00	3.00	1.00	2.00	4.00	1.00
Final Sat.:	3200	2727	573	3200	3400	3200	3200	5100	1600	3200	6800	1600
Capacity Analysis Module:												
Vol/Sat:	0.11	0.76	0.79	0.03	0.12	0.09	0.25	0.28	0.13	0.08	0.12	0.17
OvlAdjV/S:						0.00						
Crit Moves:		****	****				****					****

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #106 Red Hill Avenue and El Camino Real

Cycle (sec):	100	Critical Vol./Cap.(X):	0.696
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	37	Level Of Service:	B

Street Name:	Red Hill Avenue						El Camino Real					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0 3	0 1	1	0 2	1 0	1	0 1	0 1	1	0 0	1 0
Volume Module:												
Base Vol:	433	1372	253	20	728	96	52	113	148	265	439	51
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	433	1372	253	20	728	96	52	113	148	265	439	51
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	433	1372	253	20	728	96	52	113	148	265	439	51
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	433	1372	253	20	728	96	52	113	148	265	439	51
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	433	1372	253	20	728	96	52	113	148	265	439	51
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.05	1.00	1.00	1.06	1.00	1.00	1.00	1.00
Lanes:	2.00	3.00	1.00	1.00	2.65	0.35	1.00	1.00	1.00	1.00	0.90	0.10
Final Sat.:	3200	5100	1600	1600	4441	559	1600	1700	1600	1600	1433	167
Capacity Analysis Module:												
Vol/Sat:	0.14	0.27	0.16	0.01	0.16	0.17	0.03	0.07	0.09	0.17	0.31	0.31
Crit Moves:	****					****	****				****	

Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #107 Red Hill Avenue and I-5 NB Ramps

Cycle (sec):	100	Critical Vol./Cap.(X):	0.623
Loss Time (sec):	5	Average Delay (sec/veh):	23.6
Optimal Cycle:	32	Level Of Service:	C

Street Name:	Red Hill Avenue						I-5 NB Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0 3	0 0	0	0 3	0 1	0	0 0	0 0	1	1 0	1 0
Volume Module:												
Base Vol:	292	1670	0	0	865	175	0	0	0	256	96	415
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	292	1670	0	0	865	175	0	0	0	256	96	415
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	292	1670	0	0	865	175	0	0	0	256	96	415
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	292	1670	0	0	865	175	0	0	0	256	96	415
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	292	1670	0	0	865	175	0	0	0	256	96	415
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.91	1.00	1.00	0.91	0.85	1.00	1.00	1.00	0.83	0.83	0.83
Lanes:	1.00	3.00	0.00	0.00	3.00	1.00	0.00	0.00	0.00	1.45	0.55	1.00
Final Sat.:	1805	5187	0	0	5187	1615	0	0	0	2292	860	1576
Capacity Analysis Module:												
Vol/Sat:	0.16	0.32	0.00	0.00	0.17	0.11	0.00	0.00	0.00	0.11	0.11	0.26
Crit Moves:	****				****							****
Green/Cycle:	0.26	0.53	0.00	0.00	0.27	0.27	0.00	0.00	0.00	0.42	0.42	0.42
Volume/Cap:	0.62	0.61	0.00	0.00	0.62	0.40	0.00	0.00	0.00	0.26	0.26	0.62
Delay/Veh:	35.3	16.9	0.0	0.0	33.1	30.7	0.0	0.0	0.0	18.8	18.8	23.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

AdjDel/Veh:	35.3	16.9	0.0	0.0	33.1	30.7	0.0	0.0	0.0	18.8	18.8	23.6
LOS by Move:	D	B	A	A	C	C	A	A	A	B	B	C
HCM2k85thQ:	13	20	0	0	14	7	0	0	0	6	6	17

****

Note: Queue reported is the number of cars per lane.

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Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #108 Red Hill Avenue and I-5 SB Ramps

Cycle (sec):	100	Critical Vol./Cap.(X):	0.713
Loss Time (sec):	5	Average Delay (sec/veh):	21.8
Optimal Cycle:	40	Level Of Service:	C

Street Name:	Red Hill Avenue						I-5 SB Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0 4	0 1	1	0 3	0 0	0	1 0	0 1	0	0 0	0 0
Volume Module:												
Base Vol:	0	1700	540	310	744	0	296	3	265	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1700	540	310	744	0	296	3	265	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1700	540	310	744	0	296	3	265	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1700	540	310	744	0	296	3	265	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1700	540	310	744	0	296	3	265	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.91	0.85	0.95	0.91	1.00	0.92	0.92	0.85	1.00	1.00	1.00
Lanes:	0.00	4.00	1.00	1.00	3.00	0.00	0.99	0.01	1.00	0.00	0.00	0.00
Final Sat.:	0	6916	1615	1805	5187	0	1732	18	1615	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.25	0.33	0.17	0.14	0.00	0.17	0.17	0.16	0.00	0.00	0.00
Crit Moves:			****	****				****				
Green/Cycle:	0.00	0.47	0.47	0.24	0.71	0.00	0.24	0.24	0.24	0.00	0.00	0.00
Volume/Cap:	0.00	0.52	0.71	0.71	0.20	0.00	0.71	0.71	0.68	0.00	0.00	0.00
Delay/Veh:	0.0	18.8	24.4	40.3	4.9	0.0	40.5	40.5	39.6	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	18.8	24.4	40.3	4.9	0.0	40.5	40.5	39.6	0.0	0.0	0.0
LOS by Move:	A	B	C	D	A	A	D	D	D	A	A	A
HCM2k85thQ:	0	15	21	15	4	0	15	15	13	0	0	0

Note: Queue reported is the number of cars per lane.

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #109 Red Hill Avenue and Nisson Road

Cycle (sec):	100	Critical Vol./Cap.(X):	0.715
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	39	Level Of Service:	C

Street Name:	Red Hill Avenue						Nisson Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 1	0	1 0	2 1	0	1 0	0 1	0	1 0	0 1	0
Volume Module:												
Base Vol:	34	1769	36	142	730	73	247	90	40	48	83	141
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	34	1769	36	142	730	73	247	90	40	48	83	141
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	34	1769	36	142	730	73	247	90	40	48	83	141
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	34	1769	36	142	730	73	247	90	40	48	83	141
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	34	1769	36	142	730	73	247	90	40	48	83	141
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.05	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	3.92	0.08	1.00	2.73	0.27	1.00	0.69	0.31	1.00	0.37	0.63
Final Sat.:	1600	6572	128	1600	4564	436	1600	1108	492	1600	593	1007
Capacity Analysis Module:												
Vol/Sat:	0.02	0.27	0.28	0.09	0.16	0.17	0.15	0.08	0.08	0.03	0.14	0.14
Crit Moves:			****	****			****				****	

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #110 Red Hill Avenue and Walnut Avenue

Cycle (sec):	100	Critical Vol./Cap.(X):	0.749
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	43	Level Of Service:	C

Street Name:	Red Hill Avenue						Walnut Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	2	1	0	1	0	2	1	0	1	0	1	0	2	0	1	1	0
Volume Module:												
Base Vol:	283	1378	99	123	382	160	91	218	90	196	654	171
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	283	1378	99	123	382	160	91	218	90	196	654	171
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	283	1378	99	123	382	160	91	218	90	196	654	171
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	283	1378	99	123	382	160	91	218	90	196	654	171
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	283	1378	99	123	382	160	91	218	90	196	654	171
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.04	1.00	1.00	1.06	1.00	1.00	1.04	1.00	1.00	1.04	1.00
Lanes:	1.00	2.80	0.20	1.00	2.11	0.89	1.00	1.42	0.58	2.00	1.59	0.41
Final Sat.:	1600	4678	322	1600	3583	1417	1600	2365	935	3200	2637	663
Capacity Analysis Module:												
Vol/Sat:	0.18	0.29	0.31	0.08	0.11	0.11	0.06	0.09	0.10	0.06	0.25	0.26
Crit Moves:			****	****			****					****

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #111 Red Hill Avenue and Valencia Avenue

Cycle (sec):	100	Critical Vol./Cap.(X):	0.753
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	44	Level Of Service:	C

Street Name:	Red Hill Avenue						Valencia Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ovl			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	3 1	0	1 0	2 1	0	1 0	1 0	1	2 0	1 0	1
Volume Module:												
Base Vol:	248	1849	305	116	467	52	110	297	130	284	412	272
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	248	1849	305	116	467	52	110	297	130	284	412	272
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	248	1849	305	116	467	52	110	297	130	284	412	272
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	248	1849	305	116	467	52	110	297	130	284	412	272
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	248	1849	305	116	467	52	110	297	130	284	412	272
OvlAdjVol:			225									156
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.05	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	1.00	3.43	0.57	1.00	2.70	0.30	1.00	1.00	1.00	2.00	1.00	1.00
Final Sat.:	1600	5794	906	1600	4519	481	1600	1700	1600	3200	1700	1600
Capacity Analysis Module:												
Vol/Sat:	0.16	0.32	0.34	0.07	0.10	0.11	0.07	0.17	0.08	0.09	0.24	0.17
OvlAdjV/S:			0.25									0.10
Crit Moves:	****			****			****				****	

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #112 Tustin Ranch Road and Warner Avenue North

Cycle (sec):	100	Critical Vol./Cap.(X):	0.924
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	103	Level Of Service:	E

Street Name:	Tustin Ranch Road						Warner Avenue North					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Ovl			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0	3 0 1	2	0	3 0 0	0	0	0 0 0	3	0	0 0 2
Volume Module:												
Base Vol:	0	1995	1175	447	657	0	0	0	0	792	0	716
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1995	1175	447	657	0	0	0	0	792	0	716
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1995	1175	447	657	0	0	0	0	792	0	716
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1995	1175	447	657	0	0	0	0	792	0	716
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1995	1175	447	657	0	0	0	0	792	0	716
OvlAdjVol:			911									269
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	0.00	3.00	1.00	2.00	3.00	0.00	0.00	0.00	0.00	3.00	0.00	2.00
Final Sat.:	0	5100	1600	3200	5100	0	0	0	0	4800	0	3200
Capacity Analysis Module:												
Vol/Sat:	0.00	0.39	0.73	0.14	0.13	0.00	0.00	0.00	0.00	0.17	0.00	0.22
OvlAdjV/S:			0.57									0.08
Crit Moves:			****	****						****		

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #113 Tustin Ranch Road and Walnut Avenue

Cycle (sec):	100	Critical Vol./Cap.(X):	1.772
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	180	Level Of Service:	F

Street Name:	Tustin Ranch Road						Walnut Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ovl			Ovl			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	3	0	1	2	0	3	0	1	2	0	1	1	0	2	0	2	0	1
Volume Module:																				
Base Vol:	876	3814	401	550	1460	947	329	402	230	307	1760	1394
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	876	3814	401	550	1460	947	329	402	230	307	1760	1394
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	876	3814	401	550	1460	947	329	402	230	307	1760	1394
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	876	3814	401	550	1460	947	329	402	230	307	1760	1394
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	876	3814	401	550	1460	947	329	402	230	307	1760	1394
OvlAdjVol:			247			783						1119
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.05	1.00	1.00	1.06	1.00
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	1.27	0.73	2.00	2.00	1.00
Final Sat.:	3200	5100	1600	3200	5100	1600	3200	2135	1165	3200	3400	1600
Capacity Analysis Module:												
Vol/Sat:	0.27	0.75	0.25	0.17	0.29	0.59	0.10	0.19	0.20	0.10	0.52	0.87
OvlAdjV/S:			0.15			0.49						0.70
Crit Moves:	****			****			****					****

Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #114 SR-55 SB Ramps and Irvine Boulevard

Cycle (sec):	100	Critical Vol./Cap.(X):	0.929
Loss Time (sec):	5	Average Delay (sec/veh):	26.5
Optimal Cycle:	111	Level Of Service:	C

Street Name:	SR-55 SB Ramps						Irvine Boulevard					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0	0	1	0	1! 0	1	0	0	2	1	0
Volume Module:												
Base Vol:	0	0	0	484	0	289	0	1049	707	425	1222	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	484	0	289	0	1049	707	425	1222	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	484	0	289	0	1049	707	425	1222	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	484	0	289	0	1049	707	425	1222	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	484	0	289	0	1049	707	425	1222	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	0.74	1.00	0.73	1.00	0.86	0.86	0.95	0.91	1.00
Lanes:	0.00	0.00	0.00	1.62	0.00	1.38	0.00	2.00	1.00	1.00	3.00	0.00
Final Sat.:	0	0	0	2278	0	1915	0	3251	1625	1805	5187	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.21	0.00	0.15	0.00	0.32	0.44	0.24	0.24	0.00
Crit Moves:				****					****	****		
Green/Cycle:	0.00	0.00	0.00	0.23	0.00	0.46	0.00	0.47	0.47	0.25	0.72	0.00
Volume/Cap:	0.00	0.00	0.00	0.93	0.00	0.33	0.00	0.69	0.93	0.93	0.33	0.00
Delay/Veh:	0.0	0.0	0.0	54.5	0.0	17.5	0.0	21.7	33.7	61.9	5.1	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	54.5	0.0	17.5	0.0	21.7	33.7	61.9	5.1	0.0
LOS by Move:	A	A	A	D	A	B	A	C	C	E	A	A

```
HCM2k85thQ:     0    0     0    19    0     7     0   22    39    25    8     0
********************************************************************************
Note: Queue reported is the number of cars per lane.
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Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #115 SR-55 NB Ramps and Irvine Boulevard

Cycle (sec):	100	Critical Vol./Cap.(X):	0.841
Loss Time (sec):	5	Average Delay (sec/veh):	22.3
Optimal Cycle:	65	Level Of Service:	C

Street Name:	SR-55 NB Ramps						Irvine Boulevard					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1! 0	1	0	0	0	0	1	0	3	0	0	0	0	2	1	0
Volume Module:																		
Base Vol:	424	21	386	0	0	0	239	1094	0	0	1043	660
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	424	21	386	0	0	0	239	1094	0	0	1043	660
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	424	21	386	0	0	0	239	1094	0	0	1043	660
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	424	21	386	0	0	0	239	1094	0	0	1043	660
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	424	21	386	0	0	0	239	1094	0	0	1043	660
Saturation Flow Module:																		
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.86	0.86	0.86	1.00	1.00	1.00	0.95	0.91	1.00	1.00	0.86	0.86
Lanes:	1.50	0.05	1.45	0.00	0.00	0.00	1.00	3.00	0.00	0.00	2.00	1.00
Final Sat.:	2445	80	2372	0	0	0	1805	5187	0	0	3257	1629
Capacity Analysis Module:																		
Vol/Sat:	0.17	0.26	0.16	0.00	0.00	0.00	0.13	0.21	0.00	0.00	0.32	0.41
Crit Moves:	****						****					****
Green/Cycle:	0.31	0.31	0.31	0.00	0.00	0.00	0.16	0.64	0.00	0.00	0.48	0.48
Volume/Cap:	0.56	0.84	0.52	0.00	0.00	0.00	0.84	0.33	0.00	0.00	0.66	0.84
Delay/Veh:	29.2	38.7	28.7	0.0	0.0	0.0	60.5	8.3	0.0	0.0	20.4	25.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	29.2	38.7	28.7	0.0	0.0	0.0	60.5	8.3	0.0	0.0	20.4	25.9
LOS by Move:	C	D	C	A	A	A	E	A	A	A	C	C
HCM2k85thQ:	12	22	11	0	0	0	15	9	0	0	21	31

Note: Queue reported is the number of cars per lane.

APPENDIX E
MITIGATION WORKSHEETS

Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #3 Euclid St and Edinger Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.995
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	180	Level Of Service:	E

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 1	0	2 0	2 1	0	1 0	2 0	1	1 0	2 1	0
Volume Module:												
Base Vol:	127	801	68	180	2613	240	136	595	364	133	812	148
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	127	801	68	180	2613	240	136	595	364	133	812	148
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	127	801	68	180	2613	240	136	595	364	133	812	148
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	127	801	68	180	2613	240	136	595	364	133	812	148
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	127	801	68	180	2613	240	136	595	364	133	812	148
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	127	801	68	180	2613	240	136	595	364	133	812	148
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.05	1.00	1.00	1.06	1.00	1.00	1.05	1.00
Lanes:	2.00	2.77	0.23	2.00	2.75	0.25	1.00	2.00	1.00	1.00	2.54	0.46
Final Sat.:	3200	4624	376	3200	4596	404	1600	3400	1600	1600	4260	740
Capacity Analysis Module:												
Vol/Sat:	0.04	0.17	0.18	0.06	0.57	0.59	0.09	0.17	0.23	0.08	0.19	0.20
Crit Moves:	****					****			****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #3 Euclid St and Edinger Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.803
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	53	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 1	0	2 0	2 1	0	1 0	2 0	1	1 0	2 1	0
Volume Module:												
Base Vol:	551	1648	117	136	897	228	121	467	140	119	1103	179
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	551	1648	117	136	897	228	121	467	140	119	1103	179
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	551	1648	117	136	897	228	121	467	140	119	1103	179
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	551	1648	117	136	897	228	121	467	140	119	1103	179
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	551	1648	117	136	897	228	121	467	140	119	1103	179
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	551	1648	117	136	897	228	121	467	140	119	1103	179
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.04	1.00	1.00	1.05	1.00	1.00	1.06	1.00	1.00	1.05	1.00
Lanes:	2.00	2.80	0.20	2.00	2.39	0.61	1.00	2.00	1.00	1.00	2.58	0.42
Final Sat.:	3200	4682	318	3200	4027	973	1600	3400	1600	1600	4330	670
Capacity Analysis Module:												
Vol/Sat:	0.17	0.35	0.37	0.04	0.22	0.23	0.08	0.14	0.09	0.07	0.25	0.27
Crit Moves:		****	****				****					****

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #3 Euclid St and Edinger Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.995
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	180	Level Of Service:	E

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 1	0	2 0	2 1	0	2 0	2 0	1	1 0	2 0	1
Volume Module:												
Base Vol:	127	801	68	180	2613	240	136	595	364	133	812	148
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	127	801	68	180	2613	240	136	595	364	133	812	148
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	127	801	68	180	2613	240	136	595	364	133	812	148
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	127	801	68	180	2613	240	136	595	364	133	812	148
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	127	801	68	180	2613	240	136	595	364	133	812	148
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	127	801	68	180	2613	240	136	595	364	133	812	148
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.05	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	2.00	2.77	0.23	2.00	2.75	0.25	2.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	3200	4624	376	3200	4596	404	3200	3400	1600	1600	3400	1600
Capacity Analysis Module:												
Vol/Sat:	0.04	0.17	0.18	0.06	0.57	0.59	0.04	0.17	0.23	0.08	0.24	0.09
Crit Moves:	****					****			****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #3 Euclid St and Edinger Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.822
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	57	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2	1 0	2 0	2	1 0	2 0	2	0 1	1 0	2	0 1
Volume Module:												
Base Vol:	551	1648	117	136	897	228	121	467	140	119	1103	179
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	551	1648	117	136	897	228	121	467	140	119	1103	179
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	551	1648	117	136	897	228	121	467	140	119	1103	179
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	551	1648	117	136	897	228	121	467	140	119	1103	179
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	551	1648	117	136	897	228	121	467	140	119	1103	179
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	551	1648	117	136	897	228	121	467	140	119	1103	179
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.04	1.00	1.00	1.05	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	2.00	2.80	0.20	2.00	2.39	0.61	2.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	3200	4682	318	3200	4027	973	3200	3400	1600	1600	3400	1600
Capacity Analysis Module:												
Vol/Sat:	0.17	0.35	0.37	0.04	0.22	0.23	0.04	0.14	0.09	0.07	0.32	0.11
Crit Moves:			****	****			****				****	

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #3 Euclid St and Edinger Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.965
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	154	Level Of Service:	E

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2	1 0	2 0	2	1 0	2 0	2	0 1	2 0	2	0 1
Volume Module:												
Base Vol:	127	801	68	180	2613	240	136	595	364	133	812	148
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	127	801	68	180	2613	240	136	595	364	133	812	148
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	127	801	68	180	2613	240	136	595	364	133	812	148
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	127	801	68	180	2613	240	136	595	364	133	812	148
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	127	801	68	180	2613	240	136	595	364	133	812	148
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	127	801	68	180	2613	240	136	595	364	133	812	148
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.05	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	2.00	2.77	0.23	2.00	2.75	0.25	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3200	4624	376	3200	4596	404	3200	3400	1600	3200	3400	1600
Capacity Analysis Module:												
Vol/Sat:	0.04	0.17	0.18	0.06	0.57	0.59	0.04	0.17	0.23	0.04	0.24	0.09
Crit Moves:	****					****	****				****	

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #3 Euclid St and Edinger Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.822
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	57	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2	1 0	2 0	2	1 0	2 0	2	0 1	2 0	2	0 1
Volume Module:												
Base Vol:	551	1648	117	136	897	228	121	467	140	119	1103	179
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	551	1648	117	136	897	228	121	467	140	119	1103	179
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	551	1648	117	136	897	228	121	467	140	119	1103	179
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	551	1648	117	136	897	228	121	467	140	119	1103	179
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	551	1648	117	136	897	228	121	467	140	119	1103	179
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	551	1648	117	136	897	228	121	467	140	119	1103	179
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.04	1.00	1.00	1.05	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	2.00	2.80	0.20	2.00	2.39	0.61	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3200	4682	318	3200	4027	973	3200	3400	1600	3200	3400	1600
Capacity Analysis Module:												
Vol/Sat:	0.17	0.35	0.37	0.04	0.22	0.23	0.04	0.14	0.09	0.04	0.32	0.11
Crit Moves:			****	****			****				****	

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #13 Harbor Blvd and Segerstrom Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.961
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	147	Level Of Service:	E

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 1	0	1 0	2 1	0	1 0	1 1	0	2 0	2 0	1
Volume Module:												
Base Vol:	107	759	48	173	2324	87	90	753	303	146	453	103
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	107	759	48	173	2324	87	90	753	303	146	453	103
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	107	759	48	173	2324	87	90	753	303	146	453	103
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	107	759	48	173	2324	87	90	753	303	146	453	103
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	107	759	48	173	2324	87	90	753	303	146	453	103
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.04	1.00	1.00	1.04	1.00	1.00	1.04	1.00	1.00	1.06	1.00
Lanes:	2.00	2.82	0.18	1.00	2.89	0.11	1.00	1.43	0.57	2.00	2.00	1.00
Final Sat.:	3200	4714	286	1600	4827	173	1600	2382	918	3200	3400	1600
Capacity Analysis Module:												
Vol/Sat:	0.03	0.16	0.17	0.11	0.48	0.50	0.06	0.32	0.33	0.05	0.13	0.06
Crit Moves:	****					****			****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #13 Harbor Blvd and Segerstrom Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.934
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	113	Level Of Service:	E

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 1	0	1 0	2 1	0	1 0	1 1	0	2 0	2 0	1
Volume Module:												
Base Vol:	275	1732	55	86	973	86	118	585	192	121	1308	475
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	275	1732	55	86	973	86	118	585	192	121	1308	475
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	275	1732	55	86	973	86	118	585	192	121	1308	475
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	275	1732	55	86	973	86	118	585	192	121	1308	475
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	275	1732	55	86	973	86	118	585	192	121	1308	475
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.04	1.00	1.00	1.05	1.00	1.00	1.04	1.00	1.00	1.06	1.00
Lanes:	2.00	2.91	0.09	1.00	2.76	0.24	1.00	1.51	0.49	2.00	2.00	1.00
Final Sat.:	3200	4852	148	1600	4610	390	1600	2509	791	3200	3400	1600
Capacity Analysis Module:												
Vol/Sat:	0.09	0.36	0.37	0.05	0.21	0.22	0.07	0.23	0.24	0.04	0.38	0.30
Crit Moves:			****	****			****				****	

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #34 Bristol St and 1st St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.788
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	50	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	3 0	1	2 0	3 0	1	1 0	2 1	1	1 0	2 1	0
Volume Module:												
Base Vol:	208	1451	184	315	1298	183	206	1268	128	126	949	139
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	208	1451	184	315	1298	183	206	1268	128	126	949	139
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	208	1451	184	315	1298	183	206	1268	128	126	949	139
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	208	1451	184	315	1298	183	206	1268	128	126	949	139
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	208	1451	184	315	1298	183	206	1268	128	126	949	139
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.05	1.00
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	1.00	3.00	1.00	1.00	2.62	0.38
Final Sat.:	3200	5100	1600	3200	5100	1600	1600	5100	1600	1600	4387	613
Capacity Analysis Module:												
Vol/Sat:	0.07	0.28	0.12	0.10	0.25	0.11	0.13	0.25	0.08	0.08	0.22	0.23
Crit Moves:		****			****			****				****

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #34 Bristol St and 1st St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.867
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	71	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	3 0	1	2 0	3 0	1	1 0	2 1	1	1 0	2 1	0
Volume Module:												
Base Vol:	434	1872	276	216	1169	264	259	1454	186	155	953	90
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	434	1872	276	216	1169	264	259	1454	186	155	953	90
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	434	1872	276	216	1169	264	259	1454	186	155	953	90
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	434	1872	276	216	1169	264	259	1454	186	155	953	90
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	434	1872	276	216	1169	264	259	1454	186	155	953	90
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.05	1.00
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	1.00	3.00	1.00	1.00	2.74	0.26
Final Sat.:	3200	5100	1600	3200	5100	1600	1600	5100	1600	1600	4586	414
Capacity Analysis Module:												
Vol/Sat:	0.14	0.37	0.17	0.07	0.23	0.17	0.16	0.29	0.12	0.10	0.21	0.22
Crit Moves:		****		****				****		****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #37 Bristol St and Segerstrom Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.814
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	55	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	WideBypass			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2	1 1	1 0	2	1 0	1 0	2	1 0	1 0	2	1 0
Volume Module:												
Base Vol:	70	778	146	283	1011	119	306	1480	136	157	712	91
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	70	778	146	283	1011	119	306	1480	136	157	712	91
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	70	778	146	283	1011	119	306	1480	136	157	712	91
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	70	778	146	283	1011	119	306	1480	136	157	712	91
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	70	778	146	283	1011	119	306	1480	136	157	712	91
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.05	1.00	1.00	1.05	1.00	1.00	1.05	1.00
Lanes:	1.00	3.00	1.00	1.00	2.68	0.32	1.00	2.75	0.25	1.00	2.66	0.34
Final Sat.:	1600	5100	1600	1600	4495	505	1600	4596	404	1600	4456	544
Capacity Analysis Module:												
Vol/Sat:	0.04	0.15	0.09	0.18	0.22	0.24	0.19	0.32	0.34	0.10	0.16	0.17
Crit Moves:		****		****					****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #37 Bristol St and Segerstrom Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.868
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	72	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	WideBypass			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2	1 1	1 0	2	1 0	1 0	2	1 0	1 0	2	1 0
Volume Module:												
Base Vol:	177	1309	231	98	894	187	279	998	79	156	1408	71
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	177	1309	231	98	894	187	279	998	79	156	1408	71
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	177	1309	231	98	894	187	279	998	79	156	1408	71
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	177	1309	231	98	894	187	279	998	79	156	1408	71
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	177	1309	231	98	894	187	279	998	79	156	1408	71
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.05	1.00	1.00	1.04	1.00	1.00	1.04	1.00
Lanes:	1.00	3.00	1.00	1.00	2.48	0.52	1.00	2.78	0.22	1.00	2.86	0.14
Final Sat.:	1600	5100	1600	1600	4170	830	1600	4648	352	1600	4770	230
Capacity Analysis Module:												
Vol/Sat:	0.11	0.26	0.14	0.06	0.21	0.23	0.17	0.21	0.22	0.10	0.30	0.31
Crit Moves:	****					****	****					****

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #44 Flower St and 1st St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.925
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	104	Level Of Service:	E

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 0	1	1 0	1 1	0	1 0	1 1	0	1 0	1 1	0
Volume Module:												
Base Vol:	89	387	102	366	1158	121	107	983	39	161	664	95
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	89	387	102	366	1158	121	107	983	39	161	664	95
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	89	387	102	366	1158	121	107	983	39	161	664	95
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	89	387	102	366	1158	121	107	983	39	161	664	95
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	89	387	102	366	1158	121	107	983	39	161	664	95
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	89	387	102	366	1158	121	107	983	39	161	664	95
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.03	1.00	1.00	1.03	1.00	1.00	1.04	1.00
Lanes:	1.00	2.00	1.00	1.00	1.81	0.19	1.00	1.92	0.08	1.00	1.75	0.25
Final Sat.:	1600	3400	1600	1600	2997	303	1600	3178	122	1600	2899	401
Capacity Analysis Module:												
Vol/Sat:	0.06	0.11	0.06	0.23	0.39	0.40	0.07	0.31	0.32	0.10	0.23	0.24
Crit Moves:	****					****			****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #44 Flower St and 1st St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.921
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	101	Level Of Service:	E

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2 0	1	1 0	1 1	0	1 0	1 1	0	1 0	1 1	0
Volume Module:												
Base Vol:	211	1000	238	140	383	111	135	1181	98	144	969	101
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	211	1000	238	140	383	111	135	1181	98	144	969	101
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	211	1000	238	140	383	111	135	1181	98	144	969	101
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	211	1000	238	140	383	111	135	1181	98	144	969	101
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	211	1000	238	140	383	111	135	1181	98	144	969	101
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	211	1000	238	140	383	111	135	1181	98	144	969	101
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.04	1.00	1.00	1.03	1.00	1.00	1.03	1.00
Lanes:	1.00	2.00	1.00	1.00	1.55	0.45	1.00	1.85	0.15	1.00	1.81	0.19
Final Sat.:	1600	3400	1600	1600	2581	719	1600	3055	245	1600	2998	302
Capacity Analysis Module:												
Vol/Sat:	0.13	0.29	0.15	0.09	0.15	0.15	0.08	0.39	0.40	0.09	0.32	0.33
Crit Moves:		****		****					****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

****

Intersection #62 Santiago St and Santa Ana Blvd

****

Cycle (sec):	100	Critical Vol./Cap.(X):	1.241	
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx	
Optimal Cycle:	180	Level Of Service:	F	

****

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1 0	1	1 0	1 0	1	0 1	0 1	0	1 0	2 0	1
Volume Module:												
Base Vol:	188	611	303	409	972	253	118	732	99	297	699	258
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	188	611	303	409	972	253	118	732	99	297	699	258
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	188	611	303	409	972	253	118	732	99	297	699	258
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	188	611	303	409	972	253	118	732	99	297	699	258
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	188	611	303	409	972	253	118	732	99	297	699	258
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.00	1.00	1.00	1.06	1.00
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	0.25	1.54	0.21	1.00	2.00	1.00
Final Sat.:	1600	1700	1600	1600	1700	1600	398	2468	334	1600	3400	1600
Capacity Analysis Module:												
Vol/Sat:	0.12	0.36	0.19	0.26	0.57	0.16	0.30	0.30	0.30	0.19	0.21	0.16
Crit Moves:	****			****			****			****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

****

Intersection #62 Santiago St and Santa Ana Blvd

****

Cycle (sec):	100	Critical Vol./Cap.(X):	1.282	
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx	
Optimal Cycle:	180	Level Of Service:	F	

****

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1 0	1	1 0	1 0	1	0 1	0 1	0	1 0	2 0	1
Volume Module:												
Base Vol:	135	833	236	378	639	103	164	673	87	255	546	347
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	135	833	236	378	639	103	164	673	87	255	546	347
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	135	833	236	378	639	103	164	673	87	255	546	347
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	135	833	236	378	639	103	164	673	87	255	546	347
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	135	833	236	378	639	103	164	673	87	255	546	347
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.00	1.00	1.00	1.06	1.00
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	0.35	1.46	0.19	1.00	2.00	1.00
Final Sat.:	1600	1700	1600	1600	1700	1600	568	2331	301	1600	3400	1600
Capacity Analysis Module:												
Vol/Sat:	0.08	0.49	0.15	0.24	0.38	0.06	0.29	0.29	0.29	0.16	0.16	0.22
Crit Moves:		****		****					****			****

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #63 Standard Ave and 4th St

Cycle (sec):	100	Critical Vol./Cap.(X):	1.062
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	180	Level Of Service:	F

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1 0	1	1 0	1 0	1	1 0	1 1	0	1 0	1 1	0
Volume Module:												
Base Vol:	191	473	248	431	604	332	298	624	219	250	550	340
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	191	473	248	431	604	332	298	624	219	250	550	340
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	191	473	248	431	604	332	298	624	219	250	550	340
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	191	473	248	431	604	332	298	624	219	250	550	340
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	191	473	248	431	604	332	298	624	219	250	550	340
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	191	473	248	431	604	332	298	624	219	250	550	340
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.04	1.00	1.00	1.05	1.00
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.48	0.52	1.00	1.24	0.76
Final Sat.:	1600	1700	1600	1600	1700	1600	1600	2469	831	1600	2078	1222
Capacity Analysis Module:												
Vol/Sat:	0.12	0.28	0.16	0.27	0.36	0.21	0.19	0.25	0.26	0.16	0.26	0.28
Crit Moves:		****			****			****				****

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #63 Standard Ave and 4th St

Cycle (sec):	100	Critical Vol./Cap.(X):	1.029
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	180	Level Of Service:	F

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1 0	1	1 0	1 0	1	1 0	1 1	0	1 0	1 1	0
Volume Module:												
Base Vol:	251	543	214	254	428	297	302	477	201	233	648	351
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	251	543	214	254	428	297	302	477	201	233	648	351
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	251	543	214	254	428	297	302	477	201	233	648	351
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	251	543	214	254	428	297	302	477	201	233	648	351
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	251	543	214	254	428	297	302	477	201	233	648	351
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	251	543	214	254	428	297	302	477	201	233	648	351
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.04	1.00	1.00	1.05	1.00
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.41	0.59	1.00	1.30	0.70
Final Sat.:	1600	1700	1600	1600	1700	1600	1600	2351	949	1600	2176	1124
Capacity Analysis Module:												
Vol/Sat:	0.16	0.32	0.13	0.16	0.25	0.19	0.19	0.20	0.21	0.15	0.30	0.31
Crit Moves:		****		****			****					****

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #81 Grand Ave and McFadden Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.861
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	69	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2	1 0	1 0	2	1 0	1 0	1	1 0	1 0	1	1 0
Volume Module:												
Base Vol:	262	1104	165	294	1974	192	109	352	107	95	340	86
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	262	1104	165	294	1974	192	109	352	107	95	340	86
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	262	1104	165	294	1974	192	109	352	107	95	340	86
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	262	1104	165	294	1974	192	109	352	107	95	340	86
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	262	1104	165	294	1974	192	109	352	107	95	340	86
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.05	1.00	1.00	1.04	1.00	1.00	1.04	1.00
Lanes:	1.00	2.61	0.39	1.00	2.73	0.27	1.00	1.53	0.47	1.00	1.60	0.40
Final Sat.:	1600	4376	624	1600	4575	425	1600	2554	746	1600	2654	646
Capacity Analysis Module:												
Vol/Sat:	0.16	0.25	0.26	0.18	0.43	0.45	0.07	0.14	0.14	0.06	0.13	0.13
Crit Moves:	****					****	****				****	

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #81 Grand Ave and McFadden Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.813
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	55	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2	1 0	1 0	2	1 0	1 0	1	1 0	1 0	1	1 0
Volume Module:												
Base Vol:	232	1320	227	176	800	215	64	238	42	96	762	168
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	232	1320	227	176	800	215	64	238	42	96	762	168
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	232	1320	227	176	800	215	64	238	42	96	762	168
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	232	1320	227	176	800	215	64	238	42	96	762	168
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	232	1320	227	176	800	215	64	238	42	96	762	168
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.05	1.00	1.00	1.04	1.00	1.00	1.04	1.00
Lanes:	1.00	2.56	0.44	1.00	2.36	0.64	1.00	1.70	0.30	1.00	1.64	0.36
Final Sat.:	1600	4296	704	1600	3983	1017	1600	2820	480	1600	2722	578
Capacity Analysis Module:												
Vol/Sat:	0.15	0.31	0.32	0.11	0.20	0.21	0.04	0.08	0.09	0.06	0.28	0.29
Crit Moves:			****	****			****					****

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #91 Tustin Ave and Fairhaven Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	1.056
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	180	Level Of Service:	F

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2	1 0	2 0	2	1 0	1 0	1	1 0	1 0	1	1 0
Volume Module:												
Base Vol:	125	720	126	249	2148	42	78	297	511	306	338	442
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	125	720	126	249	2148	42	78	297	511	306	338	442
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	125	720	126	249	2148	42	78	297	511	306	338	442
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	125	720	126	249	2148	42	78	297	511	306	338	442
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	125	720	126	249	2148	42	78	297	511	306	338	442
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	125	720	126	249	2148	42	78	297	511	306	338	442
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.04	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	2.00	2.55	0.45	2.00	2.94	0.06	1.00	1.00	1.00	1.00	1.00	1.00
Final Sat.:	3200	4285	715	3200	4908	92	1600	1700	1600	1600	1700	1600
Capacity Analysis Module:												
Vol/Sat:	0.04	0.17	0.18	0.08	0.44	0.46	0.05	0.17	0.32	0.19	0.20	0.28
Crit Moves:	****					****			****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #91 Tustin Ave and Fairhaven Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.641
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	32	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2	1 0	2 0	2	1 0	1 0	1	1 0	1 0	1	1 0
Volume Module:												
Base Vol:	258	1377	122	356	940	108	82	185	151	86	191	180
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	258	1377	122	356	940	108	82	185	151	86	191	180
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	258	1377	122	356	940	108	82	185	151	86	191	180
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	258	1377	122	356	940	108	82	185	151	86	191	180
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	258	1377	122	356	940	108	82	185	151	86	191	180
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	258	1377	122	356	940	108	82	185	151	86	191	180
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.05	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	2.00	2.76	0.24	2.00	2.69	0.31	1.00	1.10	0.90	1.00	1.03	0.97
Final Sat.:	3200	4609	391	3200	4505	495	1600	1862	1438	1600	1747	1553
Capacity Analysis Module:												
Vol/Sat:	0.08	0.30	0.31	0.11	0.21	0.22	0.05	0.10	0.10	0.05	0.11	0.12
Crit Moves:			****	****			****					****

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #92 Tustin Ave and Santa Clara Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.938
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	116	Level Of Service:	E

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2	1 0	2 0	2	1 0	1 0	1	1 0	1 0	1	1 0
Volume Module:												
Base Vol:	102	556	104	135	2756	87	116	293	214	118	244	122
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	102	556	104	135	2756	87	116	293	214	118	244	122
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	102	556	104	135	2756	87	116	293	214	118	244	122
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	102	556	104	135	2756	87	116	293	214	118	244	122
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	102	556	104	135	2756	87	116	293	214	118	244	122
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	102	556	104	135	2756	87	116	293	214	118	244	122
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.04	1.00	1.00	1.05	1.00	1.00	1.05	1.00
Lanes:	1.00	2.53	0.47	2.00	2.91	0.09	1.00	1.16	0.84	1.00	1.33	0.67
Final Sat.:	1600	4244	756	3200	4853	147	1600	1949	1351	1600	2233	1067
Capacity Analysis Module:												
Vol/Sat:	0.06	0.13	0.14	0.04	0.57	0.59	0.07	0.15	0.16	0.07	0.11	0.11
Crit Moves:	****					****			****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #92 Tustin Ave and Santa Clara Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.681
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	35	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2	1 0	2 0	2	1 0	1 0	1	1 0	1 0	1	1 0
Volume Module:												
Base Vol:	176	852	131	199	1574	109	63	198	116	115	144	136
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	176	852	131	199	1574	109	63	198	116	115	144	136
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	176	852	131	199	1574	109	63	198	116	115	144	136
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	176	852	131	199	1574	109	63	198	116	115	144	136
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	176	852	131	199	1574	109	63	198	116	115	144	136
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	176	852	131	199	1574	109	63	198	116	115	144	136
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.04	1.00	1.00	1.05	1.00	1.00	1.06	1.00
Lanes:	1.00	2.60	0.40	2.00	2.81	0.19	1.00	1.26	0.74	1.00	1.03	0.97
Final Sat.:	1600	4360	640	3200	4689	311	1600	2118	1182	1600	1746	1554
Capacity Analysis Module:												
Vol/Sat:	0.11	0.20	0.20	0.06	0.34	0.35	0.04	0.09	0.10	0.07	0.08	0.09
Crit Moves:	****					****			****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #96 SR-55 NB Ramps / Del Amo Ave and Newport Avenue

Cycle (sec):	100	Critical Vol./Cap.(X):	0.460
Loss Time (sec):	5	Average Delay (sec/veh):	24.4
Optimal Cycle:	23	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Ovl			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 1	0	1 0	3 0	2	2 0	1 1	0	1 0	1 1	0
Volume Module:												
Base Vol:	413	109	69	20	497	728	269	163	155	8	223	4
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	413	109	69	20	497	728	269	163	155	8	223	4
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	413	109	69	20	497	728	269	163	155	8	223	4
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	413	109	69	20	497	728	269	163	155	8	223	4
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	413	109	69	20	497	728	269	163	155	8	223	4
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.86	0.86	0.95	0.91	0.75	0.92	0.88	0.88	0.95	0.95	0.95
Lanes:	2.00	2.00	1.00	1.00	3.00	2.00	2.00	1.03	0.97	1.00	1.96	0.04
Final Sat.:	3502	3257	1629	1805	5187	2842	3502	1715	1631	1805	3536	63
Capacity Analysis Module:												
Vol/Sat:	0.12	0.03	0.04	0.01	0.10	0.26	0.08	0.10	0.10	0.00	0.06	0.06
Crit Moves:	****					****	****				****	
Green/Cycle:	0.26	0.51	0.51	0.13	0.39	0.56	0.17	0.29	0.29	0.01	0.14	0.14
Volume/Cap:	0.46	0.07	0.08	0.08	0.25	0.46	0.46	0.33	0.33	0.33	0.46	0.46
Delay/Veh:	31.7	12.3	12.4	38.1	20.7	13.4	38.2	28.0	28.0	56.5	40.4	40.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	31.7	12.3	12.4	38.1	20.7	13.4	38.2	28.0	28.0	56.5	40.4	40.4
LOS by Move:	C	B	B	D	C	B	D	C	C	E	D	D
HCM2k85thQ:	9	1	2	1	6	12	7	6	6	1	6	6

Note: Queue reported is the number of cars per lane.

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Santa Ana Circulation Element

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #96 SR-55 NB Ramps / Del Amo Ave and Newport Avenue

Cycle (sec):	100	Critical Vol./Cap.(X):	0.700
Loss Time (sec):	5	Average Delay (sec/veh):	28.5
Optimal Cycle:	39	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Ovl			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 1	0	1 0	3 0	2	2 0	1 1	0	1 0	1 1	0
Volume Module:												
Base Vol:	879	262	51	19	231	889	165	57	33	23	348	16
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	879	262	51	19	231	889	165	57	33	23	348	16
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	879	262	51	19	231	889	165	57	33	23	348	16
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	879	262	51	19	231	889	165	57	33	23	348	16
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	879	262	51	19	231	889	165	57	33	23	348	16
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.89	0.89	0.95	0.91	0.75	0.92	0.90	0.90	0.95	0.94	0.94
Lanes:	2.00	2.51	0.49	1.00	3.00	2.00	2.00	1.27	0.73	1.00	1.91	0.09
Final Sat.:	3502	4238	825	1805	5187	2842	3502	2161	1251	1805	3427	158
Capacity Analysis Module:												
Vol/Sat:	0.25	0.06	0.06	0.01	0.04	0.31	0.05	0.03	0.03	0.01	0.10	0.10
Crit Moves:	****					****	****				****	
Green/Cycle:	0.36	0.63	0.63	0.11	0.38	0.45	0.07	0.14	0.14	0.07	0.14	0.14
Volume/Cap:	0.70	0.10	0.10	0.10	0.12	0.70	0.70	0.18	0.18	0.18	0.70	0.70
Delay/Veh:	29.3	7.3	7.3	40.5	20.2	24.1	54.7	37.9	37.9	44.6	44.9	44.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	29.3	7.3	7.3	40.5	20.2	24.1	54.7	37.9	37.9	44.6	44.9	44.9
LOS by Move:	C	A	A	D	C	C	D	D	D	D	D	D
HCM2k85thQ:	19	2	2	1	3	20	6	2	2	1	11	11

Note: Queue reported is the number of cars per lane.

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #98 Red Hill Ave and Warner Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.559
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	26	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	3 1	0	2 0	2 1	0	2 0	2 1	0	2 0	3 1	0
Volume Module:												
Base Vol:	118	716	97	20	949	191	239	407	300	152	543	96
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	118	716	97	20	949	191	239	407	300	152	543	96
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	118	716	97	20	949	191	239	407	300	152	543	96
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	118	716	97	20	949	191	239	407	300	152	543	96
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	118	716	97	20	949	191	239	407	300	152	543	96
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	118	716	97	20	949	191	239	407	300	152	543	96
OvlAdjVol:												90
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.05	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	2.00	3.52	0.48	2.00	2.50	0.50	2.00	2.00	1.00	2.00	3.40	0.60
Final Sat.:	3200	5936	764	3200	4196	804	3200	3400	1600	3200	5738	962
Capacity Analysis Module:												
Vol/Sat:	0.04	0.12	0.13	0.01	0.23	0.24	0.07	0.12	0.19	0.05	0.09	0.10
OvlAdjV/S:												0.09
Crit Moves:	****					****			****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #98 Red Hill Ave and Warner Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.804
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	53	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	3 1	0	2 0	2 1	0	2 0	2 1	0	2 0	3 1	0
Volume Module:												
Base Vol:	343	1175	135	89	341	432	324	880	137	78	1643	216
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	343	1175	135	89	341	432	324	880	137	78	1643	216
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	343	1175	135	89	341	432	324	880	137	78	1643	216
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	343	1175	135	89	341	432	324	880	137	78	1643	216
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	343	1175	135	89	341	432	324	880	137	78	1643	216
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	343	1175	135	89	341	432	324	880	137	78	1643	216
OvlAdjVol:												195
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.06	1.00	1.00	1.05	1.00	1.00	1.05	1.00
Lanes:	2.00	3.59	0.41	2.00	2.00	1.00	2.00	2.60	0.40	2.00	3.54	0.46
Final Sat.:	3200	6040	660	3200	3400	1600	3200	4353	647	3200	5956	744
Capacity Analysis Module:												
Vol/Sat:	0.11	0.19	0.20	0.03	0.10	0.27	0.10	0.20	0.21	0.02	0.28	0.29
OvlAdjV/S:												0.26
Crit Moves:	****					****	****				****	

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #100 Red Hill Ave and Alton Pkwy

Cycle (sec):	100	Critical Vol./Cap.(X):	0.684
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	36	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Ignore			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	4 0	1	1 0	3 0	1	2 0	2 1	1	2 0	1 1	0
Volume Module:												
Base Vol:	235	693	434	233	1059	170	185	574	574	335	284	159
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	235	693	434	233	1059	170	185	574	574	335	284	159
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	235	693	434	233	1059	170	185	574	574	335	284	159
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Volume:	235	693	434	233	1059	170	185	574	0	335	284	159
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	235	693	434	233	1059	170	185	574	0	335	284	159
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
FinalVolume:	235	693	434	233	1059	170	185	574	0	335	284	159
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.05	1.00
Lanes:	1.00	4.00	1.00	1.00	3.00	1.00	2.00	3.00	1.00	2.00	1.28	0.72
Final Sat.:	1600	6800	1600	1600	5100	1600	3200	5100	1600	3200	2151	1149
Capacity Analysis Module:												
Vol/Sat:	0.15	0.10	0.27	0.15	0.21	0.11	0.06	0.11	0.00	0.10	0.13	0.14
Crit Moves:			****	****				****		****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #100 Red Hill Ave and Alton Pkwy

Cycle (sec):	100	Critical Vol./Cap.(X):	1.278
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	180	Level Of Service:	F

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Ignore			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	4 0	1	1 0	3 0	1	2 0	2 1	1	2 0	1 1	0
Volume Module:												
Base Vol:	27	1513	219	148	628	5	453	1111	569	2003	342	1235
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	27	1513	219	148	628	5	453	1111	569	2003	342	1235
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	27	1513	219	148	628	5	453	1111	569	2003	342	1235
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Volume:	27	1513	219	148	628	5	453	1111	0	2003	342	1235
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	27	1513	219	148	628	5	453	1111	0	2003	342	1235
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
FinalVolume:	27	1513	219	148	628	5	453	1111	0	2003	342	1235
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	1.00	4.00	1.00	1.00	3.00	1.00	2.00	3.00	1.00	2.00	1.00	1.00
Final Sat.:	1600	6800	1600	1600	5100	1600	3200	5100	1600	3200	1700	1600
Capacity Analysis Module:												
Vol/Sat:	0.02	0.22	0.14	0.09	0.12	0.00	0.14	0.22	0.00	0.63	0.20	0.77
Crit Moves:		****			****			****				****

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #105 Von Karman Ave and Barranca Pkwy

Cycle (sec):	100	Critical Vol./Cap.(X):	0.930
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	108	Level Of Service:	E

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Ovl			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	1	1 0	2 0	2 0	2	2 0	3 0	1	2 0	3 1	1
Volume Module:												
Base Vol:	375	497	298	98	960	420	247	928	310	917	1506	47
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	375	497	298	98	960	420	247	928	310	917	1506	47
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	375	497	298	98	960	420	247	928	310	917	1506	47
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	375	497	298	98	960	420	247	928	310	917	1506	47
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	375	497	298	98	960	420	247	928	310	917	1506	47
OvlAdjVol:						173						
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.05	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	2.00	1.25	0.75	2.00	2.00	2.00	2.00	3.00	1.00	2.00	4.00	1.00
Final Sat.:	3200	2101	1199	3200	3400	3200	3200	5100	1600	3200	6800	1600
Capacity Analysis Module:												
Vol/Sat:	0.12	0.24	0.25	0.03	0.28	0.13	0.08	0.18	0.19	0.29	0.22	0.03
OvlAdjV/S:						0.05						
Crit Moves:	****			****					****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #105 Von Karman Ave and Barranca Pkwy

Cycle (sec):	100	Critical Vol./Cap.(X):	1.241
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	180	Level Of Service:	F

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Ovl			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	1	1 0	2 0	2 0	2	2 0	3 0	1	2 0	3	1 1
Volume Module:												
Base Vol:	362	2082	454	80	407	280	785	1435	201	254	805	274
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	362	2082	454	80	407	280	785	1435	201	254	805	274
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	362	2082	454	80	407	280	785	1435	201	254	805	274
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	362	2082	454	80	407	280	785	1435	201	254	805	274
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	362	2082	454	80	407	280	785	1435	201	254	805	274
OvlAdjVol:						0						
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.04	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.05	1.00
Lanes:	2.00	1.64	0.36	2.00	2.00	2.00	2.00	3.00	1.00	2.00	3.73	1.27
Final Sat.:	3200	2727	573	3200	3400	3200	3200	5100	1600	3200	6268	2032
Capacity Analysis Module:												
Vol/Sat:	0.11	0.76	0.79	0.03	0.12	0.09	0.25	0.28	0.13	0.08	0.13	0.13
OvlAdjV/S:						0.00						
Crit Moves:		****	****				****				****	

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #112 Tustin Ranch Road and Warner Avenue North

Cycle (sec):	100	Critical Vol./Cap.(X):	0.459
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	22	Level Of Service:	A

Street Name:	Tustin Ranch Road						Warner Avenue North					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Ovl			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	3 0	2	2 0	3 0	0	0 0	0 0	0	3 0	0 0	2
Volume Module:												
Base Vol:	0	396	383	412	1165	0	0	0	0	865	0	255
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	396	383	412	1165	0	0	0	0	865	0	255
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	396	383	412	1165	0	0	0	0	865	0	255
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	396	383	412	1165	0	0	0	0	865	0	255
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	396	383	412	1165	0	0	0	0	865	0	255
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	396	383	412	1165	0	0	0	0	865	0	255
OvlAdjVol:			0									0
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	0.00	3.00	2.00	2.00	3.00	0.00	0.00	0.00	0.00	3.00	0.00	2.00
Final Sat.:	0	5100	3200	3200	5100	0	0	0	0	4800	0	3200
Capacity Analysis Module:												
Vol/Sat:	0.00	0.08	0.12	0.13	0.23	0.00	0.00	0.00	0.00	0.18	0.00	0.08
OvlAdjV/S:			0.00									0.00
Crit Moves:	****			****						****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #112 Tustin Ranch Road and Warner Avenue North

Cycle (sec):	100	Critical Vol./Cap.(X):	0.746
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	43	Level Of Service:	C

Street Name:	Tustin Ranch Road						Warner Avenue North					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Ovl			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	3 0	2	2 0	3 0	0	0 0	0 0	0	3 0	0 0	2
Volume Module:												
Base Vol:	0	1995	1175	447	657	0	0	0	0	792	0	716
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1995	1175	447	657	0	0	0	0	792	0	716
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1995	1175	447	657	0	0	0	0	792	0	716
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1995	1175	447	657	0	0	0	0	792	0	716
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1995	1175	447	657	0	0	0	0	792	0	716
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1995	1175	447	657	0	0	0	0	792	0	716
OvlAdjVol:			647									269
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	0.00	3.00	2.00	2.00	3.00	0.00	0.00	0.00	0.00	3.00	0.00	2.00
Final Sat.:	0	5100	3200	3200	5100	0	0	0	0	4800	0	3200
Capacity Analysis Module:												
Vol/Sat:	0.00	0.39	0.37	0.14	0.13	0.00	0.00	0.00	0.00	0.17	0.00	0.22
OvlAdjV/S:			0.20									0.08
Crit Moves:	****			****						****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #113 Tustin Ranch Road and Walnut Avenue

Cycle (sec):	100	Critical Vol./Cap.(X):	1.175
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	180	Level Of Service:	F

Street Name:	Tustin Ranch Road						Walnut Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ovl			Ovl			Include			Ignore		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	3 0	1	2 0	3 0	1	2 0	2 0	1	2 0	2 0	1
Volume Module:												
Base Vol:	103	630	314	1123	3139	418	856	1118	675	176	260	219
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	103	630	314	1123	3139	418	856	1118	675	176	260	219
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	103	630	314	1123	3139	418	856	1118	675	176	260	219
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Volume:	103	630	314	1123	3139	418	856	1118	675	176	260	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	103	630	314	1123	3139	418	856	1118	675	176	260	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
FinalVolume:	103	630	314	1123	3139	418	856	1118	675	176	260	0
OvlAdjVol:			226			0						
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3200	5100	1600	3200	5100	1600	3200	3400	1600	3200	3400	1600
Capacity Analysis Module:												
Vol/Sat:	0.03	0.12	0.20	0.35	0.62	0.26	0.27	0.33	0.42	0.06	0.08	0.00
OvlAdjV/S:			0.14			0.00						
Crit Moves:	****			****					****	****		

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Santa Ana Circulation Element

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #113 Tustin Ranch Road and Walnut Avenue

Cycle (sec):	100	Critical Vol./Cap.(X):	1.590
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	180	Level Of Service:	F

Street Name:	Tustin Ranch Road						Walnut Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ovl			Ovl			Include			Ignore		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	3 0	1	2 0	3 0	1	2 0	2 0	1	2 0	2 0	1
Volume Module:												
Base Vol:	876	3814	401	550	1460	947	329	402	230	307	1760	1394
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	876	3814	401	550	1460	947	329	402	230	307	1760	1394
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	876	3814	401	550	1460	947	329	402	230	307	1760	1394
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Volume:	876	3814	401	550	1460	947	329	402	230	307	1760	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	876	3814	401	550	1460	947	329	402	230	307	1760	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
FinalVolume:	876	3814	401	550	1460	947	329	402	230	307	1760	0
OvlAdjVol:			247			783						
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00	1.00	1.06	1.00
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3200	5100	1600	3200	5100	1600	3200	3400	1600	3200	3400	1600
Capacity Analysis Module:												
Vol/Sat:	0.27	0.75	0.25	0.17	0.29	0.59	0.10	0.12	0.14	0.10	0.52	0.00
OvlAdjV/S:			0.15			0.49						
Crit Moves:	****			****			****				****	

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APPENDIX F
VMT CALCULATIONS

Base Year 2016										
SCENARIO	I-I	I-X	X-I	Total VMT	TOT_POP	Total Employees	VMT/Capita	TOT_POP	Total Employees - Reduced	VMT / Capita
Citywide	698,590	5,295,496	5,291,968	11,286,054	364,042	176,354	20.9	364,042	139,672	22.4
Countywide	47,482,030	24,809,328	24,994,227	97,285,585	3,179,626	1,710,147	19.9	3,179,626	593,421	25.8

Existing Year 2020										
SCENARIO	I-I	I-X	X-I	Total VMT	TOT_POP	Total Employees	VMT/Capita	TOT_POP	Total Employees - Reduced	VMT / Capita
Citywide	697,779	5,356,504	5,352,841	11,407,124	367,064	177,854	20.9	367,064	140,860	22.5
Countywide	48,242,429	25,463,887	25,637,825	99,344,141	3,228,591	1,747,428	20.0	3,228,591	606,358	25.9

Future Year 2045 Baseline										
SCENARIO	I-I	I-X	X-I	Total VMT	TOT_POP	Total Employees	VMT/Capita	TOT_POP	Total Employees - Reduced	VMT / Capita
Citywide	692,704	5,737,798	5,733,292	12,163,794	385,955	187,226	21.2	385,955	148,283	22.8
Countywide	52,994,916	29,554,879	29,660,308	112,210,103	3,534,620	1,980,433	20.3	3,534,620	687,210	26.6

Future Year 2045 WP - 80% Buildout										
SCENARIO	I-I	I-X	X-I	Total VMT	TOT_POP	Total Employees	VMT/Capita	TOT_POP	Total Employees - Reduced	VMT / Capita
Citywide	637,655	5,432,337	5,448,967	11,518,959	432,421	169,438	19.1	432,421	134,195	20.3
Countywide	52,931,787	29,642,498	29,748,229	112,322,514	3,581,086	1,962,645	20.3	3,581,086	681,038	26.4

*In order to mitigate double-counting, a reduction factor was applied to the employee population to account for the amount of employees who are also residents of the City. Per SCAG Local Profile Report (2019), 20.8% of commuters live in the City. Thus, a reduction of 20.8% was applied to the employee population. (https://www.scag.ca.gov/Documents/SantaAna.pdf)

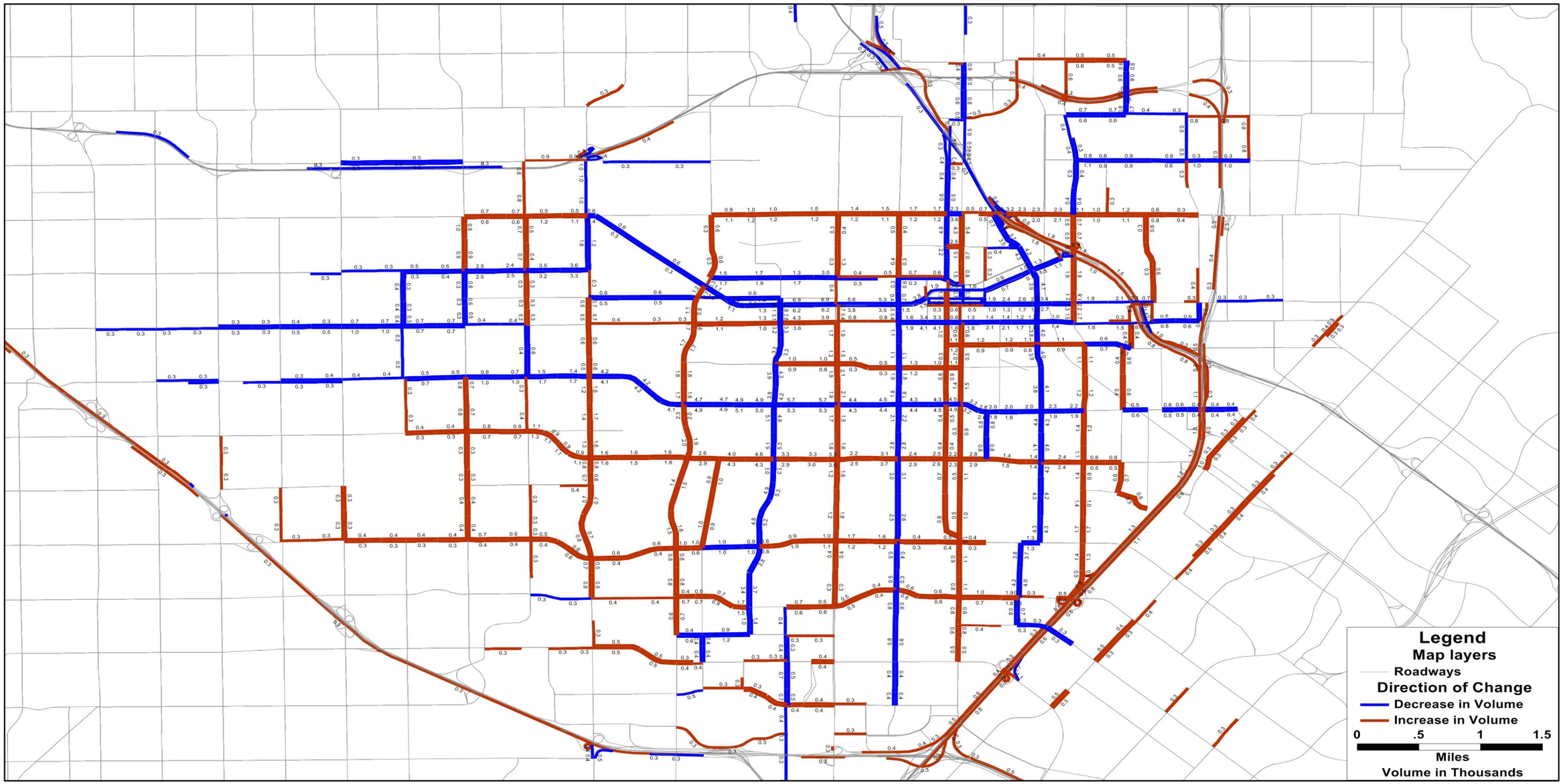
*In order to mitigate double-counting, a reduction factor was applied to the employee population to account for the amount of employees who are also residents of the County. Per SCAG Local Profile Report (2019), 65.3% of commuters live in the County. Thus, a reduction of 65.3% was applied to the employee population. (https://www.scag.ca.gov/Documents/OrangeCountyLP.pdf)

APPENDIX G

OCTAM VOLUME COMPARISON PLOTS

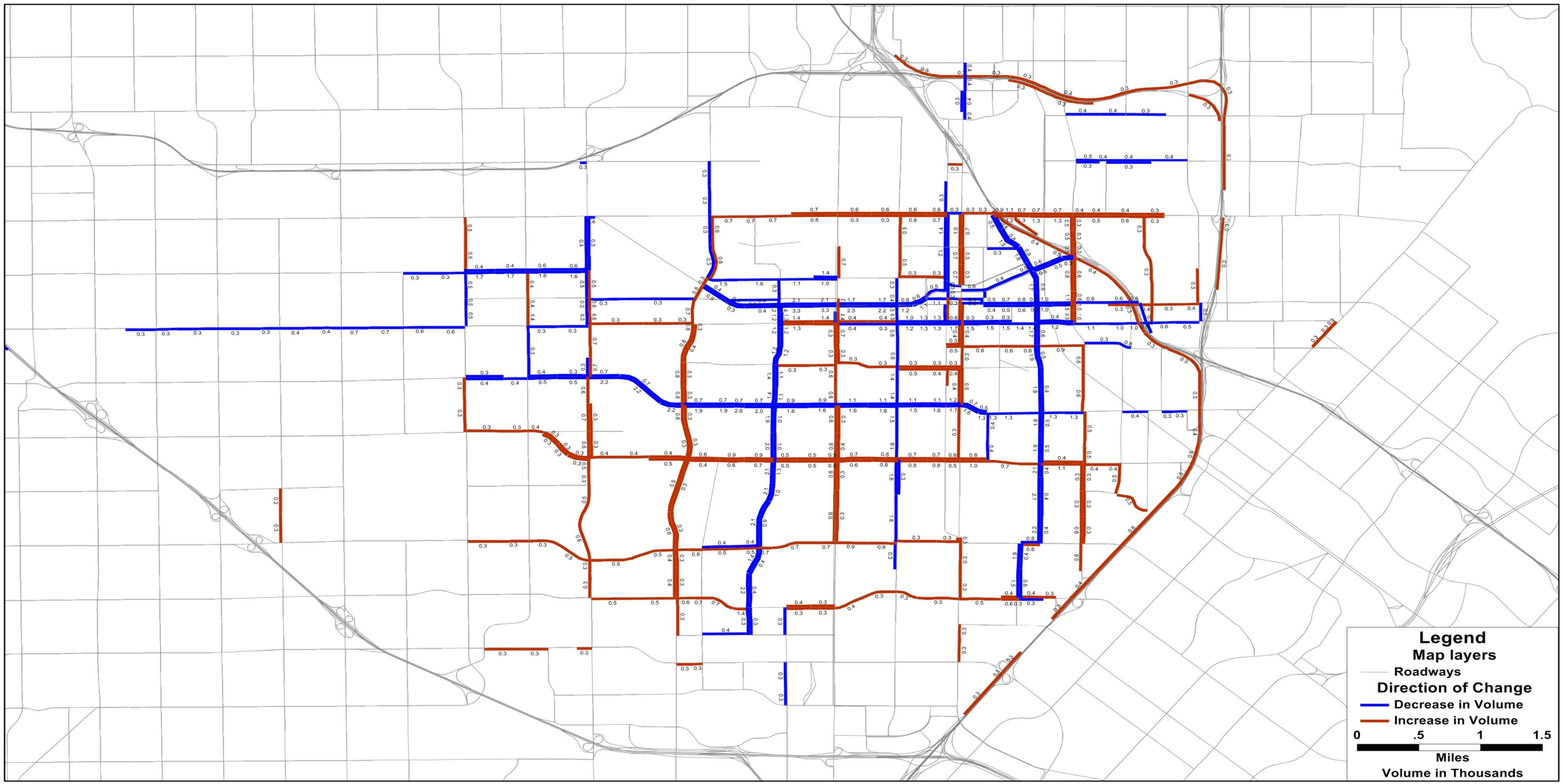
OCTAM 5.0 – Daily Traffic Volume Comparison Between 2045 80% Buildout and 2045 80% Buildout with Baseline Network

Volume in Thousands



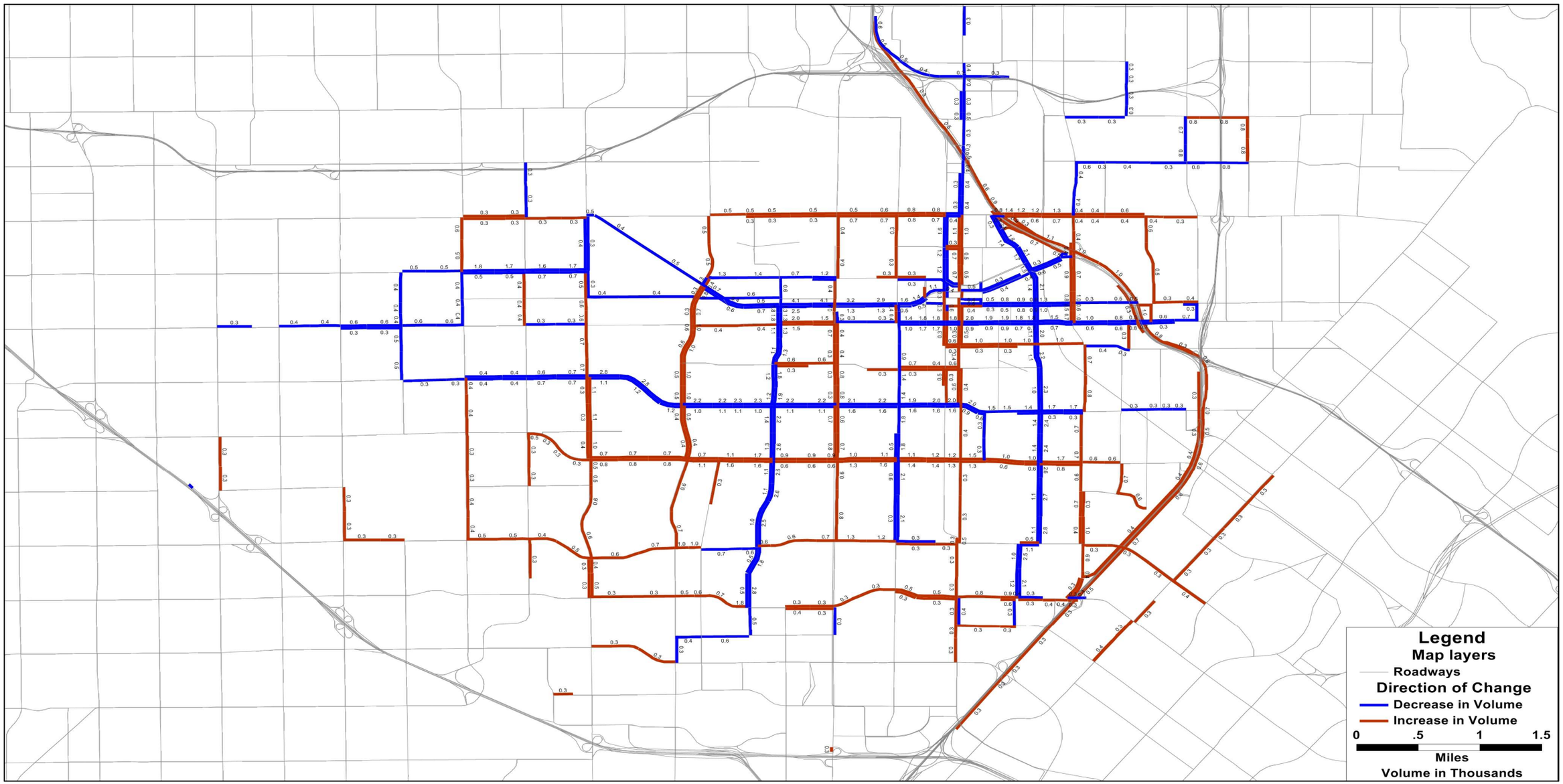
OCTAM 5.0 – AM Peak Traffic Volume Comparison Between 2045 80% Buildout and 2045 80% Buildout with Baseline Network

Volume in Thousands



OCTAM 5.0 – PM Peak Traffic Volume Comparison Between 2045 80% Buildout and 2045 80% Buildout with Baseline Network

Volume in Thousands



APPENDIX H
COUNTS

INTERSECTION TURNING MOVEMENT COUNTS

T218

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Tue, May 14, 19

LOCATION: Santa Ana
NORTH & SOUTH: Euclid
EAST & WEST: 1st

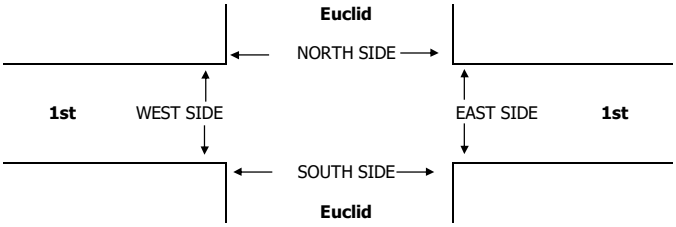
PROJECT #: SC2183
LOCATION #: 1
CONTROL: SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

Add U-Turns to Left Turns

		NORTHBOUND (Euclid)			SOUTHBOUND (Euclid)			EASTBOUND (1st)			WESTBOUND (1st)				U-TURNS				
	LANES:	NL 1	NT 3	NR 0	SL 1	ST 3	SR 0	EL 1	ET 3	ER 0	WL 1	WT 3	WR 0	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	7	180	40	42	475	14	33	136	22	23	71	18	1,061	1	0	0	2	3
	7:15 AM	10	203	43	53	504	12	36	138	32	37	109	29	1,206	0	0	0	2	2
	7:30 AM	28	245	48	48	503	19	44	147	38	60	125	42	1,347	0	0	0	1	1
	7:45 AM	34	271	44	47	473	15	62	205	41	47	173	49	1,461	0	0	1	0	1
	8:00 AM	33	264	41	60	432	23	52	210	43	44	168	49	1,419	1	0	0	0	1
	8:15 AM	27	253	44	49	417	45	57	240	29	31	114	46	1,352	1	0	0	2	3
	8:30 AM	21	235	43	58	400	35	41	168	22	37	123	32	1,215	0	0	1	3	4
	8:45 AM	35	179	31	48	377	39	56	117	23	35	141	34	1,115	1	0	0	0	1
	VOLUMES	195	1,830	334	405	3,581	202	381	1,361	250	314	1,024	299	10,176	4	0	2	10	16
	APPROACH %	8%	78%	14%	10%	86%	5%	19%	68%	13%	19%	63%	18%						
	APP/DEPART	2,359	/	2,508	4,188	/	4,139	1,992	/	2,110	1,637	/	1,419	0					
	BEGIN PEAK HR		7:30 AM																
	VOLUMES	122	1,033	177	204	1,825	102	215	802	151	182	580	186	5,579					
	APPROACH %	9%	78%	13%	10%	86%	5%	18%	69%	13%	19%	61%	20%						
	PEAK HR FACTOR		0.954			0.935			0.896			0.881		0.955					
	APP/DEPART	1,332	/	1,433	2,131	/	2,157	1,168	/	1,186	948	/	803	0					
PM	4:00 PM	46	364	41	36	244	43	55	161	20	44	162	58	1,274	0	1	1	1	3
	4:15 PM	45	404	28	44	213	42	44	121	19	39	174	52	1,225	0	0	0	1	1
	4:30 PM	23	318	73	50	283	48	57	161	20	46	170	43	1,292	0	0	1	1	2
	4:45 PM	36	367	29	39	258	47	53	154	20	48	196	61	1,308	0	0	2	2	4
	5:00 PM	34	363	33	43	289	47	46	162	28	59	225	55	1,384	0	0	3	0	3
	5:15 PM	43	371	28	49	261	46	58	169	28	56	226	55	1,390	0	0	2	0	2
	5:30 PM	41	370	23	38	245	56	53	162	25	45	223	58	1,339	1	0	0	0	1
	5:45 PM	39	358	33	53	247	48	52	178	23	54	226	46	1,357	0	0	0	0	0
	VOLUMES	307	2,915	288	352	2,040	377	418	1,268	183	391	1,602	428	10,569	1	1	9	5	16
	APPROACH %	9%	83%	8%	13%	74%	14%	22%	68%	10%	16%	66%	18%						
	APP/DEPART	3,510	/	3,753	2,769	/	2,610	1,869	/	1,912	2,421	/	2,294	0					
	BEGIN PEAK HR		5:00 PM																
	VOLUMES	157	1,462	117	183	1,042	197	209	671	104	214	900	214	5,470					
	APPROACH %	9%	84%	7%	13%	73%	14%	21%	68%	11%	16%	68%	16%						
	PEAK HR FACTOR		0.982			0.938			0.965			0.979		0.984					
	APP/DEPART	1,736	/	1,880	1,422	/	1,361	984	/	971	1,328	/	1,258	0					



		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	AM BEGIN PEAK HR	7:30 AM					0	0	0	0	0					
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	PM BEGIN PEAK HR	5:00 PM					0	0	0	0	0					

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 pacific@aimtd.com

DATE: Wed, Feb 10, 16

LOCATION: Santa Ana
NORTH & SOUTH: Euclid
EAST & WEST: McFadden

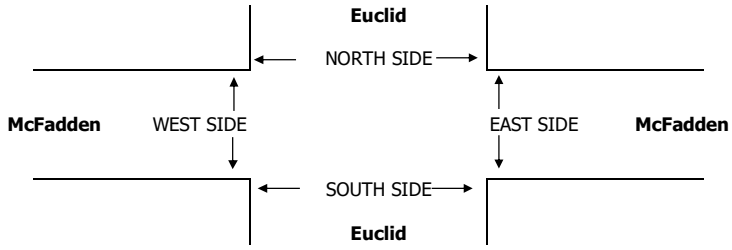
PROJECT #: SC0846
LOCATION #: 30
CONTROL: SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

☑ Add U-Turns to Left Turns

		NORTHBOUND Euclid			SOUTHBOUND Euclid			EASTBOUND McFadden			WESTBOUND McFadden				U-TURNS				
	LANES:	NL 1	NT 2	NR 0	SL 1	ST 3	SR 0	EL 1	ET 2	ER 0	WL 1	WT 2	WR 0	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	15	164	8	14	479	23	19	68	16	23	52	12	893	0	0	0	0	0
	7:15 AM	16	272	20	26	548	20	27	78	41	17	64	25	1,154	0	0	0	0	0
	7:30 AM	29	263	38	32	395	18	51	118	71	45	65	39	1,164	0	0	0	0	0
	7:45 AM	34	265	27	38	470	34	58	101	81	49	75	38	1,270	0	0	0	0	0
	8:00 AM	43	258	30	26	431	58	55	111	62	41	133	35	1,283	0	0	0	0	0
	8:15 AM	33	271	30	35	535	41	54	114	61	24	80	22	1,300	0	0	0	0	0
	8:30 AM	22	263	15	22	469	31	39	118	48	17	73	34	1,151	0	0	0	0	0
	8:45 AM	20	229	17	20	432	18	34	90	28	20	56	25	989	0	0	0	0	0
	VOLUMES	212	1,985	185	213	3,759	243	337	798	408	236	598	230	9,204	0	0	0	0	0
	APPROACH %	9%	83%	8%	5%	89%	6%	22%	52%	26%	22%	56%	22%						
	APP/DEPART	2,382	/	2,552	4,215	/	4,403	1,543	/	1,196	1,064	/	1,053	0					
	BEGIN PEAK HR		7:30 AM																
	VOLUMES	139	1,057	125	131	1,831	151	218	444	275	159	353	134	5,017					
	APPROACH %	11%	80%	9%	6%	87%	7%	23%	47%	29%	25%	55%	21%						
	PEAK HR FACTOR		0.989			0.865			0.976			0.773		0.965					
	APP/DEPART	1,321	/	1,409	2,113	/	2,265	937	/	700	646	/	643	0					
PM	4:00 PM	29	286	20	25	278	27	45	83	35	14	96	25	963	0	0	0	0	0
	4:15 PM	30	297	15	27	284	35	53	96	47	17	109	30	1,040	0	0	0	0	0
	4:30 PM	34	315	21	22	287	40	55	101	43	21	123	35	1,097	0	0	0	0	0
	4:45 PM	36	327	20	26	300	39	49	98	52	27	130	47	1,151	0	0	0	0	0
	5:00 PM	44	335	23	24	285	35	51	104	40	30	134	53	1,158	0	0	0	0	0
	5:15 PM	34	374	19	22	365	40	40	100	41	34	130	63	1,262	0	0	0	0	0
	5:30 PM	54	334	26	33	351	43	35	100	44	31	117	73	1,241	0	0	0	0	0
	5:45 PM	51	352	17	28	267	36	36	115	29	21	121	64	1,137	0	0	0	0	0
	VOLUMES	312	2,620	161	207	2,417	295	364	797	331	195	960	390	9,049	0	0	0	0	0
	APPROACH %	10%	85%	5%	7%	83%	10%	24%	53%	22%	13%	62%	25%						
	APP/DEPART	3,093	/	3,374	2,919	/	2,943	1,492	/	1,165	1,545	/	1,567	0					
	BEGIN PEAK HR		4:45 PM																
	VOLUMES	168	1,370	88	105	1,301	157	175	402	177	122	511	236	4,812					
	APPROACH %	10%	84%	5%	7%	83%	10%	23%	53%	23%	14%	59%	27%						
	PEAK HR FACTOR		0.952			0.915			0.947			0.957		0.953					
	APP/DEPART	1,626	/	1,781	1,563	/	1,600	754	/	595	869	/	836	0					



		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	8	4	2	8	22	7	1	2	5	15	1	3	0	3	7
	7:15 AM	8	13	6	27	54	6	12	5	27	50	2	1	1	0	4
	7:30 AM	21	52	21	55	149	20	50	19	52	141	1	2	2	3	8
	7:45 AM	7	12	11	4	34	6	8	8	3	25	1	4	3	1	9
	8:00 AM	9	20	4	11	44	3	15	4	7	29	6	5	0	4	15
	8:15 AM	6	4	5	9	24	6	3	4	9	22	0	1	1	0	2
	8:30 AM	4	6	4	2	16	3	5	4	2	14	1	1	0	0	2
	8:45 AM	1	2	2	0	5	1	1	2	0	4	0	1	0	0	1
	TOTAL	64	113	55	116	348	52	95	48	105	300	12	18	7	11	48
PM	4:00 PM	8	14	9	7	38	5	12	7	5	29	3	2	2	2	9
	4:15 PM	8	12	13	4	37	7	8	8	3	26	1	4	5	1	11
	4:30 PM	10	15	8	10	43	4	10	6	6	26	6	5	2	4	17
	4:45 PM	8	4	5	9	26	6	3	4	9	22	2	1	1	0	4
	5:00 PM	35	14	11	51	111	31	12	10	47	100	4	2	1	4	11
	5:15 PM	19	46	15	34	114	16	44	11	33	104	3	2	4	1	10
	5:30 PM	15	24	6	42	87	14	22	6	41	83	1	2	0	1	4
	5:45 PM	6	7	4	11	28	5	7	2	10	24	1	0	2	1	4
	TOTAL	109	136	71	168	484	88	118	54	154	414	21	18	17	14	70

INTERSECTION TURNING MOVEMENT COUNTS

T218

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Tue, May 14, 19

LOCATION: Santa Ana
NORTH & SOUTH: Euclid
EAST & WEST: Edinger

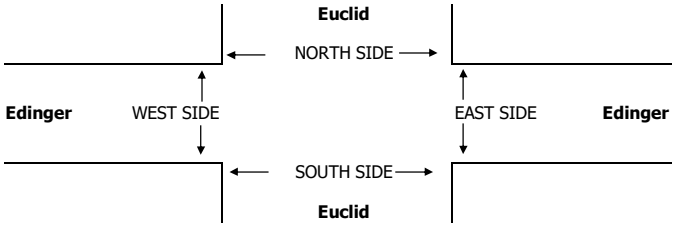
PROJECT #: SC2183
LOCATION #: 2
CONTROL: SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — N / W / E / S

Add U-Turns to Left Turns

		NORTHBOUND Euclid			SOUTHBOUND Euclid			EASTBOUND Edinger			WESTBOUND Edinger				U-TURNS				
	LANES:	NL 2	NT 2.5	NR 0.5	SL 2	ST 2.5	SR 0.5	EL 1	ET 2	ER 1	WL 1	WT 2	WR 1	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	15	137	5	17	426	24	33	131	88	25	101	18	1,020	0	0	0	1	1
	7:15 AM	23	134	8	27	485	31	50	141	86	18	119	24	1,146	0	0	3	1	4
	7:30 AM	30	214	8	35	494	39	42	152	124	27	165	32	1,362	3	0	2	0	5
	7:45 AM	47	199	18	27	478	57	50	188	138	29	155	29	1,415	3	0	2	1	6
	8:00 AM	30	221	16	34	424	30	37	204	109	27	149	30	1,311	3	1	4	0	8
	8:15 AM	25	202	29	29	427	41	41	201	84	16	133	18	1,246	0	0	1	1	2
	8:30 AM	27	161	13	26	456	45	50	144	87	27	117	21	1,174	1	1	2	0	4
	8:45 AM	33	152	19	26	397	33	31	140	86	20	125	26	1,088	2	0	5	0	7
	VOLUMES	230	1,420	116	221	3,587	300	334	1,301	802	189	1,064	198	9,762	12	2	19	4	37
	APPROACH %	13%	80%	7%	5%	87%	7%	14%	53%	33%	13%	73%	14%						
	APP/DEPART	1,766	/	1,935	4,108	/	4,586	2,437	/	1,640	1,451	/	1,601	0					
	BEGIN PEAK HR		7:30 AM																
	VOLUMES	132	836	71	125	1,823	167	170	745	455	99	602	109	5,334					
	APPROACH %	13%	80%	7%	6%	86%	8%	12%	54%	33%	12%	74%	13%						
	PEAK HR FACTOR		0.973			0.931			0.911			0.904		0.942					
	APP/DEPART	1,039	/	1,107	2,115	/	2,384	1,370	/	942	810	/	901	0					
PM	4:00 PM	86	347	11	24	179	36	39	162	39	23	186	22	1,154	2	3	1	1	7
	4:15 PM	104	390	27	25	179	41	37	150	36	18	214	21	1,242	1	0	2	0	3
	4:30 PM	107	350	19	28	178	47	40	150	46	17	208	32	1,222	0	1	5	1	7
	4:45 PM	102	415	34	32	191	46	46	139	41	20	203	35	1,304	1	1	2	0	4
	5:00 PM	140	374	27	36	195	48	37	130	55	21	217	36	1,316	3	0	8	0	11
	5:15 PM	136	401	29	27	216	63	43	172	45	19	191	29	1,371	6	1	4	1	12
	5:30 PM	142	366	20	25	193	44	33	174	43	30	220	34	1,324	3	0	1	0	4
	5:45 PM	112	313	25	32	191	43	40	171	38	17	207	32	1,221	0	2	8	0	10
	VOLUMES	929	2,956	192	229	1,522	368	315	1,248	343	165	1,646	241	10,154	16	8	31	3	58
	APPROACH %	23%	73%	5%	11%	72%	17%	17%	65%	18%	8%	80%	12%						
	APP/DEPART	4,077	/	3,489	2,119	/	2,043	1,906	/	1,664	2,052	/	2,958	0					
	BEGIN PEAK HR		4:45 PM																
	VOLUMES	520	1,556	110	120	795	201	159	615	184	90	831	134	5,315					
	APPROACH %	24%	71%	5%	11%	71%	18%	17%	64%	19%	9%	79%	13%						
	PEAK HR FACTOR		0.966			0.912			0.921			0.929		0.969					
	APP/DEPART	2,186	/	1,836	1,116	/	1,081	958	/	844	1,055	/	1,554	0					



		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	AM BEGIN PEAK HR	7:30 AM					0	0	0	0	0					
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	PM BEGIN PEAK HR	4:45 PM					0	0	0	0	0					

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 pacific@aimtd.com

DATE: Wed, Feb 10, 16

LOCATION: Santa Ana
NORTH & SOUTH: Newhope
EAST & WEST: Hazard

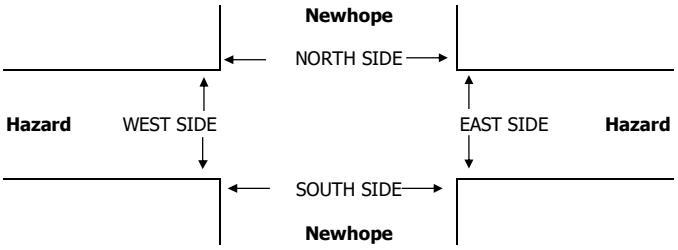
PROJECT #: SC0846
LOCATION #: 11
CONTROL: SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

☑ Add U-Turns to Left Turns

		NORTHBOUND (Newhope)			SOUTHBOUND (Newhope)			EASTBOUND (Hazard)			WESTBOUND (Hazard)				U-TURNS				
	LANES:	NL 1	NT 2	NR 0	SL 1	ST 2	SR 0	EL 1	ET 2	ER 0	WL 1	WT 2	WR 0	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	10	146	6	7	257	4	13	28	16	4	15	9	515	0	0	0	0	0
	7:15 AM	15	178	15	15	352	21	10	36	28	8	39	9	726	0	0	0	0	0
	7:30 AM	24	190	22	21	308	31	19	50	25	17	39	13	759	0	0	0	0	0
	7:45 AM	40	165	48	37	281	41	26	57	59	10	45	19	828	0	0	0	0	0
	8:00 AM	15	176	15	14	347	25	19	48	29	14	40	24	766	0	0	0	0	0
	8:15 AM	20	174	4	17	316	16	30	59	22	1	23	11	693	0	0	0	0	0
	8:30 AM	13	163	3	17	322	23	22	48	24	9	32	10	686	0	0	0	0	0
	8:45 AM	29	161	11	9	282	13	24	32	26	4	29	12	632	0	0	0	0	0
	VOLUMES	166	1,353	124	137	2,465	174	163	358	229	67	262	107	5,605	0	0	0	0	0
	APPROACH %	10%	82%	8%	5%	89%	6%	22%	48%	31%	15%	60%	25%						
	APP/DEPART	1,643	/	1,623	2,776	/	2,761	750	/	619	436	/	602	0					
	BEGIN PEAK HR		7:15 AM																
	VOLUMES	94	709	100	87	1,288	118	74	191	141	49	163	65	3,079					
	APPROACH %	10%	79%	11%	6%	86%	8%	18%	47%	35%	18%	59%	23%						
	PEAK HR FACTOR		0.892			0.962			0.715			0.888		0.930					
	APP/DEPART	903	/	848	1,493	/	1,478	406	/	378	277	/	375	0					
PM	4:00 PM	20	292	8	11	223	24	24	30	18	3	42	38	733	0	0	0	0	0
	4:15 PM	18	304	12	16	194	17	27	35	17	10	30	37	717	0	0	0	0	0
	4:30 PM	21	340	12	10	199	27	29	49	14	6	41	13	761	0	0	0	0	0
	4:45 PM	27	299	18	13	193	19	24	51	23	8	59	12	746	0	0	0	0	0
	5:00 PM	22	315	9	15	267	35	19	48	29	10	52	7	828	0	0	0	0	0
	5:15 PM	31	298	7	9	252	31	29	49	29	5	54	19	813	0	0	0	0	0
	5:30 PM	28	294	15	14	251	26	29	56	37	12	37	13	812	0	0	0	0	0
	5:45 PM	30	324	17	9	227	27	26	52	30	3	51	16	812	0	0	0	0	0
	VOLUMES	197	2,466	98	97	1,806	206	207	370	197	57	366	155	6,222	0	0	0	0	0
	APPROACH %	7%	89%	4%	5%	86%	10%	27%	48%	25%	10%	63%	27%						
	APP/DEPART	2,761	/	2,828	2,109	/	2,060	774	/	565	578	/	769	0					
	BEGIN PEAK HR		5:00 PM																
	VOLUMES	111	1,231	48	47	997	119	103	205	125	30	194	55	3,265					
	APPROACH %	8%	89%	3%	4%	86%	10%	24%	47%	29%	11%	70%	20%						
	PEAK HR FACTOR		0.937			0.917			0.887			0.894		0.986					
	APP/DEPART	1,390	/	1,389	1,163	/	1,152	433	/	300	279	/	424	0					



		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	1	1	1	0	3	0	0	0	0	0	1	1	1	0	3
	7:15 AM	2	3	1	0	6	1	2	1	0	4	1	1	0	0	2
	7:30 AM	4	3	5	0	12	4	3	4	0	11	0	0	1	0	1
	7:45 AM	1	3	8	2	14	1	3	6	1	11	0	0	2	1	3
	8:00 AM	1	12	8	0	21	1	11	5	0	17	0	1	3	0	4
	8:15 AM	1	6	7	4	18	0	6	5	2	13	1	0	2	2	5
	8:30 AM	14	6	5	0	25	14	6	4	0	24	0	0	1	0	1
	8:45 AM	1	12	2	0	15	1	12	1	0	14	0	0	1	0	1
	TOTAL	25	46	37	6	114	22	43	26	3	94	3	3	11	3	20
PM	4:00 PM	1	0	3	2	6	0	0	3	2	5	1	0	0	0	1
	4:15 PM	1	2	1	3	7	0	0	0	0	0	1	2	1	3	7
	4:30 PM	4	0	2	4	10	4	0	1	3	8	0	0	1	1	2
	4:45 PM	3	0	0	5	8	3	0	0	3	6	0	0	0	2	2
	5:00 PM	0	2	4	1	7	0	1	4	0	5	0	1	0	1	2
	5:15 PM	2	3	5	2	12	1	2	2	0	5	1	1	3	2	7
	5:30 PM	1	4	2	1	8	0	2	1	0	3	1	2	1	1	5
	5:45 PM	2	2	2	2	8	2	1	1	0	4	0	1	1	2	4
	TOTAL	14	13	19	20	66	10	6	12	8	36	4	7	7	12	30

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 pacific@aimtd.com

DATE: Wed, Feb 10, 16

LOCATION: Santa Ana
NORTH & SOUTH: Newhope
EAST & WEST: McFadden

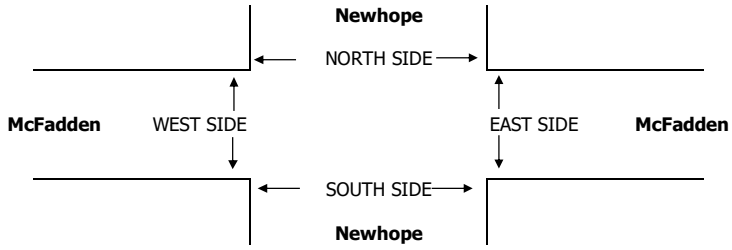
PROJECT #: SC0846
LOCATION #: 31
CONTROL: SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

☑ Add U-Turns to Left Turns

		NORTHBOUND (Newhope)			SOUTHBOUND (Newhope)			EASTBOUND (McFadden)			WESTBOUND (McFadden)				U-TURNS				
	LANES:	NL 1	NT 2	NR 0	SL 1	ST 2	SR 0	EL 1	ET 2	ER 0	WL 1	WT 2	WR 0	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	5	97	11	18	281	11	10	54	17	11	67	21	603	0	0	0	0	0
	7:15 AM	14	91	15	22	301	19	8	73	38	17	72	17	687	0	0	0	0	0
	7:30 AM	17	94	28	18	318	17	33	113	37	37	112	22	846	0	0	0	0	0
	7:45 AM	38	110	45	29	247	20	24	102	43	49	110	34	851	0	0	0	0	0
	8:00 AM	31	144	60	31	249	37	52	129	38	53	133	22	979	0	0	0	0	0
	8:15 AM	19	123	33	36	322	31	20	128	35	30	76	18	871	0	0	0	0	0
	8:30 AM	9	127	28	22	291	17	25	108	30	35	88	25	805	0	0	0	0	0
	8:45 AM	23	162	38	26	355	23	10	83	21	40	61	31	873	0	0	0	0	0
	VOLUMES	156	948	258	202	2,364	175	182	790	259	272	719	190	6,515	0	0	0	0	0
	APPROACH %	11%	70%	19%	7%	86%	6%	15%	64%	21%	23%	61%	16%						
	APP/DEPART	1,362	/	1,320	2,741	/	2,895	1,231	/	1,250	1,181	/	1,050	0					
	BEGIN PEAK HR		7:30 AM																
	VOLUMES	105	471	166	114	1,136	105	129	472	153	169	431	96	3,547					
	APPROACH %	14%	63%	22%	8%	84%	8%	17%	63%	20%	24%	62%	14%						
	PEAK HR FACTOR		0.789			0.871			0.861			0.837		0.906					
	APP/DEPART	742	/	696	1,355	/	1,458	754	/	752	696	/	641	0					
PM	4:00 PM	37	275	38	37	140	30	15	103	11	35	104	51	876	0	0	0	0	0
	4:15 PM	26	283	41	37	158	26	22	118	17	27	99	40	894	0	0	0	0	0
	4:30 PM	35	278	42	30	134	31	11	104	13	31	103	38	850	0	0	0	0	0
	4:45 PM	42	274	39	22	146	18	11	106	16	26	130	46	876	0	0	0	0	0
	5:00 PM	43	262	42	26	158	32	26	110	18	25	138	39	919	0	0	0	0	0
	5:15 PM	52	260	53	37	169	40	19	108	11	24	135	39	947	0	0	0	0	0
	5:30 PM	50	245	42	48	191	36	20	122	23	32	138	39	986	0	0	0	0	0
	5:45 PM	49	274	45	46	186	28	12	136	17	21	155	44	1,013	0	0	0	0	0
	VOLUMES	334	2,151	342	283	1,282	241	136	907	126	221	1,002	336	7,361	0	0	0	0	0
	APPROACH %	12%	76%	12%	16%	71%	13%	12%	78%	11%	14%	64%	22%						
	APP/DEPART	2,827	/	2,623	1,806	/	1,629	1,169	/	1,532	1,559	/	1,577	0					
	BEGIN PEAK HR		5:00 PM																
	VOLUMES	194	1,041	182	157	704	136	77	476	69	102	566	161	3,865					
	APPROACH %	14%	73%	13%	16%	71%	14%	12%	77%	11%	12%	68%	19%						
	PEAK HR FACTOR		0.963			0.906			0.942			0.942		0.954					
	APP/DEPART	1,417	/	1,279	997	/	875	622	/	815	829	/	896	0					



		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	1	5	4	0	10	1	4	3	0	8	0	1	1	0	2
	7:15 AM	4	4	7	0	15	1	2	6	0	9	3	2	1	0	6
	7:30 AM	4	24	19	1	48	3	21	18	0	42	1	3	1	1	6
	7:45 AM	13	17	20	32	82	13	16	19	31	79	0	1	1	1	3
	8:00 AM	36	57	47	40	180	35	55	43	38	171	1	2	4	2	9
	8:15 AM	11	30	34	17	92	9	30	32	15	86	2	0	2	2	6
	8:30 AM	5	7	19	4	35	5	6	17	3	31	0	1	2	1	4
	8:45 AM	3	3	14	0	20	3	2	13	0	18	0	1	1	0	2
	TOTAL	77	147	164	94	482	70	136	151	87	444	7	11	13	7	38
PM	4:00 PM	2	2	5	4	13	2	1	5	4	12	0	1	0	0	1
	4:15 PM	4	6	10	6	26	3	2	5	4	14	1	4	5	2	12
	4:30 PM	2	6	1	2	11	2	3	0	2	7	0	3	1	0	4
	4:45 PM	10	17	4	8	39	10	15	4	8	37	0	2	0	0	2
	5:00 PM	15	9	4	4	32	9	6	3	3	21	6	3	1	1	11
	5:15 PM	4	7	8	4	23	4	3	7	4	18	0	4	1	0	5
	5:30 PM	7	4	5	5	21	6	2	3	5	16	1	2	2	0	5
	5:45 PM	5	5	6	1	17	3	3	3	0	9	2	2	3	1	8
	TOTAL	49	56	43	34	182	39	35	30	30	134	10	21	13	4	48

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Harbor Blvd and Banner Dr , Garden Grove

Date: 2014-10-16
Day: Thursday

Project #: Historical
City: Garden Grove

AM Peak Hour	715 AM
NOON Peak Hour	
PM Peak Hour	500 PM

Peak Hour Summary

Southbound Approach (Harbor Blvd)

Lanes	0	3	0		
AM	17	1301	0	1407	AM
NOON	0	0	0	0	NOON
PM	47	1459	0	2166	PM

Eastbound Approach (Banner Dr)

Lanes	AM	NOON	PM
	126	0	207
0	71	0	89
1	0	0	0
0	116	0	74
Lanes	AM	NOON	PM

Westbound Approach

AM	NOON	PM	Lanes
112	0	163	1
42	0	76	.5
803	0	569	1.5
0	0	0	
AM	NOON	PM	

CONTROL: Signalized

Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON		
PM	4:00 PM	6:00 PM

Northbound Approach

AM	2220	67	1224	0	AM
NOON	0	0	0	0	NOON
PM	2102	84	1914	0	PM
		1	3	1	Lanes

Total Ins & Outs

	AM	NOON	PM
North Leg	1318	0	1506
	1407	0	2166
East Leg	957	0	808
	0	0	0
West Leg	126	0	207
	187	0	163
South Leg	2220	0	2102
	1291	0	1998

Total Volume Per Leg

	AM	NOON	PM
North Leg	2725	0	3672
East Leg	957	0	808
West Leg	313	0	370
South Leg	3511	0	4100

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

SR-22 EB On-Ramp and Trask Ave , City of Santa Ana

Date: 2013-02-05

Day: Tuesday

Project #: Historical

AM Peak Hour	715 AM
NOON Peak Hour	
PM Peak Hour	400 PM

Peak Hour Summary

Southbound Approach

SR-22 EB On-Ramp

	Lanes 0	0	0		
AM	0	0	0	735	AM
NOON	0	0	0	0	NOON
PM	0	0	0	834	PM

Trask Ave

Eastbound Approach

Lanes	AM	NOON	PM
	688	0	565
2	607	0	781
1	760	0	585
0	0	0	0
Lanes	AM	NOON	PM

CONTROL

Signalized

Westbound Approach

AM	NOON	PM	Lanes
128	0	53	0
688	0	565	2
0	0	0	0
760	0	585	
AM	NOON	PM	

Count Periods	Start	End
AM	6:00 AM	9:00 AM
NOON		
PM	4:00 PM	7:00 PM

Northbound Approach

AM	0	0	0	0	AM
NOON	0	0	0	0	NOON
PM	0	0	0	0	PM
		0	0	0	Lanes

Total Ins & Outs

	North Leg		
	0	735	AM
	0	0	NOON
	0	834	PM

West Leg				East Leg		
AM	NOON	PM		AM	NOON	PM
688	0	565		816	0	618
1367	0	1366		760	0	585

	South Leg	
AM	0	0
NOON	0	0
PM	0	0

Total Volume Per Leg

	North Leg	
	735	AM
	0	NOON
	834	PM

West Leg			East Leg		
AM	NOON	PM	AM	NOON	PM
2055	0	1931	1576	0	1203

	South Leg
AM	0
NOON	0
PM	0

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Thu, May 16, 19

LOCATION: Santa Ana
NORTH & SOUTH: Harbor
EAST & WEST: Westminster

PROJECT #: SC2183
LOCATION #: 3
CONTROL: SIGNAL

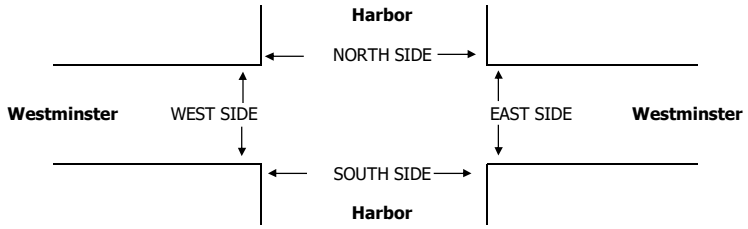
NOTES:

AM / PM / MD / OTHER / OTHER

N ▲ S ▼ W ◄ E ►

☑ Add U-Turns to Left Turns

		NORTHBOUND (Harbor)			SOUTHBOUND (Harbor)			EASTBOUND (Westminster)			WESTBOUND (Westminster)				U-TURNS				
	LANES:	NL 1	NT 3	NR 1	SL 1	ST 3	SR 1	EL 1	ET 3	ER 0	WL 1	WT 3	WR 1	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	40	258	41	40	419	20	24	160	3	51	91	25	1,172	7	3	3	4	17
	7:15 AM	28	298	43	43	428	13	23	214	6	50	115	32	1,293	5	3	4	6	18
	7:30 AM	41	336	67	56	439	24	36	237	10	61	156	33	1,496	6	4	8	7	25
	7:45 AM	49	299	74	56	391	22	43	236	2	52	156	38	1,418	9	8	10	5	32
	8:00 AM	48	288	55	55	390	28	43	234	9	48	138	45	1,381	9	4	9	5	27
	8:15 AM	38	238	52	42	426	20	52	210	11	48	118	38	1,293	10	6	13	6	35
	8:30 AM	52	282	41	56	383	36	55	182	8	40	113	35	1,283	13	8	14	5	40
	8:45 AM	44	234	24	35	340	34	37	145	8	48	103	48	1,100	9	2	6	4	21
	VOLUMES	340	2,233	397	383	3,216	197	313	1,618	57	398	990	294	10,436	68	38	67	42	215
	APPROACH %	11%	75%	13%	10%	85%	5%	16%	81%	3%	24%	59%	17%						
	APP/DEPART	2,970	/	2,811	3,796	/	3,697	1,988	/	2,402	1,682	/	1,526	0					
	BEGIN PEAK HR		7:30 AM																
	VOLUMES	176	1,161	248	209	1,646	94	174	917	32	209	568	154	5,588					
	APPROACH %	11%	73%	16%	11%	84%	5%	15%	82%	3%	22%	61%	17%						
	PEAK HR FACTOR		0.892			0.939			0.982			0.931		0.934					
	APP/DEPART	1,585	/	1,471	1,949	/	1,898	1,123	/	1,375	931	/	844	0					
PM	4:00 PM	59	331	66	47	345	48	60	170	4	63	171	50	1,414	9	3	13	8	33
	4:15 PM	60	331	46	44	321	37	45	136	8	54	180	48	1,310	6	2	9	6	23
	4:30 PM	63	336	70	58	299	46	45	127	11	62	181	46	1,344	6	2	7	12	27
	4:45 PM	50	363	72	48	320	41	47	153	14	59	204	49	1,420	8	7	9	5	29
	5:00 PM	69	341	65	48	370	40	49	142	3	57	194	52	1,430	10	4	10	4	28
	5:15 PM	69	320	84	55	369	39	49	177	10	59	216	42	1,489	9	7	13	7	36
	5:30 PM	85	336	100	53	356	43	40	188	4	52	175	36	1,468	12	6	12	3	33
	5:45 PM	70	337	77	57	340	31	39	170	7	50	173	38	1,389	10	1	11	4	26
	VOLUMES	525	2,695	580	410	2,720	325	374	1,263	61	456	1,494	361	11,264	70	32	84	49	235
	APPROACH %	14%	71%	15%	12%	79%	9%	22%	74%	4%	20%	65%	16%						
	APP/DEPART	3,800	/	3,378	3,455	/	3,258	1,698	/	2,270	2,311	/	2,358	0					
	BEGIN PEAK HR		4:45 PM																
	VOLUMES	273	1,360	321	204	1,415	163	185	660	31	227	789	179	5,807					
	APPROACH %	14%	70%	16%	11%	79%	9%	21%	75%	4%	19%	66%	15%						
	PEAK HR FACTOR		0.938			0.962			0.928			0.942		0.975					
	APP/DEPART	1,954	/	1,704	1,782	/	1,693	876	/	1,180	1,195	/	1,230	0					



		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	AM BEGIN PEAK HR	7:30 AM					0	0	0	0	0					
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	PM BEGIN PEAK HR	4:45 PM					0	0	0	0	0					

INTERSECTION TURNING MOVEMENT COUNTS AVERAGE SHEET

T319

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: AVERAGE FOR THREE DAYS

LOCATION: Santa Ana
NORTH & SOUTH: Harbor
EAST & WEST: 1st
PROJECT #: CMP2019
LOCATION #: 190
CONTROL: SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N ◄ W E ► S ▼

Add U-Turns to Left Turns

		NORTHBOUND (Harbor)			SOUTHBOUND (Harbor)			EASTBOUND (1st)			WESTBOUND (1st)			
	LANES:	NL 1	NT 3	NR 1	SL 1	ST 3	SR 1	EL 2	ET 3	ER 0	WL 2	WT 3	WR 0	TOTAL
AM	6:00 AM	11	108	14	18	225	11	21	67	22	11	54	21	583
	6:15 AM	10	125	22	25	289	11	19	108	34	23	78	30	775
	6:30 AM	13	143	22	37	451	15	20	137	33	22	93	30	1,015
	6:45 AM	23	148	20	53	452	15	23	186	36	33	92	30	1,109
	7:00 AM	19	156	32	53	487	20	23	207	42	36	93	35	1,203
	7:15 AM	22	227	45	53	493	25	26	230	40	56	115	38	1,371
	7:30 AM	19	237	61	53	510	26	30	229	47	78	149	36	1,478
	7:45 AM	27	228	52	51	445	38	32	224	44	60	188	37	1,428
	8:00 AM	24	232	42	60	446	32	37	239	47	47	162	31	1,400
	8:15 AM	28	200	38	58	428	20	37	264	56	48	118	32	1,327
	8:30 AM	24	184	35	53	439	24	33	253	38	37	115	36	1,270
	8:45 AM	32	177	34	41	408	22	35	213	40	36	128	32	1,197
	VOLUMES	254	2,165	416	554	5,073	259	338	2,355	480	486	1,385	388	14,272
	APPROACH %	9%	75%	14%	9%	86%	4%	11%	73%	15%	22%	61%	17%	
	APP/DEPART	2,898	/	2,914	5,910	/	6,102	3,205	/	3,326	2,259	/	1,930	
	BEGIN PEAK HR		7:15 AM											
	VOLUMES	115	925	200	224	1,895	122	138	922	179	242	614	143	5,717
	APPROACH %	9%	75%	16%	10%	85%	5%	11%	74%	14%	24%	61%	14%	
	PEAK HR FACTOR		0.958			0.948			0.950			0.875		0.960
	APP/DEPART	1,239	/	1,200	2,240	/	2,337	1,238	/	1,339	999	/	840	
PM	03:00 PM	62	351	56	54	252	31	38	154	31	50	170	36	1,285
	3:15 PM	56	342	61	62	261	33	36	170	29	49	178	35	1,311
	3:30 PM	53	340	54	64	252	34	45	171	33	51	203	41	1,342
	3:45 PM	62	342	39	66	289	39	31	186	30	48	217	45	1,394
	4:00 PM	59	343	48	67	271	34	36	169	35	49	232	49	1,393
	4:15 PM	62	364	45	60	273	36	30	180	28	53	230	38	1,398
	4:30 PM	62	363	33	60	256	34	34	196	38	46	235	41	1,399
	4:45 PM	61	372	39	64	292	34	39	176	28	65	231	36	1,438
	5:00 PM	63	366	35	64	309	37	42	183	29	61	263	42	1,494
	5:15 PM	63	371	42	67	298	44	35	189	31	57	276	39	1,512
	5:30 PM	64	363	40	63	303	43	34	192	44	56	280	43	1,524
	5:45 PM	66	364	46	59	295	39	41	194	39	53	243	49	1,489
	6:00 PM	71	350	43	57	265	35	41	190	35	51	244	41	1,423
	6:15 PM	66	364	40	59	275	34	45	173	39	45	231	47	1,418
	6:30 PM	64	350	49	69	247	48	36	164	36	45	208	37	1,354
	6:45 PM	58	317	45	62	257	36	39	134	35	47	172	40	1,244
	VOLUMES	991	5,664	717	998	4,394	590	602	2,822	541	827	3,613	659	22,717
	APPROACH %	13%	76%	10%	16%	72%	10%	15%	69%	13%	16%	71%	13%	
	APP/DEPART	7,478	/	7,019	6,075	/	5,868	4,063	/	4,537	5,100	/	5,293	
	BEGIN PEAK HR		5:00 PM											
	VOLUMES	284	1,465	162	275	1,205	162	186	758	143	227	1,062	173	6,102
	APPROACH %	15%	77%	8%	17%	73%	10%	17%	70%	13%	16%	73%	12%	
	PEAK HR FACTOR		0.988			0.990			0.969			0.964		0.986
	APP/DEPART	1,911	/	1,811	1,642	/	1,603	1,087	/	1,174	1,462	/	1,514	

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	
2	2	0	0	4
2	1	0	0	3
3	2	1	0	6
4	2	3	0	8
4	0	3	0	7
5	1	2	0	8
6	1	4	0	10
5	1	4	0	10
6	3	2	0	12
8	3	2	0	14
9	3	7	0	19
8	4	3	0	16
62	23	32	0	117
7	5	5	0	17
4	10	5	0	19
7	7	4	0	18
3	6	4	0	13
5	7	7	0	19
6	7	5	0	18
8	6	6	0	21
6	6	5	0	17
8	5	8	0	21
7	4	10	0	20
6	6	11	0	23
7	7	5	0	19
9	5	7	0	20
5	6	7	0	18
9	3	5	0	17
8	5	6	0	19
106	94	99	1	299

Right-turn Overlap

NRR	SRR	ERR	WRR
X	X	X	X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

Harbor — NORTH SIDE

1st — WEST SIDE — EAST SIDE — 1st

SOUTH SIDE — Harbor

ALL PED AND BIKE

	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL
6:00 AM	4	19	4	12	38
6:15 AM	1	14	3	10	28
6:30 AM	2	17	2	12	33
6:45 AM	3	19	4	16	42
7:00 AM	5	19	7	11	42
7:15 AM	7	25	11	30	74
7:30 AM	6	28	9	29	72
7:45 AM	5	21	6	18	51
8:00 AM	5	18	4	17	45
8:15 AM	7	16	7	17	47
8:30 AM	8	16	4	13	41
8:45 AM	8	22	9	17	55
TOTAL	63	234	71	201	568
AM BEGIN PEAK HR			7:15 AM		
3:00 PM	9	26	3	23	62
3:15 PM	16	35	13	25	90
3:30 PM	15	23	8	28	73
3:45 PM	14	29	9	28	80
4:00 PM	13	27	10	28	78
4:15 PM	13	33	5	25	77
4:30 PM	18	20	10	24	72
4:45 PM	13	27	7	22	69
5:00 PM	7	26	3	26	62
5:15 PM	11	33	7	27	78
5:30 PM	12	18	7	19	56
5:45 PM	13	29	9	29	81
6:00 PM	16	19	10	25	70
6:15 PM	10	23	7	22	62
6:30 PM	10	18	3	18	49
6:45 PM	7	21	4	19	52
TOTAL	197	408	116	390	1,110
PM BEGIN PEAK HR			5:00 PM		

PEDESTRIAN CROSSINGS

N SIDE	S SIDE	E SIDE	W SIDE	TOTAL
3	17	4	10	34
1	12	2	10	25
2	15	2	11	30
2	17	3	14	36
4	17	6	9	36
7	24	11	28	71
6	26	8	26	66
3	19	6	17	45
5	16	4	15	39
5	14	6	15	40
5	14	4	12	34
6	19	8	15	47
48	210	64	181	503
21	85	29	85	220
7	23	3	22	55
15	34	12	25	86
13	22	7	25	67
12	27	8	27	74
11	24	8	24	67
12	32	4	24	72
16	18	10	22	66
12	25	6	19	62
4	24	3	23	55
10	29	5	25	69
10	16	5	17	49
11	26	9	25	70
14	17	9	24	64
8	18	7	19	52
8	16	2	13	40
6	18	4	18	46
170	370	102	352	994
35	95	22	91	243

BICYCLE CROSSINGS

NS	SS	ES	WS	TOTAL
1	1	0	2	5
0	2	1	0	3
0	2	0	1	3
1	2	1	3	6
1	2	0	2	5
0	1	0	2	3
1	2	1	3	7
2	2	1	1	6
0	3	0	2	6
2	2	1	1	6
3	2	1	1	7
2	3	1	1	8
15	24	7	20	65
3	8	2	9	22
2	3	0	2	7
1	1	1	0	4
1	2	0	3	6
3	1	1	1	6
2	3	2	4	11
1	2	1	1	5
2	1	1	2	6
2	2	1	3	7
2	1	1	3	7
1	4	2	2	9
2	2	2	1	7
3	3	1	4	11
1	2	1	1	6
1	5	0	4	10
1	2	1	5	9
1	3	0	2	6
27	38	13	38	116
8	11	5	10	34

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 pacific@aimtd.com

DATE: Wed, Feb 10, 16

LOCATION: Santa Ana
NORTH & SOUTH: Harbor
EAST & WEST: McFadden

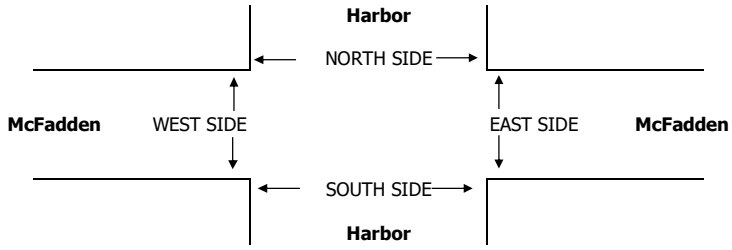
PROJECT #: SC0846
LOCATION #: 32
CONTROL: SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

☑ Add U-Turns to Left Turns

		NORTHBOUND Harbor			SOUTHBOUND Harbor			EASTBOUND McFadden			WESTBOUND McFadden				U-TURNS				
	LANES:	NL 2	NT 3	NR 1	SL 2	ST 3	SR 0	EL 1	ET 2	ER 0	WL 1	WT 2	WR 0	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	21	170	13	33	480	10	31	54	24	35	57	17	945	5	6	0	0	11
	7:15 AM	20	214	17	34	533	10	24	67	18	45	74	21	1,077	3	9	0	0	12
	7:30 AM	19	238	18	26	536	15	36	95	27	51	102	27	1,190	3	4	0	0	7
	7:45 AM	25	260	34	45	488	12	39	94	30	48	117	30	1,222	3	3	0	0	6
	8:00 AM	32	250	25	55	425	22	47	102	36	44	110	33	1,181	5	10	0	0	15
	8:15 AM	23	269	20	48	395	12	38	127	31	39	84	28	1,114	7	9	0	0	16
	8:30 AM	21	245	30	71	407	26	36	95	27	47	85	18	1,108	8	13	0	0	21
	8:45 AM	15	198	28	47	456	15	21	96	30	47	76	23	1,052	7	11	0	0	18
	VOLUMES	176	1,844	185	359	3,720	122	272	730	223	356	705	197	8,889	41	65	0	0	106
	APPROACH %	8%	84%	8%	9%	89%	3%	22%	60%	18%	28%	56%	16%						
	APP/DEPART	2,205	/	2,378	4,201	/	4,340	1,225	/	1,209	1,258	/	962	0					
	BEGIN PEAK HR		7:30 AM																
	VOLUMES	99	1,017	97	174	1,844	61	160	418	124	182	413	118	4,707					
	APPROACH %	8%	84%	8%	8%	89%	3%	23%	60%	18%	26%	58%	17%						
	PEAK HR FACTOR		0.951			0.901			0.895			0.914		0.963					
	APP/DEPART	1,213	/	1,321	2,079	/	2,168	702	/	663	713	/	555	0					
PM	4:00 PM	51	346	34	67	266	22	34	135	19	44	109	47	1,174	5	12	0	0	17
	4:15 PM	35	416	33	67	277	30	50	130	18	53	125	29	1,263	5	13	0	1	19
	4:30 PM	35	421	36	62	284	24	43	122	22	50	99	26	1,224	5	11	0	1	17
	4:45 PM	38	405	36	74	317	29	46	115	14	44	117	31	1,266	3	14	0	0	17
	5:00 PM	35	425	27	74	286	27	50	117	11	49	121	40	1,262	6	18	0	0	24
	5:15 PM	38	429	29	71	305	15	56	129	15	52	125	38	1,302	5	13	0	0	18
	5:30 PM	47	411	34	66	300	32	52	127	20	48	134	35	1,306	5	10	0	1	16
	5:45 PM	40	384	30	75	332	36	47	126	16	53	106	27	1,272	4	10	0	0	14
	VOLUMES	319	3,237	259	556	2,367	215	378	1,001	135	393	936	273	10,069	38	101	0	3	142
	APPROACH %	8%	85%	7%	18%	75%	7%	25%	66%	9%	25%	58%	17%						
	APP/DEPART	3,815	/	3,989	3,138	/	2,930	1,514	/	1,718	1,602	/	1,432	0					
	BEGIN PEAK HR		5:00 PM																
	VOLUMES	160	1,649	120	286	1,223	110	205	499	62	202	486	140	5,142					
	APPROACH %	8%	85%	6%	18%	76%	7%	27%	65%	8%	24%	59%	17%						
	PEAK HR FACTOR		0.972			0.914			0.958			0.954		0.984					
	APP/DEPART	1,929	/	2,045	1,619	/	1,506	766	/	855	828	/	736	0					



		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	3	18	5	4	30	3	14	5	3	25	0	4	0	1	5
	7:15 AM	8	22	14	6	50	6	19	12	2	39	2	3	2	4	11
	7:30 AM	11	8	14	9	42	10	8	12	7	37	1	0	2	2	5
	7:45 AM	16	16	13	8	53	15	12	13	6	46	1	4	0	2	7
	8:00 AM	14	27	22	13	76	12	24	21	11	68	2	3	1	2	8
	8:15 AM	12	17	11	12	52	11	17	11	9	48	1	0	0	3	4
	8:30 AM	9	14	9	6	38	8	12	9	3	32	1	2	0	3	6
	8:45 AM	20	14	14	10	58	16	13	10	9	48	4	1	4	1	10
	TOTAL	93	136	102	68	399	81	119	93	50	343	12	17	9	18	56
PM	4:00 PM	4	27	15	11	57	3	25	13	6	47	1	2	2	5	10
	4:15 PM	17	24	33	19	93	14	22	30	13	79	3	2	3	6	14
	4:30 PM	22	27	19	23	91	14	20	15	16	65	8	7	4	7	26
	4:45 PM	22	28	31	19	100	18	26	27	14	85	4	2	4	5	15
	5:00 PM	14	31	21	7	73	8	27	16	3	54	6	4	5	4	19
	5:15 PM	18	32	22	21	93	17	30	18	20	85	1	2	4	1	8
	5:30 PM	19	17	21	16	73	14	14	15	13	56	5	3	6	3	17
	5:45 PM	9	47	18	13	87	7	42	9	13	71	2	5	9	0	16
	TOTAL	125	233	180	129	667	95	206	143	98	542	30	27	37	31	125

INTERSECTION TURNING MOVEMENT COUNTS

T218

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

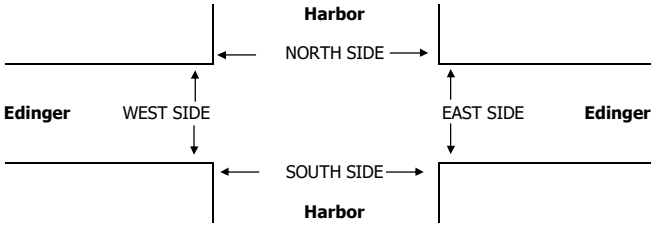
DATE:	LOCATION:	Santa Ana	PROJECT #:	SC2183
Tue, May 14, 19	NORTH & SOUTH:	Harbor	LOCATION #:	5
	EAST & WEST:	Edinger	CONTROL:	SIGNAL

NOTES:

AM PM MD OTHER OTHER — ◄ W — ▲ N S ▼ — E ►

Add U-Turns to Left Turns

		NORTHBOUND Harbor			SOUTHBOUND Harbor			EASTBOUND Edinger			WESTBOUND Edinger				U-TURNS				
	LANES:	NL 2	NT 3	NR 1	SL 2	ST 3	SR 1	EL 2	ET 2.5	ER 0.5	WL 2	WT 3	WR 1	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	20	139	20	58	478	5	16	144	56	27	90	24	1,077	4	4	0	0	8
	7:15 AM	24	159	40	44	513	12	23	165	79	33	118	49	1,259	5	2	2	1	10
	7:30 AM	28	202	37	55	538	15	25	147	82	63	120	55	1,367	5	5	0	0	10
	7:45 AM	20	226	43	43	552	18	27	138	65	74	125	53	1,384	2	4	1	2	9
	8:00 AM	29	177	24	39	481	15	30	187	93	48	123	44	1,290	3	2	3	1	9
	8:15 AM	20	149	21	43	530	11	33	150	56	39	101	32	1,185	6	3	0	0	9
	8:30 AM	13	164	22	43	489	10	37	129	66	27	105	25	1,130	0	4	1	0	5
	8:45 AM	17	148	25	50	477	6	25	117	47	50	98	28	1,088	2	6	1	0	9
	VOLUMES	171	1,364	232	375	4,058	92	216	1,177	544	361	880	310	9,780	27	30	8	4	69
	APPROACH %	10%	77%	13%	8%	90%	2%	11%	61%	28%	23%	57%	20%						
	APP/DEPART	1,767	/	1,912	4,525	/	4,986	1,937	/	1,758	1,551	/	1,124	0					
	BEGIN PEAK HR		7:15 AM																
	VOLUMES	101	764	144	181	2,084	60	105	637	319	218	486	201	5,300					
	APPROACH %	10%	76%	14%	8%	90%	3%	10%	60%	30%	24%	54%	22%						
	PEAK HR FACTOR		0.873			0.948			0.856			0.898		0.957					
	APP/DEPART	1,009	/	1,077	2,325	/	2,632	1,061	/	953	905	/	638	0					
PM	4:00 PM	58	404	47	60	205	21	41	134	26	47	164	62	1,269	1	5	2	1	9
	4:15 PM	52	416	37	74	229	15	31	127	20	40	203	81	1,325	0	9	1	1	11
	4:30 PM	68	450	43	73	210	20	36	137	26	30	179	72	1,344	1	13	6	1	21
	4:45 PM	65	451	48	63	208	17	35	137	23	25	205	65	1,342	4	4	3	1	12
	5:00 PM	66	434	53	66	197	20	32	128	28	31	190	66	1,311	2	11	7	0	20
	5:15 PM	83	443	48	77	197	18	33	155	18	44	222	62	1,400	4	7	3	0	14
	5:30 PM	65	427	62	74	211	19	32	138	30	38	187	75	1,358	1	14	3	0	18
	5:45 PM	63	410	47	82	198	11	22	154	29	48	190	86	1,340	1	5	3	0	9
	VOLUMES	520	3,435	385	569	1,655	141	262	1,110	200	303	1,540	569	10,689	14	68	28	4	114
	APPROACH %	12%	79%	9%	24%	70%	6%	17%	71%	13%	13%	64%	24%						
	APP/DEPART	4,340	/	4,306	2,365	/	2,168	1,572	/	2,000	2,412	/	2,215	0					
	BEGIN PEAK HR		4:45 PM																
	VOLUMES	279	1,755	211	280	813	74	132	558	99	138	804	268	5,411					
	APPROACH %	12%	78%	9%	24%	70%	6%	17%	71%	13%	11%	66%	22%						
	PEAK HR FACTOR		0.978			0.960			0.958			0.922		0.966					
	APP/DEPART	2,245	/	2,175	1,167	/	1,060	789	/	1,014	1,210	/	1,162	0					



		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	AM BEGIN PEAK HR	7:15 AM					0	0	0	0	0					
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	PM BEGIN PEAK HR	4:45 PM					0	0	0	0	0					

INTERSECTION TURNING MOVEMENT COUNTS

T319

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Tue, Feb 26, 19

LOCATION: Santa Ana
NORTH & SOUTH: Harbor
EAST & WEST: Warner

PROJECT #: CMP2019
LOCATION #: 191
CONTROL: SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N ◄ W E ► S ▼

Add U-Turns to Left Turns

		NORTHBOUND Harbor			SOUTHBOUND Harbor			EASTBOUND Warner			WESTBOUND Warner				U-TURNS					Right-turn Overlap			
	LANES:	NL 2	NT 3	NR 0	SL 2	ST 3	SR 1	EL 2	ET 3	ER 1	WL 2	WT 3	WR 1	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL	NRR X	SRR X	ERR X	WRR X
AM	6:00 AM	10	71	22	50	246	3	2	129	28	26	87	9	683	5	1	0	2	8	0	0	0	0
AM	6:15 AM	15	56	15	47	302	12	9	136	36	40	99	17	784	3	1	0	5	9	0	0	0	0
AM	6:30 AM	19	70	11	95	470	27	7	166	35	35	113	10	1,058	6	0	0	2	8	0	0	0	0
AM	6:45 AM	19	98	24	99	473	22	12	233	58	41	138	14	1,231	4	0	0	2	6	0	0	0	0
AM	7:00 AM	24	132	33	111	491	13	15	272	73	32	121	14	1,331	9	1	0	6	16	0	0	0	0
AM	7:15 AM	25	154	40	117	523	16	24	358	89	31	194	22	1,593	3	1	1	1	6	0	0	0	0
AM	7:30 AM	40	196	40	104	527	32	26	318	106	33	216	30	1,668	3	0	0	3	6	0	0	0	0
AM	7:45 AM	17	163	38	114	509	36	23	350	78	44	210	37	1,619	5	2	1	3	11	0	0	0	0
AM	8:00 AM	31	181	58	117	479	37	23	345	87	41	164	43	1,606	3	0	1	5	9	0	0	0	0
AM	8:15 AM	28	174	54	107	515	29	25	316	69	38	182	23	1,560	2	0	2	3	7	0	0	0	0
AM	8:30 AM	28	141	42	106	476	29	23	280	95	34	162	27	1,443	1	0	2	3	6	0	0	0	0
AM	8:45 AM	27	140	42	83	512	29	17	224	85	24	188	22	1,393	5	0	0	2	7	0	0	0	0
AM	VOLUMES	283	1,576	419	1,150	5,523	285	206	3,127	839	419	1,874	268	15,969	49	6	7	37	99	0	0	0	0
AM	APPROACH %	12%	69%	18%	17%	79%	4%	5%	75%	20%	16%	73%	10%										
AM	APP/DEPART	2,278	/	2,049	6,958	/	6,793	4,172	/	4,727	2,561	/	2,400	0									
AM	BEGIN PEAK HR		7:15 AM																				
AM	VOLUMES	113	694	176	452	2,038	121	96	1,371	360	149	784	132	6,486						0	0	0	0
AM	APPROACH %	11%	71%	18%	17%	78%	5%	5%	75%	20%	14%	74%	12%										
AM	PEAK HR FACTOR		0.890			0.985			0.970			0.915		0.972									
AM	APP/DEPART	983	/	922	2,611	/	2,549	1,827	/	2,008	1,065	/	1,007	0									
PM	03:00 PM	77	408	43	57	185	22	37	238	49	54	250	91	1,511	6	1	2	2	11	0	0	0	0
PM	3:15 PM	67	424	26	53	198	27	51	227	41	44	267	87	1,512	0	0	2	1	3	0	0	0	0
PM	3:30 PM	82	446	34	39	186	30	21	182	53	50	299	106	1,528	3	0	2	6	11	0	0	0	0
PM	3:45 PM	82	422	30	36	207	24	23	221	53	35	350	120	1,603	0	0	2	1	3	0	0	0	0
PM	4:00 PM	101	467	46	28	163	22	12	224	46	45	337	94	1,585	3	0	0	5	8	0	0	0	0
PM	4:15 PM	84	439	40	37	149	19	32	213	49	22	320	94	1,498	3	1	2	0	6	0	0	0	0
PM	4:30 PM	107	446	53	28	179	21	26	197	40	28	326	106	1,557	2	0	4	0	6	0	0	0	0
PM	4:45 PM	90	478	24	47	214	17	43	190	38	29	321	109	1,600	2	0	3	0	5	0	0	0	0
PM	5:00 PM	100	454	28	32	196	28	52	254	50	43	320	122	1,679	5	0	2	2	9	0	0	0	0
PM	5:15 PM	106	472	31	34	193	27	39	237	47	35	342	99	1,662	8	1	5	0	14	0	0	0	0
PM	5:30 PM	104	498	24	30	208	22	19	154	63	26	357	109	1,614	0	0	0	1	1	0	0	0	0
PM	5:45 PM	117	456	29	32	199	22	28	149	43	34	323	90	1,522	1	0	4	1	6	0	0	0	0
PM	6:00 PM	112	438	27	26	175	20	31	197	50	34	308	73	1,491	1	0	2	2	5	0	0	0	0
PM	6:15 PM	123	381	26	36	166	26	28	163	35	23	313	91	1,411	5	1	0	2	8	0	0	0	0
PM	6:30 PM	110	412	26	33	155	31	18	196	29	29	317	53	1,409	2	1	3	1	7	0	0	0	0
PM	6:45 PM	92	349	32	32	153	19	19	165	30	28	229	54	1,202	1	0	0	1	2	0	0	0	0
PM	VOLUMES	1,554	6,990	519	580	2,926	377	479	3,207	716	559	4,979	1,498	24,384	42	5	33	25	105	0	0	0	0
PM	APPROACH %	17%	77%	6%	15%	75%	10%	11%	73%	16%	8%	71%	21%										
PM	APP/DEPART	9,063	/	8,939	3,883	/	4,218	4,402	/	4,326	7,036	/	6,901	0									
PM	BEGIN PEAK HR		4:45 PM																				
PM	VOLUMES	766	3,676	276	271	1,509	180	238	1,690	386	257	2,673	853	12,775						0	0	0	0
PM	APPROACH %	16%	78%	6%	14%	77%	9%	10%	73%	17%	7%	71%	23%										
PM	PEAK HR FACTOR		1.884			1.763			1.625			1.922		1.902									
PM	APP/DEPART	4,718	/	4,758	1,960	/	2,164	2,314	/	2,239	3,783	/	3,614	0									

Harbor

NORTH SIDE

Warner WEST SIDE EAST SIDE **Warner**

SOUTH SIDE

Harbor

		ALL PED AND BIKE					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	6:00 AM	1	0	1	1	3	1	0	1	0	2	0	0	0	1	1
AM	6:15 AM	1	1	2	3	7	1	1	1	0	3	0	0	1	3	4
AM	6:30 AM	0	8	1	0	9	0	7	1	0	8	0	1	0	0	1
AM	6:45 AM	0	6	0	2	8	0	5	0	2	7	0	1	0	0	1
AM	7:00 AM	0	2	1	4	7	0	2	1	4	7	0	0	0	0	0
AM	7:15 AM	6	6	4	1	17	6	6	3	1	16	0	0	1	0	1
AM	7:30 AM	3	7	2	2	14	2	5	1	2	10	1	2	1	0	4
AM	7:45 AM	1	0	0	1	2	0	0	0	1	1	1	0	0	0	1
AM	8:00 AM	4	13	4	6	27	3	13	3	6	25	1	0	1	0	2
AM	8:15 AM	1	0	4	0	5	1	0	4	0	5	0	0	0	0	0
AM	8:30 AM	1	2	0	3	6	1	2	0	3	6	0	0	0	0	0
AM	8:45 AM	1	0	4	5	10	1	0	3	4	8	0	0	1	1	2
AM	TOTAL	19	45	23	28	115	16	41	18	23	98	3	4	5	5	17
AM	AM BEGIN PEAK HR			7:15 AM			11	24	7	10	52	3	2	3	0	8
PM	3:00 PM	0	5	5	0	10	0	5	4	0	9	0	0	1	0	1
PM	3:15 PM	7	2	2	3	14	7	2	2	3	14	0	0	0	0	0
PM	3:30 PM	4	4	6	2	16	3	3	6	2	14	1	1	0	0	2
PM	3:45 PM	1	3	3	3	10	1	1	1	3	6	0	2	2	0	4
PM	4:00 PM	4	8	5	0	17	4	7	5	0	16	0	1	0	0	1
PM	4:15 PM	2	2	0	4	8	2	1	0	3	6	0	1	0	1	2
PM	4:30 PM	1	9	9	2	21	0	9	8	1	18	1	0	1	1	3
PM	4:45 PM	2	2	5	2	11	2	2	4	2	10	0	0	1	0	1
PM	5:00 PM	2	6	8	1	17	0	6	6	1	13	2	0	2	0	4
PM	5:15 PM	0	3	8	1	12	0	2	8	1	11	0	1	0	0	1
PM	5:30 PM	4	2	7	0	13	4	2	7	0	13	0	0	0	0	0
PM	5:45 PM	0	1	2	1	4	0	1	0	1	2	0	0	2	0	2
PM	6:00 PM	2	3	6	3	14	1	3	4	2	10	1	0	2	1	4
PM	6:15 PM	1	1	0	1	3	1	0	0	1	2	0	1	0	0	1
PM	6:30 PM	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0
PM	6:45 PM	2	1	0	1	4	2	0	0	0	2	0	1	0	1	2
PM	TOTAL	33	52	66	24	175	28	44	55	20	147	5	8	11	4	28
PM	PM BEGIN PEAK HR			4:45 PM			6	12	25	4	47	2	1	3	0	6

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 pacific@aimtd.com

DATE: Tue, Feb 9, 16

LOCATION: Santa Ana
NORTH & SOUTH: Harbor
EAST & WEST: Segerstrom

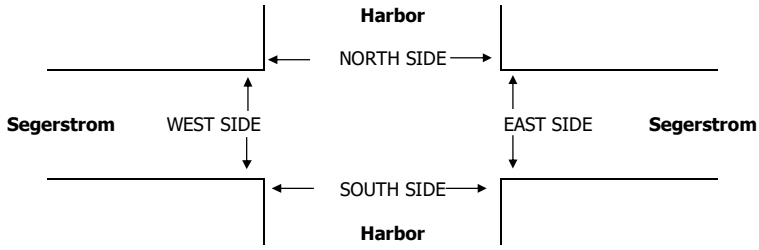
PROJECT #: SC0846
LOCATION #: 45
CONTROL: SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

☑ Add U-Turns to Left Turns

		NORTHBOUND Harbor			SOUTHBOUND Harbor			EASTBOUND Segerstrom			WESTBOUND Segerstrom				U-TURNS				
	LANES:	NL 2	NT 3	NR 0	SL 1	ST 3	SR 0	EL 1	ET 2	ER 0	WL 1	WT 2	WR 1	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	19	119	13	39	581	13	10	143	46	19	53	13	1,068	0	0	0	0	0
	7:15 AM	21	169	20	29	555	13	21	198	76	15	48	16	1,181	1	0	0	0	1
	7:30 AM	18	180	12	45	588	24	17	193	77	23	65	20	1,262	0	0	0	0	0
	7:45 AM	31	176	11	39	556	20	18	189	66	37	101	25	1,269	4	0	0	0	4
	8:00 AM	35	233	15	38	503	18	30	167	65	32	107	16	1,259	3	1	1	0	5
	8:15 AM	22	171	10	42	562	20	19	159	77	20	74	17	1,193	2	2	0	0	4
	8:30 AM	20	218	15	24	509	16	19	129	76	14	56	10	1,106	1	0	1	0	2
	8:45 AM	19	202	9	28	501	19	24	132	58	16	64	15	1,087	0	0	0	0	0
	VOLUMES	185	1,468	105	284	4,355	143	158	1,310	541	176	568	132	9,425	11	3	2	0	16
	APPROACH %	11%	84%	6%	6%	91%	3%	8%	65%	27%	20%	65%	15%						
	APP/DEPART	1,758	/	1,759	4,782	/	5,083	2,009	/	1,696	876	/	887	0					
	BEGIN PEAK HR		7:30 AM																
	VOLUMES	106	760	48	164	2,209	82	84	708	285	112	347	78	4,983					
	APPROACH %	12%	83%	5%	7%	90%	3%	8%	66%	26%	21%	65%	15%						
	PEAK HR FACTOR		0.807			0.934			0.938			0.824		0.982					
	APP/DEPART	914	/	924	2,455	/	2,615	1,077	/	917	537	/	527	0					
PM	4:00 PM	47	410	21	32	218	18	37	108	46	19	249	74	1,279	1	4	0	0	5
	4:15 PM	50	455	13	19	198	13	27	101	45	22	263	65	1,271	2	0	0	0	2
	4:30 PM	58	456	12	28	230	18	39	112	43	33	237	84	1,350	1	5	0	0	6
	4:45 PM	66	429	10	23	243	18	25	121	50	31	248	87	1,351	2	1	1	0	4
	5:00 PM	67	455	16	21	254	25	40	151	48	25	251	76	1,429	1	1	4	0	6
	5:15 PM	80	454	16	23	262	26	21	144	43	21	271	114	1,475	0	3	1	0	4
	5:30 PM	74	469	15	20	227	18	20	114	32	18	262	97	1,366	1	2	0	0	3
	5:45 PM	52	479	13	15	223	18	18	122	31	16	261	92	1,340	1	0	0	0	1
	VOLUMES	494	3,607	116	181	1,855	154	227	973	338	185	2,042	689	10,861	9	16	6	0	31
	APPROACH %	12%	86%	3%	8%	85%	7%	15%	63%	22%	6%	70%	24%						
	APP/DEPART	4,217	/	4,533	2,190	/	2,387	1,538	/	1,254	2,916	/	2,687	0					
	BEGIN PEAK HR		4:45 PM																
	VOLUMES	287	1,807	57	87	986	87	106	530	173	95	1,032	374	5,621					
	APPROACH %	13%	84%	3%	8%	85%	8%	13%	66%	21%	6%	69%	25%						
	PEAK HR FACTOR		0.964			0.932			0.846			0.924		0.953					
	APP/DEPART	2,151	/	2,288	1,160	/	1,258	809	/	667	1,501	/	1,408	0					



		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	1	1	3	5	10	1	0	1	4	6	0	1	2	1	4
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	4	3	2	2	11	1	2	2	1	6	3	1	0	1	5
	7:45 AM	3	1	0	6	10	2	0	0	4	6	1	1	0	2	4
	8:00 AM	0	1	0	2	3	0	1	0	1	2	0	0	0	1	1
	8:15 AM	0	3	0	6	9	0	1	0	5	6	0	2	0	1	3
	8:30 AM	3	4	0	2	9	0	2	0	1	3	3	2	0	1	6
	8:45 AM	2	0	1	2	5	1	0	0	2	3	1	0	1	0	2
	TOTAL	13	13	6	25	57	5	6	3	18	32	8	7	3	7	25
PM	4:00 PM	0	0	3	0	3	0	0	0	0	0	0	0	3	0	3
	4:15 PM	0	0	3	1	4	0	0	2	0	2	0	0	1	1	2
	4:30 PM	2	6	0	4	12	0	1	0	4	5	2	5	0	0	7
	4:45 PM	2	0	1	0	3	2	0	0	0	2	0	0	1	0	1
	5:00 PM	2	3	1	2	8	2	3	0	1	6	0	0	1	1	2
	5:15 PM	2	0	0	0	2	1	0	0	0	1	1	0	0	0	1
	5:30 PM	2	3	1	1	7	1	0	1	1	3	1	3	0	0	4
	5:45 PM	0	0	0	1	1	0	0	0	0	0	0	0	0	1	1
	TOTAL	10	12	9	9	40	6	4	3	6	19	4	8	6	3	21

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 pacific@aimtd.com

DATE: Tue, Mar 1, 16

LOCATION: Santa Ana
NORTH & SOUTH: Hyland
EAST & WEST: MacArthur

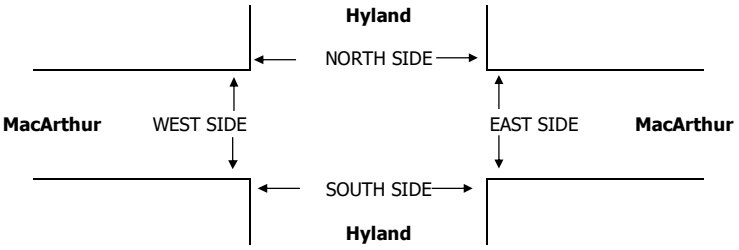
PROJECT #: SC0846
LOCATION #: 9
CONTROL: SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

☑ Add U-Turns to Left Turns

		NORTHBOUND Hyland			SOUTHBOUND Hyland			EASTBOUND MacArthur			WESTBOUND MacArthur				U-TURNS				
	LANES:	NL 2	NT 0.5	NR 0.5	SL 1	ST 1	SR 1	EL 1	ET 3	ER 1	WL 1	WT 3	WR 1	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	10	0	8	2	1	1	1	258	105	12	78	3	479	0	0	0	0	0
	7:15 AM	10	0	2	2	0	13	2	434	157	10	88	5	723	0	0	0	1	1
	7:30 AM	20	0	6	1	0	2	0	505	178	12	92	6	822	0	0	0	0	0
	7:45 AM	10	0	8	1	1	2	3	491	226	22	138	2	904	0	0	0	0	0
	8:00 AM	26	2	2	3	0	1	1	446	183	17	152	6	839	0	0	1	0	1
	8:15 AM	13	1	5	5	0	0	3	412	154	13	106	4	716	0	0	0	0	0
	8:30 AM	9	2	6	1	0	3	5	415	134	20	107	6	708	0	0	0	0	0
	8:45 AM	21	4	13	4	1	0	6	319	111	13	127	4	623	0	0	0	0	0
	VOLUMES	119	9	50	19	3	22	21	3,280	1,248	119	888	36	5,814	0	0	1	1	2
	APPROACH %	67%	5%	28%	43%	7%	50%	0%	72%	27%	11%	85%	3%						
	APP/DEPART	178	/	65	44	/	1,369	4,549	/	3,350	1,043	/	1,030	0					
	BEGIN PEAK HR		7:15 AM																
	VOLUMES	66	2	18	7	1	18	6	1,876	744	61	470	19	3,288					
	APPROACH %	77%	2%	21%	27%	4%	69%	0%	71%	28%	11%	85%	3%						
	PEAK HR FACTOR		0.717			0.433			0.912			0.786		0.909					
	APP/DEPART	86	/	26	26	/	805	2,626	/	1,902	550	/	555	0					
PM	4:00 PM	250	2	18	4	1	6	6	192	29	6	476	2	992	0	0	3	0	3
	4:15 PM	254	3	10	3	0	8	3	184	34	3	582	3	1,087	0	0	2	0	2
	4:30 PM	270	0	15	6	3	2	6	227	45	10	532	5	1,121	0	0	5	0	5
	4:45 PM	282	0	14	3	2	1	9	200	45	6	561	1	1,124	0	0	4	1	5
	5:00 PM	284	2	24	3	0	2	7	218	32	10	556	1	1,139	0	0	4	0	4
	5:15 PM	302	2	18	3	1	7	9	233	38	3	556	5	1,177	0	0	4	1	5
	5:30 PM	286	2	11	2	0	3	9	205	38	5	585	4	1,150	0	0	1	0	1
	5:45 PM	280	2	6	2	2	4	7	195	44	3	566	5	1,116	0	0	2	0	2
	VOLUMES	2,208	13	116	26	9	33	56	1,654	305	46	4,414	26	8,906	0	0	25	2	27
	APPROACH %	94%	1%	5%	38%	13%	49%	3%	82%	15%	1%	98%	1%						
	APP/DEPART	2,337	/	70	68	/	358	2,015	/	1,798	4,486	/	6,680	0					
	BEGIN PEAK HR		4:45 PM																
	VOLUMES	1,154	6	67	11	3	13	34	856	153	24	2,258	11	4,590					
	APPROACH %	94%	0%	5%	41%	11%	48%	3%	82%	15%	1%	98%	0%						
	PEAK HR FACTOR		0.953			0.614			0.931			0.965		0.975					
	APP/DEPART	1,227	/	38	27	/	178	1,043	/	936	2,293	/	3,438	0					



		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	2	2	1	0	5	1	2	0	0	3	1	0	1	0	2
	7:30 AM	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0
	7:45 AM	3	2	0	0	5	1	2	0	0	3	2	0	0	0	2
	8:00 AM	1	0	0	0	1	0	0	0	0	0	1	0	0	0	1
	8:15 AM	5	0	0	0	5	5	0	0	0	5	0	0	0	0	0
	8:30 AM	1	1	0	0	2	0	0	0	0	0	1	1	0	0	2
	8:45 AM	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0
	TOTAL	13	6	1	0	20	8	5	0	0	13	5	1	1	0	7
PM	4:00 PM	4	2	0	0	6	1	2	0	0	3	3	0	0	0	3
	4:15 PM	4	1	2	0	7	2	0	1	0	3	2	1	1	0	4
	4:30 PM	3	0	2	0	5	0	0	1	0	1	3	0	1	0	4
	4:45 PM	1	5	3	0	9	0	3	2	0	5	1	2	1	0	4
	5:00 PM	2	1	3	0	6	0	1	2	0	3	2	0	1	0	3
	5:15 PM	3	1	1	0	5	1	0	1	0	2	2	1	0	0	3
	5:30 PM	8	0	0	0	8	1	0	0	0	1	7	0	0	0	7
	5:45 PM	1	1	0	0	2	1	1	0	0	2	0	0	0	0	0
	TOTAL	26	11	11	0	48	6	7	7	0	20	20	4	4	0	28

INTERSECTION TURNING MOVEMENT COUNTS

T218

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Tue, May 22, 18

LOCATION: Costa Mesa
NORTH & SOUTH: Harbor
EAST & WEST: MacArthur

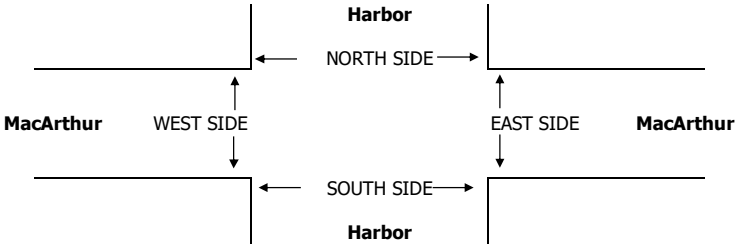
PROJECT #: SC
LOCATION #: 1
CONTROL: SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

☑ Add U-Turns to Left Turns

		NORTHBOUND Harbor			SOUTHBOUND Harbor			EASTBOUND MacArthur			WESTBOUND MacArthur				U-TURNS				
	LANES:	NL 2	NT 3	NR 1	SL 2	ST 3	SR 1	EL 1	ET 3	ER 1	WL 1	WT 3	WR 1	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	21	181	7	74	415	39	33	217	36	14	54	16	1,107	0	0	0	3	3
	7:15 AM	18	188	9	70	474	26	37	249	65	16	78	28	1,258	0	2	0	3	5
	7:30 AM	27	197	19	89	468	20	36	322	102	29	93	38	1,440	3	0	0	2	5
	7:45 AM	33	212	24	79	422	34	23	293	74	39	125	29	1,387	0	3	0	10	13
	8:00 AM	41	251	24	59	454	35	32	254	76	33	119	38	1,416	1	1	0	10	12
	8:15 AM	24	220	23	82	440	34	32	249	85	29	97	24	1,339	3	0	0	6	9
	8:30 AM	39	192	21	73	412	40	30	212	68	31	80	26	1,224	3	0	0	9	12
	8:45 AM	36	203	23	75	438	39	26	177	78	28	76	28	1,227	4	0	0	6	10
	VOLUMES	239	1,644	150	601	3,523	267	249	1,973	584	219	722	227	10,398	14	6	0	49	69
	APPROACH %	12%	81%	7%	14%	80%	6%	9%	70%	21%	19%	62%	19%						
	APP/DEPART	2,033	/	2,126	4,391	/	4,291	2,806	/	2,767	1,168	/	1,214	0					
	BEGIN PEAK HR		7:30 AM																
	VOLUMES	125	880	90	309	1,784	123	123	1,118	337	130	434	129	5,582					
	APPROACH %	11%	80%	8%	14%	81%	6%	8%	71%	21%	19%	63%	19%						
	PEAK HR FACTOR		0.866			0.960			0.858			0.898		0.969					
	APP/DEPART	1,095	/	1,136	2,216	/	2,230	1,578	/	1,541	693	/	675	0					
PM	4:00 PM	131	418	18	47	237	38	37	138	45	26	358	73	1,566	4	4	0	7	15
	4:15 PM	138	393	32	43	250	41	23	110	41	22	362	55	1,510	3	1	2	8	14
	4:30 PM	144	377	26	48	291	32	38	125	35	32	340	81	1,569	2	7	1	9	19
	4:45 PM	144	358	23	50	244	47	30	105	47	13	370	53	1,484	0	1	0	5	6
	5:00 PM	141	355	22	64	284	67	37	126	55	18	369	61	1,599	1	2	3	2	8
	5:15 PM	147	399	15	46	232	26	32	123	40	22	359	75	1,516	1	3	2	6	12
	5:30 PM	112	407	13	50	253	29	45	99	43	20	346	86	1,503	2	3	3	6	14
	5:45 PM	130	411	16	51	220	34	29	98	30	14	356	69	1,458	0	3	1	6	10
	VOLUMES	1,087	3,118	165	399	2,011	314	271	924	336	167	2,860	553	12,205	13	24	12	49	98
	APPROACH %	25%	71%	4%	15%	74%	12%	18%	60%	22%	5%	80%	15%						
	APP/DEPART	4,370	/	3,954	2,724	/	2,478	1,531	/	1,513	3,580	/	4,260	0					
	BEGIN PEAK HR		4:30 PM																
	VOLUMES	576	1,489	86	208	1,051	172	137	479	177	85	1,438	270	6,168					
	APPROACH %	27%	69%	4%	15%	73%	12%	17%	60%	22%	5%	80%	15%						
	PEAK HR FACTOR		0.959			0.862			0.909			0.983		0.964					
	APP/DEPART	2,151	/	1,903	1,431	/	1,295	793	/	782	1,793	/	2,188	0					



		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	AM BEGIN PEAK HR	7:30 AM					0	0	0	0	0					
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	PM BEGIN PEAK HR	4:30 PM					0	0	0	0	0					

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 pacific@aimtd.com

DATE: Tue, Mar 1, 16

LOCATION: Santa Ana
NORTH & SOUTH: Harbor
EAST & WEST: Sunflower

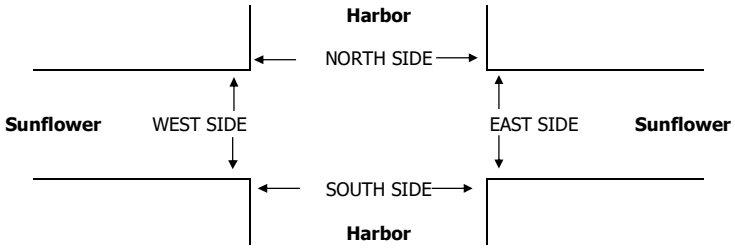
PROJECT #: SC0846
LOCATION #: 11
CONTROL: SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

☑ Add U-Turns to Left Turns

		NORTHBOUND (Harbor)			SOUTHBOUND (Harbor)			EASTBOUND (Sunflower)			WESTBOUND (Sunflower)				U-TURNS				
	LANES:	NL 2	NT 3	NR 0	SL 2	ST 3	SR 1	EL 1	ET 2	ER 0	WL 1.5	WT 1.5	WR 0	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	33	170	24	36	445	5	5	22	7	17	31	8	803	0	0	0	0	0
	7:15 AM	48	224	32	58	556	15	0	21	6	16	16	13	1,005	1	0	0	0	1
	7:30 AM	39	272	53	71	616	8	3	32	17	26	34	24	1,195	0	0	0	0	0
	7:45 AM	52	334	70	57	530	16	1	33	8	41	58	19	1,219	2	1	0	0	3
	8:00 AM	69	233	42	50	531	15	4	18	9	41	51	34	1,097	0	0	0	0	0
	8:15 AM	69	246	40	56	453	14	0	17	14	26	34	14	983	1	1	0	0	2
	8:30 AM	54	268	40	62	454	18	2	8	11	13	26	15	971	1	4	0	0	5
	8:45 AM	62	241	27	39	463	13	7	20	8	26	26	15	947	2	1	0	0	3
	VOLUMES	426	1,988	328	429	4,048	104	22	171	80	206	276	142	8,220	7	7	0	0	14
	APPROACH %	16%	73%	12%	9%	88%	2%	8%	63%	29%	33%	44%	23%						
	APP/DEPART	2,742	/	2,159	4,581	/	4,341	273	/	921	624	/	799	0					
	BEGIN PEAK HR		7:15 AM																
	VOLUMES	208	1,063	197	236	2,233	54	8	104	40	124	159	90	4,516					
	APPROACH %	14%	72%	13%	9%	89%	2%	5%	68%	26%	33%	43%	24%						
	PEAK HR FACTOR		0.805			0.908			0.731			0.740		0.926					
	APP/DEPART	1,468	/	1,162	2,523	/	2,400	152	/	536	373	/	418	0					
PM	4:00 PM	39	466	41	31	338	13	12	29	39	65	92	33	1,198	3	3	0	0	6
	4:15 PM	47	493	42	26	300	6	8	21	29	51	110	39	1,172	2	1	0	0	3
	4:30 PM	37	463	58	18	355	11	20	45	57	65	106	44	1,279	2	2	0	0	4
	4:45 PM	48	467	53	30	326	12	9	30	32	55	127	58	1,247	1	2	0	0	3
	5:00 PM	46	358	65	28	330	9	28	56	50	68	132	32	1,202	4	3	0	0	7
	5:15 PM	40	413	76	31	327	8	7	43	42	56	147	57	1,247	1	1	0	0	2
	5:30 PM	41	440	70	35	306	8	8	32	30	53	148	53	1,224	2	3	0	0	5
	5:45 PM	49	485	59	25	266	10	4	31	29	61	151	46	1,216	1	1	0	2	4
	VOLUMES	347	3,585	464	224	2,548	77	96	287	308	474	1,013	362	9,785	16	16	0	2	34
	APPROACH %	8%	82%	11%	8%	89%	3%	14%	42%	45%	26%	55%	20%						
	APP/DEPART	4,396	/	4,059	2,849	/	3,344	691	/	961	1,849	/	1,421	0					
	BEGIN PEAK HR		4:30 PM																
	VOLUMES	171	1,701	252	107	1,338	40	64	174	181	244	512	191	4,975					
	APPROACH %	8%	80%	12%	7%	90%	3%	15%	42%	43%	26%	54%	20%						
	PEAK HR FACTOR		0.935			0.967			0.782			0.911		0.972					
	APP/DEPART	2,124	/	1,964	1,485	/	1,771	419	/	525	947	/	715	0					



		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0
	7:15 AM	2	0	0	2	4	2	0	0	0	2	0	0	0	2	2
	7:30 AM	1	1	1	1	4	1	0	1	1	3	0	1	0	0	1
	7:45 AM	4	2	2	2	10	3	0	2	2	7	1	2	0	0	3
	8:00 AM	0	3	0	0	3	0	0	0	0	0	0	3	0	0	3
	8:15 AM	2	1	2	3	8	2	0	2	1	5	0	1	0	2	3
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	4	1	4	3	12	2	0	2	1	5	2	1	2	2	7
	TOTAL	14	8	9	11	42	11	0	7	5	23	3	8	2	6	19
PM	4:00 PM	2	1	4	1	8	1	1	2	0	4	1	0	2	1	4
	4:15 PM	2	0	2	1	5	1	0	1	1	3	1	0	1	0	2
	4:30 PM	3	4	2	2	11	0	0	2	1	3	3	4	0	1	8
	4:45 PM	5	1	3	1	10	3	0	3	1	7	2	1	0	0	3
	5:00 PM	2	1	1	2	6	1	0	0	1	2	1	1	1	1	4
	5:15 PM	2	1	3	1	7	1	0	1	0	2	1	1	2	1	5
	5:30 PM	3	2	2	0	7	2	0	2	0	4	1	2	0	0	3
	5:45 PM	1	1	4	0	6	0	0	4	0	4	1	1	0	0	2
	TOTAL	20	11	21	8	60	9	1	15	4	29	11	10	6	4	31

INTERSECTION TURNING MOVEMENT COUNTS

T319

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Costa Mesa	PROJECT #:	CMP2019
Tue, Mar 12, 19	NORTH & SOUTH:	Harbor	LOCATION #:	48
	EAST & WEST:	NB I-405 Ramps	CONTROL:	SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

Add U-Turns to Left Turns

		NORTHBOUND (Harbor)			SOUTHBOUND (Harbor)			EASTBOUND (NB I-405 Ramps)			WESTBOUND (NB I-405 Ramps)			
	LANES:	NL X	NT 4	NR 2	SL X	ST 5	SR X	EL X	ET X	ER X	WL 1,5	WT X	WR 1,5	TOTAL
AM	6:00 AM	0	118	82	0	193	0	0	0	0	29	0	76	498
	6:15 AM	0	95	79	0	234	0	0	0	0	42	0	87	537
	6:30 AM	0	157	99	0	369	0	0	0	0	51	0	88	764
	6:45 AM	0	177	90	0	441	0	0	0	0	53	0	179	940
	7:00 AM	0	200	119	0	448	0	0	0	0	77	0	156	1,000
	7:15 AM	0	261	133	0	551	0	0	0	0	80	0	169	1,194
	7:30 AM	0	305	132	0	623	0	0	0	0	114	0	172	1,346
	7:45 AM	0	381	161	0	628	0	0	0	0	157	0	230	1,557
	8:00 AM	0	404	130	0	525	0	0	0	0	111	0	204	1,374
	8:15 AM	0	384	135	0	571	0	0	0	0	106	0	211	1,407
	8:30 AM	0	382	144	0	579	0	0	0	0	128	0	240	1,473
	8:45 AM	0	369	112	0	541	0	0	0	0	127	0	218	1,367
	VOLUMES	0	3,233	1,416	0	5,703	0	0	0	0	1,075	0	2,030	13,457
	APPROACH %	0%	70%	30%	0%	100%	0%	0%	0%	0%	35%	0%	65%	
	APP/DEPART	4,649	/	5,263	5,703	/	6,778	0	/	1,416	3,105	/	0	0
	BEGIN PEAK HR		7:45 AM											
	VOLUMES	0	1,551	570	0	2,303	0	0	0	0	502	0	885	5,811
	APPROACH %	0%	73%	27%	0%	100%	0%	0%	0%	0%	36%	0%	64%	
	PEAK HR FACTOR		0.978			0.917			0.000			0.896		0.933
	APP/DEPART	2,121	/	2,436	2,303	/	2,805	0	/	570	1,387	/	0	0
PM	03:00 PM	0	395	118	0	488	0	0	0	0	193	0	240	1,434
	3:15 PM	0	391	135	0	465	0	0	0	0	194	0	233	1,418
	3:30 PM	0	358	113	0	474	0	0	0	0	193	0	291	1,429
	3:45 PM	0	398	105	0	480	0	0	0	0	172	0	268	1,423
	4:00 PM	0	385	137	0	543	0	0	0	0	174	0	280	1,519
	4:15 PM	0	409	151	0	493	0	0	0	0	192	0	267	1,512
	4:30 PM	0	407	156	0	547	0	0	0	0	173	0	287	1,570
	4:45 PM	0	368	112	0	556	0	0	0	0	159	0	301	1,496
	5:00 PM	0	381	188	0	664	0	0	0	0	183	0	265	1,681
	5:15 PM	0	357	148	0	683	0	0	0	0	179	0	267	1,634
	5:30 PM	0	422	117	0	553	0	0	0	0	178	0	241	1,511
	5:45 PM	0	331	139	0	485	0	0	0	0	187	0	234	1,376
	6:00 PM	0	342	155	0	464	0	0	0	0	196	0	242	1,399
	6:15 PM	0	336	124	0	437	0	0	0	0	211	0	260	1,368
	6:30 PM	0	333	79	0	398	0	0	0	0	204	0	233	1,247
	6:45 PM	0	302	89	0	370	0	0	0	0	206	0	180	1,147
	VOLUMES	0	5,915	2,066	0	8,100	0	0	0	0	2,994	0	4,089	23,164
	APPROACH %	0%	74%	26%	0%	100%	0%	0%	0%	0%	42%	0%	58%	
	APP/DEPART	7,981	/	10,004	8,100	/	11,094	0	/	2,066	7,083	/	0	0
	BEGIN PEAK HR		4:30 PM											
	VOLUMES	0	1,513	604	0	2,450	0	0	0	0	694	0	1,120	6,381
	APPROACH %	0%	71%	29%	0%	100%	0%	0%	0%	0%	38%	0%	62%	
	PEAK HR FACTOR		0.930			0.897			0.000			0.986		0.949
	APP/DEPART	2,117	/	2,633	2,450	/	3,144	0	/	604	1,814	/	0	0

U-TURNS					
	NB	SB	EB	WB	TTL
	0	0	0	0	
AM	0	0	0	0	0
PM	0	0	0	0	0
BEGIN PEAK HR					
	0	0	0	0	0

Right-turn Overlap			
NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0

Harbor

NORTH SIDE

NB I-405 Ramps WEST SIDE EAST SIDE **NB I-405 Ramps**

SOUTH SIDE

Harbor

	ALL PED AND BIKE				
	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL
AM 6:00 AM	0	0	0	0	0
6:15 AM	0	1	0	0	1
6:30 AM	0	0	1	0	1
6:45 AM	0	1	0	0	1
7:00 AM	0	0	1	0	1
7:15 AM	0	0	2	0	2
7:30 AM	0	0	0	0	0
7:45 AM	0	0	0	0	0
8:00 AM	0	3	0	0	3
8:15 AM	0	1	0	0	1
8:30 AM	0	0	4	0	4
8:45 AM	0	0	2	0	2
TOTAL	0	6	10	0	16
AM BEGIN PEAK HR			7:45 AM		
PM 3:00 PM	0	0	0	0	0
3:15 PM	0	3	1	0	4
3:30 PM	0	0	0	0	0
3:45 PM	0	0	3	0	3
4:00 PM	0	1	1	0	2
4:15 PM	0	0	1	0	1
4:30 PM	0	1	2	0	3
4:45 PM	0	0	1	0	1
5:00 PM	0	2	1	0	3
5:15 PM	0	0	1	0	1
5:30 PM	0	1	0	0	1
5:45 PM	0	2	5	0	7
6:00 PM	0	5	0	0	5
6:15 PM	0	2	0	0	2
6:30 PM	0	1	1	0	2
6:45 PM	0	1	0	0	1
TOTAL	0	19	17	0	36
PM BEGIN PEAK HR			4:30 PM		

	PEDESTRIAN CROSSINGS				
	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL
AM 6:00 AM	0	0	0	0	0
6:15 AM	0	0	0	0	0
6:30 AM	0	0	1	0	1
6:45 AM	0	0	0	0	0
7:00 AM	0	0	1	0	1
7:15 AM	0	0	2	0	2
7:30 AM	0	0	0	0	0
7:45 AM	0	0	0	0	0
8:00 AM	0	0	0	0	0
8:15 AM	0	0	0	0	0
8:30 AM	0	0	4	0	4
8:45 AM	0	0	2	0	2
TOTAL	0	0	10	0	10
AM BEGIN PEAK HR	0	0	4	0	4
PM 3:00 PM	0	0	0	0	0
3:15 PM	0	0	1	0	1
3:30 PM	0	0	0	0	0
3:45 PM	0	0	3	0	3
4:00 PM	0	0	1	0	1
4:15 PM	0	0	1	0	1
4:30 PM	0	0	2	0	2
4:45 PM	0	0	1	0	1
5:00 PM	0	0	1	0	1
5:15 PM	0	0	1	0	1
5:30 PM	0	0	0	0	0
5:45 PM	0	0	5	0	5
6:00 PM	0	0	0	0	0
6:15 PM	0	0	0	0	0
6:30 PM	0	0	1	0	1
6:45 PM	0	0	0	0	0
TOTAL	0	0	17	0	17
PM BEGIN PEAK HR	0	0	5	0	5

	BICYCLE CROSSINGS				
	NS	SS	ES	WS	TOTAL
AM 6:00 AM	0	0	0	0	0
6:15 AM	0	1	0	0	1
6:30 AM	0	0	0	0	0
6:45 AM	0	1	0	0	1
7:00 AM	0	0	0	0	0
7:15 AM	0	0	0	0	0
7:30 AM	0	0	0	0	0
7:45 AM	0	0	0	0	0
8:00 AM	0	3	0	0	3
8:15 AM	0	1	0	0	1
8:30 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0
TOTAL	0	6	0	0	6
AM BEGIN PEAK HR	0	4	0	0	4
PM 3:00 PM	0	0	0	0	0
3:15 PM	0	3	0	0	3
3:30 PM	0	0	0	0	0
3:45 PM	0	0	0	0	0
4:00 PM	0	1	0	0	1
4:15 PM	0	0	0	0	0
4:30 PM	0	1	0	0	1
4:45 PM	0	0	0	0	0
5:00 PM	0	2	0	0	2
5:15 PM	0	0	0	0	0
5:30 PM	0	1	0	0	1
5:45 PM	0	2	0	0	2
6:00 PM	0	5	0	0	5
6:15 PM	0	2	0	0	2
6:30 PM	0	1	0	0	1
6:45 PM	0	1	0	0	1
TOTAL	0	19	0	0	19
PM BEGIN PEAK HR	0	3	0	0	3

INTERSECTION TURNING MOVEMENT COUNTS

T319

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Tue, Apr 16, 19

LOCATION: Costa Mesa
NORTH & SOUTH: Harbor
EAST & WEST: SB I-405 Ramps

PROJECT #: CMP2019
LOCATION #: 42
CONTROL: SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N ◄ W E ► S ▼

Add U-Turns to Left Turns

		NORTHBOUND Harbor			SOUTHBOUND Harbor			EASTBOUND SB I-405 Ramps			WESTBOUND SB I-405 Ramps				U-TURNS					Right-turn Overlap			
	LANES:	NL X	NT 3.5	NR 1.5	SL X	ST 4	SR 1	EL 1.5	ET X	ER 1.5	WL X	WT X	WR X	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL	NRR X	SRR X	ERR X	WRR X
AM	6:00 AM	0	161	102	0	99	131	63	0	95	0	0	0	651	0	0	0	0	0	0	0	0	0
AM	6:15 AM	0	160	146	0	146	177	59	0	71	0	0	0	759	0	0	0	0	0	0	0	0	0
AM	6:30 AM	0	197	226	0	204	258	49	0	86	0	0	0	1,020	0	0	0	0	0	0	0	0	0
AM	6:45 AM	0	260	244	0	210	229	52	0	90	0	0	0	1,085	0	0	0	0	0	0	0	0	0
AM	7:00 AM	0	269	289	0	258	313	42	0	110	0	0	0	1,281	0	0	0	0	0	0	0	0	0
AM	7:15 AM	0	313	349	0	303	349	74	0	89	0	0	0	1,477	0	0	0	0	0	0	0	0	0
AM	7:30 AM	0	389	353	0	386	344	105	0	96	0	0	0	1,673	0	0	0	0	0	0	0	0	0
AM	7:45 AM	0	475	309	0	332	271	80	0	99	0	0	0	1,566	0	0	0	0	0	0	0	0	0
AM	8:00 AM	0	431	327	0	398	266	104	0	113	0	0	0	1,639	0	0	0	0	0	0	0	0	0
AM	8:15 AM	0	416	277	0	373	260	92	0	116	0	0	0	1,534	0	0	0	0	0	0	0	0	0
AM	8:30 AM	0	400	276	0	400	265	109	0	127	0	0	0	1,577	0	0	0	0	0	0	0	0	0
AM	8:45 AM	0	316	258	0	430	198	112	0	120	0	0	0	1,434	0	0	0	0	0	0	0	0	0
	VOLUMES	0	3,787	3,156	0	3,539	3,061	941	0	1,212	0	0	0	15,696	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	55%	45%	0%	54%	46%	44%	0%	56%	0%	0%	0%										
	APP/DEPART	6,943	/	4,728	6,600	/	4,751	2,153	/	3,156	0	/	3,061	0									
	BEGIN PEAK HR		7:30 AM																				
	VOLUMES	0	1,711	1,266	0	1,489	1,141	381	0	424	0	0	0	6,412						0	0	0	0
	APPROACH %	0%	57%	43%	0%	57%	43%	47%	0%	53%	0%	0%	0%										
	PEAK HR FACTOR		0.949			0.901			0.927			0.000		0.958									
	APP/DEPART	2,977	/	2,092	2,630	/	1,913	805	/	1,266	0	/	1,141	0									
PM	03:00 PM	0	468	180	0	456	213	51	0	139	0	0	0	1,507	0	0	0	0	0	0	0	0	0
PM	3:15 PM	0	467	199	0	444	191	46	0	139	0	0	0	1,486	0	0	0	0	0	0	0	0	0
PM	3:30 PM	0	411	169	0	428	203	52	0	180	0	0	0	1,443	0	0	0	0	0	0	0	0	0
PM	3:45 PM	0	478	205	0	447	205	44	0	163	0	0	0	1,542	0	0	0	0	0	0	0	0	0
PM	4:00 PM	0	483	188	0	495	250	40	0	167	0	0	0	1,623	0	1	0	0	1	0	0	0	0
PM	4:15 PM	0	454	201	0	465	222	37	0	161	0	0	0	1,540	0	0	0	0	0	0	0	0	0
PM	4:30 PM	0	440	156	0	508	241	35	0	178	0	0	0	1,558	0	0	0	0	0	0	0	0	0
PM	4:45 PM	0	451	171	0	546	256	41	0	165	0	0	0	1,630	0	0	0	0	0	0	0	0	0
PM	5:00 PM	0	503	170	0	534	352	43	0	172	0	0	0	1,774	0	0	0	0	0	0	0	0	0
PM	5:15 PM	0	448	170	0	537	299	36	0	199	0	0	0	1,689	0	0	0	0	0	0	0	0	0
PM	5:30 PM	0	448	163	0	497	241	23	0	170	0	0	0	1,542	0	0	0	0	0	0	0	0	0
PM	5:45 PM	0	427	182	0	511	211	30	0	184	0	0	0	1,545	0	0	0	0	0	0	0	0	0
PM	6:00 PM	0	406	178	0	451	222	43	0	158	0	0	0	1,458	0	0	0	0	0	0	0	0	0
PM	6:15 PM	0	426	200	0	469	175	40	0	169	0	0	0	1,479	0	0	0	0	0	0	0	0	0
PM	6:30 PM	0	399	180	0	443	148	46	0	160	0	0	0	1,376	0	1	0	0	1	0	0	0	0
PM	6:45 PM	0	351	141	0	381	133	39	0	138	0	0	0	1,183	0	0	0	0	0	0	0	0	0
	VOLUMES	0	7,060	2,853	0	7,612	3,562	646	0	2,642	0	0	0	24,377	0	2	0	0	2	0	0	0	0
	APPROACH %	0%	71%	29%	0%	68%	32%	20%	0%	80%	0%	0%	0%										
	APP/DEPART	9,913	/	7,708	11,176	/	10,254	3,288	/	2,853	0	/	3,562	0									
	BEGIN PEAK HR		4:30 PM																				
	VOLUMES	0	1,842	667	0	2,125	1,148	155	0	714	0	0	0	6,651						0	0	0	0
	APPROACH %	0%	73%	27%	0%	65%	35%	18%	0%	82%	0%	0%	0%										
	PEAK HR FACTOR		0.932			0.924			0.924			0.000		0.937									
	APP/DEPART	2,509	/	1,997	3,273	/	2,839	869	/	667	0	/	1,148	0									

Harbor

NORTH SIDE

SB I-405 Ramps WEST SIDE EAST SIDE **SB I-405 Ramps**

SOUTH SIDE

Harbor

		ALL PED AND BIKE					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	6:15 AM	0	0	2	1	3	0	0	0	0	0	0	0	2	1	3
AM	6:30 AM	0	0	2	0	2	0	0	1	0	1	0	0	1	0	1
AM	6:45 AM	0	0	2	0	2	0	0	2	0	2	0	0	0	0	0
AM	7:00 AM	0	0	3	0	3	0	0	2	0	2	0	0	1	0	1
AM	7:15 AM	0	0	2	0	2	0	0	1	0	1	0	0	1	0	1
AM	7:30 AM	0	0	2	0	2	0	0	2	0	2	0	0	0	0	0
AM	7:45 AM	0	0	5	0	5	0	0	4	0	4	0	0	1	0	1
AM	8:00 AM	0	0	2	0	2	0	0	0	0	0	0	0	2	0	2
AM	8:15 AM	0	0	3	0	3	0	0	3	0	3	0	0	0	0	0
AM	8:30 AM	0	0	2	0	2	0	0	1	0	1	0	0	1	0	1
AM	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	25	1	26	0	0	16	0	16	0	0	9	1	10
	AM BEGIN PEAK HR			7:30 AM			0	0	9	0	9	0	0	3	0	3
PM	3:00 PM	0	0	0	1	1	0	0	0	1	1	0	0	0	0	0
PM	3:15 PM	0	0	2	0	2	0	0	0	0	0	0	0	2	0	2
PM	3:30 PM	0	0	4	1	5	0	0	2	0	2	0	0	2	1	3
PM	3:45 PM	0	0	3	0	3	0	0	1	0	1	0	0	2	0	2
PM	4:00 PM	0	0	3	0	3	0	0	1	0	1	0	0	2	0	2
PM	4:15 PM	0	0	3	0	3	0	0	2	0	2	0	0	1	0	1
PM	4:30 PM	0	0	1	0	1	0	0	0	0	0	0	0	1	0	1
PM	4:45 PM	0	0	1	0	1	0	0	1	0	1	0	0	0	0	0
PM	5:00 PM	0	0	1	0	1	0	0	1	0	1	0	0	0	0	0
PM	5:15 PM	0	0	1	0	1	0	0	1	0	1	0	0	0	0	0
PM	5:30 PM	0	0	3	1	4	0	0	2	0	2	0	0	1	1	2
PM	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	6:00 PM	0	0	4	1	5	0	0	2	1	3	0	0	2	0	2
PM	6:15 PM	0	0	1	0	1	0	0	0	0	0	0	0	1	0	1
PM	6:30 PM	0	0	2	0	2	0	0	2	0	2	0	0	0	0	0
PM	6:45 PM	0	0	3	0	3	0	0	0	0	0	0	0	3	0	3
	TOTAL	0	0	32	4	36	0	0	15	2	17	0	0	17	2	19
	PM BEGIN PEAK HR			4:30 PM			0	0	3	0	3	0	0	1	0	1

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 pacific@aimtd.com

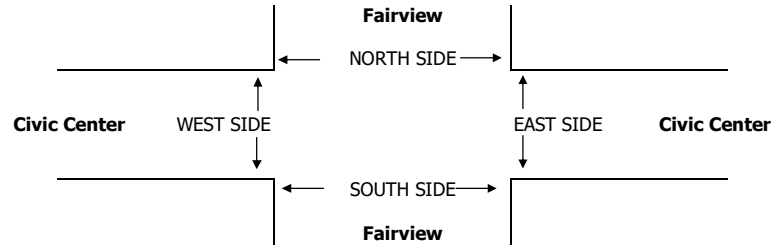
DATE:	LOCATION:	Santa Ana	PROJECT #:	SC0846
Tue, Feb 9, 16	NORTH & SOUTH:	Fairview	LOCATION #:	12
	EAST & WEST:	Civic Center	CONTROL:	SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

☑ Add U-Turns to Left Turns

		NORTHBOUND Fairview			SOUTHBOUND Fairview			EASTBOUND Civic Center			WESTBOUND Civic Center				U-TURNS				
	LANES:	NL 1	NT 3	NR 0	SL 1	ST 3	SR 0	EL 0.5	ET 1	ER 0.5	WL 1.5	WT 0.5	WR 1	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	1	313	65	39	371	1	1	5	4	78	3	22	903	0	3	0	0	3
	7:15 AM	0	331	87	57	342	2	2	6	8	82	1	49	967	0	5	0	0	5
	7:30 AM	2	277	122	68	316	1	2	4	3	67	3	45	910	0	1	0	0	1
	7:45 AM	2	307	123	69	318	1	0	7	7	61	1	32	928	0	1	0	0	1
	8:00 AM	3	272	78	49	332	3	2	2	3	63	6	21	834	0	3	0	0	3
	8:15 AM	2	253	64	28	357	1	0	0	3	48	3	39	798	0	1	0	0	1
	8:30 AM	3	247	56	22	373	0	2	1	8	53	2	29	796	0	1	0	0	1
	8:45 AM	2	236	53	19	335	0	1	3	1	61	1	20	732	0	0	0	0	0
	VOLUMES	15	2,236	648	351	2,744	9	10	28	37	513	20	257	6,868	0	15	0	0	15
	APPROACH %	1%	77%	22%	11%	88%	0%	13%	37%	49%	65%	3%	33%						
	APP/DEPART	2,899	/	2,518	3,104	/	3,294	75	/	1,012	790	/	44	0					
	BEGIN PEAK HR		7:00 AM																
	VOLUMES	5	1,228	397	233	1,347	5	5	22	22	288	8	148	3,708					
	APPROACH %	0%	75%	24%	15%	85%	0%	10%	45%	45%	65%	2%	33%						
	PEAK HR FACTOR		0.943			0.964			0.766			0.841		0.959					
	APP/DEPART	1,630	/	1,391	1,585	/	1,657	49	/	642	444	/	18	0					
PM	4:00 PM	1	335	69	36	307	2	4	1	3	74	0	41	873	0	2	0	0	2
	4:15 PM	3	358	78	22	317	0	0	0	3	76	0	41	898	2	2	0	0	4
	4:30 PM	2	360	82	28	291	0	2	1	2	113	1	34	916	1	1	0	0	2
	4:45 PM	0	337	82	26	314	0	1	1	2	111	0	38	912	0	1	0	0	1
	5:00 PM	1	325	93	29	296	0	1	3	2	112	0	50	912	0	5	0	0	5
	5:15 PM	0	340	99	34	330	0	0	1	1	126	0	32	963	0	2	0	0	2
	5:30 PM	0	351	102	32	342	0	0	0	0	88	0	41	956	0	3	0	0	3
	5:45 PM	3	358	92	43	317	0	0	0	0	94	0	32	939	2	6	0	0	8
	VOLUMES	10	2,764	697	250	2,514	2	8	7	13	794	1	309	7,369	5	22	0	0	27
	APPROACH %	0%	80%	20%	9%	91%	0%	29%	25%	46%	72%	0%	28%						
	APP/DEPART	3,471	/	3,103	2,766	/	3,326	28	/	932	1,104	/	8	0					
	BEGIN PEAK HR		5:00 PM																
	VOLUMES	4	1,374	386	138	1,285	0	1	4	3	420	0	155	3,770					
	APPROACH %	0%	78%	22%	10%	90%	0%	13%	50%	38%	73%	0%	27%						
	PEAK HR FACTOR		0.974			0.951			0.333			0.887		0.979					
	APP/DEPART	1,764	/	1,546	1,423	/	1,710	8	/	512	575	/	2	0					



		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	30	0	8	16	54	29	0	6	15	50	1	0	2	1	4
	7:15 AM	24	0	0	20	44	23	0	0	18	41	1	0	0	2	3
	7:30 AM	36	0	8	25	69	34	0	4	24	62	2	0	4	1	7
	7:45 AM	33	0	4	25	62	33	0	4	25	62	0	0	0	0	0
	8:00 AM	8	0	1	2	11	6	0	1	1	8	2	0	0	1	3
	8:15 AM	10	0	2	7	19	10	0	2	7	19	0	0	0	0	0
	8:30 AM	4	0	5	2	11	4	0	1	2	7	0	0	4	0	4
	8:45 AM	4	0	2	5	11	3	0	2	4	9	1	0	0	1	2
	TOTAL	149	0	30	102	281	142	0	20	96	258	7	0	10	6	23
PM	4:00 PM	7	0	6	0	13	6	0	4	0	10	1	0	2	0	3
	4:15 PM	10	0	1	5	16	6	0	1	2	9	4	0	0	3	7
	4:30 PM	6	0	2	4	12	6	0	2	3	11	0	0	0	1	1
	4:45 PM	5	0	0	5	10	4	0	0	5	9	1	0	0	0	1
	5:00 PM	5	0	4	5	14	4	0	3	3	10	1	0	1	2	4
	5:15 PM	3	0	4	3	10	1	0	1	0	2	2	0	3	3	8
	5:30 PM	5	0	6	1	12	5	0	3	1	9	0	0	3	0	3
	5:45 PM	2	0	4	2	8	2	0	4	2	8	0	0	0	0	0
	TOTAL	43	0	27	25	95	34	0	18	16	68	9	0	9	9	27

Transportation Studies, Inc.
2640 Walnut Avenue, Suite L
Tustin, CA. 92780

City: SANTA ANA
N-S Direction: FAIRVIEW STREET
E-W Direction: 1ST STREET

File Name : H1702002
Site Code : 00000000
Start Date : 2/7/2017
Page No : 1

Groups Printed- Turning Movements

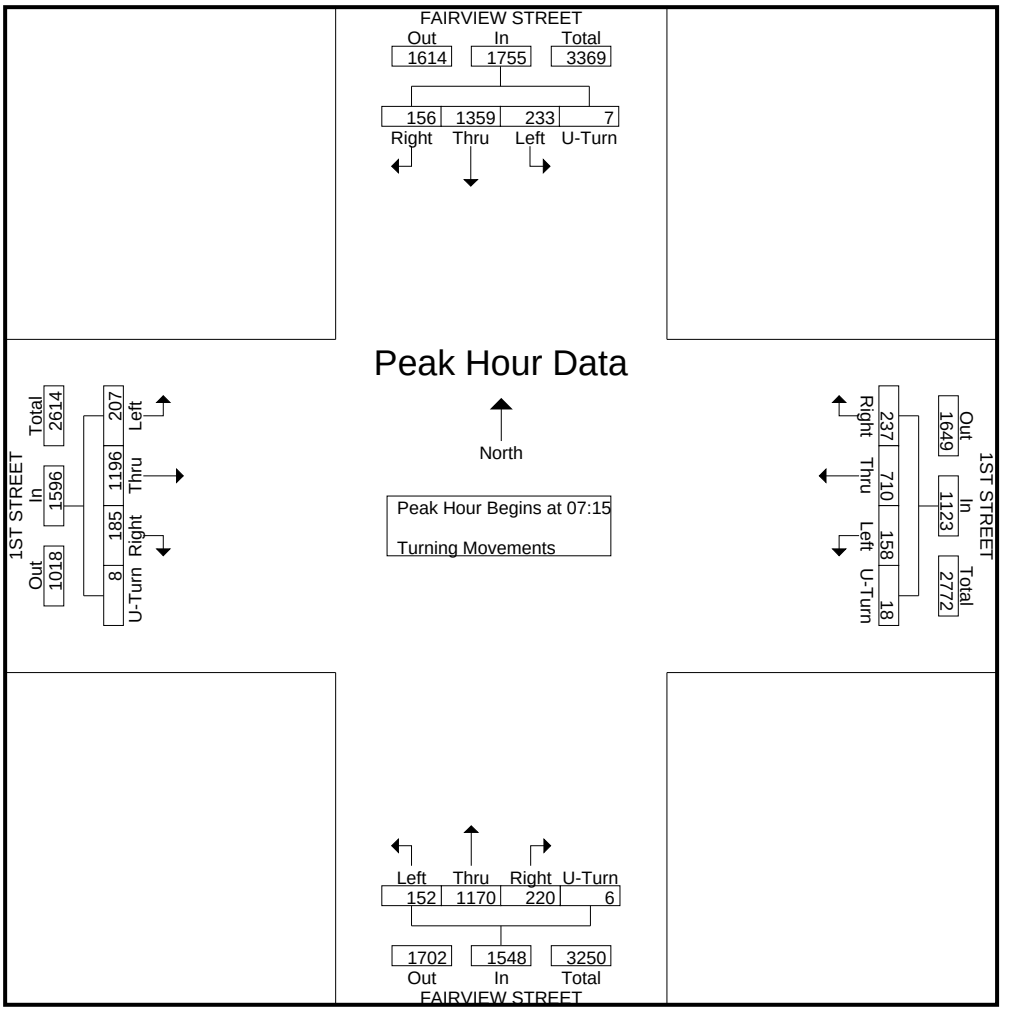
	FAIRVIEW STREET Southbound				1ST STREET Westbound				FAIRVIEW STREET Northbound				1ST STREET Eastbound				
Start Time	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Int. Total
07:00	20	352	41	1	39	136	32	2	45	284	30	0	54	254	59	0	1349
07:15	28	383	54	1	43	148	49	5	45	283	28	4	34	311	59	0	1475
07:30	40	378	65	2	67	177	47	4	44	302	29	2	34	290	48	0	1529
07:45	53	298	60	3	71	203	38	2	69	303	49	0	52	290	53	4	1548
Total	141	1411	220	7	220	664	166	13	203	1172	136	6	174	1145	219	4	5901
08:00	35	300	54	1	56	182	24	7	62	282	46	0	65	305	47	4	1470
08:15	28	338	53	2	32	123	29	5	39	243	34	0	56	261	53	1	1297
08:30	19	363	50	2	42	116	20	5	43	225	20	0	34	230	48	1	1218
08:45	26	293	33	0	53	127	27	7	40	206	26	4	27	230	50	1	1150
Total	108	1294	190	5	183	548	100	24	184	956	126	4	182	1026	198	7	5135
*** BREAK ***																	
16:00	51	246	45	6	45	275	31	7	30	240	43	0	43	218	30	3	1313
16:15	49	268	48	3	60	220	34	7	41	275	25	0	32	181	49	1	1293
16:30	72	277	56	2	49	281	38	13	36	259	32	2	38	173	40	1	1369
16:45	63	264	42	6	51	274	38	10	31	285	45	3	28	200	49	3	1392
Total	235	1055	191	17	205	1050	141	37	138	1059	145	5	141	772	168	8	5367
17:00	75	299	50	5	45	300	38	7	30	277	43	3	34	214	58	2	1480
17:15	57	346	48	2	39	292	39	7	32	273	25	2	30	213	59	0	1464
17:30	63	279	49	3	51	277	35	5	14	268	42	0	36	212	46	3	1383
17:45	48	302	50	2	45	299	42	11	20	243	34	2	46	205	45	3	1397
Total	243	1226	197	12	180	1168	154	30	96	1061	144	7	146	844	208	8	5724
Grand Total	727	4986	798	41	788	3430	561	104	621	4248	551	22	643	3787	793	27	22127
Apprch %	11.1	76.1	12.2	0.6	16.1	70.2	11.5	2.1	11.4	78.1	10.1	0.4	12.2	72.1	15.1	0.5	
Total %	3.3	22.5	3.6	0.2	3.6	15.5	2.5	0.5	2.8	19.2	2.5	0.1	2.9	17.1	3.6	0.1	

Transportation Studies, Inc.
2640 Walnut Avenue, Suite L
Tustin, CA. 92780

City: SANTA ANA
N-S Direction: FAIRVIEW STREET
E-W Direction: 1ST STREET

File Name : H1702002
Site Code : 00000000
Start Date : 2/7/2017
Page No : 2

	FAIRVIEW STREET Southbound					1ST STREET Westbound					FAIRVIEW STREET Northbound					1ST STREET Eastbound					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15																					
07:15	28	383						49						4	360	34	311	**59**			
07:30	40	378	**65**		**485**	67	177	47	4	295	44	302	29	2	377	34	290	48	0	372	1529
07:45	**53**			**3**		**71**	**203**			**314**	**69**	**303**	**49**		**421**	52	290	53	**4**	399	**1548**
08:00	**35**	**300**	**54**	**1**	**390**	**56**	**182**	**24**	**7**	269	62	282	46	0	390	**65**	305	47	4	**421**	**1470**
Total Volume	156	1359	233	7	1755	237	710	158	18	1123	220	1170	152	6	1548	185	1196	207	8	1596	6022
% App. Total																					
PHF	.736	.887	.896	.583	.905	.835	.874	.806	.643	.894	.797	.965	.776	.375	.919	.712	.961	.877	.500	.948	.973

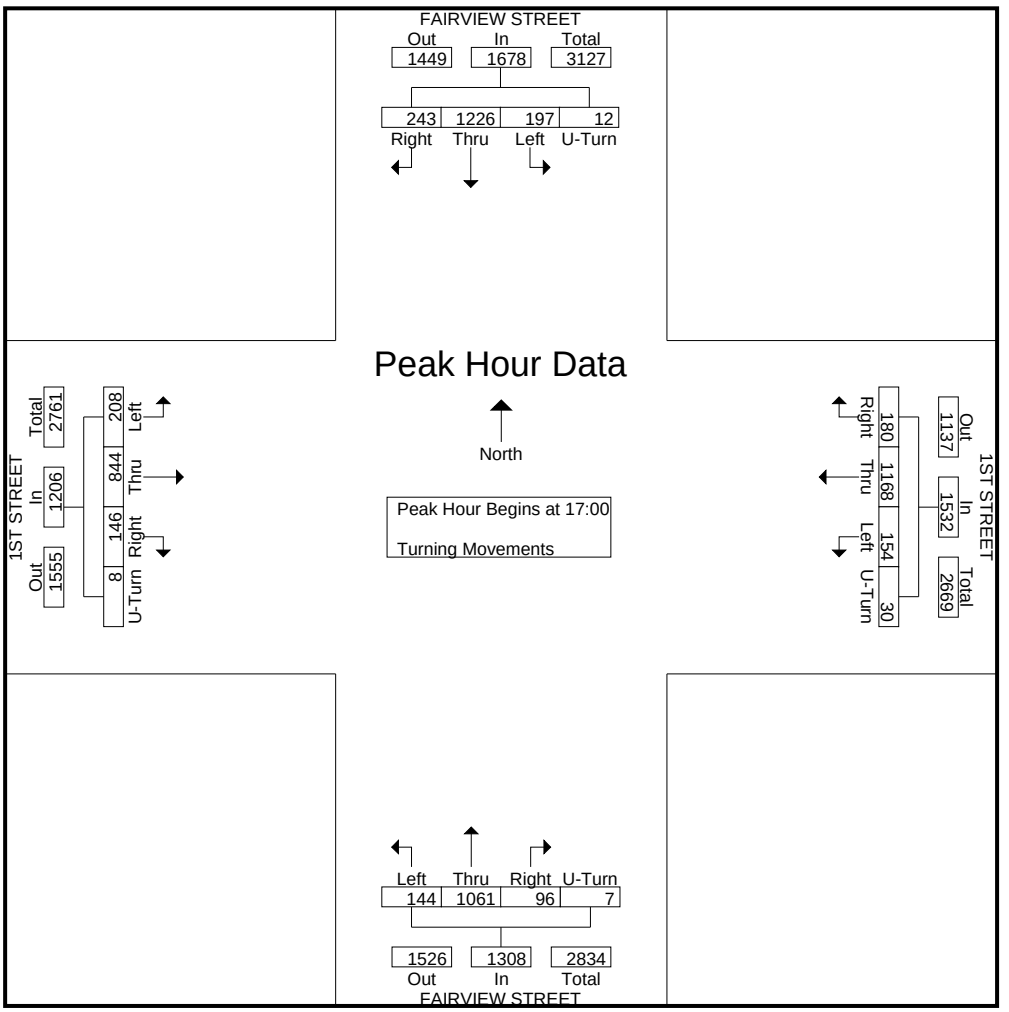


Transportation Studies, Inc.
2640 Walnut Avenue, Suite L
Tustin, CA. 92780

City: SANTA ANA
N-S Direction: FAIRVIEW STREET
E-W Direction: 1ST STREET

File Name : H1702002
Site Code : 00000000
Start Date : 2/7/2017
Page No : 3

	FAIRVIEW STREET Southbound					1ST STREET Westbound					FAIRVIEW STREET Northbound					1ST STREET Eastbound					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 17:00																					
17:00	75	299	50	5	429	45	300	38	7	390	30	**277**	**43**	**3**	**353**	34	**214**			**308**	**1480**
17:15	**57**	**346**	48	2	**453**	39	292	39	7	377	**32**	**273**	**25**	**2**	**332**	**30**	**213**	**59**	0	302	1464
17:30	63	279	49	3	394	**51**	277	35	5	368	14	268	42	0	324	36	212	46	**3**	297	1383
17:45	48	302	50	2	402	45	299	**42**	**11**	**397**						**46**	205	45	3	299	1397
Total Volume	243	1226	197	12	1678	180	1168	154	30	1532	96	1061	144	7	1308	146	844	208	8	1206	5724
% App. Total	14.5	73.1	11.7	0.7		11.7	76.2	10.1	2		7.3	81.1	11	0.5		12.1	70	17.2	0.7		
PHF	.810	.886	.985	.600	.926	.882	.973	.917	.682	.965	.750	.958	.837	.583	.926	.793	.986	.881	.667	.979	.967



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 pacific@aimtd.com

DATE: Tue, Feb 9, 16

LOCATION: Santa Ana
NORTH & SOUTH: Fairview
EAST & WEST: McFadden

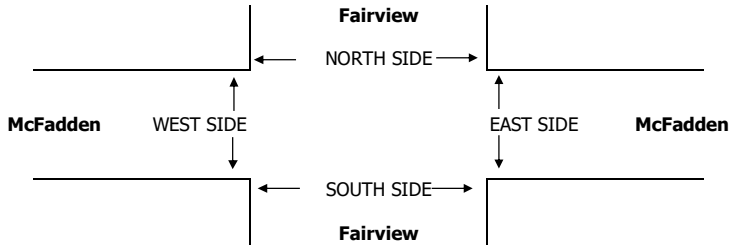
PROJECT #: SC0846
LOCATION #: 33
CONTROL: SIGNAL

NOTES:

AM PM MD OTHER OTHER — ▲ N, ◄ W, E ►, S ▼

☑ Add U-Turns to Left Turns

		NORTHBOUND Fairview			SOUTHBOUND Fairview			EASTBOUND McFadden			WESTBOUND McFadden				U-TURNS				
	LANES:	NL 1	NT 3	NR 1	SL 1	ST 3	SR 1	EL 1	ET 2	ER 0	WL 1	WT 2	WR 0	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	20	257	19	17	393	28	44	97	23	46	79	14	1,037	0	3	0	0	3
	7:15 AM	20	321	30	14	493	25	57	102	30	54	105	13	1,264	4	3	0	0	7
	7:30 AM	29	325	41	41	426	26	54	128	26	56	152	5	1,309	4	6	0	0	10
	7:45 AM	30	326	51	39	395	39	49	140	37	49	114	11	1,280	0	4	0	0	4
	8:00 AM	37	271	44	42	345	30	52	131	22	27	109	9	1,119	3	10	0	0	13
	8:15 AM	29	239	27	41	344	27	54	130	43	30	88	33	1,085	2	13	0	0	15
	8:30 AM	24	194	19	28	415	27	43	109	56	25	102	18	1,060	1	8	0	0	9
	8:45 AM	19	186	17	38	398	26	34	110	43	33	84	21	1,009	3	7	0	0	10
	VOLUMES	208	2,119	248	260	3,209	228	387	947	280	320	833	124	9,163	17	54	0	0	71
	APPROACH %	8%	82%	10%	7%	87%	6%	24%	59%	17%	25%	65%	10%						
	APP/DEPART	2,575	/	2,684	3,697	/	3,826	1,614	/	1,401	1,277	/	1,252	0					
	BEGIN PEAK HR		7:15 AM																
	VOLUMES	116	1,243	166	136	1,659	120	212	501	115	186	480	38	4,972					
	APPROACH %	8%	82%	11%	7%	87%	6%	26%	61%	14%	26%	68%	5%						
	PEAK HR FACTOR		0.937			0.900			0.916			0.826		0.950					
	APP/DEPART	1,525	/	1,516	1,915	/	1,971	828	/	780	704	/	705	0					
PM	4:00 PM	32	372	34	36	235	43	46	153	21	30	117	32	1,151	0	9	0	0	9
	4:15 PM	42	388	35	34	236	38	40	116	37	30	134	21	1,151	1	3	0	0	4
	4:30 PM	35	369	35	35	277	54	37	146	27	29	133	24	1,201	0	4	0	0	4
	4:45 PM	32	367	38	37	284	46	53	152	29	31	124	16	1,209	0	1	0	0	1
	5:00 PM	48	338	29	35	314	49	53	158	31	38	125	37	1,255	0	4	0	0	4
	5:15 PM	26	346	25	30	300	51	55	141	46	39	150	34	1,243	1	5	0	0	6
	5:30 PM	36	361	41	36	293	48	59	165	39	35	118	28	1,259	0	9	0	0	9
	5:45 PM	42	359	27	47	300	40	67	169	40	39	130	29	1,289	1	3	0	0	4
	VOLUMES	293	2,900	264	290	2,239	369	410	1,200	270	271	1,031	221	9,758	3	38	0	0	41
	APPROACH %	8%	84%	8%	10%	77%	13%	22%	64%	14%	18%	68%	15%						
	APP/DEPART	3,457	/	3,569	2,898	/	2,783	1,880	/	1,716	1,523	/	1,690	0					
	BEGIN PEAK HR		5:00 PM																
	VOLUMES	152	1,404	122	148	1,207	188	234	633	156	151	523	128	5,046					
	APPROACH %	9%	84%	7%	10%	78%	12%	23%	62%	15%	19%	65%	16%						
	PEAK HR FACTOR		0.958			0.969			0.927			0.899		0.979					
	APP/DEPART	1,678	/	1,787	1,543	/	1,516	1,023	/	882	802	/	861	0					



		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	18	15	27	25	85	14	14	25	21	74	4	1	2	4	11
	7:15 AM	26	46	46	34	152	26	43	44	30	143	0	3	2	4	9
	7:30 AM	120	117	87	110	434	118	110	82	104	414	2	7	5	6	20
	7:45 AM	83	96	44	81	304	81	90	42	76	289	2	6	2	5	15
	8:00 AM	33	27	28	22	110	27	27	26	21	101	6	0	2	1	9
	8:15 AM	8	39	29	5	81	7	36	26	5	74	1	3	3	0	7
	8:30 AM	12	11	11	13	47	9	10	10	10	39	3	1	1	3	8
	8:45 AM	8	5	9	9	31	8	3	6	8	25	0	2	3	1	6
	TOTAL	308	356	281	299	1,244	290	333	261	275	1,159	18	23	20	24	85
PM	4:00 PM	7	25	33	4	69	6	23	31	1	61	1	2	2	3	8
	4:15 PM	52	4	15	13	84	50	2	13	10	75	2	2	2	3	9
	4:30 PM	12	7	18	9	46	6	6	17	7	36	6	1	1	2	10
	4:45 PM	48	18	18	7	91	46	14	16	5	81	2	4	2	2	10
	5:00 PM	4	6	18	4	32	4	5	15	3	27	0	1	3	1	5
	5:15 PM	18	8	21	13	60	11	6	19	8	44	7	2	2	5	16
	5:30 PM	17	10	24	14	65	11	6	22	7	46	6	4	2	7	19
	5:45 PM	17	16	30	13	76	14	15	28	11	68	3	1	2	2	8
	TOTAL	175	94	177	77	523	148	77	161	52	438	27	17	16	25	85

INTERSECTION TURNING MOVEMENT COUNTS

T218

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Thu, May 16, 19

LOCATION: Santa Ana
NORTH & SOUTH: Fairview
EAST & WEST: Edinger

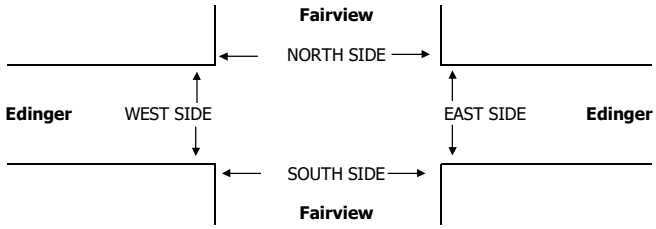
PROJECT #: SC2183
LOCATION #: 10
CONTROL: SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

☑ Add U-Turns to Left Turns

		NORTHBOUND Fairview			SOUTHBOUND Fairview			EASTBOUND Edinger			WESTBOUND Edinger				U-TURNS				
	LANES:	NL 2	NT 3	NR 0	SL 2	ST 3	SR 0	EL 2	ET 3	ER 0	WL 2	WT 3	WR 0	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	34	179	28	44	430	28	24	127	34	88	86	29	1,131	2	1	0	0	3
	7:15 AM	40	186	27	63	336	21	58	215	54	110	126	22	1,258	1	0	1	0	2
	7:30 AM	55	226	31	50	363	37	66	154	45	96	164	28	1,315	4	0	0	0	4
	7:45 AM	57	231	28	55	359	39	86	154	41	122	171	29	1,372	3	1	0	0	4
	8:00 AM	31	193	26	38	289	43	67	130	39	31	134	49	1,070	1	3	0	1	5
	8:15 AM	35	149	16	36	298	36	48	160	38	57	137	28	1,038	1	1	0	0	2
	8:30 AM	22	138	22	37	424	32	56	154	31	48	101	21	1,086	0	2	0	0	2
	8:45 AM	27	127	12	38	324	33	28	122	40	30	90	22	893	0	2	0	0	2
	VOLUMES	301	1,429	190	361	2,823	269	433	1,216	322	582	1,009	228	9,163	12	10	1	1	24
	APPROACH %	16%	74%	10%	10%	82%	8%	22%	62%	16%	32%	55%	13%						
	APP/DEPART	1,920	/	2,099	3,453	/	3,738	1,971	/	1,758	1,819	/	1,568	0					
	BEGIN PEAK HR		7:00 AM																
	VOLUMES	186	822	114	212	1,488	125	234	650	174	416	547	108	5,076					
	APPROACH %	17%	73%	10%	12%	82%	7%	22%	61%	16%	39%	51%	10%						
	PEAK HR FACTOR		0.888			0.909			0.809			0.832		0.925					
	APP/DEPART	1,122	/	1,165	1,825	/	2,088	1,058	/	974	1,071	/	849	0					
PM	4:00 PM	25	398	32	46	152	31	25	187	39	96	173	40	1,244	0	2	1	0	3
	4:15 PM	45	411	25	63	155	25	49	199	59	93	178	32	1,334	0	0	0	0	0
	4:30 PM	51	473	34	50	159	37	57	173	46	103	204	39	1,426	2	0	0	0	2
	4:45 PM	59	435	26	52	143	39	55	162	44	89	201	43	1,348	5	0	0	0	5
	5:00 PM	31	456	23	31	152	48	66	162	37	84	198	57	1,345	3	0	2	0	5
	5:15 PM	34	444	22	39	140	41	52	173	41	72	192	36	1,286	2	1	0	0	3
	5:30 PM	23	501	26	37	129	32	60	180	30	66	189	36	1,309	0	1	0	1	2
	5:45 PM	29	477	20	37	153	38	57	172	39	56	181	32	1,291	1	0	0	2	3
	VOLUMES	297	3,595	208	355	1,183	291	421	1,408	335	659	1,516	315	10,583	13	4	3	3	23
	APPROACH %	7%	88%	5%	19%	65%	16%	19%	65%	15%	26%	61%	13%						
	APP/DEPART	4,100	/	4,332	1,829	/	2,187	2,164	/	1,970	2,490	/	2,094	0					
	BEGIN PEAK HR		4:15 PM																
	VOLUMES	186	1,775	108	196	609	149	227	696	186	369	781	171	5,453					
	APPROACH %	9%	86%	5%	21%	64%	16%	20%	63%	17%	28%	59%	13%						
	PEAK HR FACTOR		0.927			0.970			0.903			0.954		0.956					
	APP/DEPART	2,069	/	2,171	954	/	1,174	1,109	/	1,000	1,321	/	1,108	0					



		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	AM BEGIN PEAK HR	7:00 AM					0	0	0	0	0					
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	PM BEGIN PEAK HR	4:15 PM					0	0	0	0	0					

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 pacific@aimtd.com

DATE: Tue, Feb 9, 16

LOCATION: Santa Ana
NORTH & SOUTH: Fairview
EAST & WEST: Warner

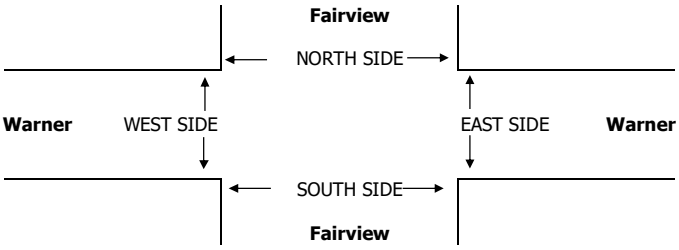
PROJECT #: SC0846
LOCATION #: 42
CONTROL: SIGNAL

NOTES:

AM PM MD OTHER OTHER — ▲ N, ◄ W, E ►, S ▼

☑ Add U-Turns to Left Turns

		NORTHBOUND Fairview			SOUTHBOUND Fairview			EASTBOUND Warner			WESTBOUND Warner				U-TURNS				
	LANES:	NL 2	NT 3	NR 0	SL 2	ST 3	SR 0	EL 2	ET 3	ER 0	WL 2	WT 3	WR 0	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	30	152	19	57	397	21	18	173	43	48	131	41	1,130	4	3	0	6	13
	7:15 AM	49	211	34	35	427	28	11	272	78	56	193	49	1,443	1	0	0	8	9
	7:30 AM	40	240	38	64	381	26	15	287	84	95	236	87	1,593	2	0	0	9	11
	7:45 AM	65	236	21	51	351	25	16	183	59	89	247	93	1,436	3	1	0	5	9
	8:00 AM	52	227	27	47	405	35	24	228	68	55	213	59	1,440	5	0	1	3	9
	8:15 AM	42	172	29	56	381	32	31	270	72	56	150	38	1,329	3	2	0	6	11
	8:30 AM	42	136	30	47	419	24	24	277	77	47	184	17	1,324	1	1	0	3	5
	8:45 AM	28	174	24	42	410	24	32	193	46	49	171	24	1,217	4	0	1	5	10
	VOLUMES	348	1,548	222	399	3,171	215	171	1,883	527	495	1,525	408	10,912	23	7	2	45	77
	APPROACH %	16%	73%	10%	11%	84%	6%	7%	73%	20%	20%	63%	17%						
	APP/DEPART	2,118	/	2,132	3,785	/	4,171	2,581	/	2,542	2,428	/	2,067	0					
	BEGIN PEAK HR		7:15 AM																
	VOLUMES	206	914	120	197	1,564	114	66	970	289	295	889	288	5,912					
	APPROACH %	17%	74%	10%	11%	83%	6%	5%	73%	22%	20%	60%	20%						
	PEAK HR FACTOR		0.963			0.957			0.858			0.858		0.928					
	APP/DEPART	1,240	/	1,268	1,875	/	2,134	1,325	/	1,311	1,472	/	1,199	0					
PM	4:00 PM	51	414	39	54	212	23	56	210	35	31	197	26	1,348	3	2	0	5	10
	4:15 PM	53	396	42	42	202	25	39	205	42	41	225	37	1,349	4	3	1	7	15
	4:30 PM	43	395	37	46	201	27	47	228	43	46	241	37	1,391	4	3	0	7	14
	4:45 PM	34	415	38	37	209	25	49	231	45	41	230	53	1,407	1	3	0	8	12
	5:00 PM	49	393	41	40	259	23	65	254	47	41	249	50	1,511	5	0	2	12	19
	5:15 PM	47	432	37	51	202	32	44	240	36	38	278	49	1,486	3	2	2	6	13
	5:30 PM	49	419	43	38	233	24	44	217	30	48	283	65	1,493	4	0	1	12	17
	5:45 PM	63	416	33	51	219	13	36	206	29	53	254	66	1,439	2	4	0	12	18
	VOLUMES	389	3,280	310	359	1,737	192	380	1,791	307	339	1,957	383	11,424	26	17	6	69	118
	APPROACH %	10%	82%	8%	16%	76%	8%	15%	72%	12%	13%	73%	14%						
	APP/DEPART	3,979	/	4,054	2,288	/	2,340	2,478	/	2,512	2,679	/	2,518	0					
	BEGIN PEAK HR		5:00 PM																
	VOLUMES	208	1,660	154	180	913	92	189	917	142	180	1,064	230	5,929					
	APPROACH %	10%	82%	8%	15%	77%	8%	15%	73%	11%	12%	72%	16%						
	PEAK HR FACTOR		0.980			0.920			0.852			0.931		0.981					
	APP/DEPART	2,022	/	2,080	1,185	/	1,207	1,248	/	1,287	1,474	/	1,355	0					



		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	1	1	4	0	6	0	1	3	0	4	1	0	1	0	2
	7:15 AM	2	8	6	4	20	0	6	5	4	15	2	2	1	0	5
	7:30 AM	1	3	3	4	11	0	3	3	2	8	1	0	0	2	3
	7:45 AM	2	3	2	4	11	0	3	1	4	8	2	0	1	0	3
	8:00 AM	7	9	6	8	30	2	8	2	8	20	5	1	4	0	10
	8:15 AM	3	5	7	9	24	2	4	7	8	21	1	1	0	1	3
	8:30 AM	1	3	5	2	11	1	1	4	0	6	0	2	1	2	5
	8:45 AM	1	2	4	2	9	1	2	3	1	7	0	0	1	1	2
	TOTAL	18	34	37	33	122	6	28	28	27	89	12	6	9	6	33
PM	4:00 PM	5	16	15	9	45	4	11	9	7	31	1	5	6	2	14
	4:15 PM	6	5	13	2	26	4	3	11	1	19	2	2	2	1	7
	4:30 PM	5	8	7	2	22	4	5	6	1	16	1	3	1	1	6
	4:45 PM	3	6	19	2	30	3	3	13	1	20	0	3	6	1	10
	5:00 PM	1	7	20	3	31	1	4	12	2	19	0	3	8	1	12
	5:15 PM	7	5	9	14	35	3	5	5	9	22	4	0	4	5	13
	5:30 PM	5	0	5	5	15	5	0	4	4	13	0	0	1	1	2
	5:45 PM	1	5	6	3	15	1	2	4	2	9	0	3	2	1	6
	TOTAL	33	52	94	40	219	25	33	64	27	149	8	19	30	13	70

INTERSECTION TURNING MOVEMENT COUNTS

T218

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Thu, May 16, 19

LOCATION: Santa Ana
NORTH & SOUTH: Fairview
EAST & WEST: MacArthur

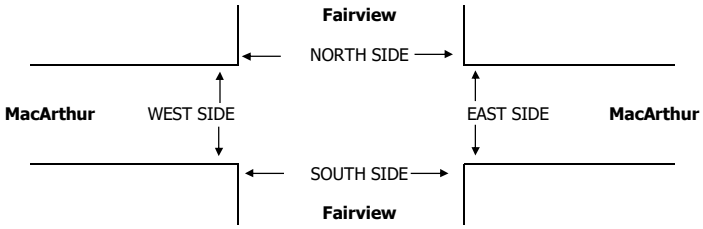
PROJECT #: SC2183
LOCATION #: 11
CONTROL: SIGNAL

NOTES:

AM PM MD OTHER OTHER — N ▲ / ◄ W / E ► / S ▼

Add U-Turns to Left Turns

		NORTHBOUND Fairview			SOUTHBOUND Fairview			EASTBOUND MacArthur			WESTBOUND MacArthur				U-TURNS				
	LANES:	NL 2	NT 3	NR 0	SL 2	ST 3	SR 1	EL 2	ET 3	ER 1	WL 2	WT 3	WR 1	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	25	129	15	55	313	33	18	188	35	38	81	14	944	5	1	0	3	9
	7:15 AM	48	175	15	63	416	29	20	233	36	51	108	25	1,219	11	1	2	2	16
	7:30 AM	71	199	21	65	381	34	34	248	44	50	113	44	1,304	20	0	0	4	24
	7:45 AM	67	213	22	80	372	54	31	258	37	75	146	37	1,392	24	0	0	2	26
	8:00 AM	59	176	30	95	361	54	38	269	31	56	122	32	1,323	18	0	0	2	20
	8:15 AM	41	193	17	47	303	51	27	230	39	32	131	27	1,138	9	1	0	3	13
	8:30 AM	38	140	10	66	353	22	26	195	40	41	104	21	1,056	4	2	0	1	7
	8:45 AM	30	158	17	54	343	42	26	166	24	40	106	17	1,023	4	0	0	3	7
	VOLUMES	379	1,383	147	525	2,842	319	220	1,787	286	383	911	217	9,399	95	5	2	20	122
	APPROACH %	20%	72%	8%	14%	77%	9%	10%	78%	12%	25%	60%	14%						
	APP/DEPART	1,909	/	1,823	3,686	/	3,586	2,293	/	2,474	1,511	/	1,516	0					
	BEGIN PEAK HR		7:15 AM																
	VOLUMES	245	763	88	303	1,530	171	123	1,008	148	232	489	138	5,238					
	APPROACH %	22%	70%	8%	15%	76%	9%	10%	79%	12%	27%	57%	16%						
	PEAK HR FACTOR		0.907			0.982			0.946			0.832		0.941					
	APP/DEPART	1,096	/	1,023	2,004	/	1,973	1,279	/	1,408	859	/	834	0					
PM	4:00 PM	72	367	32	52	217	34	73	165	59	40	373	47	1,531	3	3	0	5	11
	4:15 PM	66	451	13	38	205	24	65	175	55	36	304	54	1,486	6	6	0	1	13
	4:30 PM	69	424	24	31	235	19	74	196	44	37	322	49	1,524	7	3	1	4	15
	4:45 PM	69	452	27	32	228	23	56	169	49	41	354	67	1,567	4	5	1	9	19
	5:00 PM	47	351	17	64	232	21	80	189	82	47	353	67	1,550	4	7	0	5	16
	5:15 PM	55	428	22	42	250	24	67	169	68	52	322	53	1,552	3	2	0	4	9
	5:30 PM	60	395	32	42	223	26	68	163	44	47	349	64	1,513	8	4	0	6	18
	5:45 PM	71	429	34	39	194	35	46	146	42	47	299	57	1,439	1	5	1	3	10
	VOLUMES	509	3,297	201	340	1,784	206	529	1,372	443	347	2,676	458	12,162	36	35	3	37	111
	APPROACH %	13%	82%	5%	15%	77%	9%	23%	59%	19%	10%	77%	13%						
	APP/DEPART	4,007	/	4,316	2,330	/	2,573	2,344	/	1,915	3,481	/	3,358	0					
	BEGIN PEAK HR		4:30 PM																
	VOLUMES	240	1,655	90	169	945	87	277	723	243	177	1,351	236	6,193					
	APPROACH %	12%	83%	5%	14%	79%	7%	22%	58%	20%	10%	77%	13%						
	PEAK HR FACTOR		0.906			0.947			0.885			0.944		0.988					
	APP/DEPART	1,985	/	2,183	1,201	/	1,361	1,243	/	987	1,764	/	1,662	0					



		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	AM BEGIN PEAK HR	7:15 AM					0	0	0	0	0					
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	PM BEGIN PEAK HR	4:30 PM					0	0	0	0	0					

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 pacific@aimtd.com

DATE: Tue, Mar 1, 16

LOCATION: Santa Ana
NORTH & SOUTH: Fairview
EAST & WEST: Sunflower

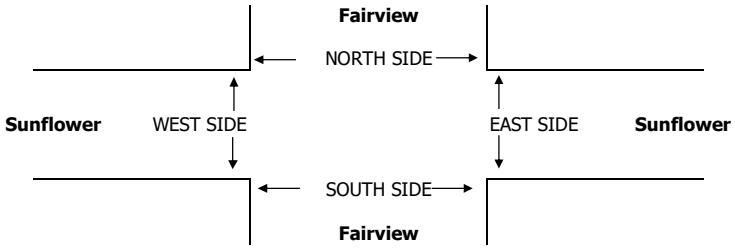
PROJECT #: SC0846
LOCATION #: 12
CONTROL: SIGNAL

NOTES:

AM PM MD OTHER OTHER — ▲ N, ◄ W, E ►, S ▼

☑ Add U-Turns to Left Turns

		NORTHBOUND Fairview			SOUTHBOUND Fairview			EASTBOUND Sunflower			WESTBOUND Sunflower				U-TURNS				
	LANES:	NL 2	NT 3	NR 1	SL 2	ST 3	SR 0	EL 2	ET 2	ER 0	WL 2	WT 3	WR 1	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	27	152	19	17	322	12	10	45	17	47	22	14	704	0	2	0	0	2
	7:15 AM	30	254	31	40	416	23	4	64	10	61	22	18	973	0	5	0	0	5
	7:30 AM	47	294	36	38	411	13	12	76	14	88	58	35	1,122	0	1	2	0	3
	7:45 AM	52	255	32	55	419	31	14	91	14	73	102	46	1,184	1	4	10	0	15
	8:00 AM	48	226	57	63	424	39	17	78	24	72	64	27	1,139	0	4	6	0	10
	8:15 AM	32	224	41	56	376	38	6	59	16	61	34	16	959	0	5	1	0	6
	8:30 AM	29	182	33	37	395	39	11	46	9	40	25	10	856	0	3	3	0	6
	8:45 AM	33	210	22	51	379	32	10	48	9	60	34	9	897	2	2	1	0	5
	VOLUMES	298	1,797	271	357	3,142	227	84	507	113	502	361	175	7,834	3	26	23	0	52
	APPROACH %	13%	76%	11%	10%	84%	6%	12%	72%	16%	48%	35%	17%						
	APP/DEPART	2,366	/	2,059	3,726	/	3,760	704	/	1,109	1,038	/	906	0					
	BEGIN PEAK HR		7:15 AM																
	VOLUMES	177	1,029	156	196	1,670	106	47	309	62	294	246	126	4,418					
	APPROACH %	13%	76%	11%	10%	85%	5%	11%	74%	15%	44%	37%	19%						
	PEAK HR FACTOR		0.903			0.937			0.878			0.753		0.933					
	APP/DEPART	1,362	/	1,198	1,972	/	2,027	418	/	647	666	/	546	0					
PM	4:00 PM	29	400	51	31	238	7	24	61	14	53	112	34	1,054	0	7	1	0	8
	4:15 PM	35	472	74	26	257	15	13	60	11	58	137	43	1,201	1	4	3	1	9
	4:30 PM	32	413	80	24	321	22	37	84	21	71	150	40	1,295	0	2	6	0	8
	4:45 PM	32	436	63	30	277	11	51	83	17	69	169	47	1,285	0	4	5	1	10
	5:00 PM	40	448	67	27	305	27	60	106	26	57	150	46	1,359	0	3	1	0	4
	5:15 PM	46	444	98	31	287	12	52	124	23	60	162	36	1,375	1	5	3	0	9
	5:30 PM	58	450	100	39	308	22	44	90	26	55	153	42	1,387	0	5	4	0	9
	5:45 PM	49	393	112	41	249	18	39	93	16	82	173	42	1,307	2	6	4	0	12
	VOLUMES	321	3,456	645	249	2,242	134	320	701	154	505	1,206	330	10,263	4	36	27	2	69
	APPROACH %	7%	78%	15%	9%	85%	5%	27%	60%	13%	25%	59%	16%						
	APP/DEPART	4,422	/	4,115	2,625	/	2,903	1,175	/	1,561	2,041	/	1,684	0					
	BEGIN PEAK HR		5:00 PM																
	VOLUMES	193	1,735	377	138	1,149	79	195	413	91	254	638	166	5,428					
	APPROACH %	8%	75%	16%	10%	84%	6%	28%	59%	13%	24%	60%	16%						
	PEAK HR FACTOR		0.948			0.925			0.878			0.891		0.978					
	APP/DEPART	2,305	/	2,103	1,366	/	1,497	699	/	909	1,058	/	919	0					



		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	3	1	1	3	8	0	1	1	2	4	3	0	0	1	4
	7:15 AM	2	1	1	1	5	0	0	1	1	2	2	1	0	0	3
	7:30 AM	2	3	2	3	10	0	1	1	2	4	2	2	1	1	6
	7:45 AM	3	3	1	3	10	1	1	1	3	6	2	2	0	0	4
	8:00 AM	2	2	2	3	9	0	0	2	2	4	2	2	0	1	5
	8:15 AM	2	7	0	3	12	0	4	0	2	6	2	3	0	1	6
	8:30 AM	2	0	1	5	8	0	0	1	4	5	2	0	0	1	3
	8:45 AM	5	1	0	3	9	2	0	0	3	5	3	1	0	0	4
	TOTAL	21	18	8	24	71	3	7	7	19	36	18	11	1	5	35
PM	4:00 PM	2	2	1	0	5	0	0	1	0	1	2	2	0	0	4
	4:15 PM	1	1	1	2	5	0	1	1	1	3	1	0	0	1	2
	4:30 PM	3	3	4	1	11	0	2	3	1	6	3	1	1	0	5
	4:45 PM	6	4	1	0	11	3	3	0	0	6	3	1	1	0	5
	5:00 PM	5	13	2	0	20	0	3	1	0	4	5	10	1	0	16
	5:15 PM	6	2	2	3	13	4	0	0	2	6	2	2	2	1	7
	5:30 PM	6	5	3	1	15	2	2	2	0	6	4	3	1	1	9
	5:45 PM	3	8	0	3	14	1	3	0	3	7	2	5	0	0	7
	TOTAL	32	38	14	10	94	10	14	8	7	39	22	24	6	3	55

Transportation Studies, Inc.
2640 Walnut Avenue, Suite L
Tustin, CA. 92780

City: SANTA ANA
N-S Direction: GREENVILLE STREET
E-W Direction: EDINGER AVENUE

File Name : H1702003
Site Code : 00000000
Start Date : 2/7/2017

Groups Printed- Turning Movements

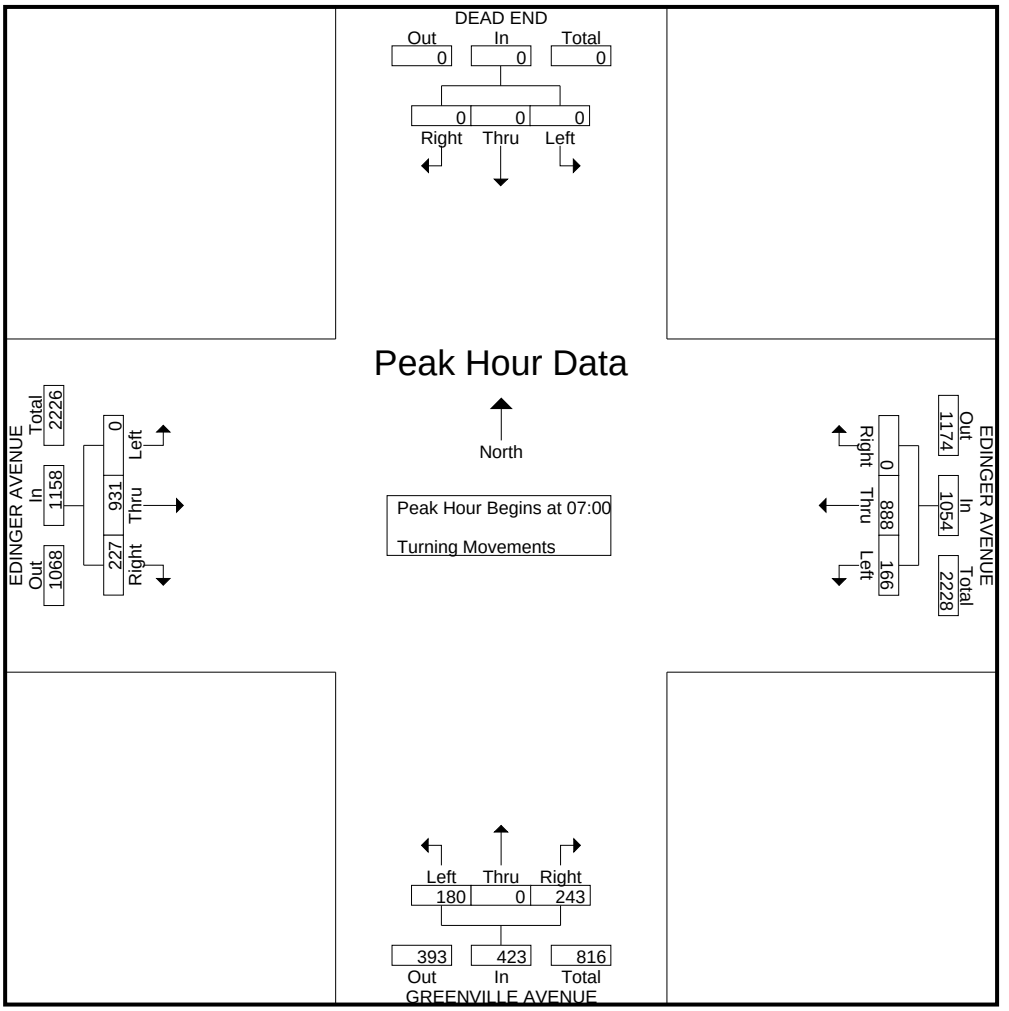
	DEAD END Southbound			EDINGER AVENUE Westbound			GREENVILLE AVENUE Northbound			EDINGER AVENUE Eastbound			
Start Time	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Int. Total
07:00	0	0	0	0	183	30	48	0	32	40	220	0	553
07:15	0	0	0	0	234	36	46	0	38	64	268	0	686
07:30	0	0	0	0	234	59	64	0	48	61	232	0	698
07:45	0	0	0	0	237	41	85	0	62	62	211	0	698
Total	0	0	0	0	888	166	243	0	180	227	931	0	2635
08:00	0	0	0	0	217	22	49	0	31	37	189	0	545
08:15	0	0	0	0	197	8	20	0	20	28	210	0	483
08:30	0	0	0	0	173	11	33	0	24	23	239	0	503
08:45	0	0	0	0	179	21	29	0	23	16	151	0	419
Total	0	0	0	0	766	62	131	0	98	104	789	0	1950
*** BREAK ***													
16:00	0	0	0	0	244	31	51	0	61	50	232	0	669
16:15	0	0	0	0	264	29	54	0	66	44	265	0	722
16:30	0	0	0	0	276	25	52	0	67	41	231	0	692
16:45	0	0	0	0	280	19	55	0	78	49	236	0	717
Total	0	0	0	0	1064	104	212	0	272	184	964	0	2800
17:00	0	0	0	0	270	30	49	0	78	54	245	0	726
17:15	0	0	0	0	274	24	53	0	85	52	208	0	696
17:30	0	0	0	0	270	19	54	0	76	39	264	0	722
17:45	0	0	0	0	275	31	40	0	69	45	199	0	659
Total	0	0	0	0	1089	104	196	0	308	190	916	0	2803
Grand Total	0	0	0	0	3807	436	782	0	858	705	3600	0	10188
Apprch %	0	0	0	0	89.7	10.3	47.7	0	52.3	16.4	83.6	0	
Total %	0	0	0	0	37.4	4.3	7.7	0	8.4	6.9	35.3	0	

Transportation Studies, Inc.
2640 Walnut Avenue, Suite L
Tustin, CA. 92780

City: SANTA ANA
N-S Direction: GREENVILLE STREET
E-W Direction: EDINGER AVENUE

File Name : H1702003
Site Code : 00000000
Start Date : 2/7/2017

	DEAD END Southbound				EDINGER AVENUE Westbound				GREENVILLE AVENUE Northbound				EDINGER AVENUE Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00																	
07:00	0	0	0	0	0	183	30	213	48	0	32	80	40	220	0	260	553
07:15	0	0	0	0	0	234	36	270	46	0	38	84	**64**	**268**	0	**332**	686
07:30	0	0	0	0	0	234	**59**	**293**	64	0	48	112	61	232	0	293	**698**
07:45	0	0	0	0	0	**237**	41	278	**85**	0	**62**	**147**	62	211	0	273	698
Total Volume	0	0	0	0	0	888	166	1054	243	0	180	423	227	931	0	1158	2635
% App. Total	0	0	0		0	84.3	15.7		57.4	0	42.6		19.6	80.4	0		
PHF	.000	.000	.000	.000	.000	.937	.703	.899	.715	.000	.726	.719	.887	.868	.000	.872	.944

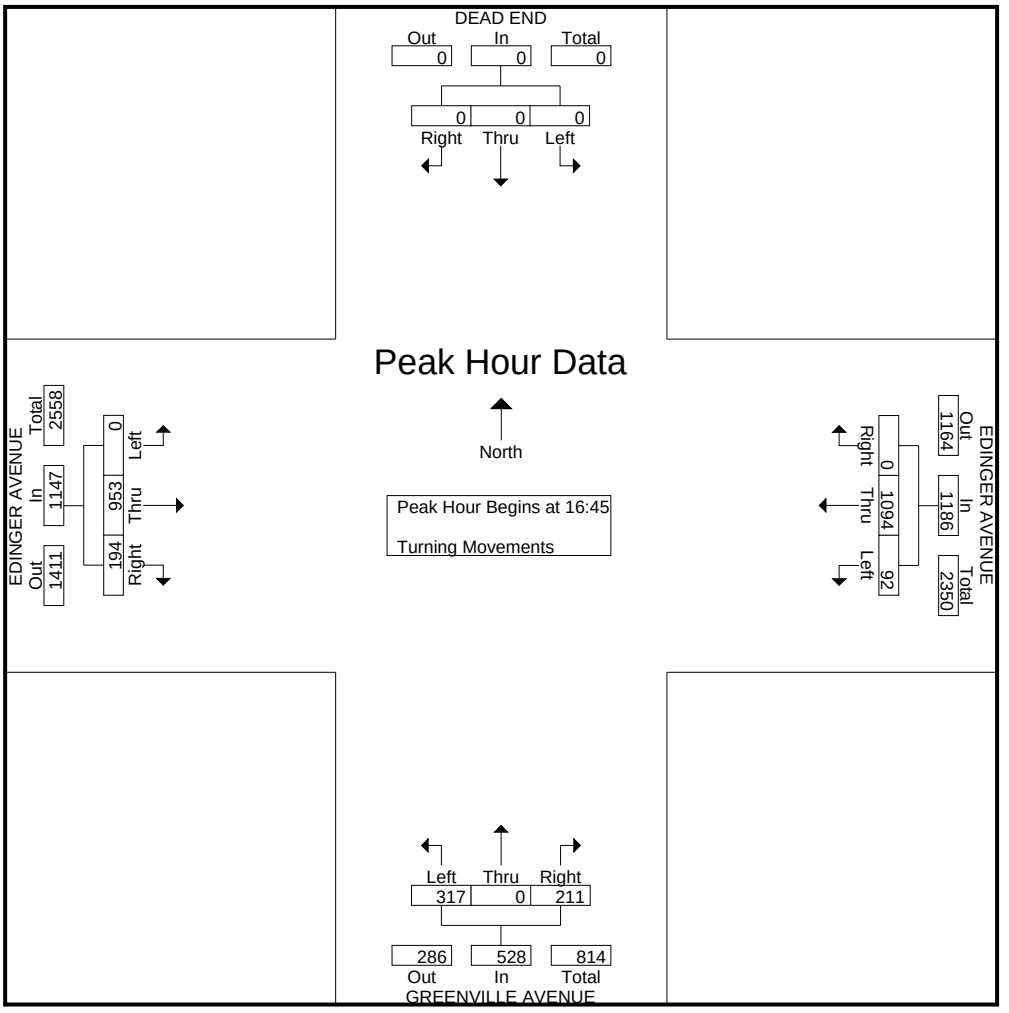


Transportation Studies, Inc.
2640 Walnut Avenue, Suite L
Tustin, CA. 92780

City: SANTA ANA
N-S Direction: GREENVILLE STREET
E-W Direction: EDINGER AVENUE

File Name : H1702003
Site Code : 00000000
Start Date : 2/7/2017
Page No : 3

	DEAD END Southbound				EDINGER AVENUE Westbound				GREENVILLE AVENUE Northbound				EDINGER AVENUE Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 16:45																	
16:45	0	0	0	0	0	**280**	19	299	**55**	0	78	133	49	236	0	285	717
17:00	0	0	0	0	0	270	**30**	**300**	49	0	78	127	**54**	245	0	299	**726**
17:15	0	0	0	0	0	274	24	298	53	0	**85**	**138**	52	208	0	260	696
17:30	0	0	0	0	0	270	19	289	54	0	76	130	39	**264**	0	**303**	722
Total Volume	0	0	0	0	0	1094	92	1186	211	0	317	528	194	953	0	1147	2861
% App. Total	0	0	0		0	92.2	7.8		40	0	60		16.9	83.1	0		
PHF	.000	.000	.000	.000	.000	.977	.767	.988	.959	.000	.932	.957	.898	.902	.000	.946	.985



Transportation Studies, Inc.
2640 Walnut Avenue, Suite L
Tustin, CA. 92780

City: SANTA ANA
N-S Direction: GREENVILLE STREET
E-W Direction: SEGERSTROM AVENUE

File Name : H1702004
Site Code : 00000000
Start Date : 2/7/2017

Groups Printed- Turning Movements

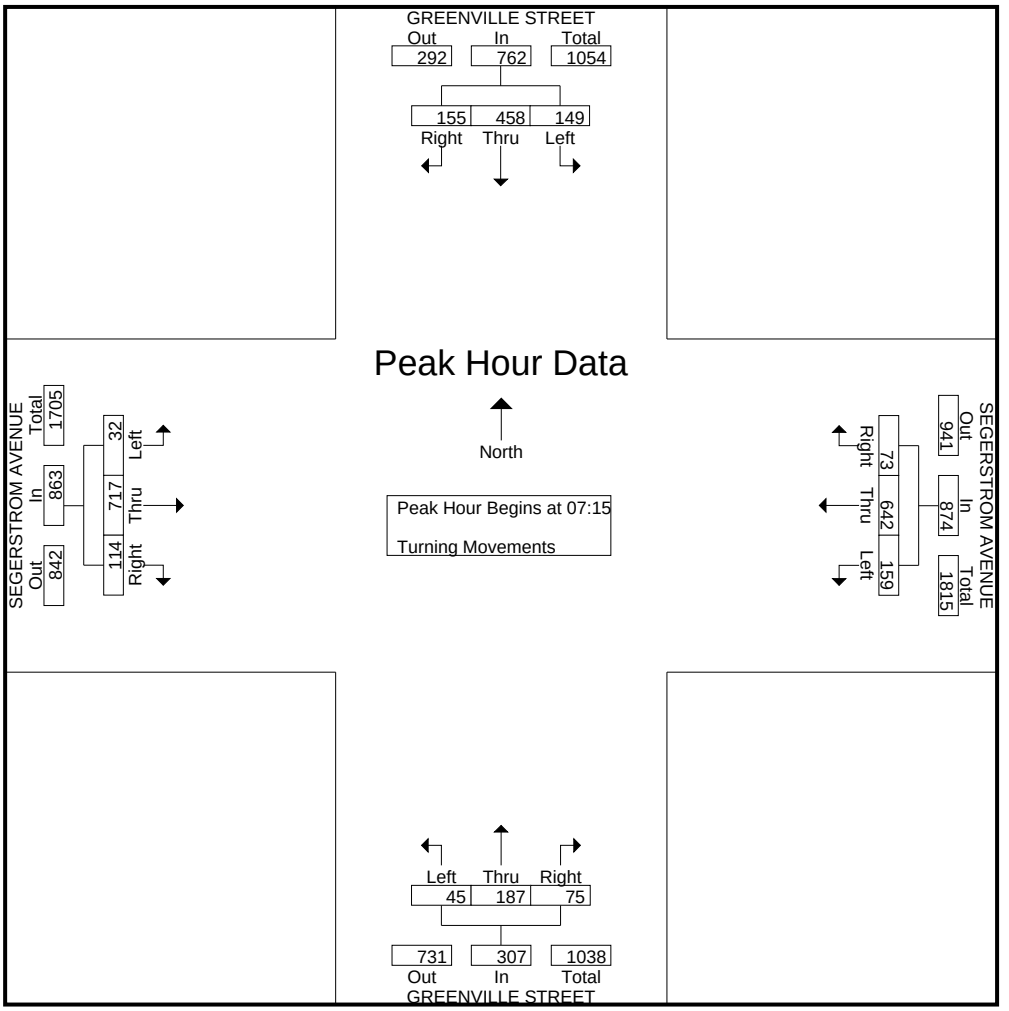
	GREENVILLE STREET Southbound			SEGERSTROM AVENUE Westbound			GREENVILLE STREET Northbound			SEGERSTROM AVENUE Eastbound			
Start Time	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Int. Total
07:00	18	44	21	11	97	9	10	9	6	11	119	5	360
07:15	23	88	27	12	114	24	8	41	6	26	175	10	554
07:30	44	139	49	12	161	40	17	37	9	31	193	10	742
07:45	53	138	45	29	189	57	27	62	12	29	191	5	837
Total	138	409	142	64	561	130	62	149	33	97	678	30	2493
08:00	35	93	28	20	178	38	23	47	18	28	158	7	673
08:15	17	59	32	8	98	6	6	31	10	7	176	9	459
08:30	15	50	14	7	99	1	7	10	5	9	185	7	409
08:45	11	28	8	4	97	6	6	11	3	5	130	6	315
Total	78	230	82	39	472	51	42	99	36	49	649	29	1856
*** BREAK ***													
16:00	8	36	8	25	215	7	4	69	13	7	167	32	591
16:15	12	38	12	25	254	8	4	112	15	12	147	24	663
16:30	14	45	14	27	229	5	6	101	11	5	174	37	668
16:45	6	35	6	24	252	8	9	111	21	8	166	25	671
Total	40	154	40	101	950	28	23	393	60	32	654	118	2593
17:00	13	38	13	35	223	4	7	121	17	12	207	30	720
17:15	14	52	14	37	280	6	12	128	15	10	207	31	806
17:30	15	58	15	38	246	6	5	105	8	11	213	28	748
17:45	17	46	17	33	257	10	10	108	15	12	171	15	711
Total	59	194	59	143	1006	26	34	462	55	45	798	104	2985
Grand Total	315	987	323	347	2989	235	161	1103	184	223	2779	281	9927
Apprch %	19.4	60.7	19.9	9.7	83.7	6.6	11.1	76.2	12.7	6.8	84.6	8.6	
Total %	3.2	9.9	3.3	3.5	30.1	2.4	1.6	11.1	1.9	2.2	28	2.8	

Transportation Studies, Inc.
2640 Walnut Avenue, Suite L
Tustin, CA. 92780

City: SANTA ANA
N-S Direction: GREENVILLE STREET
E-W Direction: SEGERSTROM AVENUE

File Name : H1702004
Site Code : 00000000
Start Date : 2/7/2017

	GREENVILLE STREET Southbound				SEGERSTROM AVENUE Westbound				GREENVILLE STREET Northbound				SEGERSTROM AVENUE Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15																	
07:15	23	88	27	138	12	114	24	150	8	41	6	55	26	175	**10**	211	554
07:30	44	**139**	**49**	232	12	161	40	213	17	37	9	63	**31**	**193**	10	**234**	742
07:45	**53**	138	45	**236**	**29**	**189**	**57**	**275**	**27**	**62**	12	**101**	29	191	5	225	**837**
08:00	35	93	28	156	20	178	38	236	23	47	**18**	88	28	158	7	193	673
Total Volume	155	458	149	762	73	642	159	874	75	187	45	307	114	717	32	863	2806
% App. Total	20.3	60.1	19.6		8.4	73.5	18.2		24.4	60.9	14.7		13.2	83.1	3.7		
PHF	.731	.824	.760	.807	.629	.849	.697	.795	.694	.754	.625	.760	.919	.929	.800	.922	.838

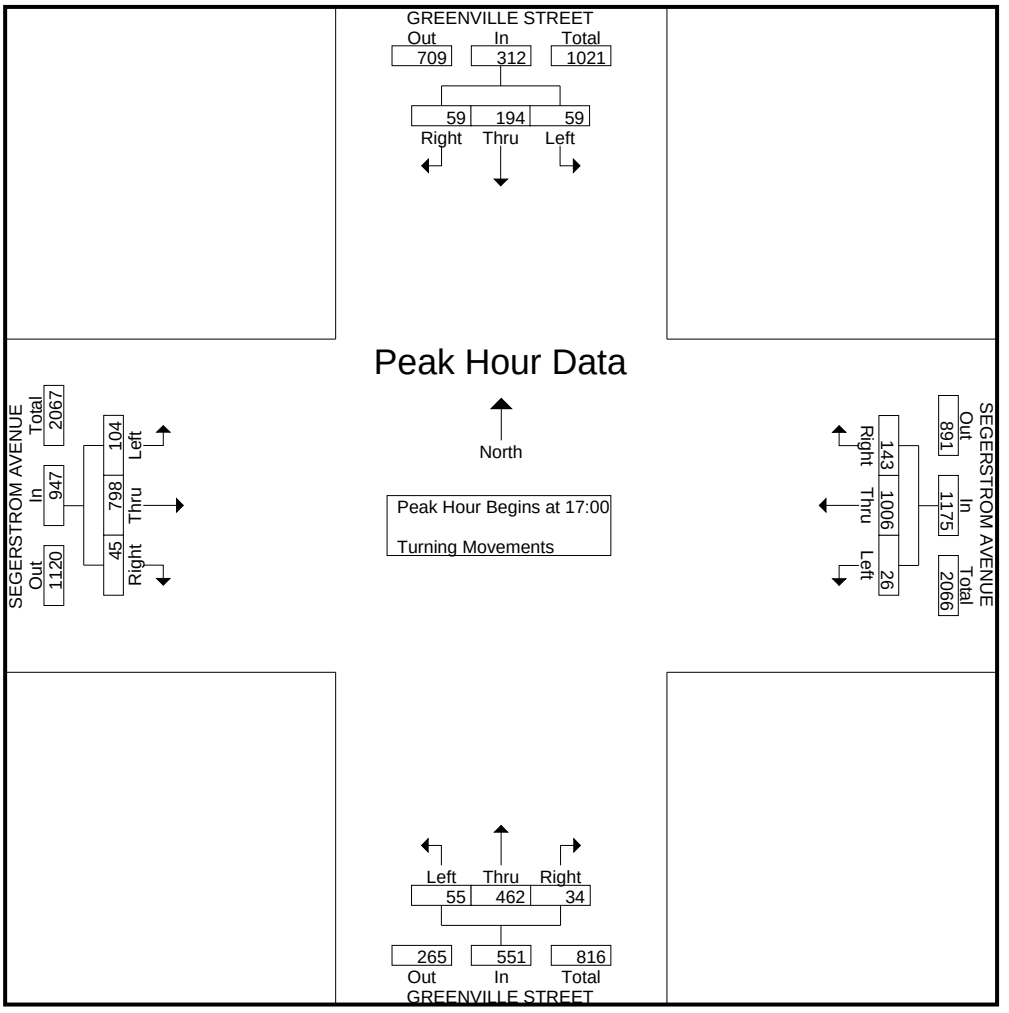


Transportation Studies, Inc.
2640 Walnut Avenue, Suite L
Tustin, CA. 92780

City: SANTA ANA
N-S Direction: GREENVILLE STREET
E-W Direction: SEGERSTROM AVENUE

File Name : H1702004
Site Code : 00000000
Start Date : 2/7/2017
Page No : 3

	GREENVILLE STREET Southbound				SEGERSTROM AVENUE Westbound				GREENVILLE STREET Northbound				SEGERSTROM AVENUE Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 17:00																	
17:00	13	38	13	64	35	223	4	262	7	121	**17**	145	**12**	207	30	249	720
17:15	14	52	14	80	37	**280**	6	**323**	**12**	**128**	15	**155**	10	207	**31**	248	**806**
17:30	15	**58**	15	**88**	**38**	246	6	290	5	105	8	118	11	**213**	28	**252**	748
17:45	**17**	46	**17**	80	33	257	**10**	300	10	108	15	133	12	171	15	198	711
Total Volume	59	194	59	312	143	1006	26	1175	34	462	55	551	45	798	104	947	2985
% App. Total	18.9	62.2	18.9		12.2	85.6	2.2		6.2	83.8	10		4.8	84.3	11		
PHF	.868	.836	.868	.886	.941	.898	.650	.909	.708	.902	.809	.889	.938	.937	.839	.939	.926



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 pacific@aimtd.com

DATE: Tue, Feb 9, 16

LOCATION: Santa Ana
NORTH & SOUTH: Raitt
EAST & WEST: McFadden

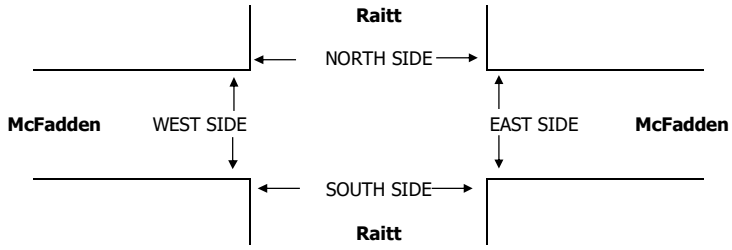
PROJECT #: SC0846
LOCATION #: 34
CONTROL: SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

☑ Add U-Turns to Left Turns

		NORTHBOUND Raitt			SOUTHBOUND Raitt			EASTBOUND McFadden			WESTBOUND McFadden				U-TURNS				
	LANES:	NL 1	NT 2	NR 0	SL 1	ST 2	SR 0	EL 1	ET 2	ER 0	WL 1	WT 2	WR 0	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	6	75	22	9	149	13	12	142	21	24	87	10	570	0	0	0	0	0
	7:15 AM	8	109	20	20	231	25	24	130	25	39	124	18	773	0	0	0	0	0
	7:30 AM	8	153	21	27	213	25	24	175	22	54	155	26	903	0	0	0	0	0
	7:45 AM	20	137	18	28	183	27	23	190	25	47	133	22	853	0	0	0	0	0
	8:00 AM	23	148	27	21	105	22	40	181	14	25	108	27	741	0	0	0	0	0
	8:15 AM	9	88	15	20	95	14	24	137	18	13	105	10	548	0	0	0	0	0
	8:30 AM	11	62	16	10	82	14	18	132	11	10	120	14	500	0	0	0	0	0
	8:45 AM	7	63	13	11	58	15	16	123	2	12	109	13	442	0	0	0	0	0
	VOLUMES	92	835	152	146	1,116	155	181	1,210	138	224	941	140	5,330	0	0	0	0	0
	APPROACH %	9%	77%	14%	10%	79%	11%	12%	79%	9%	17%	72%	11%						
	APP/DEPART	1,079	/	1,156	1,417	/	1,478	1,529	/	1,508	1,305	/	1,188	0					
	BEGIN PEAK HR		7:15 AM																
	VOLUMES	59	547	86	96	732	99	111	676	86	165	520	93	3,270					
	APPROACH %	9%	79%	12%	10%	79%	11%	13%	77%	10%	21%	67%	12%						
	PEAK HR FACTOR		0.874			0.840			0.917			0.828		0.905					
	APP/DEPART	692	/	751	927	/	983	873	/	858	778	/	678	0					
PM	4:00 PM	12	184	34	11	91	12	23	157	8	18	114	17	681	0	0	0	0	0
	4:15 PM	13	171	32	8	93	17	15	160	6	31	174	21	741	0	0	0	0	0
	4:30 PM	16	191	29	11	92	17	28	151	11	21	158	22	747	0	0	0	0	0
	4:45 PM	12	198	17	11	109	13	19	160	11	19	184	25	778	0	0	0	0	0
	5:00 PM	18	181	39	10	98	12	24	180	14	24	158	29	787	0	0	0	0	0
	5:15 PM	11	209	31	9	114	21	30	172	10	12	193	29	841	0	0	0	0	0
	5:30 PM	17	210	30	11	121	18	37	190	18	21	166	22	861	0	0	0	0	0
	5:45 PM	9	202	24	13	122	22	30	175	20	27	196	18	858	0	0	0	0	0
	VOLUMES	108	1,546	236	84	840	132	206	1,345	98	173	1,343	183	6,294	0	0	0	0	0
	APPROACH %	6%	82%	12%	8%	80%	13%	12%	82%	6%	10%	79%	11%						
	APP/DEPART	1,890	/	1,935	1,056	/	1,111	1,649	/	1,665	1,699	/	1,583	0					
	BEGIN PEAK HR		5:00 PM																
	VOLUMES	55	802	124	43	455	73	121	717	62	84	713	98	3,347					
	APPROACH %	6%	82%	13%	8%	80%	13%	13%	80%	7%	9%	80%	11%						
	PEAK HR FACTOR		0.954			0.909			0.918			0.928		0.972					
	APP/DEPART	981	/	1,021	571	/	601	900	/	884	895	/	841	0					



		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	19	8	1	16	44	17	6	1	14	38	2	2	0	2	6
	7:15 AM	12	8	6	24	50	9	6	3	22	40	3	2	3	2	10
	7:30 AM	23	30	12	36	101	23	28	10	35	96	0	2	2	1	5
	7:45 AM	62	19	13	44	138	60	18	11	42	131	2	1	2	2	7
	8:00 AM	16	15	5	27	63	13	12	1	25	51	3	3	4	2	12
	8:15 AM	6	19	2	12	39	4	18	1	12	35	2	1	1	0	4
	8:30 AM	11	14	0	10	35	10	12	0	10	32	1	2	0	0	3
	8:45 AM	5	8	4	3	20	4	7	4	3	18	1	1	0	0	2
	TOTAL	154	121	43	172	490	140	107	31	163	441	14	14	12	9	49
PM	4:00 PM	13	14	7	17	51	11	13	5	17	46	2	1	2	0	5
	4:15 PM	9	17	4	14	44	6	11	3	12	32	3	6	1	2	12
	4:30 PM	12	5	7	6	30	9	2	7	6	24	3	3	0	0	6
	4:45 PM	7	11	4	12	34	5	7	2	12	26	2	4	2	0	8
	5:00 PM	7	9	3	15	34	3	7	2	15	27	4	2	1	0	7
	5:15 PM	13	16	14	15	58	12	15	13	15	55	1	1	1	0	3
	5:30 PM	6	12	1	20	39	5	7	0	19	31	1	5	1	1	8
	5:45 PM	12	17	5	13	47	7	14	5	12	38	5	3	0	1	9
	TOTAL	79	101	45	112	337	58	76	37	108	279	21	25	8	4	58

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 pacific@aimtd.com

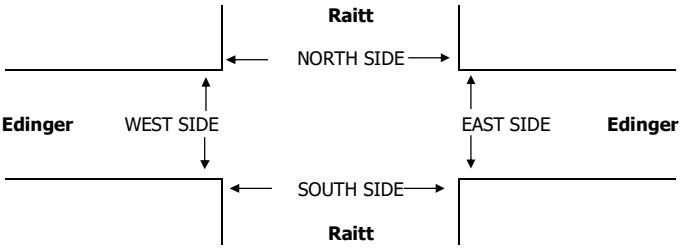
DATE:	LOCATION:	Santa Ana	PROJECT #:	SC0846
Tue, Feb 9, 16	NORTH & SOUTH:	Raitt	LOCATION #:	40
	EAST & WEST:	Edinger	CONTROL:	SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

☑ Add U-Turns to Left Turns

		NORTHBOUND (Raitt)			SOUTHBOUND (Raitt)			EASTBOUND (Edinger)			WESTBOUND (Edinger)				U-TURNS				
	LANES:	NL 1	NT 2	NR 0	SL 1	ST 2	SR 0	EL 1	ET 2	ER 0	WL 1	WT 2	WR 0	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	20	71	19	25	121	29	22	198	28	22	198	7	760	0	0	0	0	0
	7:15 AM	33	93	33	25	173	32	45	240	42	24	250	13	1,003	0	0	0	0	0
	7:30 AM	55	125	42	48	193	14	38	222	37	36	223	11	1,044	0	0	0	0	0
	7:45 AM	45	123	45	36	178	15	41	254	24	32	215	11	1,019	0	0	0	0	0
	8:00 AM	47	140	53	37	144	20	34	252	36	20	192	16	991	0	0	0	0	0
	8:15 AM	28	82	28	32	71	15	11	249	33	14	160	16	739	0	0	0	0	0
	8:30 AM	10	56	22	35	57	8	8	205	9	17	171	11	609	0	0	0	0	0
	8:45 AM	19	44	19	24	61	11	13	205	8	15	151	11	581	0	0	0	0	0
	VOLUMES	257	734	261	262	998	144	212	1,825	217	180	1,560	96	6,746	0	0	0	0	0
	APPROACH %	21%	59%	21%	19%	71%	10%	9%	81%	10%	10%	85%	5%						
	APP/DEPART	1,252	/	1,042	1,404	/	1,395	2,254	/	2,348	1,836	/	1,961	0					
	BEGIN PEAK HR		7:15 AM																
	VOLUMES	180	481	173	146	688	81	158	968	139	112	880	51	4,057					
	APPROACH %	22%	58%	21%	16%	75%	9%	12%	77%	11%	11%	84%	5%						
	PEAK HR FACTOR		0.869			0.897			0.967			0.909		0.972					
	APP/DEPART	834	/	690	915	/	939	1,265	/	1,287	1,043	/	1,141	0					
PM	4:00 PM	32	190	58	16	71	20	24	244	25	14	245	19	958	0	0	0	0	0
	4:15 PM	35	173	61	22	81	21	30	210	30	16	240	28	947	0	0	0	0	0
	4:30 PM	51	169	32	32	64	26	29	222	18	23	231	28	925	0	0	0	0	0
	4:45 PM	50	203	56	24	93	26	34	214	28	17	235	26	1,006	0	0	0	0	0
	5:00 PM	50	198	47	29	76	18	31	227	34	19	257	16	1,002	0	0	0	0	0
	5:15 PM	37	193	63	32	90	25	34	216	31	20	244	20	1,005	0	0	0	0	0
	5:30 PM	36	193	55	17	107	21	30	255	26	21	238	27	1,026	0	0	0	0	0
	5:45 PM	59	200	55	28	96	28	38	225	40	22	195	20	1,006	0	0	0	0	0
	VOLUMES	350	1,519	427	200	678	185	250	1,813	232	152	1,885	184	7,875	0	0	0	0	0
	APPROACH %	15%	66%	19%	19%	64%	17%	11%	79%	10%	7%	85%	8%						
	APP/DEPART	2,296	/	1,953	1,063	/	1,062	2,295	/	2,440	2,221	/	2,420	0					
	BEGIN PEAK HR		5:00 PM																
	VOLUMES	182	784	220	106	369	92	133	923	131	82	934	83	4,039					
	APPROACH %	15%	66%	19%	19%	65%	16%	11%	78%	11%	7%	85%	8%						
	PEAK HR FACTOR		0.944			0.933			0.954			0.941		0.984					
	APP/DEPART	1,186	/	1,000	567	/	582	1,187	/	1,249	1,099	/	1,208	0					



		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	12	32	8	17	69	10	26	6	16	58	2	6	2	1	11
	7:15 AM	48	33	7	27	115	46	27	7	26	106	2	6	0	1	9
	7:30 AM	86	52	24	78	240	81	47	24	75	227	5	5	0	3	13
	7:45 AM	91	65	41	70	267	87	60	39	68	254	4	5	2	2	13
	8:00 AM	51	57	29	55	192	48	53	28	52	181	3	4	1	3	11
	8:15 AM	11	29	8	15	63	10	28	7	15	60	1	1	1	0	3
	8:30 AM	7	4	2	2	15	6	2	2	2	12	1	2	0	0	3
	8:45 AM	8	3	2	5	18	8	2	2	5	17	0	1	0	0	1
	TOTAL	314	275	121	269	979	296	245	115	259	915	18	30	6	10	64
PM	4:00 PM	27	27	14	16	84	19	23	13	13	68	8	4	1	3	16
	4:15 PM	12	13	7	3	35	7	11	5	3	26	5	2	2	0	9
	4:30 PM	17	22	5	11	55	7	14	4	6	31	10	8	1	5	24
	4:45 PM	27	31	22	22	102	20	29	19	18	86	7	2	3	4	16
	5:00 PM	11	24	9	21	65	10	17	9	20	56	1	7	0	1	9
	5:15 PM	21	25	8	17	71	15	18	4	15	52	6	7	4	2	19
	5:30 PM	25	16	12	12	65	21	9	7	12	49	4	7	5	0	16
	5:45 PM	7	12	3	11	33	6	3	3	6	18	1	9	0	5	15
	TOTAL	147	170	80	113	510	105	124	64	93	386	42	46	16	20	124

Transportation Studies, Inc.
2640 Walnut Avenue, Suite L
Tustin, CA. 92780

City: SANTA ANA
N-S Direction: BEAR STREET
E-W Direction: MACARTHUR BOULEVARD

File Name : H1702005
Site Code : 00000000
Start Date : 2/7/2017

Groups Printed- Turning Movements

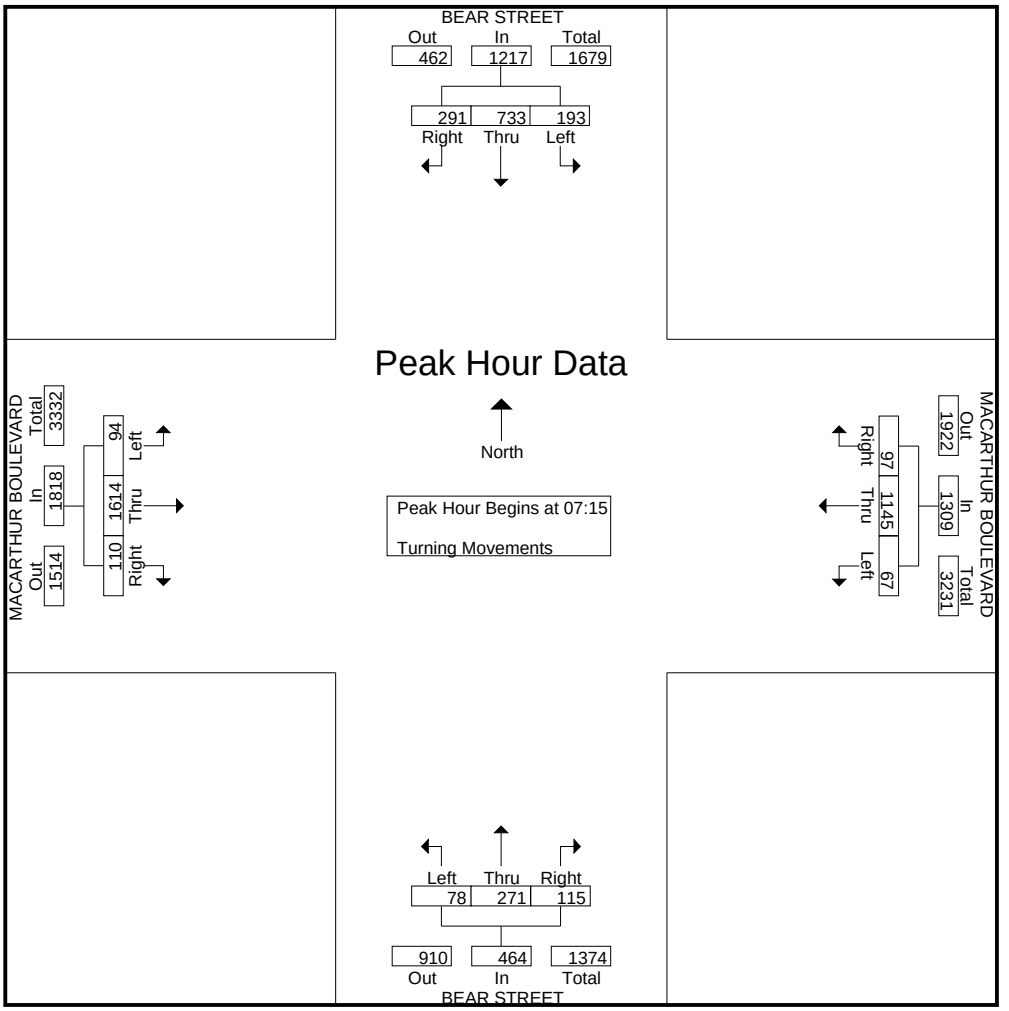
	BEAR STREET Southbound			MACARTHUR BOULEVARD Westbound			BEAR STREET Northbound			MACARTHUR BOULEVARD Eastbound			
Start Time	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Int. Total
07:00	22	100	28	11	160	5	26	63	9	17	271	9	721
07:15	56	154	42	19	294	16	27	66	21	23	382	11	1111
07:30	77	198	53	30	380	13	25	49	24	26	434	19	1328
07:45	111	199	45	31	342	17	30	72	20	36	392	34	1329
Total	266	651	168	91	1176	51	108	250	74	102	1479	73	4489
08:00	47	182	53	17	129	21	33	84	13	25	406	30	1040
08:15	26	155	43	13	136	14	36	85	5	27	346	14	900
08:30	18	127	37	6	109	11	36	69	10	53	386	7	869
08:45	19	95	23	14	110	16	34	46	10	30	276	10	683
Total	110	559	156	50	484	62	139	284	38	135	1414	61	3492
*** BREAK ***													
16:00	16	43	18	53	395	17	67	196	39	25	210	14	1093
16:15	13	74	19	66	388	16	59	210	59	18	214	16	1152
16:30	14	60	27	62	417	25	62	214	46	24	223	15	1189
16:45	17	62	24	65	396	25	59	227	51	20	213	21	1180
Total	60	239	88	246	1596	83	247	847	195	87	860	66	4614
17:00	17	63	25	69	386	18	58	242	46	20	240	29	1213
17:15	21	75	36	66	399	20	68	244	56	20	206	18	1229
17:30	24	63	23	58	442	27	58	220	41	31	224	26	1237
17:45	32	66	28	59	416	29	56	204	48	18	198	22	1176
Total	94	267	112	252	1643	94	240	910	191	89	868	95	4855
Grand Total	530	1716	524	639	4899	290	734	2291	498	413	4621	295	17450
Apprch %	19.1	61.9	18.9	11	84.1	5	20.8	65	14.1	7.8	86.7	5.5	
Total %	3	9.8	3	3.7	28.1	1.7	4.2	13.1	2.9	2.4	26.5	1.7	

Transportation Studies, Inc.
2640 Walnut Avenue, Suite L
Tustin, CA. 92780

City: SANTA ANA
N-S Direction: BEAR STREET
E-W Direction: MACARTHUR BOULEVARD

File Name : H1702005
Site Code : 00000000
Start Date : 2/7/2017

	BEAR STREET Southbound				MACARTHUR BOULEVARD Westbound				BEAR STREET Northbound				MACARTHUR BOULEVARD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15																	
07:15	56	154	42	252	19	294	16	329	27	66	21	114	23	382	11	416	1111
07:30	77	198	**53**	328	30	**380**	13	**423**	25	49	**24**	98	26	**434**	19	**479**	1328
07:45	**111**	**199**	45	**355**	**31**	342	17	390	30	72	20	122	**36**	392	**34**	462	**1329**
08:00	47	182	53	282	17	129	**21**	167	**33**	**84**	13	**130**	25	406	30	461	1040
Total Volume	291	733	193	1217	97	1145	67	1309	115	271	78	464	110	1614	94	1818	4808
% App. Total	23.9	60.2	15.9		7.4	87.5	5.1		24.8	58.4	16.8		6.1	88.8	5.2		
PHF	.655	.921	.910	.857	.782	.753	.798	.774	.871	.807	.813	.892	.764	.930	.691	.949	.904

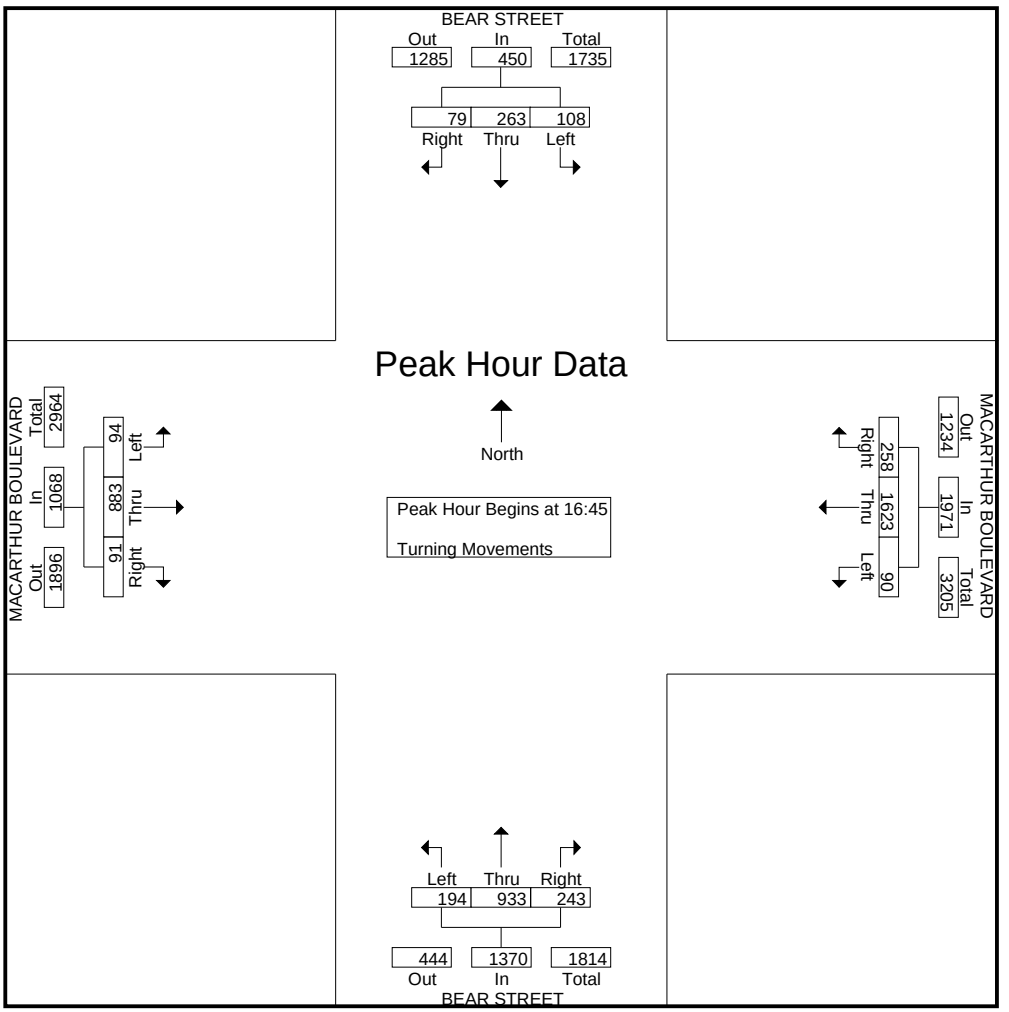


Transportation Studies, Inc.
2640 Walnut Avenue, Suite L
Tustin, CA. 92780

City: SANTA ANA
N-S Direction: BEAR STREET
E-W Direction: MACARTHUR BOULEVARD

File Name : H1702005
Site Code : 00000000
Start Date : 2/7/2017

	BEAR STREET Southbound				MACARTHUR BOULEVARD Westbound				BEAR STREET Northbound				MACARTHUR BOULEVARD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 16:45																	
16:45	17	62	24	103	65	396	25	486	59	227	51	337	20	213	21	254	1180
17:00	17	63	25	105	**69**	386	18	473	58	242	46	346	20	**240**	**29**	**289**	1213
17:15	21	**75**	**36**	**132**	66	399	20	485	**68**	**244**	**56**	**368**	20	206	18	244	1229
17:30	**24**	63	23	110	58	**442**	**27**	**527**	58	220	41	319	**31**	224	26	281	**1237**
Total Volume	79	263	108	450	258	1623	90	1971	243	933	194	1370	91	883	94	1068	4859
% App. Total	17.6	58.4	24		13.1	82.3	4.6		17.7	68.1	14.2		8.5	82.7	8.8		
PHF	.823	.877	.750	.852	.935	.918	.833	.935	.893	.956	.866	.931	.734	.920	.810	.924	.982



INTERSECTION TURNING MOVEMENT COUNTS

T218

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Tue, May 14, 19

LOCATION: Santa Ana
NORTH & SOUTH: Bristol
EAST & WEST: 17th

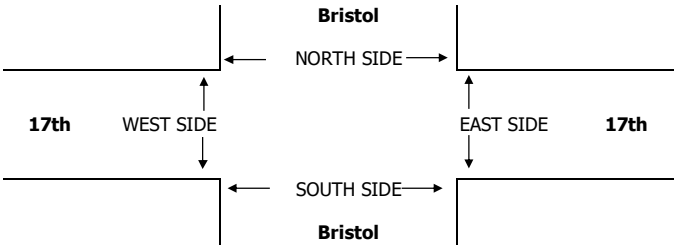
PROJECT #: SC2183
LOCATION #: 12
CONTROL: SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N ◄ W E ► S ▼

☑ Add U-Turns to Left Turns

		NORTHBOUND Bristol			SOUTHBOUND Bristol			EASTBOUND 17th			WESTBOUND 17th				U-TURNS				
	LANES:	NL 2	NT 3	NR 1	SL 2	ST 2	SR 1	EL 2	ET 3	ER 0	WL 2	WT 3	WR 1	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	23	254	42	59	328	28	47	230	34	46	116	51	1,258	4	0	0	2	6
	7:15 AM	32	285	28	83	324	26	67	258	35	48	141	69	1,396	3	0	0	3	6
	7:30 AM	45	270	41	102	342	21	78	281	38	76	202	92	1,588	3	0	0	8	11
	7:45 AM	59	234	49	94	311	40	86	250	33	87	225	73	1,541	2	1	1	8	12
	8:00 AM	39	248	39	83	368	46	71	183	42	91	184	51	1,445	4	0	0	11	15
	8:15 AM	47	226	36	52	341	72	85	239	41	101	204	54	1,498	7	0	1	2	10
	8:30 AM	39	256	43	53	361	61	63	203	26	51	129	22	1,307	5	0	0	5	10
	8:45 AM	37	246	38	65	280	63	55	174	37	51	93	31	1,170	5	1	1	6	13
	VOLUMES	321	2,019	316	591	2,655	357	552	1,818	286	551	1,294	443	11,203	33	2	3	45	83
	APPROACH %	12%	76%	12%	16%	74%	10%	21%	68%	11%	24%	57%	19%						
	APP/DEPART	2,656	/	3,013	3,603	/	3,480	2,656	/	2,768	2,288	/	1,942	0					
	BEGIN PEAK HR		7:30 AM																
	VOLUMES	190	978	165	331	1,362	179	320	953	154	355	815	270	6,072					
	APPROACH %	14%	73%	12%	18%	73%	10%	22%	67%	11%	25%	57%	19%						
	PEAK HR FACTOR		0.936			0.942			0.899			0.935		0.956					
	APP/DEPART	1,333	/	1,567	1,872	/	1,858	1,427	/	1,477	1,440	/	1,170	0					
PM	4:00 PM	43	282	37	68	272	60	85	168	25	48	260	76	1,424	2	2	2	7	13
	4:15 PM	45	282	37	66	295	50	61	178	33	63	234	67	1,411	4	1	0	12	17
	4:30 PM	40	277	26	53	286	48	69	193	34	55	308	71	1,460	2	1	0	7	10
	4:45 PM	36	281	40	68	308	45	74	177	28	70	255	87	1,469	3	0	2	6	11
	5:00 PM	61	284	58	50	311	56	85	192	40	57	286	107	1,587	5	0	1	7	13
	5:15 PM	53	264	41	62	317	54	97	223	30	71	247	81	1,540	2	0	2	8	12
	5:30 PM	55	304	42	75	322	57	71	163	37	77	265	93	1,561	2	0	1	8	11
	5:45 PM	64	284	48	53	330	50	79	164	27	76	260	77	1,512	8	0	0	11	19
	VOLUMES	397	2,258	329	495	2,441	420	621	1,458	254	517	2,115	659	11,964	28	4	8	66	106
	APPROACH %	13%	76%	11%	15%	73%	13%	27%	62%	11%	16%	64%	20%						
	APP/DEPART	2,984	/	3,534	3,356	/	3,174	2,333	/	2,344	3,291	/	2,912	0					
	BEGIN PEAK HR		5:00 PM																
	VOLUMES	233	1,136	189	240	1,280	217	332	742	134	281	1,058	358	6,200					
	APPROACH %	15%	73%	12%	14%	74%	12%	27%	61%	11%	17%	62%	21%						
	PEAK HR FACTOR		0.967			0.956			0.863			0.943		0.977					
	APP/DEPART	1,558	/	1,822	1,737	/	1,678	1,208	/	1,205	1,697	/	1,495	0					



		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	AM BEGIN PEAK HR	7:30 AM					0	0	0	0	0					
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	PM BEGIN PEAK HR	5:00 PM					0	0	0	0	0					

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 pacific@aimtd.com

DATE: Wed, Feb 10, 16

LOCATION: Santa Ana
NORTH & SOUTH: Bristol
EAST & WEST: Civic Center

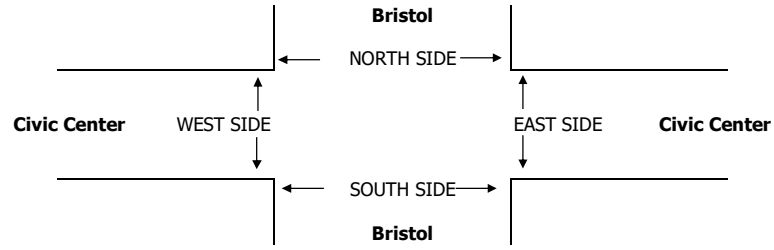
PROJECT #: SC0846
LOCATION #: 13
CONTROL: SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

☑ Add U-Turns to Left Turns

		NORTHBOUND Bristol			SOUTHBOUND Bristol			EASTBOUND Civic Center			WESTBOUND Civic Center				U-TURNS				
	LANES:	NL 1	NT 3	NR 0	SL 1	ST 3	SR 0	EL 1	ET 2	ER 0	WL 1	WT 2	WR 0	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	15	257	12	66	336	19	35	100	24	26	44	8	942	2	1	0	0	3
	7:15 AM	31	265	11	104	263	15	44	153	27	22	61	6	1,002	2	0	0	0	2
	7:30 AM	28	256	15	83	297	22	49	195	28	25	77	14	1,089	1	1	0	0	2
	7:45 AM	39	306	21	87	291	16	37	217	18	21	103	17	1,173	0	4	0	0	4
	8:00 AM	37	240	17	72	288	27	29	182	28	45	136	25	1,126	3	5	0	0	8
	8:15 AM	14	242	39	63	357	11	28	131	15	25	69	23	1,017	0	5	0	6	11
	8:30 AM	18	267	27	70	357	14	24	101	14	15	63	14	984	3	3	0	0	6
	8:45 AM	13	259	19	57	326	17	21	94	20	23	53	13	915	4	2	0	0	6
	VOLUMES	195	2,092	161	602	2,515	141	267	1,173	174	202	606	120	8,248	15	21	0	6	42
	APPROACH %	8%	85%	7%	18%	77%	4%	17%	73%	11%	22%	65%	13%						
	APP/DEPART	2,448	/	2,500	3,258	/	2,900	1,614	/	1,921	928	/	927	0					
	BEGIN PEAK HR		7:30 AM																
	VOLUMES	118	1,044	92	305	1,233	76	143	725	89	116	385	79	4,405					
	APPROACH %	9%	83%	7%	19%	76%	5%	15%	76%	9%	20%	66%	14%						
	PEAK HR FACTOR		0.857			0.936			0.880			0.704		0.939					
	APP/DEPART	1,254	/	1,281	1,614	/	1,436	957	/	1,113	580	/	575	0					
PM	4:00 PM	28	247	15	25	206	20	35	108	16	28	93	32	853	8	7	0	0	15
	4:15 PM	44	335	16	37	311	29	37	101	12	21	86	33	1,062	9	5	0	0	14
	4:30 PM	36	314	26	32	330	28	25	60	13	38	134	31	1,067	5	6	0	0	11
	4:45 PM	41	314	20	30	296	30	56	80	17	41	133	52	1,110	4	3	4	0	11
	5:00 PM	42	341	23	30	280	28	45	92	14	38	178	34	1,145	1	1	0	0	2
	5:15 PM	55	371	21	38	311	30	32	153	13	38	212	17	1,291	6	3	0	0	9
	5:30 PM	43	334	18	33	310	29	44	119	12	37	160	17	1,156	7	7	0	0	14
	5:45 PM	52	298	8	29	300	36	61	149	21	49	144	10	1,157	5	3	0	0	8
	VOLUMES	341	2,554	147	254	2,344	230	335	862	118	290	1,140	226	8,841	45	35	4	0	84
	APPROACH %	11%	84%	5%	9%	83%	8%	25%	66%	9%	18%	69%	14%						
	APP/DEPART	3,042	/	3,146	2,828	/	2,797	1,315	/	1,228	1,656	/	1,670	0					
	BEGIN PEAK HR		5:00 PM																
	VOLUMES	192	1,344	70	130	1,201	123	182	513	60	162	694	78	4,749					
	APPROACH %	12%	84%	4%	9%	83%	8%	24%	68%	8%	17%	74%	8%						
	PEAK HR FACTOR		0.898			0.959			0.817			0.875		0.920					
	APP/DEPART	1,606	/	1,618	1,454	/	1,442	755	/	699	934	/	990	0					



		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	2	7	10	5	24	2	7	8	5	22	0	0	2	0	2
	7:15 AM	10	4	8	11	33	8	3	8	7	26	2	1	0	4	7
	7:30 AM	9	12	3	10	34	7	10	3	6	26	2	2	0	4	8
	7:45 AM	10	10	5	12	37	10	9	2	12	33	0	1	3	0	4
	8:00 AM	7	6	2	6	21	5	6	2	5	18	2	0	0	1	3
	8:15 AM	7	9	2	2	20	7	8	0	2	17	0	1	2	0	3
	8:30 AM	1	9	3	5	18	1	6	3	2	12	0	3	0	3	6
	8:45 AM	3	6	2	12	23	2	6	1	10	19	1	0	1	2	4
	TOTAL	49	63	35	63	210	42	55	27	49	173	7	8	8	14	37
PM	4:00 PM	1	6	2	6	15	1	4	1	5	11	0	2	1	1	4
	4:15 PM	1	11	0	5	17	1	8	0	4	13	0	3	0	1	4
	4:30 PM	1	11	1	9	22	0	11	1	6	18	1	0	0	3	4
	4:45 PM	0	11	0	5	16	0	10	0	3	13	0	1	0	2	3
	5:00 PM	1	11	3	9	24	0	7	3	7	17	1	4	0	2	7
	5:15 PM	5	8	2	11	26	4	8	2	9	23	1	0	0	2	3
	5:30 PM	5	11	4	7	27	5	9	4	6	24	0	2	0	1	3
	5:45 PM	7	18	0	7	32	7	17	0	5	29	0	1	0	2	3
	TOTAL	21	87	12	59	179	18	74	11	45	148	3	13	1	14	31

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 pacific@aimtd.com

DATE: Tue, Feb 9, 16

LOCATION: Santa Ana
NORTH & SOUTH: Bristol
EAST & WEST: Santa Ana

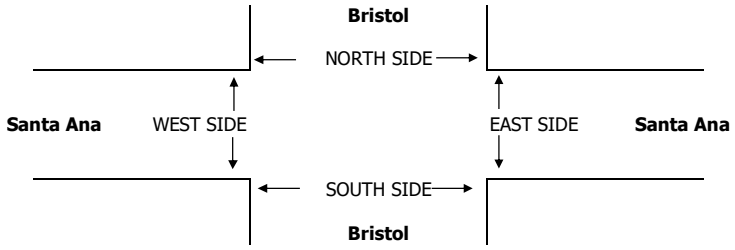
PROJECT #: SC0846
LOCATION #: 21
CONTROL: SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

☑ Add U-Turns to Left Turns

		NORTHBOUND Bristol			SOUTHBOUND Bristol			EASTBOUND Santa Ana			WESTBOUND Santa Ana				U-TURNS				
		NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB	TTL
	LANES:	1	3	0	1	3	0	1	2	0	1	2	0		0	0	0	0	
AM	7:00 AM	12	299	16	24	375	3	21	53	17	25	26	9	880	0	0	0	0	0
	7:15 AM	16	341	36	33	399	9	13	72	8	24	54	4	1,009	0	3	0	0	3
	7:30 AM	16	360	52	26	369	7	29	110	9	30	64	13	1,085	0	1	0	0	1
	7:45 AM	23	352	55	39	309	12	19	136	12	21	79	8	1,065	2	6	0	0	8
	8:00 AM	7	310	46	33	371	11	18	69	4	17	33	14	933	0	6	0	0	6
	8:15 AM	12	274	25	36	369	7	9	29	3	20	23	12	819	3	2	0	0	5
	8:30 AM	11	237	21	23	307	8	13	25	7	21	15	12	700	1	3	0	0	4
	8:45 AM	5	292	14	31	345	4	8	26	2	10	18	11	766	0	5	0	0	5
	VOLUMES	102	2,465	265	245	2,844	61	130	520	62	168	312	83	7,257	6	26	0	0	32
	APPROACH %	4%	87%	9%	8%	90%	2%	18%	73%	9%	30%	55%	15%						
	APP/DEPART	2,832	/	2,704	3,150	/	3,080	712	/	1,004	563	/	469	0					
	BEGIN PEAK HR		7:15 AM																
	VOLUMES	62	1,363	189	131	1,448	39	79	387	33	92	230	39	4,092					
	APPROACH %	4%	84%	12%	8%	89%	2%	16%	78%	7%	25%	64%	11%						
	PEAK HR FACTOR		0.938			0.917			0.747			0.836		0.943					
	APP/DEPART	1,614	/	1,497	1,618	/	1,575	499	/	691	361	/	329	0					
PM	4:00 PM	5	338	23	30	351	12	19	30	7	43	59	11	928	0	5	0	0	5
	4:15 PM	6	345	21	25	387	13	9	35	4	31	57	18	951	0	8	0	0	8
	4:30 PM	13	345	26	29	353	18	12	42	7	38	64	23	970	3	3	0	0	6
	4:45 PM	10	361	15	18	352	7	11	34	5	42	76	23	954	1	8	0	0	9
	5:00 PM	19	333	16	20	289	14	9	32	9	64	88	29	922	3	6	0	0	9
	5:15 PM	21	386	19	27	357	14	11	41	6	61	96	27	1,066	2	5	0	0	7
	5:30 PM	13	399	21	22	353	14	15	39	14	50	85	22	1,047	1	5	0	0	6
	5:45 PM	19	346	27	31	348	8	21	44	7	48	87	18	1,004	3	7	0	0	10
	VOLUMES	106	2,853	168	202	2,790	100	107	297	59	377	612	171	7,842	13	47	0	0	60
	APPROACH %	3%	91%	5%	7%	90%	3%	23%	64%	13%	33%	53%	15%						
	APP/DEPART	3,127	/	3,178	3,092	/	3,239	463	/	620	1,160	/	805	0					
	BEGIN PEAK HR		5:00 PM																
	VOLUMES	72	1,464	83	100	1,347	50	56	156	36	223	356	96	4,039					
	APPROACH %	4%	90%	5%	7%	90%	3%	23%	63%	15%	33%	53%	14%						
	PEAK HR FACTOR		0.935			0.940			0.861			0.917		0.947					
	APP/DEPART	1,619	/	1,639	1,497	/	1,615	248	/	316	675	/	469	0					



		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	13	6	9	9	37	13	4	6	8	31	0	2	3	1	6
	7:15 AM	42	16	13	11	82	40	16	12	7	75	2	0	1	4	7
	7:30 AM	40	26	14	26	106	39	26	12	23	100	1	0	2	3	6
	7:45 AM	43	21	5	17	86	40	20	2	16	78	3	1	3	1	8
	8:00 AM	32	7	10	12	61	31	7	9	10	57	1	0	1	2	4
	8:15 AM	5	3	5	7	20	5	3	4	6	18	0	0	1	1	2
	8:30 AM	16	10	5	6	37	15	5	3	3	26	1	5	2	3	11
	8:45 AM	7	13	8	4	32	5	12	7	2	26	2	1	1	2	6
	TOTAL	198	102	69	92	461	188	93	55	75	411	10	9	14	17	50
PM	4:00 PM	5	10	7	9	31	5	6	4	8	23	0	4	3	1	8
	4:15 PM	8	13	13	10	44	6	11	5	8	30	2	2	8	2	14
	4:30 PM	12	3	6	10	31	10	2	6	9	27	2	1	0	1	4
	4:45 PM	1	3	4	10	18	0	3	4	8	15	1	0	0	2	3
	5:00 PM	6	15	11	10	42	6	10	7	7	30	0	5	4	3	12
	5:15 PM	21	7	18	17	63	20	7	12	16	55	1	0	6	1	8
	5:30 PM	36	18	12	30	96	29	18	9	24	80	7	0	3	6	16
	5:45 PM	26	11	28	11	76	24	11	22	9	66	2	0	6	2	10
	TOTAL	115	80	99	107	401	100	68	69	89	326	15	12	30	18	75

INTERSECTION TURNING MOVEMENT COUNTS

T218

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

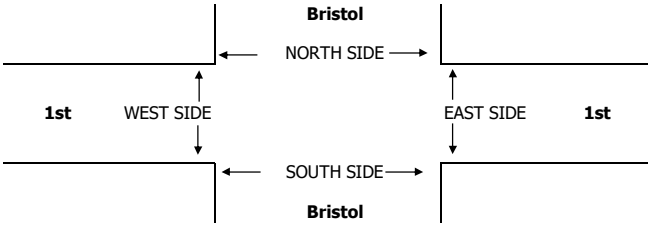
DATE:	LOCATION:	Santa Ana	PROJECT #:	SC2183
Tue, May 14, 19	NORTH & SOUTH:	Bristol	LOCATION #:	13
	EAST & WEST:	1st	CONTROL:	SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

Add U-Turns to Left Turns

		NORTHBOUND Bristol			SOUTHBOUND Bristol			EASTBOUND 1st			WESTBOUND 1st				U-TURNS				
	LANES:	NL 2	NT 3	NR 1	SL 2	ST 3	SR 1	EL 1	ET 3	ER 0	WL 1	WT 3	WR 0	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	36	259	34	58	271	47	43	290	22	28	124	17	1,229	2	2	0	0	4
	7:15 AM	39	329	43	65	316	34	36	318	32	23	145	23	1,403	2	1	0	1	4
	7:30 AM	46	328	36	88	284	51	53	332	28	30	204	28	1,508	3	3	0	0	6
	7:45 AM	57	346	48	74	259	37	62	314	30	25	258	36	1,546	2	2	0	0	4
	8:00 AM	39	262	33	45	262	36	52	291	36	28	197	30	1,311	2	3	0	0	5
	8:15 AM	35	266	40	56	275	32	44	293	29	29	179	23	1,301	1	3	0	0	4
	8:30 AM	23	240	58	63	248	34	55	299	24	22	143	41	1,250	3	0	0	0	3
	8:45 AM	24	202	37	57	229	31	36	285	26	17	137	24	1,105	1	0	0	0	1
	VOLUMES	299	2,232	329	506	2,144	302	381	2,422	227	202	1,387	222	10,653	16	14	0	1	31
	APPROACH %	10%	78%	12%	17%	73%	10%	13%	80%	7%	11%	77%	12%						
	APP/DEPART	2,860	/	2,849	2,952	/	2,588	3,030	/	3,244	1,811	/	1,972	0					
	BEGIN PEAK HR		7:15 AM																
	VOLUMES	181	1,265	160	272	1,121	158	203	1,255	126	106	804	117	5,768					
	APPROACH %	11%	79%	10%	18%	72%	10%	13%	79%	8%	10%	78%	11%						
	PEAK HR FACTOR		0.890			0.917			0.959			0.805		0.933					
	APP/DEPART	1,606	/	1,594	1,551	/	1,361	1,584	/	1,679	1,027	/	1,134	0					
PM	4:00 PM	72	301	45	37	155	34	49	244	38	47	256	28	1,306	5	3	0	2	10
	4:15 PM	66	288	50	39	176	39	43	279	36	41	293	38	1,388	5	3	0	1	9
	4:30 PM	63	284	54	51	260	54	58	283	39	58	328	27	1,559	4	5	1	2	12
	4:45 PM	70	290	40	64	266	72	42	255	42	45	339	25	1,550	7	3	1	1	12
	5:00 PM	87	338	47	42	275	59	46	231	32	50	304	33	1,544	10	1	0	2	13
	5:15 PM	63	310	39	46	302	64	41	282	21	61	345	39	1,613	4	3	0	0	7
	5:30 PM	66	317	46	50	279	59	57	261	20	47	307	34	1,543	2	1	1	3	7
	5:45 PM	63	335	53	54	246	63	48	253	33	39	287	30	1,504	3	1	0	2	6
	VOLUMES	550	2,463	374	383	1,959	444	384	2,088	261	388	2,459	254	12,007	40	20	3	13	76
	APPROACH %	16%	73%	11%	14%	70%	16%	14%	76%	10%	13%	79%	8%						
	APP/DEPART	3,387	/	3,118	2,786	/	2,635	2,733	/	2,838	3,101	/	3,416	0					
	BEGIN PEAK HR		4:30 PM																
	VOLUMES	283	1,222	180	203	1,103	249	187	1,051	134	214	1,316	124	6,266					
	APPROACH %	17%	73%	11%	13%	71%	16%	14%	77%	10%	13%	80%	7%						
	PEAK HR FACTOR		0.892			0.944			0.903			0.929		0.971					
	APP/DEPART	1,685	/	1,543	1,555	/	1,471	1,372	/	1,427	1,654	/	1,825	0					



		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	AM BEGIN PEAK HR	7:15 AM					0	0	0	0	0					
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	PM BEGIN PEAK HR	4:30 PM					0	0	0	0	0					

Transportation Studies, Inc.
2640 Walnut Avenue, Suite L
Tustin, CA. 92780

City: SANTA ANA
N-S Direction: BRISTOL STREET
E-W Direction: MCFADDEN AVENUE

File Name : H1702008
Site Code : 00000000
Start Date : 2/7/2017
Page No : 1

Groups Printed- Turning Movements

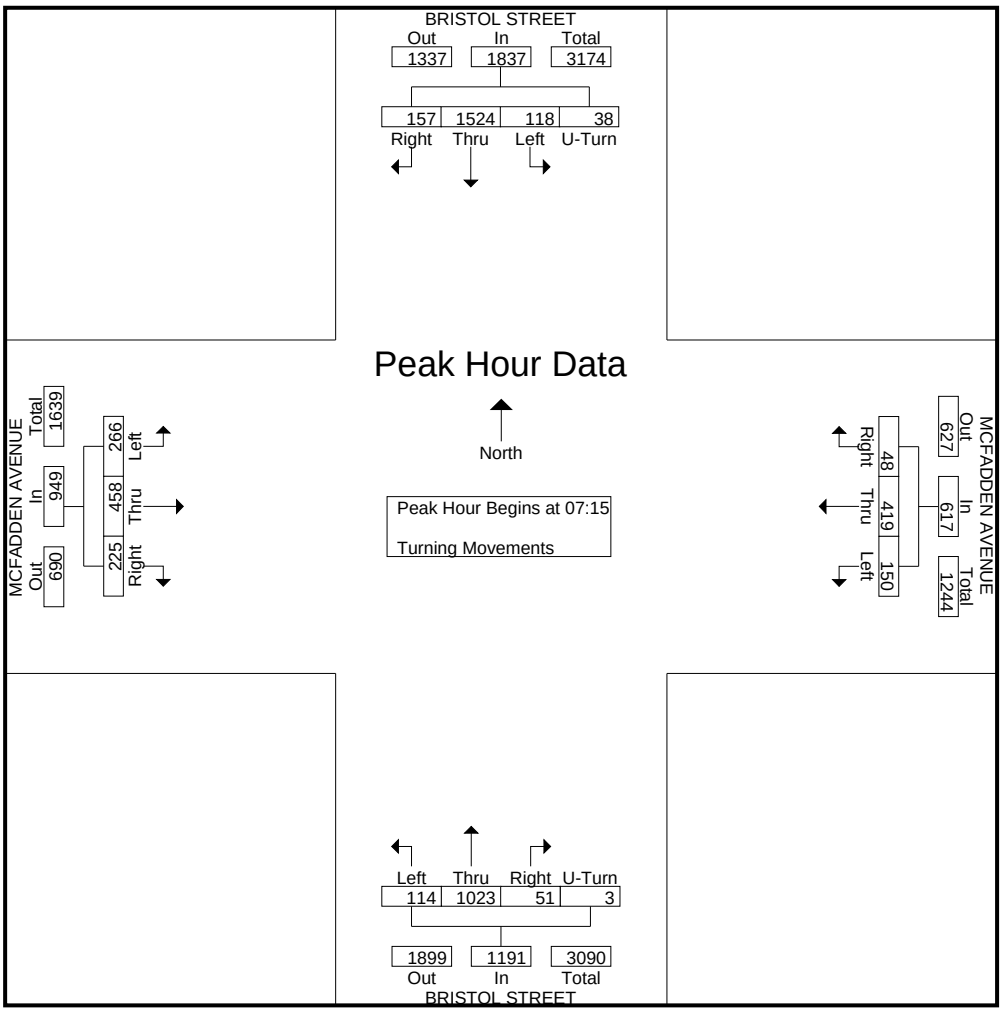
	BRISTOL STREET Southbound				MCFADDEN AVENUE Westbound			BRISTOL STREET Northbound				MCFADDEN AVENUE Eastbound			
Start Time	Right	Thru	Left	U-Turn	Right	Thru	Left	Right	Thru	Left	U-Turn	Right	Thru	Left	Int. Total
07:00	41	347	20	6	18	80	43	9	170	18	0	53	94	41	940
07:15	49	378	27	6	12	103	43	11	246	26	1	53	119	72	1146
07:30	28	388	30	8	9	110	34	18	264	35	0	53	115	80	1172
07:45	52	391	34	11	12	111	33	12	255	35	2	62	110	46	1166
Total	170	1504	111	31	51	404	153	50	935	114	3	221	438	239	4424
08:00	28	367	27	13	15	95	40	10	258	18	0	57	114	68	1110
08:15	25	350	28	5	14	66	23	14	174	19	2	33	76	48	877
08:30	24	323	16	6	10	74	24	10	218	19	0	32	81	47	884
08:45	25	320	23	7	11	54	26	11	193	24	1	22	78	47	842
Total	102	1360	94	31	50	289	113	45	843	80	3	144	349	210	3713
*** BREAK ***															
16:00	47	257	17	15	26	100	34	18	382	48	5	23	111	67	1150
16:15	61	258	27	6	22	102	31	17	368	41	2	24	98	71	1128
16:30	64	246	23	14	14	118	40	24	363	49	5	25	114	68	1167
16:45	62	268	21	14	19	116	32	19	384	46	3	30	122	57	1193
Total	234	1029	88	49	81	436	137	78	1497	184	15	102	445	263	4638
17:00	66	296	19	16	15	127	19	15	376	57	4	23	118	67	1218
17:15	65	298	25	8	12	122	22	30	382	43	2	23	136	63	1231
17:30	69	274	16	8	11	124	21	18	377	60	3	23	120	67	1191
17:45	56	286	19	16	11	121	28	22	320	64	1	28	113	71	1156
Total	256	1154	79	48	49	494	90	85	1455	224	10	97	487	268	4796
Grand Total	762	5047	372	159	231	1623	493	258	4730	602	31	564	1719	980	17571
Apprch %	12	79.6	5.9	2.5	9.8	69.2	21	4.6	84.1	10.7	0.6	17.3	52.7	30	
Total %	4.3	28.7	2.1	0.9	1.3	9.2	2.8	1.5	26.9	3.4	0.2	3.2	9.8	5.6	

Transportation Studies, Inc.
2640 Walnut Avenue, Suite L
Tustin, CA. 92780

City: SANTA ANA
N-S Direction: BRISTOL STREET
E-W Direction: MCFADDEN AVENUE

File Name : H1702008
Site Code : 00000000
Start Date : 2/7/2017
Page No : 2

	BRISTOL STREET Southbound					MCFADDEN AVENUE Westbound				BRISTOL STREET Northbound					MCFADDEN AVENUE Eastbound				
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																			
Peak Hour for Entire Intersection Begins at 07:15																			
07:15	49	378	27	6	460	12	103	43	158	11	246	26	1	284	53	119			
07:30	28	388	30	8	454	9	110	34	153	18	**264**	**35**	0	**317**	53	115	**80**	**248**	**1172**
07:45	**52**	**391**	**34**	11	**488**	12	**111**	33	156	12	255	35	**2**	304	**62**	110	46	218	1166
08:00	28	367	27	**13**	435	**15**													
Total Volume	157	1524	118	38	1837	48	419	150	617	51	1023	114	3	1191	225	458	266	949	4594
% App. Total	8.5	83	6.4	2.1		7.8	67.9	24.3		4.3	85.9	9.6	0.3		23.7	48.3	28		
PHF	.755	.974	.868	.731	.941	.800	.944	.872	.976	.708	.969	.814	.375	.939	.907	.962	.831	.957	.980

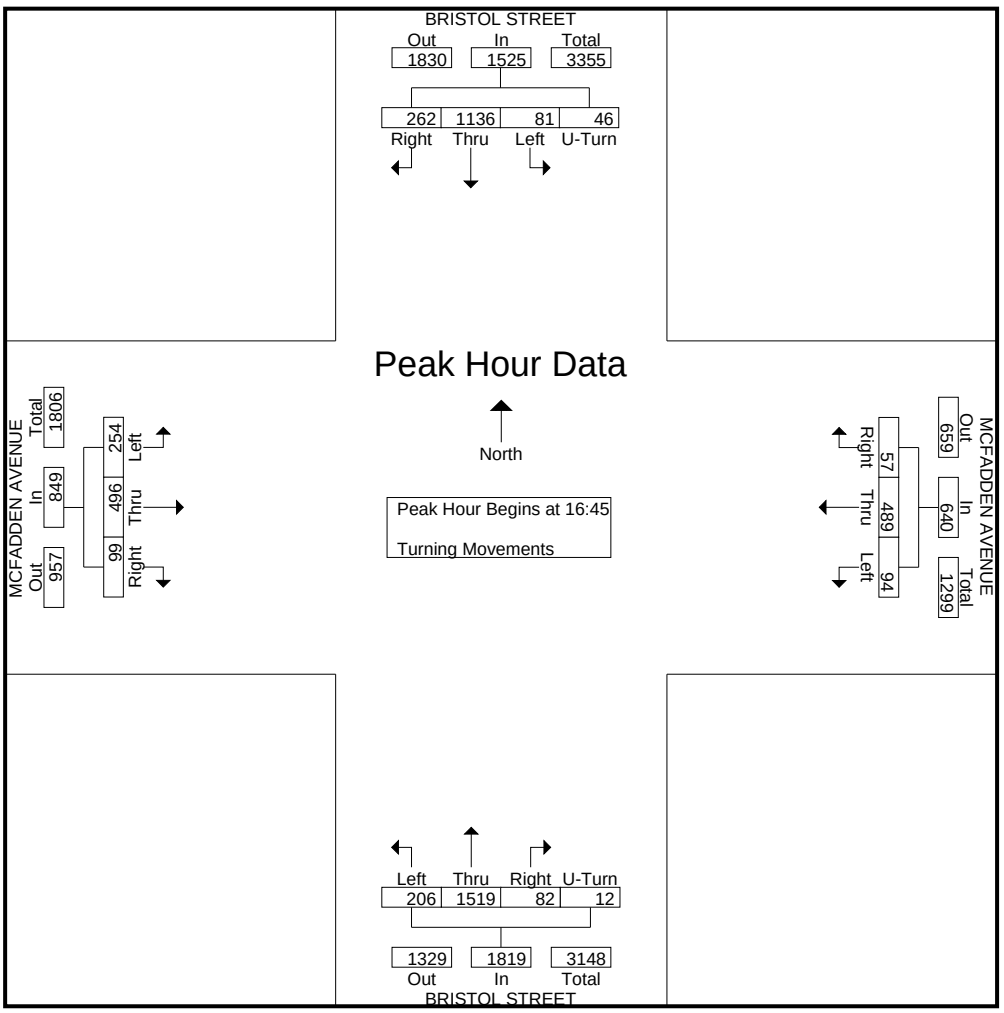


Transportation Studies, Inc.
2640 Walnut Avenue, Suite L
Tustin, CA. 92780

City: SANTA ANA
N-S Direction: BRISTOL STREET
E-W Direction: MCFADDEN AVENUE

File Name : H1702008
Site Code : 00000000
Start Date : 2/7/2017
Page No : 3

	BRISTOL STREET Southbound					MCFADDEN AVENUE Westbound				BRISTOL STREET Northbound					MCFADDEN AVENUE Eastbound				
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																			
Peak Hour for Entire Intersection Begins at 16:45																			
16:45	62	268	21	14	365	19	116	32	167	19	384				**30**				
17:00	66	296	19	**16**	**397**	15	**127**	19	161	15	376	57	**4**	452	23	118	**67**	208	1218
17:15	65	**298**	**25**	8	396	12	122	22	156	**30**	382	43	2	457	23	**136**	63	**222**	**1231**
17:30	**69**	274	16	8	367	11	124	21	156	18	377	**60**	3	**458**	23	120	67	210	1191
Total Volume	262	1136	81	46	1525	57	489	94	640	82	1519	206	12	1819	99	496	254	849	4833
% App. Total	17.2	74.5	5.3	3		8.9	76.4	14.7		4.5	83.5	11.3	0.7		11.7	58.4	29.9		
PHF	.949	.953	.810	.719	.960	.750	.963	.734	.958	.683	.989	.858	.750	.993	.825	.912	.948	.956	.982



INTERSECTION TURNING MOVEMENT COUNTS

T218

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Thu, May 16, 19

LOCATION: Santa Ana
NORTH & SOUTH: Bristol
EAST & WEST: Warner

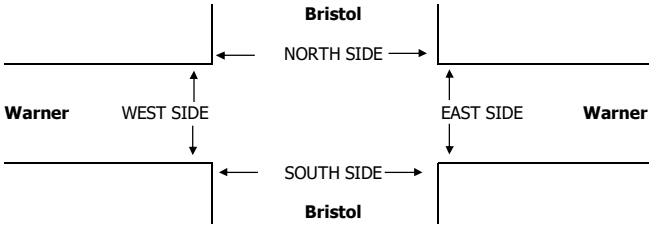
PROJECT #: SC2183
LOCATION #: 15
CONTROL: SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

☑ Add U-Turns to Left Turns

		NORTHBOUND (Bristol)			SOUTHBOUND (Bristol)			EASTBOUND (Warner)			WESTBOUND (Warner)				U-TURNS				
	LANES:	NL 2	NT 2	NR 1	SL 2	ST 3	SR 0	EL 1	ET 3	ER 1	WL 1	WT 3	WR 1	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	40	125	29	104	291	34	30	297	55	36	143	25	1,209	0	2	0	0	2
	7:15 AM	43	163	24	110	327	37	48	304	71	35	199	25	1,386	2	0	0	1	3
	7:30 AM	49	182	42	79	336	33	52	292	64	54	230	35	1,448	1	1	0	1	3
	7:45 AM	53	250	34	90	316	36	50	266	72	49	243	37	1,496	0	1	0	1	2
	8:00 AM	45	258	57	103	315	40	53	275	76	48	179	47	1,496	0	1	0	0	1
	8:15 AM	36	272	81	84	324	40	53	217	72	35	126	41	1,381	0	0	0	0	0
	8:30 AM	26	205	62	74	322	36	48	221	65	49	127	29	1,264	1	0	0	2	3
	8:45 AM	36	127	35	72	310	35	33	197	72	52	110	30	1,109	0	2	0	0	2
	VOLUMES	328	1,582	364	716	2,541	291	367	2,069	547	358	1,357	269	10,789	4	7	0	5	16
	APPROACH %	14%	70%	16%	20%	72%	8%	12%	69%	18%	18%	68%	14%						
	APP/DEPART	2,274	/	2,225	3,548	/	3,445	2,983	/	3,147	1,984	/	1,972	0					
	BEGIN PEAK HR		7:15 AM																
	VOLUMES	190	853	157	382	1,294	146	203	1,137	283	186	851	144	5,826					
	APPROACH %	16%	71%	13%	21%	71%	8%	13%	70%	17%	16%	72%	12%						
	PEAK HR FACTOR		0.833			0.961			0.959			0.897		0.974					
	APP/DEPART	1,200	/	1,203	1,822	/	1,763	1,623	/	1,676	1,181	/	1,184	0					
PM	4:00 PM	68	304	50	84	211	30	53	206	36	32	219	93	1,386	0	0	1	0	1
	4:15 PM	80	289	54	72	192	43	43	227	36	35	247	79	1,397	1	0	1	1	3
	4:30 PM	73	295	54	44	205	35	44	208	44	45	243	77	1,367	2	0	0	2	4
	4:45 PM	80	284	44	77	195	36	51	193	36	38	255	72	1,361	2	0	0	0	2
	5:00 PM	72	277	56	55	237	47	53	231	35	53	265	68	1,449	2	0	0	1	3
	5:15 PM	59	254	50	81	202	42	51	210	46	36	257	69	1,357	0	2	1	0	3
	5:30 PM	70	291	63	66	176	36	54	207	49	40	260	72	1,384	1	0	2	0	3
	5:45 PM	72	282	50	70	192	47	54	207	30	42	260	67	1,373	0	1	0	0	1
	VOLUMES	574	2,276	421	549	1,610	316	403	1,689	312	321	2,006	597	11,074	8	3	5	4	20
	APPROACH %	18%	70%	13%	22%	65%	13%	17%	70%	13%	11%	69%	20%						
	APP/DEPART	3,271	/	3,274	2,475	/	2,247	2,404	/	2,660	2,924	/	2,893	0					
	BEGIN PEAK HR		4:15 PM																
	VOLUMES	305	1,145	208	248	829	161	191	859	151	171	1,010	296	5,574					
	APPROACH %	18%	69%	13%	20%	67%	13%	16%	72%	13%	12%	68%	20%						
	PEAK HR FACTOR		0.980			0.913			0.941			0.957		0.962					
	APP/DEPART	1,658	/	1,631	1,238	/	1,154	1,201	/	1,319	1,477	/	1,470	0					



		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	AM BEGIN PEAK HR	7:15 AM					0	0	0	0	0					
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	PM BEGIN PEAK HR	4:15 PM					0	0	0	0	0					

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 pacific@aimtd.com

DATE: Tue, Feb 9, 16

LOCATION: Santa Ana
NORTH & SOUTH: Bristol
EAST & WEST: Segerstrom

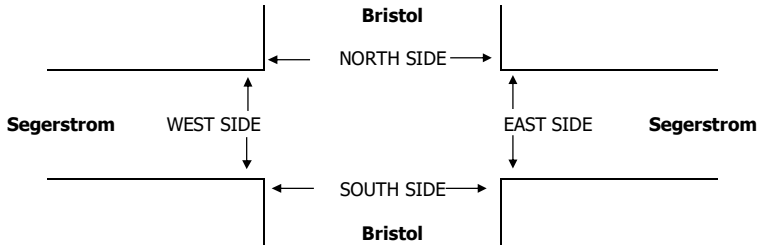
PROJECT #: SC0846
LOCATION #: 46
CONTROL: SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

☑ Add U-Turns to Left Turns

		NORTHBOUND Bristol			SOUTHBOUND Bristol			EASTBOUND Segerstrom			WESTBOUND Segerstrom				U-TURNS				
		NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB	TTL
	LANES:	1	3	0	1	3	0	1	2	0	1	2	0		0	0	0	0	
AM	7:00 AM	6	92	12	45	252	33	14	166	16	19	100	11	766	0	0	0	0	0
	7:15 AM	12	143	29	62	244	39	41	232	10	23	122	11	968	0	0	0	0	0
	7:30 AM	17	188	30	80	249	25	26	232	24	25	171	18	1,085	0	0	0	0	0
	7:45 AM	22	176	32	76	234	21	64	220	20	44	151	24	1,084	0	0	0	0	0
	8:00 AM	11	189	39	53	244	29	50	193	26	25	88	15	962	0	0	0	0	0
	8:15 AM	12	179	23	38	250	25	49	166	21	26	62	12	863	1	0	0	0	1
	8:30 AM	4	236	21	27	259	36	56	164	20	18	51	12	904	0	0	0	0	0
	8:45 AM	9	223	13	33	265	36	55	143	18	16	77	22	910	0	0	0	0	0
	VOLUMES	93	1,426	199	414	1,997	244	355	1,516	155	196	822	125	7,542	1	0	0	0	1
	APPROACH %	5%	83%	12%	16%	75%	9%	18%	75%	8%	17%	72%	11%						
	APP/DEPART	1,718	/	1,906	2,655	/	2,349	2,026	/	2,129	1,143	/	1,158	0					
	BEGIN PEAK HR		7:15 AM																
	VOLUMES	62	696	130	271	971	114	181	877	80	117	532	68	4,099					
	APPROACH %	7%	78%	15%	20%	72%	8%	16%	77%	7%	16%	74%	9%						
	PEAK HR FACTOR		0.929			0.958			0.936			0.818		0.944					
	APP/DEPART	888	/	945	1,356	/	1,168	1,138	/	1,278	717	/	708	0					
PM	4:00 PM	33	218	38	20	165	31	43	135	11	32	248	24	998	0	0	0	0	0
	4:15 PM	17	229	32	20	179	43	48	141	15	30	259	16	1,029	0	1	0	0	1
	4:30 PM	21	269	29	21	188	27	53	152	11	26	249	13	1,059	0	0	0	0	0
	4:45 PM	30	328	43	25	183	35	45	139	6	37	243	20	1,134	0	0	0	0	0
	5:00 PM	38	320	50	26	195	39	47	154	11	34	272	10	1,196	1	0	0	0	1
	5:15 PM	38	319	69	26	185	40	47	191	13	29	258	15	1,230	0	0	0	0	0
	5:30 PM	46	321	49	16	200	48	46	189	13	19	250	18	1,215	0	0	0	0	0
	5:45 PM	50	310	55	20	230	42	52	154	17	32	252	8	1,222	1	0	0	0	1
	VOLUMES	273	2,314	365	174	1,525	305	381	1,255	97	239	2,031	124	9,083	2	1	0	0	3
	APPROACH %	9%	78%	12%	9%	76%	15%	22%	72%	6%	10%	85%	5%						
	APP/DEPART	2,952	/	2,820	2,004	/	1,863	1,733	/	1,793	2,394	/	2,607	0					
	BEGIN PEAK HR		5:00 PM																
	VOLUMES	172	1,270	223	88	810	169	192	688	54	114	1,032	51	4,863					
	APPROACH %	10%	76%	13%	8%	76%	16%	21%	74%	6%	10%	86%	4%						
	PEAK HR FACTOR		0.977			0.914			0.930			0.947		0.988					
	APP/DEPART	1,665	/	1,513	1,067	/	980	934	/	999	1,197	/	1,371	0					



		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	8	6	4	3	21	1	3	4	1	9	7	3	0	2	12
	7:15 AM	3	16	0	3	22	2	7	0	1	10	1	9	0	2	12
	7:30 AM	11	7	8	6	32	1	2	7	5	15	10	5	1	1	17
	7:45 AM	4	7	2	4	17	0	0	2	3	5	4	7	0	1	12
	8:00 AM	1	2	5	3	11	0	0	5	2	7	1	2	0	1	4
	8:15 AM	2	0	3	2	7	1	0	3	1	5	1	0	0	1	2
	8:30 AM	4	3	1	2	10	2	0	0	1	3	2	3	1	1	7
	8:45 AM	2	2	5	3	12	2	1	4	3	10	0	1	1	0	2
	TOTAL	35	43	28	26	132	9	13	25	17	64	26	30	3	9	68
PM	4:00 PM	16	3	10	8	37	3	1	6	4	14	13	2	4	4	23
	4:15 PM	10	6	3	5	24	0	1	2	1	4	10	5	1	4	20
	4:30 PM	16	5	8	7	36	1	3	4	3	11	15	2	4	4	25
	4:45 PM	6	5	6	6	23	1	0	4	3	8	5	5	2	3	15
	5:00 PM	9	2	6	6	23	0	2	5	4	11	9	0	1	2	12
	5:15 PM	13	1	4	7	25	1	1	3	6	11	12	0	1	1	14
	5:30 PM	8	3	17	2	30	3	1	16	1	21	5	2	1	1	9
	5:45 PM	6	0	3	4	13	1	0	1	3	5	5	0	2	1	8
	TOTAL	84	25	57	45	211	10	9	41	25	85	74	16	16	20	126

Transportation Studies, Inc.
2640 Walnut Avenue, Suite L
Tustin, CA. 92780

City: SANTA ANA
N-S Direction: BRISTOL STREET
E-W Direction: ALTON AVENUE

File Name : H1702006
Site Code : 00000000
Start Date : 2/15/2017
Page No : 1

Groups Printed- Turning Movements

	BRISTOL STREET Southbound				ALTON AVENUE Westbound			BRISTOL STREET Northbound				ALTON AVENUE Eastbound				
Start Time	Right	Thru	Left	U-Turn	Right	Thru	Left	Right	Thru	Left	U-Turn	Right	Thru	Left	Peds	Int. Total
07:00	30	305	9	0	7	6	2	2	122	7	1	31	9	28	0	559
07:15	47	369	4	0	7	10	11	3	137	15	0	34	19	36	0	692
07:30	82	373	8	0	14	31	6	1	166	12	0	55	42	50	0	840
07:45	64	388	11	0	9	33	6	1	148	10	2	52	28	74	0	826
Total	223	1435	32	0	37	80	25	7	573	44	3	172	98	188	0	2917
08:00	27	394	11	0	9	10	7	1	158	8	0	43	24	76	0	768
08:15	21	343	7	0	10	11	4	2	143	6	0	35	15	75	0	672
08:30	19	312	6	0	11	7	3	0	142	6	2	20	16	36	0	580
08:45	18	306	13	1	4	12	4	3	126	7	0	13	12	18	0	537
Total	85	1355	37	1	34	40	18	6	569	27	2	111	67	205	0	2557
*** BREAK ***																
16:00	21	204	10	0	28	17	7	8	448	37	1	12	19	41	0	853
16:15	24	200	11	2	15	23	8	3	381	33	4	17	17	39	0	777
16:30	24	214	12	0	27	20	10	5	406	30	7	14	26	43	0	838
16:45	28	219	16	1	21	34	7	8	417	36	4	12	29	48	0	880
Total	97	837	49	3	91	94	32	24	1652	136	16	55	91	171	0	3348
17:00	31	204	9	1	26	26	7	5	383	35	3	13	26	45	0	814
17:15	27	212	17	1	25	51	7	5	405	48	6	23	22	46	0	895
17:30	25	234	12	1	16	34	7	7	426	34	3	24	24	50	0	897
17:45	25	220	19	0	29	34	7	9	381	37	3	22	23	35	0	844
Total	108	870	57	3	96	145	28	26	1595	154	15	82	95	176	0	3450
Grand Total	513	4497	175	7	258	359	103	63	4389	361	36	420	351	740	0	12272
Apprch %	9.9	86.6	3.4	0.1	35.8	49.9	14.3	1.3	90.5	7.4	0.7	27.8	23.2	49	0	
Total %	4.2	36.6	1.4	0.1	2.1	2.9	0.8	0.5	35.8	2.9	0.3	3.4	2.9	6	0	

Transportation Studies, Inc.
2640 Walnut Avenue, Suite L
Tustin, CA. 92780

City: SANTA ANA
N-S Direction: BRISTOL STREET
E-W Direction: MACARTHUR BOULEVARD

File Name : H1702007
Site Code : 00000000
Start Date : 2/7/2017

Groups Printed- Turning Movements

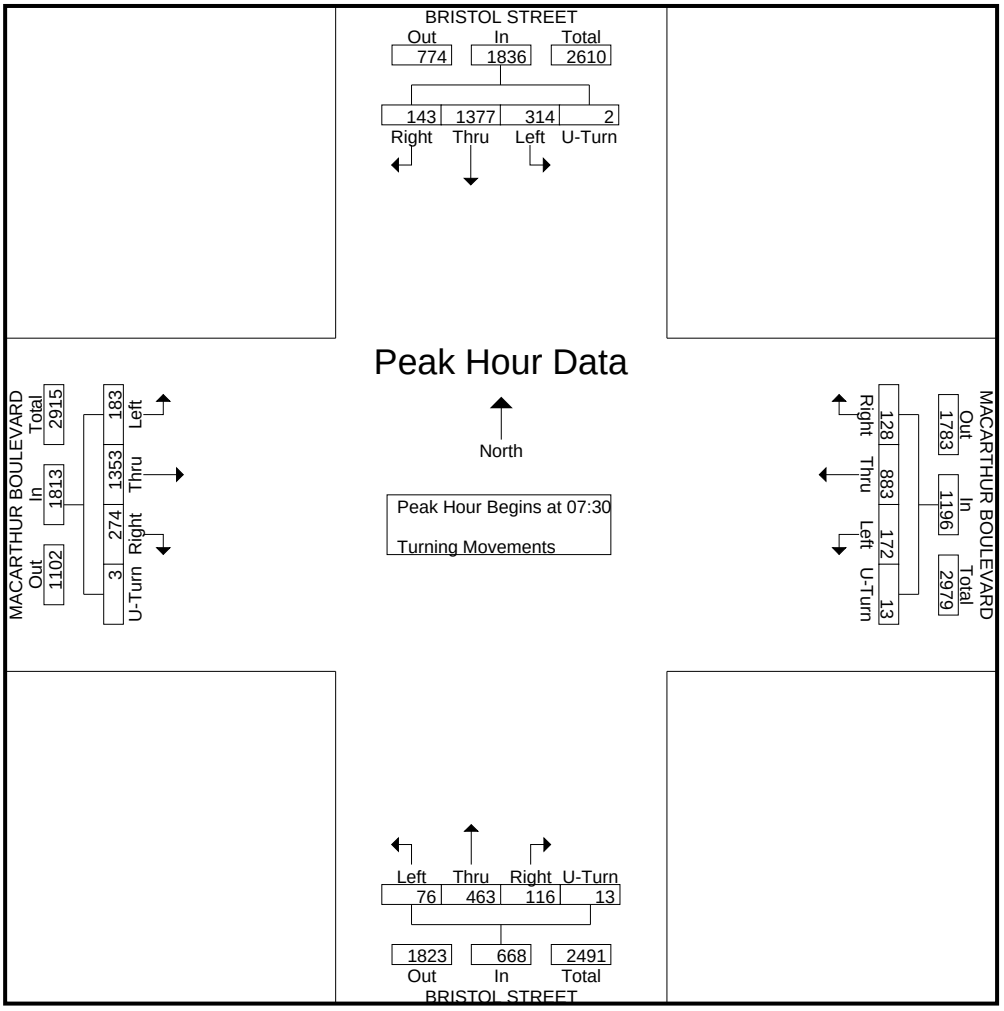
	BRISTOL STREET Southbound				MACARTHUR BOULEVARD Westbound				BRISTOL STREET Northbound				MACARTHUR BOULEVARD Eastbound				
Start Time	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Int. Total
07:00	20	276	34	0	26	139	44	0	21	78	15	4	23	172	23	0	875
07:15	37	323	48	1	30	241	41	4	16	86	10	2	19	291	37	1	1187
07:30	45	328	70	0	39	360	38	1	24	98	22	3	66	384	35	0	1513
07:45	34	336	83	1	33	292	49	2	28	121	30	5	69	324	51	1	1459
Total	136	1263	235	2	128	1032	172	7	89	383	77	14	177	1171	146	2	5034
08:00	32	379	86	1	31	122	39	4	26	119	11	2	64	351	50	1	1318
08:15	32	334	75	0	25	109	46	6	38	125	13	3	75	294	47	1	1223
08:30	20	274	44	0	32	92	51	8	34	107	11	1	70	332	62	0	1138
08:45	27	262	35	3	14	113	59	8	25	113	17	7	55	258	37	0	1033
Total	111	1249	240	4	102	436	195	26	123	464	52	13	264	1235	196	2	4712
*** BREAK ***																	
16:00	23	170	42	8	55	344	68	2	61	313	73	4	27	176	87	1	1454
16:15	30	174	39	6	59	370	83	0	56	350	62	11	31	166	92	1	1530
16:30	30	198	48	6	57	378	70	0	58	340	59	14	32	197	82	0	1569
16:45	27	183	57	5	74	355	61	0	72	346	67	13	46	195	87	0	1588
Total	110	725	186	25	245	1447	282	2	247	1349	261	42	136	734	348	2	6141
17:00	26	191	39	8	59	366	76	0	73	353	56	8	39	209	89	1	1593
17:15	31	210	45	11	74	385	63	0	58	350	67	13	45	190	80	2	1624
17:30	41	212	44	7	74	384	57	0	49	337	86	15	34	178	86	1	1605
17:45	34	213	57	7	92	339	61	0	51	295	91	16	45	183	89	1	1574
Total	132	826	185	33	299	1474	257	0	231	1335	300	52	163	760	344	5	6396
Grand Total	489	4063	846	64	774	4389	906	35	690	3531	690	121	740	3900	1034	11	22283
Apprch %	9	74.4	15.5	1.2	12.7	71.9	14.8	0.6	13.7	70.2	13.7	2.4	13	68.6	18.2	0.2	
Total %	2.2	18.2	3.8	0.3	3.5	19.7	4.1	0.2	3.1	15.8	3.1	0.5	3.3	17.5	4.6	0	

Transportation Studies, Inc.
2640 Walnut Avenue, Suite L
Tustin, CA. 92780

City: SANTA ANA
N-S Direction: BRISTOL STREET
E-W Direction: MACARTHUR BOULEVARD

File Name : H1702007
Site Code : 00000000
Start Date : 2/7/2017
Page No : 2

	BRISTOL STREET Southbound					MACARTHUR BOULEVARD Westbound					BRISTOL STREET Northbound					MACARTHUR BOULEVARD Eastbound					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30																					
07:30	45	328	70	0	443	39	360	38	1	438	24	98	22	3	147	66	**384**	**35**	**0**	**485**	**1513**
07:45	**34**	**336**	**83**	**1**	**454**	**33**	**292**	**49**	2	376	28	121	**30**	**5**	**184**	69	324	**51**	**1**	445	1459
08:00	32	**379**	**86**		**498**	31	122	39	4	196	26	119	11	2	158	64	351	50	1	466	1318
08:15	32	334	75	0	441	25	109	46	**6**	186	**38**	**125**	13	3	179	**75**	294	47	1	417	1223
Total Volume	143	1377	314	2	1836	128	883	172	13	1196	116	463	76	13	668	274	1353	183	3	1813	5513
% App. Total																					
PHF	.794	.908	.913	.500	.922	.821	.613	.878	.542	.683	.763	.926	.633	.650	.908	.913	.881	.897	.750	.935	.911

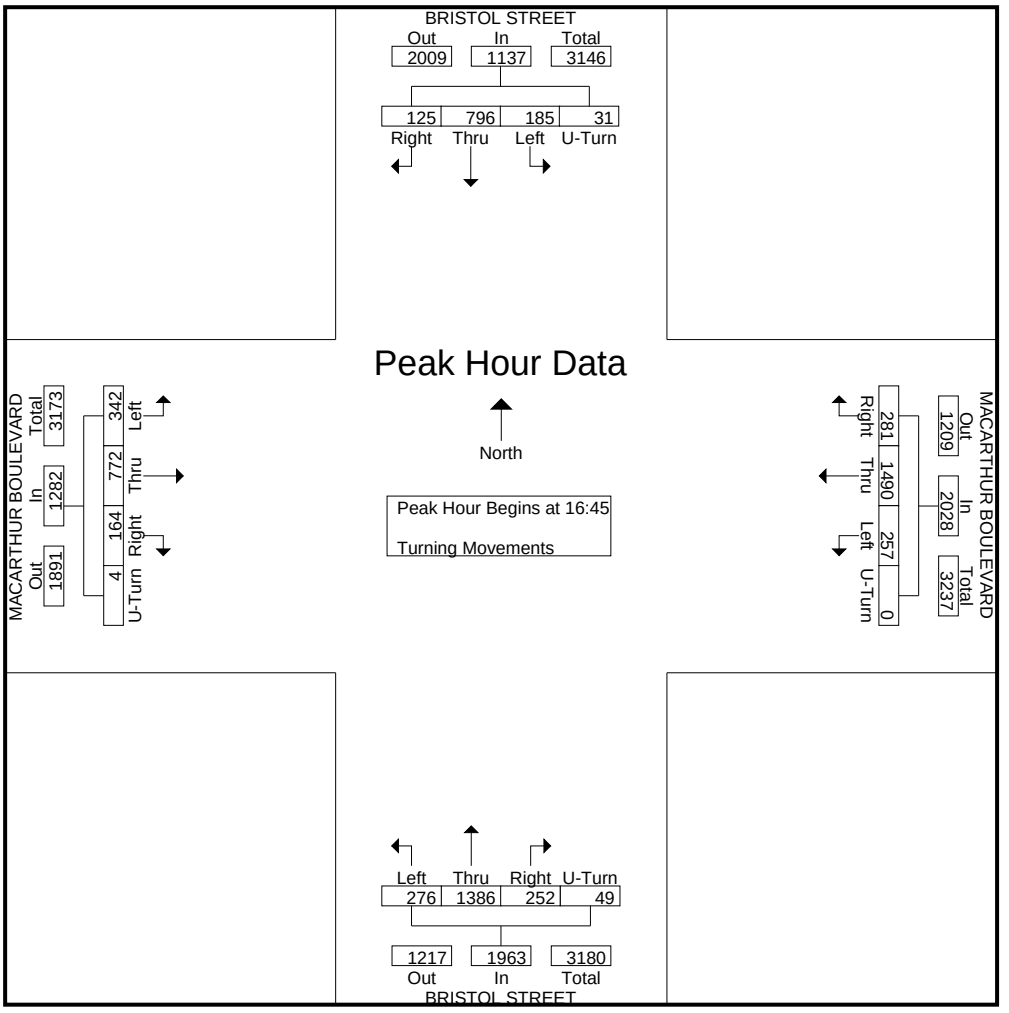


Transportation Studies, Inc.
2640 Walnut Avenue, Suite L
Tustin, CA. 92780

City: SANTA ANA
N-S Direction: BRISTOL STREET
E-W Direction: MACARTHUR BOULEVARD

File Name : H1702007
Site Code : 00000000
Start Date : 2/7/2017
Page No : 3

	BRISTOL STREET Southbound					MACARTHUR BOULEVARD Westbound					BRISTOL STREET Northbound					MACARTHUR BOULEVARD Eastbound					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:45																					
16:45	27	183	57	5	272	74									498	46					
17:00	26	191	39	8	264	59	366	**76**	0	501	**73**	**353**	56	8	490	39	**209**	**89**	1	**338**	
17:15	**31**	**210**	**45**	**11**	**297**	**74**	**385**	**63**	**0**	**522**	**58**	**350**	**67**	**13**	**488**	**45**	**190**	**80**	**2**	317	**1624**
17:30	**41**	**212**	44	7	**304**	74	384	57	0	515	49	337	**86**	**15**	**487**	**34**	**178**	**86**	**1**	**299**	**1605**
Total Volume	125	796	185	31	1137	281	1490	257	0	2028	252	1386	276	49	1963	164	772	342	4	1282	6410
% App. Total	11	70	16.3	2.7		13.9	73.5	12.7	0		12.8	70.6	14.1	2.5		12.8	60.2	26.7	0.3		
PHF	.762	.939	.811	.705	.935	.949	.968	.845	.000	.971	.863	.982	.802	.817	.985	.891	.923	.961	.500	.948	.987



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 pacific@aimtd.com

DATE: Tue, Mar 1, 16

LOCATION: Santa Ana
NORTH & SOUTH: Bristol
EAST & WEST: Sunflower

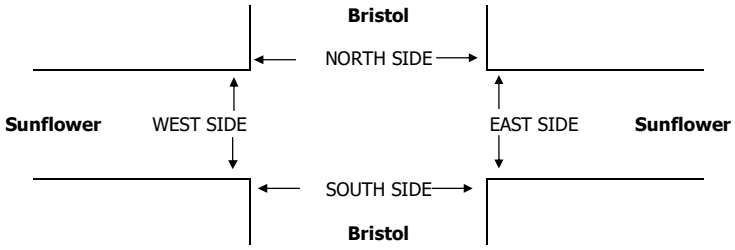
PROJECT #: SC0846
LOCATION #: 14
CONTROL: SIGNAL

NOTES:

AM PM MD OTHER OTHER — ▲ N ◄ W E ► S ▼

☑ Add U-Turns to Left Turns

		NORTHBOUND Bristol			SOUTHBOUND Bristol			EASTBOUND Sunflower			WESTBOUND Sunflower				U-TURNS				
	LANES:	NL 2	NT 2.5	NR 1.5	SL 2	ST 3	SR 1	EL 2	ET 2.5	ER 1.5	WL 2	WT 3	WR 1	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	20	112	12	30	301	14	15	94	61	59	55	32	805	0	2	0	4	6
	7:15 AM	16	121	19	41	356	9	16	115	79	54	68	25	919	0	0	0	2	2
	7:30 AM	20	97	26	43	351	18	34	205	85	74	108	34	1,095	0	2	0	3	5
	7:45 AM	32	104	35	84	339	29	15	265	111	49	140	34	1,237	2	0	0	0	2
	8:00 AM	23	103	26	47	284	29	27	259	101	55	76	35	1,065	2	0	0	4	6
	8:15 AM	15	139	43	61	359	23	33	176	69	58	60	29	1,065	3	1	0	5	9
	8:30 AM	17	117	28	47	254	27	23	134	69	69	51	38	874	1	1	0	7	9
	8:45 AM	20	114	28	56	285	26	22	98	63	49	82	33	876	0	1	0	7	8
	VOLUMES	163	907	217	409	2,529	175	185	1,346	638	467	640	260	7,936	8	7	0	32	47
	APPROACH %	13%	70%	17%	13%	81%	6%	9%	62%	29%	34%	47%	19%						
	APP/DEPART	1,287	/	1,359	3,113	/	3,610	2,169	/	1,997	1,367	/	970	0					
	BEGIN PEAK HR		7:30 AM																
	VOLUMES	90	443	130	235	1,333	99	109	905	366	236	384	132	4,462					
	APPROACH %	14%	67%	20%	14%	80%	6%	8%	66%	27%	31%	51%	18%						
	PEAK HR FACTOR		0.841			0.922			0.882			0.843		0.902					
	APP/DEPART	663	/	687	1,667	/	1,930	1,380	/	1,279	752	/	566	0					
PM	4:00 PM	139	353	49	33	143	36	63	104	49	42	162	65	1,238	3	1	4	3	11
	4:15 PM	152	356	47	28	158	46	81	125	47	52	168	63	1,323	5	2	6	4	17
	4:30 PM	148	341	54	44	185	41	64	102	39	56	218	83	1,375	6	5	3	7	21
	4:45 PM	150	347	44	43	152	38	67	111	53	65	253	70	1,393	4	2	7	8	21
	5:00 PM	138	339	67	48	167	44	68	122	47	52	228	80	1,400	6	2	3	5	16
	5:15 PM	165	318	46	40	173	50	68	131	53	62	246	87	1,439	4	4	3	6	17
	5:30 PM	155	331	48	57	188	54	73	149	54	53	259	64	1,485	0	4	5	6	15
	5:45 PM	161	321	50	48	192	58	72	148	59	85	239	78	1,511	2	2	4	6	14
	VOLUMES	1,208	2,706	405	341	1,358	367	556	992	401	467	1,773	590	11,164	30	22	35	45	132
	APPROACH %	28%	63%	9%	17%	66%	18%	29%	51%	21%	17%	63%	21%						
	APP/DEPART	4,319	/	3,839	2,066	/	2,211	1,949	/	1,761	2,830	/	3,353	0					
	BEGIN PEAK HR		5:00 PM																
	VOLUMES	619	1,309	211	193	720	206	281	550	213	252	972	309	5,835					
	APPROACH %	29%	61%	10%	17%	64%	18%	27%	53%	20%	16%	63%	20%						
	PEAK HR FACTOR		0.983			0.936			0.935			0.953		0.965					
	APP/DEPART	2,139	/	1,896	1,119	/	1,174	1,044	/	965	1,533	/	1,800	0					



		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	13	5	4	4	26	13	2	4	4	23	0	3	0	0	3
	7:15 AM	3	1	5	0	9	3	0	3	0	6	0	1	2	0	3
	7:30 AM	3	3	1	5	12	3	3	1	4	11	0	0	0	1	1
	7:45 AM	3	4	0	2	9	3	2	0	2	7	0	2	0	0	2
	8:00 AM	5	3	0	2	10	4	3	0	2	9	1	0	0	0	1
	8:15 AM	5	2	2	3	12	5	1	1	2	9	0	1	1	1	3
	8:30 AM	13	6	6	1	26	11	5	6	1	23	2	1	0	0	3
	8:45 AM	6	3	2	6	17	5	3	2	5	15	1	0	0	1	2
	TOTAL	51	27	20	23	121	47	19	17	20	103	4	8	3	3	18
PM	4:00 PM	13	4	7	8	32	12	4	6	8	30	1	0	1	0	2
	4:15 PM	9	5	5	1	20	7	5	5	1	18	2	0	0	0	2
	4:30 PM	21	13	5	11	50	17	11	5	9	42	4	2	0	2	8
	4:45 PM	18	9	3	11	41	15	8	3	11	37	3	1	0	0	4
	5:00 PM	11	4	13	10	38	11	3	9	10	33	0	1	4	0	5
	5:15 PM	8	4	7	6	25	8	4	6	6	24	0	0	1	0	1
	5:30 PM	13	5	5	6	29	12	4	4	5	25	1	1	1	1	4
	5:45 PM	16	5	7	5	33	16	4	6	5	31	0	1	1	0	2
	TOTAL	109	49	52	58	268	98	43	44	55	240	11	6	8	3	28

Prepared by National Data & Surveying Services

Bristol St & I-405 NB Ramps

Peak Hour Turning Movement Count

ID: Historical
City: Costa Mesa

Day: Thursday
Date: 10/11/2018

PEAK HOURS

AM: 07:45 AM - 08:45 AM
NOON: NONE
PM: 04:45 PM - 05:45 PM

COUNT PERIODS

AM: 07:00 AM - 09:00 AM
NOON: NONE
PM: 04:00 PM - 06:00 PM

Bristol St — SOUTHBOUND

AM	7	1928	0	0	2110	AM
NOON	0	0	0	0	0	NOON
PM	19	2105	0	0	3212	PM

I-405 NB Ramps — EASTBOUND

AM	NOON	PM		
78	0	318	⇦	
0	0	0	↶	0
0	0	0	↱	0
0	0	0	→	0
33	0	190	↷	2
AM	NOON	PM		

I-405 NB Ramps — WESTBOUND

PM	NOON	AM		
1160	0	651	↰	2
299	0	71	←	1.5
349	0	118	↙	1.5
0	0	0	↲	0
179	0	187	⇨	
PM	NOON	AM		

	0	5	0	0
	0	0	4	1

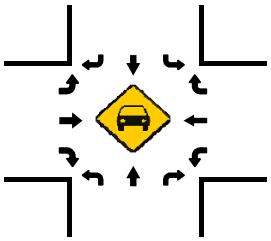
CONTROL: Signalized

TEV	4454	0	6353
	AM	NOON	PM
PHF	0.97		0.97

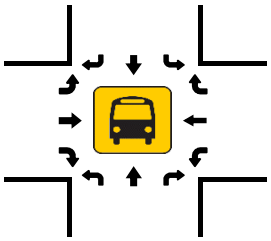
Bristol St — NORTHBOUND

PM	2644	0	0	2052	179	PM
NOON	0	0	0	0	0	NOON
AM	2079	0	0	1459	187	AM

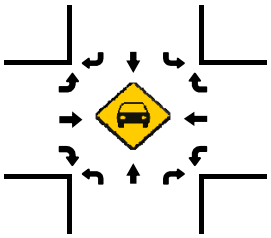
Total Vehicles (AM)



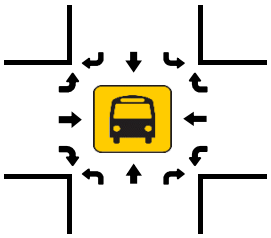
Total Vehicles (AM)



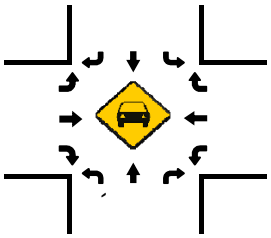
Total Vehicles (NOON)



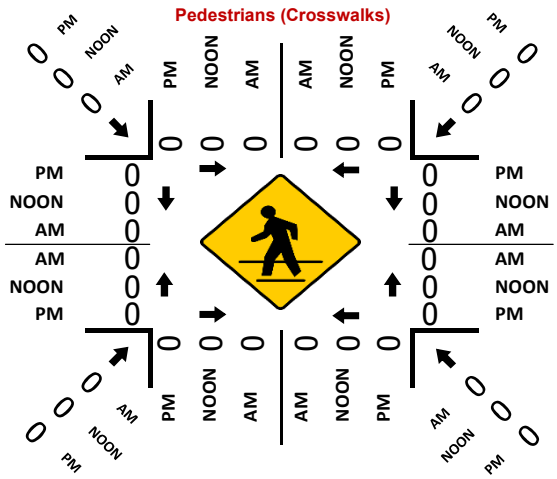
Total Vehicles (NOON)



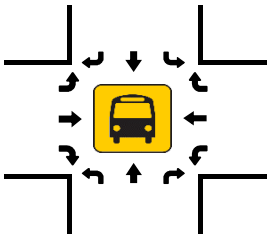
Total Vehicles (PM)



Pedestrians (Crosswalks)



Total Vehicles (PM)



Prepared by National Data & Surveying Services

Bristol St & I-405 SB Ramps

Peak Hour Turning Movement Count

ID: Historical
City: Costa Mesa

Day: Thursday
Date: 10/11/2018

PEAK HOURS

AM: 07:45 AM - 08:45 AM
NOON: NONE
PM: 05:00 PM - 06:00 PM

COUNT PERIODS

AM: 07:00 AM - 09:00 AM
NOON: NONE
PM: 04:00 PM - 06:00 PM

Bristol St — SOUTHBOUND

AM	830	965	0	0	1647	AM
NOON	0	0	0	0	0	NOON
PM	862	1476	0	3	2252	PM
	2	3	0	0		

I-405 SB Ramps — EASTBOUND

AM	NOON	PM	
940	0	986	
0	0	0	0
561	0	725	3
0	0	0	0
513	0	324	1
AM	NOON	PM	

CONTROL

Signalized

TEV	4065	0	5038
	AM	NOON	PM
PHF	0.96		0.94

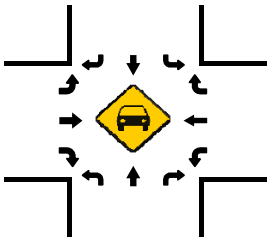
I-405 SB Ramps — WESTBOUND

PM	NOON	AM	
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	
PM	NOON	AM	

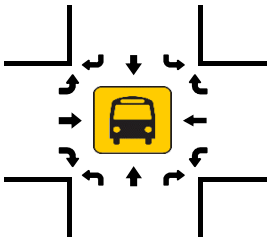
Bristol St — NORTHBOUND

PM	1800	0	124	1524	0	PM
NOON	0	0	0	0	0	NOON
AM	1478	0	110	1086	0	AM
		0	1	4	0	

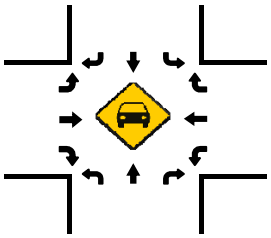
Total Vehicles (AM)



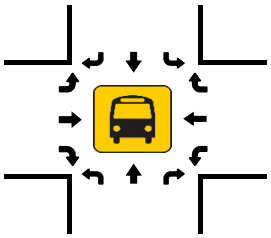
Total Vehicles (AM)



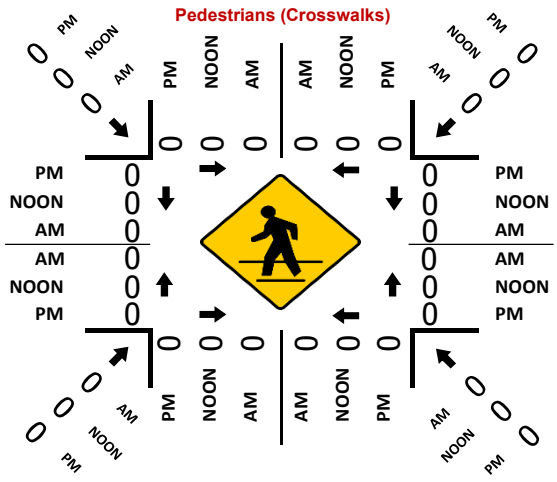
Total Vehicles (NOON)



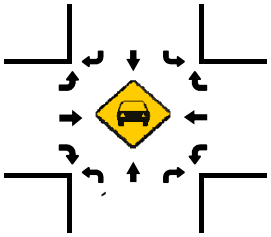
Total Vehicles (NOON)



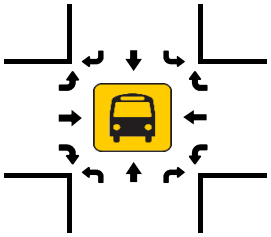
Pedestrians (Crosswalks)



Total Vehicles (PM)



Total Vehicles (PM)



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 pacific@aimtd.com

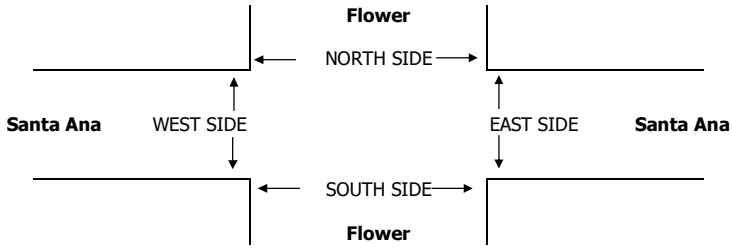
DATE:	LOCATION:	Santa Ana	PROJECT #:	SC0846
Thu, Feb 11, 16	NORTH & SOUTH:	Flower	LOCATION #:	23
	EAST & WEST:	Santa Ana	CONTROL:	SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

☑ Add U-Turns to Left Turns

		NORTHBOUND (Flower)			SOUTHBOUND (Flower)			EASTBOUND (Santa Ana)			WESTBOUND (Santa Ana)				U-TURNS				
	LANES:	NL 1	NT 2	NR 1	SL 1	ST 2	SR 1	EL 1	ET 3	ER 1	WL 1	WT 2	WR 1	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	11	120	17	30	104	24	11	85	18	16	63	26	525	0	0	0	0	0
	7:15 AM	14	199	19	36	131	20	24	146	24	22	78	25	738	0	0	0	0	0
	7:30 AM	17	234	36	38	156	17	26	202	20	35	92	33	906	0	0	0	0	0
	7:45 AM	26	194	35	50	156	25	33	193	23	18	73	22	848	0	0	0	0	0
	8:00 AM	26	152	23	37	102	11	26	141	10	22	67	49	666	1	0	0	0	1
	8:15 AM	10	95	28	47	85	20	20	104	14	10	51	35	519	0	0	0	0	0
	8:30 AM	13	128	19	26	86	9	6	50	11	14	42	25	429	1	0	0	0	1
	8:45 AM	20	105	13	24	63	4	15	52	8	18	36	26	384	2	0	0	0	2
	VOLUMES	137	1,227	190	288	883	130	161	973	128	155	502	241	5,015	4	0	0	0	4
	APPROACH %	9%	79%	12%	22%	68%	10%	13%	77%	10%	17%	56%	27%						
	APP/DEPART	1,554	/	1,629	1,301	/	1,170	1,262	/	1,451	898	/	765	0					
	BEGIN PEAK HR		7:15 AM																
	VOLUMES	83	779	113	161	545	73	109	682	77	97	310	129	3,158					
	APPROACH %	9%	80%	12%	21%	70%	9%	13%	79%	9%	18%	58%	24%						
	PEAK HR FACTOR		0.849			0.843			0.871			0.838		0.871					
	APP/DEPART	975	/	1,017	779	/	720	868	/	956	536	/	465	0					
PM	4:00 PM	19	161	17	28	111	14	19	84	11	26	82	20	592	0	0	0	0	0
	4:15 PM	25	148	23	23	94	7	13	105	17	37	71	30	593	0	0	0	0	0
	4:30 PM	18	152	13	30	123	11	42	123	13	34	98	33	690	0	0	0	0	0
	4:45 PM	31	171	18	39	133	10	26	82	20	25	97	25	677	0	0	0	0	0
	5:00 PM	26	152	16	24	125	9	47	103	15	43	149	56	765	1	0	0	0	1
	5:15 PM	33	210	12	19	120	14	22	90	13	46	125	29	733	0	0	0	0	0
	5:30 PM	29	191	13	17	131	13	33	95	12	26	119	35	714	1	0	0	0	1
	5:45 PM	24	206	14	9	90	7	15	69	11	30	98	28	601	0	0	0	0	0
	VOLUMES	205	1,391	126	189	927	85	217	751	112	267	839	256	5,365	2	0	0	0	2
	APPROACH %	12%	81%	7%	16%	77%	7%	20%	70%	10%	20%	62%	19%						
	APP/DEPART	1,722	/	1,864	1,201	/	1,308	1,080	/	1,066	1,362	/	1,127	0					
	BEGIN PEAK HR		4:45 PM																
	VOLUMES	119	724	59	99	509	46	128	370	60	140	490	145	2,889					
	APPROACH %	13%	80%	7%	15%	78%	7%	23%	66%	11%	18%	63%	19%						
	PEAK HR FACTOR		0.884			0.898			0.845			0.781		0.944					
	APP/DEPART	902	/	997	654	/	711	558	/	528	775	/	653	0					



		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	7	10	13	18	48	1	1	9	14	25	6	9	4	4	23
	7:15 AM	7	9	27	23	66	3	0	26	16	45	4	9	1	7	21
	7:30 AM	6	8	23	20	57	1	1	16	17	35	5	7	7	3	22
	7:45 AM	2	4	55	25	86	0	0	53	22	75	2	4	2	3	11
	8:00 AM	3	8	17	12	40	2	0	17	9	28	1	8	0	3	12
	8:15 AM	5	9	17	6	37	0	4	16	3	23	5	5	1	3	14
	8:30 AM	10	15	15	9	49	0	0	11	9	20	10	15	4	0	29
	8:45 AM	11	24	9	26	70	4	1	8	26	39	7	23	1	0	31
	TOTAL	51	87	176	139	453	11	7	156	116	290	40	80	20	23	163
PM	4:00 PM	2	7	7	22	38	0	2	5	17	24	2	5	2	5	14
	4:15 PM	8	14	9	26	57	4	0	8	24	36	4	14	1	2	21
	4:30 PM	10	5	8	10	33	1	1	6	9	17	9	4	2	1	16
	4:45 PM	2	3	10	13	28	0	1	8	9	18	2	2	2	4	10
	5:00 PM	1	9	6	12	28	0	1	5	12	18	1	8	1	0	10
	5:15 PM	5	5	6	4	20	1	3	3	3	10	4	2	3	1	10
	5:30 PM	1	3	5	8	17	1	2	4	8	15	0	1	1	0	2
	5:45 PM	4	3	5	10	22	1	0	2	9	12	3	3	3	1	10
	TOTAL	33	49	56	105	243	8	10	41	91	150	25	39	15	14	93

Transportation Studies, Inc.
2640 Walnut Avenue, Suite L
Tustin, CA. 92780

City: SANTA ANA
N-S Direction: FLOWER STREET
E-W Direction: 1ST STREET

File Name : H1702009
Site Code : 00000000
Start Date : 2/9/2017
Page No : 1

Groups Printed- Turning Movements

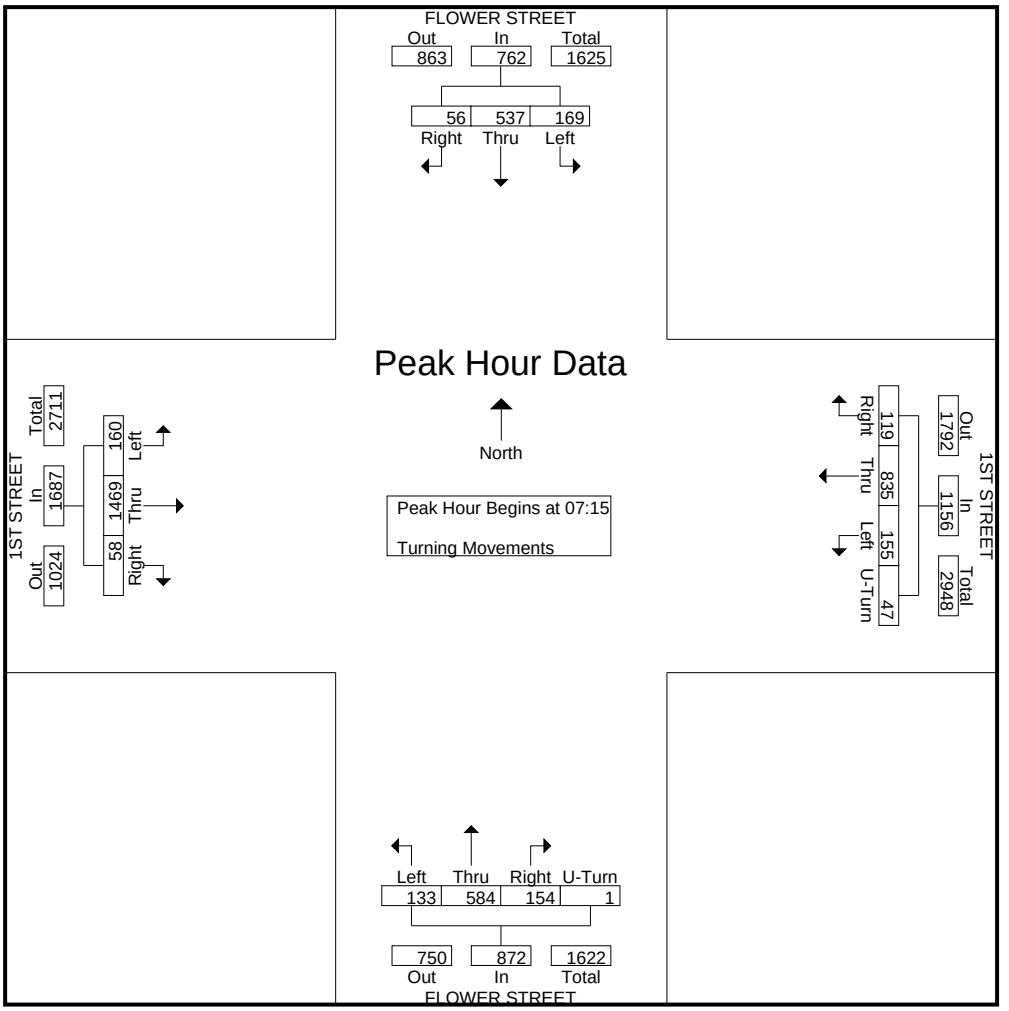
	FLOWER STREET Southbound			1ST STREET Westbound				FLOWER STREET Northbound				1ST STREET Eastbound			
Start Time	Right	Thru	Left	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	Int. Total
07:00	13	106	37	21	158	32	2	37	110	22	1	18	324	25	906
07:15	12	113	35	35	201	42	10	44	143	39	0	15	383	39	1111
07:30	16	132	55	21	205	39	18	32	155	32	1	18	364	35	1123
07:45	13	162	46	40	235	45	12	41	175	40	0	16	363	39	1227
Total	54	513	173	117	799	158	42	154	583	133	2	67	1434	138	4367
08:00	15	130	33	23	194	29	7	37	111	22	0	9	359	47	1016
08:15	17	58	32	23	168	39	6	32	78	21	1	15	329	37	856
08:30	15	61	35	20	145	28	0	28	69	16	2	9	319	33	780
08:45	24	60	39	16	139	17	1	29	61	18	0	17	293	25	739
Total	71	309	139	82	646	113	14	126	319	77	3	50	1300	142	3391
*** BREAK ***															
16:00	30	82	49	28	305	52	3	28	97	34	0	21	288	35	1052
16:15	34	94	46	29	358	41	2	28	142	35	2	16	271	44	1142
16:30	22	140	37	20	336	40	8	29	122	35	0	16	264	31	1100
16:45	26	114	51	31	360	53	3	33	143	25	0	25	291	34	1189
Total	112	430	183	108	1359	186	16	118	504	129	2	78	1114	144	4483
17:00	37	115	47	36	327	53	3	39	159	34	3	18	312	35	1218
17:15	34	110	40	34	364	45	2	35	150	35	0	25	293	29	1196
17:30	34	113	27	41	322	39	5	37	154	29	2	30	285	36	1154
17:45	25	118	36	47	317	43	8	27	141	34	1	23	303	32	1155
Total	130	456	150	158	1330	180	18	138	604	132	6	96	1193	132	4723
Grand Total	367	1708	645	465	4134	637	90	536	2010	471	13	291	5041	556	16964
Apprch %	13.5	62.8	23.7	8.7	77.6	12	1.7	17.7	66.3	15.5	0.4	4.9	85.6	9.4	
Total %	2.2	10.1	3.8	2.7	24.4	3.8	0.5	3.2	11.8	2.8	0.1	1.7	29.7	3.3	

Transportation Studies, Inc.
2640 Walnut Avenue, Suite L
Tustin, CA. 92780

City: SANTA ANA
N-S Direction: FLOWER STREET
E-W Direction: 1ST STREET

File Name : H1702009
Site Code : 00000000
Start Date : 2/9/2017
Page No : 2

	FLOWER STREET Southbound				1ST STREET Westbound					FLOWER STREET Northbound					1ST STREET Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																			
Peak Hour for Entire Intersection Begins at 07:15																			
07:15	12	113	35	160	35	201	42	10	288	44								383	437	1111
07:30	16	132	**55**	203	21	205	39	**18**					**1**	220	**18**	364	35	417	1123
07:45	13	**162**	46	**221**	**40**	**235**	**45**	12	**332**		**175**	**40**	0	**256**	16	363	39	418	**1227**
08:00	**15**	**130**	**33**	**178**	**23**	**194**	**29**	**7**	**253**	**37**	**111**	**22**	**0**	**170**	**9**	**359**	**47**	415	1016
Total Volume	56	537	169	762	119	835	155	47	1156	154	584	133	1	872	58	1469	160	1687	4477
% App. Total	7.3	70.5	22.2		10.3	72.2	13.4	4.1		17.7	67	15.3	0.1		3.4	87.1	9.5		
PHF	.875	.829	.768	.862	.744	.888	.861	.653	.870	.875	.834	.831	.250	.852	.806	.959	.851	.965	.912

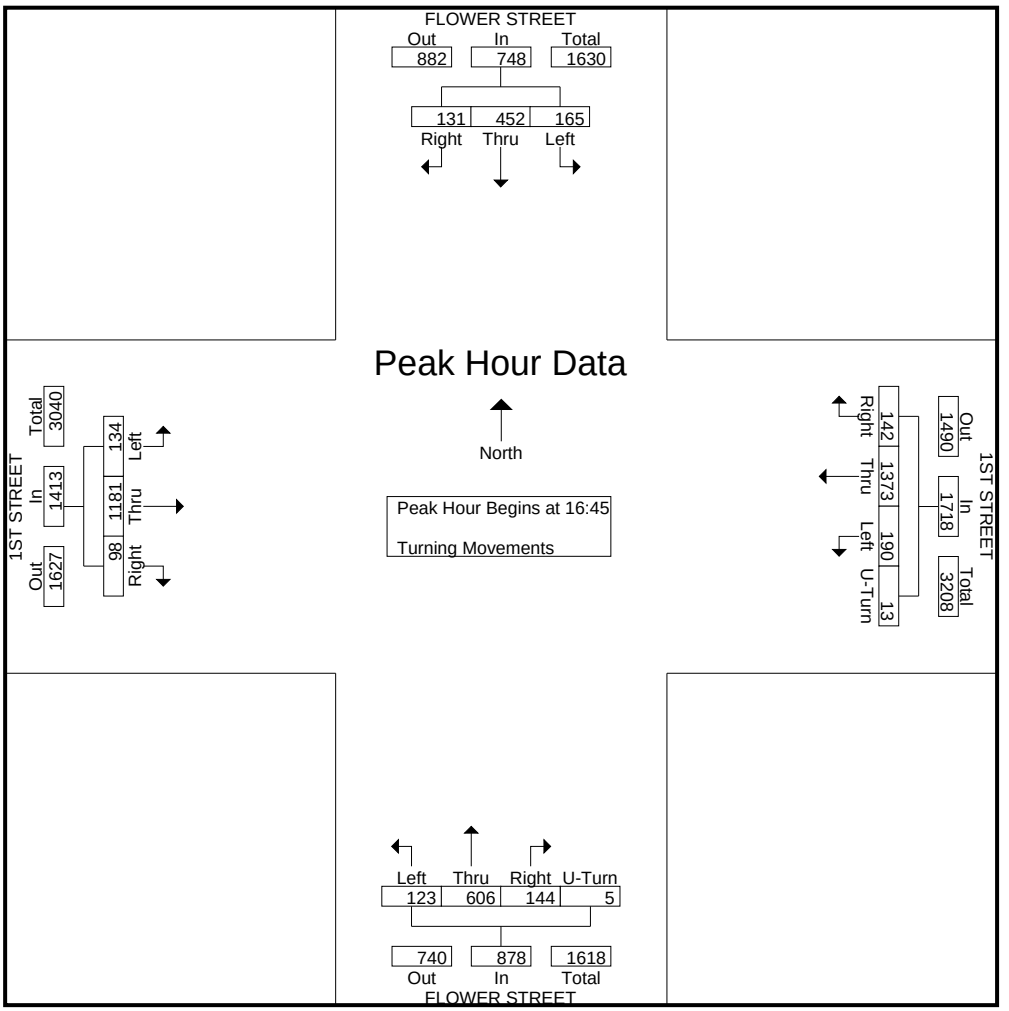


Transportation Studies, Inc.
2640 Walnut Avenue, Suite L
Tustin, CA. 92780

City: SANTA ANA
N-S Direction: FLOWER STREET
E-W Direction: 1ST STREET

File Name : H1702009
Site Code : 00000000
Start Date : 2/9/2017
Page No : 3

	FLOWER STREET Southbound				1ST STREET Westbound					FLOWER STREET Northbound					1ST STREET Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																			
Peak Hour for Entire Intersection Begins at 16:45																			
16:45	26	114	51				53		447	33	143	25	0	201	25	291	34	350	1189
17:00	37	**115**	47	**199**						**39**	**159**	34	**3**	**235**	18	**312**	35	**365**	**1218**
17:15	**34**	**110**	**40**	**184**	**34**	**364**	**45**	**2**	**445**	**35**	**150**	**35**	0	220	25	293	29	347	1196
17:30	34	113	27	174	**41**	322	39	**5**							**30**	285	**36**	351	1154
Total Volume	131	452	165	748	142	1373	190	13	1718	144	606	123	5	878	98	1181	134	1413	4757
% App. Total	17.5	60.4	22.1		8.3	79.9	11.1	0.8		16.4	69	14	0.6		6.9	83.6	9.5		
PHF	.885	.983	.809	.940	.866	.943	.896	.650	.961	.923	.953	.879	.417	.934	.817	.946	.931	.968	.976



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 pacific@aimtd.com

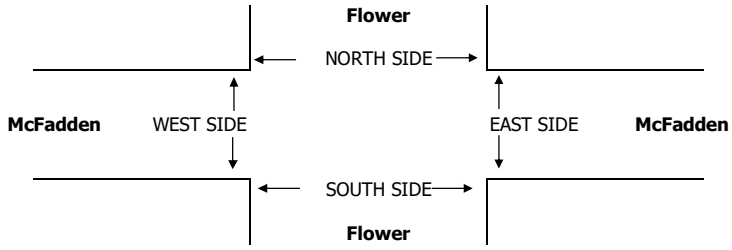
DATE:	LOCATION:	Santa Ana	PROJECT #:	SC0846
Thu, Feb 11, 16	NORTH & SOUTH:	Flower	LOCATION #:	36
	EAST & WEST:	McFadden	CONTROL:	SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

☑ Add U-Turns to Left Turns

		NORTHBOUND (Flower)			SOUTHBOUND (Flower)			EASTBOUND (McFadden)			WESTBOUND (McFadden)				U-TURNS				
	LANES:	NL 1	NT 1	NR 0	SL 1	ST 1	SR 0	EL 1	ET 1	ER 0	WL 1	WT 1	WR 0	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	8	75	5	14	75	8	12	86	10	8	79	5	385	0	0	0	0	0
	7:15 AM	8	102	8	10	89	10	13	134	12	12	92	15	505	0	0	0	0	0
	7:30 AM	13	105	10	14	85	13	13	139	19	16	120	15	562	0	0	0	0	0
	7:45 AM	15	111	8	18	90	15	11	145	5	22	112	13	565	0	0	0	0	0
	8:00 AM	21	102	10	21	88	12	12	140	6	11	91	12	526	0	0	0	0	0
	8:15 AM	9	82	8	15	66	7	13	89	6	13	66	4	378	0	0	0	0	0
	8:30 AM	5	64	10	10	79	8	10	81	4	9	59	8	347	0	0	0	0	0
	8:45 AM	7	63	6	9	54	10	9	90	4	11	76	3	342	0	0	0	0	0
	VOLUMES	86	704	65	111	626	83	93	904	66	102	695	75	3,610	0	0	0	0	0
	APPROACH %	10%	82%	8%	14%	76%	10%	9%	85%	6%	12%	80%	9%						
	APP/DEPART	855	/	872	820	/	794	1,063	/	1,080	872	/	864	0					
	BEGIN PEAK HR		7:15 AM																
	VOLUMES	57	420	36	63	352	50	49	558	42	61	415	55	2,158					
	APPROACH %	11%	82%	7%	14%	76%	11%	8%	86%	6%	11%	78%	10%						
	PEAK HR FACTOR		0.957			0.945			0.949			0.879		0.955					
	APP/DEPART	513	/	524	465	/	455	649	/	657	531	/	522	0					
PM	4:00 PM	11	106	6	6	65	9	9	121	9	9	126	18	495	0	0	0	0	0
	4:15 PM	10	137	5	8	93	13	8	106	4	12	136	15	547	0	0	0	0	0
	4:30 PM	12	119	5	14	64	18	12	100	2	15	126	13	500	0	0	0	0	0
	4:45 PM	8	135	7	8	75	17	10	110	4	9	148	7	538	0	0	0	0	0
	5:00 PM	10	135	9	14	60	9	15	109	4	6	131	17	519	0	0	0	0	0
	5:15 PM	9	143	10	10	95	16	15	100	3	13	145	21	580	0	0	0	0	0
	5:30 PM	10	139	7	10	105	10	15	127	5	10	142	21	601	0	0	0	0	0
	5:45 PM	11	127	7	10	78	19	16	123	6	17	153	22	589	0	0	0	0	0
	VOLUMES	81	1,041	56	80	635	111	100	896	37	91	1,107	134	4,369	0	0	0	0	0
	APPROACH %	7%	88%	5%	10%	77%	13%	10%	87%	4%	7%	83%	10%						
	APP/DEPART	1,178	/	1,275	826	/	763	1,033	/	1,032	1,332	/	1,299	0					
	BEGIN PEAK HR		5:00 PM																
	VOLUMES	40	544	33	44	338	54	61	459	18	46	571	81	2,289					
	APPROACH %	6%	88%	5%	10%	78%	12%	11%	85%	3%	7%	82%	12%						
	PEAK HR FACTOR		0.952			0.872			0.915			0.909		0.952					
	APP/DEPART	617	/	686	436	/	402	538	/	536	698	/	665	0					



		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	8	9	9	5	31	2	1	7	5	15	6	8	2	0	16
	7:15 AM	7	2	3	4	16	1	0	2	4	7	6	2	1	0	9
	7:30 AM	15	9	7	14	45	1	0	7	12	20	14	9	0	2	25
	7:45 AM	8	19	9	15	51	3	0	8	15	26	5	19	1	0	25
	8:00 AM	4	5	3	9	21	2	0	3	9	14	2	5	0	0	7
	8:15 AM	3	7	5	11	26	3	2	4	9	18	0	5	1	2	8
	8:30 AM	2	2	2	6	12	1	1	1	4	7	1	1	1	2	5
	8:45 AM	2	2	0	4	8	0	0	0	4	4	2	2	0	0	4
	TOTAL	49	55	38	68	210	13	4	32	62	111	36	51	6	6	99
PM	4:00 PM	10	7	13	10	40	3	0	11	9	23	7	7	2	1	17
	4:15 PM	7	8	7	5	27	0	1	7	5	13	7	7	0	0	14
	4:30 PM	4	3	3	3	13	3	0	2	2	7	1	3	1	1	6
	4:45 PM	3	7	6	6	22	2	0	6	6	14	1	7	0	0	8
	5:00 PM	8	3	0	8	19	2	0	0	6	8	6	3	0	2	11
	5:15 PM	4	6	7	7	24	1	1	6	6	14	3	5	1	1	10
	5:30 PM	11	8	8	7	34	1	0	8	7	16	10	8	0	0	18
	5:45 PM	6	11	4	4	25	1	4	4	2	11	5	7	0	2	14
	TOTAL	53	53	48	50	204	13	6	44	43	106	40	47	4	7	98

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 pacific@aimtd.com

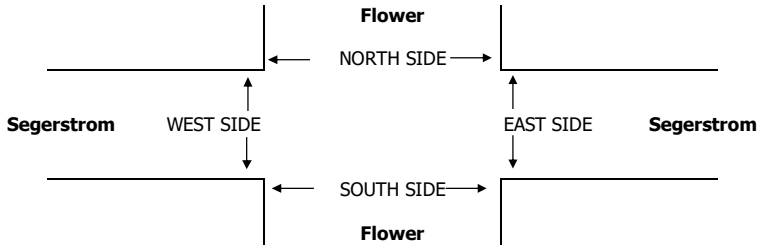
DATE:	LOCATION:	Santa Ana	PROJECT #:	SC0846
Tue, Feb 9, 16	NORTH & SOUTH:	Flower	LOCATION #:	47
	EAST & WEST:	Segerstrom	CONTROL:	SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

☑ Add U-Turns to Left Turns

		NORTHBOUND (Flower)			SOUTHBOUND (Flower)			EASTBOUND (Segerstrom)			WESTBOUND (Segerstrom)				U-TURNS				
	LANES:	NL 1	NT 2	NR 0	SL 1	ST 2	SR 0	EL 1	ET 2	ER 0	WL 1	WT 2	WR 0	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	16	50	12	28	108	31	33	200	68	18	96	10	670	0	0	0	0	0
	7:15 AM	16	84	14	25	149	16	24	252	65	18	114	11	788	0	0	0	0	0
	7:30 AM	14	96	27	21	155	27	37	272	91	20	181	17	958	0	0	0	0	0
	7:45 AM	14	88	17	20	110	41	54	299	61	15	133	19	871	0	0	0	0	0
	8:00 AM	10	52	9	32	95	18	29	287	44	9	77	5	667	0	0	0	0	0
	8:15 AM	11	42	10	26	99	9	10	204	16	8	82	6	523	0	0	0	0	0
	8:30 AM	14	51	9	40	82	5	4	190	20	7	63	2	487	0	0	0	0	0
	8:45 AM	10	32	11	24	80	5	5	179	21	2	83	9	461	0	0	0	0	0
	VOLUMES	105	495	109	216	878	152	196	1,883	386	97	829	79	5,425	0	0	0	0	0
	APPROACH %	15%	70%	15%	17%	70%	12%	8%	76%	16%	10%	82%	8%						
	APP/DEPART	709	/	770	1,246	/	1,361	2,465	/	2,208	1,005	/	1,086	0					
	BEGIN PEAK HR		7:00 AM																
	VOLUMES	60	318	70	94	522	115	148	1,023	285	71	524	57	3,287					
	APPROACH %	13%	71%	16%	13%	71%	16%	10%	70%	20%	11%	80%	9%						
	PEAK HR FACTOR		0.818			0.900			0.879			0.748		0.858					
	APP/DEPART	448	/	523	731	/	878	1,456	/	1,187	652	/	699	0					
PM	4:00 PM	35	162	18	21	71	15	38	138	19	16	281	32	846	0	0	0	0	0
	4:15 PM	26	157	17	13	69	18	28	156	13	13	277	23	810	0	0	0	0	0
	4:30 PM	43	185	23	13	83	10	29	152	29	20	287	18	892	0	0	0	0	0
	4:45 PM	26	194	22	20	72	21	31	153	19	20	296	30	904	0	0	0	0	0
	5:00 PM	29	201	24	15	81	28	52	170	13	20	274	19	926	0	0	0	0	0
	5:15 PM	31	219	20	17	80	22	44	211	23	16	317	19	1,019	0	0	0	0	0
	5:30 PM	30	208	16	15	97	22	33	199	23	19	315	17	994	0	0	0	0	0
	5:45 PM	25	182	16	16	96	29	22	175	20	17	302	22	922	0	0	0	0	0
	VOLUMES	245	1,508	156	130	649	165	277	1,354	159	141	2,349	180	7,313	0	0	0	0	0
	APPROACH %	13%	79%	8%	14%	69%	17%	15%	76%	9%	5%	88%	7%						
	APP/DEPART	1,909	/	1,965	944	/	949	1,790	/	1,640	2,670	/	2,759	0					
	BEGIN PEAK HR		5:00 PM																
	VOLUMES	115	810	76	63	354	101	151	755	79	72	1,208	77	3,861					
	APPROACH %	11%	81%	8%	12%	68%	19%	15%	77%	8%	5%	89%	6%						
	PEAK HR FACTOR		0.927			0.918			0.886			0.964		0.947					
	APP/DEPART	1,001	/	1,038	518	/	505	985	/	894	1,357	/	1,424	0					



		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	5	5	1	8	19	3	4	1	8	16	2	1	0	0	3
	7:15 AM	8	17	6	28	59	5	14	5	26	50	3	3	1	2	9
	7:30 AM	27	34	9	54	124	26	32	9	53	120	1	2	0	1	4
	7:45 AM	27	56	20	132	235	27	55	19	132	233	0	1	1	0	2
	8:00 AM	1	2	0	11	14	1	2	0	11	14	0	0	0	0	0
	8:15 AM	2	2	2	8	14	2	2	0	6	10	0	0	2	2	4
	8:30 AM	1	1	2	2	6	0	1	1	1	3	1	0	1	1	3
	8:45 AM	1	1	0	1	3	0	0	0	1	1	1	1	0	0	2
	TOTAL	72	118	40	244	474	64	110	35	238	447	8	8	5	6	27
PM	4:00 PM	1	11	3	11	26	0	11	3	11	25	1	0	0	0	1
	4:15 PM	2	9	4	2	17	1	6	2	2	11	1	3	2	0	6
	4:30 PM	3	7	2	8	20	1	6	2	6	15	2	1	0	2	5
	4:45 PM	5	7	1	12	25	4	5	1	11	21	1	2	0	1	4
	5:00 PM	3	5	4	14	26	1	4	1	10	16	2	1	3	4	10
	5:15 PM	1	5	8	5	19	0	2	7	5	14	1	3	1	0	5
	5:30 PM	4	6	1	4	15	2	6	1	4	13	2	0	0	0	2
	5:45 PM	6	7	0	4	17	3	7	0	2	12	3	0	0	2	5
	TOTAL	25	57	23	60	165	12	47	17	51	127	13	10	6	9	38

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 pacific@aimtd.com

DATE: Tue, Feb 9, 16

LOCATION: Santa Ana
NORTH & SOUTH: Flower
EAST & WEST: MacArthur

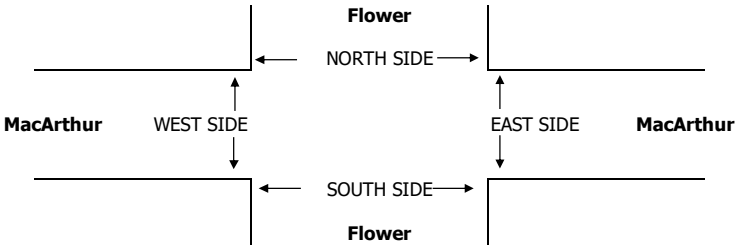
PROJECT #: SC0846
LOCATION #: 53
CONTROL: SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

☑ Add U-Turns to Left Turns

		NORTHBOUND Flower			SOUTHBOUND Flower			EASTBOUND MacArthur			WESTBOUND MacArthur				U-TURNS				
	LANES:	NL 1	NT 2	NR 0	SL 1	ST 2	SR 0	EL 1	ET 3	ER 0	WL 1	WT 3	WR 0	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	9	26	20	36	60	51	28	315	14	6	142	9	716	0	0	0	0	0
	7:15 AM	5	32	17	40	70	54	54	424	15	11	218	17	957	0	0	0	1	1
	7:30 AM	6	44	25	35	88	100	45	478	16	16	297	16	1,166	0	0	1	0	1
	7:45 AM	4	35	13	45	104	67	30	460	27	12	197	15	1,009	0	0	1	1	2
	8:00 AM	6	25	15	36	76	32	29	443	18	12	161	7	860	0	0	1	0	1
	8:15 AM	9	32	15	47	82	21	24	438	33	10	171	13	895	0	0	0	1	1
	8:30 AM	10	27	16	36	47	20	23	368	21	17	148	17	750	0	0	0	0	0
	8:45 AM	10	21	12	30	65	24	13	329	16	8	128	11	667	0	0	0	0	0
	VOLUMES	59	242	133	305	592	369	246	3,255	160	92	1,462	105	7,020	0	0	3	3	6
	APPROACH %	14%	56%	31%	24%	47%	29%	7%	89%	4%	6%	88%	6%						
	APP/DEPART	434	/	590	1,266	/	841	3,661	/	3,696	1,659	/	1,893	0					
	BEGIN PEAK HR		7:15 AM																
	VOLUMES	21	136	70	156	338	253	158	1,805	76	51	873	55	3,992					
	APPROACH %	9%	60%	31%	21%	45%	34%	8%	89%	4%	5%	89%	6%						
	PEAK HR FACTOR		0.757			0.837			0.946			0.744		0.856					
	APP/DEPART	227	/	346	747	/	463	2,039	/	2,033	979	/	1,150	0					
PM	4:00 PM	17	121	16	25	44	36	46	240	14	10	454	35	1,058	0	0	0	0	0
	4:15 PM	22	134	7	18	39	31	45	217	10	15	476	38	1,052	0	0	1	1	2
	4:30 PM	23	124	15	15	51	49	45	249	11	15	477	33	1,107	0	0	0	3	3
	4:45 PM	22	144	17	15	39	39	56	244	10	8	451	38	1,083	0	0	1	0	1
	5:00 PM	35	167	13	19	44	45	49	242	15	12	504	44	1,189	0	0	0	0	0
	5:15 PM	33	190	17	17	52	41	49	221	21	16	464	45	1,166	0	0	1	0	1
	5:30 PM	38	140	28	24	49	54	47	245	10	15	463	35	1,148	0	0	0	0	0
	5:45 PM	21	112	13	21	52	49	55	247	14	16	480	46	1,126	0	0	0	0	0
	VOLUMES	211	1,132	126	154	370	344	392	1,905	105	107	3,769	314	8,929	0	0	3	4	7
	APPROACH %	14%	77%	9%	18%	43%	40%	16%	79%	4%	3%	90%	7%						
	APP/DEPART	1,469	/	1,835	868	/	578	2,402	/	2,189	4,190	/	4,327	0					
	BEGIN PEAK HR		5:00 PM																
	VOLUMES	127	609	71	81	197	189	200	955	60	59	1,911	170	4,629					
	APPROACH %	16%	75%	9%	17%	42%	40%	16%	79%	5%	3%	89%	8%						
	PEAK HR FACTOR		0.841			0.919			0.961			0.955		0.973					
	APP/DEPART	807	/	978	467	/	316	1,215	/	1,107	2,140	/	2,228	0					



		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	1	3	5	4	13	1	3	4	3	11	0	0	1	1	2
	7:15 AM	2	6	3	14	25	2	6	3	14	25	0	0	0	0	0
	7:30 AM	4	6	8	3	21	3	6	8	3	20	1	0	0	0	1
	7:45 AM	2	12	5	6	25	2	12	5	6	25	0	0	0	0	0
	8:00 AM	1	8	3	1	13	1	8	3	1	13	0	0	0	0	0
	8:15 AM	0	20	3	7	30	0	20	2	5	27	0	0	1	2	3
	8:30 AM	1	11	7	3	22	0	10	5	2	17	1	1	2	1	5
	8:45 AM	1	2	3	1	7	1	2	2	1	6	0	0	1	0	1
	TOTAL	12	68	37	39	156	10	67	32	35	144	2	1	5	4	12
PM	4:00 PM	3	10	2	4	19	2	9	1	4	16	1	1	1	0	3
	4:15 PM	5	3	1	2	11	5	3	1	1	10	0	0	0	1	1
	4:30 PM	4	4	0	0	8	1	3	0	0	4	3	1	0	0	4
	4:45 PM	2	2	2	2	8	1	1	0	2	4	1	1	2	0	4
	5:00 PM	1	4	5	7	17	1	4	2	7	14	0	0	3	0	3
	5:15 PM	4	2	5	0	11	3	2	5	0	10	1	0	0	0	1
	5:30 PM	0	2	3	3	8	0	1	3	1	5	0	1	0	2	3
	5:45 PM	5	4	10	2	21	3	4	9	2	18	2	0	1	0	3
	TOTAL	24	31	28	20	103	16	27	21	17	81	8	4	7	3	22

Prepared by National Data & Surveying Services

Main St & La Veta Ave

Peak Hour Turning Movement Count

ID: Historical
City: Orange

Day: Tuesday
Date: 08/28/2018

PEAK HOURS

AM	07:30 AM - 08:30 AM
NOON	NONE
PM	05:00 PM - 06:00 PM

COUNT PERIODS

AM	07:00 AM - 09:00 AM
NOON	NONE
PM	04:00 PM - 06:00 PM

Main St — SOUTHBOUND

AM	169	1013	194	0	1135	AM
NOON	0	0	0	0	0	NOON
PM	230	893	142	0	1410	PM
	0	3	2	0		

La Veta Ave — EASTBOUND

AM	NOON	PM	
521	0	1032	
0	0	0	0
343	0	290	2
485	0	413	3
210	0	185	0
AM	NOON	PM	

La Veta Ave — WESTBOUND

PM	NOON	AM	
201	0	225	1
502	0	270	2
251	0	309	2
0	0	0	0
985	0	973	
PM	NOON	AM	

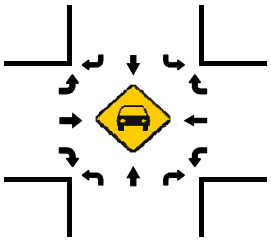
CONTROL: Signalized

TEV	4161	0	4756
	AM	NOON	PM
PHF	0.95		0.90

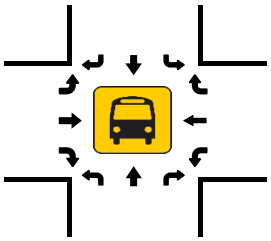
Main St — NORTHBOUND

PM	1329	0	300	919	430	PM
NOON	0	0	0	0	0	NOON
AM	1532	0	82	567	294	AM
		0	2	3	1	

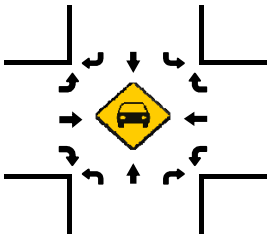
Total Vehicles (AM)



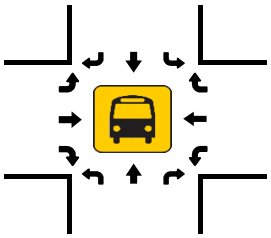
Total Vehicles (AM)



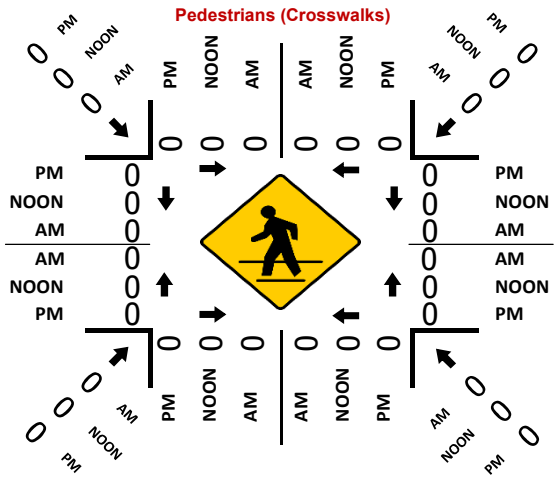
Total Vehicles (NOON)



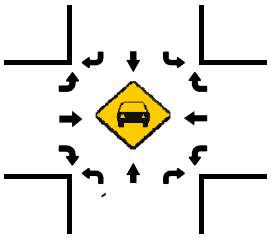
Total Vehicles (NOON)



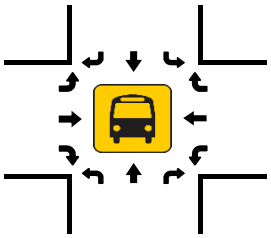
Pedestrians (Crosswalks)



Total Vehicles (PM)



Total Vehicles (PM)



INTERSECTION TURNING MOVEMENT COUNTS

T218

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Tue, May 14, 19

LOCATION: Santa Ana
NORTH & SOUTH: Main
EAST & WEST: Mainplace

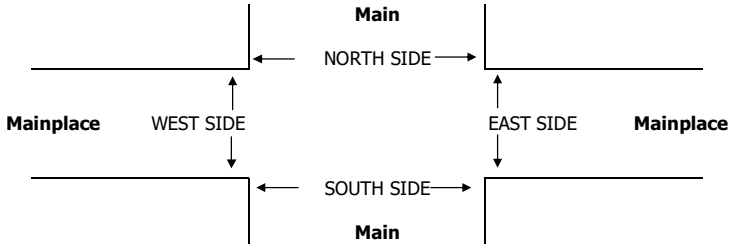
PROJECT #: SC2183
LOCATION #: 16
CONTROL: SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

☑ Add U-Turns to Left Turns

		NORTHBOUND Main			SOUTHBOUND Main			EASTBOUND Mainplace			WESTBOUND Mainplace				U-TURNS				
	LANES:	NL 2	NT 3	NR 0	SL 2	ST 3	SR 0	EL 2	ET 2.5	ER 0.5	WL 2	WT 2	WR 1	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	3	121	34	5	255	43	16	23	5	27	46	1	579	1	2	0	0	3
	7:15 AM	8	140	43	4	355	62	31	31	7	31	37	6	755	0	0	0	0	0
	7:30 AM	0	165	72	9	328	66	39	67	3	62	58	2	871	0	2	0	0	2
	7:45 AM	8	237	70	10	306	60	35	65	5	50	73	3	922	1	1	0	1	3
	8:00 AM	6	177	52	8	307	53	38	63	4	51	47	4	810	1	1	0	1	3
	8:15 AM	13	177	53	4	290	78	34	35	3	33	45	5	770	1	1	0	0	2
	8:30 AM	6	165	38	6	219	61	36	37	12	35	36	5	656	0	0	0	0	0
	8:45 AM	12	160	46	9	233	46	20	19	10	29	36	4	624	1	4	0	1	6
	VOLUMES	56	1,342	408	55	2,293	469	249	340	49	318	378	30	5,987	5	11	0	3	19
	APPROACH %	3%	74%	23%	2%	81%	17%	39%	53%	8%	44%	52%	4%						
	APP/DEPART	1,806	/	1,632	2,817	/	2,662	638	/	795	726	/	898	0					
	BEGIN PEAK HR		7:30 AM																
	VOLUMES	27	756	247	31	1,231	257	146	230	15	196	223	14	3,373					
	APPROACH %	3%	73%	24%	2%	81%	17%	37%	59%	4%	45%	52%	3%						
	PEAK HR FACTOR		0.817			0.942			0.897			0.859		0.915					
	APP/DEPART	1,030	/	921	1,519	/	1,443	391	/	505	433	/	504	0					
PM	4:00 PM	9	201	37	15	241	40	46	54	28	27	39	14	751	0	6	0	0	6
	4:15 PM	17	194	35	16	277	41	53	65	21	48	29	8	804	1	2	0	2	5
	4:30 PM	21	218	26	9	267	36	60	61	33	36	41	8	816	2	3	0	1	6
	4:45 PM	23	213	37	12	257	27	66	80	13	46	42	16	832	1	5	0	0	6
	5:00 PM	22	247	57	19	243	43	69	79	25	51	34	24	913	2	6	0	0	8
	5:15 PM	25	246	43	8	282	33	83	92	26	50	42	18	948	1	5	0	0	6
	5:30 PM	19	229	40	11	262	34	72	70	22	36	31	14	840	0	4	0	1	5
	5:45 PM	28	208	39	12	187	30	61	62	15	28	29	12	711	0	6	0	3	9
	VOLUMES	164	1,756	314	102	2,016	284	510	563	183	322	287	114	6,615	7	37	0	7	51
	APPROACH %	7%	79%	14%	4%	84%	12%	41%	45%	15%	45%	40%	16%						
	APP/DEPART	2,234	/	2,417	2,402	/	2,521	1,256	/	949	723	/	728	0					
	BEGIN PEAK HR		4:45 PM																
	VOLUMES	89	935	177	50	1,044	137	290	321	86	183	149	72	3,533					
	APPROACH %	7%	78%	15%	4%	85%	11%	42%	46%	12%	45%	37%	18%						
	PEAK HR FACTOR		0.921			0.953			0.867			0.918		0.932					
	APP/DEPART	1,201	/	1,317	1,231	/	1,316	697	/	529	404	/	371	0					



		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	AM BEGIN PEAK HR	7:30 AM					0	0	0	0	0					
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	PM BEGIN PEAK HR	4:45 PM					0	0	0	0	0					

INTERSECTION TURNING MOVEMENT COUNTS

T218

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Tue, May 14, 19

LOCATION: Santa Ana
NORTH & SOUTH: Main
EAST & WEST: 17th

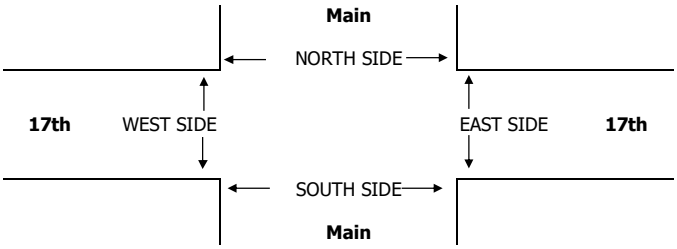
PROJECT #: SC2183
LOCATION #: 17
CONTROL: SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N ◄ W E ► S ▼

☑ Add U-Turns to Left Turns

		NORTHBOUND Main			SOUTHBOUND Main			EASTBOUND 17th			WESTBOUND 17th				U-TURNS				
	LANES:	NL 2	NT 2	NR 1	SL 2	ST 2	SR 0	EL 2	ET 3	ER 0	WL 2	WT 3	WR 0	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	19	107	16	23	233	12	27	300	16	64	222	6	1,045	0	0	1	3	4
	7:15 AM	27	164	20	37	287	13	26	301	22	64	294	5	1,260	0	0	0	1	1
	7:30 AM	33	190	37	48	288	14	20	302	14	88	337	4	1,375	0	0	0	2	2
	7:45 AM	36	218	62	61	268	23	29	304	14	100	347	4	1,466	0	0	1	1	2
	8:00 AM	30	180	42	47	232	19	39	305	10	69	309	5	1,287	0	0	1	3	4
	8:15 AM	29	130	15	43	220	13	30	287	23	48	255	15	1,108	0	0	2	2	4
	8:30 AM	16	125	35	34	201	17	26	265	24	39	220	11	1,013	0	0	1	3	4
	8:45 AM	22	138	14	30	195	15	29	218	17	32	192	18	920	0	0	1	2	3
	VOLUMES	212	1,252	241	323	1,924	126	226	2,282	140	504	2,176	68	9,474	0	0	7	17	24
	APPROACH %	12%	73%	14%	14%	81%	5%	9%	86%	5%	18%	79%	2%						
	APP/DEPART	1,705	/	1,539	2,373	/	2,551	2,648	/	2,863	2,748	/	2,521	0					
	BEGIN PEAK HR		7:15 AM																
	VOLUMES	126	752	161	193	1,075	69	114	1,212	60	321	1,287	18	5,388					
	APPROACH %	12%	72%	15%	14%	80%	5%	8%	87%	4%	20%	79%	1%						
	PEAK HR FACTOR		0.822			0.950			0.979			0.901		0.919					
	APP/DEPART	1,039	/	882	1,337	/	1,449	1,386	/	1,573	1,626	/	1,484	0					
PM	4:00 PM	39	236	54	33	164	28	43	273	20	47	263	17	1,217	0	1	2	3	6
	4:15 PM	56	253	49	40	188	30	48	300	26	37	259	20	1,306	0	0	2	1	3
	4:30 PM	47	243	49	44	196	26	47	283	15	50	279	24	1,303	0	1	2	2	5
	4:45 PM	45	255	63	42	193	22	56	313	18	55	291	16	1,369	0	0	1	2	3
	5:00 PM	47	257	58	45	172	37	67	328	13	34	249	11	1,318	0	0	8	0	8
	5:15 PM	52	254	36	46	175	41	49	325	22	32	228	16	1,276	0	0	2	1	3
	5:30 PM	46	242	41	51	176	31	46	291	18	37	299	13	1,291	0	0	2	0	2
	5:45 PM	38	263	40	50	158	19	59	276	22	41	280	7	1,253	0	0	3	2	5
	VOLUMES	370	2,003	390	351	1,422	234	415	2,389	154	333	2,148	124	10,333	0	2	22	11	35
	APPROACH %	13%	72%	14%	17%	71%	12%	14%	81%	5%	13%	82%	5%						
	APP/DEPART	2,763	/	2,522	2,007	/	1,898	2,958	/	3,139	2,605	/	2,774	0					
	BEGIN PEAK HR		4:15 PM																
	VOLUMES	195	1,008	219	171	749	115	218	1,224	72	176	1,078	71	5,296					
	APPROACH %	14%	71%	15%	17%	72%	11%	14%	81%	5%	13%	81%	5%						
	PEAK HR FACTOR		0.979			0.973			0.928			0.915		0.967					
	APP/DEPART	1,422	/	1,285	1,035	/	992	1,514	/	1,618	1,325	/	1,401	0					



		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	AM BEGIN PEAK HR	7:15 AM					0	0	0	0	0					
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	PM BEGIN PEAK HR	4:15 PM					0	0	0	0	0					

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 pacific@aimtd.com

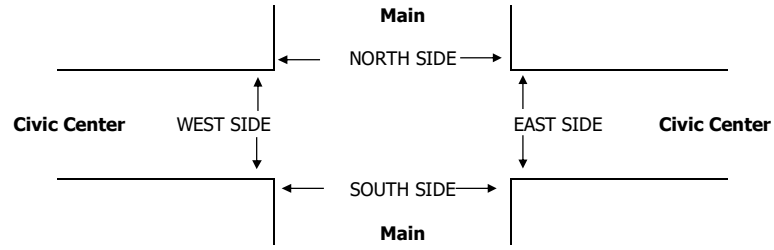
DATE:	LOCATION:	Santa Ana	PROJECT #:	SC0846
Thu, Feb 11, 16	NORTH & SOUTH:	Main	LOCATION #:	14
	EAST & WEST:	Civic Center	CONTROL:	SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

☑ Add U-Turns to Left Turns

		NORTHBOUND Main			SOUTHBOUND Main			EASTBOUND Civic Center			WESTBOUND Civic Center				U-TURNS				
	LANES:	NL 1	NT 2	NR 0	SL 1	ST 2	SR 0	EL 1	ET 2	ER 0	WL 1	WT 2	WR 0	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	19	158	9	12	248	29	8	80	16	6	65	3	653	0	0	0	0	0
	7:15 AM	35	205	12	13	242	21	19	106	27	8	125	12	825	0	0	0	0	0
	7:30 AM	35	219	13	15	251	47	20	112	16	9	137	5	879	0	0	0	0	0
	7:45 AM	30	234	25	16	257	47	20	159	25	14	166	10	1,003	0	0	0	0	0
	8:00 AM	32	207	25	12	251	37	27	146	27	10	115	5	894	0	0	0	0	0
	8:15 AM	32	188	17	17	254	42	19	64	24	6	80	14	757	0	0	0	0	0
	8:30 AM	31	189	10	13	251	22	15	63	39	9	68	5	715	0	0	0	0	0
	8:45 AM	20	175	8	8	203	22	17	53	32	3	49	5	595	0	0	0	0	0
	VOLUMES	234	1,575	119	106	1,957	267	145	783	206	65	805	59	6,321	0	0	0	0	0
	APPROACH %	12%	82%	6%	5%	84%	11%	13%	69%	18%	7%	87%	6%						
	APP/DEPART	1,928	/	1,779	2,330	/	2,228	1,134	/	1,008	929	/	1,306	0					
	BEGIN PEAK HR		7:15 AM																
	VOLUMES	132	865	75	56	1,001	152	86	523	95	41	543	32	3,601					
	APPROACH %	12%	81%	7%	5%	83%	13%	12%	74%	13%	7%	88%	5%						
	PEAK HR FACTOR		0.927			0.945			0.863			0.811		0.898					
	APP/DEPART	1,072	/	983	1,209	/	1,137	704	/	654	616	/	827	0					
PM	4:00 PM	17	275	24	10	199	10	30	126	29	14	59	5	798	0	0	0	0	0
	4:15 PM	17	238	13	9	201	19	34	118	22	7	57	12	747	0	0	0	0	0
	4:30 PM	27	291	12	6	227	10	39	187	24	6	77	14	920	1	0	0	0	1
	4:45 PM	17	278	25	18	240	21	51	228	22	6	87	9	1,002	0	0	0	0	0
	5:00 PM	18	245	24	23	248	18	42	241	36	16	119	4	1,034	0	0	0	0	0
	5:15 PM	23	268	29	11	241	11	20	190	18	8	86	10	915	0	0	0	0	0
	5:30 PM	24	258	16	8	210	21	14	120	30	17	76	17	811	0	0	0	0	0
	5:45 PM	23	271	16	13	226	15	11	97	15	9	76	9	781	0	0	0	0	0
	VOLUMES	166	2,124	159	98	1,792	125	241	1,307	196	83	637	80	7,008	1	0	0	0	1
	APPROACH %	7%	87%	6%	5%	89%	6%	14%	75%	11%	10%	80%	10%						
	APP/DEPART	2,449	/	2,445	2,015	/	2,072	1,744	/	1,564	800	/	927	0					
	BEGIN PEAK HR		4:30 PM																
	VOLUMES	85	1,082	90	58	956	60	152	846	100	36	369	37	3,871					
	APPROACH %	7%	86%	7%	5%	89%	6%	14%	77%	9%	8%	83%	8%						
	PEAK HR FACTOR		0.952			0.929			0.861			0.795		0.936					
	APP/DEPART	1,257	/	1,271	1,074	/	1,093	1,098	/	994	442	/	513	0					



		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	9	1	2	3	15	9	0	2	3	14	0	1	0	0	1
	7:15 AM	1	1	15	3	20	1	1	14	3	19	0	0	1	0	1
	7:30 AM	1	7	6	2	16	0	6	4	2	12	1	1	2	0	4
	7:45 AM	0	6	6	6	18	0	4	6	4	14	0	2	0	2	4
	8:00 AM	8	5	8	1	22	8	2	8	1	19	0	3	0	0	3
	8:15 AM	18	1	8	8	35	17	1	6	7	31	1	0	2	1	4
	8:30 AM	13	6	7	7	33	13	6	5	7	31	0	0	2	0	2
	8:45 AM	12	0	10	5	27	12	0	7	4	23	0	0	3	1	4
	TOTAL	62	27	62	35	186	60	20	52	31	163	2	7	10	4	23
PM	4:00 PM	6	6	8	7	27	6	5	5	7	23	0	1	3	0	4
	4:15 PM	7	4	7	19	37	7	4	6	15	32	0	0	1	4	5
	4:30 PM	10	7	15	6	38	10	6	14	5	35	0	1	1	1	3
	4:45 PM	6	4	11	3	24	6	3	9	3	21	0	1	2	0	3
	5:00 PM	48	9	16	1	74	48	5	14	1	68	0	4	2	0	6
	5:15 PM	5	5	7	1	18	4	2	7	1	14	1	3	0	0	4
	5:30 PM	8	3	6	2	19	8	3	6	2	19	0	0	0	0	0
	5:45 PM	6	3	15	1	25	6	0	11	1	18	0	3	4	0	7
	TOTAL	96	41	85	40	262	95	28	72	35	230	1	13	13	5	32

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 pacific@aimtd.com

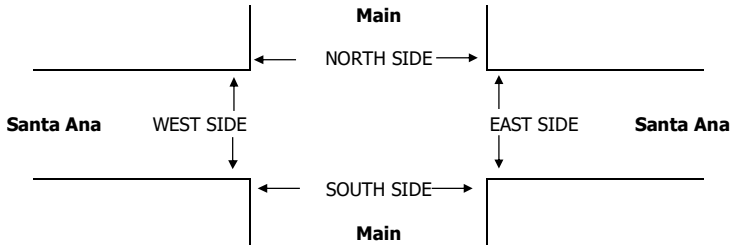
DATE:	LOCATION:	Santa Ana	PROJECT #:	SC0846
Thu, Feb 11, 16	NORTH & SOUTH:	Main	LOCATION #:	26
	EAST & WEST:	Santa Ana	CONTROL:	SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

☑ Add U-Turns to Left Turns

		NORTHBOUND Main			SOUTHBOUND Main			EASTBOUND Santa Ana			WESTBOUND Santa Ana				U-TURNS				
	LANES:	NL 1	NT 2	NR X	SL X	ST 2	SR 0	EL X	ET X	ER X	WL 0.5	WT 2	WR 0.5	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	10	149	0	0	240	25	0	0	0	14	152	6	596	0	0	0	0	0
	7:15 AM	16	220	0	0	273	22	0	0	0	19	153	14	717	0	0	0	0	0
	7:30 AM	16	241	0	0	270	26	0	0	0	15	233	15	816	0	0	0	0	0
	7:45 AM	15	334	0	0	258	17	0	0	0	8	203	15	850	0	0	0	0	0
	8:00 AM	18	245	0	0	262	29	0	0	0	16	225	18	813	0	0	0	0	0
	8:15 AM	11	207	0	0	235	42	0	0	0	17	148	15	675	0	0	0	0	0
	8:30 AM	15	217	0	0	288	28	0	0	0	15	144	9	716	0	0	0	0	0
	8:45 AM	15	167	0	0	203	26	0	0	0	13	116	14	554	0	0	0	0	0
	VOLUMES	116	1,780	0	0	2,029	215	0	0	0	117	1,374	106	5,737	0	0	0	0	0
	APPROACH %	6%	94%	0%	0%	90%	10%	0%	0%	0%	7%	86%	7%						
	APP/DEPART	1,896	/	1,886	2,244	/	2,146	0	/	0	1,597	/	1,705	0					
	BEGIN PEAK HR		7:15 AM																
	VOLUMES	65	1,040	0	0	1,063	94	0	0	0	58	814	62	3,196					
	APPROACH %	6%	94%	0%	0%	92%	8%	0%	0%	0%	6%	87%	7%						
	PEAK HR FACTOR		0.792			0.977			0.000			0.888		0.940					
	APP/DEPART	1,105	/	1,102	1,157	/	1,121	0	/	0	934	/	973	0					
PM	4:00 PM	12	261	0	0	219	9	0	0	0	17	146	18	682	0	0	0	0	0
	4:15 PM	10	251	0	0	218	12	0	0	0	2	113	13	619	0	0	0	0	0
	4:30 PM	12	302	0	0	217	7	0	0	0	15	122	17	692	0	0	0	0	0
	4:45 PM	10	330	0	0	247	12	0	0	0	15	157	19	790	0	0	0	0	0
	5:00 PM	16	250	0	0	300	15	0	0	0	18	127	25	751	0	0	0	0	0
	5:15 PM	14	319	0	0	263	12	0	0	0	15	177	20	820	0	0	0	0	0
	5:30 PM	11	282	0	0	230	11	0	0	0	14	169	17	734	0	0	0	0	0
	5:45 PM	6	254	0	0	252	10	0	0	0	15	147	20	704	0	0	0	0	0
	VOLUMES	91	2,249	0	0	1,946	88	0	0	0	111	1,158	149	5,792	0	0	0	0	0
	APPROACH %	4%	96%	0%	0%	96%	4%	0%	0%	0%	8%	82%	11%						
	APP/DEPART	2,340	/	2,398	2,034	/	2,057	0	/	0	1,418	/	1,337	0					
	BEGIN PEAK HR		4:45 PM																
	VOLUMES	51	1,181	0	0	1,040	50	0	0	0	62	630	81	3,095					
	APPROACH %	4%	96%	0%	0%	95%	5%	0%	0%	0%	8%	82%	10%						
	PEAK HR FACTOR		0.906			0.865			0.000			0.912		0.944					
	APP/DEPART	1,232	/	1,262	1,090	/	1,102	0	/	0	773	/	731	0					



		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	7	7	2	4	20	4	5	2	4	15	3	2	0	0	5
	7:15 AM	11	13	17	7	48	11	11	14	7	43	0	2	3	0	5
	7:30 AM	7	20	22	6	55	6	18	21	6	51	1	2	1	0	4
	7:45 AM	6	5	6	6	23	6	5	6	5	22	0	0	0	1	1
	8:00 AM	8	5	8	4	25	6	4	7	3	20	2	1	1	1	5
	8:15 AM	4	3	5	6	18	3	2	5	4	14	1	1	0	2	4
	8:30 AM	4	2	7	8	21	2	2	6	7	17	2	0	1	1	4
	8:45 AM	1	0	6	2	9	1	0	3	2	6	0	0	3	0	3
	TOTAL	48	55	73	43	219	39	47	64	38	188	9	8	9	5	31
PM	4:00 PM	7	5	6	8	26	5	4	5	6	20	2	1	1	2	6
	4:15 PM	4	4	7	14	29	4	4	7	14	29	0	0	0	0	0
	4:30 PM	11	8	10	15	44	8	7	9	13	37	3	1	1	2	7
	4:45 PM	12	2	11	9	34	11	2	10	6	29	1	0	1	3	5
	5:00 PM	9	8	6	21	44	8	6	5	20	39	1	2	1	1	5
	5:15 PM	8	18	6	21	53	8	18	6	21	53	0	0	0	0	0
	5:30 PM	12	2	10	9	33	10	1	9	7	27	2	1	1	2	6
	5:45 PM	3	3	10	11	27	3	2	8	9	22	0	1	2	2	5
	TOTAL	66	50	66	108	290	57	44	59	96	256	9	6	7	12	34

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 pacific@aimtd.com

DATE: Thu, Feb 11, 16

LOCATION: Santa Ana
NORTH & SOUTH: Main
EAST & WEST: 4th

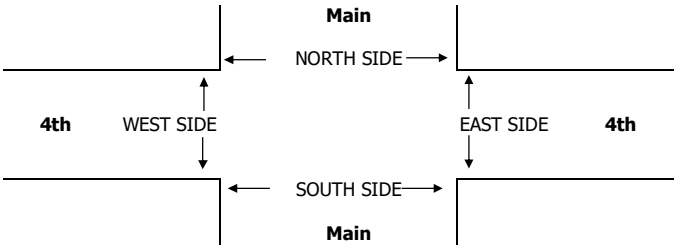
PROJECT #: SC0846
LOCATION #: 25
CONTROL: SIGNAL

NOTES:

AM PM MD OTHER OTHER — ▲ N, ◄ W, E ►, S ▼

☑ Add U-Turns to Left Turns

		NORTHBOUND Main			SOUTHBOUND Main			EASTBOUND 4th			WESTBOUND 4th				U-TURNS				
	LANES:	NL 0	NT 2	NR 0	SL 0	ST 2	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	0	169	4	0	244	8	0	12	5	0	10	6	458	0	0	0	0	0
	7:15 AM	0	202	5	0	276	4	0	21	2	0	18	6	534	0	0	0	0	0
	7:30 AM	0	251	4	0	258	7	0	25	2	0	27	9	583	0	0	0	0	0
	7:45 AM	0	271	9	0	261	3	0	25	3	0	35	5	612	0	0	0	0	0
	8:00 AM	0	214	4	0	260	11	0	18	6	0	29	6	548	0	0	0	0	0
	8:15 AM	0	184	8	2	239	11	0	16	7	0	48	7	522	0	0	0	0	0
	8:30 AM	0	208	7	0	272	8	1	14	3	1	43	11	568	0	0	0	0	0
	8:45 AM	0	168	5	0	216	5	0	13	5	1	29	13	455	0	0	0	0	0
	VOLUMES	0	1,667	46	2	2,026	57	1	144	33	2	239	63	4,280	0	0	0	0	0
	APPROACH %	0%	97%	3%	0%	97%	3%	1%	81%	19%	1%	79%	21%						
	APP/DEPART	1,713	/	1,731	2,085	/	2,061	178	/	192	304	/	296	0					
	BEGIN PEAK HR		7:15 AM																
	VOLUMES	0	938	22	0	1,055	25	0	89	13	0	109	26	2,277					
	APPROACH %	0%	98%	2%	0%	98%	2%	0%	87%	13%	0%	81%	19%						
	PEAK HR FACTOR		0.857			0.964			0.911			0.844		0.930					
	APP/DEPART	960	/	964	1,080	/	1,068	102	/	111	135	/	134	0					
PM	4:00 PM	0	254	12	0	206	7	0	32	12	0	37	19	579	0	0	0	0	0
	4:15 PM	2	239	9	0	195	7	1	27	6	1	41	8	536	0	0	0	0	0
	4:30 PM	0	261	20	0	224	8	1	24	10	2	40	10	600	0	0	0	0	0
	4:45 PM	0	270	16	0	220	13	0	27	8	1	43	14	612	0	0	0	0	0
	5:00 PM	0	235	8	0	274	12	2	17	17	3	38	14	620	0	0	0	0	0
	5:15 PM	0	259	7	0	257	10	1	27	14	0	45	8	628	0	0	0	0	0
	5:30 PM	0	249	17	0	245	10	1	23	13	0	47	8	613	0	0	0	0	0
	5:45 PM	0	247	10	0	220	14	0	17	22	2	38	22	592	0	0	0	0	0
	VOLUMES	2	2,014	99	0	1,841	81	6	194	102	9	329	103	4,780	0	0	0	0	0
	APPROACH %	0%	95%	5%	0%	96%	4%	2%	64%	34%	2%	75%	23%						
	APP/DEPART	2,115	/	2,123	1,922	/	1,952	302	/	293	441	/	412	0					
	BEGIN PEAK HR		4:45 PM																
	VOLUMES	0	1,013	48	0	996	45	4	94	52	4	173	44	2,473					
	APPROACH %	0%	95%	5%	0%	96%	4%	3%	63%	35%	2%	78%	20%						
	PEAK HR FACTOR		0.927			0.910			0.893			0.953		0.984					
	APP/DEPART	1,061	/	1,061	1,041	/	1,052	150	/	142	221	/	218	0					



		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	4	6	1	3	14	3	5	1	3	12	1	1	0	0	2
	7:15 AM	8	0	9	3	20	7	0	9	3	19	1	0	0	0	1
	7:30 AM	4	6	5	4	19	4	5	1	4	14	0	1	4	0	5
	7:45 AM	3	12	9	5	29	3	11	8	4	26	0	1	1	1	3
	8:00 AM	6	14	3	4	27	6	14	3	4	27	0	0	0	0	0
	8:15 AM	10	17	2	7	36	10	13	1	7	31	0	4	1	0	5
	8:30 AM	15	12	13	12	52	13	11	12	12	48	2	1	1	0	4
	8:45 AM	10	12	7	8	37	8	9	4	8	29	2	3	3	0	8
	TOTAL	60	79	49	46	234	54	68	39	45	206	6	11	10	1	28
PM	4:00 PM	32	44	24	26	126	32	44	23	24	123	0	0	1	2	3
	4:15 PM	48	61	28	31	168	46	60	27	31	164	2	1	1	0	4
	4:30 PM	39	76	31	39	185	37	71	27	34	169	2	5	4	5	16
	4:45 PM	32	66	18	23	139	31	66	16	23	136	1	0	2	0	3
	5:00 PM	51	42	13	28	134	51	40	12	26	129	0	2	1	2	5
	5:15 PM	29	45	16	24	114	28	45	16	22	111	1	0	0	2	3
	5:30 PM	39	71	22	33	165	35	71	21	29	156	4	0	1	4	9
	5:45 PM	34	41	20	21	116	34	40	17	20	111	0	1	3	1	5
	TOTAL	304	446	172	225	1,147	294	437	159	209	1,099	10	9	13	16	48

INTERSECTION TURNING MOVEMENT COUNTS

T218

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

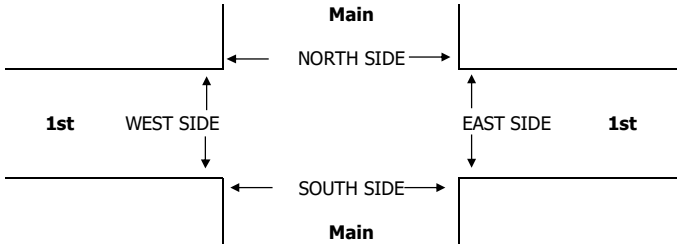
DATE:	LOCATION:	Santa Ana	PROJECT #:	SC2183
Tue, May 14, 19	NORTH & SOUTH:	Main	LOCATION #:	18
	EAST & WEST:	1st	CONTROL:	SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

☑ Add U-Turns to Left Turns

		NORTHBOUND Main			SOUTHBOUND Main			EASTBOUND 1st			WESTBOUND 1st				U-TURNS				
	LANES:	NL 1	NT 2	NR 0	SL 1	ST 2	SR 1	EL 1	ET 3	ER 0	WL 1	WT 3	WR 0	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	21	110	8	17	205	15	24	398	30	14	167	9	1,018	0	0	0	0	0
	7:15 AM	23	143	14	23	226	13	26	298	29	25	251	9	1,080	0	0	0	2	2
	7:30 AM	37	166	8	23	213	23	28	362	44	21	285	13	1,223	0	0	0	0	0
	7:45 AM	27	168	13	23	232	17	30	362	42	21	311	22	1,268	0	0	0	0	0
	8:00 AM	27	113	24	18	202	11	33	357	30	20	239	16	1,090	0	0	0	0	0
	8:15 AM	35	119	15	24	198	12	21	326	40	15	240	19	1,064	0	0	0	0	0
	8:30 AM	34	132	20	18	225	12	31	318	36	26	214	14	1,080	0	0	0	0	0
	8:45 AM	14	128	16	22	193	16	35	276	45	23	197	19	984	0	0	0	0	0
	VOLUMES	218	1,079	118	168	1,694	119	228	2,697	296	165	1,904	121	8,807	0	0	0	2	2
	APPROACH %	15%	76%	8%	8%	86%	6%	7%	84%	9%	8%	87%	6%						
	APP/DEPART	1,415	/	1,428	1,981	/	2,153	3,221	/	2,985	2,190	/	2,241	0					
	BEGIN PEAK HR		7:15 AM																
	VOLUMES	114	590	59	87	873	64	117	1,379	145	87	1,086	60	4,661					
	APPROACH %	15%	77%	8%	8%	85%	6%	7%	84%	9%	7%	88%	5%						
	PEAK HR FACTOR		0.904			0.941			0.945			0.871		0.919					
	APP/DEPART	763	/	767	1,024	/	1,103	1,641	/	1,527	1,233	/	1,264	0					
PM	4:00 PM	34	204	15	34	135	30	34	233	26	32	287	17	1,081	0	0	1	1	2
	4:15 PM	38	219	24	35	171	34	37	272	19	26	306	10	1,191	0	0	0	2	2
	4:30 PM	33	214	20	35	160	32	35	285	25	26	294	19	1,178	0	0	0	1	1
	4:45 PM	43	191	20	48	150	32	39	312	18	18	306	24	1,201	0	0	0	0	0
	5:00 PM	40	206	15	40	173	30	21	272	26	31	316	20	1,190	0	0	0	0	0
	5:15 PM	43	197	21	43	169	38	30	315	18	32	316	23	1,245	0	0	1	0	1
	5:30 PM	41	223	15	42	172	41	28	302	27	31	324	21	1,267	0	0	0	0	0
	5:45 PM	39	194	17	43	160	41	22	291	25	26	302	30	1,190	0	0	0	0	0
	VOLUMES	311	1,648	147	320	1,290	278	246	2,282	184	222	2,451	164	9,543	0	0	2	4	6
	APPROACH %	15%	78%	7%	17%	68%	15%	9%	84%	7%	8%	86%	6%						
	APP/DEPART	2,106	/	2,056	1,888	/	1,692	2,712	/	2,753	2,837	/	3,042	0					
	BEGIN PEAK HR		4:45 PM																
	VOLUMES	167	817	71	173	664	141	118	1,201	89	112	1,262	88	4,903					
	APPROACH %	16%	77%	7%	18%	68%	14%	8%	85%	6%	8%	86%	6%						
	PEAK HR FACTOR		0.945			0.959			0.954			0.972		0.967					
	APP/DEPART	1,055	/	1,022	978	/	865	1,408	/	1,445	1,462	/	1,571	0					



		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	AM BEGIN PEAK HR	7:15 AM					0	0	0	0	0					
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	PM BEGIN PEAK HR	4:45 PM					0	0	0	0	0					

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 pacific@aimtd.com

DATE: Thu, Feb 11, 16

LOCATION: Santa Ana
NORTH & SOUTH: Main
EAST & WEST: McFadden

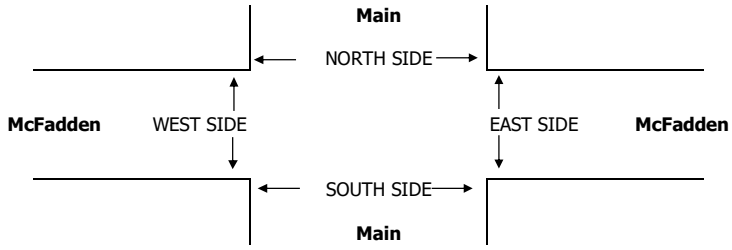
PROJECT #: SC0846
LOCATION #: 37
CONTROL: SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

☑ Add U-Turns to Left Turns

		NORTHBOUND Main			SOUTHBOUND Main			EASTBOUND McFadden			WESTBOUND McFadden				U-TURNS				
		NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB	TTL
	LANES:	1	2	0	1	2	0	1	1	0	1	1	1		0	0	0	0	
AM	7:00 AM	14	149	6	40	242	6	5	93	5	18	70	21	669	0	0	0	0	0
	7:15 AM	15	179	10	47	309	3	8	97	12	30	99	31	840	0	0	0	0	0
	7:30 AM	26	234	5	36	337	8	12	93	11	40	96	22	920	0	0	0	0	0
	7:45 AM	27	216	15	46	343	5	12	98	6	32	87	24	911	0	0	0	0	0
	8:00 AM	17	176	10	39	321	9	8	92	12	32	76	25	817	0	0	0	0	0
	8:15 AM	17	153	14	42	318	4	8	84	10	8	51	11	720	0	0	0	0	0
	8:30 AM	22	173	11	25	247	14	14	68	11	11	49	28	673	0	0	0	0	0
	8:45 AM	19	148	7	30	302	8	9	68	15	14	79	8	707	0	0	0	0	0
	VOLUMES	157	1,428	78	305	2,419	57	76	693	82	185	607	170	6,257	0	0	0	0	0
	APPROACH %	9%	86%	5%	11%	87%	2%	9%	81%	10%	19%	63%	18%						
	APP/DEPART	1,663	/	1,674	2,781	/	2,686	851	/	1,076	962	/	821	0					
	BEGIN PEAK HR		7:15 AM																
	VOLUMES	85	805	40	168	1,310	25	40	380	41	134	358	102	3,488					
	APPROACH %	9%	87%	4%	11%	87%	2%	9%	82%	9%	23%	60%	17%						
	PEAK HR FACTOR		0.877			0.954			0.985			0.928		0.948					
	APP/DEPART	930	/	947	1,503	/	1,485	461	/	588	594	/	468	0					
PM	4:00 PM	35	268	13	30	175	13	18	80	13	17	112	31	805	0	0	0	0	0
	4:15 PM	37	291	8	38	174	14	12	77	15	22	123	57	868	0	0	0	0	0
	4:30 PM	31	283	17	33	195	19	18	77	7	20	121	49	870	0	0	0	0	0
	4:45 PM	34	283	11	27	189	10	21	83	10	21	121	40	850	0	0	0	0	0
	5:00 PM	39	286	12	33	198	7	17	82	9	10	117	60	870	0	0	0	0	0
	5:15 PM	32	256	17	29	229	21	18	84	11	23	115	41	876	0	0	0	1	1
	5:30 PM	35	292	28	36	276	23	20	68	10	27	96	49	960	0	0	0	0	0
	5:45 PM	34	268	11	30	169	12	19	97	10	21	133	57	861	0	0	0	0	0
	VOLUMES	277	2,227	117	256	1,605	119	143	648	85	161	938	384	6,960	0	0	0	1	1
	APPROACH %	11%	85%	4%	13%	81%	6%	16%	74%	10%	11%	63%	26%						
	APP/DEPART	2,621	/	2,754	1,980	/	1,850	876	/	1,022	1,483	/	1,334	0					
	BEGIN PEAK HR		5:00 PM																
	VOLUMES	140	1,102	68	128	872	63	74	331	40	81	461	207	3,567					
	APPROACH %	11%	84%	5%	12%	82%	6%	17%	74%	9%	11%	62%	28%						
	PEAK HR FACTOR		0.923			0.793			0.883			0.887		0.929					
	APP/DEPART	1,310	/	1,383	1,063	/	992	445	/	528	749	/	664	0					



		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	6	2	5	4	17	4	2	4	4	14	2	0	1	0	3
	7:15 AM	4	5	11	5	25	4	5	11	5	25	0	0	0	0	0
	7:30 AM	9	16	20	20	65	8	16	18	18	60	1	0	2	2	5
	7:45 AM	9	9	30	32	80	8	9	29	29	75	1	0	1	3	5
	8:00 AM	7	14	12	25	58	6	13	12	25	56	1	1	0	0	2
	8:15 AM	6	5	8	13	32	5	5	8	11	29	1	0	0	2	3
	8:30 AM	7	6	9	4	26	4	3	8	3	18	3	3	1	1	8
	8:45 AM	4	2	13	19	38	2	2	12	14	30	2	0	1	5	8
	TOTAL	52	59	108	122	341	41	55	102	109	307	11	4	6	13	34
PM	4:00 PM	10	11	20	22	63	8	10	18	17	53	2	1	2	5	10
	4:15 PM	5	8	13	17	43	4	6	9	17	36	1	2	4	0	7
	4:30 PM	14	13	26	22	75	12	8	22	20	62	2	5	4	2	13
	4:45 PM	21	30	29	15	95	18	25	29	13	85	3	5	0	2	10
	5:00 PM	11	3	12	9	35	10	2	8	4	24	1	1	4	5	11
	5:15 PM	13	13	19	18	63	12	12	18	16	58	1	1	1	2	5
	5:30 PM	9	10	15	12	46	8	9	14	12	43	1	1	1	0	3
	5:45 PM	12	13	8	27	60	10	10	8	25	53	2	3	0	2	7
	TOTAL	95	101	142	142	480	82	82	126	124	414	13	19	16	18	66

INTERSECTION TURNING MOVEMENT COUNTS

T218

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Thu, May 16, 19

LOCATION: Santa Ana
NORTH & SOUTH: Main
EAST & WEST: Edinger

PROJECT #: SC2183
LOCATION #: 19
CONTROL: SIGNAL

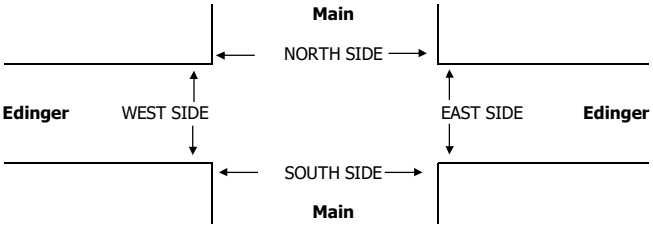
NOTES:

AM / PM / MD / OTHER / OTHER

N ▲ S ▼ W ◄ E ►

Add U-Turns to Left Turns

		NORTHBOUND Main			SOUTHBOUND Main			EASTBOUND Edinger			WESTBOUND Edinger				U-TURNS				
	LANES:	NL 1	NT 2	NR 0	SL 1	ST 2	SR 0	EL 1	ET 2	ER 1	WL 1	WT 3	WR 0	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	18	115	19	34	247	18	14	241	38	20	149	15	928	0	0	0	0	0
	7:15 AM	21	158	17	47	248	14	15	243	35	28	184	26	1,036	0	0	2	3	5
	7:30 AM	27	171	18	61	265	17	9	246	38	31	159	21	1,063	0	0	0	2	2
	7:45 AM	28	128	13	59	244	12	23	250	28	38	165	24	1,012	0	0	1	2	3
	8:00 AM	31	153	18	58	284	11	27	222	28	23	193	15	1,063	0	0	0	1	1
	8:15 AM	23	126	19	47	265	9	19	212	21	17	194	22	974	0	0	0	1	1
	8:30 AM	21	102	21	34	233	13	32	220	37	24	141	16	894	0	0	0	3	3
	8:45 AM	10	104	21	22	272	18	18	183	25	27	100	20	820	0	0	1	2	3
	VOLUMES	179	1,057	146	362	2,058	112	157	1,817	250	208	1,285	159	7,790	0	0	4	14	18
	APPROACH %	13%	76%	11%	14%	81%	4%	7%	82%	11%	13%	78%	10%						
	APP/DEPART	1,382	/	1,369	2,532	/	2,502	2,224	/	2,339	1,652	/	1,580	0					
	BEGIN PEAK HR		7:15 AM																
	VOLUMES	107	610	66	225	1,041	54	74	961	129	120	701	86	4,174					
	APPROACH %	14%	78%	8%	17%	79%	4%	6%	83%	11%	13%	77%	9%						
	PEAK HR FACTOR		0.906			0.935			0.967			0.953		0.982					
	APP/DEPART	783	/	767	1,320	/	1,282	1,164	/	1,260	907	/	865	0					
PM	4:00 PM	21	237	17	32	121	22	41	171	26	20	297	39	1,044	0	0	0	0	0
	4:15 PM	27	226	11	34	133	34	38	180	26	28	316	31	1,084	0	0	1	1	2
	4:30 PM	23	253	14	21	139	9	21	195	17	18	328	27	1,065	0	0	1	2	3
	4:45 PM	14	272	13	20	146	30	29	160	15	13	297	30	1,039	0	0	0	0	0
	5:00 PM	29	250	12	39	137	13	34	164	23	23	330	29	1,083	0	0	2	2	4
	5:15 PM	33	243	15	33	148	20	36	203	23	27	325	32	1,138	0	0	0	2	2
	5:30 PM	18	259	9	28	180	26	22	194	24	23	320	33	1,136	0	0	1	1	2
	5:45 PM	18	287	11	20	137	23	33	183	13	23	308	38	1,094	0	0	0	2	2
	VOLUMES	183	2,027	102	227	1,141	177	254	1,450	167	175	2,521	259	8,683	0	0	5	10	15
	APPROACH %	8%	88%	4%	15%	74%	11%	14%	77%	9%	6%	85%	9%						
	APP/DEPART	2,312	/	2,535	1,545	/	1,473	1,871	/	1,789	2,955	/	2,886	0					
	BEGIN PEAK HR		5:00 PM																
	VOLUMES	98	1,039	47	120	602	82	125	744	83	96	1,283	132	4,451					
	APPROACH %	8%	88%	4%	15%	75%	10%	13%	78%	9%	6%	85%	9%						
	PEAK HR FACTOR		0.937			0.859			0.908			0.984		0.978					
	APP/DEPART	1,184	/	1,293	804	/	774	952	/	918	1,511	/	1,466	0					



		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	AM BEGIN PEAK HR	7:15 AM					0	0	0	0	0					
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	PM BEGIN PEAK HR	5:00 PM					0	0	0	0	0					

INTERSECTION TURNING MOVEMENT COUNTS

T218

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Tue, May 14, 19

LOCATION: Santa Ana
NORTH & SOUTH: Main
EAST & WEST: MacArthur

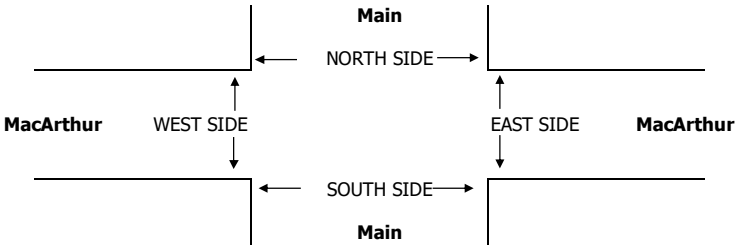
PROJECT #: SC2183
LOCATION #: 20
CONTROL: SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N ◄ W E ► S ▼

☑ Add U-Turns to Left Turns

		NORTHBOUND Main			SOUTHBOUND Main			EASTBOUND MacArthur			WESTBOUND MacArthur				U-TURNS				
	LANES:	NL 2	NT 3	NR 1	SL 2	ST 3	SR 1	EL 2	ET 3	ER 1	WL 2	WT 3	WR 1	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	11	59	34	159	178	36	35	308	35	43	109	54	1,061	3	8	7	0	18
	7:15 AM	15	53	64	156	193	54	32	358	58	31	106	66	1,186	3	5	1	0	9
	7:30 AM	12	84	67	188	221	66	60	372	61	42	123	40	1,336	2	16	2	1	21
	7:45 AM	13	88	72	157	233	40	84	349	72	36	109	46	1,299	4	8	2	1	15
	8:00 AM	13	82	58	137	192	30	61	300	58	35	92	63	1,121	3	7	1	1	12
	8:15 AM	12	63	43	146	217	43	50	304	73	41	95	47	1,134	1	6	4	1	12
	8:30 AM	13	53	63	131	216	31	53	339	72	36	92	42	1,141	4	3	2	4	13
	8:45 AM	13	49	65	129	198	37	44	301	75	40	88	40	1,079	4	6	2	3	15
	VOLUMES	102	531	466	1,203	1,648	337	419	2,631	504	304	814	398	9,357	24	59	21	11	115
	APPROACH %	9%	48%	42%	38%	52%	11%	12%	74%	14%	20%	54%	26%						
	APP/DEPART	1,099	/	1,386	3,188	/	2,469	3,554	/	4,252	1,516	/	1,250	0					
	BEGIN PEAK HR		7:15 AM																
	VOLUMES	53	307	261	638	839	190	237	1,379	249	144	430	215	4,942					
	APPROACH %	9%	49%	42%	38%	50%	11%	13%	74%	13%	18%	54%	27%						
	PEAK HR FACTOR		0.897			0.877			0.923			0.962		0.925					
	APP/DEPART	621	/	789	1,667	/	1,241	1,865	/	2,245	789	/	667	0					
PM	4:00 PM	97	244	95	68	71	61	51	132	18	34	362	125	1,358	5	2	0	3	10
	4:15 PM	88	277	79	69	85	55	49	145	17	36	405	118	1,423	3	6	3	2	14
	4:30 PM	113	256	78	67	85	67	65	131	14	43	373	107	1,399	7	2	3	2	14
	4:45 PM	109	215	85	75	87	52	72	150	16	43	384	133	1,421	6	8	11	2	27
	5:00 PM	118	285	75	58	81	65	66	153	10	43	408	97	1,459	8	4	3	2	17
	5:15 PM	123	333	89	76	82	80	70	180	15	51	397	107	1,603	3	8	4	1	16
	5:30 PM	125	272	77	72	98	63	79	143	16	49	381	123	1,498	6	10	4	3	23
	5:45 PM	117	267	76	74	103	67	80	130	17	53	368	124	1,476	4	6	5	2	17
	VOLUMES	890	2,149	654	559	692	510	532	1,164	123	352	3,078	934	11,637	42	46	33	17	138
	APPROACH %	24%	58%	18%	32%	39%	29%	29%	64%	7%	8%	71%	21%						
	APP/DEPART	3,693	/	3,628	1,761	/	1,192	1,819	/	2,348	4,364	/	4,469	0					
	BEGIN PEAK HR		5:00 PM																
	VOLUMES	483	1,157	317	280	364	275	295	606	58	196	1,554	451	6,036					
	APPROACH %	25%	59%	16%	30%	40%	30%	31%	63%	6%	9%	71%	20%						
	PEAK HR FACTOR		0.898			0.942			0.905			0.991		0.941					
	APP/DEPART	1,957	/	1,915	919	/	631	959	/	1,183	2,201	/	2,307	0					



		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	AM BEGIN PEAK HR	7:15 AM					0	0	0	0	0					
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	PM BEGIN PEAK HR	5:00 PM					0	0	0	0	0					

Transportation Studies, Inc.
2640 Walnut Avenue, Suite L
Tustin, CA. 92780

City: SANTA ANA
N-S Direction: PENN WAY
E-W Direction: 17TH STREET

File Name : H1702011
Site Code : 00000000
Start Date : 2/9/2017
Page No : 1

Groups Printed- Turning Movements

	DEAD END Southbound			17TH STREET Westbound				PENN WAY Northbound				17TH STREET Eastbound			
Start Time	Right	Thru	Left	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Int. Total
07:00	0	0	0	0	298	46	0	44	0	7	0	164	280	0	839
07:15	0	0	0	0	394	55	0	70	0	10	0	163	260	0	952
07:30	0	0	0	0	471	47	0	53	0	6	0	165	321	0	1063
07:45	0	0	0	0	461	68	1	50	0	14	0	162	288	0	1044
Total	0	0	0	0	1624	216	1	217	0	37	0	654	1149	0	3898
08:00	0	0	0	0	345	37	0	37	0	11	0	122	332	0	884
08:15	0	0	0	0	280	37	0	38	0	7	0	137	280	0	779
08:30	0	0	0	0	299	32	0	41	0	7	1	116	255	0	751
08:45	0	0	0	0	307	25	0	52	0	14	0	99	231	0	728
Total	0	0	0	0	1231	131	0	168	0	39	1	474	1098	0	3142
*** BREAK ***															
16:00	0	0	0	0	327	28	1	98	0	23	1	102	326	0	906
16:15	0	0	0	0	405	26	0	78	0	21	0	106	304	0	940
16:30	0	0	0	0	350	40	1	89	0	18	0	111	335	0	944
16:45	0	0	0	0	360	30	0	98	0	19	1	113	329	0	950
Total	0	0	0	0	1442	124	2	363	0	81	2	432	1294	0	3740
17:00	0	0	0	0	335	30	1	108	0	24	0	149	413	0	1060
17:15	0	0	0	0	394	27	0	99	0	27	0	118	388	0	1053
17:30	0	0	0	0	337	35	1	110	0	15	1	122	339	0	960
17:45	0	0	0	0	331	27	0	84	0	17	1	108	403	0	971
Total	0	0	0	0	1397	119	2	401	0	83	2	497	1543	0	4044
Grand Total	0	0	0	0	5694	590	5	1149	0	240	5	2057	5084	0	14824
Apprch %	0	0	0	0	90.5	9.4	0.1	82.4	0	17.2	0.4	28.8	71.2	0	
Total %	0	0	0	0	38.4	4	0	7.8	0	1.6	0	13.9	34.3	0	

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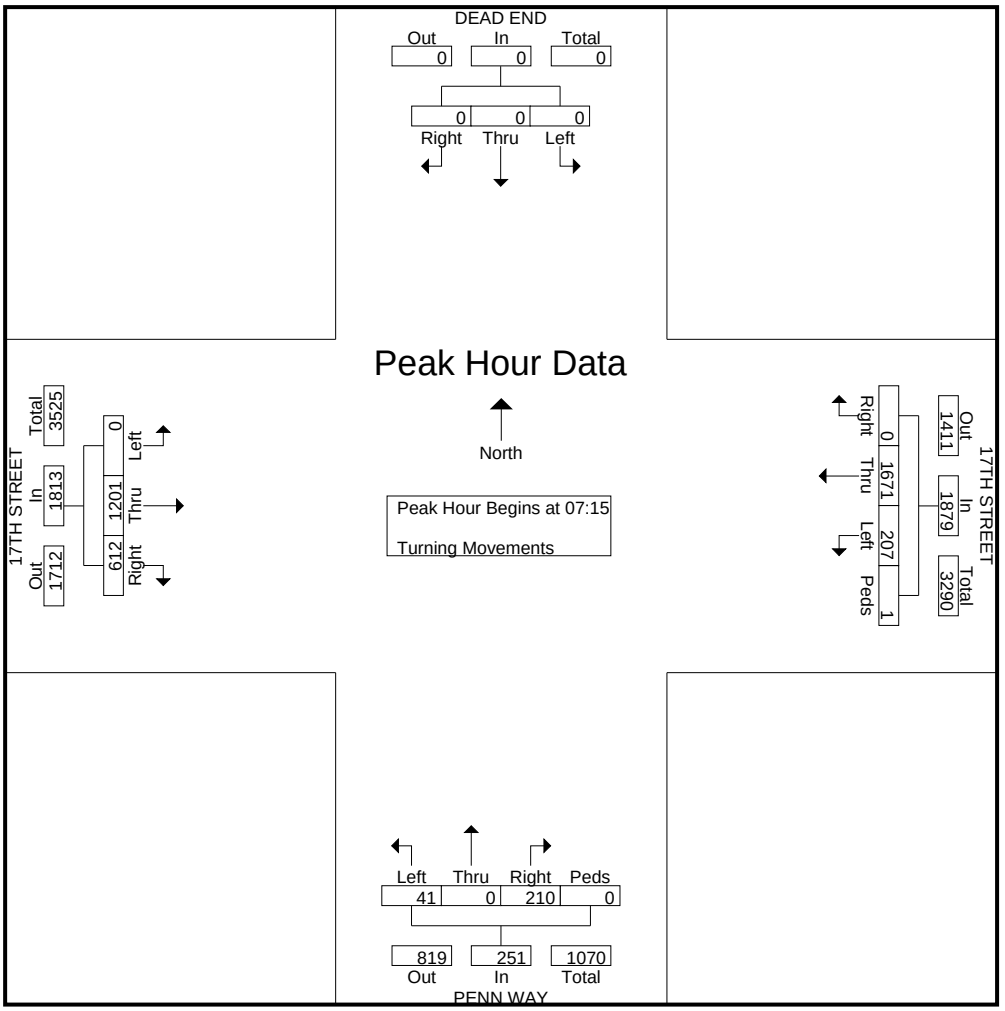
Site Code : 00000000
Start Date : 2/9/2017
Page No : 2

	DEAD END Southbound				17TH STREET Westbound					PENN WAY Northbound					17TH STREET Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																			
Peak Hour for Entire Intersection Begins at 07:15																			
07:15	0	0	0	0	0	394	55	0	449	70				80					
07:30	0	0	0	0	0	471	47	0	518	53	0	6	0	59	165	321	0	**486**	**1063**
07:45	**0**	**0**	**0**	**0**	**0**	**461**	**68**	**1**	**530**	**50**	**0**	**14**	0	64	162	288	0	450	1044
08:00	0	0	0	0	0	345	37	0	382	37	0	11	0	48	122	**332**	0	454	884
Total Volume	0	0	0	0	0	1671	207	1	1879	210	0	41	0	251	612	1201	0	1813	3943
% App. Total	0	0	0		0	88.9	11	0.1		83.7	0	16.3	0		33.8	66.2	0		
PHF	.000	.000	.000	.000	.000	.887	.761	.250	.886	.750	.000	.732	.000	.784	.927	.904	.000	.933	.927



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City: SANTA ANA
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Start Date : 2/9/2017
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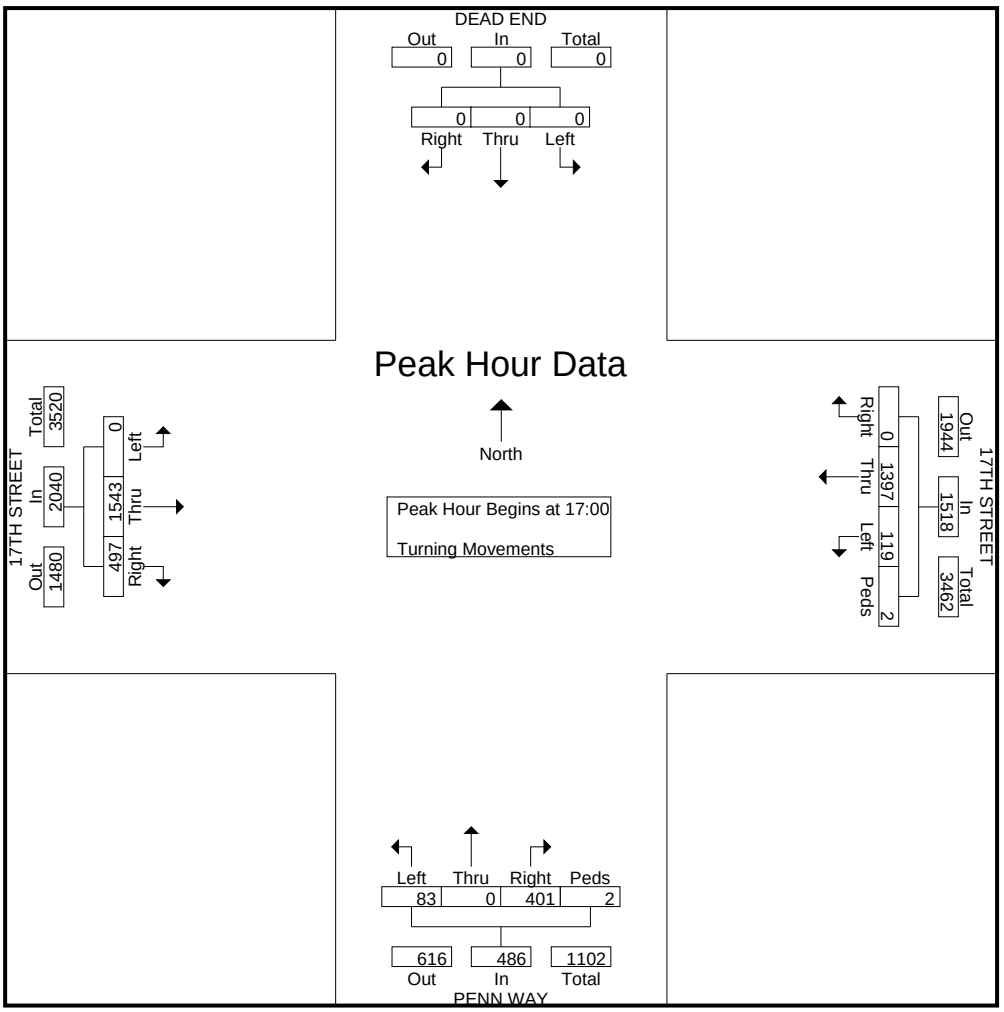
	DEAD END Southbound				17TH STREET Westbound					PENN WAY Northbound					17TH STREET Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																			
Peak Hour for Entire Intersection Begins at 17:00																			
17:00	0	0	0	0	0	335	30	1	366	108	0	24	0	132	149	413	0	**562**	**1060**
17:15	**0**	**0**	**0**	**0**	**0**	**394**	**27**	**0**	**421**	**99**	**0**	**27**	0	126	118	388	0	506	1053
17:30	0	0	0	0	0	337	**35**	1	373	**110**	0	15	**1**	126	122	339	0	461	960
17:45	0	0	0	0	0	331	27	0	358	84	0	17	1	102	108	403	0	511	971
Total Volume	0	0	0	0	0	1397	119	2	1518	401	0	83	2	486	497	1543	0	2040	4044
% App. Total	0	0	0		0	92	7.8	0.1		82.5	0	17.1	0.4		24.4	75.6	0		
PHF	.000	.000	.000	.000	.000	.886	.850	.500	.901	.911	.000	.769	.500	.920	.834	.934	.000	.907	.954



INTERSECTION TURNING MOVEMENT COUNTS

T218

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Tue, May 14, 19

LOCATION: Santa Ana
NORTH & SOUTH: I-5 NB Ramps
EAST & WEST: 17th

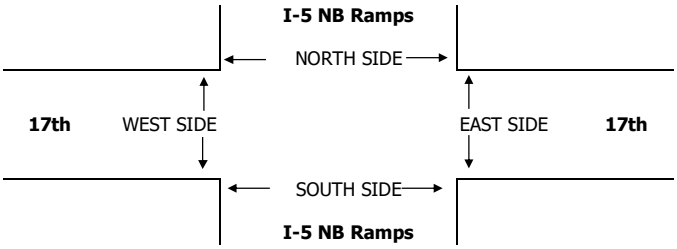
PROJECT #: SC2183
LOCATION #: 30
CONTROL: SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N ◄ W E ► S ▼

Add U-Turns to Left Turns

		NORTHBOUND I-5 NB Ramps			SOUTHBOUND I-5 NB Ramps			EASTBOUND 17th			WESTBOUND 17th				U-TURNS				
	LANES:	NL 1.5	NT 0.5	NR 1	SL 1	ST X	SR 1	EL 1	ET 3	ER 1	WL X	WT 3	WR 0	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	129	11	9	7	0	51	21	188	65	0	200	1	682	0	0	3	0	3
	7:15 AM	180	16	1	15	0	54	15	255	65	0	259	4	864	0	0	5	0	5
	7:30 AM	220	5	10	14	0	69	21	266	91	0	304	7	1,007	0	0	4	0	4
	7:45 AM	201	8	6	15	0	100	29	276	108	0	365	4	1,112	0	0	7	0	7
	8:00 AM	159	5	4	12	0	69	33	232	108	0	304	4	930	0	0	11	0	11
	8:15 AM	151	5	11	9	0	48	20	227	52	0	206	6	735	0	0	2	0	2
	8:30 AM	130	12	11	5	0	45	23	223	60	0	201	8	718	0	0	4	0	4
	8:45 AM	110	8	3	12	0	35	16	192	67	0	202	9	654	0	0	5	0	5
	VOLUMES	1,280	70	55	89	0	471	178	1,859	616	0	2,041	43	6,702	0	0	41	0	41
	APPROACH %	91%	5%	4%	16%	0%	84%	7%	70%	23%	0%	98%	2%						
	APP/DEPART	1,405	/	250	560	/	616	2,653	/	2,003	2,084	/	3,833	0					
	BEGIN PEAK HR		7:15 AM																
	VOLUMES	760	34	21	56	0	292	98	1,029	372	0	1,232	19	3,913					
	APPROACH %	93%	4%	3%	16%	0%	84%	7%	69%	25%	0%	98%	2%						
	PEAK HR FACTOR		0.867			0.757			0.907			0.848		0.880					
	APP/DEPART	815	/	124	348	/	372	1,499	/	1,106	1,251	/	2,311	0					
PM	4:00 PM	81	9	5	5	0	24	26	240	157	0	353	10	910	0	0	8	0	8
	4:15 PM	88	14	4	15	0	33	28	251	128	0	374	9	944	0	0	5	0	5
	4:30 PM	86	8	3	6	0	33	27	228	202	0	367	13	973	0	0	3	0	3
	4:45 PM	83	12	6	9	0	32	29	286	176	0	377	7	1,017	0	0	8	0	8
	5:00 PM	84	11	4	20	0	33	34	323	208	0	391	11	1,119	0	0	6	0	6
	5:15 PM	80	23	4	9	0	42	29	262	141	0	303	9	902	0	0	4	0	4
	5:30 PM	71	14	6	11	0	39	31	241	113	0	361	14	901	0	0	4	0	4
	5:45 PM	94	12	7	17	0	34	29	273	93	0	341	5	905	0	0	10	0	10
	VOLUMES	667	103	39	92	0	270	233	2,104	1,218	0	2,867	78	7,671	0	0	48	0	48
	APPROACH %	82%	13%	5%	25%	0%	75%	7%	59%	34%	0%	97%	3%						
	APP/DEPART	809	/	366	362	/	1,218	3,555	/	2,235	2,945	/	3,852	0					
	BEGIN PEAK HR		4:15 PM																
	VOLUMES	341	45	17	50	0	131	118	1,088	714	0	1,509	40	4,053					
	APPROACH %	85%	11%	4%	28%	0%	72%	6%	57%	37%	0%	97%	3%						
	PEAK HR FACTOR		0.950			0.854			0.850			0.963		0.905					
	APP/DEPART	403	/	181	181	/	714	1,920	/	1,155	1,549	/	2,003	0					



		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	AM BEGIN PEAK HR	7:15 AM					0	0	0	0	0					
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	PM BEGIN PEAK HR	4:15 PM					0	0	0	0	0					

Transportation Studies, Inc.
2640 Walnut Avenue, Suite L
Tustin, CA. 92780

City: SANTA ANA
N-S Direction: PENN WAY
E-W Direction: I-5 SB RAMPS

File Name : H1702012
Site Code : 00000000
Start Date : 2/9/2017

Groups Printed- Turning Movements

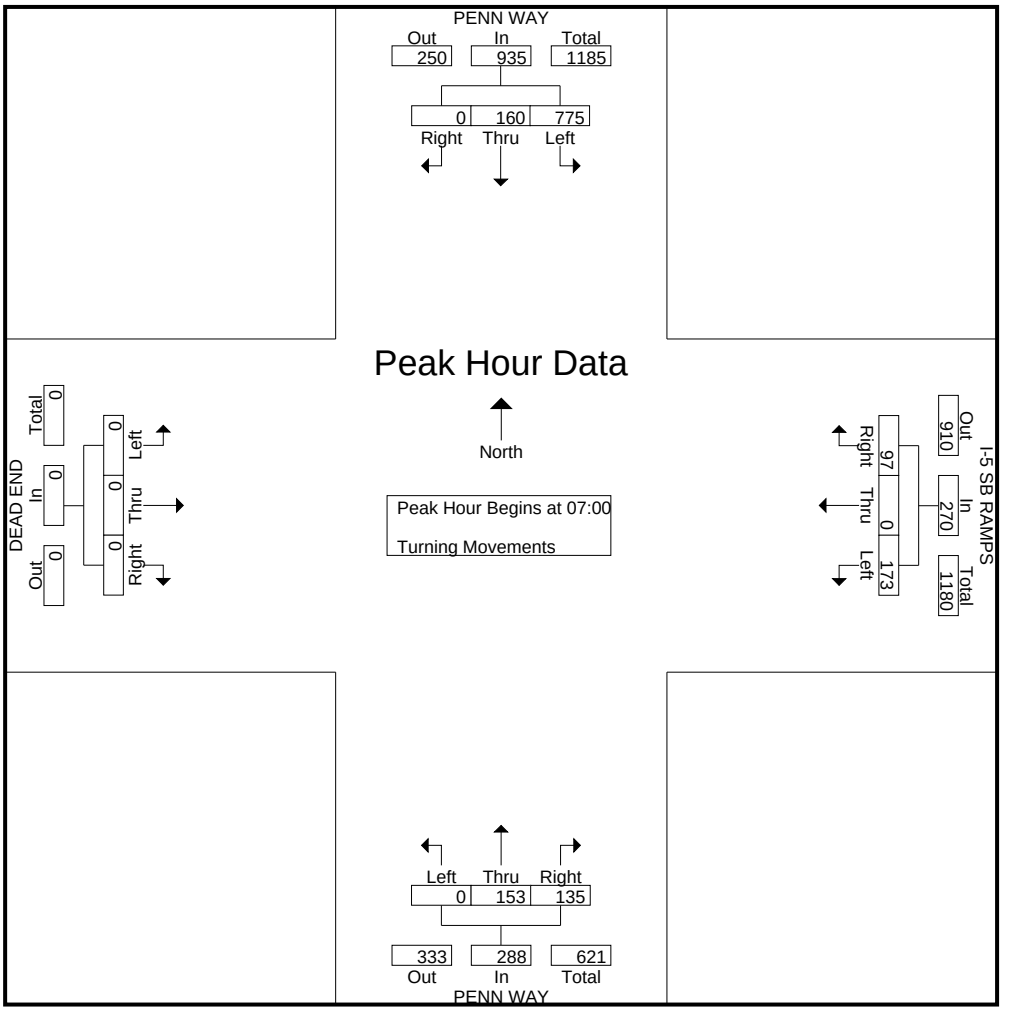
	PENN WAY Southbound			I-5 SB RAMPS Westbound			PENN WAY Northbound			DEAD END Eastbound			
Start Time	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Int. Total
07:00	0	31	198	22	0	44	18	29	0	0	0	0	342
07:15	0	32	196	36	0	39	32	41	0	0	0	0	376
07:30	0	37	191	19	0	38	35	40	0	0	0	0	360
07:45	0	60	190	20	0	52	50	43	0	0	0	0	415
Total	0	160	775	97	0	173	135	153	0	0	0	0	1493
08:00	0	30	144	21	0	48	37	27	0	0	0	0	307
08:15	0	28	153	20	0	17	32	28	0	0	0	0	278
08:30	0	20	139	34	0	21	19	17	0	0	0	0	250
08:45	0	18	113	31	0	23	18	33	0	0	0	0	236
Total	0	96	549	106	0	109	106	105	0	0	0	0	1071
*** BREAK ***													
16:00	0	25	111	57	0	40	44	64	0	0	0	0	341
16:15	0	22	114	45	0	51	37	59	0	0	0	0	328
16:30	0	33	105	31	0	46	69	74	0	0	0	0	358
16:45	0	30	130	43	0	52	51	70	0	0	0	0	376
Total	0	110	460	176	0	189	201	267	0	0	0	0	1403
17:00	0	32	152	40	0	41	77	94	0	0	0	0	436
17:15	0	30	119	34	0	37	63	92	0	0	0	0	375
17:30	0	31	132	28	0	39	40	96	0	0	0	0	366
17:45	0	39	112	27	0	29	22	74	0	0	0	0	303
Total	0	132	515	129	0	146	202	356	0	0	0	0	1480
Grand Total	0	498	2299	508	0	617	644	881	0	0	0	0	5447
Apprch %	0	17.8	82.2	45.2	0	54.8	42.2	57.8	0	0	0	0	
Total %	0	9.1	42.2	9.3	0	11.3	11.8	16.2	0	0	0	0	

Transportation Studies, Inc.
2640 Walnut Avenue, Suite L
Tustin, CA. 92780

City: SANTA ANA
N-S Direction: PENN WAY
E-W Direction: I-5 SB RAMPS

File Name : H1702012
Site Code : 00000000
Start Date : 2/9/2017
Page No : 2

	PENN WAY Southbound				I-5 SB RAMPS Westbound				PENN WAY Northbound				DEAD END Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00																	
07:00	0	31	**198**	229	22	0	44	66	18	29	0	47	0	0	0	0	342
07:15	0	32	196	228	**36**	0	39	**75**	32	41	0	73	0	0	0	0	376
07:30	0	37	191	228	19	0	38	57	35	40	0	75	0	0	0	0	360
07:45	0	**60**	190	**250**	20	0	**52**	72	**50**	**43**	0	**93**	0	0	0	0	**415**
Total Volume	0	160	775	935	97	0	173	270	135	153	0	288	0	0	0	0	1493
% App. Total	0	17.1	82.9		35.9	0	64.1		46.9	53.1	0		0	0	0		
PHF	.000	.667	.979	.935	.674	.000	.832	.900	.675	.890	.000	.774	.000	.000	.000	.000	.899



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File Name : H1702012
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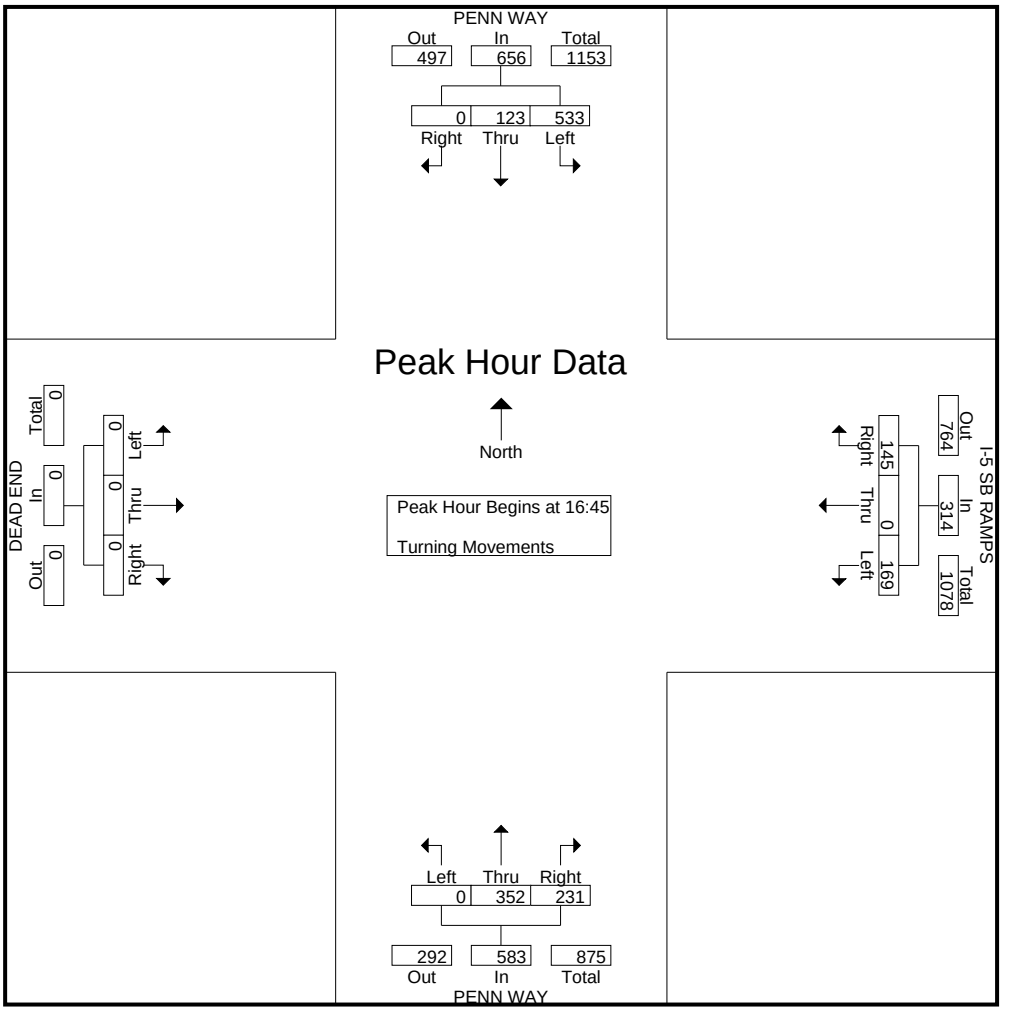
	PENN WAY Southbound				I-5 SB RAMPS Westbound				PENN WAY Northbound				DEAD END Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 16:45																	
16:45	0	30	130	160	**43**	0	**52**	**95**	51	70	0	121	0	0	0	0	376
17:00	0	**32**	**152**	**184**	40	0	41	81	**77**	94	0	**171**	0	0	0	0	**436**
17:15	0	30	119	149	34	0	37	71	63	92	0	155	0	0	0	0	375
17:30	0	31	132	163	28	0	39	67	40	**96**	0	136	0	0	0	0	366
Total Volume	0	123	533	656	145	0	169	314	231	352	0	583	0	0	0	0	1553
% App. Total	0	18.8	81.2		46.2	0	53.8		39.6	60.4	0		0	0	0		
PHF	.000	.961	.877	.891	.843	.000	.813	.826	.750	.917	.000	.852	.000	.000	.000	.000	.890



Transportation Studies, Inc.
2640 Walnut Avenue, Suite L
Tustin, CA. 92780

City: SANTA ANA
N-S Direction: SANTIAGO STREET
E-W Direction: CIVIC CENTER DRIVE

File Name : H1702013
Site Code : 00000000
Start Date : 2/9/2017

Groups Printed- Turning Movements

	SANTIAGO STREET Southbound			CIVIC CENTER DRIVE Westbound			SANTIAGO STREET Northbound			CIVIC CENTER DRIVE Eastbound			
Start Time	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Int. Total
07:00	12	60	0	1	6	8	1	22	15	33	4	16	178
07:15	15	73	0	3	12	14	1	20	37	47	9	30	261
07:30	22	82	0	4	14	14	6	41	55	67	11	31	347
07:45	16	70	3	2	23	25	6	44	69	63	13	29	363
Total	65	285	3	10	55	61	14	127	176	210	37	106	1149
08:00	18	69	1	3	15	16	6	33	38	61	11	27	298
08:15	9	35	1	1	1	7	5	19	29	27	8	12	154
08:30	5	44	1	3	1	6	3	8	18	26	9	9	133
08:45	5	43	0	0	1	4	3	18	25	20	6	15	140
Total	37	191	3	7	18	33	17	78	110	134	34	63	725
*** BREAK ***													
16:00	5	52	0	1	4	3	3	46	18	45	6	37	220
16:15	10	41	2	2	3	4	4	59	15	32	8	33	213
16:30	7	48	1	2	3	1	2	48	26	44	12	64	258
16:45	14	47	2	5	3	3	12	59	27	68	20	67	327
Total	36	188	5	10	13	11	21	212	86	189	46	201	1018
17:00	16	38	3	6	8	2	8	70	25	90	20	77	363
17:15	6	47	3	4	4	2	5	76	24	54	16	66	307
17:30	10	49	4	2	3	6	4	85	18	49	17	48	295
17:45	10	51	1	1	6	3	6	65	22	37	11	50	263
Total	42	185	11	13	21	13	23	296	89	230	64	241	1228
Grand Total	180	849	22	40	107	118	75	713	461	763	181	611	4120
Apprch %	17.1	80.8	2.1	15.1	40.4	44.5	6	57.1	36.9	49.1	11.6	39.3	
Total %	4.4	20.6	0.5	1	2.6	2.9	1.8	17.3	11.2	18.5	4.4	14.8	

Transportation Studies, Inc.
2640 Walnut Avenue, Suite L
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City: SANTA ANA
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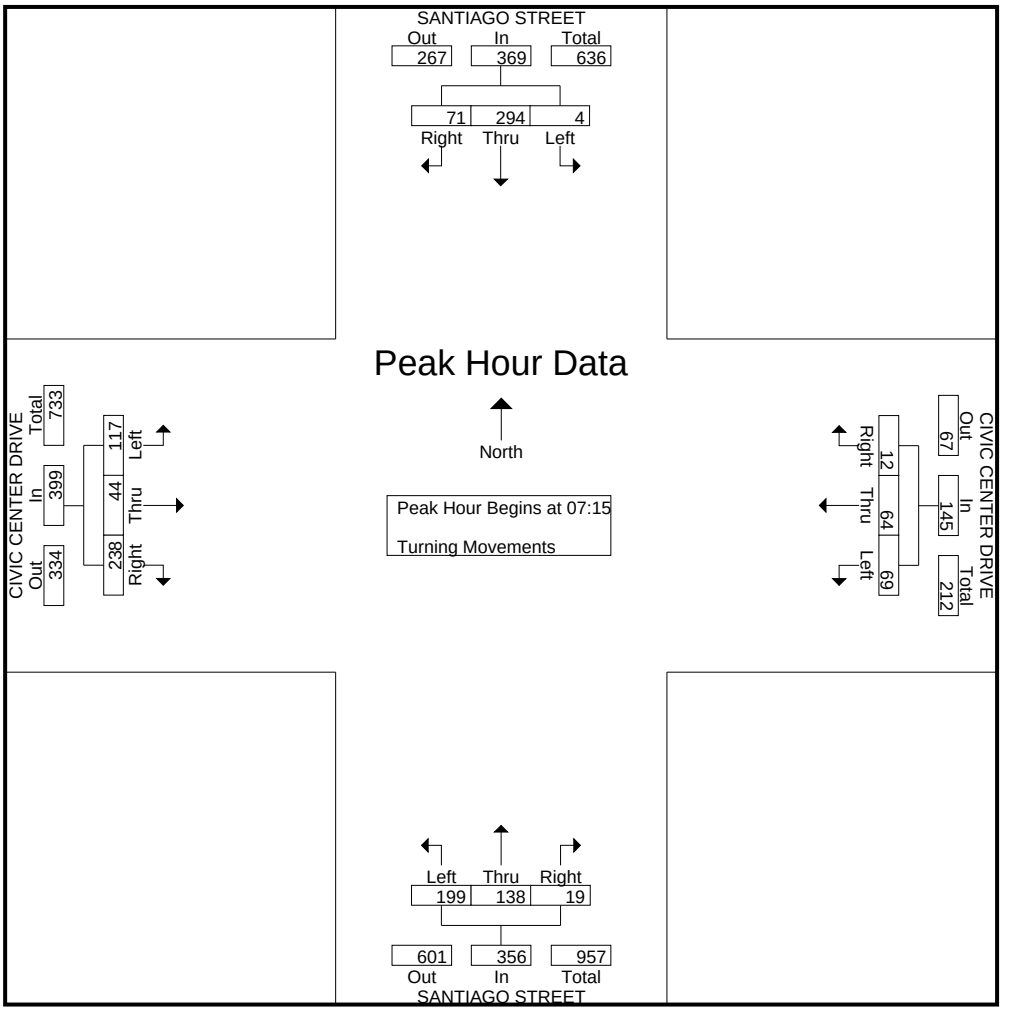
File Name : H1702013
Site Code : 00000000
Start Date : 2/9/2017
Page No : 2

	SANTIAGO STREET Southbound				CIVIC CENTER DRIVE Westbound				SANTIAGO STREET Northbound				CIVIC CENTER DRIVE Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15																	
07:15	15	73	0	88	3	12	14	29	1	20	37	58	47	9	30	86	261
07:30	**22**	**82**	0	**104**	**4**	14	14	32	**6**	41	55	102	**67**	11	**31**	**109**	347
07:45	16	70	**3**	89	2	**23**	**25**	**50**	6	**44**	**69**	**119**	63	**13**	29	105	**363**
08:00	18	69	1	88	3	15	16	34	6	33	38	77	61	11	27	99	298
Total Volume	71	294	4	369	12	64	69	145	19	138	199	356	238	44	117	399	1269
% App. Total	19.2	79.7	1.1		8.3	44.1	47.6		5.3	38.8	55.9		59.6	11	29.3		
PHF	.807	.896	.333	.887	.750	.696	.690	.725	.792	.784	.721	.748	.888	.846	.944	.915	.874

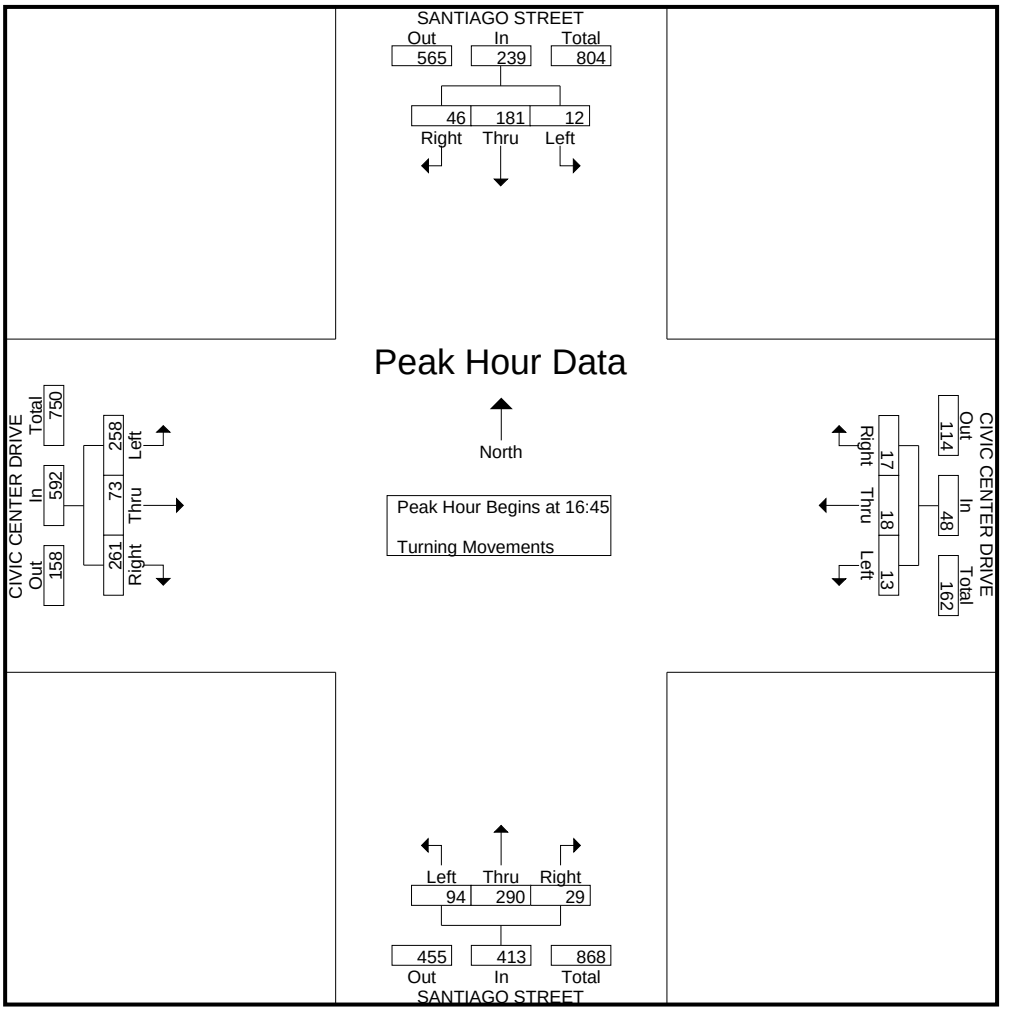


Transportation Studies, Inc.
2640 Walnut Avenue, Suite L
Tustin, CA. 92780

City: SANTA ANA
N-S Direction: SANTIAGO STREET
E-W Direction: CIVIC CENTER DRIVE

File Name : H1702013
Site Code : 00000000
Start Date : 2/9/2017
Page No : 3

	SANTIAGO STREET Southbound				CIVIC CENTER DRIVE Westbound				SANTIAGO STREET Northbound				CIVIC CENTER DRIVE Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 16:45																	
16:45	14	47	2	**63**	5	3	3	11	**12**	59	**27**	98	68	**20**	67	155	327
17:00	**16**	38	3	57	**6**	**8**	2	**16**	8	70	25	103	**90**	20	**77**	**187**	**363**
17:15	6	47	3	56	4	4	2	10	5	76	24	105	54	16	66	136	307
17:30	10	**49**	**4**	63	2	3	**6**	11	4	**85**	18	**107**	49	17	48	114	295
Total Volume	46	181	12	239	17	18	13	48	29	290	94	413	261	73	258	592	1292
% App. Total	19.2	75.7	5		35.4	37.5	27.1		7	70.2	22.8		44.1	12.3	43.6		
PHF	.719	.923	.750	.948	.708	.563	.542	.750	.604	.853	.870	.965	.725	.913	.838	.791	.890



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 pacific@aimtd.com

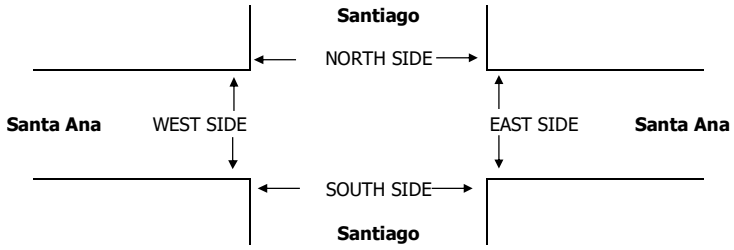
DATE:	LOCATION:	Santa Ana	PROJECT #:	SC0846
Thu, Feb 11, 16	NORTH & SOUTH:	Santiago	LOCATION #:	15
	EAST & WEST:	Santa Ana	CONTROL:	SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

☑ Add U-Turns to Left Turns

		NORTHBOUND (Santiago)			SOUTHBOUND (Santiago)			EASTBOUND (Santa Ana)			WESTBOUND (Santa Ana)				U-TURNS				
		NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB	TTL
	LANES:	1	1	1	1	1	1	1	2	0	1	2	1		0	0	0	0	
AM	7:00 AM	6	12	16	52	27	20	6	77	5	32	137	34	424	0	0	0	9	9
	7:15 AM	7	11	18	69	31	24	3	128	1	17	162	41	512	0	0	0	6	6
	7:30 AM	5	17	9	85	31	36	11	139	4	31	212	67	647	0	0	0	12	12
	7:45 AM	2	16	11	62	62	32	24	104	1	33	250	102	699	0	0	0	5	5
	8:00 AM	9	24	15	82	30	35	8	84	7	22	151	50	517	0	0	0	6	6
	8:15 AM	4	14	19	46	21	16	9	68	4	16	148	35	400	0	0	0	1	1
	8:30 AM	2	12	17	39	15	18	1	69	2	20	139	27	361	0	0	0	2	2
	8:45 AM	2	7	19	40	22	15	1	48	9	17	123	25	328	0	0	0	2	2
	VOLUMES	37	113	124	475	239	196	63	717	33	188	1,322	381	3,888	0	0	0	43	43
	APPROACH %	14%	41%	45%	52%	26%	22%	8%	88%	4%	10%	70%	20%						
	APP/DEPART	274	/	557	910	/	417	813	/	1,359	1,891	/	1,555	0					
	BEGIN PEAK HR		7:15 AM																
	VOLUMES	23	68	53	298	154	127	46	455	13	103	775	260	2,375					
	APPROACH %	16%	47%	37%	51%	27%	22%	9%	89%	3%	9%	68%	23%						
	PEAK HR FACTOR		0.750			0.928			0.834			0.739		0.849					
	APP/DEPART	144	/	374	579	/	241	514	/	835	1,138	/	925	0					
PM	4:00 PM	3	28	16	60	21	15	7	109	12	22	90	32	415	0	0	0	6	6
	4:15 PM	3	21	14	45	24	25	6	127	1	17	77	29	389	0	0	0	4	4
	4:30 PM	8	20	16	61	23	15	21	147	2	21	123	55	512	0	0	0	3	3
	4:45 PM	5	30	14	77	29	14	17	159	8	16	132	46	547	0	0	0	5	5
	5:00 PM	8	38	24	70	28	10	16	175	4	17	102	34	526	0	0	0	8	8
	5:15 PM	13	39	26	77	35	19	14	142	5	16	115	44	545	0	0	0	2	2
	5:30 PM	6	22	19	55	31	22	13	93	6	18	111	26	422	0	0	0	8	8
	5:45 PM	11	42	17	62	29	24	9	90	3	23	101	51	462	0	0	0	10	10
	VOLUMES	57	240	146	507	220	144	103	1,042	41	150	851	317	3,818	0	0	0	46	46
	APPROACH %	13%	54%	33%	58%	25%	17%	9%	88%	3%	11%	65%	24%						
	APP/DEPART	443	/	660	871	/	365	1,186	/	1,741	1,318	/	1,052	0					
	BEGIN PEAK HR		4:30 PM																
	VOLUMES	34	127	80	285	115	58	68	623	19	70	472	179	2,130					
	APPROACH %	14%	53%	33%	62%	25%	13%	10%	88%	3%	10%	65%	25%						
	PEAK HR FACTOR		0.772			0.874			0.910			0.906		0.973					
	APP/DEPART	241	/	374	458	/	186	710	/	1,006	721	/	564	0					



		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	9	18	12	8	47	9	16	9	8	42	0	2	3	0	5
	7:15 AM	14	6	8	6	34	11	4	7	6	28	3	2	1	0	6
	7:30 AM	9	4	8	7	28	9	4	6	7	26	0	0	2	0	2
	7:45 AM	1	4	5	2	12	1	4	5	2	12	0	0	0	0	0
	8:00 AM	1	1	6	1	9	1	0	5	1	7	0	1	1	0	2
	8:15 AM	0	1	2	1	4	0	0	0	1	1	0	1	2	0	3
	8:30 AM	2	1	2	2	7	1	1	2	2	6	1	0	0	0	1
	8:45 AM	0	6	3	3	12	0	5	1	3	9	0	1	2	0	3
	TOTAL	36	41	46	30	153	32	34	35	30	131	4	7	11	0	22
PM	4:00 PM	4	6	5	5	20	0	5	4	3	12	4	1	1	2	8
	4:15 PM	0	4	4	1	9	0	4	3	1	8	0	0	1	0	1
	4:30 PM	4	2	5	1	12	4	2	5	1	12	0	0	0	0	0
	4:45 PM	2	2	5	0	9	0	2	3	0	5	2	0	2	0	4
	5:00 PM	3	15	8	4	30	2	13	8	2	25	1	2	0	2	5
	5:15 PM	3	10	7	10	30	3	9	7	9	28	0	1	0	1	2
	5:30 PM	2	8	9	7	26	1	7	7	6	21	1	1	2	1	5
	5:45 PM	1	0	1	6	8	1	0	1	5	7	0	0	0	1	1
	TOTAL	19	47	44	34	144	11	42	38	27	118	8	5	6	7	26

Transportation Studies, Inc.
2640 Walnut Avenue, Suite L
Tustin, CA. 92780

City: SANTA ANA
N-S Direction: STANDARD AVENUE
E-W Direction: 1ST STREET

File Name : H1702014
Site Code : 00000000
Start Date : 2/9/2017
Page No : 1

Groups Printed- Turning Movements

	STANDARD AVENUE Southbound			1ST STREET Westbound			STANDARD AVENUE Northbound			1ST STREET Eastbound				
Start Time	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	U-Turn	Int. Total
07:00	0	41	6	1	179	10	28	43	17	50	282	10	2	669
07:15	3	49	7	1	228	10	19	42	23	39	376	21	2	820
07:30	4	61	3	5	255	14	43	55	28	60	324	20	2	874
07:45	3	65	8	2	282	19	27	47	36	70	291	19	3	872
Total	10	216	24	9	944	53	117	187	104	219	1273	70	9	3235
08:00	1	49	6	3	217	19	26	41	17	38	287	15	1	720
08:15	4	47	3	4	204	13	19	41	20	52	333	8	4	752
08:30	7	19	4	2	177	5	14	32	21	37	284	8	1	611
08:45	2	29	2	5	171	19	22	31	17	22	304	9	3	636
Total	14	144	15	14	769	56	81	145	75	149	1208	40	9	2719
*** BREAK ***														
16:00	5	41	5	3	251	17	19	78	53	31	272	22	2	799
16:15	4	39	2	4	251	23	34	98	43	36	294	19	2	849
16:30	2	37	5	4	243	17	30	79	44	28	311	20	2	822
16:45	2	33	1	6	265	29	23	79	45	26	297	26	4	836
Total	13	150	13	17	1010	86	106	334	185	121	1174	87	10	3306
17:00	8	45	9	6	246	24	51	93	35	30	311	24	6	888
17:15	2	48	2	4	297	21	23	81	39	34	300	37	2	890
17:30	5	50	3	7	281	24	13	98	49	37	290	42	15	914
17:45	7	40	4	3	290	19	28	84	56	24	281	33	12	881
Total	22	183	18	20	1114	88	115	356	179	125	1182	136	35	3573
Grand Total	59	693	70	60	3837	283	419	1022	543	614	4837	333	63	12833
Apprch %	7.2	84.3	8.5	1.4	91.8	6.8	21.1	51.5	27.4	10.5	82.7	5.7	1.1	
Total %	0.5	5.4	0.5	0.5	29.9	2.2	3.3	8	4.2	4.8	37.7	2.6	0.5	

Transportation Studies, Inc.
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City: SANTA ANA
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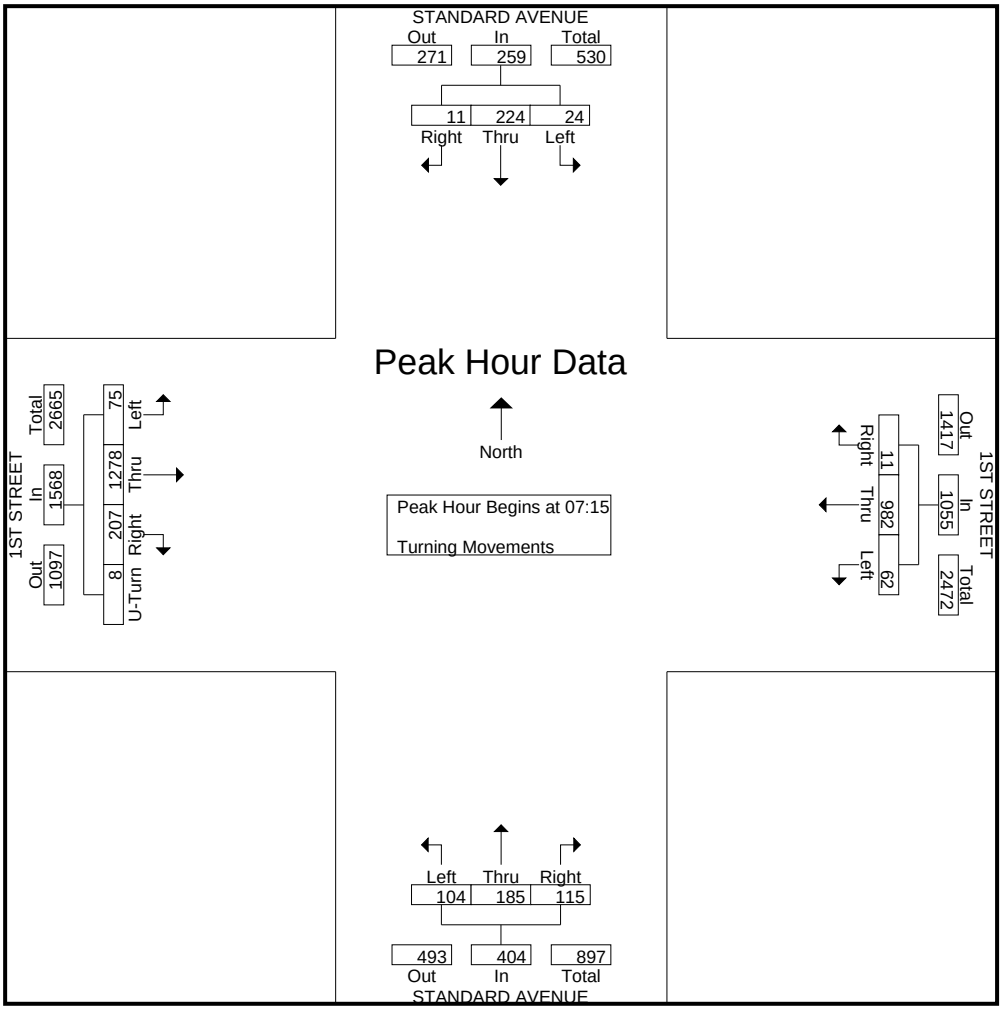
File Name : H1702014
Site Code : 00000000
Start Date : 2/9/2017
Page No : 2

	STANDARD AVENUE Southbound				1ST STREET Westbound				STANDARD AVENUE Northbound				1ST STREET Eastbound					
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																		
Peak Hour for Entire Intersection Begins at 07:15																		
07:15	3	49	7	59	1	228	10	239	19	42	23	84	39	376	21	2	438	820
07:30	4	61	3	68	**5**	255	14	274	**43**	**55**	28	**126**	60	324	20	2	406	**874**
07:45	**3**	**65**	**8**	**76**	**2**	**282**	**19**	**303**	**27**	**47**	**36**	110	**70**	291	19	**3**	383	872
08:00	1	49	6	56	3	217	19	239	26	41	17	84	38	287	15	1	341	720
Total Volume	11	224	24	259	11	982	62	1055	115	185	104	404	207	1278	75	8	1568	3286
% App. Total	4.2	86.5	9.3		1	93.1	5.9		28.5	45.8	25.7		13.2	81.5	4.8	0.5		
PHF	.688	.862	.750	.852	.550	.871	.816	.870	.669	.841	.722	.802	.739	.850	.893	.667	.895	.940



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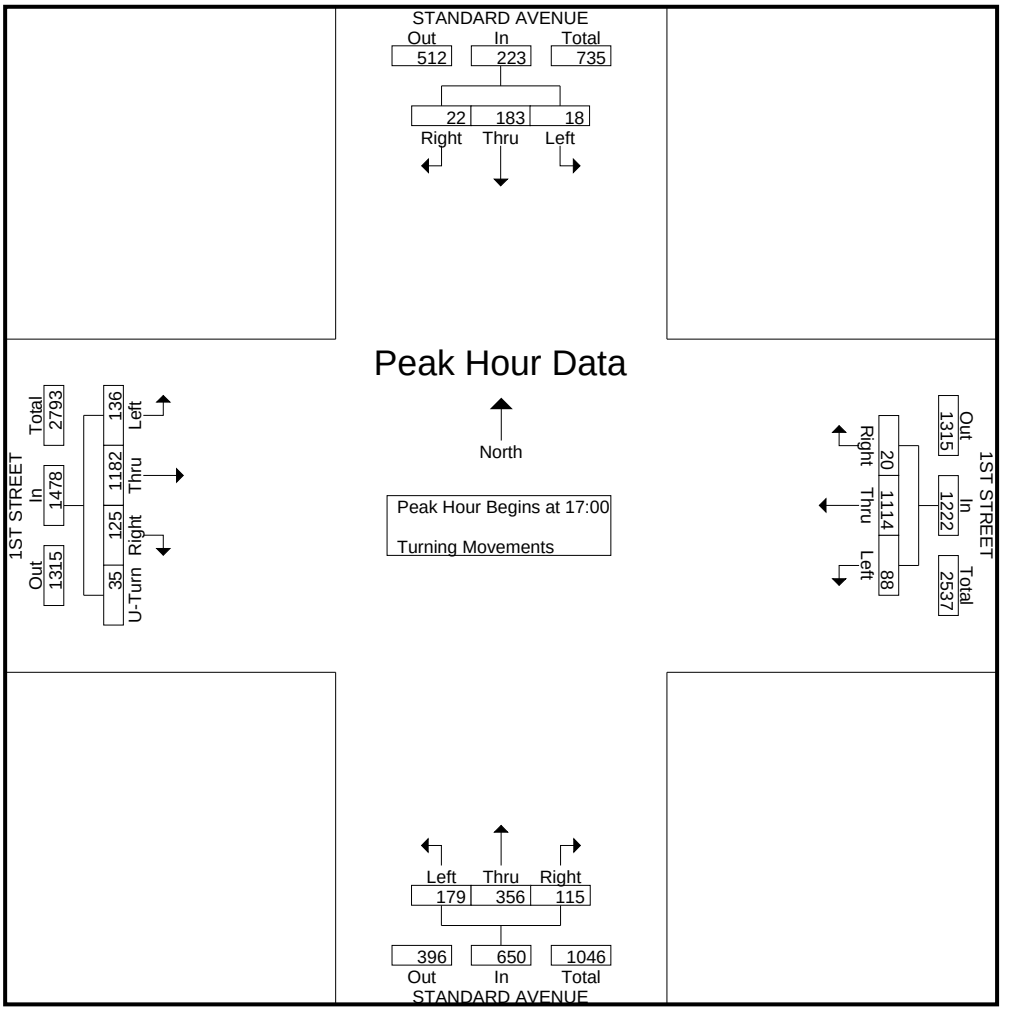
	STANDARD AVENUE Southbound				1ST STREET Westbound				STANDARD AVENUE Northbound				1ST STREET Eastbound					
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																		
Peak Hour for Entire Intersection Begins at 17:00																		
17:00	8	45	9	62	6	246	24	276	**51**	93	35	**179**	30	**311**	24	6	371	888
17:15	2	48	2	52	4	**297**	21	**322**										
17:30	**5**	**50**	3	58	**7**	281	24	312	13	**98**	49	160	**37**	290	**42**	**15**	**384**	**914**
17:45	**7**	**40**	**4**	**51**	**3**	**290**	**19**	**312**	**28**	**84**	**56**	168	24	281	33	12	350	881
Total Volume	22	183	18	223	20	1114	88	1222	115	356	179	650	125	1182	136	35	1478	3573
% App. Total	9.9	82.1	8.1		1.6	91.2	7.2		17.7	54.8	27.5		8.5	80	9.2	2.4		
PHF	.688	.915	.500	.899	.714	.938	.917	.949	.564	.908	.799	.908	.845	.950	.810	.583	.962	.977



INTERSECTION TURNING MOVEMENT COUNTS

T218

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Tue, May 15, 18

LOCATION: Santa Ana Zed
NORTH & SOUTH: Standard
EAST & WEST: McFadden

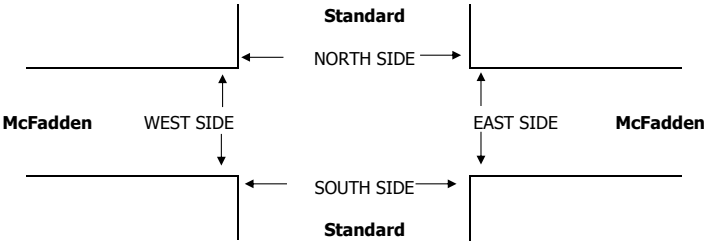
PROJECT #: SC1791
LOCATION #: 63
CONTROL: SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

☑ Add U-Turns to Left Turns

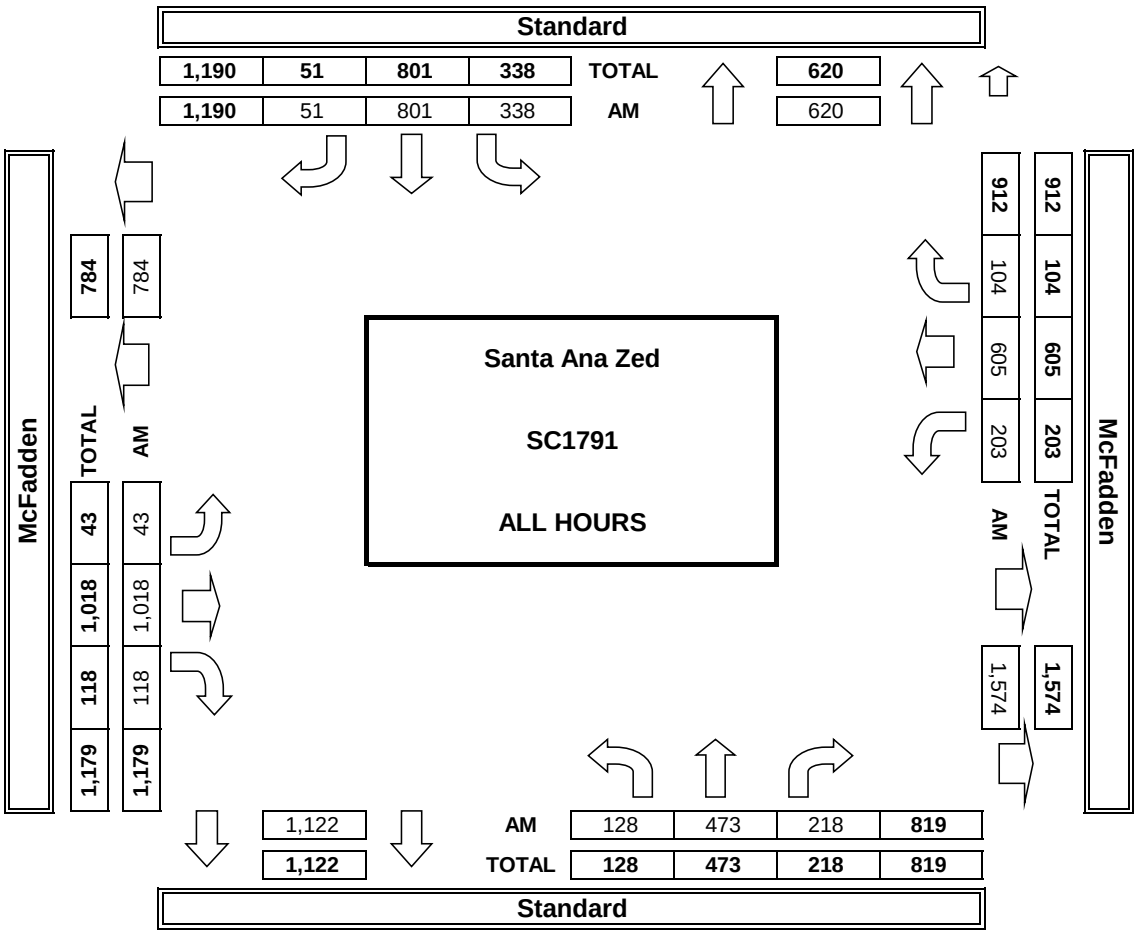
		NORTHBOUND Standard			SOUTHBOUND Standard			EASTBOUND McFadden			WESTBOUND McFadden				U-TURNS				
	LANES:	NL 1	NT 2	NR 0	SL 1	ST 2	SR 0	EL 1	ET 2	ER 0	WL 1	WT 2	WR 0	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	9	50	30	49	91	6	5	131	15	18	62	9	475	0	0	0	0	0
	7:15 AM	16	62	34	45	84	13	5	146	17	27	76	12	537	0	0	0	0	0
	7:30 AM	18	88	35	58	153	10	3	162	21	25	80	19	672	0	0	0	0	0
	7:45 AM	16	68	27	67	161	7	5	140	15	47	102	23	678	0	0	0	0	0
	8:00 AM	22	60	29	45	122	6	3	129	16	36	100	26	594	0	0	0	0	0
	8:15 AM	17	53	25	26	75	5	11	135	10	23	75	7	462	0	0	0	0	0
	8:30 AM	16	48	18	23	57	3	7	84	12	16	51	2	337	0	0	0	0	0
	8:45 AM	14	44	20	25	58	1	4	91	12	11	59	6	345	0	0	0	0	0
	VOLUMES	128	473	218	338	801	51	43	1,018	118	203	605	104	4,100	0	0	0	0	0
	APPROACH %	16%	58%	27%	28%	67%	4%	4%	86%	10%	22%	66%	11%						
	APP/DEPART	819	/	620	1,190	/	1,122	1,179	/	1,574	912	/	784	0					
	BEGIN PEAK HR		7:15 AM																
	VOLUMES	72	278	125	215	520	36	16	577	69	135	358	80	2,481					
	APPROACH %	15%	59%	26%	28%	67%	5%	2%	87%	10%	24%	62%	14%						
	PEAK HR FACTOR		0.842			0.820			0.890			0.833		0.915					
	APP/DEPART	475	/	374	771	/	724	662	/	917	573	/	466	0					

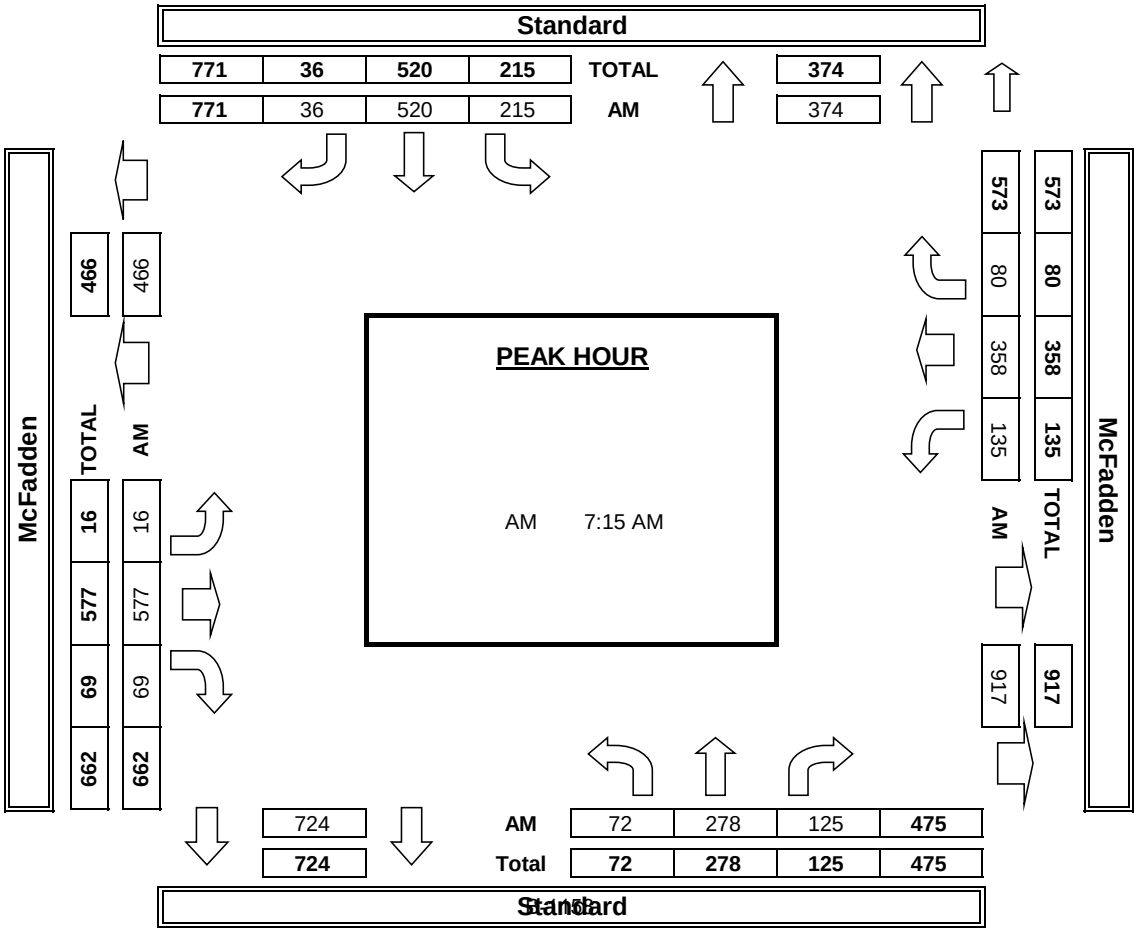


		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	9	22	18	13	62	9	19	17	9	54	0	3	1	4	8
	7:15 AM	20	26	39	10	95	19	24	37	8	88	1	2	2	2	7
	7:30 AM	19	32	25	27	103	16	31	21	23	91	3	1	4	4	12
	7:45 AM	12	43	55	29	139	10	42	51	28	131	2	1	4	1	8
	8:00 AM	8	27	24	19	78	7	26	21	19	73	1	1	3	0	5
	8:15 AM	17	19	16	13	65	16	19	15	10	60	1	0	1	3	5
	8:30 AM	7	20	13	13	53	6	19	12	11	48	1	1	1	2	5
	8:45 AM	6	13	4	8	31	5	12	3	8	28	1	1	1	0	3
	TOTAL	98	202	194	132	626	88	192	177	116	573	10	10	17	16	53
	AM BEGIN PEAK HR			7:15 AM			52	123	130	78	383					

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

T218

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Tue, May 15, 18

LOCATION: Santa Ana Zed
NORTH & SOUTH: Standard
EAST & WEST: McFadden

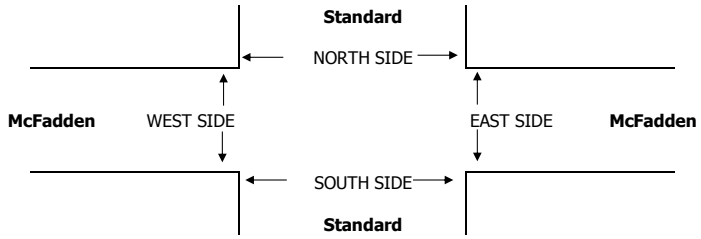
PROJECT #: SC1791
LOCATION #: 63
CONTROL: SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N / ◄ W / E ► / S ▼

☑ Add U-Turns to Left Turns

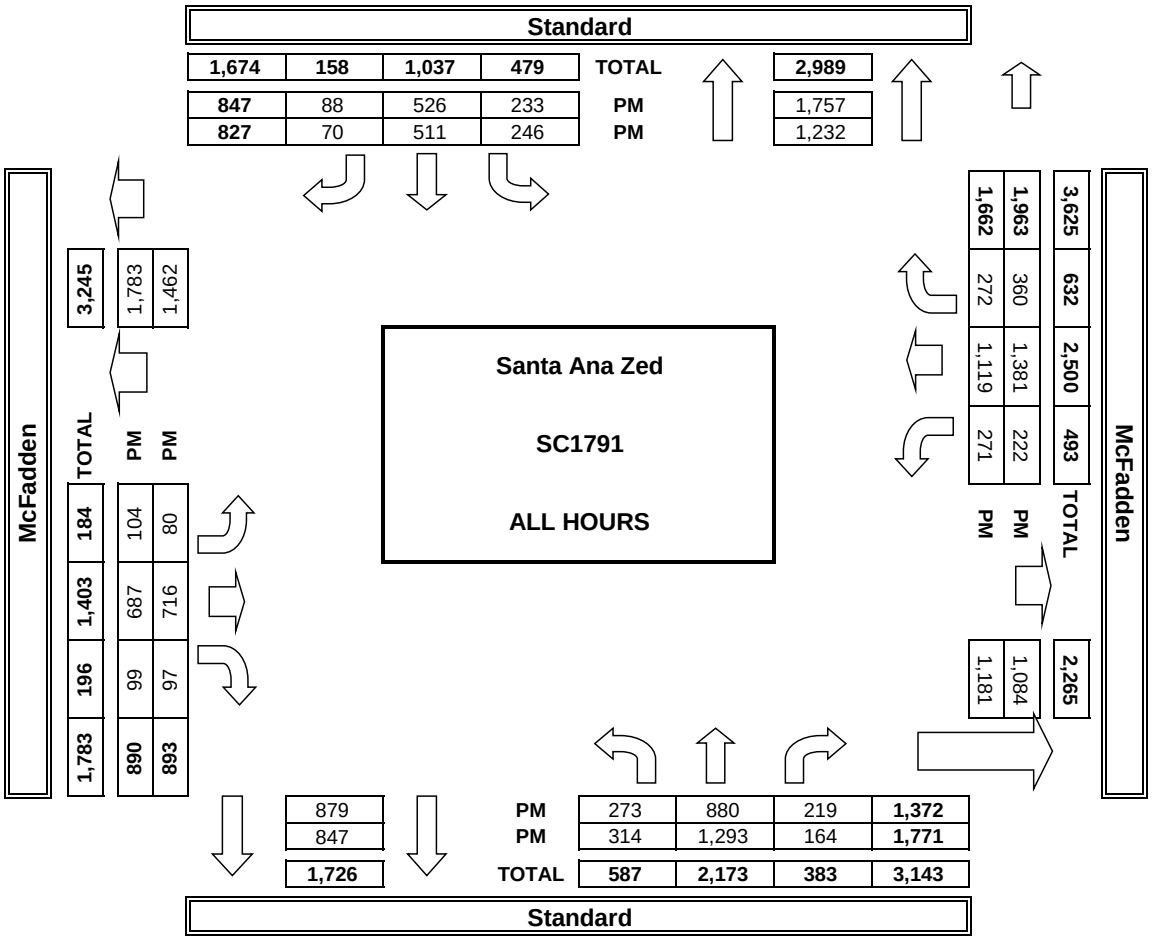
		NORTHBOUND Standard			SOUTHBOUND Standard			EASTBOUND McFadden			WESTBOUND McFadden				U-TURNS				
	LANES:	NL 1	NT 2	NR 0	SL 1	ST 2	SR 0	EL 1	ET 2	ER 0	WL 1	WT 2	WR 0	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
PM	2:00 PM	28	66	29	29	42	11	6	71	13	17	110	21	443	0	0	0	0	0
	2:15 PM	19	79	21	28	57	12	9	102	16	26	100	19	488	0	0	0	0	0
	2:30 PM	39	86	34	23	66	9	12	89	10	33	147	26	574	0	0	0	0	0
	2:45 PM	42	111	27	33	65	12	10	99	10	43	146	31	629	0	0	0	0	0
	3:00 PM	35	131	33	31	63	7	16	94	15	46	149	55	675	0	0	0	0	0
	3:15 PM	38	125	28	28	53	7	5	96	14	34	124	34	586	0	0	0	0	0
	3:30 PM	29	136	23	36	89	6	11	82	13	36	167	40	668	0	0	0	0	0
	3:45 PM	43	146	24	38	76	6	11	83	6	36	176	46	691	0	0	0	0	0
	VOLUMES	273	880	219	246	511	70	80	716	97	271	1,119	272	4,754	0	0	0	0	0
	APPROACH %	20%	64%	16%	30%	62%	8%	9%	80%	11%	16%	67%	16%						
	APP/DEPART	1,372	/	1,232	827	/	879	893	/	1,181	1,662	/	1,462	0					
	BEGIN PEAK HR		3:00 PM																
	VOLUMES	145	538	108	133	281	26	43	355	48	152	616	175	2,620					
	APPROACH %	18%	68%	14%	30%	64%	6%	10%	80%	11%	16%	65%	19%						
	PEAK HR FACTOR		0.928			0.840			0.892			0.914		0.948					
	APP/DEPART	791	/	756	440	/	481	446	/	596	943	/	787	0					
PM	4:00 PM	45	158	25	24	71	8	16	90	10	27	167	45	686	0	0	0	0	0
	4:15 PM	37	137	22	26	59	6	9	82	11	28	173	23	613	0	0	0	0	0
	4:30 PM	40	171	21	28	51	10	10	87	7	27	183	44	679	0	0	0	0	0
	4:45 PM	27	174	16	21	51	14	18	84	13	26	161	47	652	0	0	0	0	0
	5:00 PM	41	159	25	28	60	7	17	81	13	28	170	46	675	0	0	0	0	0
	5:15 PM	51	182	21	36	70	12	7	92	15	29	196	57	768	0	0	0	0	0
	5:30 PM	37	167	19	33	82	19	17	81	17	29	176	47	724	0	0	0	0	0
	5:45 PM	36	145	15	37	82	12	10	90	13	28	155	51	674	0	0	0	0	0
	VOLUMES	314	1,293	164	233	526	88	104	687	99	222	1,381	360	5,471	0	0	0	0	0
	APPROACH %	18%	73%	9%	28%	62%	10%	12%	77%	11%	11%	70%	18%						
	APP/DEPART	1,771	/	1,757	847	/	847	890	/	1,084	1,963	/	1,783	0					
	BEGIN PEAK HR		5:00 PM																
	VOLUMES	165	653	80	134	294	50	51	344	58	114	697	201	2,841					
	APPROACH %	18%	73%	9%	28%	62%	10%	11%	76%	13%	11%	69%	20%						
	PEAK HR FACTOR		0.884			0.892			0.985			0.897		0.925					
	APP/DEPART	898	/	905	478	/	466	453	/	558	1,012	/	912	0					

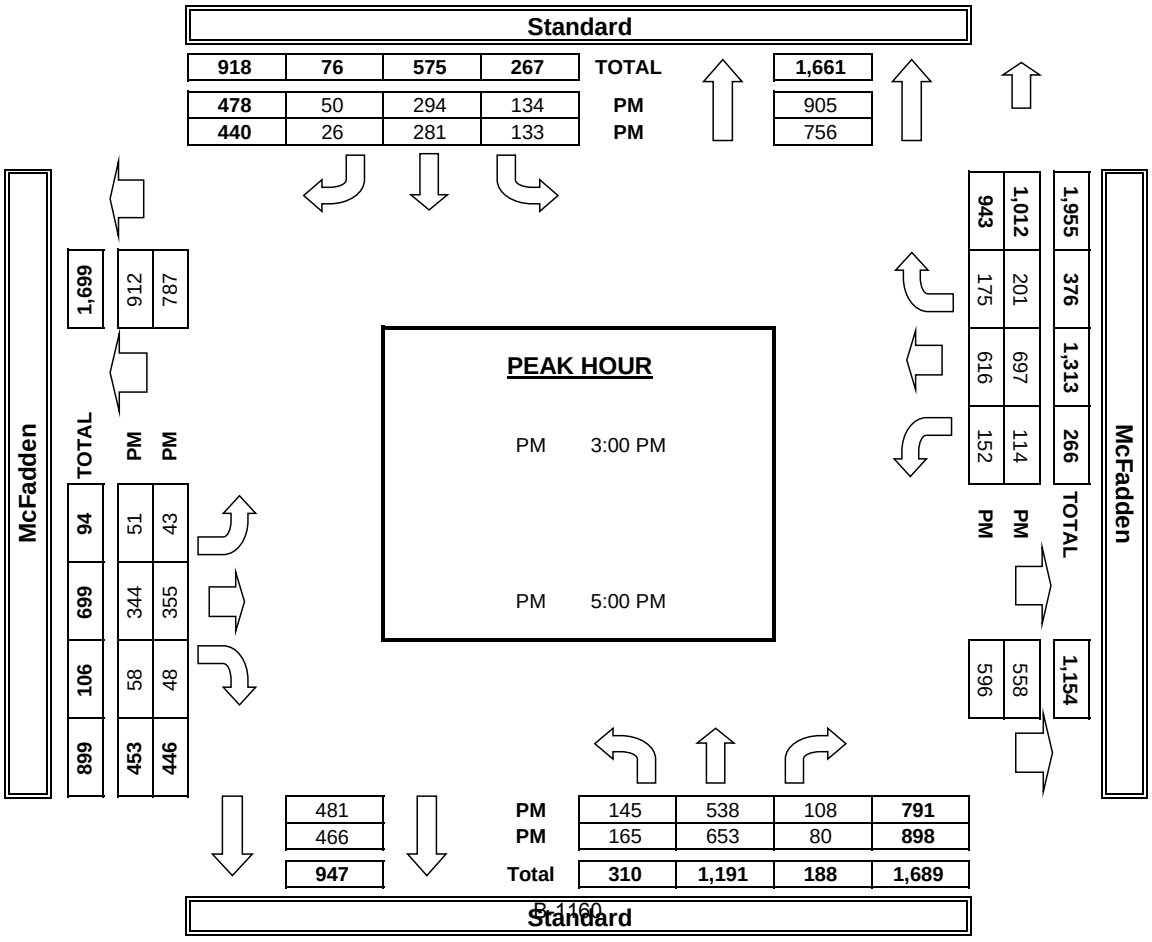


		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
PM	2:00 PM	17	16	28	14	75	12	15	27	14	68	5	1	1	0	7
	2:15 PM	26	20	29	16	91	26	20	29	16	91	0	0	0	0	0
	2:30 PM	29	25	34	28	116	25	24	31	25	105	4	1	3	3	11
	2:45 PM	31	47	45	21	144	27	45	42	19	133	4	2	3	2	11
	3:00 PM	62	47	47	39	195	54	45	44	38	181	8	2	3	1	14
	3:15 PM	43	46	49	28	166	40	46	49	28	163	3	0	0	0	3
	3:30 PM	23	29	41	23	116	17	29	38	22	106	6	0	3	1	10
	3:45 PM	19	17	28	8	72	15	15	27	7	64	4	2	1	1	8
	TOTAL	250	247	301	177	975	216	239	287	169	911	34	8	14	8	64
	AM BEGIN PEAK HR	3:00 PM					126	135	158	95	514					
PM	4:00 PM	10	27	24	21	82	10	26	24	19	79	0	1	0	2	3
	4:15 PM	20	30	18	22	90	15	29	17	18	79	5	1	1	4	11
	4:30 PM	12	30	15	21	78	10	29	15	18	72	2	1	0	3	6
	4:45 PM	21	14	18	23	76	16	14	13	20	63	5	0	5	3	13
	5:00 PM	15	19	22	18	74	12	18	22	17	69	3	1	0	1	5
	5:15 PM	33	23	33	26	115	29	22	30	23	104	4	1	3	3	11
	5:30 PM	17	21	16	28	82	15	16	15	21	67	2	5	1	7	15
	5:45 PM	17	24	21	32	94	15	16	20	29	80	2	8	1	3	14
	TOTAL	145	188	167	191	691	122	170	156	165	613	23	18	11	26	78
	PM BEGIN PEAK HR	5:00 PM					71	72	87	90	320					

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 pacific@aimtd.com

DATE: Tue, Feb 9, 16

LOCATION: Santa Ana
NORTH & SOUTH: Halladay
EAST & WEST: Warner

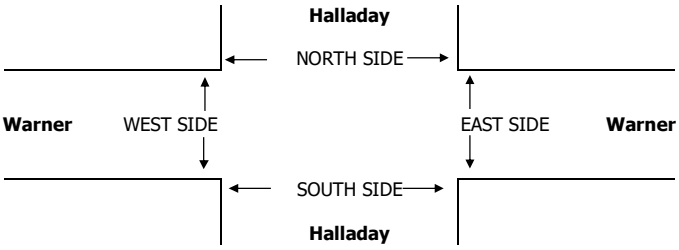
PROJECT #: SC0846
LOCATION #: 44
CONTROL: SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — N / W / E / S

Add U-Turns to Left Turns

		NORTHBOUND Halladay			SOUTHBOUND Halladay			EASTBOUND Warner			WESTBOUND Warner				U-TURNS				
	LANES:	NL 1	NT X	NR 1	SL X	ST X	SR X	EL X	ET 2	ER 0	WL 0	WT 2	WR X	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	13	0	6	0	0	0	0	247	29	18	151	0	464	0	0	0	0	0
	7:15 AM	10	0	24	0	0	0	0	293	28	36	139	0	530	0	0	0	0	0
	7:30 AM	14	0	24	0	0	0	0	308	46	39	181	0	612	0	0	0	0	0
	7:45 AM	10	0	22	0	0	0	0	323	42	45	146	0	588	0	0	0	0	0
	8:00 AM	7	0	26	0	0	0	0	308	23	33	117	0	514	0	0	0	0	0
	8:15 AM	7	0	21	0	0	0	0	298	17	24	114	0	481	0	0	0	0	0
	8:30 AM	12	0	24	0	0	0	0	245	22	16	134	0	453	0	0	0	0	0
	8:45 AM	14	0	26	0	0	0	0	188	14	24	132	0	398	0	0	0	0	0
	VOLUMES	87	0	173	0	0	0	0	2,210	221	235	1,114	0	4,040	0	0	0	0	0
	APPROACH %	33%	0%	67%	0%	0%	0%	0%	91%	9%	17%	83%	0%						
	APP/DEPART	260	/	0	0	/	456	2,431	/	2,383	1,349	/	1,201	0					
	BEGIN PEAK HR		7:15 AM																
	VOLUMES	41	0	96	0	0	0	0	1,232	139	153	583	0	2,244					
	APPROACH %	30%	0%	70%	0%	0%	0%	0%	90%	10%	21%	79%	0%						
	PEAK HR FACTOR		0.901			0.000			0.939			0.836		0.917					
	APP/DEPART	137	/	0	0	/	292	1,371	/	1,328	736	/	624	0					
PM	4:00 PM	39	0	75	0	0	0	0	197	12	26	236	0	585	0	0	0	0	0
	4:15 PM	29	0	80	0	0	0	0	204	17	22	211	0	563	0	0	0	0	0
	4:30 PM	35	0	81	0	0	0	0	219	22	26	270	0	653	0	0	0	0	0
	4:45 PM	32	0	70	0	0	0	1	205	11	32	244	0	595	0	0	1	0	1
	5:00 PM	44	0	84	0	0	0	0	210	20	30	295	0	683	0	0	0	0	0
	5:15 PM	51	0	103	0	0	0	0	255	36	47	268	0	760	0	0	0	0	0
	5:30 PM	38	0	83	0	0	0	0	204	25	41	231	0	622	0	0	0	0	0
	5:45 PM	30	0	85	0	0	0	0	202	24	37	217	0	595	0	0	0	0	0
	VOLUMES	298	0	661	0	0	0	1	1,696	167	261	1,972	0	5,056	0	0	1	0	1
	APPROACH %	31%	0%	69%	0%	0%	0%	0%	91%	9%	12%	88%	0%						
	APP/DEPART	959	/	0	0	/	428	1,864	/	2,357	2,233	/	2,271	0					
	BEGIN PEAK HR		4:30 PM																
	VOLUMES	162	0	338	0	0	0	1	889	89	135	1,077	0	2,691					
	APPROACH %	32%	0%	68%	0%	0%	0%	0%	91%	9%	11%	89%	0%						
	PEAK HR FACTOR		0.812			0.000			0.841			0.932		0.885					
	APP/DEPART	500	/	0	0	/	224	979	/	1,227	1,212	/	1,240	0					



		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	0	0	0	8	8	0	0	0	8	8	0	0	0	0	0
	7:15 AM	0	1	0	2	3	0	1	0	2	3	0	0	0	0	0
	7:30 AM	1	1	0	1	3	0	1	0	1	2	1	0	0	0	1
	7:45 AM	0	0	0	2	2	0	0	0	2	2	0	0	0	0	0
	8:00 AM	0	3	0	2	5	0	2	0	2	4	0	1	0	0	1
	8:15 AM	0	0	0	5	5	0	0	0	4	4	0	0	0	1	1
	8:30 AM	0	1	0	1	2	0	0	0	1	1	0	1	0	0	1
	8:45 AM	0	0	0	7	7	0	0	0	7	7	0	0	0	0	0
	TOTAL	1	6	0	28	35	0	4	0	27	31	1	2	0	1	4
PM	4:00 PM	0	1	0	5	6	0	0	0	5	5	0	1	0	0	1
	4:15 PM	0	1	0	4	5	0	1	0	3	4	0	0	0	1	1
	4:30 PM	0	0	0	7	7	0	0	0	6	6	0	0	0	1	1
	4:45 PM	1	0	0	6	7	0	0	0	2	2	1	0	0	4	5
	5:00 PM	0	2	0	9	11	0	2	0	8	10	0	0	0	1	1
	5:15 PM	0	1	0	16	17	0	0	0	15	15	0	1	0	1	2
	5:30 PM	0	0	0	5	5	0	0	0	4	4	0	0	0	1	1
	5:45 PM	0	2	0	2	4	0	1	0	2	3	0	1	0	0	1
	TOTAL	1	7	0	54	62	0	4	0	45	49	1	3	0	9	13

INTERSECTION TURNING MOVEMENT COUNTS

T218

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Tue, May 14, 19

LOCATION: Santa Ana
NORTH & SOUTH: Halladay
EAST & WEST: Dyer

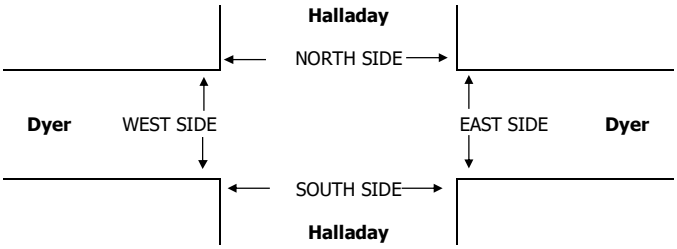
PROJECT #: SC2183
LOCATION #: 21
CONTROL: SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — N ▲ / ◄ W / E ► / S ▼

☑ Add U-Turns to Left Turns

		NORTHBOUND Halladay			SOUTHBOUND Halladay			EASTBOUND Dyer			WESTBOUND Dyer				U-TURNS				
	LANES:	NL 1	NT 1	NR 0	SL 1	ST 0	SR 1	EL 1	ET 3	ER 0	WL 1	WT 3	WR 0	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	1	4	14	37	8	9	2	266	1	25	152	33	552	0	0	0	0	0
	7:15 AM	1	3	14	44	5	8	9	334	5	33	147	33	636	0	0	0	0	0
	7:30 AM	1	4	8	51	8	13	11	363	0	20	175	26	680	0	0	0	0	0
	7:45 AM	4	5	10	43	9	7	9	358	2	20	161	21	649	0	0	0	0	0
	8:00 AM	4	5	16	43	14	10	11	306	2	40	136	20	607	0	0	0	0	0
	8:15 AM	2	6	12	52	14	8	5	290	3	41	149	19	601	0	0	0	1	1
	8:30 AM	3	5	8	46	8	6	4	288	7	34	140	18	567	0	0	0	1	1
	8:45 AM	0	3	12	35	14	9	6	235	6	27	148	18	513	0	0	0	0	0
	VOLUMES	16	35	94	351	80	70	57	2,440	26	240	1,208	188	4,805	0	0	0	2	2
	APPROACH %	11%	24%	65%	70%	16%	14%	2%	97%	1%	15%	74%	11%						
	APP/DEPART	145	/	280	501	/	344	2,523	/	2,887	1,636	/	1,294	0					
	BEGIN PEAK HR		7:15 AM																
	VOLUMES	10	17	48	181	36	38	40	1,361	9	113	619	100	2,572					
	APPROACH %	13%	23%	64%	71%	14%	15%	3%	97%	1%	14%	74%	12%						
	PEAK HR FACTOR		0.750			0.885			0.943			0.941		0.946					
	APP/DEPART	75	/	157	255	/	158	1,410	/	1,590	832	/	667	0					
PM	4:00 PM	5	43	50	37	3	12	21	287	0	14	280	21	773	0	0	0	1	1
	4:15 PM	7	37	56	33	6	10	31	281	4	19	312	25	821	0	0	0	1	1
	4:30 PM	15	36	56	35	3	10	43	335	1	12	362	26	934	0	0	0	0	0
	4:45 PM	8	32	51	26	3	4	30	308	1	11	331	34	839	0	0	0	0	0
	5:00 PM	15	61	56	28	5	11	34	338	4	14	333	30	929	0	0	0	1	1
	5:15 PM	2	49	42	23	3	6	41	304	2	7	410	24	913	0	0	0	0	0
	5:30 PM	7	44	46	27	8	3	37	337	2	15	345	40	911	0	0	0	0	0
	5:45 PM	3	48	45	20	9	10	35	320	1	15	298	32	836	0	0	0	1	1
	VOLUMES	62	350	402	229	40	66	272	2,510	15	107	2,671	232	6,956	0	0	0	4	4
	APPROACH %	8%	43%	49%	68%	12%	20%	10%	90%	1%	4%	89%	8%						
	APP/DEPART	814	/	854	335	/	158	2,797	/	3,145	3,010	/	2,799	0					
	BEGIN PEAK HR		4:30 PM																
	VOLUMES	40	178	205	112	14	31	148	1,285	8	44	1,436	114	3,615					
	APPROACH %	9%	42%	48%	71%	9%	20%	10%	89%	1%	3%	90%	7%						
	PEAK HR FACTOR		0.801			0.818			0.951			0.904		0.968					
	APP/DEPART	423	/	440	157	/	65	1,441	/	1,603	1,594	/	1,507	0					



		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	AM BEGIN PEAK HR	7:15 AM					0	0	0	0	0					
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	PM BEGIN PEAK HR	4:30 PM					0	0	0	0	0					

INTERSECTION TURNING MOVEMENT COUNTS

T218

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Tue, May 14, 19

LOCATION: Santa Ana
NORTH & SOUTH: SR-55 SB Ramps
EAST & WEST: MacArthur

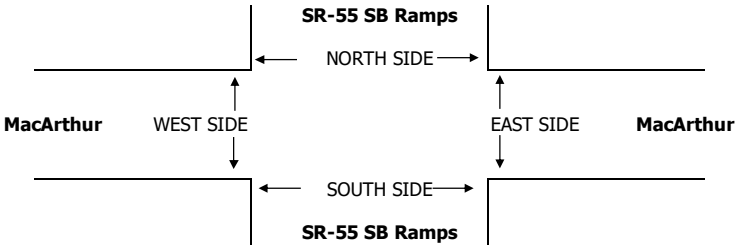
PROJECT #: SC2183
LOCATION #: 23
CONTROL: SIGNAL

NOTES:
PM WB queue

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

☑ Add U-Turns to Left Turns

		NORTHBOUND SR-55 SB Ramps			SOUTHBOUND SR-55 SB Ramps			EASTBOUND MacArthur			WESTBOUND MacArthur				U-TURNS				
	LANES:	NL X	NT X	NR X	SL 2	ST X	SR 2	EL X	ET 3	ER 2	WL X	WT 3	WR 1	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	0	0	0	236	0	222	0	299	232	0	239	22	1,250	0	0	0	0	0
	7:15 AM	0	0	0	233	0	229	0	324	267	0	246	33	1,332	0	0	0	0	0
	7:30 AM	0	0	0	208	0	215	0	397	280	0	305	31	1,436	0	0	0	0	0
	7:45 AM	0	0	0	256	0	229	0	378	246	0	318	38	1,465	0	0	0	0	0
	8:00 AM	0	0	0	242	0	209	0	342	238	0	314	39	1,384	0	0	0	0	0
	8:15 AM	0	0	0	245	0	208	0	309	252	0	325	35	1,374	0	0	0	0	0
	8:30 AM	0	0	0	204	0	144	0	339	250	0	277	55	1,269	0	0	0	0	0
	8:45 AM	0	0	0	237	0	165	0	287	197	0	248	64	1,198	0	0	0	0	0
	VOLUMES	0	0	0	1,861	0	1,621	0	2,675	1,962	0	2,272	317	10,708	0	0	0	0	0
	APPROACH %	0%	0%	0%	53%	0%	47%	0%	58%	42%	0%	88%	12%						
	APP/DEPART	0	/	317	3,482	/	1,962	4,637	/	4,536	2,589	/	3,893	0					
	BEGIN PEAK HR		7:30 AM																
	VOLUMES	0	0	0	951	0	861	0	1,426	1,016	0	1,262	143	5,659					
	APPROACH %	0%	0%	0%	52%	0%	48%	0%	58%	42%	0%	90%	10%						
	PEAK HR FACTOR		0.000			0.934			0.902			0.976		0.966					
	APP/DEPART	0	/	143	1,812	/	1,016	2,442	/	2,377	1,405	/	2,123	0					
PM	4:00 PM	0	0	0	62	0	132	0	326	263	0	389	160	1,332	0	0	0	0	0
	4:15 PM	0	0	0	71	0	187	0	275	234	0	357	148	1,272	0	0	0	0	0
	4:30 PM	0	0	0	74	0	170	0	277	269	0	415	153	1,358	0	0	0	0	0
	4:45 PM	0	0	0	69	0	176	0	274	239	0	366	133	1,257	0	0	0	0	0
	5:00 PM	0	0	0	63	0	166	0	319	282	0	370	178	1,378	0	0	0	0	0
	5:15 PM	0	0	0	79	0	178	0	285	239	0	365	132	1,278	0	0	0	0	0
	5:30 PM	0	0	0	61	0	180	0	291	206	0	370	125	1,233	0	0	0	0	0
	5:45 PM	0	0	0	93	0	171	0	245	187	0	350	105	1,151	0	0	0	0	0
	VOLUMES	0	0	0	572	0	1,360	0	2,292	1,919	0	2,982	1,134	10,259	0	0	0	0	0
	APPROACH %	0%	0%	0%	30%	0%	70%	0%	54%	46%	0%	72%	28%						
	APP/DEPART	0	/	1,134	1,932	/	1,919	4,211	/	2,864	4,116	/	4,342	0					
	BEGIN PEAK HR		4:30 PM																
	VOLUMES	0	0	0	285	0	690	0	1,155	1,029	0	1,516	596	5,271					
	APPROACH %	0%	0%	0%	29%	0%	71%	0%	53%	47%	0%	72%	28%						
	PEAK HR FACTOR		0.000			0.948			0.908			0.930		0.956					
	APP/DEPART	0	/	596	975	/	1,029	2,184	/	1,440	2,112	/	2,206	0					



		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	AM BEGIN PEAK HR	7:30 AM					0	0	0	0	0					
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	PM BEGIN PEAK HR	4:30 PM					0	0	0	0	0					

INTERSECTION TURNING MOVEMENT COUNTS

T218

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Tue, May 14, 19

LOCATION: Santa Ana
NORTH & SOUTH: SR-55 NB Ramps
EAST & WEST: MacArthur

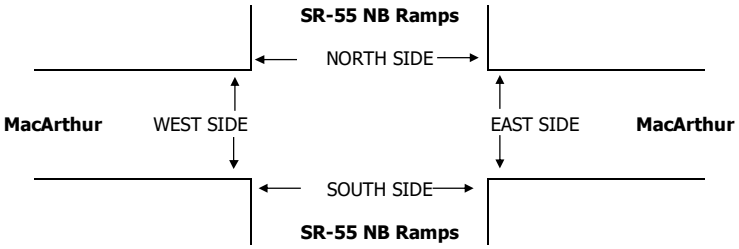
PROJECT #: SC2183
LOCATION #: 22
CONTROL: SIGNAL

NOTES: PM WB queue

AM / PM / MD / OTHER / OTHER — ▲ N ◄ W E ► S ▼

☐ Add U-Turns to Left Turns

		NORTHBOUND SR-55 NB Ramps			SOUTHBOUND SR-55 NB Ramps			EASTBOUND MacArthur			WESTBOUND MacArthur				U-TURNS				
	LANES:	NL 2	NT X	NR 1	SL X	ST X	SR X	EL X	ET 2	ER 2	WL X	WT 3	WR 1	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	183	0	210	0	0	0	0	388	146	0	75	55	1,057	0	0	0	0	0
	7:15 AM	188	0	207	0	0	0	0	365	193	0	88	48	1,089	0	0	0	0	0
	7:30 AM	232	0	201	0	0	0	0	374	237	0	106	48	1,198	0	0	0	0	0
	7:45 AM	215	0	264	0	0	0	0	423	219	0	142	62	1,325	0	0	0	0	0
	8:00 AM	233	0	239	0	0	0	0	399	183	0	118	68	1,240	0	0	0	0	0
	8:15 AM	219	0	262	0	0	0	0	397	149	0	145	63	1,235	0	0	0	0	0
	8:30 AM	209	0	203	0	0	0	0	366	182	0	130	66	1,156	0	0	0	0	0
	8:45 AM	176	0	247	0	0	0	0	374	146	0	134	74	1,151	0	0	0	0	0
	VOLUMES	1,655	0	1,833	0	0	0	0	3,086	1,455	0	938	484	9,451	0	0	0	0	0
	APPROACH %	47%	0%	53%	0%	0%	0%	0%	68%	32%	0%	66%	34%						
	APP/DEPART	3,488	/	484	0	/	1,455	4,541	/	4,919	1,422	/	2,593	0					
	BEGIN PEAK HR		7:30 AM																
	VOLUMES	899	0	966	0	0	0	0	1,593	788	0	511	241	4,998					
	APPROACH %	48%	0%	52%	0%	0%	0%	0%	67%	33%	0%	68%	32%						
	PEAK HR FACTOR		0.969			0.000			0.927			0.904		0.943					
	APP/DEPART	1,865	/	241	0	/	788	2,381	/	2,559	752	/	1,410	0					
PM	4:00 PM	164	0	132	0	0	0	0	178	215	0	391	248	1,328	0	0	0	0	0
	4:15 PM	144	0	122	0	0	0	0	183	160	0	355	271	1,235	0	0	1	0	1
	4:30 PM	167	0	77	0	0	0	0	178	171	0	404	267	1,264	0	0	0	0	0
	4:45 PM	159	0	90	0	0	0	0	164	177	0	336	284	1,210	0	0	0	0	0
	5:00 PM	131	0	67	0	0	0	0	211	175	0	419	273	1,276	0	0	0	0	0
	5:15 PM	160	0	70	0	0	0	0	206	160	0	336	227	1,159	0	0	0	0	0
	5:30 PM	158	0	110	0	0	0	0	235	121	0	338	214	1,176	0	0	0	0	0
	5:45 PM	152	0	93	0	0	0	0	181	151	0	297	218	1,092	0	0	0	0	0
	VOLUMES	1,235	0	761	0	0	0	0	1,536	1,330	0	2,876	2,002	9,741	0	0	1	0	1
	APPROACH %	62%	0%	38%	0%	0%	0%	0%	54%	46%	0%	59%	41%						
	APP/DEPART	1,996	/	2,002	0	/	1,330	2,867	/	2,297	4,878	/	4,112	0					
	BEGIN PEAK HR		4:00 PM																
	VOLUMES	634	0	421	0	0	0	0	703	723	0	1,486	1,070	5,038					
	APPROACH %	60%	0%	40%	0%	0%	0%	0%	49%	51%	0%	58%	42%						
	PEAK HR FACTOR		0.891			0.000			0.908			0.952		0.948					
	APP/DEPART	1,055	/	1,070	0	/	723	1,427	/	1,124	2,556	/	2,121	0					



		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	AM BEGIN PEAK HR	7:30 AM					0	0	0	0	0					
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	PM BEGIN PEAK HR	4:00 PM					0	0	0	0	0					

INTERSECTION TURNING MOVEMENT COUNTS

T218

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Thu, May 16, 19

LOCATION: Santa Ana
NORTH & SOUTH: SR-55 SB Ramps
EAST & WEST: Dyer

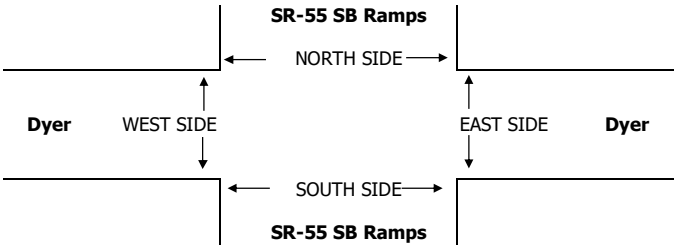
PROJECT #: SC2183
LOCATION #: 28
CONTROL: SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N ◄ W E ► S ▼

☑ Add U-Turns to Left Turns

		NORTHBOUND SR-55 SB Ramps			SOUTHBOUND SR-55 SB Ramps			EASTBOUND Dyer			WESTBOUND Dyer				U-TURNS				
	LANES:	NL 1.5	NT 0.5	NR 2	SL 0.5	ST 1.5	SR 1	EL 1	ET 3	ER 1	WL 2	WT 3	WR 1	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	73	5	119	7	46	12	3	254	66	76	129	23	813	0	0	0	0	0
	7:15 AM	56	2	140	5	53	16	7	320	68	79	161	18	925	0	0	0	1	1
	7:30 AM	64	7	127	12	72	16	2	344	81	95	153	21	994	0	0	0	0	0
	7:45 AM	51	6	125	5	68	16	14	331	64	101	166	38	985	0	0	0	0	0
	8:00 AM	65	6	120	14	47	11	6	314	76	90	167	27	943	0	0	0	1	1
	8:15 AM	38	6	128	18	52	16	12	335	61	117	154	20	957	0	0	0	0	0
	8:30 AM	45	3	88	18	41	18	7	243	70	131	137	18	819	0	0	0	0	0
	8:45 AM	46	0	73	18	37	12	12	235	61	92	170	19	775	0	0	0	0	0
	VOLUMES	438	35	920	97	416	117	63	2,376	547	781	1,237	184	7,211	0	0	0	2	2
	APPROACH %	31%	3%	66%	15%	66%	19%	2%	80%	18%	35%	56%	8%						
	APP/DEPART	1,393	/	282	630	/	1,742	2,986	/	3,395	2,202	/	1,792	0					
	BEGIN PEAK HR		7:30 AM																
	VOLUMES	218	25	500	49	239	59	34	1,324	282	403	640	106	3,879					
	APPROACH %	29%	3%	67%	14%	69%	17%	2%	81%	17%	35%	56%	9%						
	PEAK HR FACTOR		0.938			0.868			0.960			0.942		0.976					
	APP/DEPART	743	/	165	347	/	923	1,640	/	1,874	1,149	/	917	0					
PM	4:00 PM	74	1	43	30	57	19	18	308	62	113	219	14	958	0	0	0	0	0
	4:15 PM	74	0	56	21	34	14	16	336	42	107	258	11	969	0	0	0	0	0
	4:30 PM	64	2	55	26	55	24	11	383	51	138	238	9	1,056	0	1	0	1	2
	4:45 PM	84	2	63	15	39	22	15	370	48	127	233	23	1,041	0	0	1	0	1
	5:00 PM	74	4	49	40	61	36	19	372	57	138	257	15	1,122	0	0	0	0	0
	5:15 PM	93	1	70	20	68	26	19	382	48	147	253	16	1,143	0	0	0	1	1
	5:30 PM	59	1	56	23	40	16	23	341	32	97	243	18	949	0	0	1	0	1
	5:45 PM	83	2	68	17	47	22	31	346	40	95	196	15	962	0	0	0	0	0
	VOLUMES	605	13	460	192	401	179	152	2,838	380	962	1,897	121	8,200	0	1	2	2	5
	APPROACH %	56%	1%	43%	25%	52%	23%	5%	84%	11%	32%	64%	4%						
	APP/DEPART	1,078	/	285	772	/	1,741	3,370	/	3,491	2,980	/	2,683	0					
	BEGIN PEAK HR		4:30 PM																
	VOLUMES	315	9	237	101	223	108	64	1,507	204	550	981	63	4,362					
	APPROACH %	56%	2%	42%	23%	52%	25%	4%	85%	11%	35%	62%	4%						
	PEAK HR FACTOR		0.855			0.788			0.988			0.958		0.954					
	APP/DEPART	561	/	136	432	/	975	1,775	/	1,846	1,594	/	1,405	0					



		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	AM BEGIN PEAK HR			7:30 AM			0	0	0	0	0					
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	PM BEGIN PEAK HR			4:30 PM			0	0	0	0	0					

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 pacific@aimtd.com

DATE: Tue, Mar 1, 16

LOCATION: Santa Ana
NORTH & SOUTH: Glassell
EAST & WEST: La Veta

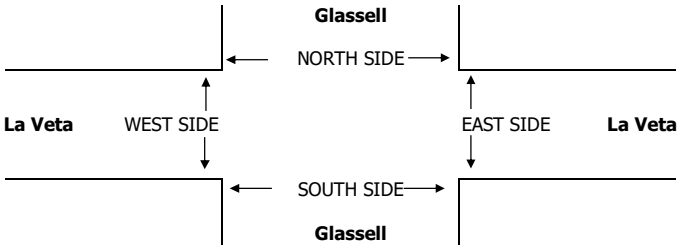
PROJECT #: SC0846
LOCATION #: 5
CONTROL: SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

☑ Add U-Turns to Left Turns

		NORTHBOUND Glassell			SOUTHBOUND Glassell			EASTBOUND La Veta			WESTBOUND La Veta				U-TURNS				
	LANES:	NL 2	NT 1	NR 1	SL 1	ST 2	SR 0	EL 1	ET 1	ER 1	WL 1	WT 2	WR 0	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	23	68	11	1	70	14	8	28	80	44	33	1	381	0	0	0	0	0
	7:15 AM	61	73	17	3	94	16	8	37	85	57	39	1	491	0	0	0	0	0
	7:30 AM	58	85	22	1	104	17	6	54	100	65	58	0	570	0	0	0	0	0
	7:45 AM	70	93	27	3	72	17	15	61	107	53	65	1	584	0	0	0	0	0
	8:00 AM	76	121	43	9	74	19	10	45	82	52	61	1	593	0	0	0	0	0
	8:15 AM	48	96	28	3	94	22	5	27	71	56	55	3	508	0	0	0	0	0
	8:30 AM	47	94	16	1	47	9	6	36	82	35	30	0	403	0	0	0	0	0
	8:45 AM	44	112	29	0	30	12	14	34	67	32	43	0	417	0	0	0	0	0
	VOLUMES	427	742	193	21	585	126	72	322	674	394	384	7	3,947	0	0	0	0	0
	APPROACH %	31%	54%	14%	3%	80%	17%	7%	30%	63%	50%	49%	1%						
	APP/DEPART	1,362	/	821	732	/	1,653	1,068	/	536	785	/	937	0					
	BEGIN PEAK HR		7:30 AM																
	VOLUMES	252	395	120	16	344	75	36	187	360	226	239	5	2,255					
	APPROACH %	33%	51%	16%	4%	79%	17%	6%	32%	62%	48%	51%	1%						
	PEAK HR FACTOR		0.799			0.891			0.796			0.955		0.951					
	APP/DEPART	767	/	436	435	/	930	583	/	323	470	/	566	0					
PM	4:00 PM	62	122	38	2	107	5	19	69	92	35	54	3	608	0	0	0	0	0
	4:15 PM	72	111	60	5	103	11	16	53	100	31	33	2	597	0	0	0	0	0
	4:30 PM	89	104	42	3	114	9	16	34	79	29	36	1	556	0	0	0	0	0
	4:45 PM	91	114	40	1	118	14	12	45	79	23	38	2	577	0	0	0	0	0
	5:00 PM	106	131	45	3	105	7	20	58	128	33	49	2	687	0	0	0	0	0
	5:15 PM	109	132	38	5	125	11	24	82	112	33	61	3	735	0	0	0	0	0
	5:30 PM	122	117	36	3	120	8	13	61	95	40	58	2	675	0	0	0	0	0
	5:45 PM	116	90	34	3	129	9	21	56	108	42	101	3	712	0	0	0	0	0
	VOLUMES	767	921	333	25	921	74	141	458	793	266	430	18	5,147	0	0	0	0	0
	APPROACH %	38%	46%	16%	2%	90%	7%	10%	33%	57%	37%	60%	3%						
	APP/DEPART	2,021	/	1,080	1,020	/	1,980	1,392	/	816	714	/	1,271	0					
	BEGIN PEAK HR		5:00 PM																
	VOLUMES	453	470	153	14	479	35	78	257	443	148	269	10	2,809					
	APPROACH %	42%	44%	14%	3%	91%	7%	10%	33%	57%	35%	63%	2%						
	PEAK HR FACTOR		0.954			0.936			0.892			0.731		0.955					
	APP/DEPART	1,076	/	558	528	/	1,070	778	/	424	427	/	757	0					



		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	1	3	0	1	5	0	2	0	1	3	1	1	0	0	2
	7:15 AM	2	0	2	2	6	2	0	1	2	5	0	0	1	0	1
	7:30 AM	3	1	1	1	6	3	1	1	0	5	0	0	0	1	1
	7:45 AM	2	3	3	0	8	1	3	2	0	6	1	0	1	0	2
	8:00 AM	0	2	2	2	6	0	2	1	2	5	0	0	1	0	1
	8:15 AM	2	2	2	1	7	1	2	1	0	4	1	0	1	1	3
	8:30 AM	6	1	0	3	10	6	1	0	2	9	0	0	0	1	1
	8:45 AM	4	0	3	3	10	4	0	2	2	8	0	0	1	1	2
	TOTAL	20	12	13	13	58	17	11	8	9	45	3	1	5	4	13
PM	4:00 PM	1	5	2	2	10	1	5	2	0	8	0	0	0	2	2
	4:15 PM	2	3	1	5	11	2	3	1	2	8	0	0	0	3	3
	4:30 PM	2	1	0	5	8	2	1	0	3	6	0	0	0	2	2
	4:45 PM	5	2	0	5	12	4	1	0	3	8	1	1	0	2	4
	5:00 PM	8	0	6	2	16	7	0	6	1	14	1	0	0	1	2
	5:15 PM	5	1	3	2	11	4	1	3	2	10	1	0	0	0	1
	5:30 PM	5	3	3	0	11	4	3	3	0	10	1	0	0	0	1
	5:45 PM	4	0	3	5	12	4	0	1	5	10	0	0	2	0	2
	TOTAL	32	15	18	26	91	28	14	16	16	74	4	1	2	10	17

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 pacific@aimtd.com

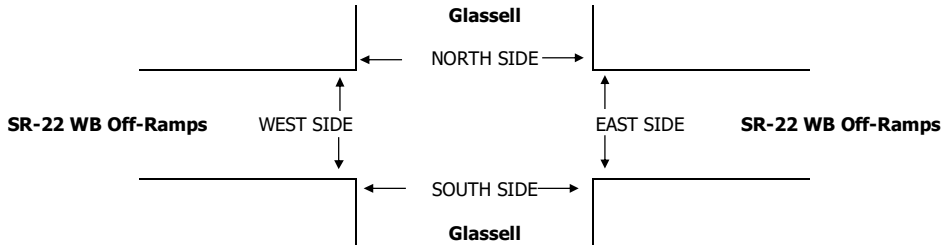
DATE:	LOCATION:	Santa Ana	PROJECT #:	SC0846
Tue, Mar 1, 16	NORTH & SOUTH:	Glassell	LOCATION #:	1
	EAST & WEST:	SR-22 WB Off-Ramps	CONTROL:	SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

☑ Add U-Turns to Left Turns

		NORTHBOUND Glassell			SOUTHBOUND Glassell			EASTBOUND SR-22 WB Off-Ramps			WESTBOUND SR-22 WB Off-Ramps				U-TURNS				
	LANES:	NL 1	NT 2	NR X	SL X	ST 2	SR 1	EL X	ET X	ER X	WL 1.5	WT 0	WR 1.5	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	62	71	0	0	133	56	0	0	0	61	0	44	427	0	0	0	0	0
	7:15 AM	107	93	0	0	177	63	0	0	0	79	4	89	612	0	0	0	0	0
	7:30 AM	109	124	0	0	174	76	0	0	0	67	0	101	651	0	0	0	0	0
	7:45 AM	139	164	0	0	207	102	0	0	0	60	0	113	785	0	0	0	0	0
	8:00 AM	125	158	0	0	156	91	0	0	0	67	0	106	703	0	0	0	0	0
	8:15 AM	103	127	0	0	166	67	0	0	0	67	0	70	600	0	0	0	0	0
	8:30 AM	99	98	0	0	142	44	0	0	0	92	0	70	545	0	0	0	0	0
	8:45 AM	94	129	0	0	103	50	0	0	0	69	0	76	521	0	0	0	0	0
	VOLUMES	838	964	0	0	1,258	549	0	0	0	562	4	669	4,844	0	0	0	0	0
	APPROACH %	47%	53%	0%	0%	70%	30%	0%	0%	0%	46%	0%	54%						
	APP/DEPART	1,802	/	1,633	1,807	/	1,820	0	/	0	1,235	/	1,391	0					
	BEGIN PEAK HR		7:15 AM																
	VOLUMES	480	539	0	0	714	332	0	0	0	273	4	409	2,751					
	APPROACH %	47%	53%	0%	0%	68%	32%	0%	0%	0%	40%	1%	60%						
	PEAK HR FACTOR		0.841			0.846			0.000			0.991		0.876					
	APP/DEPART	1,019	/	948	1,046	/	987	0	/	0	686	/	816	0					
PM	4:00 PM	99	134	0	0	171	45	0	0	0	31	1	52	533	0	0	0	0	0
	4:15 PM	126	219	0	0	221	53	0	0	0	54	0	58	731	0	0	0	0	0
	4:30 PM	123	188	0	0	182	55	0	0	0	53	0	62	663	0	0	0	0	0
	4:45 PM	129	207	0	0	198	40	0	0	0	51	0	72	697	0	0	0	0	0
	5:00 PM	138	239	0	0	198	68	0	0	0	39	1	88	771	0	0	0	0	0
	5:15 PM	113	210	0	0	230	69	0	0	0	43	1	86	752	0	0	0	0	0
	5:30 PM	144	225	0	0	200	47	0	0	0	55	2	66	739	0	0	0	0	0
	5:45 PM	140	200	0	0	215	61	0	0	0	56	2	103	777	1	0	0	0	1
	VOLUMES	1,012	1,622	0	0	1,615	438	0	0	0	382	7	587	5,663	1	0	0	0	1
	APPROACH %	38%	62%	0%	0%	79%	21%	0%	0%	0%	39%	1%	60%						
	APP/DEPART	2,634	/	2,209	2,053	/	1,998	0	/	0	976	/	1,456	0					
	BEGIN PEAK HR		5:00 PM																
	VOLUMES	535	874	0	0	843	245	0	0	0	193	6	343	3,039					
	APPROACH %	38%	62%	0%	0%	77%	23%	0%	0%	0%	36%	1%	63%						
	PEAK HR FACTOR		0.934			0.910			0.000			0.842		0.978					
	APP/DEPART	1,409	/	1,217	1,088	/	1,037	0	/	0	542	/	785	0					



		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	0	0	3	1	4	0	0	1	0	1	0	0	2	1	3
	7:15 AM	0	0	3	1	4	0	0	2	0	2	0	0	1	1	2
	7:30 AM	0	0	3	1	4	0	0	2	0	2	0	0	1	1	2
	7:45 AM	0	0	1	1	2	0	0	1	0	1	0	0	0	1	1
	8:00 AM	0	0	4	3	7	0	0	2	3	5	0	0	2	0	2
	8:15 AM	0	0	3	1	4	0	0	1	0	1	0	0	2	1	3
	8:30 AM	0	0	2	3	5	0	0	1	2	3	0	0	1	1	2
	8:45 AM	0	0	2	1	3	0	0	1	0	1	0	0	1	1	2
	TOTAL	0	0	21	12	33	0	0	11	5	16	0	0	10	7	17
PM	4:00 PM	0	0	4	5	9	0	0	2	4	6	0	0	2	1	3
	4:15 PM	0	0	8	1	9	0	0	4	1	5	0	0	4	0	4
	4:30 PM	0	0	3	2	5	0	0	2	0	2	0	0	1	2	3
	4:45 PM	0	0	5	6	11	0	0	2	3	5	0	0	3	3	6
	5:00 PM	0	0	6	2	8	0	0	4	0	4	0	0	2	2	4
	5:15 PM	0	0	5	0	5	0	0	2	0	2	0	0	3	0	3
	5:30 PM	0	0	6	0	6	0	0	3	0	3	0	0	3	0	3
	5:45 PM	0	0	6	2	8	0	0	4	0	4	0	0	2	2	4
	TOTAL	0	0	43	18	61	0	0	23	8	31	0	0	20	10	30

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 pacific@aimtd.com

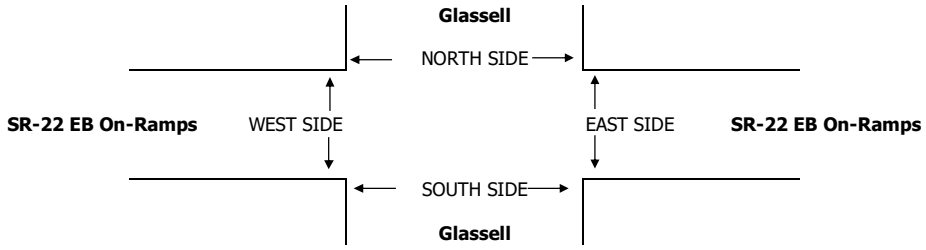
DATE:	LOCATION:	Santa Ana	PROJECT #:	SC0846
Tue, Mar 1, 16	NORTH & SOUTH:	Glassell	LOCATION #:	2
	EAST & WEST:	SR-22 EB On-Ramps	CONTROL:	SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

☑ Add U-Turns to Left Turns

		NORTHBOUND Glassell			SOUTHBOUND Glassell			EASTBOUND SR-22 EB On-Ramps			WESTBOUND SR-22 EB On-Ramps				U-TURNS				
	LANES:	NL X	NT 2	NR 1	SL 1	ST 2	SR X	EL 1.3	ET 0.3	ER 1.3	WL X	WT X	WR X	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	0	113	51	79	158	0	35	0	209	0	0	0	645	0	0	0	0	0
	7:15 AM	0	167	51	58	192	0	46	0	239	0	0	0	753	0	0	0	0	0
	7:30 AM	0	185	66	81	159	0	57	0	236	0	0	0	784	0	0	0	0	0
	7:45 AM	0	222	50	71	182	0	84	0	241	0	0	0	850	0	0	0	0	0
	8:00 AM	0	212	42	59	171	0	60	0	256	0	0	0	800	0	0	0	0	0
	8:15 AM	0	147	40	70	162	0	53	1	271	0	0	0	744	0	0	0	0	0
	8:30 AM	0	157	41	43	159	0	60	1	233	0	0	0	694	0	0	0	0	0
	8:45 AM	0	145	36	53	128	0	71	0	208	0	0	0	641	0	0	0	0	0
	VOLUMES	0	1,348	377	514	1,311	0	466	2	1,893	0	0	0	5,911	0	0	0	0	0
	APPROACH %	0%	78%	22%	28%	72%	0%	20%	0%	80%	0%	0%	0%						
	APP/DEPART	1,725	/	1,814	1,825	/	3,204	2,361	/	893	0	/	0	0					
	BEGIN PEAK HR		7:15 AM																
	VOLUMES	0	786	209	269	704	0	247	0	972	0	0	0	3,187					
	APPROACH %	0%	79%	21%	28%	72%	0%	20%	0%	80%	0%	0%	0%						
	PEAK HR FACTOR		0.915			0.961			0.938			0.000		0.937					
	APP/DEPART	995	/	1,033	973	/	1,676	1,219	/	478	0	/	0	0					
PM	4:00 PM	0	237	78	85	155	0	64	0	116	0	0	0	735	0	0	0	0	0
	4:15 PM	0	226	64	92	164	0	86	0	126	0	0	0	758	0	1	0	0	1
	4:30 PM	0	253	63	77	146	0	59	0	121	0	0	0	719	0	0	0	0	0
	4:45 PM	0	265	58	91	138	0	77	0	129	0	0	0	758	0	0	0	0	0
	5:00 PM	0	276	69	100	160	0	67	0	147	0	0	0	819	0	0	0	0	0
	5:15 PM	0	277	85	87	157	0	53	2	119	0	0	0	780	0	0	0	0	0
	5:30 PM	0	310	71	87	165	0	44	0	111	0	0	0	788	0	0	0	0	0
	5:45 PM	0	292	70	92	172	0	56	1	106	0	0	0	789	0	0	0	0	0
	VOLUMES	0	2,136	558	711	1,257	0	506	3	975	0	0	0	6,146	0	1	0	0	1
	APPROACH %	0%	79%	21%	36%	64%	0%	34%	0%	66%	0%	0%	0%						
	APP/DEPART	2,694	/	2,643	1,968	/	2,232	1,484	/	1,271	0	/	0	0					
	BEGIN PEAK HR		5:00 PM																
	VOLUMES	0	1,155	295	366	654	0	220	3	483	0	0	0	3,176					
	APPROACH %	0%	80%	20%	36%	64%	0%	31%	0%	68%	0%	0%	0%						
	PEAK HR FACTOR		0.951			0.966			0.825			0.000		0.969					
	APP/DEPART	1,450	/	1,375	1,020	/	1,137	706	/	664	0	/	0	0					



		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	0	0	3	1	4	0	0	1	0	1	0	0	2	1	3
	7:15 AM	0	0	4	1	5	0	0	2	0	2	0	0	2	1	3
	7:30 AM	0	0	1	1	2	0	0	1	0	1	0	0	0	1	1
	7:45 AM	0	0	3	1	4	0	0	2	1	3	0	0	1	0	1
	8:00 AM	0	0	4	2	6	0	0	2	2	4	0	0	2	0	2
	8:15 AM	0	0	2	1	3	0	0	1	0	1	0	0	1	1	2
	8:30 AM	0	0	2	4	6	0	0	1	2	3	0	0	1	2	3
	8:45 AM	0	1	2	0	3	0	1	1	0	2	0	0	1	0	1
	TOTAL	0	1	21	11	33	0	1	11	5	17	0	0	10	6	16
PM	4:00 PM	0	0	6	5	11	0	0	2	4	6	0	0	4	1	5
	4:15 PM	0	0	7	2	9	0	0	5	1	6	0	0	2	1	3
	4:30 PM	0	0	4	3	7	0	0	2	1	3	0	0	2	2	4
	4:45 PM	0	0	5	5	10	0	0	2	2	4	0	0	3	3	6
	5:00 PM	0	0	7	1	8	0	0	4	0	4	0	0	3	1	4
	5:15 PM	0	2	5	0	7	0	2	3	0	5	0	0	2	0	2
	5:30 PM	0	0	6	0	6	0	0	3	0	3	0	0	3	0	3
	5:45 PM	0	0	11	3	14	0	0	8	0	8	0	0	3	3	6
	TOTAL	0	2	51	19	72	0	2	29	8	39	0	0	22	11	33

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 pacific@aimtd.com

DATE: Thu, Feb 11, 16

LOCATION: Santa Ana
NORTH & SOUTH: Grand
EAST & WEST: Fairhaven

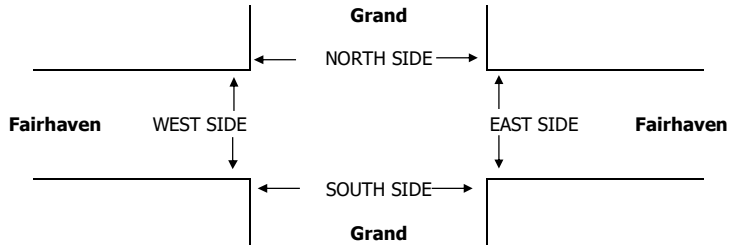
PROJECT #: SC0846
LOCATION #: 2
CONTROL: SIGNAL

NOTES:

AM PM MD OTHER OTHER — ▲ N ◄ W E ► S ▼

☑ Add U-Turns to Left Turns

		NORTHBOUND Grand			SOUTHBOUND Grand			EASTBOUND Fairhaven			WESTBOUND Fairhaven				U-TURNS				
		NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB	TTL
	LANES:	1	3	0	1	2	1	1	2	0	1	1	1		0	0	0	0	
AM	7:00 AM	4	146	15	32	350	6	19	6	11	38	3	30	660	1	0	0	0	1
	7:15 AM	3	169	23	27	367	7	18	15	13	55	3	55	755	3	0	0	0	3
	7:30 AM	6	198	30	45	341	12	26	13	20	56	2	57	806	1	0	0	0	1
	7:45 AM	3	183	31	50	333	8	29	22	13	63	9	52	796	1	1	0	0	2
	8:00 AM	5	158	17	45	346	3	22	7	10	70	12	56	751	2	0	0	0	2
	8:15 AM	9	152	27	28	387	3	19	5	11	66	5	35	747	2	1	0	0	3
	8:30 AM	6	154	7	36	342	16	26	6	8	62	4	42	709	2	0	0	0	2
	8:45 AM	2	164	22	31	335	11	15	6	9	47	1	41	684	1	0	0	0	1
	VOLUMES	38	1,324	172	294	2,801	66	174	80	95	457	39	368	5,908	13	2	0	0	15
	APPROACH %	2%	86%	11%	9%	89%	2%	50%	23%	27%	53%	5%	43%						
	APP/DEPART	1,534	/	1,868	3,161	/	3,366	349	/	544	864	/	130	0					
	BEGIN PEAK HR		7:15 AM																
	VOLUMES	17	708	101	167	1,387	30	95	57	56	244	26	220	3,108					
	APPROACH %	2%	86%	12%	11%	88%	2%	46%	27%	27%	50%	5%	45%						
	PEAK HR FACTOR		0.882			0.988			0.813			0.888		0.964					
	APP/DEPART	826	/	1,024	1,584	/	1,694	208	/	324	490	/	66	0					
PM	4:00 PM	11	271	36	31	181	12	14	11	3	40	6	31	647	4	2	0	0	6
	4:15 PM	17	254	36	36	206	18	21	6	4	44	7	29	678	3	0	0	0	3
	4:30 PM	15	306	34	45	187	14	12	4	4	44	9	24	698	5	3	0	0	8
	4:45 PM	9	313	47	45	203	21	13	7	7	44	7	36	752	3	1	0	0	4
	5:00 PM	9	303	53	54	164	23	25	12	7	54	4	38	746	3	4	0	0	7
	5:15 PM	11	293	62	58	238	16	12	7	4	56	9	47	813	1	4	0	0	5
	5:30 PM	14	297	60	58	218	17	23	13	11	61	18	45	835	3	1	0	0	4
	5:45 PM	10	273	58	43	239	22	15	11	9	74	15	43	812	1	1	0	0	2
	VOLUMES	96	2,310	386	370	1,636	143	135	71	49	417	75	293	5,981	23	16	0	0	39
	APPROACH %	3%	83%	14%	17%	76%	7%	53%	28%	19%	53%	10%	37%						
	APP/DEPART	2,792	/	2,754	2,149	/	2,125	255	/	811	785	/	291	0					
	BEGIN PEAK HR		5:00 PM																
	VOLUMES	44	1,166	233	213	859	78	75	43	31	245	46	173	3,206					
	APPROACH %	3%	81%	16%	19%	75%	7%	50%	29%	21%	53%	10%	37%						
	PEAK HR FACTOR		0.972			0.921			0.793			0.879		0.960					
	APP/DEPART	1,443	/	1,424	1,150	/	1,143	149	/	479	464	/	160	0					



		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	0	6	3	1	10	0	6	1	1	8	0	0	2	0	2
	7:15 AM	0	2	2	0	4	0	2	2	0	4	0	0	0	0	0
	7:30 AM	2	18	9	3	32	2	18	9	1	30	0	0	0	2	2
	7:45 AM	18	22	18	8	66	18	22	16	8	64	0	0	2	0	2
	8:00 AM	6	13	1	3	23	6	13	1	2	22	0	0	0	1	1
	8:15 AM	1	3	1	1	6	1	3	1	1	6	0	0	0	0	0
	8:30 AM	2	3	3	2	10	2	3	1	1	7	0	0	2	1	3
	8:45 AM	2	1	4	0	7	2	0	3	0	5	0	1	1	0	2
	TOTAL	31	68	41	18	158	31	67	34	14	146	0	1	7	4	12
PM	4:00 PM	3	4	1	1	9	3	4	1	0	8	0	0	0	1	1
	4:15 PM	4	2	1	1	8	4	1	1	1	7	0	1	0	0	1
	4:30 PM	2	3	4	2	11	2	2	3	0	7	0	1	1	2	4
	4:45 PM	1	6	2	3	12	1	6	2	3	12	0	0	0	0	0
	5:00 PM	6	8	4	0	18	5	8	3	0	16	1	0	1	0	2
	5:15 PM	3	4	9	3	19	2	3	5	0	10	1	1	4	3	9
	5:30 PM	8	6	2	5	21	8	6	2	2	18	0	0	0	3	3
	5:45 PM	0	10	14	1	25	0	10	8	1	19	0	0	6	0	6
	TOTAL	27	43	37	16	123	25	40	25	7	97	2	3	12	9	26

Transportation Studies, Inc.
2640 Walnut Avenue, Suite L
Tustin, CA. 92780

City: SANTA ANA
N-S Direction: GRAND AVENUE
E-W Direction: SANTA CLARA AVENUE

File Name : H1702015
Site Code :
Start Date : 2/9/2017

Groups Printed- Turning Movements

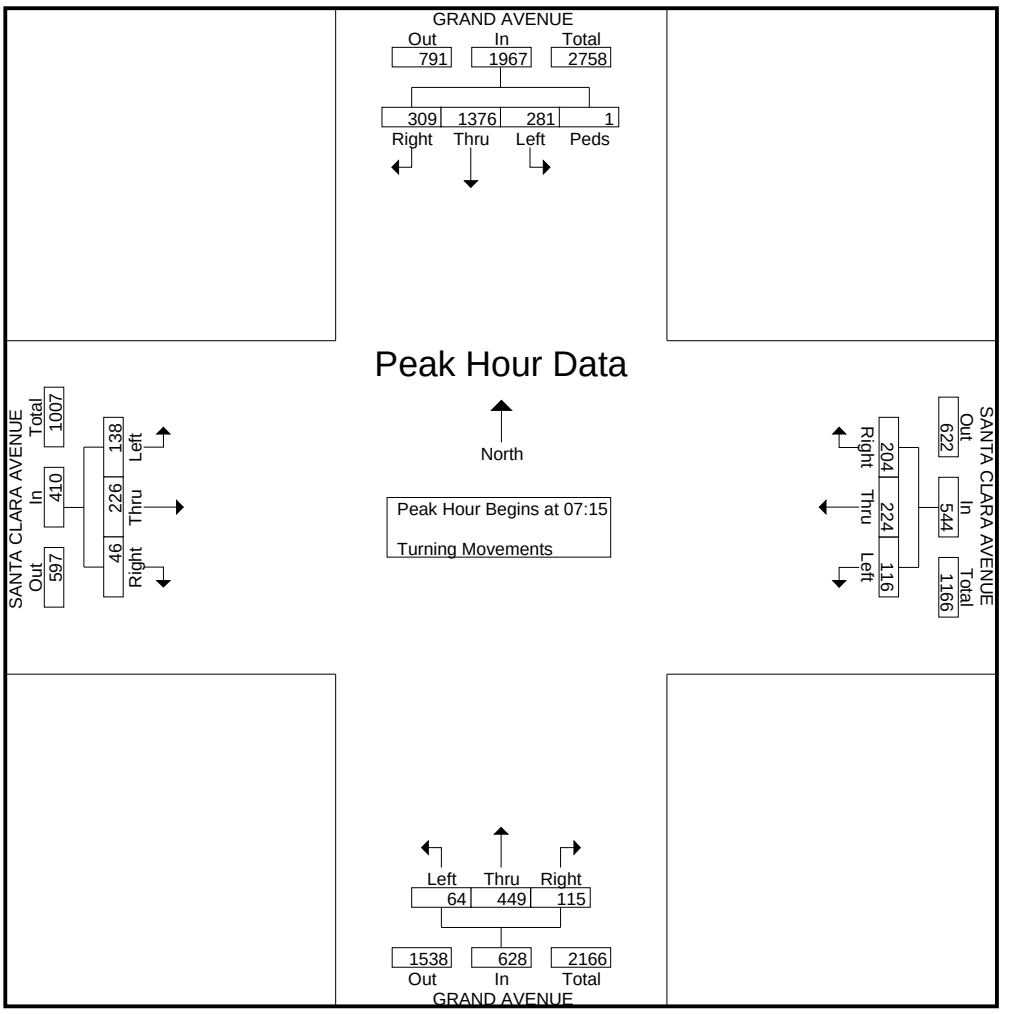
	GRAND AVENUE Southbound				SANTA CLARA AVENUE Westbound			GRAND AVENUE Northbound			SANTA CLARA AVENUE Eastbound			
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Int. Total
07:00	47	415	37	1	39	31	17	17	88	7	10	31	26	766
07:15	78	364	64	0	47	54	19	28	83	13	11	56	35	852
07:30	84	333	80	1	67	58	33	31	131	15	13	65	26	937
07:45	76	317	83	0	52	51	36	37	133	29	16	58	32	920
Total	285	1429	264	2	205	194	105	113	435	64	50	210	119	3475
08:00	71	362	54	0	38	61	28	19	102	7	6	47	45	840
08:15	70	442	35	0	32	47	30	24	91	5	6	32	26	840
08:30	46	429	54	0	29	18	22	19	118	10	15	20	20	800
08:45	45	338	48	0	30	17	25	20	104	11	12	25	21	696
Total	232	1571	191	0	129	143	105	82	415	33	39	124	112	3176
*** BREAK ***														
16:00	45	163	42	1	44	56	35	42	249	22	5	32	33	769
16:15	47	168	38	1	25	46	38	62	268	18	10	31	37	789
16:30	26	195	31	0	43	45	36	55	280	18	11	36	36	812
16:45	43	170	48	1	49	57	25	47	276	17	14	34	36	817
Total	161	696	159	3	161	204	134	206	1073	75	40	133	142	3187
17:00	61	201	40	2	87	68	32	64	297	16	7	56	43	974
17:15	60	234	60	2	52	63	29	59	286	28	7	39	46	965
17:30	48	179	56	0	59	55	37	50	287	26	8	43	27	875
17:45	44	228	57	1	54	50	34	65	280	15	12	50	38	928
Total	213	842	213	5	252	236	132	238	1150	85	34	188	154	3742
Grand Total	891	4538	827	10	747	777	476	639	3073	257	163	655	527	13580
Apprch %	14.2	72.4	13.2	0.2	37.3	38.8	23.8	16.1	77.4	6.5	12.1	48.7	39.2	
Total %	6.6	33.4	6.1	0.1	5.5	5.7	3.5	4.7	22.6	1.9	1.2	4.8	3.9	

Transportation Studies, Inc.
2640 Walnut Avenue, Suite L
Tustin, CA. 92780

City: SANTA ANA
N-S Direction: GRAND AVENUE
E-W Direction: SANTA CLARA AVENUE

File Name : H1702015
Site Code :
Start Date : 2/9/2017

	GRAND AVENUE Southbound					SANTA CLARA AVENUE Westbound				GRAND AVENUE Northbound				SANTA CLARA AVENUE Eastbound				
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																		
Peak Hour for Entire Intersection Begins at 07:15																		
07:15	78	**364**	64	0	**506**	47	54	19	120	28	83	13	124	11	56	35	102	852
07:30	**84**	333	80	**1**	498	**67**	58	33	**158**	31	131	15	177	13	**65**	26	104	**937**
07:45	76	317	**83**	0	476	52	51	**36**	139	**37**	**133**	**29**	**199**	**16**	58	32	**106**	920
08:00	71	362	54	0	487	38	**61**	28	127	19	102	7	128	6	47	**45**	98	840
Total Volume	309	1376	281	1	1967	204	224	116	544	115	449	64	628	46	226	138	410	3549
% App. Total	15.7	70	14.3	0.1		37.5	41.2	21.3		18.3	71.5	10.2		11.2	55.1	33.7		
PHF	.920	.945	.846	.250	.972	.761	.918	.806	.861	.777	.844	.552	.789	.719	.869	.767	.967	.947

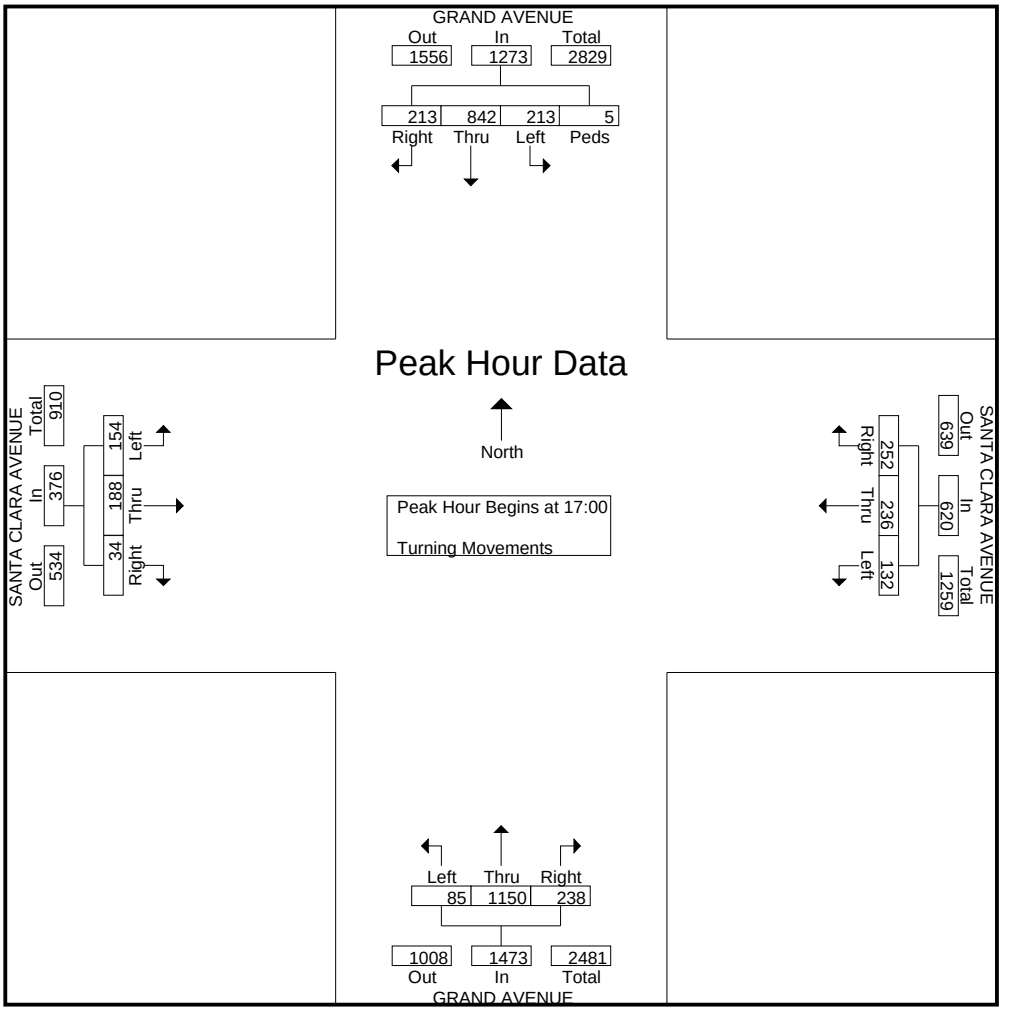


Transportation Studies, Inc.
2640 Walnut Avenue, Suite L
Tustin, CA. 92780

City: SANTA ANA
N-S Direction: GRAND AVENUE
E-W Direction: SANTA CLARA AVENUE

File Name : H1702015
Site Code :
Start Date : 2/9/2017
Page No : 3

	GRAND AVENUE Southbound					SANTA CLARA AVENUE Westbound				GRAND AVENUE Northbound				SANTA CLARA AVENUE Eastbound				
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																		
Peak Hour for Entire Intersection Begins at 17:00																		
17:00	**61**	201	40	**2**	304	**87**	**68**	32	**187**	64	**297**	16	**377**	7	**56**	43	**106**	**974**
17:15	60	**234**	**60**	2	**356**	52	63	29	144	59	286	**28**	373	7	39	**46**	92	965
17:30	48	179	56	0	283	59	55	**37**	151	50	287	26	363	8	43	27	78	875
17:45	44	228	57	1	330	54	50	34	138	**65**	280	15	360	**12**	50	38	100	928
Total Volume	213	842	213	5	1273	252	236	132	620	238	1150	85	1473	34	188	154	376	3742
% App. Total	16.7	66.1	16.7	0.4		40.6	38.1	21.3		16.2	78.1	5.8		9	50	41		
PHF	.873	.900	.888	.625	.894	.724	.868	.892	.829	.915	.968	.759	.977	.708	.839	.837	.887	.960



INTERSECTION TURNING MOVEMENT COUNTS

T218

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Tue, May 14, 19

LOCATION: Santa Ana
NORTH & SOUTH: Grand
EAST & WEST: 17th

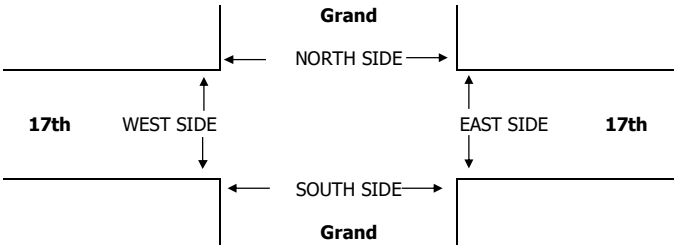
PROJECT #: SC2183
LOCATION #: 24
CONTROL: SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

☑ Add U-Turns to Left Turns

		NORTHBOUND Grand			SOUTHBOUND Grand			EASTBOUND 17th			WESTBOUND 17th				U-TURNS				
	LANES:	NL 1	NT 3	NR 0	SL 1	ST 2	SR 1	EL 2	ET 3	ER 0	WL 2	WT 3	WR 0	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	24	85	43	45	293	34	38	137	41	46	115	10	911	1	0	5	0	6
	7:15 AM	32	100	80	51	301	46	46	183	31	67	176	18	1,131	3	0	5	0	8
	7:30 AM	49	146	87	60	309	60	64	216	31	89	210	26	1,347	1	0	6	0	7
	7:45 AM	43	137	97	77	289	73	53	217	17	84	236	24	1,347	2	0	3	0	5
	8:00 AM	37	88	59	95	287	53	58	210	25	65	177	19	1,173	0	0	4	0	4
	8:15 AM	36	70	56	67	314	39	35	169	34	59	132	15	1,026	3	0	5	0	8
	8:30 AM	44	93	50	62	305	35	33	137	35	48	114	26	982	1	0	12	0	13
	8:45 AM	41	77	50	80	293	45	30	144	30	46	113	13	962	1	0	2	0	3
	VOLUMES	306	796	522	537	2,391	385	357	1,413	244	504	1,273	151	8,879	12	0	42	0	54
	APPROACH %	19%	49%	32%	16%	72%	12%	18%	70%	12%	26%	66%	8%						
	APP/DEPART	1,624	/	1,262	3,313	/	3,151	2,014	/	2,472	1,928	/	1,994	0					
	BEGIN PEAK HR		7:15 AM																
	VOLUMES	161	471	323	283	1,186	232	221	826	104	305	799	87	4,998					
	APPROACH %	17%	49%	34%	17%	70%	14%	19%	72%	9%	26%	67%	7%						
	PEAK HR FACTOR		0.847			0.969			0.925			0.866		0.928					
	APP/DEPART	955	/	761	1,701	/	1,601	1,151	/	1,432	1,191	/	1,204	0					
PM	4:00 PM	76	196	78	49	111	33	54	171	24	60	246	58	1,156	0	0	5	0	5
	4:15 PM	64	193	55	55	132	51	62	204	29	59	255	50	1,209	0	0	8	0	8
	4:30 PM	64	222	62	45	105	28	69	185	25	79	251	45	1,180	0	0	13	0	13
	4:45 PM	68	211	58	59	111	24	72	196	39	74	292	51	1,255	2	0	9	0	11
	5:00 PM	61	186	47	72	154	31	111	232	42	80	262	36	1,314	1	0	13	0	14
	5:15 PM	52	212	49	77	157	29	82	242	39	68	287	46	1,340	1	0	6	0	7
	5:30 PM	62	259	64	59	154	42	77	207	27	75	255	66	1,347	1	0	11	0	12
	5:45 PM	68	249	48	66	126	52	75	168	40	61	213	49	1,215	3	0	14	0	17
	VOLUMES	515	1,728	461	482	1,050	290	602	1,605	265	556	2,061	401	10,016	8	0	79	0	87
	APPROACH %	19%	64%	17%	26%	58%	16%	24%	65%	11%	18%	68%	13%						
	APP/DEPART	2,704	/	2,652	1,822	/	1,879	2,472	/	2,548	3,018	/	2,937	0					
	BEGIN PEAK HR		4:45 PM																
	VOLUMES	243	868	218	267	576	126	342	877	147	297	1,096	199	5,256					
	APPROACH %	18%	65%	16%	28%	59%	13%	25%	64%	11%	19%	69%	13%						
	PEAK HR FACTOR		0.863			0.921			0.887			0.954		0.976					
	APP/DEPART	1,329	/	1,370	969	/	1,025	1,366	/	1,362	1,592	/	1,499	0					



		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	AM BEGIN PEAK HR	7:15 AM					0	0	0	0	0					
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	PM BEGIN PEAK HR	4:45 PM					0	0	0	0	0					

INTERSECTION TURNING MOVEMENT COUNTS

T816

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Thu, Feb 16, 17

LOCATION: Santa Ana
NORTH & SOUTH: Grand
EAST & WEST: I-5 NB Ramps

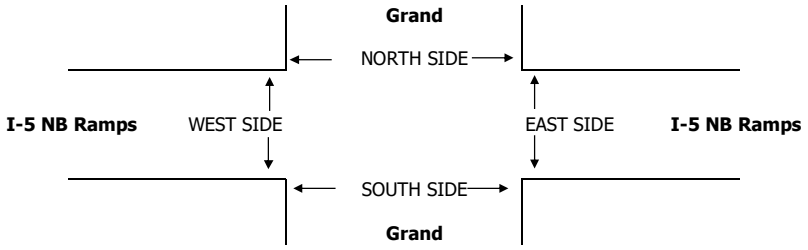
PROJECT #: SC1220
LOCATION #: 3
CONTROL: SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N ◄ W E ► S ▼

☑ Add U-Turns to Left Turns

		NORTHBOUND Grand			SOUTHBOUND Grand			EASTBOUND I-5 NB Ramps			WESTBOUND I-5 NB Ramps				U-TURNS				
	LANES:	NL X	NT 2	NR 1	SL 1	ST 3	SR X	EL X	ET X	ER X	WL 2	WT X	WR 1	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	0	123	106	19	411	0	0	0	0	104	0	31	794	0	3	0	0	3
	7:15 AM	0	184	108	8	495	0	0	0	0	97	0	15	907	0	3	0	0	3
	7:30 AM	0	226	137	12	482	0	0	0	0	94	0	31	982	0	1	0	0	1
	7:45 AM	0	229	117	20	425	0	0	0	0	131	0	43	965	0	7	0	0	7
	8:00 AM	0	167	103	16	412	0	0	0	0	120	0	33	851	0	6	0	0	6
	8:15 AM	0	147	103	12	389	0	0	0	0	97	0	41	789	0	5	0	0	5
	8:30 AM	0	153	104	9	380	0	0	0	0	93	0	33	772	0	4	0	0	4
	8:45 AM	0	151	96	6	354	0	0	0	0	115	0	37	759	0	0	0	0	0
	VOLUMES	0	1,380	874	102	3,348	0	0	0	0	851	0	264	6,819	0	29	0	0	29
	APPROACH %	0%	61%	39%	3%	97%	0%	0%	0%	0%	76%	0%	24%						
	APP/DEPART	2,254	/	1,673	3,450	/	4,199	0	/	947	1,115	/	0	0					
	BEGIN PEAK HR		7:15 AM																
	VOLUMES	0	806	465	56	1,814	0	0	0	0	442	0	122	3,705					
	APPROACH %	0%	63%	37%	3%	97%	0%	0%	0%	0%	78%	0%	22%						
	PEAK HR FACTOR		0.875			0.929			0.000			0.810		0.943					
	APP/DEPART	1,271	/	945	1,870	/	2,256	0	/	504	564	/	0	0					
PM	4:00 PM	0	292	260	12	217	0	0	0	0	38	0	38	857	0	8	0	0	8
	4:15 PM	0	286	262	14	210	0	0	0	0	43	0	46	861	0	7	0	0	7
	4:30 PM	0	313	244	14	223	0	0	0	0	50	0	46	890	0	7	0	0	7
	4:45 PM	0	337	221	8	262	0	0	0	0	37	0	36	901	0	7	0	0	7
	5:00 PM	0	307	246	12	280	0	0	0	0	22	0	42	909	0	6	0	0	6
	5:15 PM	0	335	273	12	273	0	0	0	0	42	0	28	963	0	6	0	0	6
	5:30 PM	0	286	233	12	285	0	0	0	0	30	0	51	897	0	6	0	0	6
	5:45 PM	0	330	219	10	291	0	0	0	0	44	0	45	939	0	5	0	0	5
	VOLUMES	0	2,486	1,958	94	2,041	0	0	0	0	306	0	332	7,217	0	52	0	0	52
	APPROACH %	0%	56%	44%	4%	96%	0%	0%	0%	0%	48%	0%	52%						
	APP/DEPART	4,444	/	2,870	2,135	/	2,347	0	/	2,000	638	/	0	0					
	BEGIN PEAK HR		5:00 PM																
	VOLUMES	0	1,258	971	46	1,129	0	0	0	0	138	0	166	3,708					
	APPROACH %	0%	56%	44%	4%	96%	0%	0%	0%	0%	45%	0%	55%						
	PEAK HR FACTOR		0.917			0.976			0.000			0.854		0.963					
	APP/DEPART	2,229	/	1,447	1,175	/	1,267	0	/	994	304	/	0	0					



		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

INTERSECTION TURNING MOVEMENT COUNTS

T816

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Thu, Feb 16, 17

LOCATION: Santa Ana
NORTH & SOUTH: Grand
EAST & WEST: Santa Ana

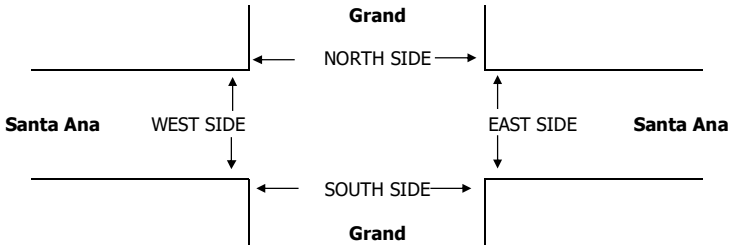
PROJECT #: SC1220
LOCATION #: 2
CONTROL: SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N ◄ W E ► S ▼

☑ Add U-Turns to Left Turns

		NORTHBOUND Grand			SOUTHBOUND Grand			EASTBOUND Santa Ana			WESTBOUND Santa Ana				U-TURNS				
	LANES:	NL 1	NT 2.5	NR 0.5	SL 1	ST 2	SR 2	EL 2	ET 1	ER 2	WL 0.5	WT 1	WR 0.5	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	14	210	14	25	256	235	30	35	126	2	25	8	980	0	0	0	0	0
	7:15 AM	12	194	11	49	263	241	62	49	90	1	51	8	1,031	1	0	0	0	1
	7:30 AM	18	292	18	37	308	253	60	61	99	2	123	9	1,280	2	0	0	0	2
	7:45 AM	18	273	13	22	307	239	75	51	97	0	141	9	1,245	0	0	0	0	0
	8:00 AM	20	214	7	28	253	265	58	49	129	1	47	7	1,078	0	1	0	0	1
	8:15 AM	19	214	9	10	271	219	45	33	98	3	27	3	951	4	0	0	0	4
	8:30 AM	22	198	10	15	275	186	46	25	99	3	32	3	914	2	0	0	0	2
	8:45 AM	17	186	5	13	286	181	49	22	95	5	24	11	894	1	0	0	0	1
	VOLUMES	140	1,781	87	199	2,219	1,819	425	325	833	17	470	58	8,373	10	1	0	0	11
	APPROACH %	7%	89%	4%	5%	52%	43%	27%	21%	53%	3%	86%	11%						
	APP/DEPART	2,008	/	2,265	4,237	/	3,079	1,583	/	610	545	/	2,419	0					
	BEGIN PEAK HR		7:15 AM																
	VOLUMES	68	973	49	136	1,131	998	255	210	415	4	362	33	4,634					
	APPROACH %	6%	89%	4%	6%	50%	44%	29%	24%	47%	1%	91%	8%						
	PEAK HR FACTOR		0.831			0.947			0.932			0.665		0.905					
	APP/DEPART	1,090	/	1,262	2,265	/	1,553	880	/	394	399	/	1,425	0					
PM	4:00 PM	31	435	3	5	131	103	63	18	68	4	19	12	892	0	1	0	0	1
	4:15 PM	33	417	3	12	160	98	87	22	91	4	26	23	976	2	1	0	0	3
	4:30 PM	50	461	3	5	126	122	95	24	88	6	45	21	1,046	1	1	0	0	2
	4:45 PM	40	441	4	9	167	118	87	23	105	3	41	18	1,056	0	0	0	0	0
	5:00 PM	48	427	5	5	190	120	85	91	77	3	34	22	1,107	0	0	0	0	0
	5:15 PM	47	483	5	8	177	126	80	47	69	7	40	20	1,109	5	1	0	0	6
	5:30 PM	38	457	13	12	177	137	73	37	84	5	33	23	1,089	1	0	0	0	1
	5:45 PM	29	465	7	8	183	133	80	19	76	4	23	29	1,056	2	0	0	0	2
	VOLUMES	316	3,586	43	64	1,311	957	650	281	658	36	261	168	8,331	11	4	0	0	15
	APPROACH %	8%	91%	1%	3%	56%	41%	41%	18%	41%	8%	56%	36%						
	APP/DEPART	3,945	/	4,408	2,332	/	2,016	1,589	/	384	465	/	1,523	0					
	BEGIN PEAK HR		5:00 PM																
	VOLUMES	162	1,832	30	33	727	516	318	194	306	19	130	94	4,361					
	APPROACH %	8%	91%	1%	3%	57%	40%	39%	24%	37%	8%	53%	39%						
	PEAK HR FACTOR		0.946			0.979			0.808			0.907		0.983					
	APP/DEPART	2,024	/	2,245	1,276	/	1,060	818	/	256	243	/	800	0					



		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

INTERSECTION TURNING MOVEMENT COUNTS

T218

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Thu, May 16, 19

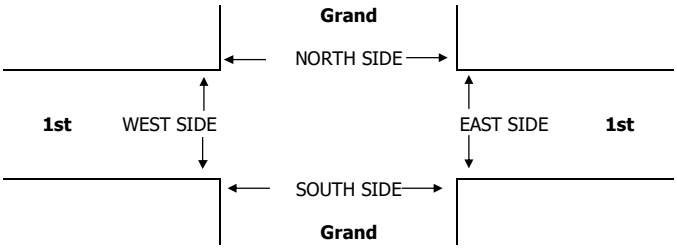
LOCATION: Santa Ana
NORTH & SOUTH: Grand
EAST & WEST: 1st
PROJECT #: SC2183
LOCATION #: 25
CONTROL: SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

☑ Add U-Turns to Left Turns

	NORTHBOUND Grand			SOUTHBOUND Grand			EASTBOUND 1st			WESTBOUND 1st				U-TURNS				
LANES:	NL 2	NT 3	NR 0	SL 2	ST 3	SR 1	EL 2	ET 3	ER 0	WL 2	WT 2	WR 0	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM 7:00 AM	14	109	12	23	348	25	48	241	26	50	192	18	1,106	0	0	0	1	1
7:15 AM	42	163	8	25	357	47	64	246	37	50	212	23	1,274	0	0	1	0	1
7:30 AM	63	223	10	25	379	36	91	169	70	76	233	28	1,403	0	2	2	0	4
7:45 AM	69	197	9	18	351	38	94	177	62	71	233	24	1,343	0	1	0	2	3
8:00 AM	36	160	7	30	330	51	79	193	53	47	180	23	1,189	0	0	1	2	3
8:15 AM	35	136	11	22	381	35	67	249	34	47	182	25	1,224	0	0	2	1	3
8:30 AM	42	146	6	24	342	39	63	250	43	44	191	30	1,220	0	1	2	2	5
8:45 AM	35	138	7	19	346	35	48	257	56	53	180	27	1,201	0	0	0	4	4
VOLUMES	336	1,272	70	186	2,834	306	554	1,782	381	438	1,603	198	9,960	0	4	8	12	24
APPROACH %	20%	76%	4%	6%	85%	9%	20%	66%	14%	20%	72%	9%						
APP/DEPART	1,678	/	2,020	3,326	/	3,641	2,717	/	2,046	2,239	/	2,253	0					
BEGIN PEAK HR		7:15 AM																
VOLUMES	210	743	34	98	1,417	172	328	785	222	244	858	98	5,209					
APPROACH %	21%	75%	3%	6%	84%	10%	25%	59%	17%	20%	72%	8%						
PEAK HR FACTOR		0.834			0.959			0.962			0.890		0.928					
APP/DEPART	987	/	1,168	1,687	/	1,879	1,335	/	918	1,200	/	1,244	0					
PM 4:00 PM	42	338	10	27	149	75	67	224	26	31	238	34	1,261	0	2	3	1	6
4:15 PM	31	300	12	35	181	63	69	201	23	33	213	57	1,218	0	1	2	4	7
4:30 PM	47	299	7	34	191	75	63	240	20	39	232	44	1,291	2	2	0	3	7
4:45 PM	43	311	8	22	178	66	75	243	21	46	248	36	1,297	0	0	4	5	9
5:00 PM	37	279	10	27	149	61	88	265	21	36	239	45	1,257	0	4	3	2	9
5:15 PM	37	279	7	22	190	47	71	216	28	30	231	49	1,207	0	3	1	0	4
5:30 PM	37	250	8	21	168	69	85	204	26	26	223	40	1,157	0	2	3	0	5
5:45 PM	43	269	11	18	166	66	93	225	18	34	221	55	1,219	0	2	0	2	4
VOLUMES	317	2,325	73	206	1,372	522	611	1,818	183	275	1,845	360	9,907	2	16	16	17	51
APPROACH %	12%	86%	3%	10%	65%	25%	23%	70%	7%	11%	74%	15%						
APP/DEPART	2,715	/	3,296	2,100	/	1,815	2,612	/	2,098	2,480	/	2,698	0					
BEGIN PEAK HR		4:00 PM																
VOLUMES	163	1,248	37	118	699	279	274	908	90	149	931	171	5,067					
APPROACH %	11%	86%	3%	11%	64%	25%	22%	71%	7%	12%	74%	14%						
PEAK HR FACTOR		0.928			0.913			0.938			0.948		0.977					
APP/DEPART	1,448	/	1,689	1,096	/	927	1,272	/	1,071	1,251	/	1,380	0					



	PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM 7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM BEGIN PEAK HR	7:15 AM					0	0	0	0	0					
PM 4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM BEGIN PEAK HR	4:00 PM					0	0	0	0	0					

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 pacific@aimtd.com

DATE: Thu, Feb 11, 16

LOCATION: Santa Ana
NORTH & SOUTH: Grand
EAST & WEST: Chestnut

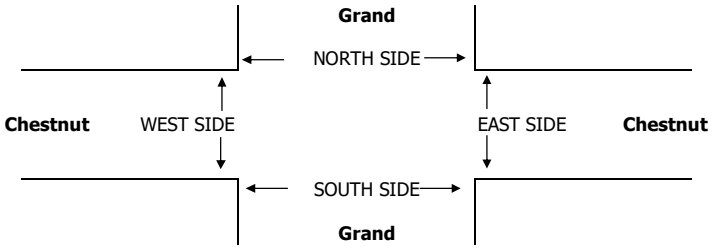
PROJECT #: SC0846
LOCATION #: 29
CONTROL: SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

☑ Add U-Turns to Left Turns

		NORTHBOUND Grand			SOUTHBOUND Grand			EASTBOUND Chestnut			WESTBOUND Chestnut				U-TURNS				
	LANES:	NL 1	NT 3	NR 0	SL 1	ST 3	SR 0	EL 1	ET 2	ER 0	WL 1	WT 2	WR 0	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	10	136	30	31	363	21	15	77	22	23	28	41	797	0	0	0	0	0
	7:15 AM	9	152	44	39	406	14	21	114	35	21	82	53	990	0	0	0	0	0
	7:30 AM	15	186	48	41	443	9	13	135	34	21	109	54	1,108	0	1	0	0	1
	7:45 AM	16	184	47	31	473	10	12	89	19	40	105	66	1,092	0	0	0	0	0
	8:00 AM	10	186	17	32	396	14	11	64	17	31	37	34	849	0	0	0	0	0
	8:15 AM	4	138	26	32	403	14	18	70	21	17	27	32	802	0	0	0	0	0
	8:30 AM	5	157	20	30	360	9	15	54	21	16	38	35	760	0	0	0	0	0
	8:45 AM	13	133	21	24	346	22	18	39	11	15	39	21	702	0	0	0	0	0
	VOLUMES	82	1,272	253	260	3,190	113	123	642	180	184	465	336	7,100	0	1	0	0	1
	APPROACH %	5%	79%	16%	7%	90%	3%	13%	68%	19%	19%	47%	34%						
	APP/DEPART	1,607	/	1,732	3,563	/	3,554	945	/	1,154	985	/	660	0					
	BEGIN PEAK HR		7:15 AM																
	VOLUMES	50	708	156	143	1,718	47	57	402	105	113	333	207	4,039					
	APPROACH %	5%	77%	17%	7%	90%	2%	10%	71%	19%	17%	51%	32%						
	PEAK HR FACTOR		0.918			0.928			0.775			0.774		0.911					
	APP/DEPART	914	/	973	1,908	/	1,936	564	/	700	653	/	430	0					
PM	4:00 PM	40	279	50	37	166	21	15	82	14	29	69	58	860	0	0	0	0	0
	4:15 PM	25	246	42	35	152	22	22	58	11	32	97	45	787	0	0	0	0	0
	4:30 PM	42	243	41	32	162	34	26	69	21	21	76	46	813	0	1	0	0	1
	4:45 PM	27	241	41	39	158	30	26	64	13	20	78	37	774	0	1	0	0	1
	5:00 PM	28	182	20	24	176	35	23	59	13	26	96	43	725	0	0	0	0	0
	5:15 PM	35	232	42	36	192	19	25	81	13	18	74	26	793	0	0	0	1	1
	5:30 PM	30	222	61	31	184	21	16	86	16	26	84	62	839	0	0	0	0	0
	5:45 PM	18	278	42	28	163	22	25	66	14	33	84	45	818	0	2	0	0	2
	VOLUMES	245	1,923	339	262	1,353	204	178	565	115	205	658	362	6,409	0	4	0	1	5
	APPROACH %	10%	77%	14%	14%	74%	11%	21%	66%	13%	17%	54%	30%						
	APP/DEPART	2,507	/	2,467	1,819	/	1,672	858	/	1,163	1,225	/	1,107	0					
	BEGIN PEAK HR		4:00 PM																
	VOLUMES	134	1,009	174	143	638	107	89	273	59	102	320	186	3,234					
	APPROACH %	10%	77%	13%	16%	72%	12%	21%	65%	14%	17%	53%	31%						
	PEAK HR FACTOR		0.892			0.974			0.907			0.874		0.940					
	APP/DEPART	1,317	/	1,286	888	/	799	421	/	588	608	/	561	0					



		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	18	9	10	2	39	17	8	7	2	34	1	1	3	0	5
	7:15 AM	59	25	29	13	126	57	20	29	12	118	2	5	0	1	8
	7:30 AM	178	35	63	42	318	175	33	62	39	309	3	2	1	3	9
	7:45 AM	122	11	20	21	174	119	10	19	18	166	3	1	1	3	8
	8:00 AM	4	3	2	2	11	3	1	1	2	7	1	2	1	0	4
	8:15 AM	2	6	7	0	15	2	5	5	0	12	0	1	2	0	3
	8:30 AM	5	2	3	2	12	4	1	2	2	9	1	1	1	0	3
	8:45 AM	0	1	2	1	4	0	0	2	1	3	0	1	0	0	1
	TOTAL	388	92	136	83	699	377	78	127	76	658	11	14	9	7	41
PM	4:00 PM	69	11	4	17	101	68	9	3	16	96	1	2	1	1	5
	4:15 PM	29	9	4	7	49	27	7	2	6	42	2	2	2	1	7
	4:30 PM	28	6	9	7	50	23	4	5	5	37	5	2	4	2	13
	4:45 PM	9	4	6	8	27	6	1	2	5	14	3	3	4	3	13
	5:00 PM	10	8	7	4	29	10	4	5	2	21	0	4	2	2	8
	5:15 PM	6	1	3	2	12	4	1	2	1	8	2	0	1	1	4
	5:30 PM	6	7	6	6	25	1	7	2	4	14	5	0	4	2	11
	5:45 PM	5	4	3	6	18	4	4	2	5	15	1	0	1	1	3
	TOTAL	162	50	42	57	311	143	37	23	44	247	19	13	19	13	64

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 pacific@aimtd.com

DATE: Tue, Feb 9, 16

LOCATION: Santa Ana
NORTH & SOUTH: Grand
EAST & WEST: McFadden

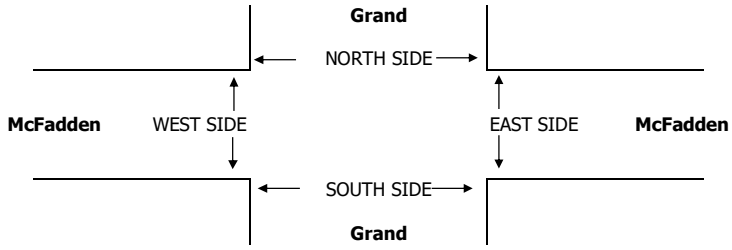
PROJECT #: SC0846
LOCATION #: 38
CONTROL: SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

☑ Add U-Turns to Left Turns

		NORTHBOUND Grand			SOUTHBOUND Grand			EASTBOUND McFadden			WESTBOUND McFadden				U-TURNS				
	LANES:	NL 1	NT 3	NR 0	SL 1	ST 3	SR 0	EL 1	ET 2	ER 0	WL 1	WT 2	WR 0	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	22	137	16	40	320	28	37	136	31	22	90	20	899	0	0	0	0	0
	7:15 AM	28	144	22	54	321	35	46	156	48	25	93	14	986	0	0	0	0	0
	7:30 AM	37	180	29	44	439	41	48	127	52	20	81	26	1,124	0	0	0	0	0
	7:45 AM	50	192	24	68	362	43	43	135	43	28	133	29	1,150	0	0	0	0	0
	8:00 AM	49	177	28	61	405	29	41	159	31	39	96	32	1,147	0	0	0	0	0
	8:15 AM	19	130	28	45	317	29	28	143	20	29	78	29	895	0	0	0	0	0
	8:30 AM	16	125	18	35	329	21	31	106	21	25	57	9	793	0	0	0	0	0
	8:45 AM	13	114	18	47	270	27	25	87	17	18	70	30	736	0	0	0	0	0
	VOLUMES	234	1,199	183	394	2,763	253	299	1,049	263	206	698	189	7,730	0	0	0	0	0
	APPROACH %	14%	74%	11%	12%	81%	7%	19%	65%	16%	19%	64%	17%						
	APP/DEPART	1,616	/	1,687	3,410	/	3,232	1,611	/	1,626	1,093	/	1,185	0					
	BEGIN PEAK HR		7:15 AM																
	VOLUMES	164	693	103	227	1,527	148	178	577	174	112	403	101	4,407					
	APPROACH %	17%	72%	11%	12%	80%	8%	19%	62%	19%	18%	65%	16%						
	PEAK HR FACTOR		0.902			0.907			0.929			0.811		0.958					
	APP/DEPART	960	/	972	1,902	/	1,813	929	/	907	616	/	715	0					
PM	4:00 PM	39	278	39	28	135	53	33	96	19	24	138	35	917	0	0	0	0	0
	4:15 PM	42	244	50	41	143	56	28	93	19	21	169	26	932	0	0	0	0	0
	4:30 PM	52	280	47	40	161	33	30	99	25	17	163	34	981	0	0	0	0	0
	4:45 PM	52	285	47	30	118	56	25	96	16	16	143	36	920	0	0	0	0	0
	5:00 PM	42	264	41	34	172	36	38	127	24	27	178	39	1,022	0	0	0	0	0
	5:15 PM	48	276	55	28	150	36	30	135	14	22	175	36	1,005	0	0	0	0	0
	5:30 PM	39	291	61	35	123	49	20	96	20	22	176	26	958	0	0	0	0	0
	5:45 PM	27	275	50	22	130	45	21	121	14	15	160	37	917	0	0	0	0	0
	VOLUMES	341	2,193	390	258	1,132	364	225	863	151	164	1,302	269	7,652	0	0	0	0	0
	APPROACH %	12%	75%	13%	15%	65%	21%	18%	70%	12%	9%	75%	16%						
	APP/DEPART	2,924	/	2,687	1,754	/	1,447	1,239	/	1,511	1,735	/	2,007	0					
	BEGIN PEAK HR		4:30 PM																
	VOLUMES	194	1,105	190	132	601	161	123	457	79	82	659	145	3,928					
	APPROACH %	13%	74%	13%	15%	67%	18%	19%	69%	12%	9%	74%	16%						
	PEAK HR FACTOR		0.969			0.924			0.872			0.908		0.961					
	APP/DEPART	1,489	/	1,373	894	/	762	659	/	779	886	/	1,014	0					



		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	14	11	8	7	40	10	8	7	4	29	4	3	1	3	11
	7:15 AM	23	31	13	23	90	19	30	12	20	81	4	1	1	3	9
	7:30 AM	23	51	22	21	117	21	49	22	18	110	2	2	0	3	7
	7:45 AM	52	105	38	55	250	50	104	38	49	241	2	1	0	6	9
	8:00 AM	17	26	5	8	56	16	24	4	6	50	1	2	1	2	6
	8:15 AM	11	7	6	5	29	9	7	5	5	26	2	0	1	0	3
	8:30 AM	13	8	9	6	36	9	8	7	6	30	4	0	2	0	6
	8:45 AM	5	2	2	3	12	3	2	2	3	10	2	0	0	0	2
	TOTAL	158	241	103	128	630	137	232	97	111	577	21	9	6	17	53
PM	4:00 PM	21	18	14	7	60	16	12	12	7	47	5	6	2	0	13
	4:15 PM	16	11	8	8	43	13	10	5	7	35	3	1	3	1	8
	4:30 PM	12	19	14	21	66	6	15	11	16	48	6	4	3	5	18
	4:45 PM	10	9	7	3	29	7	4	5	2	18	3	5	2	1	11
	5:00 PM	16	11	12	7	46	13	10	12	6	41	3	1	0	1	5
	5:15 PM	18	15	6	4	43	14	11	6	4	35	4	4	0	0	8
	5:30 PM	7	13	2	5	27	4	9	2	2	17	3	4	0	3	10
	5:45 PM	15	13	3	3	34	11	8	1	1	21	4	5	2	2	13
	TOTAL	115	109	66	58	348	84	79	54	45	262	31	30	12	13	86

INTERSECTION TURNING MOVEMENT COUNTS

T218

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Thu, May 16, 19

LOCATION: Santa Ana
NORTH & SOUTH: Grand
EAST & WEST: Edinger

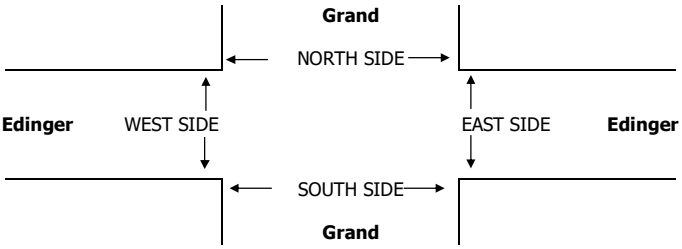
PROJECT #: SC2183
LOCATION #: 26
CONTROL: SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

☑ Add U-Turns to Left Turns

		NORTHBOUND Grand			SOUTHBOUND Grand			EASTBOUND Edinger			WESTBOUND Edinger				U-TURNS				
	LANES:	NL 1	NT 3	NR 0	SL 1	ST 3	SR 0	EL 1	ET 3	ER 0	WL 1	WT 3	WR 0	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	11	97	25	61	253	50	63	309	35	18	141	30	1,093	0	0	0	0	0
	7:15 AM	4	119	20	58	263	55	82	333	19	30	125	27	1,135	0	0	0	1	1
	7:30 AM	15	143	26	54	288	49	88	328	33	46	144	34	1,248	0	0	1	3	4
	7:45 AM	9	120	28	51	274	68	90	320	34	45	160	35	1,234	0	0	1	2	3
	8:00 AM	18	85	17	58	309	49	55	337	40	28	144	28	1,168	0	0	0	1	1
	8:15 AM	25	94	31	58	249	43	48	306	28	22	191	33	1,128	0	0	3	2	5
	8:30 AM	11	94	25	52	237	39	50	239	34	29	125	33	968	0	0	3	4	7
	8:45 AM	15	105	25	46	236	37	44	245	39	24	109	32	957	0	0	2	5	7
	VOLUMES	108	857	197	438	2,109	390	520	2,417	262	242	1,139	252	8,931	0	0	10	18	28
	APPROACH %	9%	74%	17%	15%	72%	13%	16%	76%	8%	15%	70%	15%						
	APP/DEPART	1,162	/	1,619	2,937	/	2,595	3,199	/	3,070	1,633	/	1,647	0					
	BEGIN PEAK HR		7:15 AM																
	VOLUMES	46	467	91	221	1,134	221	315	1,318	126	149	573	124	4,785					
	APPROACH %	8%	77%	15%	14%	72%	14%	18%	75%	7%	18%	68%	15%						
	PEAK HR FACTOR		0.821			0.947			0.979			0.881		0.959					
	APP/DEPART	604	/	904	1,576	/	1,402	1,759	/	1,637	846	/	842	0					
PM	4:00 PM	70	317	45	41	88	52	57	193	14	23	299	43	1,242	0	0	2	1	3
	4:15 PM	59	317	35	36	92	62	32	190	13	21	332	54	1,243	0	0	1	3	4
	4:30 PM	68	323	23	44	111	73	52	186	16	26	321	39	1,282	0	0	4	1	5
	4:45 PM	54	334	35	38	111	54	46	190	24	20	331	45	1,282	0	0	2	0	2
	5:00 PM	65	356	28	48	122	75	53	211	17	17	328	38	1,358	0	0	5	2	7
	5:15 PM	65	348	28	29	87	49	44	229	15	19	335	49	1,297	0	0	2	3	5
	5:30 PM	55	345	28	48	83	48	56	229	13	17	325	39	1,286	0	0	0	0	0
	5:45 PM	41	300	22	36	66	64	55	181	11	14	336	45	1,171	0	0	1	0	1
	VOLUMES	477	2,640	244	320	760	477	395	1,609	123	157	2,607	352	10,161	0	0	17	10	27
	APPROACH %	14%	79%	7%	21%	49%	31%	19%	76%	6%	5%	84%	11%						
	APP/DEPART	3,361	/	3,370	1,557	/	1,030	2,127	/	2,183	3,116	/	3,578	0					
	BEGIN PEAK HR		4:45 PM																
	VOLUMES	239	1,383	119	163	403	226	199	859	69	73	1,319	171	5,223					
	APPROACH %	14%	79%	7%	21%	51%	29%	18%	76%	6%	5%	84%	11%						
	PEAK HR FACTOR		0.969			0.808			0.945			0.970		0.962					
	APP/DEPART	1,741	/	1,744	792	/	540	1,127	/	1,146	1,563	/	1,793	0					



		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	AM BEGIN PEAK HR	7:15 AM					0	0	0	0	0					
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	PM BEGIN PEAK HR	4:45 PM					0	0	0	0	0					

INTERSECTION TURNING MOVEMENT COUNTS

T218

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Thu, May 16, 19

LOCATION: Santa Ana
NORTH & SOUTH: Grand
EAST & WEST: Warner

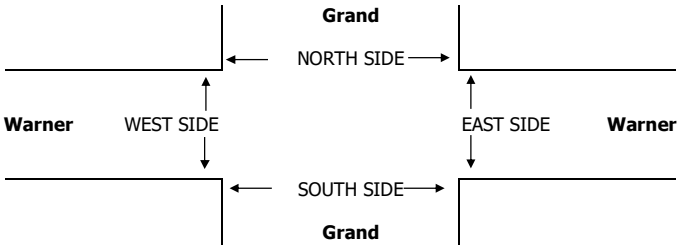
PROJECT #: SC2183
LOCATION #: 27
CONTROL: SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

Add U-Turns to Left Turns

		NORTHBOUND Grand			SOUTHBOUND Grand			EASTBOUND Warner			WESTBOUND Warner				U-TURNS				
	LANES:	NL 1	NT 3	NR 0	SL 1	ST 3	SR 0	EL 2	ET 3	ER 1	WL 2	WT 2	WR 1	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	41	102	39	31	90	48	46	182	77	10	73	14	753	0	0	0	0	0
	7:15 AM	50	116	50	42	124	53	67	206	82	26	74	24	914	0	0	0	0	0
	7:30 AM	46	125	49	47	158	44	62	207	108	19	114	23	1,002	0	0	1	0	1
	7:45 AM	36	133	51	60	146	50	57	286	89	21	107	39	1,075	0	0	0	0	0
	8:00 AM	35	130	65	48	140	45	67	205	76	21	89	43	964	0	1	0	0	1
	8:15 AM	26	98	56	52	128	52	75	188	56	23	113	27	894	1	0	0	0	1
	8:30 AM	32	87	40	57	142	51	49	188	49	26	84	13	818	0	0	0	0	0
	8:45 AM	30	87	32	58	125	30	66	169	55	19	91	37	799	0	0	0	0	0
	VOLUMES	296	878	382	395	1,053	373	489	1,631	592	165	745	220	7,219	1	1	1	0	3
	APPROACH %	19%	56%	25%	22%	58%	20%	18%	60%	22%	15%	66%	19%						
	APP/DEPART	1,556	/	1,587	1,821	/	1,811	2,712	/	2,407	1,130	/	1,414	0					
	BEGIN PEAK HR		7:15 AM																
	VOLUMES	167	504	215	197	568	192	253	904	355	87	384	129	3,955					
	APPROACH %	19%	57%	24%	21%	59%	20%	17%	60%	23%	15%	64%	22%						
	PEAK HR FACTOR		0.963			0.935			0.875			0.898		0.920					
	APP/DEPART	886	/	886	957	/	1,010	1,512	/	1,315	600	/	744	0					
PM	4:00 PM	45	159	48	29	68	61	108	146	35	28	242	82	1,051	0	0	0	0	0
	4:15 PM	51	222	40	26	73	56	93	125	36	36	204	76	1,038	0	0	0	2	2
	4:30 PM	56	211	32	32	106	57	86	120	42	45	211	71	1,069	0	1	0	0	1
	4:45 PM	65	249	45	29	132	54	77	163	36	40	248	65	1,203	0	0	0	0	0
	5:00 PM	60	188	43	38	131	62	84	164	36	49	220	81	1,156	0	0	0	0	0
	5:15 PM	56	218	46	31	104	60	86	161	39	29	254	91	1,175	0	1	0	0	1
	5:30 PM	58	209	57	46	99	38	91	161	29	31	232	75	1,126	0	0	0	1	1
	5:45 PM	53	233	40	24	75	58	75	159	15	23	208	79	1,042	0	0	0	0	0
	VOLUMES	444	1,689	351	255	788	446	700	1,199	268	281	1,819	620	8,860	0	2	0	3	5
	APPROACH %	18%	68%	14%	17%	53%	30%	32%	55%	12%	10%	67%	23%						
	APP/DEPART	2,484	/	3,011	1,489	/	1,334	2,167	/	1,806	2,720	/	2,709	0					
	BEGIN PEAK HR		4:45 PM																
	VOLUMES	239	864	191	144	466	214	338	649	140	149	954	312	4,660					
	APPROACH %	18%	67%	15%	17%	57%	26%	30%	58%	12%	11%	67%	22%						
	PEAK HR FACTOR		0.901			0.892			0.985			0.946		0.968					
	APP/DEPART	1,294	/	1,515	824	/	754	1,127	/	984	1,415	/	1,407	0					



		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	AM BEGIN PEAK HR	7:15 AM					0	0	0	0	0					
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	PM BEGIN PEAK HR	4:45 PM					0	0	0	0	0					

INTERSECTION TURNING MOVEMENT COUNTS

T218

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Thu, May 16, 19

LOCATION: Santa Ana
NORTH & SOUTH: SR-55 NB Ramps
EAST & WEST: Dyer

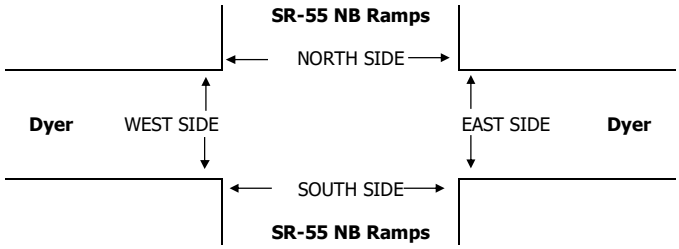
PROJECT #: SC2183
LOCATION #: 29
CONTROL: SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

☐ Add U-Turns to Left Turns

		NORTHBOUND SR-55 NB Ramps			SOUTHBOUND SR-55 NB Ramps			EASTBOUND Dyer			WESTBOUND Dyer				U-TURNS				
	LANES:	NL 1.5	NT X	NR 1.5	SL X	ST X	SR X	EL X	ET 3	ER 1	WL X	WT 3	WR 1	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	171	0	88	0	0	0	0	333	152	0	120	84	948	0	0	0	0	0
	7:15 AM	167	0	116	0	0	0	0	357	172	0	152	69	1,033	0	0	0	0	0
	7:30 AM	142	0	114	0	0	0	0	390	139	0	157	95	1,037	0	0	0	0	0
	7:45 AM	169	0	121	0	0	0	0	385	158	0	179	82	1,094	0	0	0	0	0
	8:00 AM	128	0	99	0	0	0	0	366	142	0	168	110	1,013	0	0	1	0	1
	8:15 AM	112	0	117	0	0	0	0	376	167	0	207	141	1,120	0	0	0	0	0
	8:30 AM	110	0	107	0	0	0	0	300	146	0	195	97	955	0	0	0	0	0
	8:45 AM	140	0	99	0	0	0	0	276	139	0	200	89	943	0	0	0	0	0
	VOLUMES	1,139	0	861	0	0	0	0	2,783	1,215	0	1,378	767	8,144	0	0	1	0	1
	APPROACH %	57%	0%	43%	0%	0%	0%	0%	70%	30%	0%	64%	36%						
	APP/DEPART	2,000	/	767	0	/	1,215	3,999	/	3,644	2,145	/	2,518	0					
	BEGIN PEAK HR		7:30 AM																
	VOLUMES	551	0	451	0	0	0	0	1,517	606	0	711	428	4,265					
	APPROACH %	55%	0%	45%	0%	0%	0%	0%	71%	29%	0%	62%	38%						
	PEAK HR FACTOR		0.864			0.000			0.978			0.818		0.952					
	APP/DEPART	1,002	/	428	0	/	606	2,124	/	1,968	1,139	/	1,263	0					
PM	4:00 PM	56	0	16	0	0	0	0	241	175	0	342	249	1,079	0	0	0	0	0
	4:15 PM	37	0	16	0	0	0	0	279	169	0	370	258	1,129	0	0	0	0	0
	4:30 PM	42	0	8	0	0	0	0	278	170	0	366	248	1,112	0	0	0	0	0
	4:45 PM	48	0	14	0	0	0	0	312	155	0	360	241	1,130	0	0	0	0	0
	5:00 PM	40	0	11	0	0	0	0	320	177	0	399	241	1,188	0	0	0	0	0
	5:15 PM	42	0	14	0	0	0	0	351	176	0	395	242	1,220	0	0	0	0	0
	5:30 PM	56	0	11	0	0	0	0	342	166	0	375	231	1,181	0	0	0	0	0
	5:45 PM	38	0	24	0	0	0	0	278	138	0	318	197	993	0	0	0	0	0
	VOLUMES	359	0	114	0	0	0	0	2,401	1,326	0	2,925	1,907	9,032	0	0	0	0	0
	APPROACH %	76%	0%	24%	0%	0%	0%	0%	64%	36%	0%	61%	39%						
	APP/DEPART	473	/	1,907	0	/	1,326	3,727	/	2,515	4,832	/	3,284	0					
	BEGIN PEAK HR		4:45 PM																
	VOLUMES	186	0	50	0	0	0	0	1,325	674	0	1,529	955	4,719					
	APPROACH %	79%	0%	21%	0%	0%	0%	0%	66%	34%	0%	62%	38%						
	PEAK HR FACTOR		0.881			0.000			0.948			0.970		0.967					
	APP/DEPART	236	/	955	0	/	674	1,999	/	1,375	2,484	/	1,715	0					



		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	AM BEGIN PEAK HR	7:30 AM					0	0	0	0	0					
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	PM BEGIN PEAK HR	4:45 PM					0	0	0	0	0					

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 pacific@aimtd.com

DATE: Tue, Mar 1, 16

LOCATION: Santa Ana
NORTH & SOUTH: Cambridge
EAST & WEST: La Veta

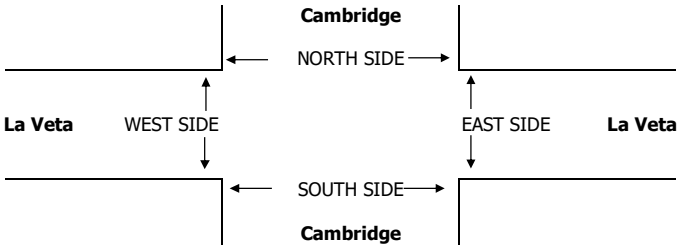
PROJECT #: SC0846
LOCATION #: 6
CONTROL: STOP ALL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

☑ Add U-Turns to Left Turns

		NORTHBOUND Cambridge			SOUTHBOUND Cambridge			EASTBOUND La Veta			WESTBOUND La Veta				U-TURNS				
		NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB	TTL
	LANES:	1	1	X	X	1	1	1	X	1	X	X	X		0	0	0	0	
AM	7:00 AM	19	21	0	0	76	37	16	0	20	0	0	0	189	0	0	0	0	0
	7:15 AM	22	34	0	0	114	47	18	0	40	0	0	0	275	0	0	0	0	0
	7:30 AM	35	46	0	0	113	62	33	0	46	0	0	0	335	0	0	0	0	0
	7:45 AM	51	68	0	0	106	68	43	0	50	0	0	0	386	0	0	0	0	0
	8:00 AM	45	48	0	0	128	58	18	0	43	0	0	0	340	0	0	0	0	0
	8:15 AM	27	32	0	0	112	55	23	0	24	0	0	0	273	0	0	0	0	0
	8:30 AM	16	27	0	0	63	36	15	0	14	0	0	0	171	0	0	0	0	0
	8:45 AM	12	36	0	0	65	48	23	0	18	0	0	0	202	0	0	0	0	0
	VOLUMES	227	312	0	0	777	411	189	0	255	0	0	0	2,171	0	0	0	0	0
	APPROACH %	42%	58%	0%	0%	65%	35%	43%	0%	57%	0%	0%	0%						
	APP/DEPART	539	/	501	1,188	/	1,032	444	/	0	0	/	638	0					
	BEGIN PEAK HR		7:15 AM																
	VOLUMES	153	196	0	0	461	235	112	0	179	0	0	0	1,336					
	APPROACH %	44%	56%	0%	0%	66%	34%	38%	0%	62%	0%	0%	0%						
	PEAK HR FACTOR		0.733			0.935			0.782			0.000		0.865					
	APP/DEPART	349	/	308	696	/	640	291	/	0	0	/	388	0					
PM	4:00 PM	22	37	0	0	49	27	59	0	28	0	0	0	222	0	0	0	0	0
	4:15 PM	25	47	0	0	30	33	59	0	30	0	0	0	224	0	0	0	0	0
	4:30 PM	29	49	0	0	49	23	49	0	22	0	0	0	221	0	0	0	0	0
	4:45 PM	34	60	0	0	43	30	53	0	33	0	0	0	253	1	0	0	0	1
	5:00 PM	36	62	0	0	40	33	40	0	31	0	0	0	242	0	0	0	0	0
	5:15 PM	41	60	0	0	47	48	67	0	35	0	0	0	298	1	0	0	0	1
	5:30 PM	45	63	0	0	59	52	55	0	42	0	0	0	316	0	0	0	0	0
	5:45 PM	61	70	0	0	42	40	48	0	30	0	0	0	291	0	0	0	0	0
	VOLUMES	293	448	0	0	359	286	430	0	251	0	0	0	2,067	2	0	0	0	2
	APPROACH %	40%	60%	0%	0%	56%	44%	63%	0%	37%	0%	0%	0%						
	APP/DEPART	741	/	878	645	/	612	681	/	0	0	/	577	0					
	BEGIN PEAK HR		5:00 PM																
	VOLUMES	183	255	0	0	188	173	210	0	138	0	0	0	1,147					
	APPROACH %	42%	58%	0%	0%	52%	48%	60%	0%	40%	0%	0%	0%						
	PEAK HR FACTOR		0.836			0.813			0.853			0.000		0.907					
	APP/DEPART	438	/	465	361	/	327	348	/	0	0	/	355	0					



		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	0	1	1	3	5	0	0	0	2	2	0	1	1	1	3
	7:15 AM	1	2	1	1	5	0	2	0	0	2	1	0	1	1	3
	7:30 AM	4	1	0	5	10	4	1	0	1	6	0	0	0	4	4
	7:45 AM	0	4	0	3	7	0	4	0	1	5	0	0	0	2	2
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	1	1	0	2	0	1	0	0	1	0	0	1	0	1
	8:45 AM	0	0	1	4	5	0	0	0	2	2	0	0	1	2	3
	TOTAL	5	9	4	16	34	4	8	0	6	18	1	1	4	10	16
PM	4:00 PM	0	1	2	3	6	0	0	0	0	0	0	1	2	3	6
	4:15 PM	1	0	0	1	2	1	0	0	1	2	0	0	0	0	0
	4:30 PM	0	1	0	2	3	0	1	0	0	1	0	0	0	2	2
	4:45 PM	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0
	5:00 PM	0	0	0	2	2	0	0	0	0	0	0	0	0	2	2
	5:15 PM	1	1	0	2	4	1	1	0	1	3	0	0	0	1	1
	5:30 PM	0	0	3	4	7	0	0	1	2	3	0	0	2	2	4
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	2	4	5	14	25	2	3	1	4	10	0	1	4	10	15

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Santa Ana
N/S: Cambridge Street
E/W: Fairhaven Avenue
Weather: Clear

File Name : 86_SNA_Cambridge_Fairhaven AM
Site Code : 20220171
Start Date : 3/12/2020
Page No : 1

Groups Printed- Total Volume

	Cambridge Street Southbound			Fairhaven Avenue Westbound			Fairhaven Avenue Eastbound			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
07:00 AM	74	26	100	16	15	31	5	36	41	172
07:15 AM	97	37	134	45	23	68	12	27	39	241
07:30 AM	117	58	175	59	42	101	16	50	66	342
07:45 AM	131	62	193	71	45	116	24	67	91	400
Total	419	183	602	191	125	316	57	180	237	1155
08:00 AM	122	56	178	62	57	119	13	69	82	379
08:15 AM	103	33	136	44	40	84	16	59	75	295
08:30 AM	73	34	107	37	26	63	9	41	50	220
08:45 AM	64	35	99	27	27	54	14	35	49	202
Total	362	158	520	170	150	320	52	204	256	1096
Grand Total	781	341	1122	361	275	636	109	384	493	2251
Apprch %	69.6	30.4		56.8	43.2		22.1	77.9		
Total %	34.7	15.1	49.8	16	12.2	28.3	4.8	17.1	21.9	

	Cambridge Street Southbound			Fairhaven Avenue Westbound			Fairhaven Avenue Eastbound			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:30 AM										
07:30 AM	117	58	175	59	42	101	16	50	66	342
07:45 AM	**131**	**62**	**193**	**71**	45	116	**24**	67	**91**	**400**
08:00 AM	122	56	178	62	**57**	**119**	13	**69**	82	379
08:15 AM	103	33	136	44	40	84	16	59	75	295
Total Volume	473	209	682	236	184	420	69	245	314	1416
% App. Total	69.4	30.6		56.2	43.8		22	78		
PHF	.903	.843	.883	.831	.807	.882	.719	.888	.863	.885

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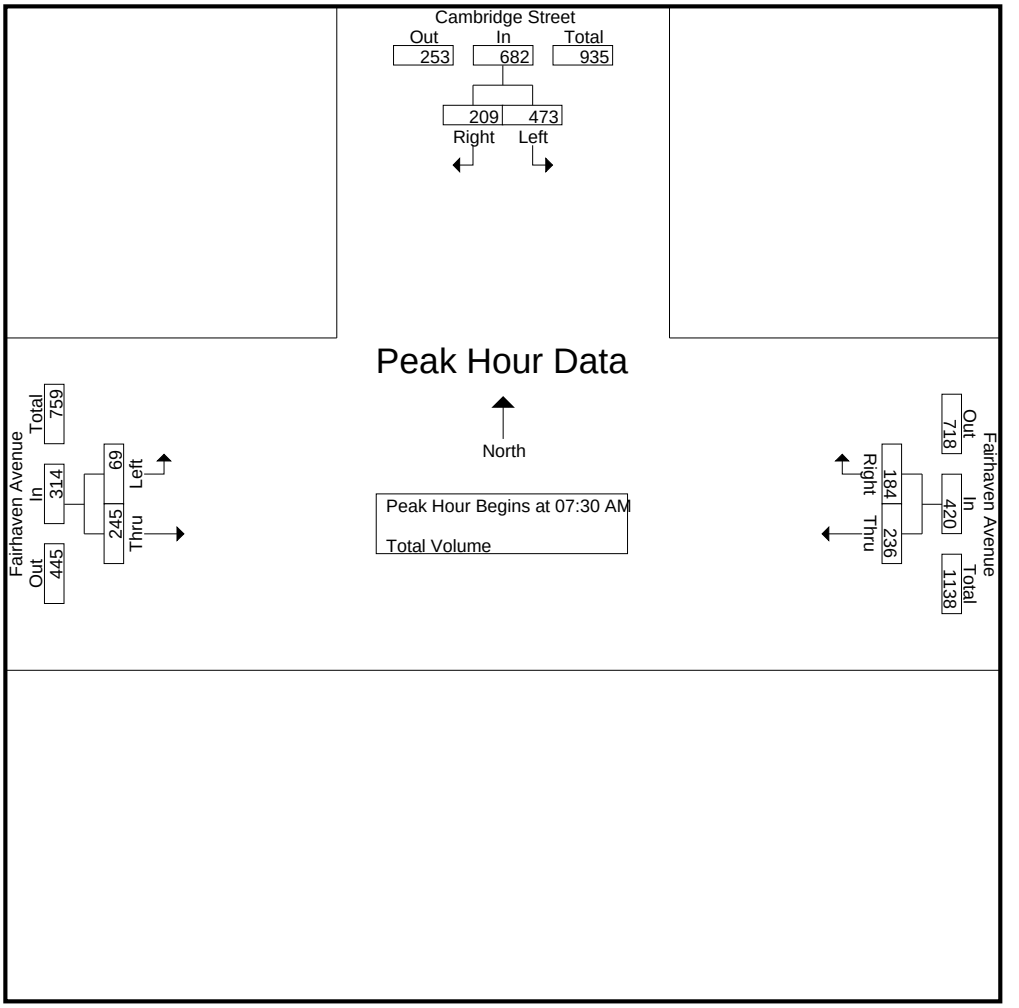
City of Santa Ana
N/S: Cambridge Street
E/W: Fairhaven Avenue
Weather: Clear

File Name : 86_SNA_Cambridge_Fairhaven AM
Site Code : 20220171
Start Date : 3/12/2020
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:30 AM			07:30 AM			07:30 AM		
+0 mins.	117	58	175	59	42	101	16	50	66
+15 mins.	**131**	**62**	**193**	**71**	45	116	**24**	67	**91**
+30 mins.	122	56	178	62	**57**	**119**	13	**69**	82
+45 mins.	103	33	136	44	40	84	16	59	75
Total Volume	473	209	682	236	184	420	69	245	314
% App. Total	69.4	30.6		56.2	43.8		22	78	
PHF	.903	.843	.883	.831	.807	.882	.719	.888	.863

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City of Santa Ana
N/S: Cambridge Street
E/W: Fairhaven Avenue
Weather: Clear

File Name : 86_SNA_Cambridge_Fairhaven PM
Site Code : 20220171
Start Date : 3/12/2020
Page No : 1

Groups Printed- Total Volume

	Cambridge Street Southbound			Fairhaven Avenue Westbound			Fairhaven Avenue Eastbound			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
04:00 PM	41	19	60	39	46	85	15	40	55	200
04:15 PM	47	14	61	53	57	110	37	47	84	255
04:30 PM	40	20	60	45	52	97	31	63	94	251
04:45 PM	41	19	60	49	71	120	31	48	79	259
Total	169	72	241	186	226	412	114	198	312	965
05:00 PM	51	20	71	76	58	134	22	53	75	280
05:15 PM	38	20	58	47	59	106	42	79	121	285
05:30 PM	42	22	64	49	54	103	30	56	86	253
05:45 PM	39	20	59	52	62	114	33	62	95	268
Total	170	82	252	224	233	457	127	250	377	1086
Grand Total	339	154	493	410	459	869	241	448	689	2051
Apprch %	68.8	31.2		47.2	52.8		35	65		
Total %	16.5	7.5	24	20	22.4	42.4	11.8	21.8	33.6	

	Cambridge Street Southbound			Fairhaven Avenue Westbound			Fairhaven Avenue Eastbound			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 05:00 PM										
05:00 PM	**51**	20	**71**	**76**	58	**134**	22	53	75	280
05:15 PM	38	20	58	47	59	106	**42**	**79**	**121**	**285**
05:30 PM	42	**22**	64	49	54	103	30	56	86	253
05:45 PM	39	20	59	52	**62**	114	33	62	95	268
Total Volume	170	82	252	224	233	457	127	250	377	1086
% App. Total	67.5	32.5		49	51		33.7	66.3		
PHF	.833	.932	.887	.737	.940	.853	.756	.791	.779	.953

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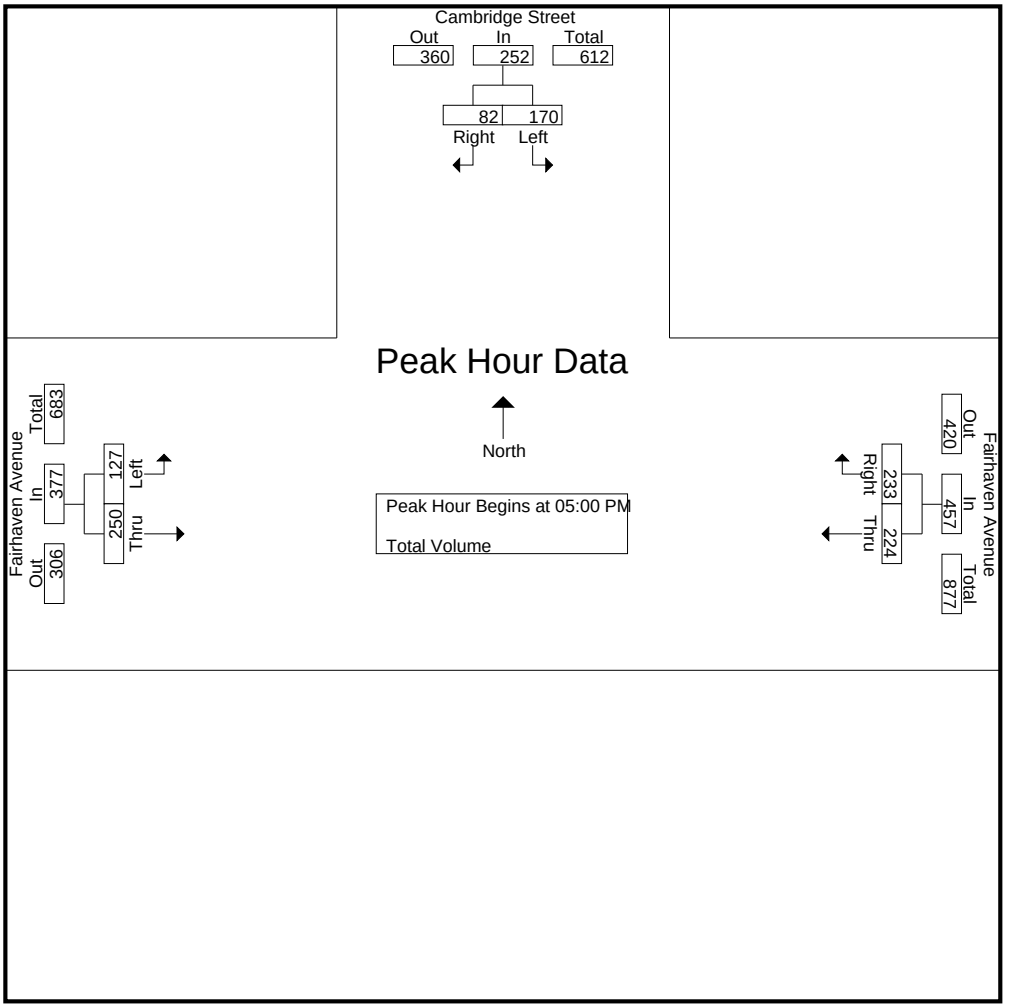
(951) 268-6268

City of Santa Ana
N/S: Cambridge Street
E/W: Fairhaven Avenue
Weather: Clear

File Name : 86_SNA_Cambridge_Fairhaven PM
Site Code : 20220171
Start Date : 3/12/2020
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:45 PM			04:45 PM			05:00 PM		
+0 mins.	41	19	60	49	**71**	120	22	53	75
+15 mins.	**51**	20	**71**	**76**	58	**134**	**42**	**79**	**121**
+30 mins.	38	20	58	47	59	106	30	56	86
+45 mins.	42	**22**	64	49	54	103	33	62	95
Total Volume	172	81	253	221	242	463	127	250	377
% App. Total	68	32		47.7	52.3		33.7	66.3	
PHF	.843	.920	.891	.727	.852	.864	.756	.791	.779

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Santa Ana
N/S: Mabury St/Elk Lane
E/W: E First Street
Weather: Clear

File Name : 87_SNA_Mabury_1st AM
Site Code : 20220171
Start Date : 3/12/2020
Page No : 1

Groups Printed- Total Volume

	Mabury Street Southbound				E First Street Westbound				Elk Lane Northbound				E First Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	57	32	132	221	6	91	0	97	2	0	52	54	0	262	8	270	642
07:15 AM	50	30	157	237	6	144	0	150	3	0	58	61	0	264	2	266	714
07:30 AM	53	37	134	224	12	191	0	203	3	0	75	78	0	265	2	267	772
07:45 AM	67	35	139	241	13	190	0	203	3	0	67	70	0	256	3	259	773
Total	227	134	562	923	37	616	0	653	11	0	252	263	0	1047	15	1062	2901
08:00 AM	58	38	114	210	8	171	0	179	2	0	52	54	0	277	2	279	722
08:15 AM	60	31	146	237	13	149	0	162	2	0	50	52	0	264	4	268	719
08:30 AM	61	31	122	214	13	131	0	144	3	0	46	49	0	291	3	294	701
08:45 AM	56	35	130	221	3	127	0	130	1	0	48	49	0	282	4	286	686
Total	235	135	512	882	37	578	0	615	8	0	196	204	0	1114	13	1127	2828
Grand Total	462	269	1074	1805	74	1194	0	1268	19	0	448	467	0	2161	28	2189	5729
Apprch %	25.6	14.9	59.5		5.8	94.2	0		4.1	0	95.9		0	98.7	1.3		
Total %	8.1	4.7	18.7	31.5	1.3	20.8	0	22.1	0.3	0	7.8	8.2	0	37.7	0.5	38.2	

	Mabury Street Southbound				E First Street Westbound				Elk Lane Northbound				E First Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	53	37	134	224	12	**191**	0	**203**	**3**	0	**75**	**78**	0	265	2	267	772
07:45 AM	**67**	35	139	**241**	**13**	190	0	203	3	0	67	70	0	256	3	259	**773**
08:00 AM	58	**38**	114	210	8	171	0	179	2	0	52	54	0	**277**	2	**279**	722
08:15 AM	60	31	**146**	237	13	149	0	162	2	0	50	52	0	264	**4**	268	719
Total Volume	238	141	533	912	46	701	0	747	10	0	244	254	0	1062	11	1073	2986
% App. Total	26.1	15.5	58.4		6.2	93.8	0		3.9	0	96.1		0	99	1		
PHF	.888	.928	.913	.946	.885	.918	.000	.920	.833	.000	.813	.814	.000	.958	.688	.961	.966

Counts Unlimited
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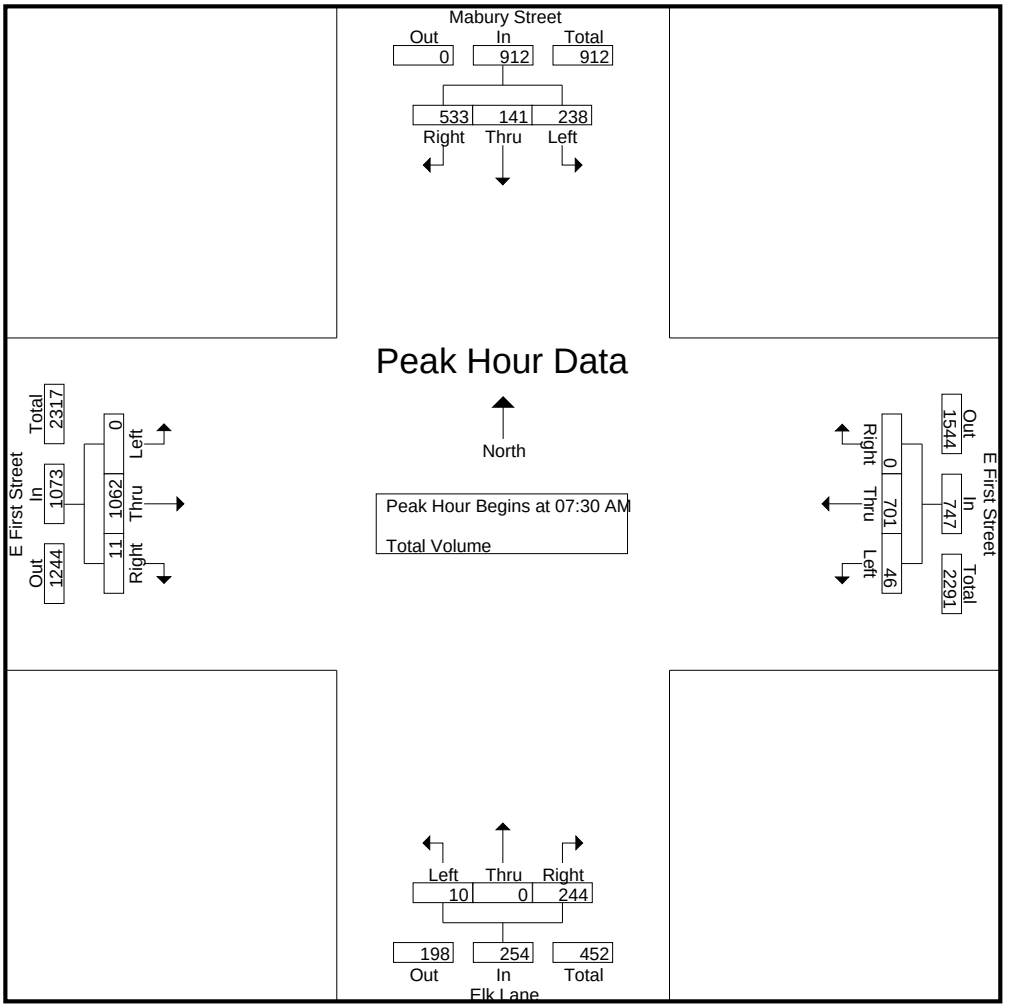
City of Santa Ana
N/S: Mabury St/Elk Lane
E/W: E First Street
Weather: Clear

File Name : 87_SNA_Mabury_1st AM
Site Code : 20220171
Start Date : 3/12/2020
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:00 AM				07:30 AM				07:00 AM				08:00 AM			
+0 mins.	57	32	132	221	12	**191**	0	**203**	2	0	52	54	0	277	2	279
+15 mins.	50	30	**157**	237	**13**	190	0	203	**3**	0	58	61	0	264	**4**	268
+30 mins.	53	**37**	134	224	8	171	0	179	3	0	**75**	**78**	0	**291**	3	**294**
+45 mins.	**67**	35	139	**241**	13	149	0	162	3	0	67	70	0	282	4	286
Total Volume	227	134	562	923	46	701	0	747	11	0	252	263	0	1114	13	1127
% App. Total	24.6	14.5	60.9		6.2	93.8	0		4.2	0	95.8		0	98.8	1.2	
PHF	.847	.905	.895	.957	.885	.918	.000	.920	.917	.000	.840	.843	.000	.957	.813	.958

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City of Santa Ana
N/S: Mabury St/Elk Lane
E/W: E First Street
Weather: Clear

File Name : 87_SNA_Mabury_1st PM
Site Code : 20220171
Start Date : 3/12/2020
Page No : 1

Groups Printed- Total Volume

	Mabury Street Southbound				E First Street Westbound				Elk Lane Northbound				E First Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	64	29	90	183	10	151	0	161	10	0	75	85	0	332	2	334	763
04:15 PM	39	15	97	151	15	153	0	168	4	0	55	59	0	314	4	318	696
04:30 PM	58	31	98	187	5	141	0	146	6	0	89	95	0	295	4	299	727
04:45 PM	37	23	100	160	12	126	0	138	5	0	70	75	0	379	4	383	756
Total	198	98	385	681	42	571	0	613	25	0	289	314	0	1320	14	1334	2942
05:00 PM	59	21	109	189	8	151	0	159	3	0	49	52	0	374	6	380	780
05:15 PM	64	25	96	185	13	166	0	179	9	0	75	84	0	351	8	359	807
05:30 PM	47	19	85	151	7	106	0	113	8	0	62	70	0	408	6	414	748
05:45 PM	54	28	106	188	15	99	0	114	5	0	72	77	0	327	7	334	713
Total	224	93	396	713	43	522	0	565	25	0	258	283	0	1460	27	1487	3048
Grand Total	422	191	781	1394	85	1093	0	1178	50	0	547	597	0	2780	41	2821	5990
Apprch %	30.3	13.7	56		7.2	92.8	0		8.4	0	91.6		0	98.5	1.5		
Total %	7	3.2	13	23.3	1.4	18.2	0	19.7	0.8	0	9.1	10	0	46.4	0.7	47.1	

	Mabury Street Southbound				E First Street Westbound				Elk Lane Northbound				E First Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	37	23	100	160	12	126	0	138	5	0	70	75	0	379	4	383	756
05:00 PM	59	21	**109**	**189**	8	151	0	159	3	0	49	52	0	374	6	380	780
05:15 PM	**64**	**25**	96	185	**13**	**166**	0	**179**	**9**	0	**75**	**84**	0	351	**8**	359	**807**
05:30 PM	47	19	85	151	7	106	0	113	8	0	62	70	0	**408**	6	**414**	748
Total Volume	207	88	390	685	40	549	0	589	25	0	256	281	0	1512	24	1536	3091
% App. Total	30.2	12.8	56.9		6.8	93.2	0		8.9	0	91.1		0	98.4	1.6		
PHF	.809	.880	.894	.906	.769	.827	.000	.823	.694	.000	.853	.836	.000	.926	.750	.928	.958

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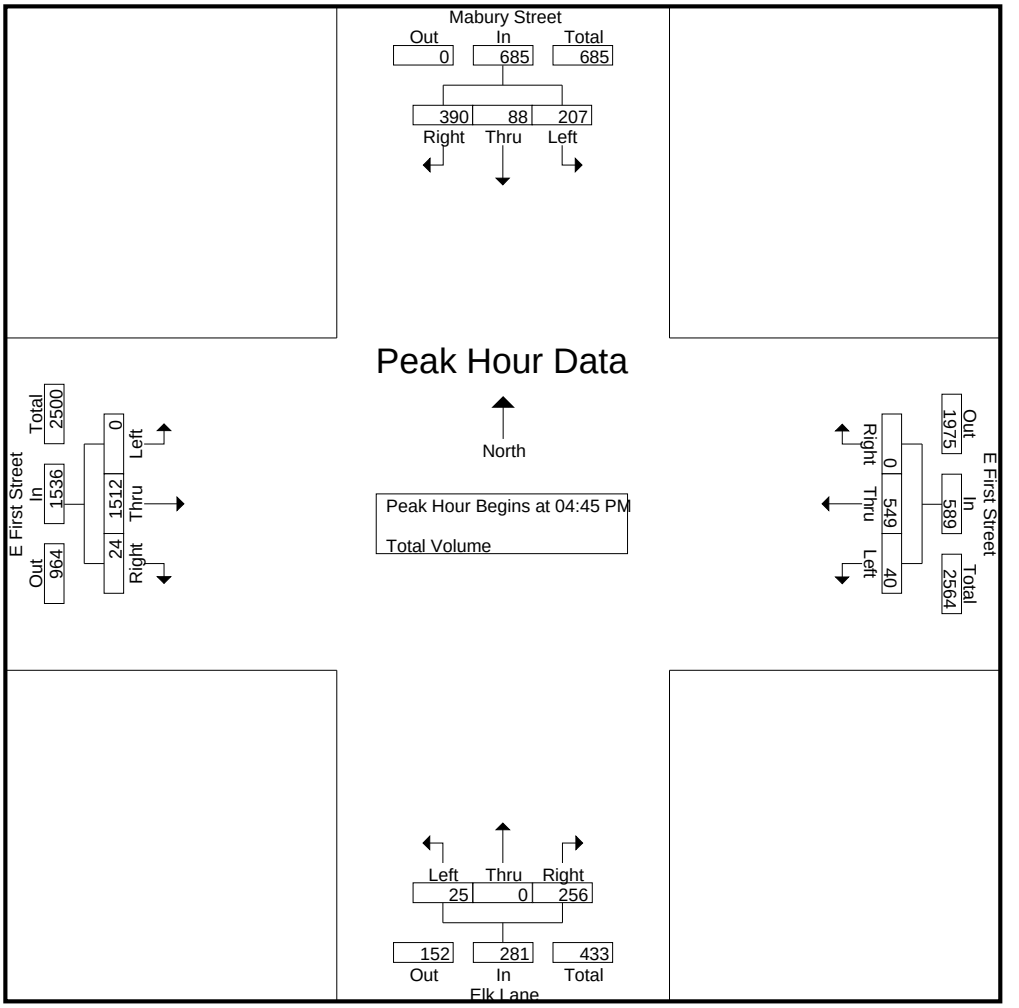
City of Santa Ana
N/S: Mabury St/Elk Lane
E/W: E First Street
Weather: Clear

File Name : 87_SNA_Mabury_1st PM
Site Code : 20220171
Start Date : 3/12/2020
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:30 PM				04:30 PM				04:00 PM				04:45 PM			
+0 mins.	58	**31**	98	187	5	141	0	146	**10**	0	75	85	0	379	4	383
+15 mins.	37	23	100	160	12	126	0	138	4	0	55	59	0	374	6	380
+30 mins.	59	21	**109**	**189**	8	151	0	159	6	0	**89**	**95**	0	351	**8**	359
+45 mins.	**64**	25	96	185	**13**	**166**	0	**179**	5	0	70	75	0	**408**	6	**414**
Total Volume	218	100	403	721	38	584	0	622	25	0	289	314	0	1512	24	1536
% App. Total	30.2	13.9	55.9		6.1	93.9	0		8	0	92		0	98.4	1.6	
PHF	.852	.806	.924	.954	.731	.880	.000	.869	.625	.000	.812	.826	.000	.926	.750	.928

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City of Orange
N/S: Tustin Street
E/W: Rock Creek Drive/La Veta Avenue
Weather: Clear

File Name : 88_ORN_Tustin_La Veta AM
Site Code : 20220171
Start Date : 1/8/2020
Page No : 1

Groups Printed- Total Volume

	Tustin Street Southbound				La Veta Avenue Westbound				Tustin Street Northbound				Rock Creek Drive Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	6	346	1	353	84	2	10	96	5	72	22	99	1	1	7	9	557
07:15 AM	19	385	0	404	114	2	11	127	2	79	28	109	1	3	9	13	653
07:30 AM	21	367	0	388	144	0	14	158	0	70	17	87	3	1	9	13	646
07:45 AM	20	378	2	400	95	0	24	119	5	94	21	120	2	6	9	17	656
Total	66	1476	3	1545	437	4	59	500	12	315	88	415	7	11	34	52	2512
08:00 AM	14	322	2	338	94	0	20	114	1	90	30	121	3	1	8	12	585
08:15 AM	14	314	0	328	92	1	24	117	7	89	31	127	0	3	10	13	585
08:30 AM	16	323	0	339	69	0	19	88	4	108	26	138	5	1	9	15	580
08:45 AM	25	295	0	320	60	6	21	87	3	122	25	150	5	0	3	8	565
Total	69	1254	2	1325	315	7	84	406	15	409	112	536	13	5	30	48	2315
Grand Total	135	2730	5	2870	752	11	143	906	27	724	200	951	20	16	64	100	4827
Apprch %	4.7	95.1	0.2		83	1.2	15.8		2.8	76.1	21		20	16	64		
Total %	2.8	56.6	0.1	59.5	15.6	0.2	3	18.8	0.6	15	4.1	19.7	0.4	0.3	1.3	2.1	

	Tustin Street Southbound				La Veta Avenue Westbound				Tustin Street Northbound				Rock Creek Drive Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	19	**385**	0	**404**	114	**2**	11	127	2	79	28	109	1	3	**9**	13	653
07:30 AM	**21**	367	0	388	**144**	0	14	**158**	0	70	17	87	**3**	1	9	13	646
07:45 AM	20	378	**2**	400	95	0	**24**	119	**5**	**94**	21	120	2	**6**	9	**17**	**656**
08:00 AM	14	322	2	338	94	0	20	114	1	90	**30**	**121**	3	1	8	12	585
Total Volume	74	1452	4	1530	447	2	69	518	8	333	96	437	9	11	35	55	2540
% App. Total	4.8	94.9	0.3		86.3	0.4	13.3		1.8	76.2	22		16.4	20	63.6		
PHF	.881	.943	.500	.947	.776	.250	.719	.820	.400	.886	.800	.903	.750	.458	.972	.809	.968

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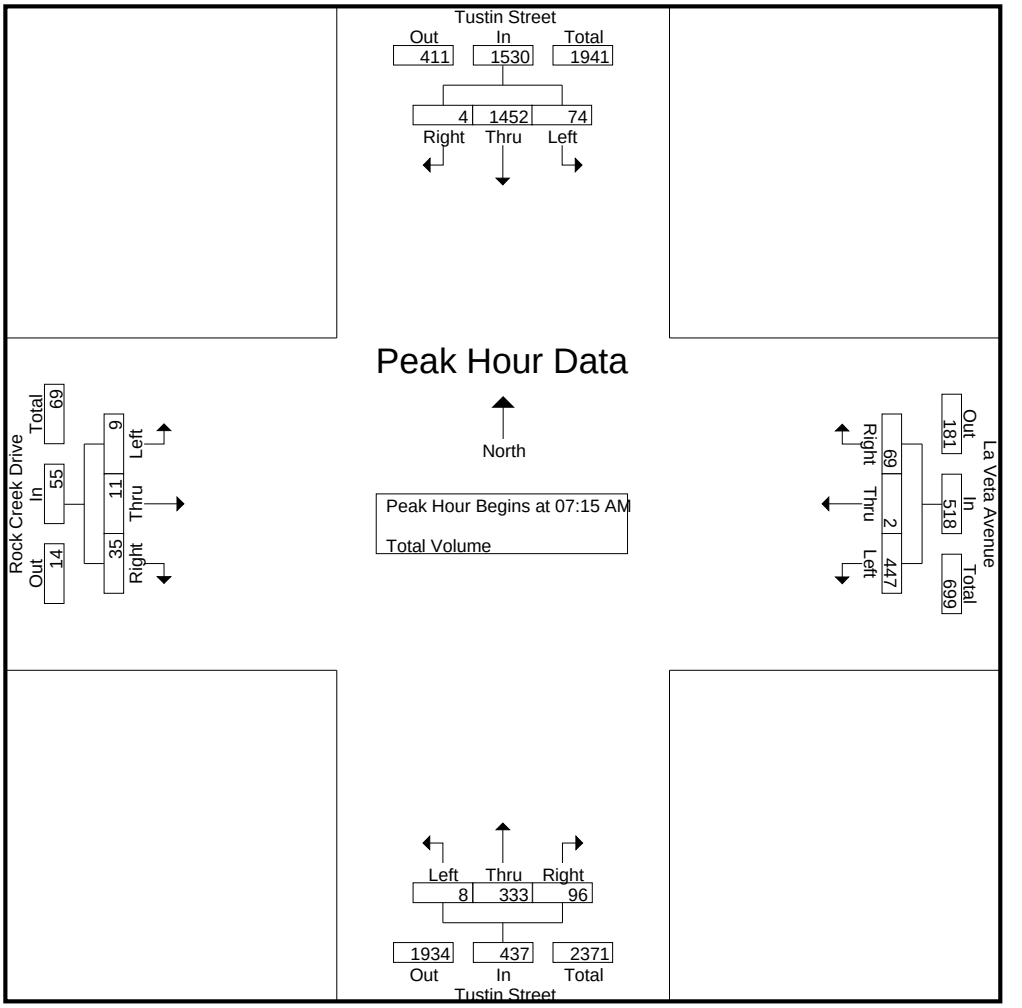
City of Orange
N/S: Tustin Street
E/W: Rock Creek Drive/La Veta Avenue
Weather: Clear

File Name : 88_ORN_Tustin_La Veta AM
Site Code : 20220171
Start Date : 1/8/2020
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:00 AM				07:15 AM				08:00 AM				07:45 AM			
+0 mins.	6	346	1	353	114	**2**	11	127	1	90	30	121	2	**6**	9	**17**
+15 mins.	19	**385**	0	**404**	**144**	0	14	**158**	**7**	89	**31**	127	3	1	8	12
+30 mins.	**21**	367	0	388	95	0	**24**	119	4	108	26	138	0	3	**10**	13
+45 mins.	20	378	**2**	400	94	0	20	114	3	**122**	25	**150**	**5**	1	9	15
Total Volume	66	1476	3	1545	447	2	69	518	15	409	112	536	10	11	36	57
% App. Total	4.3	95.5	0.2		86.3	0.4	13.3		2.8	76.3	20.9		17.5	19.3	63.2	
PHF	.786	.958	.375	.956	.776	.250	.719	.820	.536	.838	.903	.893	.500	.458	.900	.838

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City of Orange
N/S: Tustin Street
E/W: Rock Creek Drive/La Veta Avenue
Weather: Clear

File Name : 88_ORN_Tustin_La Veta PM
Site Code : 20220171
Start Date : 1/8/2020
Page No : 1

Groups Printed- Total Volume

	Tustin Street Southbound				La Veta Avenue Westbound				Tustin Street Northbound				Rock Creek Drive Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	26	208	1	235	59	3	32	94	5	285	56	346	4	1	2	7	682
04:15 PM	16	163	1	180	32	0	33	65	12	253	51	316	3	2	4	9	570
04:30 PM	18	191	5	214	55	0	24	79	9	272	52	333	2	1	5	8	634
04:45 PM	19	195	2	216	50	4	24	78	12	232	76	320	2	1	1	4	618
Total	79	757	9	845	196	7	113	316	38	1042	235	1315	11	5	12	28	2504
05:00 PM	28	224	6	258	33	1	35	69	15	278	63	356	6	1	10	17	700
05:15 PM	25	191	2	218	45	0	29	74	10	251	54	315	3	2	4	9	616
05:30 PM	34	168	4	206	51	3	23	77	19	231	49	299	5	4	2	11	593
05:45 PM	16	195	1	212	37	4	32	73	10	255	67	332	4	9	3	16	633
Total	103	778	13	894	166	8	119	293	54	1015	233	1302	18	16	19	53	2542
Grand Total	182	1535	22	1739	362	15	232	609	92	2057	468	2617	29	21	31	81	5046
Apprch %	10.5	88.3	1.3		59.4	2.5	38.1		3.5	78.6	17.9		35.8	25.9	38.3		
Total %	3.6	30.4	0.4	34.5	7.2	0.3	4.6	12.1	1.8	40.8	9.3	51.9	0.6	0.4	0.6	1.6	

	Tustin Street Southbound				La Veta Avenue Westbound				Tustin Street Northbound				Rock Creek Drive Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	18	191	5	214	**55**	0	24	**79**	9	272	52	333	2	1	5	8	634
04:45 PM	19	195	2	216	50	**4**	24	78	12	232	**76**	320	2	1	1	4	618
05:00 PM	**28**	**224**	**6**	**258**	33	1	**35**	69	**15**	**278**	63	**356**	**6**	1	**10**	**17**	**700**
05:15 PM	25	191	2	218	45	0	29	74	10	251	54	315	3	**2**	4	9	616
Total Volume	90	801	15	906	183	5	112	300	46	1033	245	1324	13	5	20	38	2568
% App. Total	9.9	88.4	1.7		61	1.7	37.3		3.5	78	18.5		34.2	13.2	52.6		
PHF	.804	.894	.625	.878	.832	.313	.800	.949	.767	.929	.806	.930	.542	.625	.500	.559	.917

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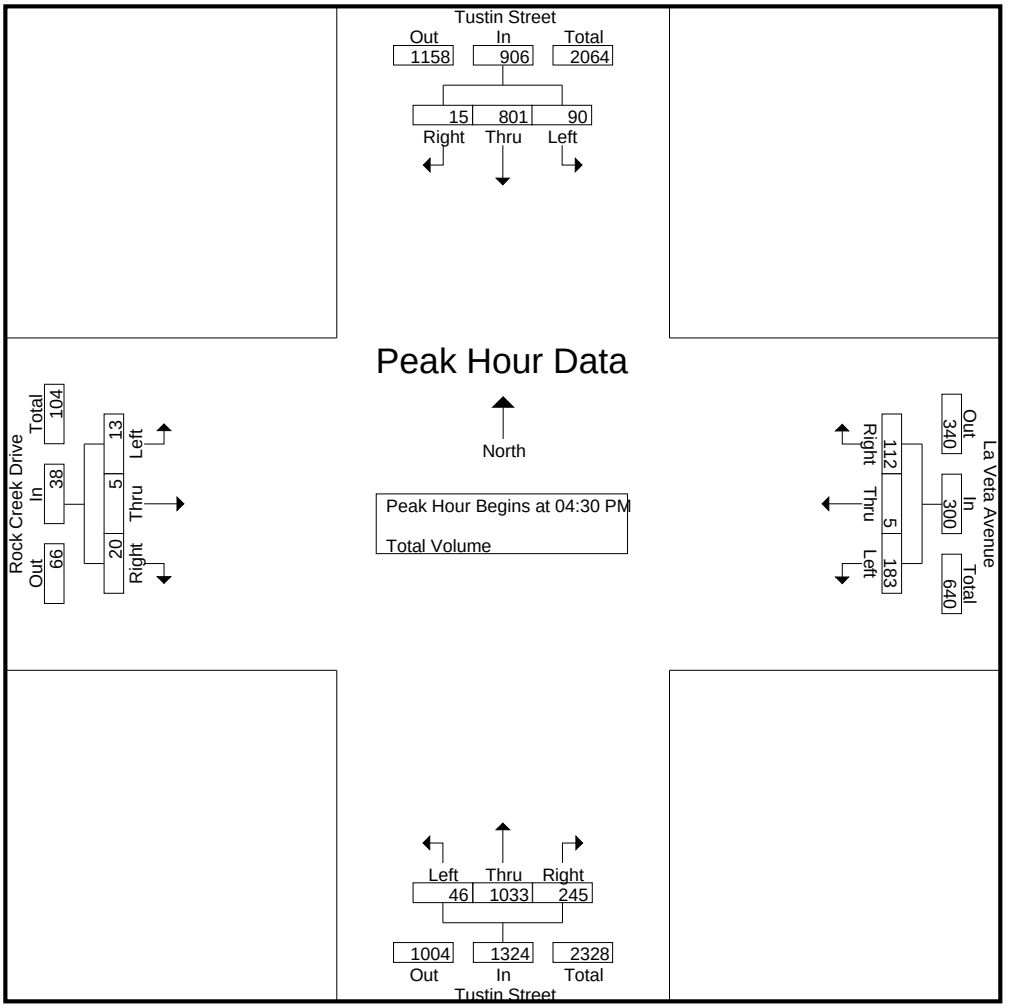
City of Orange
N/S: Tustin Street
E/W: Rock Creek Drive/La Veta Avenue
Weather: Clear

File Name : 88_ORN_Tustin_La Veta PM
Site Code : 20220171
Start Date : 1/8/2020
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:30 PM				04:00 PM				04:15 PM				05:00 PM			
+0 mins.	18	191	5	214	**59**	3	32	**94**	12	253	51	316	**6**	1	**10**	**17**
+15 mins.	19	195	2	216	32	0	**33**	65	9	272	52	333	3	2	4	9
+30 mins.	**28**	**224**	**6**	**258**	55	0	24	79	12	232	**76**	320	5	4	2	11
+45 mins.	25	191	2	218	50	**4**	24	78	**15**	**278**	63	**356**	4	**9**	3	16
Total Volume	90	801	15	906	196	7	113	316	48	1035	242	1325	18	16	19	53
% App. Total	9.9	88.4	1.7		62	2.2	35.8		3.6	78.1	18.3		34	30.2	35.8	
PHF	.804	.894	.625	.878	.831	.438	.856	.840	.800	.931	.796	.930	.750	.444	.475	.779

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City of Orange
N/S: Tustin Street
E/W: SR-22 Westbound On Ramp
Weather: Clear

File Name : 89_ORN_Tustin_22W AM
Site Code : 20220171
Start Date : 3/12/2020
Page No : 1

Groups Printed- Total Volume

	Tustin Street Southbound				Orange Tustin Inn Driveway Westbound				Tustin Street Northbound				SR-22 Westbound On Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	301	193	494	0	0	0	0	102	115	0	217	0	0	0	0	711
07:15 AM	0	389	195	584	0	0	0	0	127	115	0	242	0	0	0	0	826
07:30 AM	0	355	210	565	0	0	0	0	170	154	0	324	0	0	0	0	889
07:45 AM	0	329	233	562	0	0	0	0	216	161	0	377	0	0	0	0	939
Total	0	1374	831	2205	0	0	0	0	615	545	0	1160	0	0	0	0	3365
08:00 AM	0	322	195	517	0	0	0	0	143	180	0	323	0	0	0	0	840
08:15 AM	0	300	186	486	0	0	0	0	151	168	0	319	0	0	0	0	805
08:30 AM	0	269	151	420	0	0	0	0	121	156	0	277	0	0	0	0	697
08:45 AM	0	231	148	379	0	0	0	0	94	170	0	264	0	0	0	0	643
Total	0	1122	680	1802	0	0	0	0	509	674	0	1183	0	0	0	0	2985
Grand Total	0	2496	1511	4007	0	0	0	0	1124	1219	0	2343	0	0	0	0	6350
Apprch %	0	62.3	37.7		0	0	0		48	52	0		0	0	0		
Total %	0	39.3	23.8	63.1	0	0	0	0	17.7	19.2	0	36.9	0	0	0	0	

	Tustin Street Southbound				Orange Tustin Inn Driveway Westbound				Tustin Street Northbound				SR-22 Westbound On Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	0	**389**	195	**584**	0	0	0	0	127	115	0	242	0	0	0	0	826
07:30 AM	0	355	210	565	0	0	0	0	170	154	0	324	0	0	0	0	889
07:45 AM	0	329	**233**	562	0	0	0	0	**216**	161	0	**377**	0	0	0	0	**939**
08:00 AM	0	322	195	517	0	0	0	0	143	**180**	0	323	0	0	0	0	840
Total Volume	0	1395	833	2228	0	0	0	0	656	610	0	1266	0	0	0	0	3494
% App. Total	0	62.6	37.4		0	0	0		51.8	48.2	0		0	0	0		
PHF	.000	.897	.894	.954	.000	.000	.000	.000	.759	.847	.000	.840	.000	.000	.000	.000	.930

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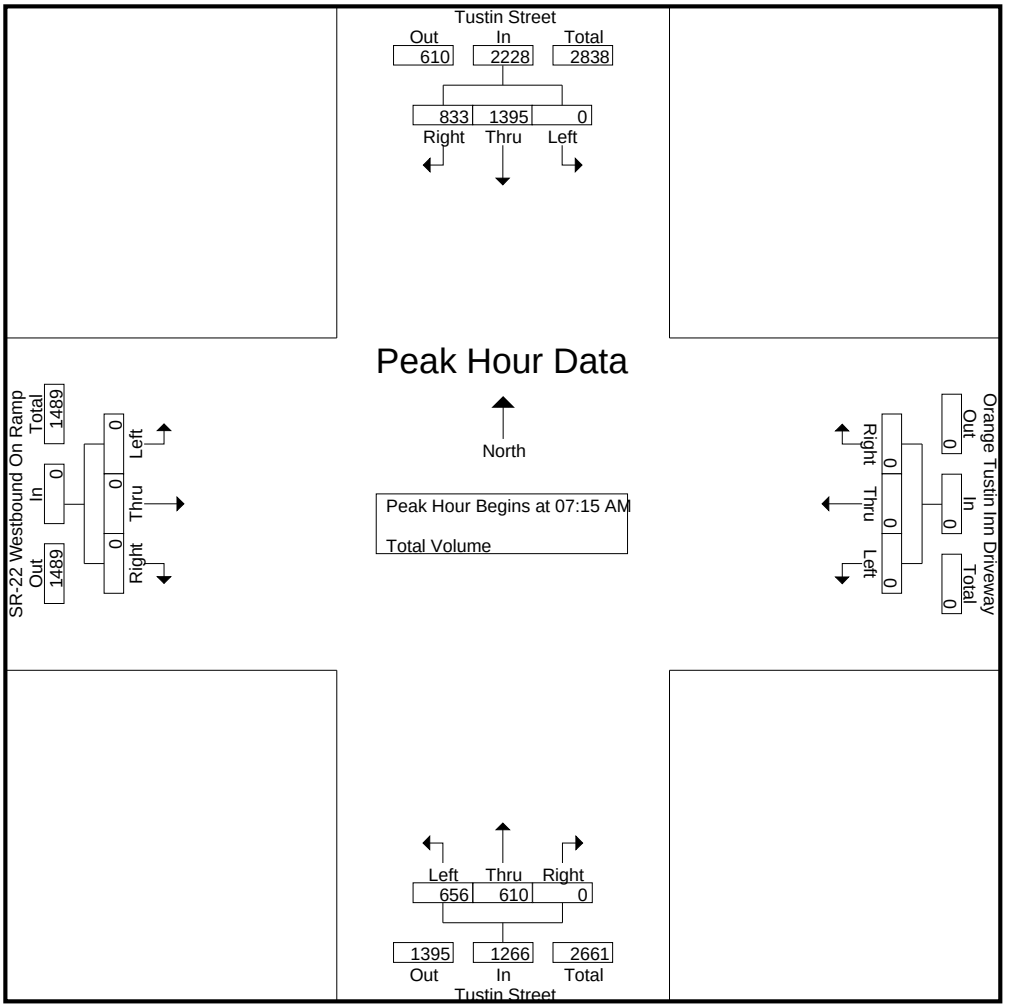
City of Orange
N/S: Tustin Street
E/W: SR-22 Westbound On Ramp
Weather: Clear

File Name : 89_ORN_Tustin_22W AM
Site Code : 20220171
Start Date : 3/12/2020
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:15 AM				07:00 AM				07:30 AM				07:00 AM			
+0 mins.	0	**389**	195	**584**	0	0	0	0	170	154	0	324	0	0	0	0
+15 mins.	0	355	210	565	0	0	0	0	**216**	161	0	**377**	0	0	0	0
+30 mins.	0	329	**233**	562	0	0	0	0	143	**180**	0	323	0	0	0	0
+45 mins.	0	322	195	517	0	0	0	0	151	168	0	319	0	0	0	0
Total Volume	0	1395	833	2228	0	0	0	0	680	663	0	1343	0	0	0	0
% App. Total	0	62.6	37.4		0	0	0		50.6	49.4	0		0	0	0	
PHF	.000	.897	.894	.954	.000	.000	.000	.000	.787	.921	.000	.891	.000	.000	.000	.000

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City of Orange
N/S: Tustin Street
E/W: SR-22 Westbound On Ramp
Weather: Clear

File Name : 89_ORN_Tustin_22W PM
Site Code : 20220171
Start Date : 3/12/2020
Page No : 1

Groups Printed- Total Volume

	Tustin Street Southbound				Orange Tustin Inn Driveway Westbound				Tustin Street Northbound				SR-22 Westbound On Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	161	113	274	0	0	0	0	148	374	0	522	0	0	0	0	796
04:15 PM	0	146	88	234	0	0	0	0	142	377	0	519	0	0	0	0	753
04:30 PM	0	148	102	250	0	0	0	0	142	376	0	518	0	0	0	0	768
04:45 PM	0	166	100	266	0	0	0	0	111	373	0	484	0	0	0	0	750
Total	0	621	403	1024	0	0	0	0	543	1500	0	2043	0	0	0	0	3067
05:00 PM	0	173	99	272	0	0	0	0	149	379	0	528	0	0	0	0	800
05:15 PM	0	182	98	280	0	0	0	0	130	391	0	521	0	0	0	0	801
05:30 PM	0	190	68	258	0	0	0	0	142	386	0	528	0	0	0	0	786
05:45 PM	0	169	81	250	0	0	0	0	105	391	0	496	0	0	0	0	746
Total	0	714	346	1060	0	0	0	0	526	1547	0	2073	0	0	0	0	3133
Grand Total	0	1335	749	2084	0	0	0	0	1069	3047	0	4116	0	0	0	0	6200
Apprch %	0	64.1	35.9		0	0	0		26	74	0		0	0	0		
Total %	0	21.5	12.1	33.6	0	0	0	0	17.2	49.1	0	66.4	0	0	0	0	

	Tustin Street Southbound				Orange Tustin Inn Driveway Westbound				Tustin Street Northbound				SR-22 Westbound On Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	0	166	**100**	266	0	0	0	0	111	373	0	484	0	0	0	0	750
05:00 PM	0	173	99	272	0	0	0	0	**149**	379	0	**528**	0	0	0	0	800
05:15 PM	0	182	98	**280**	0	0	0	0	130	**391**	0	521	0	0	0	0	**801**
05:30 PM	0	**190**	68	258	0	0	0	0	142	386	0	528	0	0	0	0	786
Total Volume	0	711	365	1076	0	0	0	0	532	1529	0	2061	0	0	0	0	3137
% App. Total	0	66.1	33.9		0	0	0		25.8	74.2	0		0	0	0		
PHF	.000	.936	.913	.961	.000	.000	.000	.000	.893	.978	.000	.976	.000	.000	.000	.000	.979

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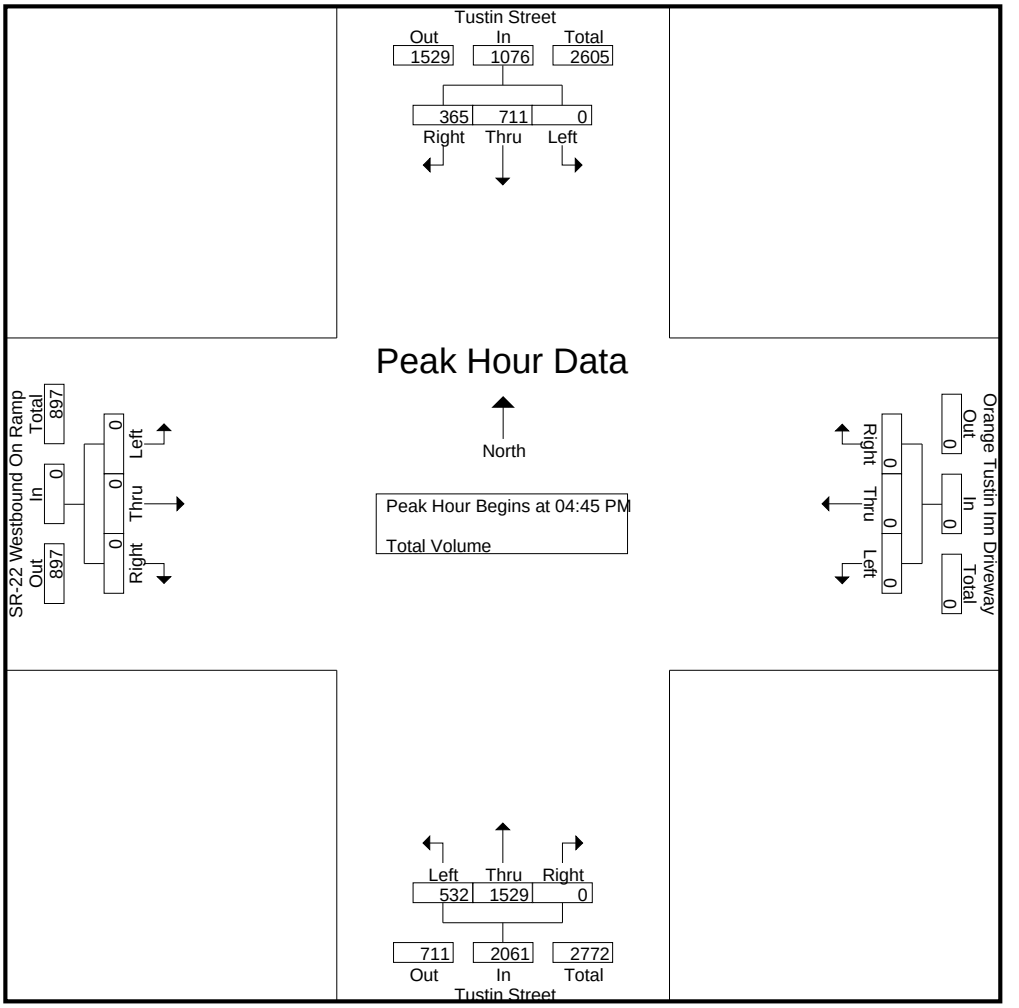
City of Orange
N/S: Tustin Street
E/W: SR-22 Westbound On Ramp
Weather: Clear

File Name : 89_ORN_Tustin_22W PM
Site Code : 20220171
Start Date : 3/12/2020
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:45 PM				04:00 PM				05:00 PM				04:00 PM			
+0 mins.	0	166	**100**	266	0	0	0	0	**149**	379	0	**528**	0	0	0	0
+15 mins.	0	173	99	272	0	0	0	0	130	**391**	0	521	0	0	0	0
+30 mins.	0	182	98	**280**	0	0	0	0	142	386	0	528	0	0	0	0
+45 mins.	0	**190**	68	258	0	0	0	0	105	391	0	496	0	0	0	0
Total Volume	0	711	365	1076	0	0	0	0	526	1547	0	2073	0	0	0	0
% App. Total	0	66.1	33.9		0	0	0		25.4	74.6	0		0	0	0	
PHF	.000	.936	.913	.961	.000	.000	.000	.000	.883	.989	.000	.982	.000	.000	.000	.000

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City of Orange
N/S: Tustin Street
E/W: SR-22 EB Off Ramp/Seba Avenue
Weather: Clear

File Name : 90_ORN_Tustin_22E AM
Site Code : 20220171
Start Date : 3/12/2020
Page No : 1

Groups Printed- Total Volume

	Tustin Street Southbound				Seba Avenue Westbound				Tustin Street Northbound				SR-22 Eastbound Off Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	2	299	0	301	3	0	4	7	0	170	0	170	49	2	208	259	737
07:15 AM	2	370	0	372	1	0	6	7	0	200	0	200	59	4	288	351	930
07:30 AM	2	316	0	318	0	0	10	10	0	263	1	264	62	9	269	340	932
07:45 AM	5	321	0	326	3	0	15	18	0	291	1	292	51	2	250	303	939
Total	11	1306	0	1317	7	0	35	42	0	924	2	926	221	17	1015	1253	3538
08:00 AM	13	342	0	355	2	0	12	14	0	242	3	245	72	9	244	325	939
08:15 AM	13	294	0	307	4	0	13	17	0	231	0	231	76	8	251	335	890
08:30 AM	6	261	0	267	6	0	9	15	0	217	2	219	63	8	184	255	756
08:45 AM	7	221	0	228	1	0	7	8	0	192	2	194	79	3	227	309	739
Total	39	1118	0	1157	13	0	41	54	0	882	7	889	290	28	906	1224	3324
Grand Total	50	2424	0	2474	20	0	76	96	0	1806	9	1815	511	45	1921	2477	6862
Apprch %	2	98	0		20.8	0	79.2		0	99.5	0.5		20.6	1.8	77.6		
Total %	0.7	35.3	0	36.1	0.3	0	1.1	1.4	0	26.3	0.1	26.5	7.4	0.7	28	36.1	

	Tustin Street Southbound				Seba Avenue Westbound				Tustin Street Northbound				SR-22 Eastbound Off Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	2	**370**	0	**372**	1	0	6	7	0	200	0	200	59	4	**288**	**351**	930
07:30 AM	2	316	0	318	0	0	10	10	0	263	1	264	62	**9**	269	340	932
07:45 AM	5	321	0	326	**3**	0	**15**	**18**	0	**291**	1	**292**	51	2	250	303	**939**
08:00 AM	**13**	342	0	355	2	0	12	14	0	242	**3**	245	**72**	9	244	325	939
Total Volume	22	1349	0	1371	6	0	43	49	0	996	5	1001	244	24	1051	1319	3740
% App. Total	1.6	98.4	0		12.2	0	87.8		0	99.5	0.5		18.5	1.8	79.7		
PHF	.423	.911	.000	.921	.500	.000	.717	.681	.000	.856	.417	.857	.847	.667	.912	.939	.996

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City of Orange
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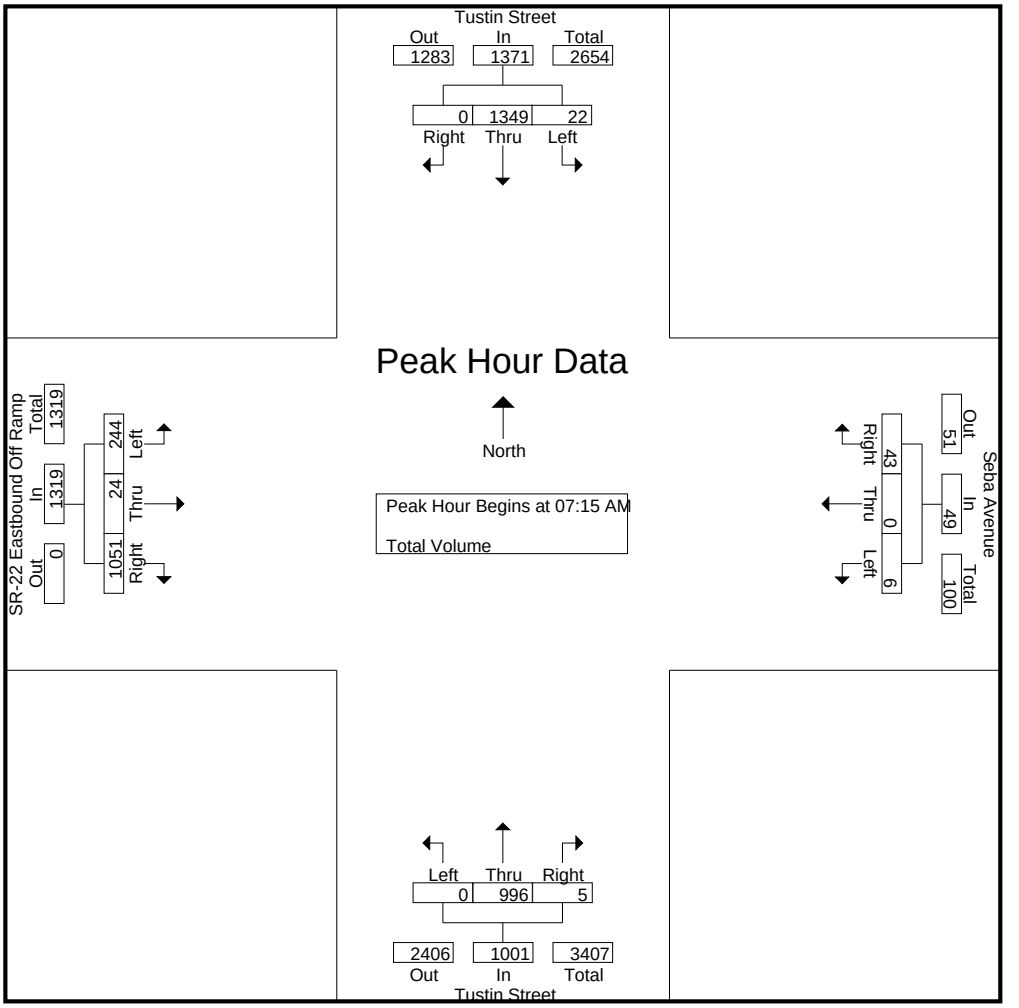
E/W: SR-22 EB Off Ramp/Seba Avenue
Weather: Clear

File Name : 90_ORN_Tustin_22E AM
Site Code : 20220171
Start Date : 3/12/2020
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:15 AM				07:45 AM				07:30 AM				07:15 AM			
+0 mins.	2	**370**	0	**372**	3	0	**15**	**18**	0	263	1	264	59	4	**288**	**351**
+15 mins.	2	316	0	318	2	0	12	14	0	**291**	1	**292**	62	**9**	269	340
+30 mins.	5	321	0	326	4	0	13	17	0	242	**3**	245	51	2	250	303
+45 mins.	**13**	342	0	355	**6**	0	9	15	0	231	0	231	**72**	9	244	325
Total Volume	22	1349	0	1371	15	0	49	64	0	1027	5	1032	244	24	1051	1319
% App. Total	1.6	98.4	0		23.4	0	76.6		0	99.5	0.5		18.5	1.8	79.7	
PHF	.423	.911	.000	.921	.625	.000	.817	.889	.000	.882	.417	.884	.847	.667	.912	.939

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City of Orange
N/S: Tustin Street
E/W: SR-22 EB Off Ramp/Seba Avenue
Weather: Clear

File Name : 90_ORN_Tustin_22E PM
Site Code : 20220171
Start Date : 3/12/2020
Page No : 1

Groups Printed- Total Volume

	Tustin Street Southbound				Seba Avenue Westbound				Tustin Street Northbound				SR-22 Eastbound Off Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	7	144	0	151	8	0	10	18	0	359	1	360	164	11	142	317	846
04:15 PM	10	155	0	165	7	0	16	23	0	350	2	352	153	16	146	315	855
04:30 PM	17	142	0	159	6	0	18	24	0	359	2	361	144	7	142	293	837
04:45 PM	14	167	0	181	5	0	11	16	0	380	0	380	114	7	123	244	821
Total	48	608	0	656	26	0	55	81	0	1448	5	1453	575	41	553	1169	3359
05:00 PM	12	177	0	189	8	0	21	29	0	382	1	383	108	10	138	256	857
05:15 PM	10	155	0	165	9	0	18	27	0	372	3	375	120	11	162	293	860
05:30 PM	16	208	0	224	6	0	17	23	0	413	0	413	116	13	158	287	947
05:45 PM	14	144	0	158	5	0	24	29	0	344	2	346	123	7	142	272	805
Total	52	684	0	736	28	0	80	108	0	1511	6	1517	467	41	600	1108	3469
Grand Total	100	1292	0	1392	54	0	135	189	0	2959	11	2970	1042	82	1153	2277	6828
Apprch %	7.2	92.8	0		28.6	0	71.4		0	99.6	0.4		45.8	3.6	50.6		
Total %	1.5	18.9	0	20.4	0.8	0	2	2.8	0	43.3	0.2	43.5	15.3	1.2	16.9	33.3	

	Tustin Street Southbound				Seba Avenue Westbound				Tustin Street Northbound				SR-22 Eastbound Off Ramp Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	14	167	0	181	5	0	11	16	0	380	0	380	114	7	123	244	821
05:00 PM	12	177	0	189	8	0	**21**	**29**	0	382	1	383	108	10	138	256	857
05:15 PM	10	155	0	165	**9**	0	18	27	0	372	**3**	375	**120**	11	**162**	**293**	860
05:30 PM	**16**	**208**	0	**224**	6	0	17	23	0	**413**	0	**413**	116	**13**	158	287	**947**
Total Volume	52	707	0	759	28	0	67	95	0	1547	4	1551	458	41	581	1080	3485
% App. Total	6.9	93.1	0		29.5	0	70.5		0	99.7	0.3		42.4	3.8	53.8		
PHF	.813	.850	.000	.847	.778	.000	.798	.819	.000	.936	.333	.939	.954	.788	.897	.922	.920

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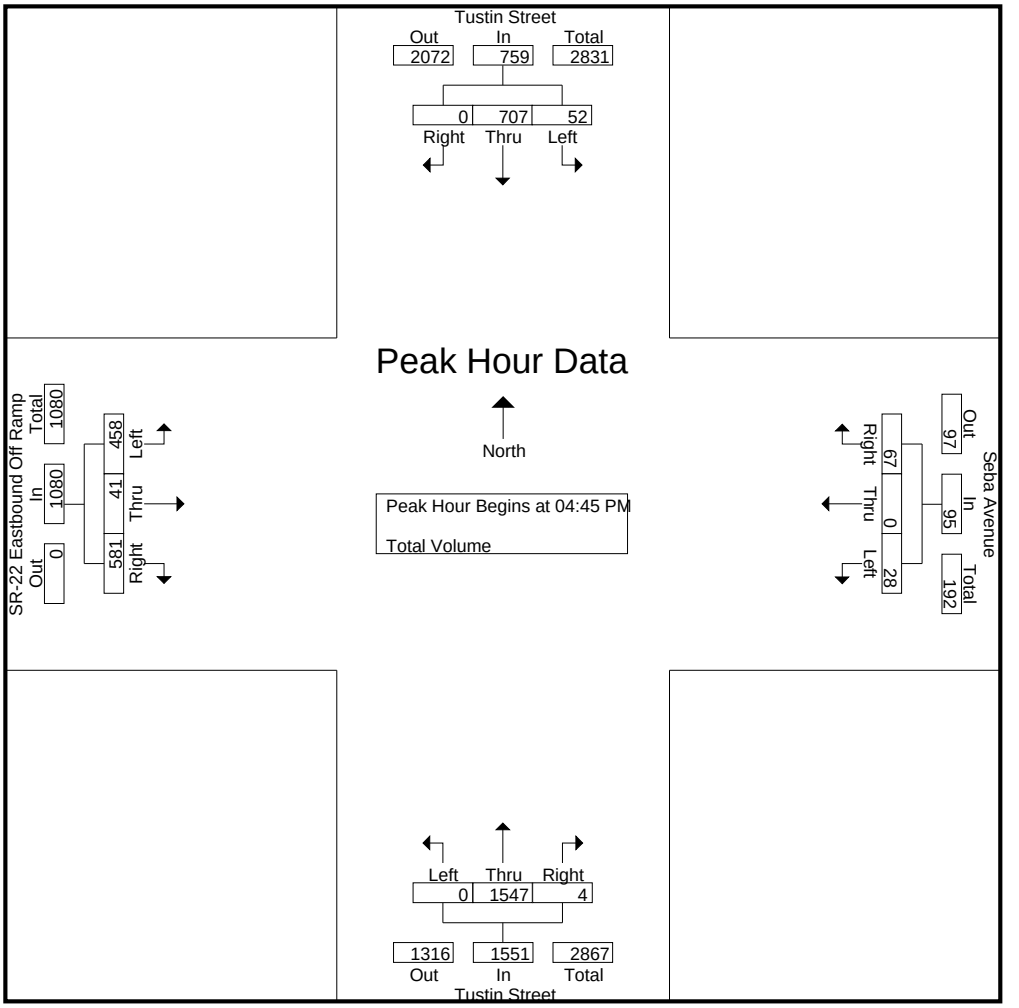
City of Orange
N/S: Tustin Street
E/W: SR-22 EB Off Ramp/Seba Avenue
Weather: Clear

File Name : 90_ORN_Tustin_22E PM
Site Code : 20220171
Start Date : 3/12/2020
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:45 PM				05:00 PM				04:45 PM				04:00 PM			
+0 mins.	14	167	0	181	8	0	21	**29**	0	380	0	380	**164**	11	142	**317**
+15 mins.	12	177	0	189	**9**	0	18	27	0	382	1	383	153	**16**	**146**	315
+30 mins.	10	155	0	165	6	0	17	23	0	372	**3**	375	144	7	142	293
+45 mins.	**16**	**208**	0	**224**	5	0	**24**	29	0	**413**	0	**413**	114	7	123	244
Total Volume	52	707	0	759	28	0	80	108	0	1547	4	1551	575	41	553	1169
% App. Total	6.9	93.1	0		25.9	0	74.1		0	99.7	0.3		49.2	3.5	47.3	
PHF	.813	.850	.000	.847	.778	.000	.833	.931	.000	.936	.333	.939	.877	.641	.947	.922

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City of Santa Ana
N/S: Tustin Street/Tustin Avenue
E/W: Fairhaven Avenue
Weather: Clear

File Name : 91_SNA_Tustin_Fairhaven AM
Site Code : 20220171
Start Date : 3/12/2020

Groups Printed- Total Volume

	Tustin Street Southbound				Fairhaven Avenue Westbound				Tustin Avenue Northbound				Fairhaven Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	39	455	3	497	44	20	70	134	8	93	12	113	11	27	66	104	848
07:15 AM	59	554	8	621	51	45	85	181	14	108	19	141	14	45	85	144	1087
07:30 AM	61	526	4	591	77	71	112	260	21	123	30	174	17	72	119	208	1233
07:45 AM	67	501	13	581	80	92	139	311	28	138	17	183	16	73	101	190	1265
Total	226	2036	28	2290	252	228	406	886	71	462	78	611	58	217	371	646	4433
08:00 AM	53	520	11	584	81	106	102	289	24	125	23	172	19	57	126	202	1247
08:15 AM	54	479	12	545	68	69	89	226	16	128	20	164	16	56	98	170	1105
08:30 AM	53	399	6	458	54	39	82	175	16	136	19	171	21	50	71	142	946
08:45 AM	49	387	5	441	48	32	61	141	13	109	15	137	17	25	68	110	829
Total	209	1785	34	2028	251	246	334	831	69	498	77	644	73	188	363	624	4127
Grand Total	435	3821	62	4318	503	474	740	1717	140	960	155	1255	131	405	734	1270	8560
Apprch %	10.1	88.5	1.4		29.3	27.6	43.1		11.2	76.5	12.4		10.3	31.9	57.8		
Total %	5.1	44.6	0.7	50.4	5.9	5.5	8.6	20.1	1.6	11.2	1.8	14.7	1.5	4.7	8.6	14.8	

	Tustin Street Southbound				Fairhaven Avenue Westbound				Tustin Avenue Northbound				Fairhaven Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	61	**526**	4	**591**	77	71	112	260	21	123	**30**	174	17	72	119	**208**	1233
07:45 AM	**67**	501	**13**	581	80	92	**139**	**311**	**28**	**138**	17	**183**	16	**73**	101	190	**1265**
08:00 AM	53	520	11	584	**81**	**106**	102	289	24	125	23	172	**19**	57	**126**	202	1247
08:15 AM	54	479	12	545	68	69	89	226	16	128	20	164	16	56	98	170	1105
Total Volume	235	2026	40	2301	306	338	442	1086	89	514	90	693	68	258	444	770	4850
% App. Total	10.2	88	1.7		28.2	31.1	40.7		12.8	74.2	13		8.8	33.5	57.7		
PHF	.877	.963	.769	.973	.944	.797	.795	.873	.795	.931	.750	.947	.895	.884	.881	.925	.958

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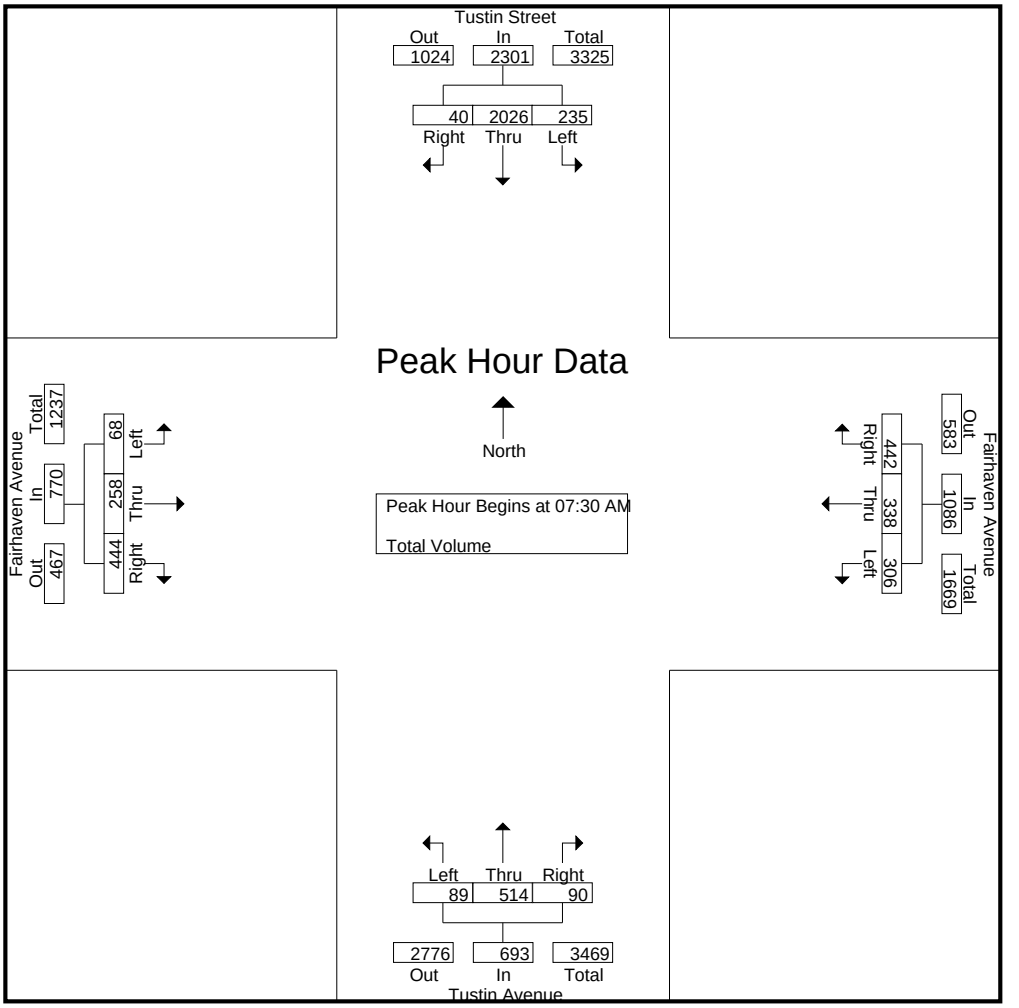
City of Santa Ana
N/S: Tustin Street/Tustin Avenue
E/W: Fairhaven Avenue
Weather: Clear

File Name : 91_SNA_Tustin_Fairhaven AM
Site Code : 20220171
Start Date : 3/12/2020
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:15 AM				07:30 AM				07:30 AM				07:30 AM			
+0 mins.	59	**554**	8	**621**	77	71	112	260	21	123	**30**	174	17	72	119	**208**
+15 mins.	61	526	4	591	80	92	**139**	**311**	**28**	**138**	17	**183**	16	**73**	101	190
+30 mins.	**67**	501	**13**	581	**81**	**106**	102	289	24	125	23	172	**19**	57	**126**	202
+45 mins.	53	520	11	584	68	69	89	226	16	128	20	164	16	56	98	170
Total Volume	240	2101	36	2377	306	338	442	1086	89	514	90	693	68	258	444	770
% App. Total	10.1	88.4	1.5		28.2	31.1	40.7		12.8	74.2	13		8.8	33.5	57.7	
PHF	.896	.948	.692	.957	.944	.797	.795	.873	.795	.931	.750	.947	.895	.884	.881	.925

Counts Unlimited
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City of Santa Ana
N/S: Tustin Street/Tustin Avenue
E/W: Fairhaven Avenue
Weather: Clear

File Name : 91_SNA_Tustin_Fairhaven PM
Site Code : 20220171
Start Date : 3/12/2020

Groups Printed- Total Volume

	Tustin Street Southbound				Fairhaven Avenue Westbound				Tustin Avenue Northbound				Fairhaven Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	80	189	19	288	46	39	63	148	48	270	27	345	21	44	32	97	878
04:15 PM	84	210	14	308	25	47	50	122	50	277	35	362	18	40	35	93	885
04:30 PM	68	182	21	271	22	55	51	128	48	289	42	379	19	43	37	99	877
04:45 PM	71	205	18	294	20	47	42	109	66	311	33	410	20	32	38	90	903
Total	303	786	72	1161	113	188	206	507	212	1147	137	1496	78	159	142	379	3543
05:00 PM	72	205	32	309	19	56	51	126	61	324	32	417	23	56	37	116	968
05:15 PM	92	198	28	318	30	46	45	121	57	329	21	407	20	52	39	111	957
05:30 PM	92	254	21	367	25	59	58	142	55	311	27	393	17	40	33	90	992
05:45 PM	70	195	14	279	29	54	47	130	58	273	27	358	17	35	46	98	865
Total	326	852	95	1273	103	215	201	519	231	1237	107	1575	77	183	155	415	3782
Grand Total	629	1638	167	2434	216	403	407	1026	443	2384	244	3071	155	342	297	794	7325
Apprch %	25.8	67.3	6.9		21.1	39.3	39.7		14.4	77.6	7.9		19.5	43.1	37.4		
Total %	8.6	22.4	2.3	33.2	2.9	5.5	5.6	14	6	32.5	3.3	41.9	2.1	4.7	4.1	10.8	

	Tustin Street Southbound				Fairhaven Avenue Westbound				Tustin Avenue Northbound				Fairhaven Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	71	205	18	294	20	47	42	109	**66**	311	**33**	410	20	32	38	90	903
05:00 PM	72	205	**32**	309	19	56	51	126	61	324	32	**417**	**23**	**56**	37	**116**	968
05:15 PM	**92**	198	28	318	**30**	46	45	121	57	**329**	21	407	20	52	**39**	111	957
05:30 PM	92	**254**	21	**367**	25	**59**	**58**	**142**	55	311	27	393	17	40	33	90	**992**
Total Volume	327	862	99	1288	94	208	196	498	239	1275	113	1627	80	180	147	407	3820
% App. Total	25.4	66.9	7.7		18.9	41.8	39.4		14.7	78.4	6.9		19.7	44.2	36.1		
PHF	.889	.848	.773	.877	.783	.881	.845	.877	.905	.969	.856	.975	.870	.804	.942	.877	.963

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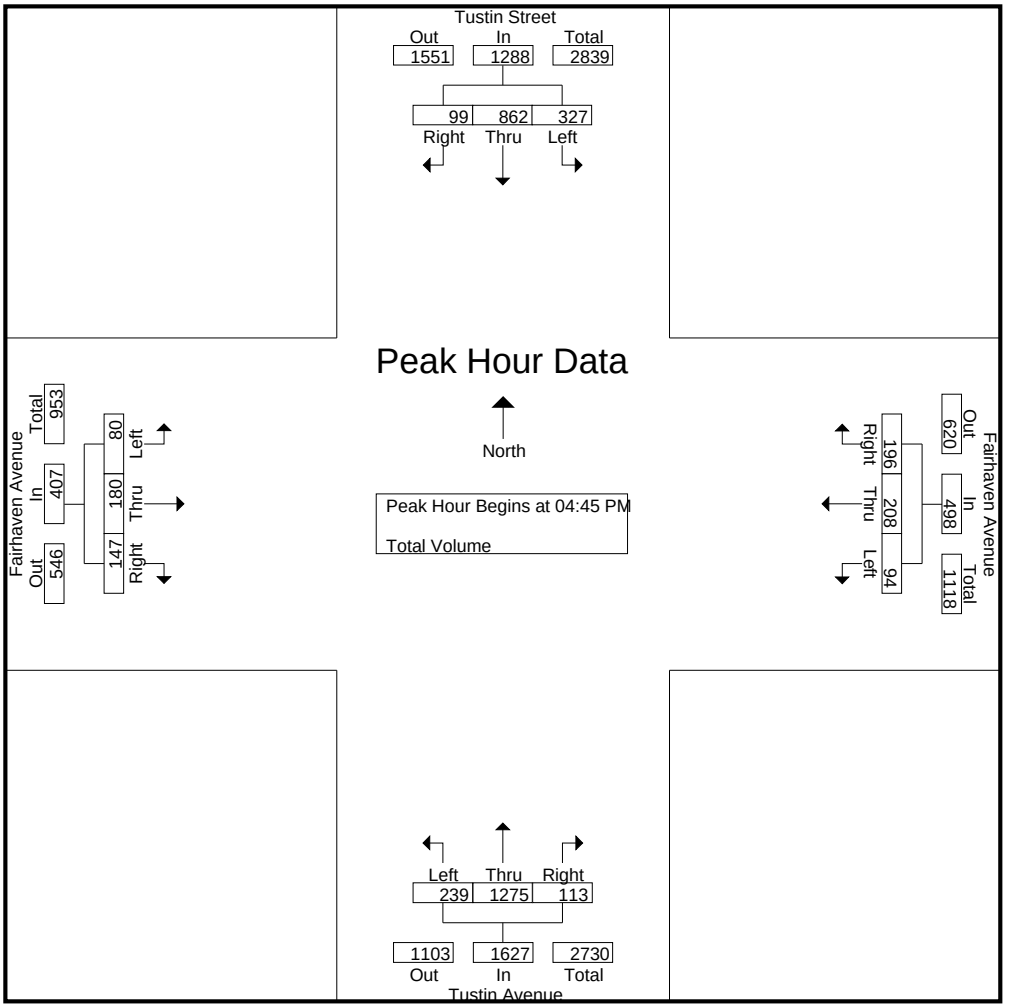
City of Santa Ana
N/S: Tustin Street/Tustin Avenue
E/W: Fairhaven Avenue
Weather: Clear

File Name : 91_SNA_Tustin_Fairhaven PM
Site Code : 20220171
Start Date : 3/12/2020
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:45 PM				05:00 PM				04:45 PM				04:30 PM			
+0 mins.	71	205	18	294	19	56	51	126	**66**	311	**33**	410	19	43	37	99
+15 mins.	72	205	**32**	309	**30**	46	45	121	61	324	32	**417**	20	32	38	90
+30 mins.	**92**	198	28	318	25	**59**	**58**	**142**	57	**329**	21	407	**23**	**56**	37	**116**
+45 mins.	92	**254**	21	**367**	29	54	47	130	55	311	27	393	20	52	**39**	111
Total Volume	327	862	99	1288	103	215	201	519	239	1275	113	1627	82	183	151	416
% App. Total	25.4	66.9	7.7		19.8	41.4	38.7		14.7	78.4	6.9		19.7	44	36.3	
PHF	.889	.848	.773	.877	.858	.911	.866	.914	.905	.969	.856	.975	.891	.817	.968	.897

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City of Santa Ana
N/S: Tustin Avenue
E/W: Santa Clara Avenue
Weather: Clear

File Name : 92_SNA_Tustin_Santa Clara AM
Site Code : 20220171
Start Date : 3/12/2020
Page No : 1

Groups Printed- Total Volume

	Tustin Avenue Southbound				Santa Clara Avenue Westbound				Tustin Avenue Northbound				Santa Clara Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	19	509	22	550	18	20	21	59	15	65	13	93	23	34	35	92	794
07:15 AM	31	655	24	710	20	29	32	81	9	78	24	111	16	86	40	142	1044
07:30 AM	24	633	22	679	31	67	32	130	17	92	20	129	33	82	54	169	1107
07:45 AM	26	654	15	695	23	59	29	111	22	101	16	139	19	73	32	124	1069
Total	100	2451	83	2634	92	175	114	381	63	336	73	472	91	275	161	527	4014
08:00 AM	33	661	28	722	30	63	37	130	17	101	20	138	32	61	56	149	1139
08:15 AM	44	652	17	713	34	55	24	113	17	103	18	138	17	39	44	100	1064
08:30 AM	23	473	17	513	19	33	23	75	20	94	13	127	25	31	37	93	808
08:45 AM	25	465	18	508	28	28	19	75	14	91	8	113	29	34	54	117	813
Total	125	2251	80	2456	111	179	103	393	68	389	59	516	103	165	191	459	3824
Grand Total	225	4702	163	5090	203	354	217	774	131	725	132	988	194	440	352	986	7838
Apprch %	4.4	92.4	3.2		26.2	45.7	28		13.3	73.4	13.4		19.7	44.6	35.7		
Total %	2.9	60	2.1	64.9	2.6	4.5	2.8	9.9	1.7	9.2	1.7	12.6	2.5	5.6	4.5	12.6	

	Tustin Avenue Southbound				Santa Clara Avenue Westbound				Tustin Avenue Northbound				Santa Clara Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	24	633	22	679	31	**67**	32	**130**	17	92	**20**	129	**33**	**82**	54	**169**	1107
07:45 AM	26	654	15	695	23	59	29	111	**22**	101	16	**139**	19	73	32	124	1069
08:00 AM	33	**661**	**28**	**722**	30	63	**37**	130	17	101	20	138	32	61	**56**	149	**1139**
08:15 AM	**44**	652	17	713	**34**	55	24	113	17	**103**	18	138	17	39	44	100	1064
Total Volume	127	2600	82	2809	118	244	122	484	73	397	74	544	101	255	186	542	4379
% App. Total	4.5	92.6	2.9		24.4	50.4	25.2		13.4	73	13.6		18.6	47	34.3		
PHF	.722	.983	.732	.973	.868	.910	.824	.931	.830	.964	.925	.978	.765	.777	.830	.802	.961

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City of Santa Ana
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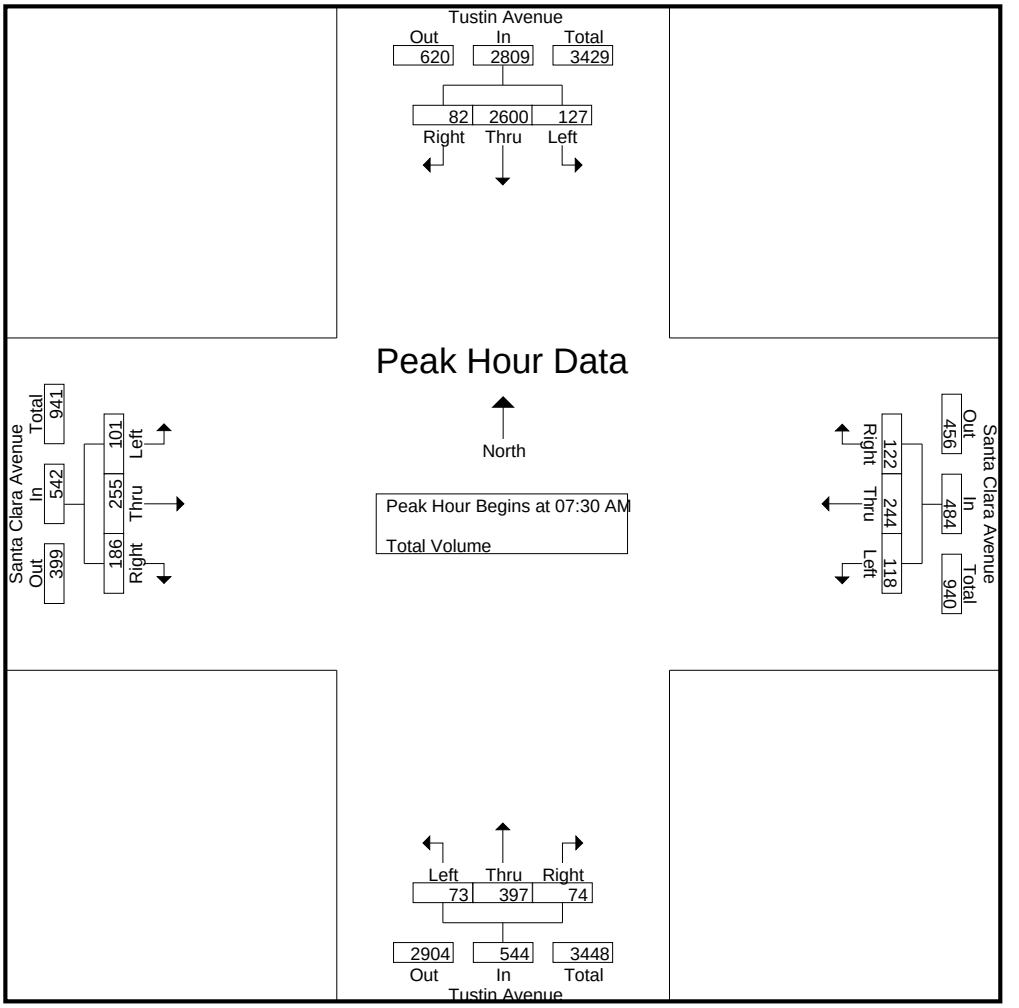
E/W: Santa Clara Avenue
Weather: Clear

File Name : 92_SNA_Tustin_Santa Clara AM
Site Code : 20220171
Start Date : 3/12/2020
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:30 AM				07:30 AM				07:30 AM				07:15 AM			
+0 mins.	24	633	22	679	31	**67**	32	**130**	17	92	**20**	129	16	**86**	40	142
+15 mins.	26	654	15	695	23	59	29	111	**22**	101	16	**139**	**33**	82	54	**169**
+30 mins.	33	**661**	**28**	**722**	30	63	**37**	130	17	101	20	138	19	73	32	124
+45 mins.	**44**	652	17	713	**34**	55	24	113	17	**103**	18	138	32	61	**56**	149
Total Volume	127	2600	82	2809	118	244	122	484	73	397	74	544	100	302	182	584
% App. Total	4.5	92.6	2.9		24.4	50.4	25.2		13.4	73	13.6		17.1	51.7	31.2	
PHF	.722	.983	.732	.973	.868	.910	.824	.931	.830	.964	.925	.978	.758	.878	.813	.864

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City of Santa Ana
N/S: Tustin Avenue
E/W: Santa Clara Avenue
Weather: Clear

File Name : 92_SNA_Tustin_Santa Clara PM
Site Code : 20220171
Start Date : 3/12/2020
Page No : 1

Groups Printed- Total Volume

	Tustin Avenue Southbound				Santa Clara Avenue Westbound				Tustin Avenue Northbound				Santa Clara Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	34	318	34	386	35	26	22	83	40	197	26	263	19	41	28	88	820
04:15 PM	53	301	29	383	29	31	28	88	32	182	30	244	14	45	30	89	804
04:30 PM	47	358	26	431	31	44	44	119	38	174	32	244	16	52	22	90	884
04:45 PM	44	349	18	411	23	40	32	95	32	197	31	260	15	47	24	86	852
Total	178	1326	107	1611	118	141	126	385	142	750	119	1011	64	185	104	353	3360
05:00 PM	37	372	30	439	28	40	30	98	37	199	29	265	17	45	40	102	904
05:15 PM	55	365	26	446	43	33	42	118	56	219	29	304	13	48	27	88	956
05:30 PM	41	344	17	402	34	50	32	116	36	203	24	263	16	52	33	101	882
05:45 PM	40	304	26	370	34	39	24	97	47	213	23	283	15	33	25	73	823
Total	173	1385	99	1657	139	162	128	429	176	834	105	1115	61	178	125	364	3565
Grand Total	351	2711	206	3268	257	303	254	814	318	1584	224	2126	125	363	229	717	6925
Apprch %	10.7	83	6.3		31.6	37.2	31.2		15	74.5	10.5		17.4	50.6	31.9		
Total %	5.1	39.1	3	47.2	3.7	4.4	3.7	11.8	4.6	22.9	3.2	30.7	1.8	5.2	3.3	10.4	

	Tustin Avenue Southbound				Santa Clara Avenue Westbound				Tustin Avenue Northbound				Santa Clara Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	47	358	26	431	31	**44**	**44**	**119**	38	174	**32**	244	16	**52**	22	90	884
04:45 PM	44	349	18	411	23	40	32	95	32	197	31	260	15	47	24	86	852
05:00 PM	37	**372**	**30**	439	28	40	30	98	37	199	29	265	**17**	45	**40**	**102**	904
05:15 PM	**55**	365	26	**446**	**43**	33	42	118	**56**	**219**	29	**304**	13	48	27	88	**956**
Total Volume	183	1444	100	1727	125	157	148	430	163	789	121	1073	61	192	113	366	3596
% App. Total	10.6	83.6	5.8		29.1	36.5	34.4		15.2	73.5	11.3		16.7	52.5	30.9		
PHF	.832	.970	.833	.968	.727	.892	.841	.903	.728	.901	.945	.882	.897	.923	.706	.897	.940

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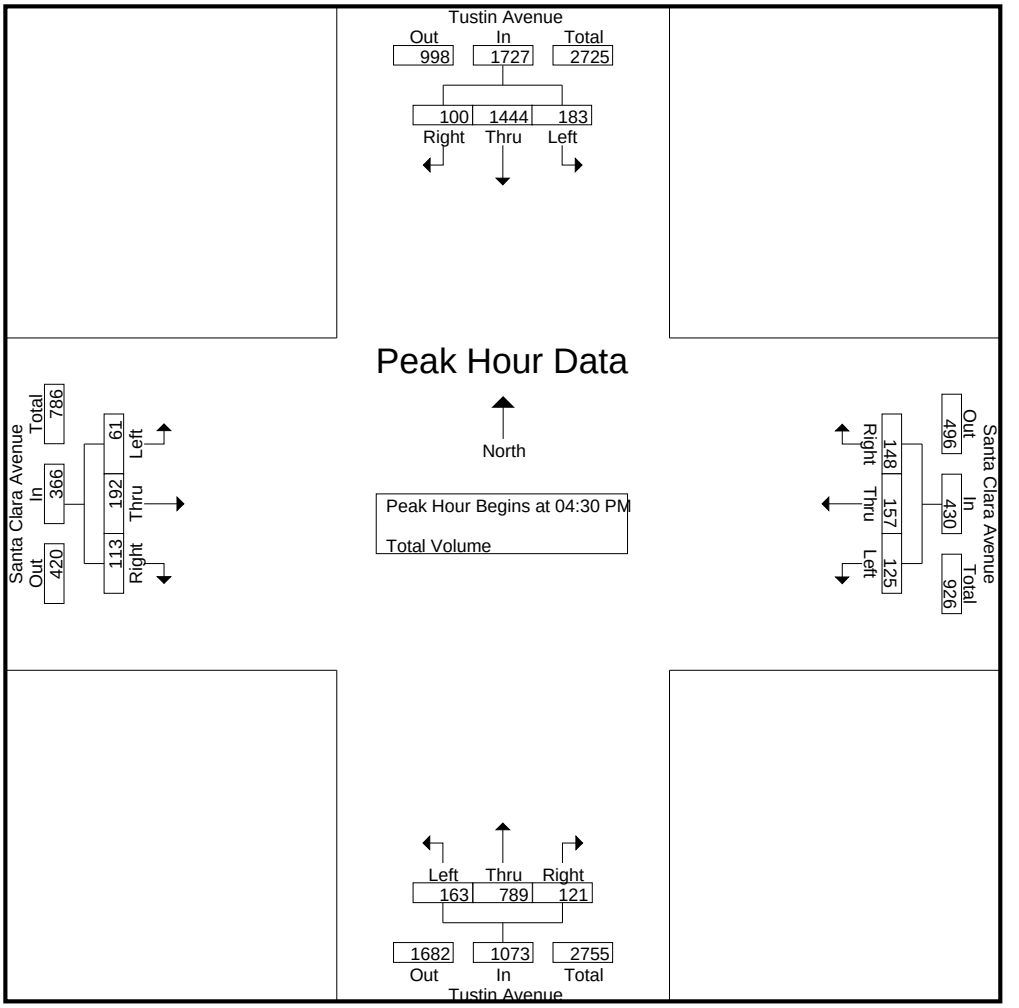
City of Santa Ana
N/S: Tustin Avenue
E/W: Santa Clara Avenue
Weather: Clear

File Name : 92_SNA_Tustin_Santa Clara PM
Site Code : 20220171
Start Date : 3/12/2020
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:30 PM				04:30 PM				05:00 PM				04:45 PM			
+0 mins.	47	358	26	431	31	**44**	**44**	**119**	37	199	**29**	265	15	47	24	86
+15 mins.	44	349	18	411	23	40	32	95	**56**	**219**	29	**304**	**17**	45	**40**	**102**
+30 mins.	37	**372**	**30**	439	28	40	30	98	36	203	24	263	13	48	27	88
+45 mins.	**55**	365	26	**446**	**43**	33	42	118	47	213	23	283	16	**52**	33	101
Total Volume	183	1444	100	1727	125	157	148	430	176	834	105	1115	61	192	124	377
% App. Total	10.6	83.6	5.8		29.1	36.5	34.4		15.8	74.8	9.4		16.2	50.9	32.9	
PHF	.832	.970	.833	.968	.727	.892	.841	.903	.786	.952	.905	.917	.897	.923	.775	.924

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City of Santa Ana
N/S: Tustin Avenue
E/W: 17th Street
Weather: Clear

File Name : 93_SNA_Tustin_17th St AM
Site Code : 20220171
Start Date : 3/12/2020
Page No : 1

Groups Printed- Total Volume

	Tustin Avenue Southbound				17th Street Westbound				Tustin Avenue Northbound				17th Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	147	328	3	478	79	95	23	197	21	35	45	101	23	118	17	158	934
07:15 AM	133	414	1	548	77	131	33	241	20	41	55	116	32	228	22	282	1187
07:30 AM	174	475	6	655	79	147	28	254	26	41	61	128	27	216	22	265	1302
07:45 AM	123	408	1	532	139	227	51	417	25	54	58	137	46	188	26	260	1346
Total	577	1625	11	2213	374	600	135	1109	92	171	219	482	128	750	87	965	4769
08:00 AM	154	454	5	613	131	201	51	383	27	56	47	130	53	199	33	285	1411
08:15 AM	151	400	7	558	139	195	58	392	33	47	70	150	61	135	45	241	1341
08:30 AM	128	288	10	426	122	145	40	307	28	65	40	133	45	124	35	204	1070
08:45 AM	117	314	9	440	142	176	47	365	37	44	45	126	46	132	35	213	1144
Total	550	1456	31	2037	534	717	196	1447	125	212	202	539	205	590	148	943	4966
Grand Total	1127	3081	42	4250	908	1317	331	2556	217	383	421	1021	333	1340	235	1908	9735
Apprch %	26.5	72.5	1		35.5	51.5	12.9		21.3	37.5	41.2		17.5	70.2	12.3		
Total %	11.6	31.6	0.4	43.7	9.3	13.5	3.4	26.3	2.2	3.9	4.3	10.5	3.4	13.8	2.4	19.6	

	Tustin Avenue Southbound				17th Street Westbound				Tustin Avenue Northbound				17th Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	**174**	**475**	6	**655**	79	147	28	254	26	41	61	128	27	**216**	22	265	1302
07:45 AM	123	408	1	532	**139**	**227**	51	**417**	25	54	58	137	46	188	26	260	1346
08:00 AM	154	454	5	613	131	201	51	383	27	**56**	47	130	53	199	33	**285**	**1411**
08:15 AM	151	400	**7**	558	139	195	**58**	392	**33**	47	**70**	**150**	**61**	135	**45**	241	1341
Total Volume	602	1737	19	2358	488	770	188	1446	111	198	236	545	187	738	126	1051	5400
% App. Total	25.5	73.7	0.8		33.7	53.3	13		20.4	36.3	43.3		17.8	70.2	12		
PHF	.865	.914	.679	.900	.878	.848	.810	.867	.841	.884	.843	.908	.766	.854	.700	.922	.957

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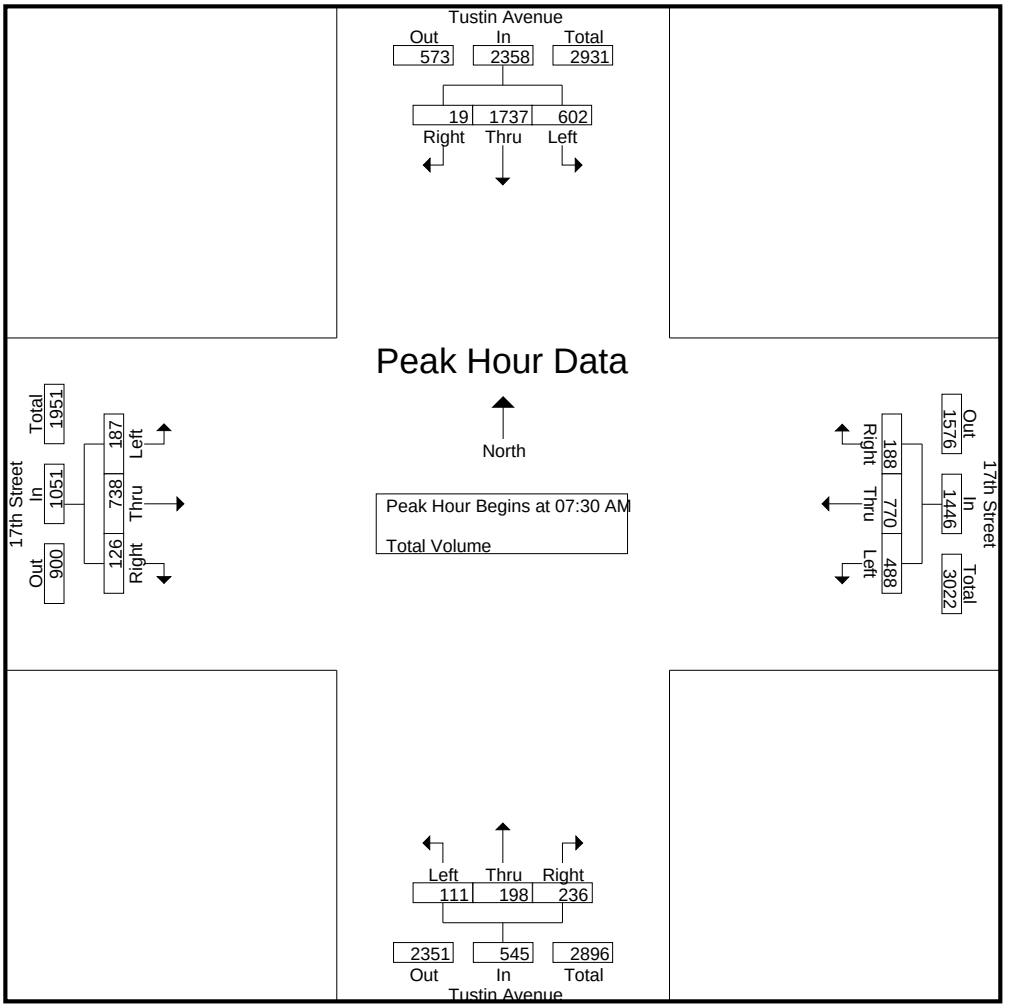
City of Santa Ana
N/S: Tustin Avenue
E/W: 17th Street
Weather: Clear

File Name : 93_SNA_Tustin_17th St AM
Site Code : 20220171
Start Date : 3/12/2020
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:30 AM				07:45 AM				07:45 AM				07:15 AM			
+0 mins.	**174**	**475**	6	**655**	**139**	**227**	51	**417**	25	54	58	137	32	**228**	22	282
+15 mins.	123	408	1	532	131	201	51	383	27	56	47	130	27	216	22	265
+30 mins.	154	454	5	613	139	195	**58**	392	**33**	47	**70**	**150**	46	188	26	260
+45 mins.	151	400	**7**	558	122	145	40	307	28	**65**	40	133	**53**	199	**33**	**285**
Total Volume	602	1737	19	2358	531	768	200	1499	113	222	215	550	158	831	103	1092
% App. Total	25.5	73.7	0.8		35.4	51.2	13.3		20.5	40.4	39.1		14.5	76.1	9.4	
PHF	.865	.914	.679	.900	.955	.846	.862	.899	.856	.854	.768	.917	.745	.911	.780	.958

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City of Santa Ana
N/S: Tustin Avenue
E/W: 17th Street
Weather: Clear

File Name : 93_SNA_Tustin_17th St PM
Site Code : 20220171
Start Date : 3/12/2020
Page No : 1

Groups Printed- Total Volume

	Tustin Avenue Southbound				17th Street Westbound				Tustin Avenue Northbound				17th Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	73	93	7	173	47	193	90	330	58	224	106	388	103	163	29	295	1186
04:15 PM	69	73	12	154	51	229	101	381	50	177	72	299	98	166	30	294	1128
04:30 PM	89	92	10	191	58	176	109	343	68	233	110	411	125	197	32	354	1299
04:45 PM	80	76	6	162	64	237	111	412	52	189	84	325	103	211	19	333	1232
Total	311	334	35	680	220	835	411	1466	228	823	372	1423	429	737	110	1276	4845
05:00 PM	90	92	9	191	46	160	108	314	57	238	169	464	115	244	29	388	1357
05:15 PM	87	111	12	210	61	180	91	332	39	266	113	418	101	220	38	359	1319
05:30 PM	89	88	12	189	48	205	88	341	47	176	102	325	129	219	37	385	1240
05:45 PM	89	101	18	208	49	186	88	323	44	207	88	339	94	180	24	298	1168
Total	355	392	51	798	204	731	375	1310	187	887	472	1546	439	863	128	1430	5084
Grand Total	666	726	86	1478	424	1566	786	2776	415	1710	844	2969	868	1600	238	2706	9929
Apprch %	45.1	49.1	5.8		15.3	56.4	28.3		14	57.6	28.4		32.1	59.1	8.8		
Total %	6.7	7.3	0.9	14.9	4.3	15.8	7.9	28	4.2	17.2	8.5	29.9	8.7	16.1	2.4	27.3	

	Tustin Avenue Southbound				17th Street Westbound				Tustin Avenue Northbound				17th Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	89	92	10	191	58	176	109	343	**68**	233	110	411	**125**	197	32	354	1299
04:45 PM	80	76	6	162	**64**	**237**	**111**	**412**	52	189	84	325	103	211	19	333	1232
05:00 PM	**90**	92	9	191	46	160	108	314	57	238	**169**	**464**	115	**244**	29	**388**	**1357**
05:15 PM	87	**111**	**12**	**210**	61	180	91	332	39	**266**	113	418	101	220	**38**	359	1319
Total Volume	346	371	37	754	229	753	419	1401	216	926	476	1618	444	872	118	1434	5207
% App. Total	45.9	49.2	4.9		16.3	53.7	29.9		13.3	57.2	29.4		31	60.8	8.2		
PHF	.961	.836	.771	.898	.895	.794	.944	.850	.794	.870	.704	.872	.888	.893	.776	.924	.959

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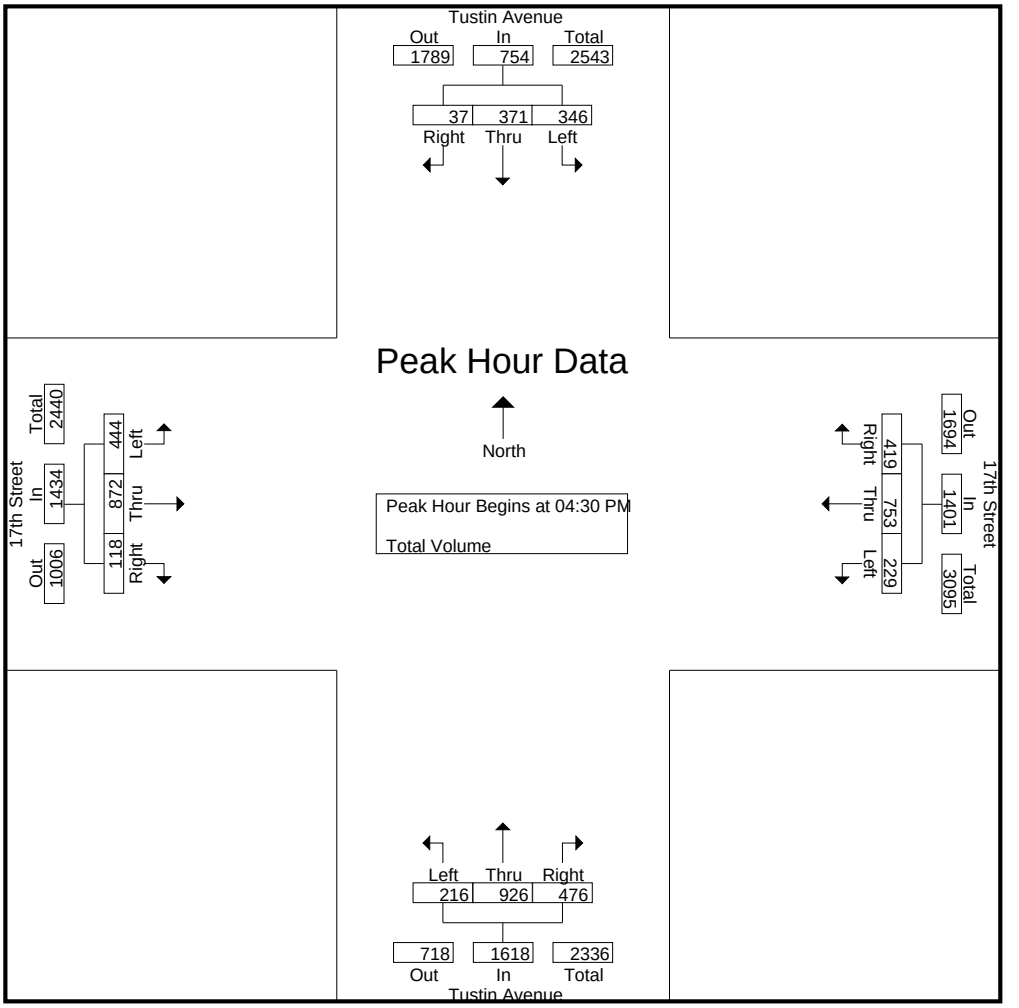
City of Santa Ana
N/S: Tustin Avenue
E/W: 17th Street
Weather: Clear

File Name : 93_SNA_Tustin_17th St PM
Site Code : 20220171
Start Date : 3/12/2020
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	05:00 PM				04:00 PM				04:30 PM				04:45 PM			
+0 mins.	**90**	92	9	191	47	193	90	330	**68**	233	110	411	103	211	19	333
+15 mins.	87	**111**	12	**210**	51	229	101	381	52	189	84	325	115	**244**	29	**388**
+30 mins.	89	88	12	189	58	176	109	343	57	238	**169**	**464**	101	220	**38**	359
+45 mins.	89	101	**18**	208	**64**	**237**	**111**	**412**	39	**266**	113	418	**129**	219	37	385
Total Volume	355	392	51	798	220	835	411	1466	216	926	476	1618	448	894	123	1465
% App. Total	44.5	49.1	6.4		15	57	28		13.3	57.2	29.4		30.6	61	8.4	
PHF	.986	.883	.708	.950	.859	.881	.926	.890	.794	.870	.704	.872	.868	.916	.809	.944

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City of Santa Ana
N/S: Tustin Avenue
E/W: 4th Street
Weather: Clear

File Name : 94_SNA_Tustin_4th St AM
Site Code : 20220171
Start Date : 3/12/2020
Page No : 1

Groups Printed- Total Volume

	Tustin Avenue Southbound				4th Street Westbound				Tustin Avenue Northbound				4th Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	177	130	38	345	10	64	56	130	5	40	33	78	13	87	5	105	658
07:15 AM	185	164	39	388	23	92	63	178	9	43	32	84	31	130	12	173	823
07:30 AM	178	258	72	508	25	152	64	241	13	53	48	114	21	198	3	222	1085
07:45 AM	155	203	74	432	27	150	104	281	13	67	68	148	22	208	5	235	1096
Total	695	755	223	1673	85	458	287	830	40	203	181	424	87	623	25	735	3662
08:00 AM	156	191	63	410	20	131	96	247	10	67	57	134	38	161	12	211	1002
08:15 AM	175	193	53	421	31	146	112	289	12	58	46	116	33	109	8	150	976
08:30 AM	168	151	55	374	26	132	87	245	15	71	49	135	32	104	13	149	903
08:45 AM	131	135	64	330	17	146	85	248	10	54	25	89	38	108	13	159	826
Total	630	670	235	1535	94	555	380	1029	47	250	177	474	141	482	46	669	3707
Grand Total	1325	1425	458	3208	179	1013	667	1859	87	453	358	898	228	1105	71	1404	7369
Apprch %	41.3	44.4	14.3		9.6	54.5	35.9		9.7	50.4	39.9		16.2	78.7	5.1		
Total %	18	19.3	6.2	43.5	2.4	13.7	9.1	25.2	1.2	6.1	4.9	12.2	3.1	15	1	19.1	

	Tustin Avenue Southbound				4th Street Westbound				Tustin Avenue Northbound				4th Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	**178**	**258**	72	**508**	25	**152**	64	241	**13**	53	48	114	21	198	3	222	1085
07:45 AM	155	203	**74**	432	27	150	104	281	13	**67**	**68**	**148**	22	**208**	5	**235**	**1096**
08:00 AM	156	191	63	410	20	131	96	247	10	67	57	134	**38**	161	**12**	211	1002
08:15 AM	175	193	53	421	**31**	146	**112**	**289**	12	58	46	116	33	109	8	150	976
Total Volume	664	845	262	1771	103	579	376	1058	48	245	219	512	114	676	28	818	4159
% App. Total	37.5	47.7	14.8		9.7	54.7	35.5		9.4	47.9	42.8		13.9	82.6	3.4		
PHF	.933	.819	.885	.872	.831	.952	.839	.915	.923	.914	.805	.865	.750	.813	.583	.870	.949

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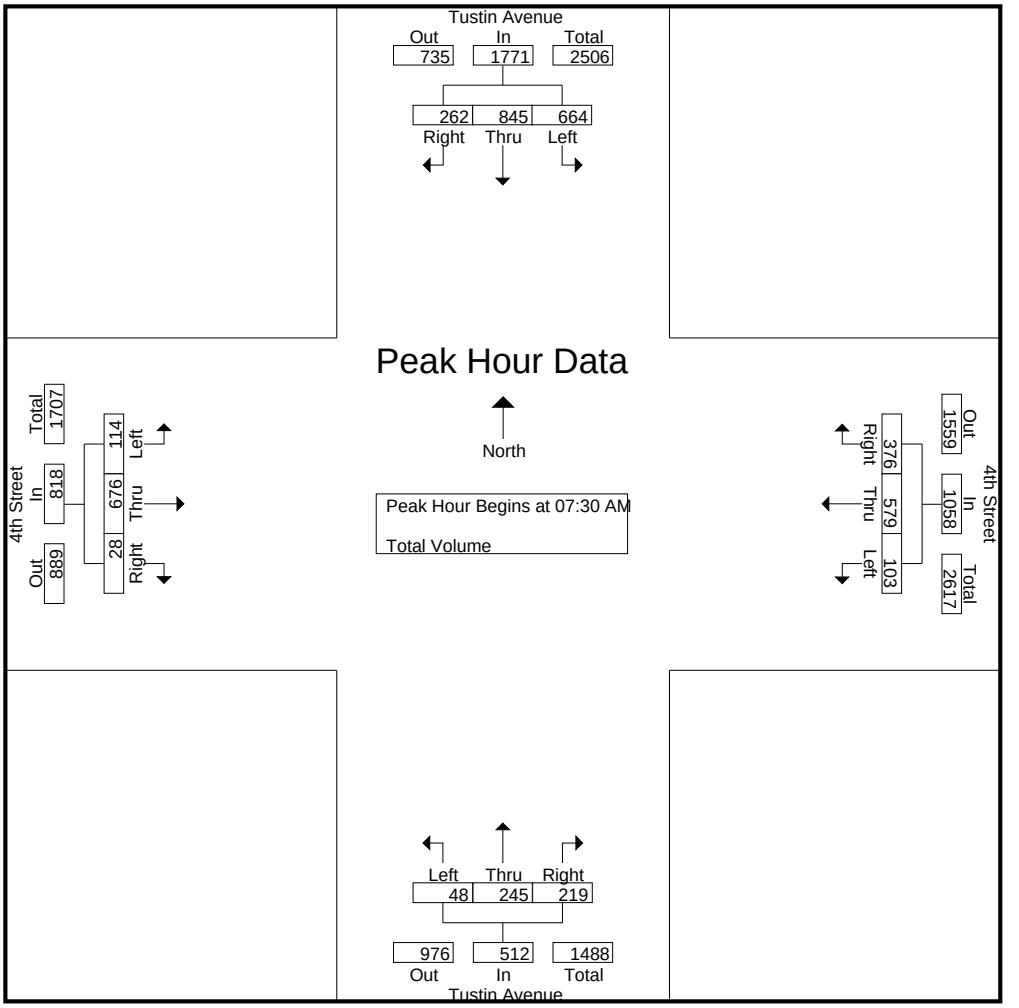
City of Santa Ana
N/S: Tustin Avenue
E/W: 4th Street
Weather: Clear

File Name : 94_SNA_Tustin_4th St AM
Site Code : 20220171
Start Date : 3/12/2020
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:30 AM				07:45 AM				07:45 AM				07:15 AM			
+0 mins.	**178**	**258**	72	**508**	27	**150**	104	281	13	67	**68**	**148**	31	130	**12**	173
+15 mins.	155	203	**74**	432	20	131	96	247	10	67	57	134	21	198	3	222
+30 mins.	156	191	63	410	**31**	146	**112**	**289**	12	58	46	116	22	**208**	5	**235**
+45 mins.	175	193	53	421	26	132	87	245	**15**	**71**	49	135	**38**	161	12	211
Total Volume	664	845	262	1771	104	559	399	1062	50	263	220	533	112	697	32	841
% App. Total	37.5	47.7	14.8		9.8	52.6	37.6		9.4	49.3	41.3		13.3	82.9	3.8	
PHF	.933	.819	.885	.872	.839	.932	.891	.919	.833	.926	.809	.900	.737	.838	.667	.895

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City of Santa Ana
N/S: Tustin Avenue
E/W: 4th Street
Weather: Clear

File Name : 94_SNA_Tustin_4th St PM
Site Code : 20220171
Start Date : 3/12/2020
Page No : 1

Groups Printed- Total Volume

	Tustin Street Southbound				Tustin Avenue Westbound				Tustin Street Northbound				Tustin Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	100	89	30	219	29	160	59	248	21	145	26	192	41	152	7	200	859
04:15 PM	98	96	23	217	23	222	101	346	19	156	40	215	71	155	21	247	1025
04:30 PM	87	74	34	195	14	69	115	198	14	140	30	184	43	118	10	171	748
04:45 PM	118	79	37	234	22	180	103	305	14	137	41	192	51	164	13	228	959
Total	403	338	124	865	88	631	378	1097	68	578	137	783	206	589	51	846	3591
05:00 PM	109	86	34	229	18	124	77	219	15	166	56	237	40	163	5	208	893
05:15 PM	105	89	35	229	23	139	93	255	12	137	46	195	42	149	6	197	876
05:30 PM	127	85	18	230	25	153	94	272	14	158	51	223	47	166	9	222	947
05:45 PM	92	70	27	189	26	154	83	263	7	145	58	210	42	115	6	163	825
Total	433	330	114	877	92	570	347	1009	48	606	211	865	171	593	26	790	3541
Grand Total	836	668	238	1742	180	1201	725	2106	116	1184	348	1648	377	1182	77	1636	7132
Apprch %	48	38.3	13.7		8.5	57	34.4		7	71.8	21.1		23	72.2	4.7		
Total %	11.7	9.4	3.3	24.4	2.5	16.8	10.2	29.5	1.6	16.6	4.9	23.1	5.3	16.6	1.1	22.9	

	Tustin Street Southbound				Tustin Avenue Westbound				Tustin Street Northbound				Tustin Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	118	79	**37**	**234**	22	**180**	**103**	**305**	14	137	41	192	**51**	164	**13**	**228**	**959**
05:00 PM	109	86	34	229	18	124	77	219	**15**	**166**	**56**	**237**	40	163	5	208	893
05:15 PM	105	**89**	35	229	23	139	93	255	12	137	46	195	42	149	6	197	876
05:30 PM	**127**	85	18	230	**25**	153	94	272	14	158	51	223	47	**166**	9	222	947
Total Volume	459	339	124	922	88	596	367	1051	55	598	194	847	180	642	33	855	3675
% App. Total	49.8	36.8	13.4		8.4	56.7	34.9		6.5	70.6	22.9		21.1	75.1	3.9		
PHF	.904	.952	.838	.985	.880	.828	.891	.861	.917	.901	.866	.893	.882	.967	.635	.938	.958

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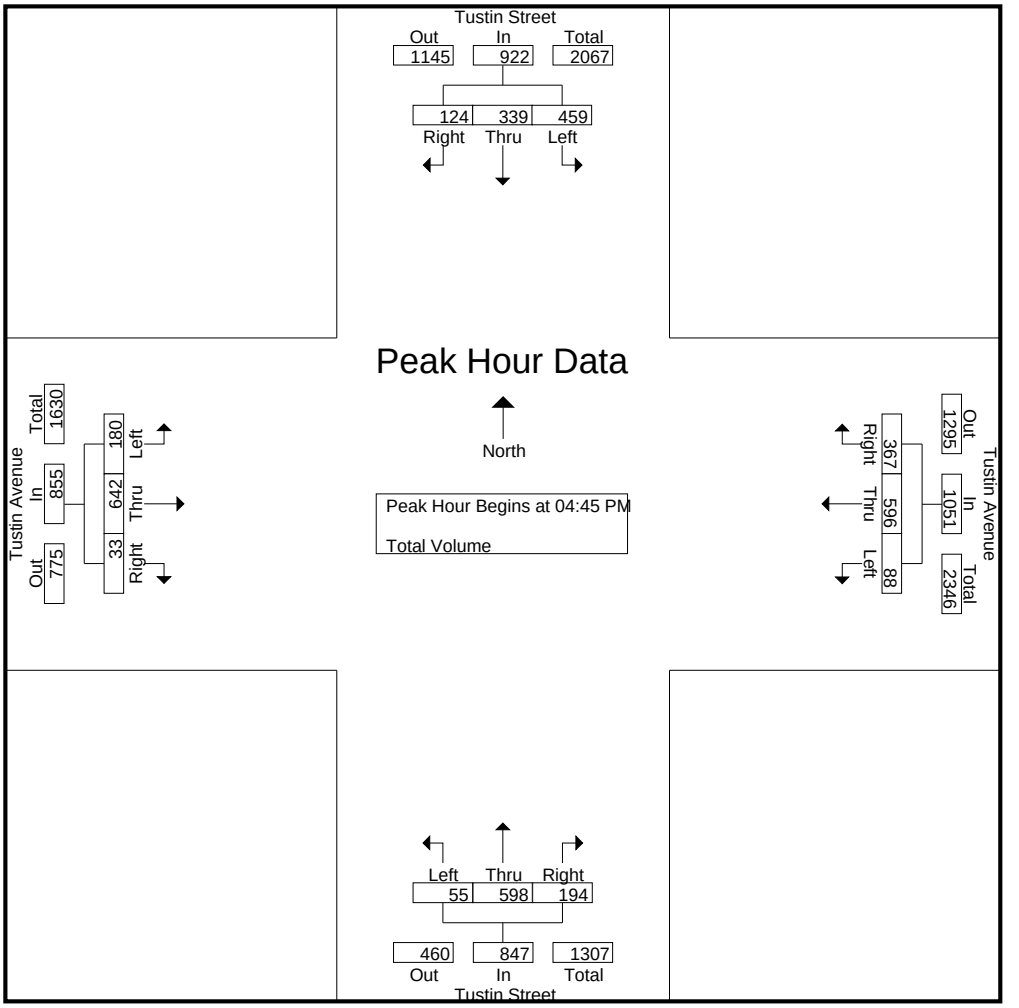
City of Santa Ana
N/S: Tustin Avenue
E/W: 4th Street
Weather: Clear

File Name : 94_SNA_Tustin_4th St PM
Site Code : 20220171
Start Date : 3/12/2020
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:45 PM				04:00 PM				05:00 PM				04:45 PM			
+0 mins.	118	79	**37**	**234**	**29**	160	59	248	**15**	**166**	56	**237**	**51**	164	**13**	**228**
+15 mins.	109	86	34	229	23	**222**	101	**346**	12	137	46	195	40	163	5	208
+30 mins.	105	**89**	35	229	14	69	**115**	198	14	158	51	223	42	149	6	197
+45 mins.	**127**	85	18	230	22	180	103	305	7	145	**58**	210	47	**166**	9	222
Total Volume	459	339	124	922	88	631	378	1097	48	606	211	865	180	642	33	855
% App. Total	49.8	36.8	13.4		8	57.5	34.5		5.5	70.1	24.4		21.1	75.1	3.9	
PHF	.904	.952	.838	.985	.759	.711	.822	.793	.800	.913	.909	.912	.882	.967	.635	.938

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City of Santa Ana
N/S: Auto Mall Dr/SR-55 Southbound Ramps
E/W: Edinger Avenue
Weather: Clear

File Name : 95_SNA_55S_Edinger AM
Site Code : 20220171
Start Date : 3/12/2020
Page No : 1

Groups Printed- Total Volume

	Auto Mall Drive Southbound				Edinger Avenue Westbound				SR-55 Southbound Ramps Northbound				Edinger Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	7	0	4	11	56	126	14	196	109	24	117	250	7	261	81	349	806
07:15 AM	11	8	1	20	70	182	29	281	121	15	137	273	6	260	194	460	1034
07:30 AM	16	10	3	29	91	230	25	346	109	18	135	262	3	294	106	403	1040
07:45 AM	8	5	2	15	129	269	34	432	91	12	130	233	3	302	58	363	1043
Total	42	23	10	75	346	807	102	1255	430	69	519	1018	19	1117	439	1575	3923
08:00 AM	15	7	2	24	109	259	35	403	100	18	96	214	16	248	50	314	955
08:15 AM	23	6	2	31	93	269	32	394	86	15	90	191	4	244	62	310	926
08:30 AM	10	5	3	18	88	220	25	333	76	10	88	174	8	256	93	357	882
08:45 AM	19	12	7	38	95	226	29	350	78	23	100	201	6	225	73	304	893
Total	67	30	14	111	385	974	121	1480	340	66	374	780	34	973	278	1285	3656
Grand Total	109	53	24	186	731	1781	223	2735	770	135	893	1798	53	2090	717	2860	7579
Apprch %	58.6	28.5	12.9		26.7	65.1	8.2		42.8	7.5	49.7		1.9	73.1	25.1		
Total %	1.4	0.7	0.3	2.5	9.6	23.5	2.9	36.1	10.2	1.8	11.8	23.7	0.7	27.6	9.5	37.7	

	Auto Mall Drive Southbound				Edinger Avenue Westbound				SR-55 Southbound Ramps Northbound				Edinger Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	11	8	1	20	70	182	29	281	**121**	15	**137**	**273**	6	260	**194**	**460**	1034
07:30 AM	**16**	**10**	**3**	**29**	91	230	25	346	109	**18**	135	262	3	294	106	403	1040
07:45 AM	8	5	2	15	**129**	**269**	34	**432**	91	12	130	233	3	**302**	58	363	**1043**
08:00 AM	15	7	2	24	109	259	**35**	403	100	18	96	214	**16**	248	50	314	955
Total Volume	50	30	8	88	399	940	123	1462	421	63	498	982	28	1104	408	1540	4072
% App. Total	56.8	34.1	9.1		27.3	64.3	8.4		42.9	6.4	50.7		1.8	71.7	26.5		
PHF	.781	.750	.667	.759	.773	.874	.879	.846	.870	.875	.909	.899	.438	.914	.526	.837	.976

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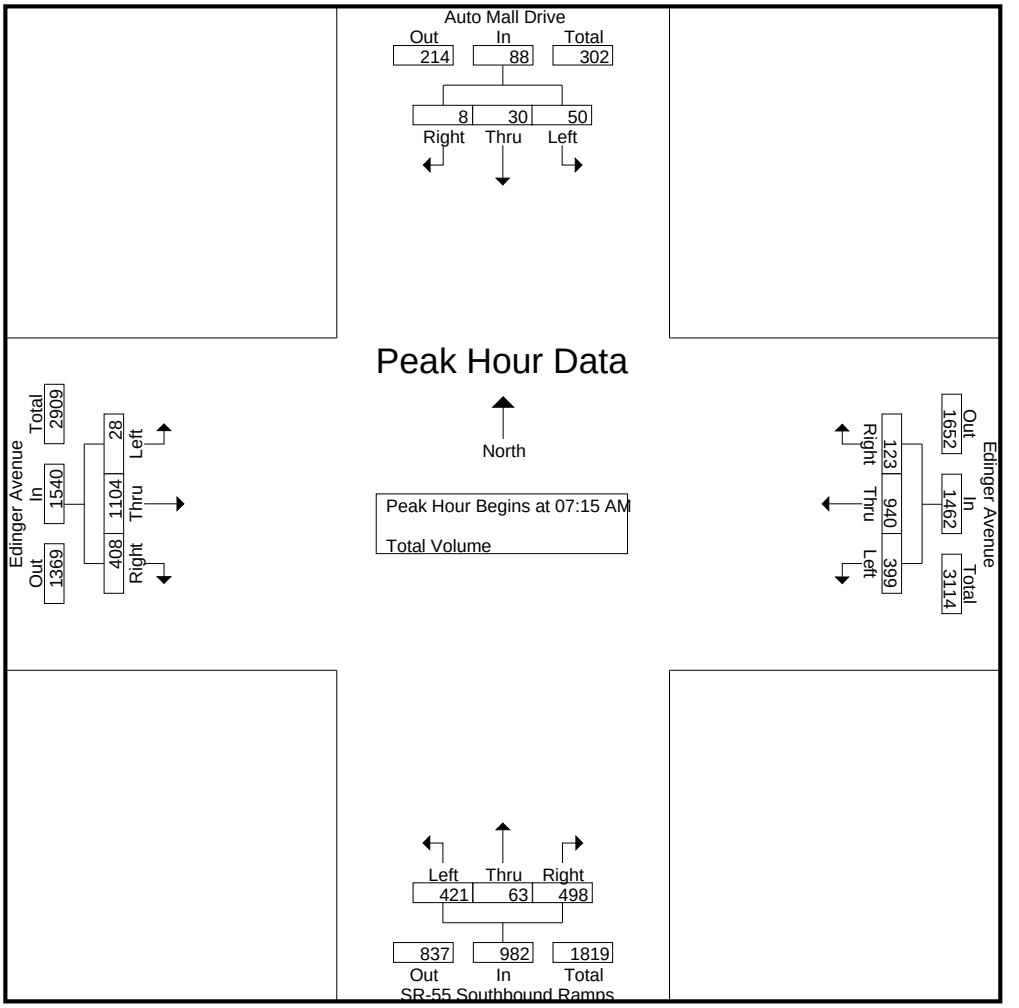
City of Santa Ana
N/S: Auto Mall Dr/SR-55 Southbound Ramps
E/W: Edinger Avenue
Weather: Clear

File Name : 95_SNA_55S_Edinger AM
Site Code : 20220171
Start Date : 3/12/2020
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	08:00 AM				07:30 AM				07:00 AM				07:00 AM			
+0 mins.	15	7	2	24	91	230	25	346	109	**24**	117	250	**7**	261	81	349
+15 mins.	**23**	6	2	31	**129**	**269**	34	**432**	**121**	15	**137**	**273**	6	260	**194**	**460**
+30 mins.	10	5	3	18	109	259	**35**	403	109	18	135	262	3	294	106	403
+45 mins.	19	**12**	**7**	**38**	93	269	32	394	91	12	130	233	3	**302**	58	363
Total Volume	67	30	14	111	422	1027	126	1575	430	69	519	1018	19	1117	439	1575
% App. Total	60.4	27	12.6		26.8	65.2	8		42.2	6.8	51		1.2	70.9	27.9	
PHF	.728	.625	.500	.730	.818	.954	.900	.911	.888	.719	.947	.932	.679	.925	.566	.856

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City of Santa Ana
N/S: Auto Mall Dr/SR-55 Southbound Ramps
E/W: Edinger Avenue
Weather: Clear

File Name : 95_SNA_55S_Edinger PM
Site Code : 20220171
Start Date : 3/12/2020

Groups Printed- Total Volume

	Auto Mall Drive Southbound				Edinger Avenue Westbound				SR-55 Southbound Ramps Northbound				Edinger Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	24	15	8	47	82	265	29	376	76	7	64	147	7	290	78	375	945
04:15 PM	25	7	7	39	61	248	23	332	79	8	59	146	12	226	62	300	817
04:30 PM	14	11	6	31	85	233	22	340	97	11	72	180	7	251	80	338	889
04:45 PM	26	12	8	46	97	210	27	334	86	5	82	173	6	239	73	318	871
Total	89	45	29	163	325	956	101	1382	338	31	277	646	32	1006	293	1331	3522
05:00 PM	39	19	8	66	96	218	27	341	89	5	85	179	13	322	103	438	1024
05:15 PM	21	9	11	41	78	252	25	355	95	12	97	204	12	296	73	381	981
05:30 PM	24	10	10	44	114	323	41	478	107	8	134	249	4	401	105	510	1281
05:45 PM	14	8	5	27	34	110	12	156	49	5	67	121	4	121	43	168	472
Total	98	46	34	178	322	903	105	1330	340	30	383	753	33	1140	324	1497	3758
Grand Total	187	91	63	341	647	1859	206	2712	678	61	660	1399	65	2146	617	2828	7280
Apprch %	54.8	26.7	18.5		23.9	68.5	7.6		48.5	4.4	47.2		2.3	75.9	21.8		
Total %	2.6	1.2	0.9	4.7	8.9	25.5	2.8	37.3	9.3	0.8	9.1	19.2	0.9	29.5	8.5	38.8	

	Auto Mall Drive Southbound				Edinger Avenue Westbound				SR-55 Southbound Ramps Northbound				Edinger Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	26	12	8	46	97	210	27	334	86	5	82	173	6	239	73	318	871
05:00 PM	**39**	**19**	8	**66**	96	218	27	341	89	5	85	179	**13**	322	103	438	1024
05:15 PM	21	9	**11**	41	78	252	25	355	95	**12**	97	204	12	296	73	381	981
05:30 PM	24	10	10	44	**114**	**323**	**41**	**478**	**107**	8	**134**	**249**	4	**401**	**105**	**510**	**1281**
Total Volume	110	50	37	197	385	1003	120	1508	377	30	398	805	35	1258	354	1647	4157
% App. Total	55.8	25.4	18.8		25.5	66.5	8		46.8	3.7	49.4		2.1	76.4	21.5		
PHF	.705	.658	.841	.746	.844	.776	.732	.789	.881	.625	.743	.808	.673	.784	.843	.807	.811

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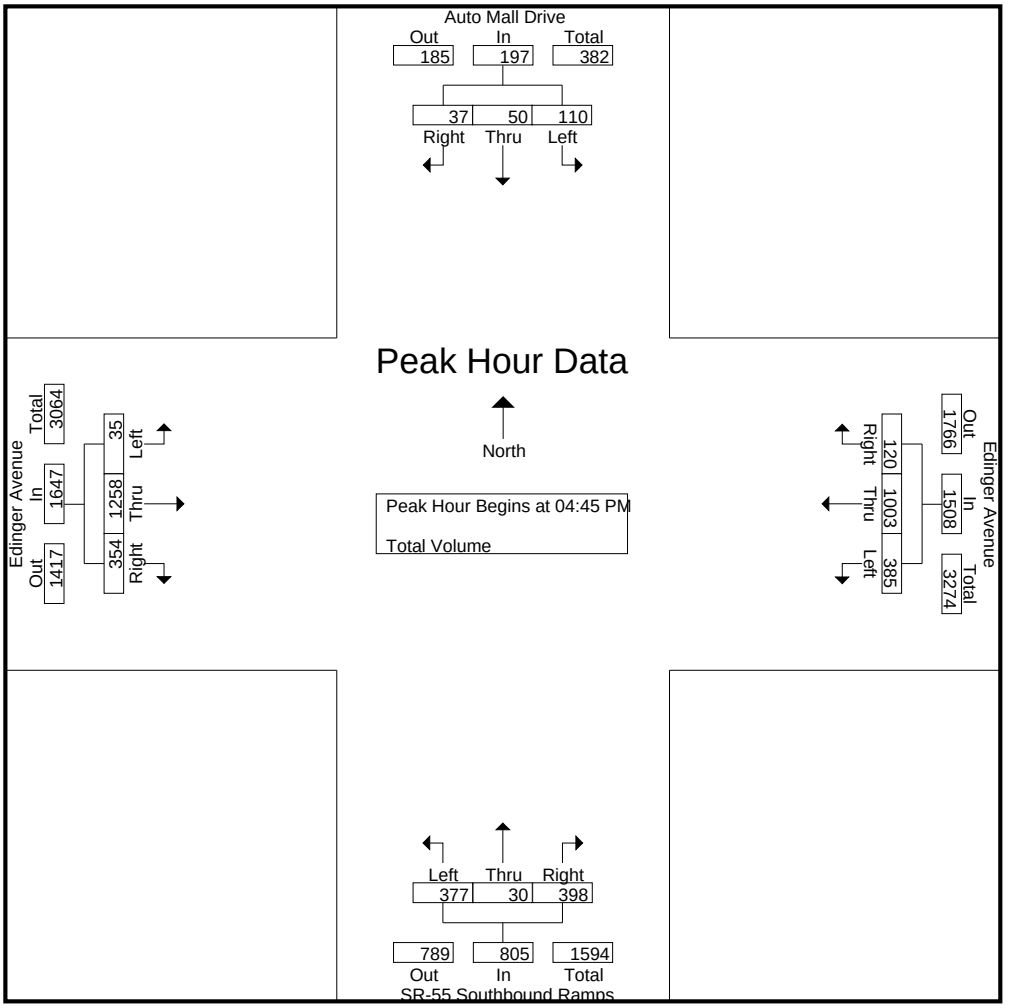
City of Santa Ana
N/S: Auto Mall Dr/SR-55 Southbound Ramps
E/W: Edinger Avenue
Weather: Clear

File Name : 95_SNA_55S_Edinger PM
Site Code : 20220171
Start Date : 3/12/2020



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:45 PM				04:45 PM				04:45 PM				04:45 PM			
+0 mins.	26	12	8	46	97	210	27	334	86	5	82	173	6	239	73	318
+15 mins.	**39**	**19**	8	**66**	96	218	27	341	89	5	85	179	**13**	322	103	438
+30 mins.	21	9	**11**	41	78	252	25	355	95	**12**	97	204	12	296	73	381
+45 mins.	24	10	10	44	**114**	**323**	**41**	**478**	**107**	8	**134**	**249**	4	**401**	**105**	**510**
Total Volume	110	50	37	197	385	1003	120	1508	377	30	398	805	35	1258	354	1647
% App. Total	55.8	25.4	18.8		25.5	66.5	8		46.8	3.7	49.4		2.1	76.4	21.5	
PHF	.705	.658	.841	.746	.844	.776	.732	.789	.881	.625	.743	.808	.673	.784	.843	.807

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City of Tustin
N/S: Newport Avenue
E/W: SR-55 NB Ramps/Del Amo Avenue
Weather: Clear

File Name : 96_TUS_Newport_55N AM
Site Code : 20220171
Start Date : 3/12/2020
Page No : 1

Groups Printed- Total Volume

	Newport Avenue Southbound				Del Amo Avenue Westbound				Newport Avenue Northbound				SR-55 Northbound Ramps Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	5	63	114	182	4	35	1	40	49	19	3	71	20	8	10	38	331
07:15 AM	3	87	136	226	4	43	1	48	54	11	6	71	53	22	20	95	440
07:30 AM	3	100	143	246	2	48	3	53	56	14	2	72	52	35	30	117	488
07:45 AM	2	104	116	222	4	68	1	73	63	14	2	79	66	46	48	160	534
Total	13	354	509	876	14	194	6	214	222	58	13	293	191	111	108	410	1793
08:00 AM	2	73	114	189	0	46	0	46	50	16	6	72	77	29	35	141	448
08:15 AM	7	67	131	205	2	61	0	63	58	16	28	102	58	43	33	134	504
08:30 AM	8	49	103	160	3	34	1	38	57	20	13	90	48	47	33	128	416
08:45 AM	6	44	120	170	5	42	2	49	38	15	15	68	69	55	34	158	445
Total	23	233	468	724	10	183	3	196	203	67	62	332	252	174	135	561	1813
Grand Total	36	587	977	1600	24	377	9	410	425	125	75	625	443	285	243	971	3606
Apprch %	2.2	36.7	61.1		5.9	92	2.2		68	20	12		45.6	29.4	25		
Total %	1	16.3	27.1	44.4	0.7	10.5	0.2	11.4	11.8	3.5	2.1	17.3	12.3	7.9	6.7	26.9	

	Newport Avenue Southbound				Del Amo Avenue Westbound				Newport Avenue Northbound				SR-55 Northbound Ramps Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	3	100	**143**	**246**	2	48	**3**	53	56	14	2	72	52	35	30	117	488
07:45 AM	2	**104**	116	222	**4**	**68**	1	**73**	**63**	14	2	79	66	**46**	**48**	**160**	**534**
08:00 AM	2	73	114	189	0	46	0	46	50	**16**	6	72	**77**	29	35	141	448
08:15 AM	**7**	67	131	205	2	61	0	63	58	16	**28**	**102**	58	43	33	134	504
Total Volume	14	344	504	862	8	223	4	235	227	60	38	325	253	153	146	552	1974
% App. Total	1.6	39.9	58.5		3.4	94.9	1.7		69.8	18.5	11.7		45.8	27.7	26.4		
PHF	.500	.827	.881	.876	.500	.820	.333	.805	.901	.938	.339	.797	.821	.832	.760	.863	.924

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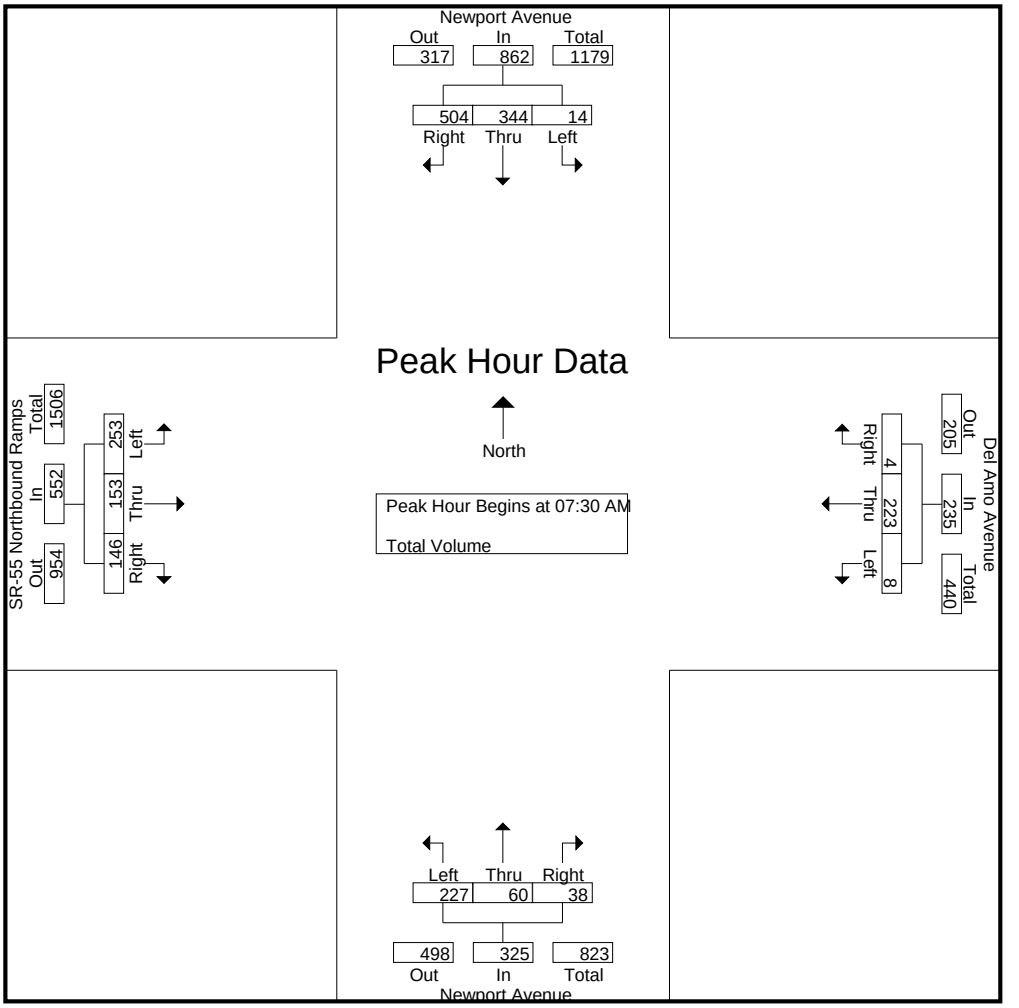
City of Tustin
N/S: Newport Avenue
E/W: SR-55 NB Ramps/Del Amo Avenue
Weather: Clear

File Name : 96_TUS_Newport_55N AM
Site Code : 20220171
Start Date : 3/12/2020
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:15 AM				07:30 AM				07:45 AM				07:45 AM			
+0 mins.	**3**	87	136	226	2	48	**3**	53	**63**	14	2	79	66	46	**48**	**160**
+15 mins.	3	100	**143**	**246**	**4**	**68**	1	**73**	50	16	6	72	**77**	29	35	141
+30 mins.	2	**104**	116	222	0	46	0	46	58	16	**28**	**102**	58	43	33	134
+45 mins.	2	73	114	189	2	61	0	63	57	**20**	13	90	48	**47**	33	128
Total Volume	10	364	509	883	8	223	4	235	228	66	49	343	249	165	149	563
% App. Total	1.1	41.2	57.6		3.4	94.9	1.7		66.5	19.2	14.3		44.2	29.3	26.5	
PHF	.833	.875	.890	.897	.500	.820	.333	.805	.905	.825	.438	.841	.808	.878	.776	.880

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City of Tustin
N/S: Newport Avenue
E/W: SR-55 NB Ramps/Del Amo Avenue
Weather: Clear

File Name : 96_TUS_Newport_55N PM
Site Code : 20220171
Start Date : 3/12/2020
Page No : 1

Groups Printed- Total Volume

	Newport Avenue Southbound				Del Amo Avenue Westbound				Newport Avenue Northbound				SR-55 Northbound Ramps Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	1	25	86	112	10	121	2	133	130	58	12	200	28	8	7	43	488
04:15 PM	4	26	94	124	6	88	2	96	164	48	11	223	19	10	6	35	478
04:30 PM	0	27	92	119	4	88	3	95	151	51	6	208	26	3	7	36	458
04:45 PM	1	23	93	117	3	74	5	82	117	30	6	153	26	10	3	39	391
Total	6	101	365	472	23	371	12	406	562	187	35	784	99	31	23	153	1815
05:00 PM	3	21	94	118	10	98	6	114	151	45	11	207	33	13	5	51	490
05:15 PM	3	18	82	103	4	87	4	95	149	46	11	206	24	15	3	42	446
05:30 PM	0	14	71	85	4	90	2	96	147	45	8	200	15	17	2	34	415
05:45 PM	3	23	74	100	2	59	3	64	129	32	2	163	26	7	6	39	366
Total	9	76	321	406	20	334	15	369	576	168	32	776	98	52	16	166	1717
Grand Total	15	177	686	878	43	705	27	775	1138	355	67	1560	197	83	39	319	3532
Apprch %	1.7	20.2	78.1		5.5	91	3.5		72.9	22.8	4.3		61.8	26	12.2		
Total %	0.4	5	19.4	24.9	1.2	20	0.8	21.9	32.2	10.1	1.9	44.2	5.6	2.3	1.1	9	

	Newport Avenue Southbound				Del Amo Avenue Westbound				Newport Avenue Northbound				SR-55 Northbound Ramps Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:15 PM																	
04:15 PM	**4**	26	**94**	**124**	6	88	2	96	**164**	48	**11**	**223**	19	10	6	35	478
04:30 PM	0	**27**	92	119	4	88	3	95	151	**51**	6	208	26	3	**7**	36	458
04:45 PM	1	23	93	117	3	74	5	82	117	30	6	153	26	10	3	39	391
05:00 PM	3	21	94	118	**10**	**98**	**6**	**114**	151	45	11	207	**33**	**13**	5	**51**	**490**
Total Volume	8	97	373	478	23	348	16	387	583	174	34	791	104	36	21	161	1817
% App. Total	1.7	20.3	78		5.9	89.9	4.1		73.7	22	4.3		64.6	22.4	13		
PHF	.500	.898	.992	.964	.575	.888	.667	.849	.889	.853	.773	.887	.788	.692	.750	.789	.927

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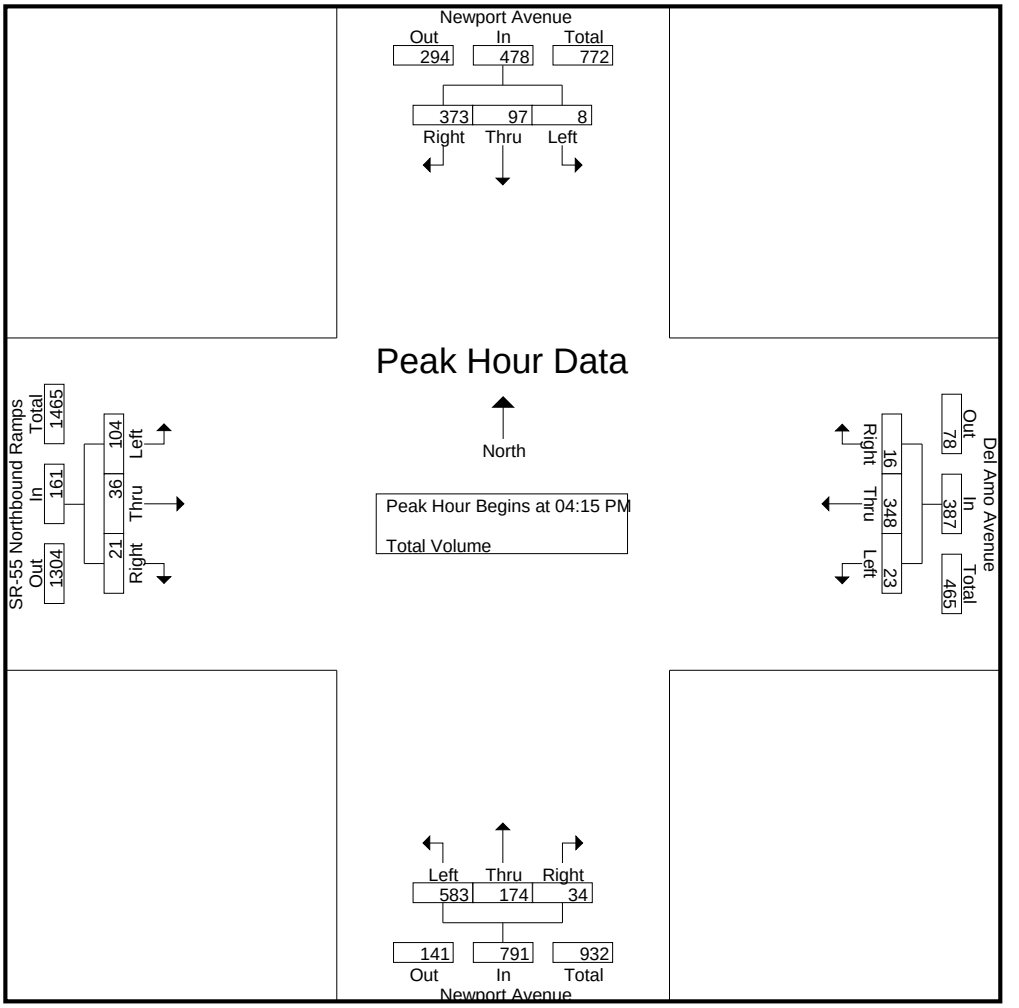
City of Tustin
N/S: Newport Avenue
E/W: SR-55 NB Ramps/Del Amo Avenue
Weather: Clear

File Name : 96_TUS_Newport_55N PM
Site Code : 20220171
Start Date : 3/12/2020
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:15 PM				04:00 PM				04:15 PM				04:30 PM			
+0 mins.	**4**	26	**94**	**124**	**10**	**121**	2	**133**	**164**	48	**11**	**223**	26	3	**7**	36
+15 mins.	0	**27**	92	119	6	88	2	96	151	**51**	6	208	26	10	3	39
+30 mins.	1	23	93	117	4	88	3	95	117	30	6	153	**33**	13	5	**51**
+45 mins.	3	21	94	118	3	74	**5**	82	151	45	11	207	24	**15**	3	42
Total Volume	8	97	373	478	23	371	12	406	583	174	34	791	109	41	18	168
% App. Total	1.7	20.3	78		5.7	91.4	3		73.7	22	4.3		64.9	24.4	10.7	
PHF	.500	.898	.992	.964	.575	.767	.600	.763	.889	.853	.773	.887	.826	.683	.643	.824

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City of Tustin
N/S: Red Hill Avenue
E/W: Edinger Avenue
Weather: Clear

File Name : 97_TUS_Red Hill_Edinger AM
Site Code : 20220171
Start Date : 3/12/2020
Page No : 1

Groups Printed- Total Volume

	Red Hill Avenue Southbound				Edinger Avenue Westbound				Red Hill Avenue Northbound				Edinger Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	40	183	74	297	15	123	19	157	32	53	15	100	44	129	38	211	765
07:15 AM	53	201	87	341	37	182	28	247	40	87	18	145	52	149	28	229	962
07:30 AM	57	243	109	409	47	233	42	322	14	80	9	103	64	174	33	271	1105
07:45 AM	68	225	116	409	60	287	35	382	20	89	37	146	49	183	30	262	1199
Total	218	852	386	1456	159	825	124	1108	106	309	79	494	209	635	129	973	4031
08:00 AM	54	264	126	444	56	292	34	382	22	69	22	113	35	117	31	183	1122
08:15 AM	47	228	99	374	61	273	41	375	25	61	17	103	42	137	36	215	1067
08:30 AM	52	200	97	349	68	258	42	368	18	68	7	93	47	133	29	209	1019
08:45 AM	61	220	107	388	45	218	34	297	20	48	15	83	32	146	34	212	980
Total	214	912	429	1555	230	1041	151	1422	85	246	61	392	156	533	130	819	4188
Grand Total	432	1764	815	3011	389	1866	275	2530	191	555	140	886	365	1168	259	1792	8219
Apprch %	14.3	58.6	27.1		15.4	73.8	10.9		21.6	62.6	15.8		20.4	65.2	14.5		
Total %	5.3	21.5	9.9	36.6	4.7	22.7	3.3	30.8	2.3	6.8	1.7	10.8	4.4	14.2	3.2	21.8	

	Red Hill Avenue Southbound				Edinger Avenue Westbound				Red Hill Avenue Northbound				Edinger Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	57	243	109	409	47	233	**42**	322	14	80	9	103	**64**	174	33	**271**	1105
07:45 AM	**68**	225	116	409	60	287	35	**382**	20	**89**	**37**	**146**	49	**183**	30	262	**1199**
08:00 AM	54	**264**	**126**	**444**	56	**292**	34	382	22	69	22	113	35	117	31	183	1122
08:15 AM	47	228	99	374	**61**	273	41	375	**25**	61	17	103	42	137	**36**	215	1067
Total Volume	226	960	450	1636	224	1085	152	1461	81	299	85	465	190	611	130	931	4493
% App. Total	13.8	58.7	27.5		15.3	74.3	10.4		17.4	64.3	18.3		20.4	65.6	14		
PHF	.831	.909	.893	.921	.918	.929	.905	.956	.810	.840	.574	.796	.742	.835	.903	.859	.937

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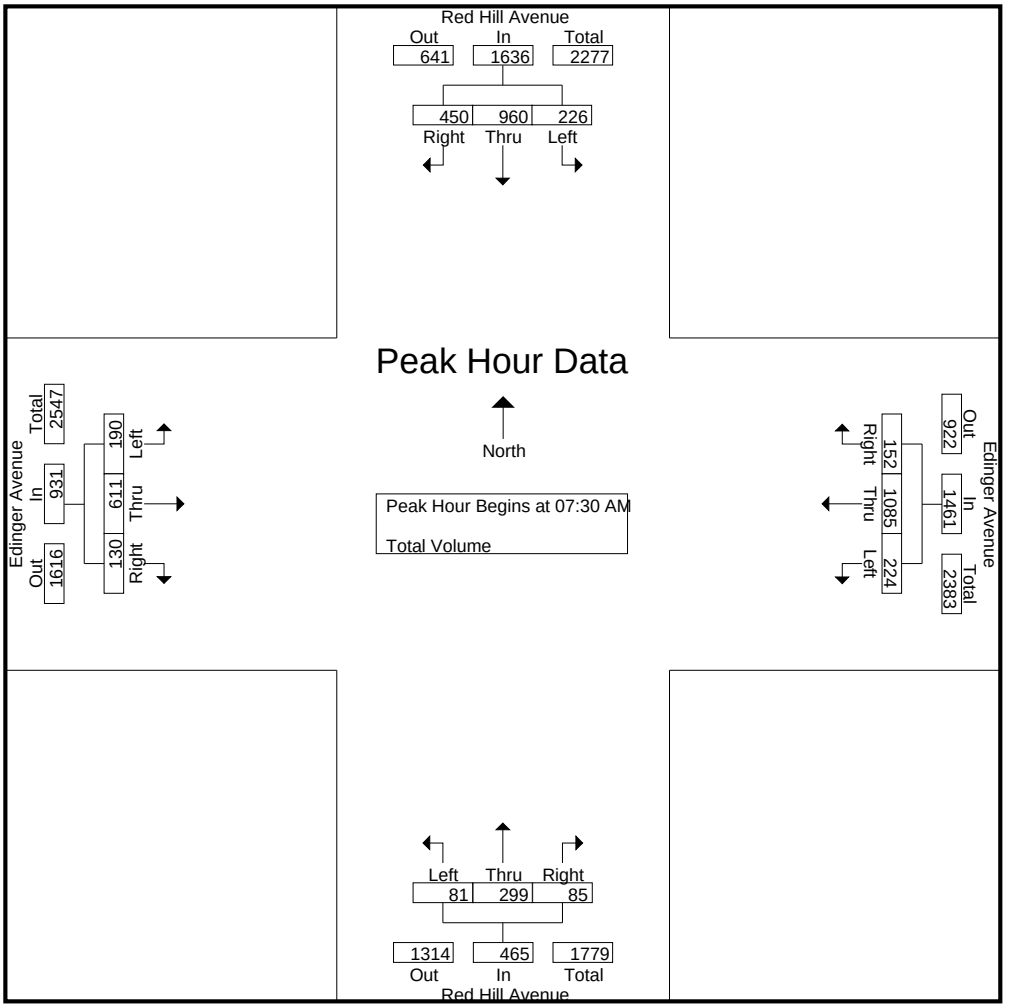
City of Tustin
N/S: Red Hill Avenue
E/W: Edinger Avenue
Weather: Clear

File Name : 97_TUS_Red Hill_Edinger AM
Site Code : 20220171
Start Date : 3/12/2020
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:30 AM				07:45 AM				07:15 AM				07:00 AM			
+0 mins.	57	243	109	409	60	287	35	**382**	**40**	87	18	145	44	129	**38**	211
+15 mins.	**68**	225	116	409	56	**292**	34	382	14	80	9	103	52	149	28	229
+30 mins.	54	**264**	**126**	**444**	61	273	41	375	20	**89**	**37**	**146**	**64**	174	33	**271**
+45 mins.	47	228	99	374	**68**	258	**42**	368	22	69	22	113	49	**183**	30	262
Total Volume	226	960	450	1636	245	1110	152	1507	96	325	86	507	209	635	129	973
% App. Total	13.8	58.7	27.5		16.3	73.7	10.1		18.9	64.1	17		21.5	65.3	13.3	
PHF	.831	.909	.893	.921	.901	.950	.905	.986	.600	.913	.581	.868	.816	.867	.849	.898

Counts Unlimited
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City of Tustin
N/S: Red Hill Avenue
E/W: Edinger Avenue
Weather: Clear

File Name : 97_TUS_Red Hill_Edinger PM
Site Code : 20220171
Start Date : 3/12/2020
Page No : 1

Groups Printed- Total Volume

	Red Hill Avenue Southbound				Edinger Avenue Westbound				Red Hill Avenue Northbound				Edinger Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	36	69	60	165	13	210	108	331	31	237	42	310	67	153	30	250	1056
04:15 PM	28	73	55	156	17	231	105	353	34	260	41	335	66	145	26	237	1081
04:30 PM	36	72	50	158	14	219	95	328	37	282	34	353	70	145	25	240	1079
04:45 PM	39	76	58	173	15	172	85	272	48	251	46	345	80	147	26	253	1043
Total	139	290	223	652	59	832	393	1284	150	1030	163	1343	283	590	107	980	4259
05:00 PM	30	72	58	160	15	225	93	333	34	281	47	362	80	210	27	317	1172
05:15 PM	40	74	59	173	15	195	119	329	29	276	49	354	95	218	22	335	1191
05:30 PM	36	67	59	162	17	211	95	323	48	338	40	426	72	263	27	362	1273
05:45 PM	40	74	42	156	17	161	93	271	33	249	40	322	58	153	27	238	987
Total	146	287	218	651	64	792	400	1256	144	1144	176	1464	305	844	103	1252	4623
Grand Total	285	577	441	1303	123	1624	793	2540	294	2174	339	2807	588	1434	210	2232	8882
Apprch %	21.9	44.3	33.8		4.8	63.9	31.2		10.5	77.4	12.1		26.3	64.2	9.4		
Total %	3.2	6.5	5	14.7	1.4	18.3	8.9	28.6	3.3	24.5	3.8	31.6	6.6	16.1	2.4	25.1	

	Red Hill Avenue Southbound				Edinger Avenue Westbound				Red Hill Avenue Northbound				Edinger Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	39	**76**	58	**173**	15	172	85	272	**48**	251	46	345	80	147	26	253	1043
05:00 PM	30	72	58	160	15	**225**	93	**333**	34	281	47	362	80	210	**27**	317	1172
05:15 PM	**40**	74	**59**	173	15	195	**119**	329	29	276	**49**	354	**95**	218	22	335	1191
05:30 PM	36	67	59	162	**17**	211	95	323	48	**338**	40	**426**	72	**263**	27	**362**	**1273**
Total Volume	145	289	234	668	62	803	392	1257	159	1146	182	1487	327	838	102	1267	4679
% App. Total	21.7	43.3	35		4.9	63.9	31.2		10.7	77.1	12.2		25.8	66.1	8.1		
PHF	.906	.951	.992	.965	.912	.892	.824	.944	.828	.848	.929	.873	.861	.797	.944	.875	.919

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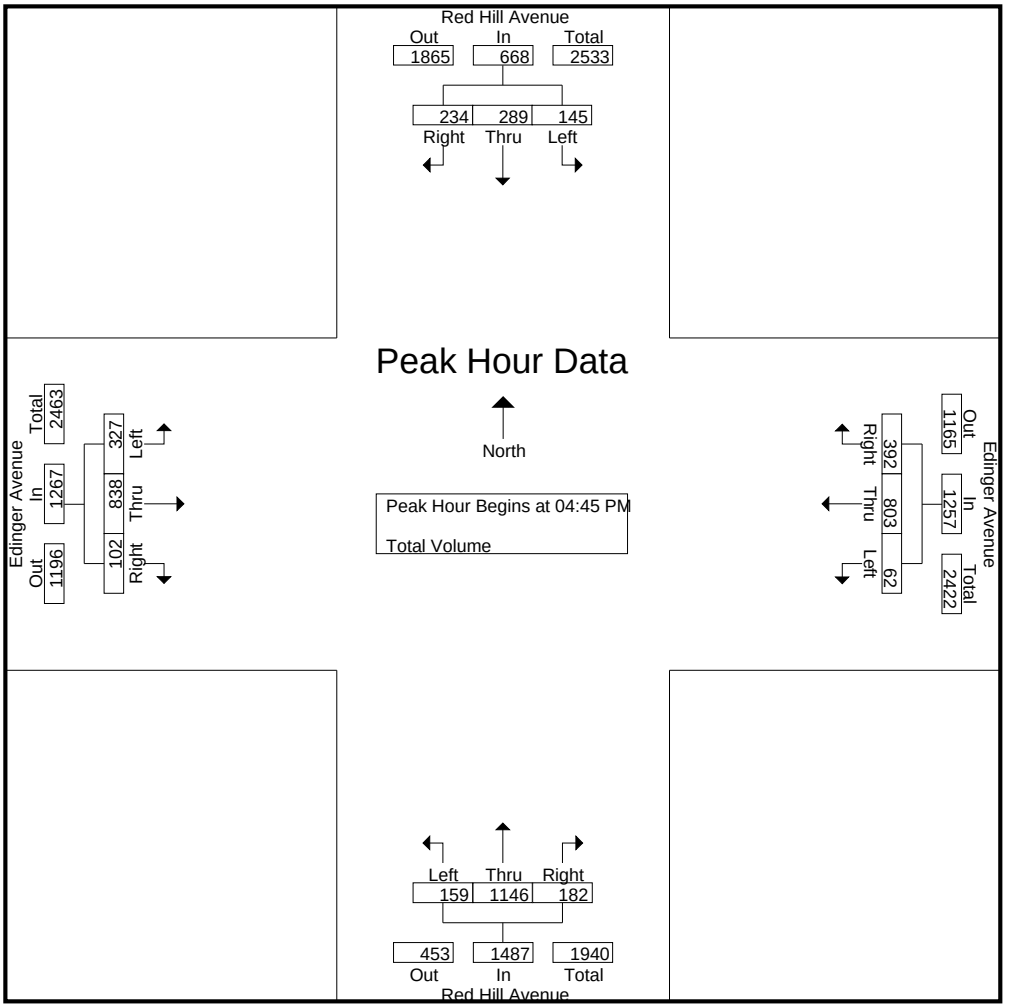
City of Tustin
N/S: Red Hill Avenue
E/W: Edinger Avenue
Weather: Clear

File Name : 97_TUS_Red Hill_Edinger PM
Site Code : 20220171
Start Date : 3/12/2020
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:45 PM				04:15 PM				04:45 PM				04:45 PM			
+0 mins.	39	**76**	58	**173**	**17**	**231**	**105**	**353**	**48**	251	46	345	80	147	26	253
+15 mins.	30	72	58	160	14	219	95	328	34	281	47	362	80	210	**27**	317
+30 mins.	**40**	74	**59**	173	15	172	85	272	29	276	**49**	354	**95**	218	22	335
+45 mins.	36	67	59	162	15	225	93	333	48	**338**	40	**426**	72	**263**	27	**362**
Total Volume	145	289	234	668	61	847	378	1286	159	1146	182	1487	327	838	102	1267
% App. Total	21.7	43.3	35		4.7	65.9	29.4		10.7	77.1	12.2		25.8	66.1	8.1	
PHF	.906	.951	.992	.965	.897	.917	.900	.911	.828	.848	.929	.873	.861	.797	.944	.875

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City of Santa Ana
N/S: Red Hill Avenue
E/W: Warner Avenue
Weather: Clear

File Name : 98_TUS_Red Hill_Warner_AM
Site Code : 20220171
Start Date : 3/12/2020
Page No : 1

Groups Printed- Total Volume

	Red Hill Avenue Southbound				Warner Avenue Westbound				Red Hill Avenue Northbound				Warner Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	3	183	31	217	11	41	6	58	24	181	8	213	41	44	38	123	611
07:15 AM	1	163	50	214	17	59	14	90	19	154	11	184	41	60	62	163	651
07:30 AM	3	231	41	275	22	75	12	109	16	94	10	120	49	70	69	188	692
07:45 AM	5	214	42	261	17	75	14	106	15	92	8	115	55	99	76	230	712
Total	12	791	164	967	67	250	46	363	74	521	37	632	186	273	245	704	2666
08:00 AM	4	255	43	302	25	92	19	136	17	89	10	116	47	72	61	180	734
08:15 AM	3	228	45	276	23	90	16	129	9	74	11	94	56	86	54	196	695
08:30 AM	7	194	49	250	33	92	13	138	15	84	17	116	44	86	62	192	696
08:45 AM	13	191	54	258	22	82	16	120	9	96	16	121	32	71	53	156	655
Total	27	868	191	1086	103	356	64	523	50	343	54	447	179	315	230	724	2780
Grand Total	39	1659	355	2053	170	606	110	886	124	864	91	1079	365	588	475	1428	5446
Apprch %	1.9	80.8	17.3		19.2	68.4	12.4		11.5	80.1	8.4		25.6	41.2	33.3		
Total %	0.7	30.5	6.5	37.7	3.1	11.1	2	16.3	2.3	15.9	1.7	19.8	6.7	10.8	8.7	26.2	

	Red Hill Avenue Southbound				Warner Avenue Westbound				Red Hill Avenue Northbound				Warner Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	5	214	42	261	17	75	14	106	15	**92**	8	115	55	**99**	**76**	**230**	712
08:00 AM	4	**255**	43	**302**	25	**92**	**19**	136	**17**	89	10	**116**	47	72	61	180	**734**
08:15 AM	3	228	45	276	23	90	16	129	9	74	11	94	**56**	86	54	196	695
08:30 AM	**7**	194	**49**	250	**33**	92	13	**138**	15	84	**17**	116	44	86	62	192	696
Total Volume	19	891	179	1089	98	349	62	509	56	339	46	441	202	343	253	798	2837
% App. Total	1.7	81.8	16.4		19.3	68.6	12.2		12.7	76.9	10.4		25.3	43	31.7		
PHF	.679	.874	.913	.901	.742	.948	.816	.922	.824	.921	.676	.950	.902	.866	.832	.867	.966

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City of Santa Ana
N/S: Red Hill Avenue
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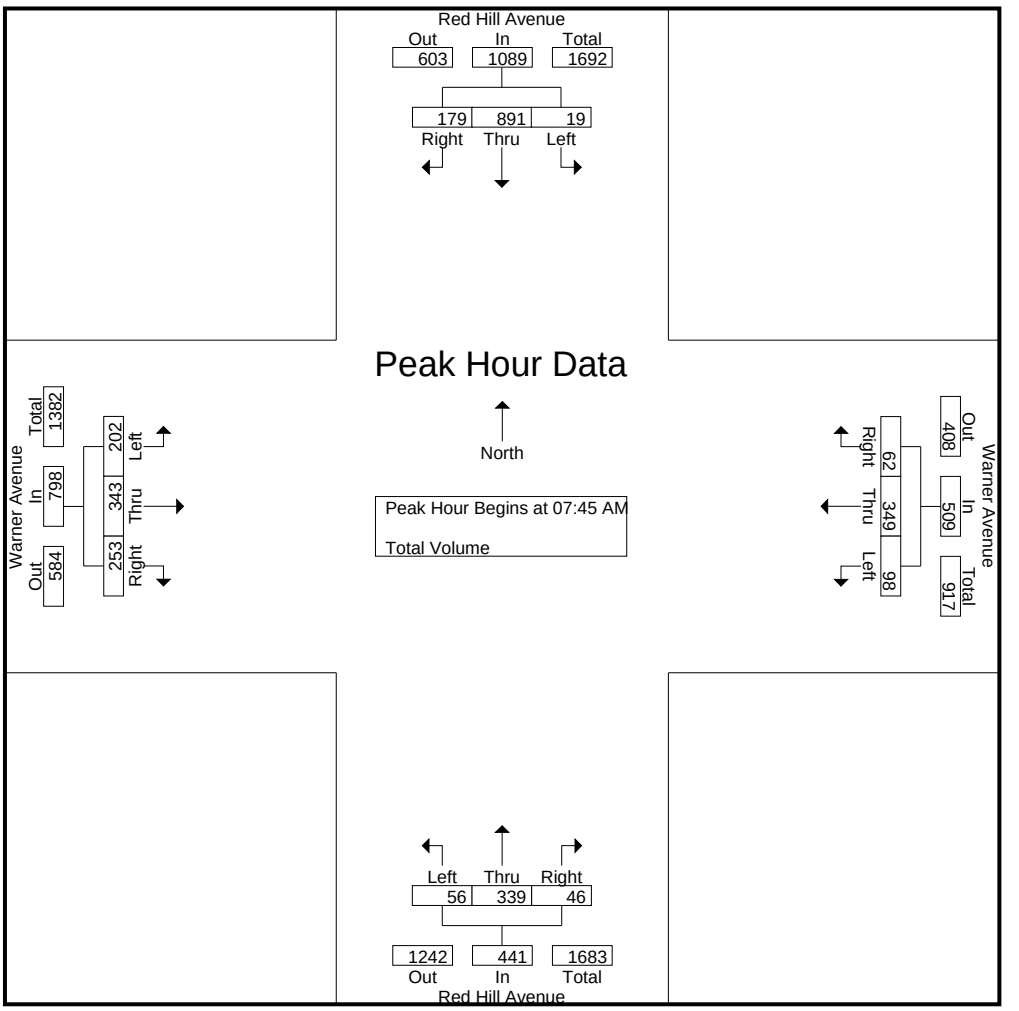
Weather: Clear

File Name : 98_TUS_Red Hill_Warner_AM
Site Code : 20220171
Start Date : 3/12/2020



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:30 AM				08:00 AM				07:00 AM				07:45 AM			
+0 mins.	3	231	41	275	25	**92**	**19**	136	**24**	**181**	8	**213**	55	**99**	**76**	**230**
+15 mins.	**5**	214	42	261	23	90	16	129	19	154	**11**	184	47	72	61	180
+30 mins.	4	**255**	43	**302**	**33**	92	13	**138**	16	94	10	120	**56**	86	54	196
+45 mins.	3	228	**45**	276	22	82	16	120	15	92	8	115	44	86	62	192
Total Volume	15	928	171	1114	103	356	64	523	74	521	37	632	202	343	253	798
% App. Total	1.3	83.3	15.4		19.7	68.1	12.2		11.7	82.4	5.9		25.3	43	31.7	
PHF	.750	.910	.950	.922	.780	.967	.842	.947	.771	.720	.841	.742	.902	.866	.832	.867

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City of Santa Ana
N/S: Red Hill Avenue
E/W: Warner Avenue
Weather: Clear

File Name : 98_TUS_Red Hill_Warner_PM
Site Code : 20220171
Start Date : 3/12/2020
Page No : 1

Groups Printed- Total Volume

	Red Hill Avenue Southbound				Warner Avenue Westbound				Red Hill Avenue Northbound				Warner Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	12	48	60	120	4	77	11	92	69	254	32	355	41	108	36	185	752
04:15 PM	14	48	80	142	8	123	13	144	76	273	31	380	52	94	35	181	847
04:30 PM	11	35	66	112	14	124	14	152	82	264	42	388	49	125	28	202	854
04:45 PM	15	39	74	128	10	133	13	156	93	325	24	442	56	128	18	202	928
Total	52	170	280	502	36	457	51	544	320	1116	129	1565	198	455	117	770	3381
05:00 PM	14	51	73	138	3	120	20	143	85	373	39	497	61	156	24	241	1019
05:15 PM	11	71	60	142	8	169	20	197	108	254	41	403	59	155	25	239	981
05:30 PM	18	62	76	156	4	103	16	123	96	356	46	498	46	164	27	237	1014
05:45 PM	11	55	73	139	6	121	20	147	87	257	53	397	55	151	21	227	910
Total	54	239	282	575	21	513	76	610	376	1240	179	1795	221	626	97	944	3924
Grand Total	106	409	562	1077	57	970	127	1154	696	2356	308	3360	419	1081	214	1714	7305
Apprch %	9.8	38	52.2		4.9	84.1	11		20.7	70.1	9.2		24.4	63.1	12.5		
Total %	1.5	5.6	7.7	14.7	0.8	13.3	1.7	15.8	9.5	32.3	4.2	46	5.7	14.8	2.9	23.5	

	Red Hill Avenue Southbound				Warner Avenue Westbound				Red Hill Avenue Northbound				Warner Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	15	39	74	128	**10**	133	13	156	93	325	24	442	56	128	18	202	928
05:00 PM	14	51	73	138	3	120	**20**	143	85	**373**	39	497	**61**	156	24	**241**	**1019**
05:15 PM	11	**71**	60	142	8	**169**	20	**197**	**108**	254	41	403	59	155	25	239	981
05:30 PM	**18**	62	**76**	**156**	4	103	16	123	96	356	**46**	**498**	46	**164**	**27**	237	1014
Total Volume	58	223	283	564	25	525	69	619	382	1308	150	1840	222	603	94	919	3942
% App. Total	10.3	39.5	50.2		4	84.8	11.1		20.8	71.1	8.2		24.2	65.6	10.2		
PHF	.806	.785	.931	.904	.625	.777	.863	.786	.884	.877	.815	.924	.910	.919	.870	.953	.967

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City of Santa Ana
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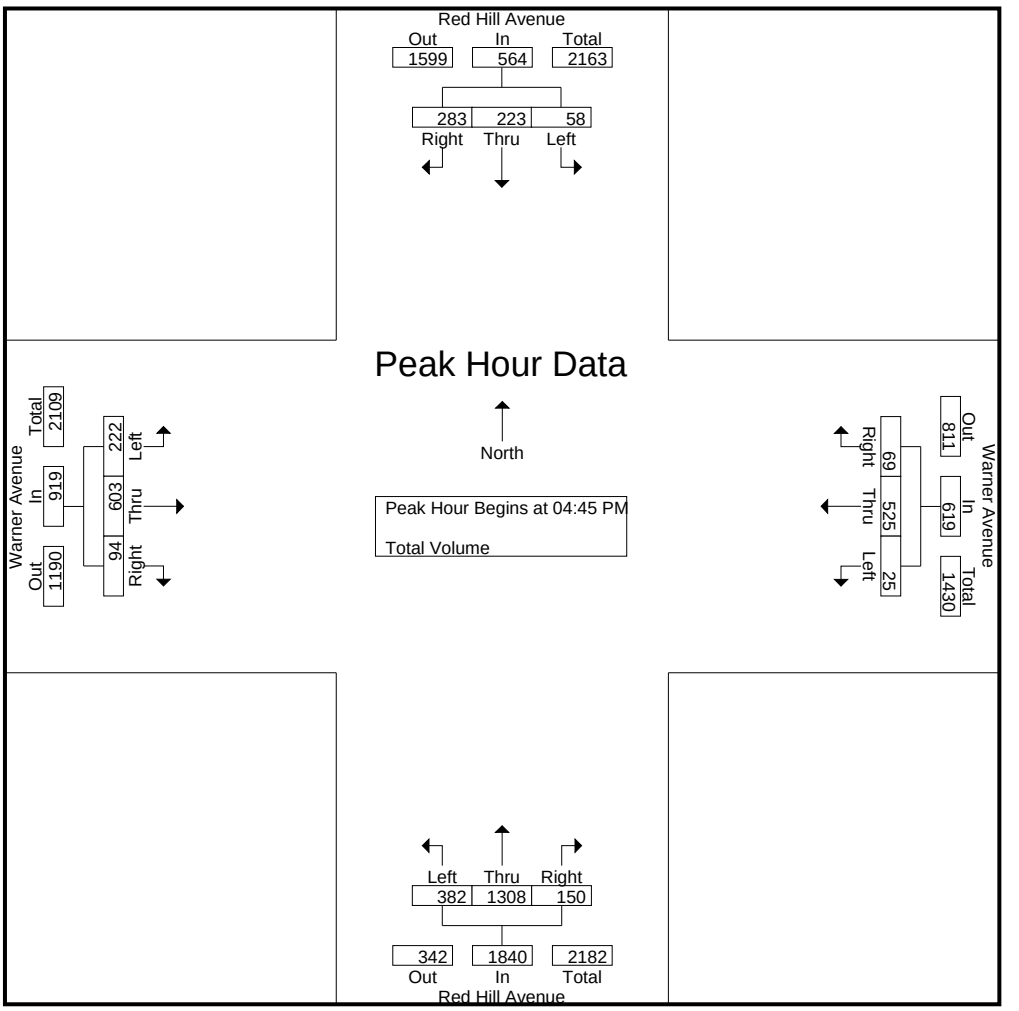
E/W: Warner Avenue
Weather: Clear

File Name : 98_TUS_Red Hill_Warner_PM
Site Code : 20220171
Start Date : 3/12/2020
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	05:00 PM				04:30 PM				04:45 PM				05:00 PM			
+0 mins.	14	51	73	138	**14**	124	14	152	93	325	24	442	**61**	156	24	**241**
+15 mins.	11	**71**	60	142	10	133	13	156	85	**373**	39	497	59	155	25	239
+30 mins.	**18**	62	**76**	**156**	3	120	**20**	143	**108**	254	41	403	46	**164**	**27**	237
+45 mins.	11	55	73	139	8	**169**	20	**197**	96	356	**46**	**498**	55	151	21	227
Total Volume	54	239	282	575	35	546	67	648	382	1308	150	1840	221	626	97	944
% App. Total	9.4	41.6	49		5.4	84.3	10.3		20.8	71.1	8.2		23.4	66.3	10.3	
PHF	.750	.842	.928	.921	.625	.808	.838	.822	.884	.877	.815	.924	.906	.954	.898	.979

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E/W: Dyer Road/Barranca Parkway
Weather: Clear

File Name : 99_SNA_Red Hill_Barranca AM
Site Code : 20220171
Start Date : 3/12/2020
Page No : 1

Groups Printed- Total Volume

	Red Hill Avenue Southbound				Barranca Parkway Westbound				Red Hill Avenue Northbound				Dyer Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	41	134	25	200	51	114	27	192	119	178	24	321	41	103	45	189	902
07:15 AM	50	127	22	199	90	136	21	247	100	153	24	277	37	154	90	281	1004
07:30 AM	37	206	30	273	105	141	25	271	48	85	27	160	23	182	52	257	961
07:45 AM	64	175	30	269	187	174	38	399	24	74	27	125	32	190	109	331	1124
Total	192	642	107	941	433	565	111	1109	291	490	102	883	133	629	296	1058	3991
08:00 AM	45	266	24	335	167	163	32	362	26	76	26	128	31	141	66	238	1063
08:15 AM	53	229	31	313	119	167	31	317	29	81	24	134	32	197	54	283	1047
08:30 AM	43	200	18	261	149	149	42	340	22	63	16	101	26	172	49	247	949
08:45 AM	46	187	27	260	148	146	37	331	25	77	16	118	25	149	90	264	973
Total	187	882	100	1169	583	625	142	1350	102	297	82	481	114	659	259	1032	4032
Grand Total	379	1524	207	2110	1016	1190	253	2459	393	787	184	1364	247	1288	555	2090	8023
Apprch %	18	72.2	9.8		41.3	48.4	10.3		28.8	57.7	13.5		11.8	61.6	26.6		
Total %	4.7	19	2.6	26.3	12.7	14.8	3.2	30.6	4.9	9.8	2.3	17	3.1	16.1	6.9	26.1	

	Red Hill Avenue Southbound				Barranca Parkway Westbound				Red Hill Avenue Northbound				Dyer Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	37	206	30	273	105	141	25	271	**48**	**85**	**27**	**160**	23	182	52	257	961
07:45 AM	**64**	175	30	269	**187**	**174**	**38**	**399**	24	74	27	125	**32**	190	**109**	**331**	**1124**
08:00 AM	45	**266**	24	**335**	167	163	32	362	26	76	26	128	31	141	66	238	1063
08:15 AM	53	229	**31**	313	119	167	31	317	29	81	24	134	32	**197**	54	283	1047
Total Volume	199	876	115	1190	578	645	126	1349	127	316	104	547	118	710	281	1109	4195
% App. Total	16.7	73.6	9.7		42.8	47.8	9.3		23.2	57.8	19		10.6	64	25.3		
PHF	.777	.823	.927	.888	.773	.927	.829	.845	.661	.929	.963	.855	.922	.901	.644	.838	.933

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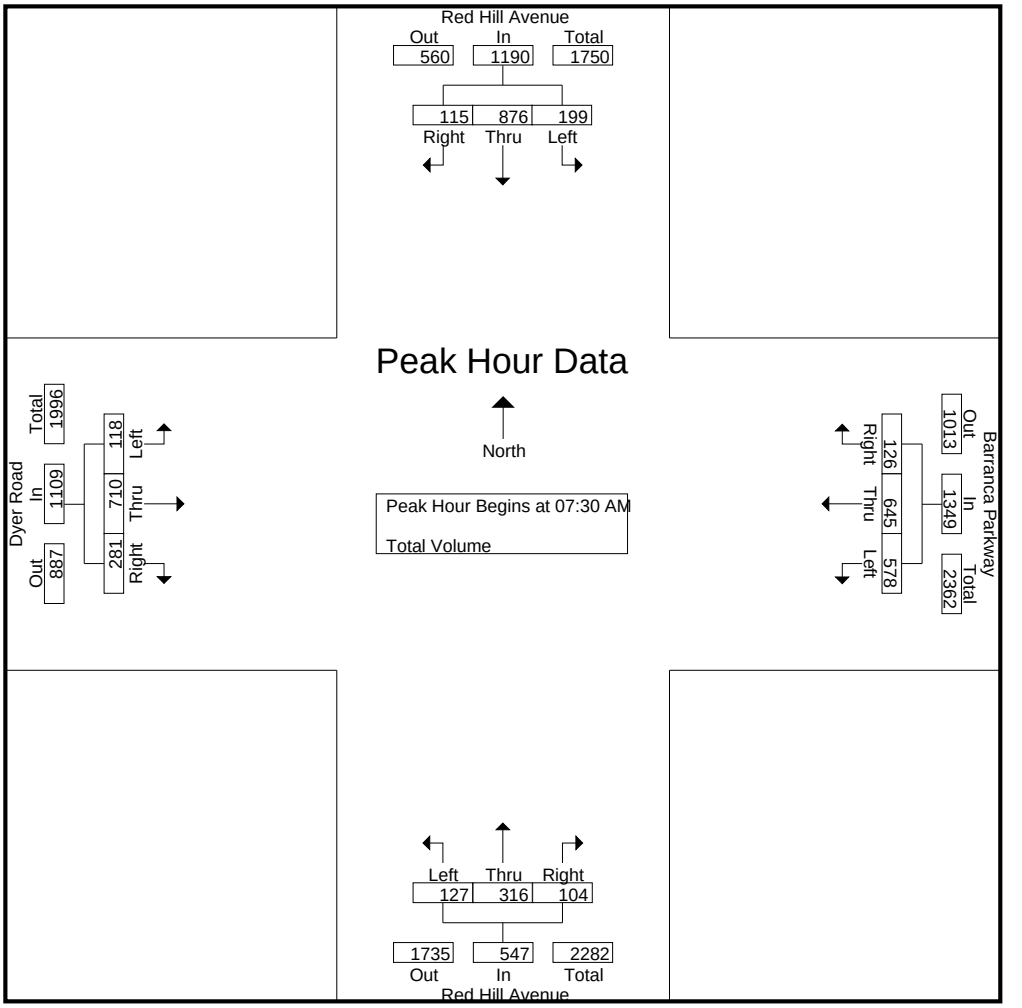
File Name : 99_SNA_Red Hill_Barranca AM
Site Code : 20220171
Start Date : 3/12/2020
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:30 AM				07:45 AM				07:00 AM				07:30 AM			
+0 mins.	37	206	30	273	**187**	**174**	38	**399**	**119**	**178**	24	**321**	23	182	52	257
+15 mins.	**64**	175	30	269	167	163	32	362	100	153	24	277	**32**	190	**109**	**331**
+30 mins.	45	**266**	24	**335**	119	167	31	317	48	85	**27**	160	31	141	66	238
+45 mins.	53	229	**31**	313	149	149	**42**	340	24	74	27	125	32	**197**	54	283
Total Volume	199	876	115	1190	622	653	143	1418	291	490	102	883	118	710	281	1109
% App. Total	16.7	73.6	9.7		43.9	46.1	10.1		33	55.5	11.6		10.6	64	25.3	
PHF	.777	.823	.927	.888	.832	.938	.851	.888	.611	.688	.944	.688	.922	.901	.644	.838

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City of Santa Ana
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File Name : 99_SNA_Red Hill_Barranca PM
Site Code : 20220171
Start Date : 3/12/2020
Page No : 1

Groups Printed- Total Volume

	Red Hill Avenue Southbound				Barranca Parkway Westbound				Red Hill Avenue Northbound				Dyer Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	33	69	32	134	36	206	71	313	59	258	84	401	35	124	27	186	1034
04:15 PM	34	76	32	142	33	169	70	272	69	292	64	425	37	128	23	188	1027
04:30 PM	27	64	26	117	26	266	80	372	55	266	82	403	51	158	27	236	1128
04:45 PM	49	86	27	162	39	164	64	267	65	350	79	494	38	148	32	218	1141
Total	143	295	117	555	134	805	285	1224	248	1166	309	1723	161	558	109	828	4330
05:00 PM	42	93	45	180	19	273	87	379	102	393	81	576	38	182	20	240	1375
05:15 PM	53	68	38	159	35	212	65	312	91	323	99	513	49	191	18	258	1242
05:30 PM	39	83	32	154	39	216	68	323	78	354	91	523	62	187	32	281	1281
05:45 PM	51	69	32	152	34	265	62	361	85	269	74	428	54	193	29	276	1217
Total	185	313	147	645	127	966	282	1375	356	1339	345	2040	203	753	99	1055	5115
Grand Total	328	608	264	1200	261	1771	567	2599	604	2505	654	3763	364	1311	208	1883	9445
Apprch %	27.3	50.7	22		10	68.1	21.8		16.1	66.6	17.4		19.3	69.6	11		
Total %	3.5	6.4	2.8	12.7	2.8	18.8	6	27.5	6.4	26.5	6.9	39.8	3.9	13.9	2.2	19.9	

	Red Hill Avenue Southbound				Barranca Parkway Westbound				Red Hill Avenue Northbound				Dyer Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	42	**93**	**45**	**180**	19	**273**	**87**	**379**	**102**	**393**	81	**576**	38	182	20	240	**1375**
05:15 PM	**53**	68	38	159	35	212	65	312	91	323	**99**	513	49	191	18	258	1242
05:30 PM	39	83	32	154	**39**	216	68	323	78	354	91	523	**62**	187	**32**	**281**	1281
05:45 PM	51	69	32	152	34	265	62	361	85	269	74	428	54	**193**	29	276	1217
Total Volume	185	313	147	645	127	966	282	1375	356	1339	345	2040	203	753	99	1055	5115
% App. Total	28.7	48.5	22.8		9.2	70.3	20.5		17.5	65.6	16.9		19.2	71.4	9.4		
PHF	.873	.841	.817	.896	.814	.885	.810	.907	.873	.852	.871	.885	.819	.975	.773	.939	.930

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City of Santa Ana
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File Name : 99_SNA_Red Hill_Barranca PM
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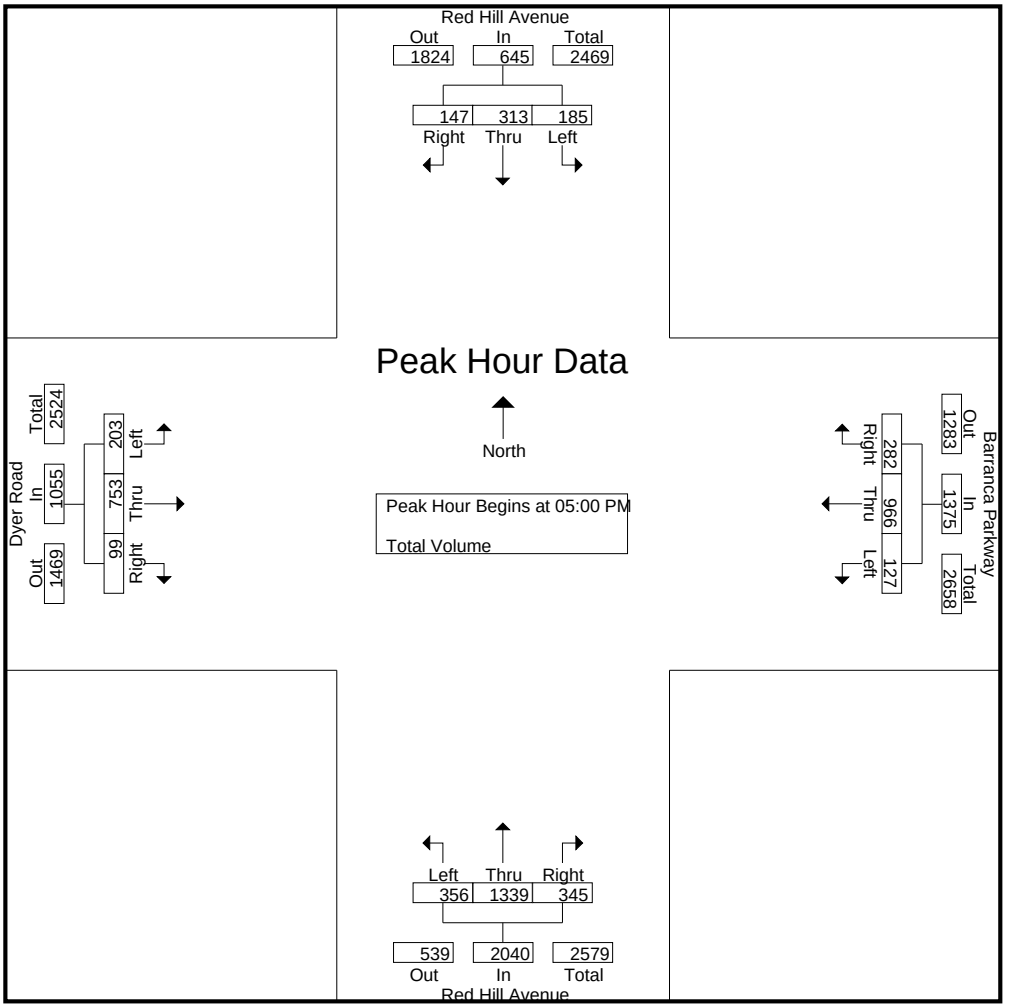
Start Date : 3/12/2020



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:45 PM				05:00 PM				04:45 PM				05:00 PM			
+0 mins.	49	86	27	162	19	**273**	**87**	**379**	65	350	79	494	38	182	20	240
+15 mins.	42	**93**	**45**	**180**	35	212	65	312	**102**	**393**	81	**576**	49	191	18	258
+30 mins.	**53**	68	38	159	**39**	216	68	323	91	323	**99**	513	**62**	187	**32**	**281**
+45 mins.	39	83	32	154	34	265	62	361	78	354	91	523	54	**193**	29	276
Total Volume	183	330	142	655	127	966	282	1375	336	1420	350	2106	203	753	99	1055
% App. Total	27.9	50.4	21.7		9.2	70.3	20.5		16	67.4	16.6		19.2	71.4	9.4	
PHF	.863	.887	.789	.910	.814	.885	.810	.907	.824	.903	.884	.914	.819	.975	.773	.939

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City of Irvine
N/S: Red Hill Avenue
E/W: Alton Parkway
Weather: Clear

File Name : 100_IRV_Red Hill_Alton AM
Site Code : 20220171
Start Date : 3/12/2020
Page No : 1

Groups Printed- Total Volume

	Red Hill Avenue Southbound				Alton Parkway Westbound				Red Hill Avenue Northbound				Alton Parkway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	47	153	15	215	24	15	15	54	31	312	62	405	2	4	4	10	684
07:15 AM	39	189	19	247	31	25	15	71	39	288	76	403	2	8	2	12	733
07:30 AM	60	241	29	330	43	27	27	97	39	153	63	255	3	8	7	18	700
07:45 AM	58	314	41	413	48	46	24	118	46	149	93	288	2	5	8	15	834
Total	204	897	104	1205	146	113	81	340	155	902	294	1351	9	25	21	55	2951
08:00 AM	83	302	55	440	53	50	27	130	53	133	76	262	3	4	9	16	848
08:15 AM	52	242	44	338	61	46	33	140	34	115	78	227	2	7	5	14	719
08:30 AM	58	283	43	384	61	47	22	130	41	115	74	230	2	12	6	20	764
08:45 AM	43	281	48	372	71	47	20	138	26	109	80	215	3	11	5	19	744
Total	236	1108	190	1534	246	190	102	538	154	472	308	934	10	34	25	69	3075
Grand Total	440	2005	294	2739	392	303	183	878	309	1374	602	2285	19	59	46	124	6026
Apprch %	16.1	73.2	10.7		44.6	34.5	20.8		13.5	60.1	26.3		15.3	47.6	37.1		
Total %	7.3	33.3	4.9	45.5	6.5	5	3	14.6	5.1	22.8	10	37.9	0.3	1	0.8	2.1	

	Red Hill Avenue Southbound				Alton Parkway Westbound				Red Hill Avenue Northbound				Alton Parkway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	58	**314**	41	413	48	46	24	118	46	**149**	**93**	**288**	2	5	8	15	834
08:00 AM	**83**	302	**55**	**440**	53	**50**	27	130	**53**	133	76	262	**3**	4	**9**	16	**848**
08:15 AM	52	242	44	338	**61**	46	**33**	**140**	34	115	78	227	2	7	5	14	719
08:30 AM	58	283	43	384	61	47	22	130	41	115	74	230	2	**12**	6	**20**	764
Total Volume	251	1141	183	1575	223	189	106	518	174	512	321	1007	9	28	28	65	3165
% App. Total	15.9	72.4	11.6		43.1	36.5	20.5		17.3	50.8	31.9		13.8	43.1	43.1		
PHF	.756	.908	.832	.895	.914	.945	.803	.925	.821	.859	.863	.874	.750	.583	.778	.813	.933

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City of Irvine
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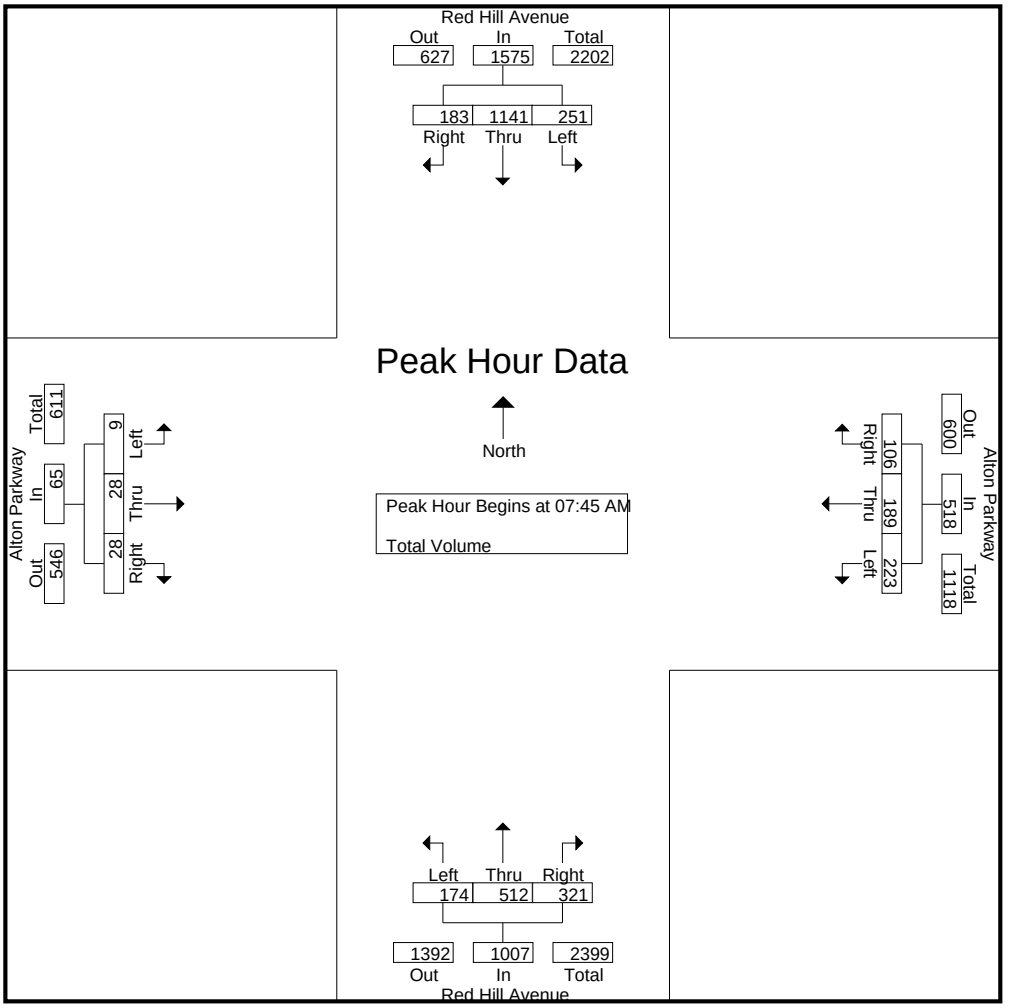
E/W: Alton Parkway
Weather: Clear

File Name : 100_IRV_Red Hill_Alton AM
Site Code : 20220171
Start Date : 3/12/2020
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:45 AM				08:00 AM				07:00 AM				08:00 AM			
+0 mins.	58	**314**	41	413	53	**50**	27	130	31	**312**	62	**405**	**3**	4	**9**	16
+15 mins.	**83**	302	**55**	**440**	61	46	**33**	**140**	39	288	76	403	2	7	5	14
+30 mins.	52	242	44	338	61	47	22	130	39	153	63	255	2	**12**	6	**20**
+45 mins.	58	283	43	384	**71**	47	20	138	**46**	149	**93**	288	3	11	5	19
Total Volume	251	1141	183	1575	246	190	102	538	155	902	294	1351	10	34	25	69
% App. Total	15.9	72.4	11.6		45.7	35.3	19		11.5	66.8	21.8		14.5	49.3	36.2	
PHF	.756	.908	.832	.895	.866	.950	.773	.961	.842	.723	.790	.834	.833	.708	.694	.863

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City of Irvine
N/S: Red Hill Avenue
E/W: Alton Parkway
Weather: Clear

File Name : 100_IRV_Red Hill_Alton PM
Site Code : 20220171
Start Date : 3/12/2020
Page No : 1

Groups Printed- Total Volume

	Red Hill Avenue Southbound				Alton Parkway Westbound				Red Hill Avenue Northbound				Alton Parkway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	23	132	1	156	99	18	64	181	6	282	42	330	21	41	36	98	765
04:15 PM	34	117	5	156	72	18	40	130	7	331	44	382	19	42	41	102	770
04:30 PM	31	128	1	160	128	21	60	209	5	367	61	433	25	68	34	127	929
04:45 PM	30	138	0	168	81	22	58	161	6	358	40	404	28	73	36	137	870
Total	118	515	7	640	380	79	222	681	24	1338	187	1549	93	224	147	464	3334
05:00 PM	36	131	0	167	139	19	97	255	4	345	63	412	46	105	50	201	1035
05:15 PM	27	131	3	161	85	12	52	149	12	429	53	494	33	78	46	157	961
05:30 PM	29	123	0	152	110	20	66	196	4	406	47	457	19	60	33	112	917
05:45 PM	36	114	2	152	88	24	55	167	4	316	73	393	25	55	28	108	820
Total	128	499	5	632	422	75	270	767	24	1496	236	1756	123	298	157	578	3733
Grand Total	246	1014	12	1272	802	154	492	1448	48	2834	423	3305	216	522	304	1042	7067
Apprch %	19.3	79.7	0.9		55.4	10.6	34		1.5	85.7	12.8		20.7	50.1	29.2		
Total %	3.5	14.3	0.2	18	11.3	2.2	7	20.5	0.7	40.1	6	46.8	3.1	7.4	4.3	14.7	

	Red Hill Avenue Southbound				Alton Parkway Westbound				Red Hill Avenue Northbound				Alton Parkway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	31	128	1	160	128	21	60	209	5	367	61	433	25	68	34	127	929
04:45 PM	30	**138**	0	**168**	81	**22**	58	161	6	358	40	404	28	73	36	137	870
05:00 PM	**36**	131	0	167	**139**	19	**97**	**255**	4	345	**63**	412	**46**	**105**	**50**	**201**	**1035**
05:15 PM	27	131	**3**	161	85	12	52	149	**12**	**429**	53	**494**	33	78	46	157	961
Total Volume	124	528	4	656	433	74	267	774	27	1499	217	1743	132	324	166	622	3795
% App. Total	18.9	80.5	0.6		55.9	9.6	34.5		1.5	86	12.4		21.2	52.1	26.7		
PHF	.861	.957	.333	.976	.779	.841	.688	.759	.563	.874	.861	.882	.717	.771	.830	.774	.917

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City of Irvine
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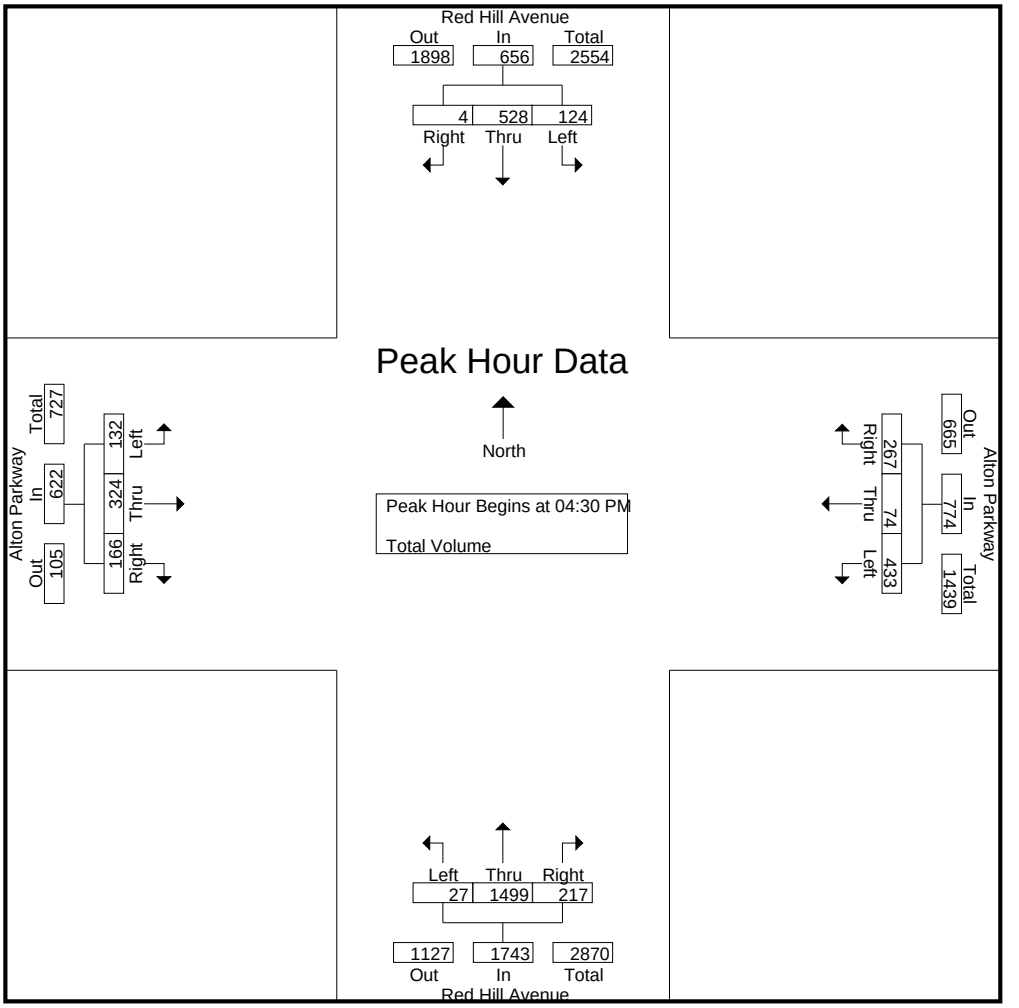
E/W: Alton Parkway
Weather: Clear

File Name : 100_IRV_Red Hill_Alton PM
Site Code : 20220171
Start Date : 3/12/2020
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:30 PM				04:30 PM				04:45 PM				04:30 PM			
+0 mins.	31	128	1	160	128	21	60	209	6	358	40	404	25	68	34	127
+15 mins.	30	**138**	0	**168**	81	**22**	58	161	4	345	**63**	412	28	73	36	137
+30 mins.	**36**	131	0	167	**139**	19	**97**	**255**	**12**	**429**	53	**494**	**46**	**105**	**50**	**201**
+45 mins.	27	131	**3**	161	85	12	52	149	4	406	47	457	33	78	46	157
Total Volume	124	528	4	656	433	74	267	774	26	1538	203	1767	132	324	166	622
% App. Total	18.9	80.5	0.6		55.9	9.6	34.5		1.5	87	11.5		21.2	52.1	26.7	
PHF	.861	.957	.333	.976	.779	.841	.688	.759	.542	.896	.806	.894	.717	.771	.830	.774

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City of Irvine
N/S: Red Hill Avenue
E/W: MacArthur Boulevard
Weather: Clear

File Name : 101_IRV_Red Hill_MacArthur AM
Site Code : 20220171
Start Date : 3/12/2020
Page No : 1

Groups Printed- Total Volume

	Red Hill Avenue Southbound				MacArthur Boulevard Westbound				Red Hill Avenue Northbound				MacArthur Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	21	60	62	143	14	69	251	334	10	89	3	102	350	142	15	507	1086
07:15 AM	40	90	68	198	7	77	228	312	28	137	1	166	271	147	19	437	1113
07:30 AM	58	117	84	259	11	77	172	260	21	122	1	144	295	151	13	459	1122
07:45 AM	37	129	117	283	6	57	187	250	17	156	3	176	331	150	32	513	1222
Total	156	396	331	883	38	280	838	1156	76	504	8	588	1247	590	79	1916	4543
08:00 AM	67	158	119	344	4	52	140	196	14	174	2	190	299	159	22	480	1210
08:15 AM	51	118	127	296	7	59	109	175	16	145	2	163	300	173	22	495	1129
08:30 AM	53	132	129	314	6	55	135	196	17	94	3	114	318	163	30	511	1135
08:45 AM	67	132	133	332	3	88	102	193	16	101	3	120	282	150	24	456	1101
Total	238	540	508	1286	20	254	486	760	63	514	10	587	1199	645	98	1942	4575
Grand Total	394	936	839	2169	58	534	1324	1916	139	1018	18	1175	2446	1235	177	3858	9118
Apprch %	18.2	43.2	38.7		3	27.9	69.1		11.8	86.6	1.5		63.4	32	4.6		
Total %	4.3	10.3	9.2	23.8	0.6	5.9	14.5	21	1.5	11.2	0.2	12.9	26.8	13.5	1.9	42.3	

	Red Hill Avenue Southbound				MacArthur Boulevard Westbound				Red Hill Avenue Northbound				MacArthur Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	37	129	117	283	6	57	**187**	**250**	**17**	156	**3**	176	**331**	150	**32**	**513**	**1222**
08:00 AM	**67**	**158**	119	**344**	4	52	140	196	14	**174**	2	**190**	299	159	22	480	1210
08:15 AM	51	118	127	296	**7**	**59**	109	175	16	145	2	163	300	**173**	22	495	1129
08:30 AM	53	132	**129**	314	6	55	135	196	17	94	3	114	318	163	30	511	1135
Total Volume	208	537	492	1237	23	223	571	817	64	569	10	643	1248	645	106	1999	4696
% App. Total	16.8	43.4	39.8		2.8	27.3	69.9		10	88.5	1.6		62.4	32.3	5.3		
PHF	.776	.850	.953	.899	.821	.945	.763	.817	.941	.818	.833	.846	.943	.932	.828	.974	.961

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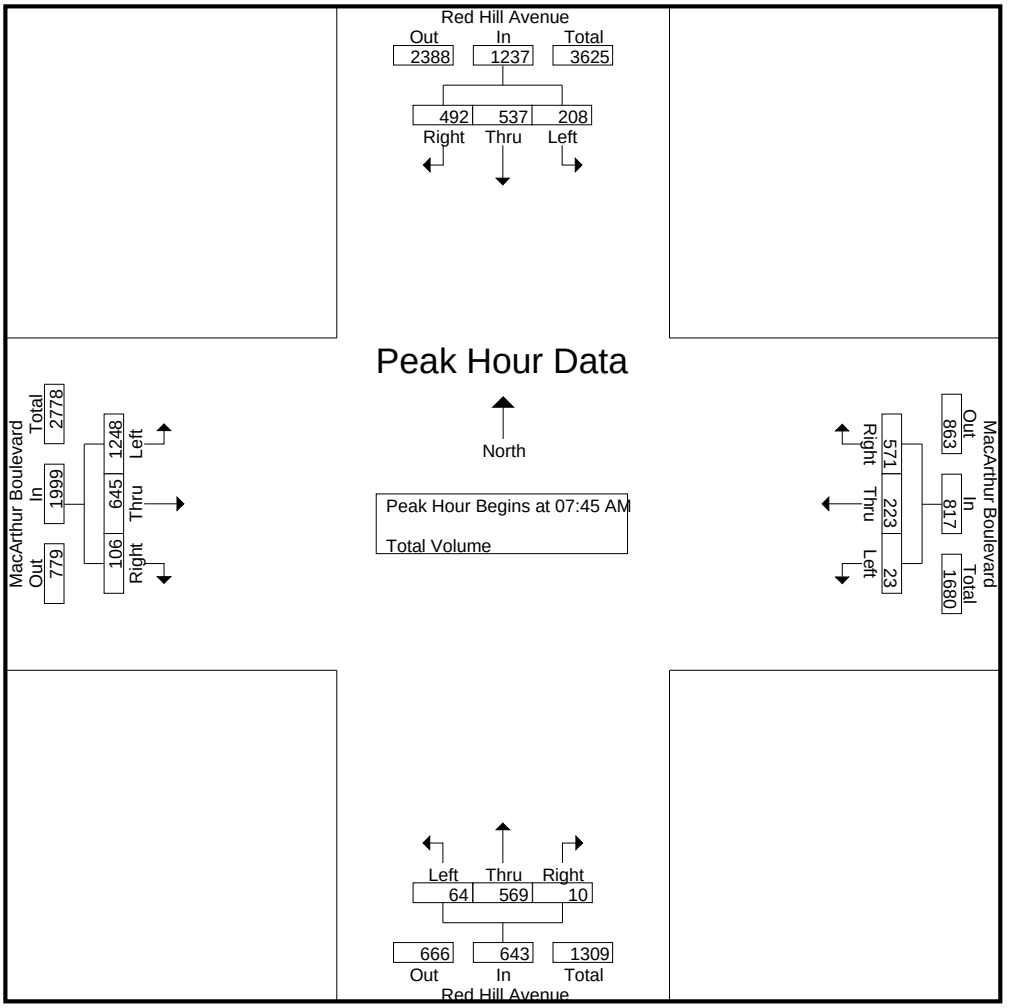
E/W: MacArthur Boulevard
Weather: Clear

File Name : 101_IRV_Red Hill_MacArthur AM
Site Code : 20220171
Start Date : 3/12/2020
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	08:00 AM				07:00 AM				07:15 AM				07:45 AM			
+0 mins.	**67**	**158**	119	**344**	**14**	69	**251**	**334**	**28**	137	1	166	**331**	150	**32**	**513**
+15 mins.	51	118	127	296	7	**77**	228	312	21	122	1	144	299	159	22	480
+30 mins.	53	132	129	314	11	77	172	260	17	156	**3**	176	300	**173**	22	495
+45 mins.	67	132	**133**	332	6	57	187	250	14	**174**	2	**190**	318	163	30	511
Total Volume	238	540	508	1286	38	280	838	1156	80	589	7	676	1248	645	106	1999
% App. Total	18.5	42	39.5		3.3	24.2	72.5		11.8	87.1	1		62.4	32.3	5.3	
PHF	.888	.854	.955	.935	.679	.909	.835	.865	.714	.846	.583	.889	.943	.932	.828	.974

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City of Irvine
N/S: Red Hill Avenue
E/W: MacArthur Boulevard
Weather: Clear

File Name : 101_IRV_Red Hill_MacArthur PM
Site Code : 20220171
Start Date : 3/12/2020
Page No : 1

Groups Printed- Total Volume

	Red Hill Avenue Southbound				MacArthur Boulevard Westbound				Red Hill Avenue Northbound				MacArthur Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	49	122	331	502	9	173	97	279	40	184	1	225	129	60	7	196	1202
04:15 PM	68	104	232	404	10	163	90	263	21	168	2	191	124	50	11	185	1043
04:30 PM	57	138	345	540	7	186	101	294	24	172	1	197	153	74	11	238	1269
04:45 PM	72	145	241	458	8	166	116	290	30	190	4	224	139	67	7	213	1185
Total	246	509	1149	1904	34	688	404	1126	115	714	8	837	545	251	36	832	4699
05:00 PM	69	166	308	543	14	231	153	398	34	208	1	243	135	76	13	224	1408
05:15 PM	78	146	254	478	11	248	163	422	27	221	2	250	117	65	12	194	1344
05:30 PM	67	137	239	443	6	173	142	321	34	190	3	227	206	67	10	283	1274
05:45 PM	39	106	193	338	4	216	118	338	22	160	4	186	181	74	10	265	1127
Total	253	555	994	1802	35	868	576	1479	117	779	10	906	639	282	45	966	5153
Grand Total	499	1064	2143	3706	69	1556	980	2605	232	1493	18	1743	1184	533	81	1798	9852
Apprch %	13.5	28.7	57.8		2.6	59.7	37.6		13.3	85.7	1		65.9	29.6	4.5		
Total %	5.1	10.8	21.8	37.6	0.7	15.8	9.9	26.4	2.4	15.2	0.2	17.7	12	5.4	0.8	18.3	

	Red Hill Avenue Southbound				MacArthur Boulevard Westbound				Red Hill Avenue Northbound				MacArthur Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	72	145	241	458	8	166	116	290	30	190	**4**	224	139	67	7	213	1185
05:00 PM	69	**166**	**308**	**543**	**14**	231	153	398	**34**	208	1	243	135	**76**	**13**	224	**1408**
05:15 PM	**78**	146	254	478	11	**248**	**163**	**422**	27	**221**	2	**250**	117	65	12	194	1344
05:30 PM	67	137	239	443	6	173	142	321	34	190	3	227	**206**	67	10	**283**	1274
Total Volume	286	594	1042	1922	39	818	574	1431	125	809	10	944	597	275	42	914	5211
% App. Total	14.9	30.9	54.2		2.7	57.2	40.1		13.2	85.7	1.1		65.3	30.1	4.6		
PHF	.917	.895	.846	.885	.696	.825	.880	.848	.919	.915	.625	.944	.725	.905	.808	.807	.925

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City of Irvine
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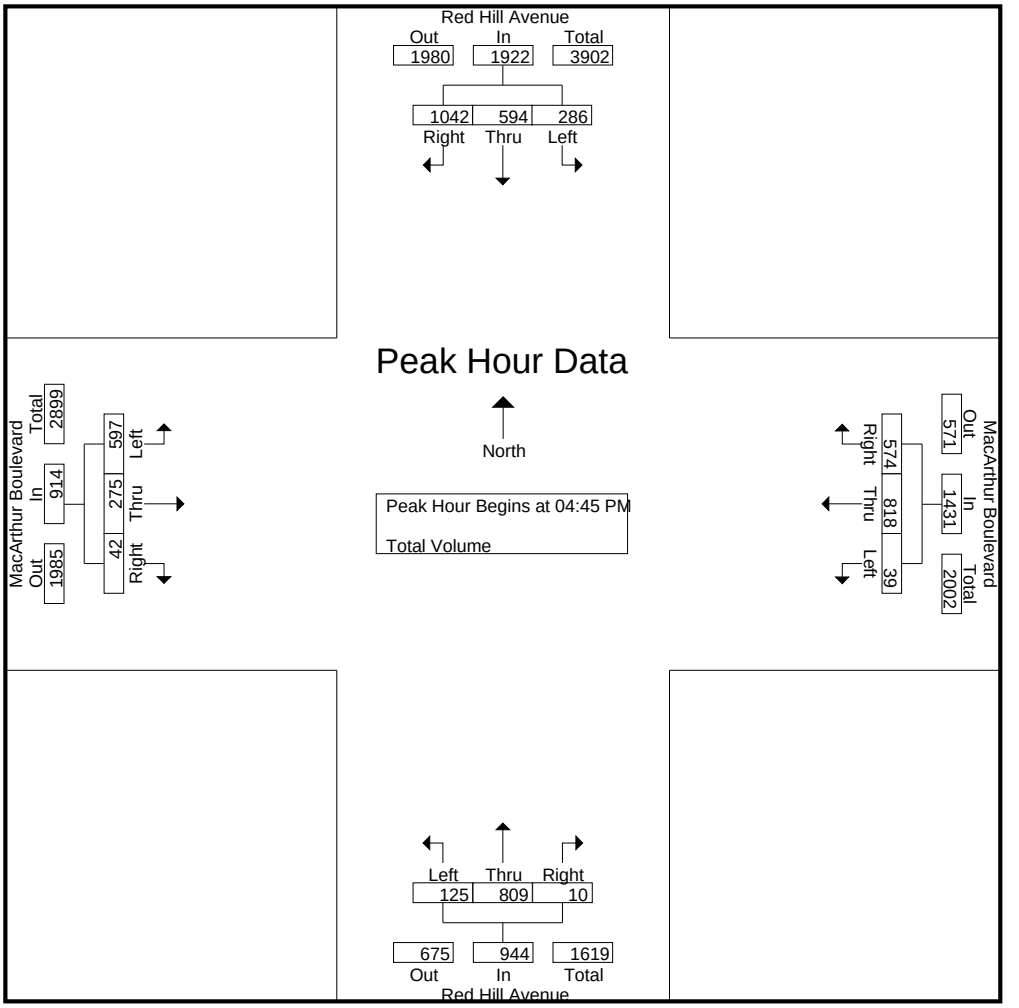
E/W: MacArthur Boulevard
Weather: Clear

File Name : 101_IRV_Red Hill_MacArthur PM
Site Code : 20220171
Start Date : 3/12/2020
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:30 PM				05:00 PM				04:45 PM				05:00 PM			
+0 mins.	57	138	**345**	540	**14**	231	153	398	30	190	**4**	224	135	**76**	**13**	224
+15 mins.	72	145	241	458	11	**248**	**163**	**422**	**34**	208	1	243	117	65	12	194
+30 mins.	69	**166**	308	**543**	6	173	142	321	27	**221**	2	**250**	**206**	67	10	**283**
+45 mins.	**78**	146	254	478	4	216	118	338	34	190	3	227	181	74	10	265
Total Volume	276	595	1148	2019	35	868	576	1479	125	809	10	944	639	282	45	966
% App. Total	13.7	29.5	56.9		2.4	58.7	38.9		13.2	85.7	1.1		66.1	29.2	4.7	
PHF	.885	.896	.832	.930	.625	.875	.883	.876	.919	.915	.625	.944	.775	.928	.865	.853

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City of Irvine
N/S: Red Hill Avenue
E/W: Main Street
Weather: Clear

File Name : 102_IRV_Red Hill_Main_AM
Site Code : 20220171
Start Date : 3/12/2020
Page No : 1

Groups Printed- Total Volume

	Red Hill Avenue Southbound				Main Street Westbound				Red Hill Avenue Northbound				Main Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	15	44	4	63	18	51	12	81	12	73	46	131	13	157	38	208	483
07:15 AM	11	40	12	63	26	54	19	99	25	113	55	193	25	234	51	310	665
07:30 AM	10	53	20	83	30	60	15	105	30	140	80	250	20	325	53	398	836
07:45 AM	19	76	26	121	41	67	20	128	35	151	82	268	30	374	76	480	997
Total	55	213	62	330	115	232	66	413	102	477	263	842	88	1090	218	1396	2981
08:00 AM	16	86	25	127	37	79	24	140	37	166	97	300	49	358	56	463	1030
08:15 AM	13	71	32	116	48	74	16	138	49	120	92	261	27	306	67	400	915
08:30 AM	19	80	25	124	28	89	13	130	41	119	90	250	33	271	55	359	863
08:45 AM	14	75	37	126	29	77	14	120	38	134	82	254	27	255	61	343	843
Total	62	312	119	493	142	319	67	528	165	539	361	1065	136	1190	239	1565	3651
Grand Total	117	525	181	823	257	551	133	941	267	1016	624	1907	224	2280	457	2961	6632
Apprch %	14.2	63.8	22		27.3	58.6	14.1		14	53.3	32.7		7.6	77	15.4		
Total %	1.8	7.9	2.7	12.4	3.9	8.3	2	14.2	4	15.3	9.4	28.8	3.4	34.4	6.9	44.6	

	Red Hill Avenue Southbound				Main Street Westbound				Red Hill Avenue Northbound				Main Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	**19**	76	26	121	41	67	20	128	35	151	82	268	30	**374**	**76**	**480**	997
08:00 AM	16	**86**	25	**127**	37	79	**24**	**140**	37	**166**	**97**	**300**	**49**	358	56	463	**1030**
08:15 AM	13	71	**32**	116	**48**	74	16	138	**49**	120	92	261	27	306	67	400	915
08:30 AM	19	80	25	124	28	**89**	13	130	41	119	90	250	33	271	55	359	863
Total Volume	67	313	108	488	154	309	73	536	162	556	361	1079	139	1309	254	1702	3805
% App. Total	13.7	64.1	22.1		28.7	57.6	13.6		15	51.5	33.5		8.2	76.9	14.9		
PHF	.882	.910	.844	.961	.802	.868	.760	.957	.827	.837	.930	.899	.709	.875	.836	.886	.924

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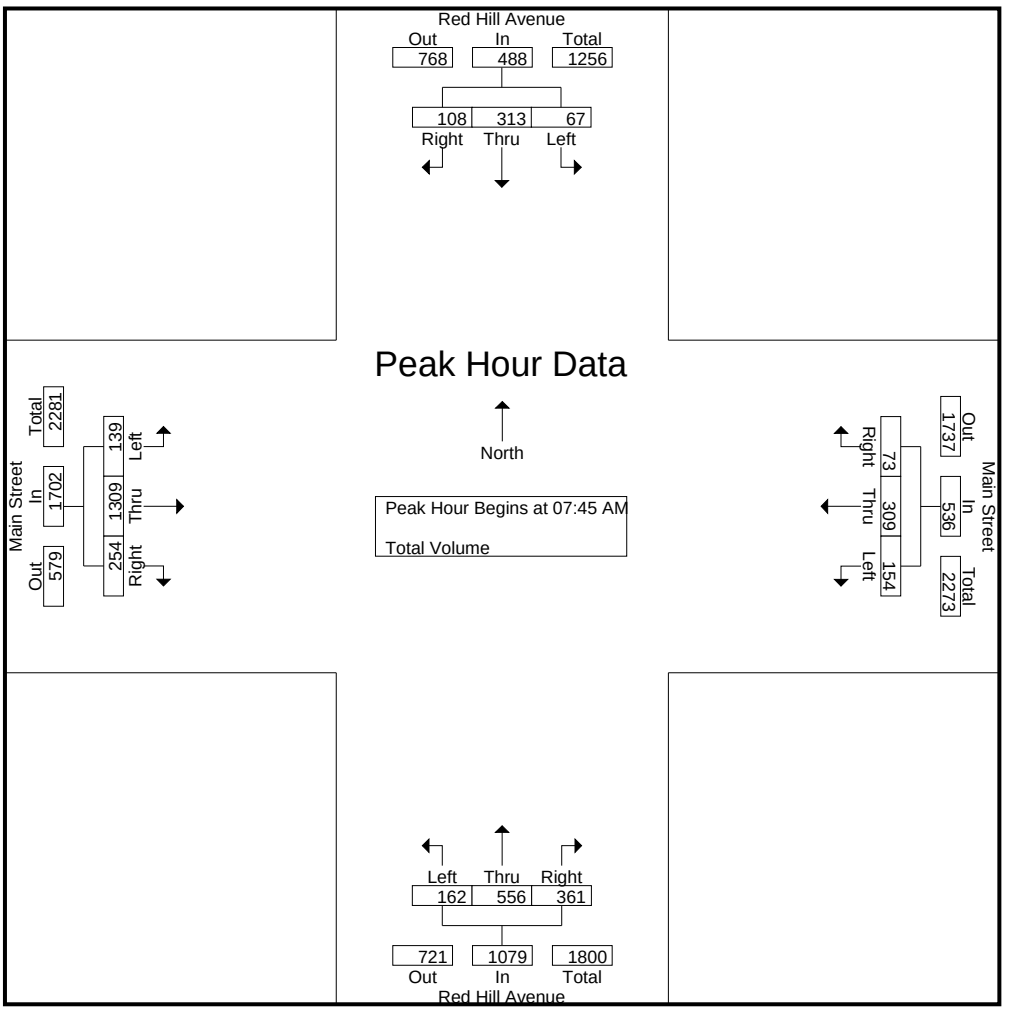
City of Irvine
N/S: Red Hill Avenue
E/W: Main Street
Weather: Clear

File Name : 102_IRV_Red Hill_Main_AM
Site Code : 20220171
Start Date : 3/12/2020
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	08:00 AM				07:45 AM				07:30 AM				07:30 AM			
+0 mins.	16	**86**	25	**127**	41	67	20	128	30	140	80	250	20	325	53	398
+15 mins.	13	71	32	116	37	79	**24**	**140**	35	151	82	268	30	**374**	**76**	**480**
+30 mins.	**19**	80	25	124	**48**	74	16	138	37	**166**	**97**	**300**	**49**	358	56	463
+45 mins.	14	75	**37**	126	28	**89**	13	130	**49**	120	92	261	27	306	67	400
Total Volume	62	312	119	493	154	309	73	536	151	577	351	1079	126	1363	252	1741
% App. Total	12.6	63.3	24.1		28.7	57.6	13.6		14	53.5	32.5		7.2	78.3	14.5	
PHF	.816	.907	.804	.970	.802	.868	.760	.957	.770	.869	.905	.899	.643	.911	.829	.907

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City of Irvine
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Weather: Clear

File Name : 102_IRV_Red Hill_Main_PM
Site Code : 20220171
Start Date : 3/12/2020
Page No : 1

Groups Printed- Total Volume

	Red Hill Avenue Southbound				Main Street Westbound				Red Hill Avenue Northbound				Main Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	12	88	33	133	58	294	20	372	56	164	57	277	26	141	27	194	976
04:15 PM	23	90	47	160	53	364	17	434	81	220	45	346	39	126	26	191	1131
04:30 PM	26	124	53	203	60	267	16	343	91	236	60	387	44	138	46	228	1161
04:45 PM	26	133	61	220	63	362	27	452	85	232	62	379	45	136	37	218	1269
Total	87	435	194	716	234	1287	80	1601	313	852	224	1389	154	541	136	831	4537
05:00 PM	22	135	75	232	81	382	18	481	93	238	75	406	49	145	42	236	1355
05:15 PM	24	133	86	243	74	468	22	564	109	243	63	415	55	183	53	291	1513
05:30 PM	13	142	71	226	58	377	24	459	118	223	51	392	44	206	45	295	1372
05:45 PM	15	128	60	203	66	362	25	453	96	193	53	342	50	171	51	272	1270
Total	74	538	292	904	279	1589	89	1957	416	897	242	1555	198	705	191	1094	5510
Grand Total	161	973	486	1620	513	2876	169	3558	729	1749	466	2944	352	1246	327	1925	10047
Apprch %	9.9	60.1	30		14.4	80.8	4.7		24.8	59.4	15.8		18.3	64.7	17		
Total %	1.6	9.7	4.8	16.1	5.1	28.6	1.7	35.4	7.3	17.4	4.6	29.3	3.5	12.4	3.3	19.2	

	Red Hill Avenue Southbound				Main Street Westbound				Red Hill Avenue Northbound				Main Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	22	135	75	232	**81**	382	18	481	93	238	**75**	406	49	145	42	236	1355
05:15 PM	**24**	133	**86**	**243**	74	**468**	22	**564**	109	**243**	63	**415**	**55**	183	**53**	291	**1513**
05:30 PM	13	**142**	71	226	58	377	24	459	**118**	223	51	392	44	**206**	45	**295**	1372
05:45 PM	15	128	60	203	66	362	**25**	453	96	193	53	342	50	171	51	272	1270
Total Volume	74	538	292	904	279	1589	89	1957	416	897	242	1555	198	705	191	1094	5510
% App. Total	8.2	59.5	32.3		14.3	81.2	4.5		26.8	57.7	15.6		18.1	64.4	17.5		
PHF	.771	.947	.849	.930	.861	.849	.890	.867	.881	.923	.807	.937	.900	.856	.901	.927	.910

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File Name : 102_IRV_Red Hill_Main_PM
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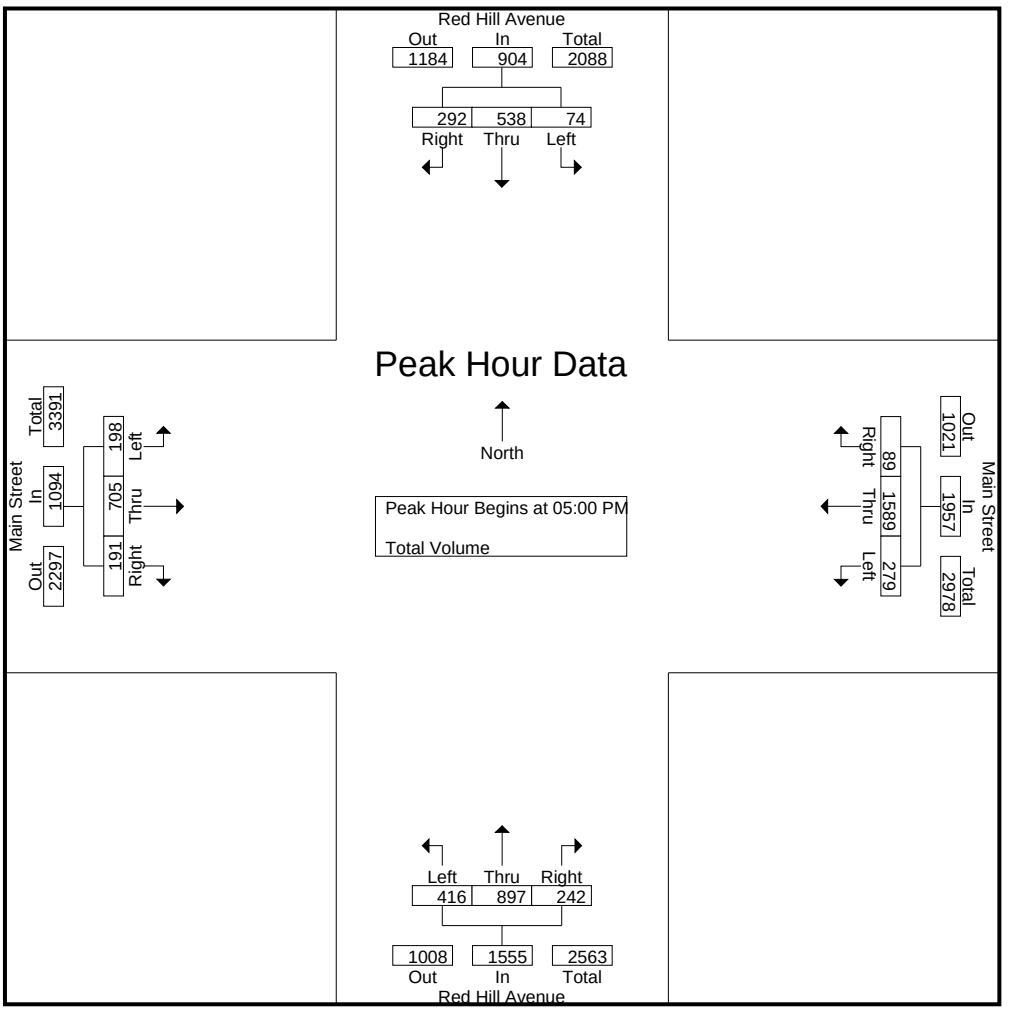


Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:45 PM				05:00 PM				04:45 PM				05:00 PM			
+0 mins.	**26**	133	61	220	**81**	382	18	481	85	232	62	379	49	145	42	236
+15 mins.	22	135	75	232	74	**468**	22	**564**	93	238	**75**	406	**55**	183	**53**	291
+30 mins.	24	133	**86**	**243**	58	377	24	459	109	**243**	63	**415**	44	**206**	45	**295**
+45 mins.	13	**142**	71	226	66	362	**25**	453	**118**	223	51	392	50	171	51	272
Total Volume	85	543	293	921	279	1589	89	1957	405	936	251	1592	198	705	191	1094
% App. Total	9.2	59	31.8		14.3	81.2	4.5		25.4	58.8	15.8		18.1	64.4	17.5	
PHF	.817	.956	.852	.948	.861	.849	.890	.867	.858	.963	.837	.959	.900	.856	.901	.927

INTERSECTION TURNING MOVEMENT COUNTS

T816

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Thu, Feb 16, 17

LOCATION: Santa Ana
NORTH & SOUTH: I-5 SB Ramps
EAST & WEST: Santa Ana

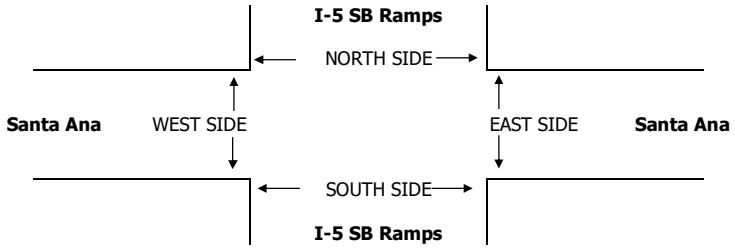
PROJECT #: SC1220
LOCATION #: 1
CONTROL: SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N ◄ W E ► S ▼

Add U-Turns to Left Turns

		NORTHBOUND I-5 SB Ramps			SOUTHBOUND I-5 SB Ramps			EASTBOUND Santa Ana			WESTBOUND Santa Ana				U-TURNS				
	LANES:	NL X	NT X	NR X	SL 2	ST X	SR 1	EL 2	ET 3	ER X	WL X	WT 3	WR 0	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	0	0	0	76	0	7	50	100	0	0	190	81	504	0	0	0	0	0
	7:15 AM	0	0	0	87	0	8	65	145	0	0	226	79	610	0	0	0	0	0
	7:30 AM	0	0	0	79	0	10	85	138	0	0	327	60	699	0	0	1	0	1
	7:45 AM	0	0	0	101	0	7	84	123	0	0	329	88	732	0	0	0	0	0
	8:00 AM	0	0	0	89	0	9	79	131	0	0	214	93	615	0	0	0	0	0
	8:15 AM	0	0	0	67	0	12	39	114	0	0	188	79	499	0	0	0	0	0
	8:30 AM	0	0	0	66	0	14	43	75	0	0	174	54	426	0	0	0	0	0
	8:45 AM	0	0	0	105	0	10	27	81	0	0	203	46	472	0	0	0	0	0
	VOLUMES	0	0	0	670	0	77	472	907	0	0	1,851	580	4,557	0	0	1	0	1
	APPROACH %	0%	0%	0%	90%	0%	10%	34%	66%	0%	0%	76%	24%						
	APP/DEPART	0	/	1,051	747	/	0	1,379	/	1,577	2,431	/	1,929	0					
	BEGIN PEAK HR		7:15 AM																
	VOLUMES	0	0	0	356	0	34	313	537	0	0	1,096	320	2,656					
	APPROACH %	0%	0%	0%	91%	0%	9%	37%	63%	0%	0%	77%	23%						
	PEAK HR FACTOR		0.000			0.903			0.953			0.849		0.907					
	APP/DEPART	0	/	632	390	/	0	850	/	893	1,416	/	1,131	0					
PM	4:00 PM	0	0	0	54	0	27	123	138	0	0	128	33	503	0	0	0	0	0
	4:15 PM	0	0	0	67	0	24	78	100	0	0	159	28	456	0	0	0	0	0
	4:30 PM	0	0	0	76	0	14	140	152	0	0	167	39	588	0	0	0	0	0
	4:45 PM	0	0	0	72	0	15	121	147	0	0	156	49	560	0	0	0	0	0
	5:00 PM	0	0	0	66	0	8	146	190	0	0	150	54	614	0	0	0	0	0
	5:15 PM	0	0	0	55	0	22	137	126	0	0	175	35	550	0	0	1	0	1
	5:30 PM	0	0	0	64	0	16	122	131	0	0	141	41	515	0	0	0	0	0
	5:45 PM	0	0	0	63	0	20	102	112	0	0	135	33	465	0	0	0	0	0
	VOLUMES	0	0	0	517	0	146	969	1,096	0	0	1,211	312	4,251	0	0	1	0	1
	APPROACH %	0%	0%	0%	78%	0%	22%	47%	53%	0%	0%	80%	20%						
	APP/DEPART	0	/	1,280	663	/	0	2,065	/	1,613	1,523	/	1,358	0					
	BEGIN PEAK HR		4:30 PM																
	VOLUMES	0	0	0	269	0	59	544	615	0	0	648	177	2,312					
	APPROACH %	0%	0%	0%	82%	0%	18%	47%	53%	0%	0%	79%	21%						
	PEAK HR FACTOR		0.000			0.911			0.862			0.982		0.941					
	APP/DEPART	0	/	720	328	/	0	1,159	/	884	825	/	708	0					



		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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City of Tustin
N/S: Tustin Ranch Road
E/W: Warner Avenue
Weather: Clear

File Name : 104_TUS_Tustin Ranch_Warner AM
Site Code : 20220171
Start Date : 3/12/2020
Page No : 1

Groups Printed- Total Volume

	Tustin Ranch Road Southbound			Tustin Ranch Road Northbound			Warner Avenue Eastbound			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
07:00 AM	140	44	184	2	46	48	57	6	63	295
07:15 AM	285	70	355	1	43	44	59	6	65	464
07:30 AM	308	80	388	4	56	60	80	5	85	533
07:45 AM	443	116	559	2	49	51	67	12	79	689
Total	1176	310	1486	9	194	203	263	29	292	1981
08:00 AM	396	82	478	2	58	60	83	14	97	635
08:15 AM	453	106	559	9	66	75	57	1	58	692
08:30 AM	425	91	516	5	65	70	58	6	64	650
08:45 AM	389	99	488	1	74	75	52	4	56	619
Total	1663	378	2041	17	263	280	250	25	275	2596
Grand Total	2839	688	3527	26	457	483	513	54	567	4577
Apprch %	80.5	19.5		5.4	94.6		90.5	9.5		
Total %	62	15	77.1	0.6	10	10.6	11.2	1.2	12.4	

	Tustin Ranch Road Southbound			Tustin Ranch Road Northbound			Warner Avenue Eastbound			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:45 AM										
07:45 AM	443	**116**	**559**	2	49	51	67	12	79	689
08:00 AM	396	82	478	2	58	60	**83**	**14**	**97**	635
08:15 AM	**453**	106	559	**9**	**66**	**75**	57	1	58	**692**
08:30 AM	425	91	516	5	65	70	58	6	64	650
Total Volume	1717	395	2112	18	238	256	265	33	298	2666
% App. Total	81.3	18.7		7	93		88.9	11.1		
PHF	.948	.851	.945	.500	.902	.853	.798	.589	.768	.963

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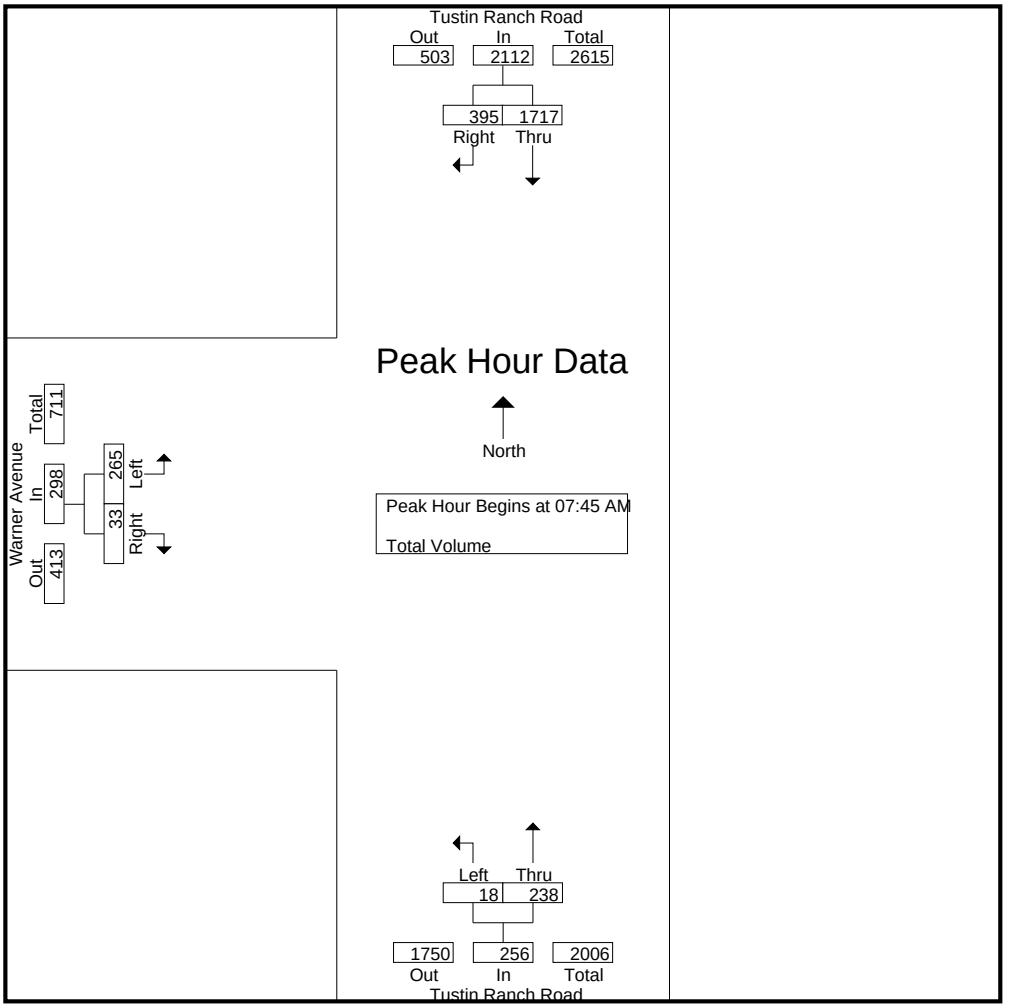

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:45 AM			08:00 AM			07:15 AM		
+0 mins.	443	**116**	**559**	2	58	60	59	6	65
+15 mins.	396	82	478	**9**	66	**75**	80	5	85
+30 mins.	**453**	106	559	5	65	70	67	12	79
+45 mins.	425	91	516	1	**74**	75	**83**	**14**	**97**
Total Volume	1717	395	2112	17	263	280	289	37	326
% App. Total	81.3	18.7		6.1	93.9		88.7	11.3	
PHF	.948	.851	.945	.472	.889	.933	.870	.661	.840

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Groups Printed- Total Volume

	Tustin Ranch Road Southbound			Tustin Ranch Road Northbound			Warner Avenue Eastbound			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
04:00 PM	99	49	148	11	351	362	100	7	107	617
04:15 PM	104	52	156	10	369	379	107	10	117	652
04:30 PM	117	55	172	18	376	394	106	9	115	681
04:45 PM	121	50	171	8	401	409	135	10	145	725
Total	441	206	647	47	1497	1544	448	36	484	2675
05:00 PM	141	63	204	19	466	485	166	12	178	867
05:15 PM	145	67	212	15	450	465	178	16	194	871
05:30 PM	141	56	197	12	478	490	174	7	181	868
05:45 PM	113	49	162	11	384	395	141	11	152	709
Total	540	235	775	57	1778	1835	659	46	705	3315
Grand Total	981	441	1422	104	3275	3379	1107	82	1189	5990
Apprch %	69	31		3.1	96.9		93.1	6.9		
Total %	16.4	7.4	23.7	1.7	54.7	56.4	18.5	1.4	19.8	

	Tustin Ranch Road Southbound			Tustin Ranch Road Northbound			Warner Avenue Eastbound			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:45 PM										
04:45 PM	121	50	171	8	401	409	135	10	145	725
05:00 PM	141	63	204	**19**	466	485	166	12	178	867
05:15 PM	**145**	**67**	**212**	15	450	465	**178**	**16**	**194**	**871**
05:30 PM	141	56	197	12	**478**	**490**	174	7	181	868
Total Volume	548	236	784	54	1795	1849	653	45	698	3331
% App. Total	69.9	30.1		2.9	97.1		93.6	6.4		
PHF	.945	.881	.925	.711	.939	.943	.917	.703	.899	.956

Counts Unlimited
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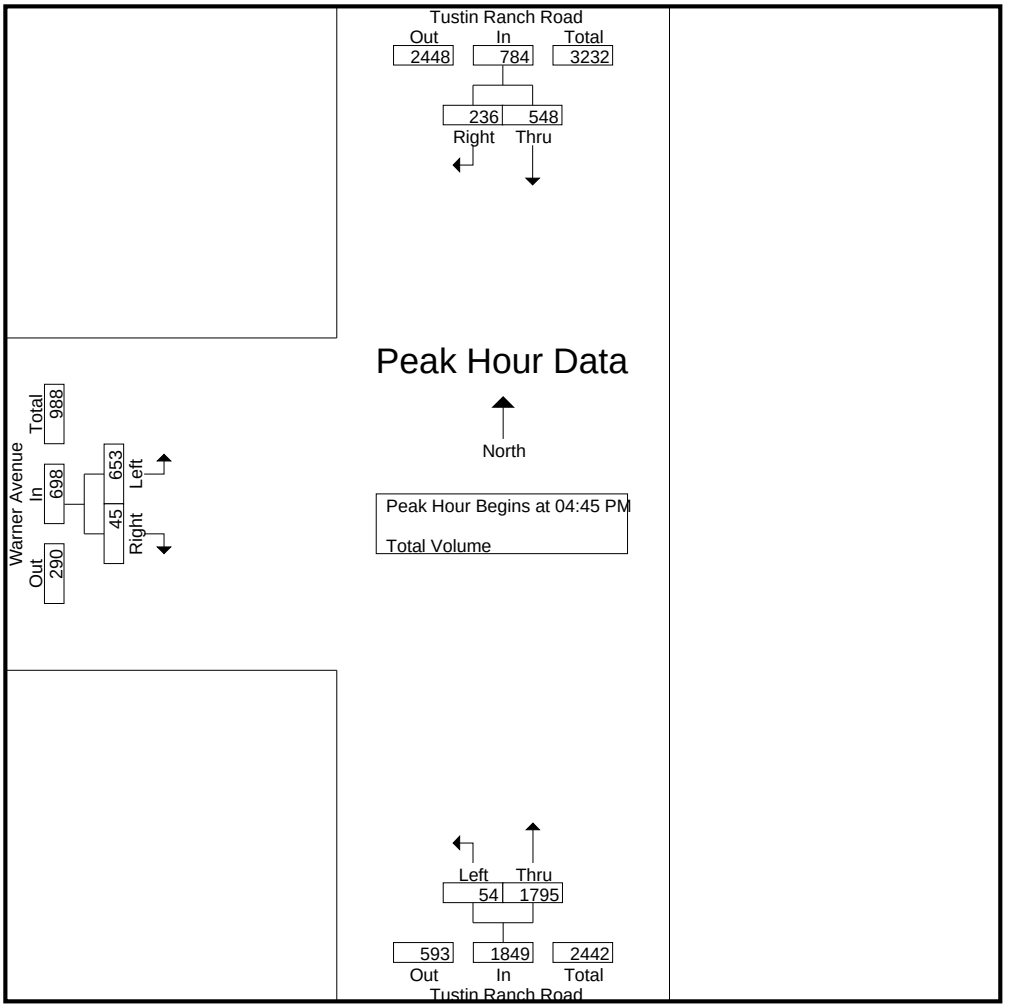
(951) 268-6268

City of Tustin
N/S: Tustin Ranch Road
E/W: Warner Avenue
Weather: Clear

File Name : 104_TUS_Tustin Ranch_Warner PM
Site Code : 20220171
Start Date : 3/12/2020
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:45 PM			04:45 PM			05:00 PM		
+0 mins.	121	50	171	8	401	409	166	12	178
+15 mins.	141	63	204	**19**	466	485	**178**	**16**	**194**
+30 mins.	**145**	**67**	**212**	15	450	465	174	7	181
+45 mins.	141	56	197	12	**478**	**490**	141	11	152
Total Volume	548	236	784	54	1795	1849	659	46	705
% App. Total	69.9	30.1		2.9	97.1		93.5	6.5	
PHF	.945	.881	.925	.711	.939	.943	.926	.719	.909

Counts Unlimited
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City of Irvine
N/S: Tustin Ranch Rd/Von Karman Ave
E/W: Barranca Parkway
Weather: Clear

File Name : 105_IRV_Von Karman_Barranca AM
Site Code : 20220171
Start Date : 3/12/2020
Page No : 1

Groups Printed- Total Volume

	Tustin Ranch Road Southbound				Barranca Parkway Westbound				Von Karman Avenue Northbound				Barranca Parkway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	5	117	38	160	81	170	11	262	17	26	17	60	17	103	35	155	637
07:15 AM	13	212	80	305	134	202	11	347	22	19	9	50	19	119	37	175	877
07:30 AM	38	258	99	395	140	264	13	417	26	29	18	73	25	101	45	171	1056
07:45 AM	30	280	118	428	186	361	8	555	21	29	16	66	30	120	51	201	1250
Total	86	867	335	1288	541	997	43	1581	86	103	60	249	91	443	168	702	3820
08:00 AM	23	301	119	443	175	290	12	477	24	36	28	88	38	115	31	184	1192
08:15 AM	44	294	141	479	192	312	10	514	34	36	22	92	32	127	35	194	1279
08:30 AM	22	289	131	442	216	300	9	525	28	41	19	88	30	126	46	202	1257
08:45 AM	30	269	134	433	156	291	17	464	28	44	23	95	49	90	44	183	1175
Total	119	1153	525	1797	739	1193	48	1980	114	157	92	363	149	458	156	763	4903
Grand Total	205	2020	860	3085	1280	2190	91	3561	200	260	152	612	240	901	324	1465	8723
Apprch %	6.6	65.5	27.9		35.9	61.5	2.6		32.7	42.5	24.8		16.4	61.5	22.1		
Total %	2.4	23.2	9.9	35.4	14.7	25.1	1	40.8	2.3	3	1.7	7	2.8	10.3	3.7	16.8	

	Tustin Ranch Road Southbound				Barranca Parkway Westbound				Von Karman Avenue Northbound				Barranca Parkway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	30	280	118	428	186	**361**	8	**555**	21	29	16	66	30	120	**51**	201	1250
08:00 AM	23	**301**	119	443	175	290	**12**	477	24	36	**28**	88	**38**	115	31	184	1192
08:15 AM	**44**	294	**141**	**479**	192	312	10	514	**34**	36	22	**92**	32	**127**	35	194	**1279**
08:30 AM	22	289	131	442	**216**	300	9	525	28	**41**	19	88	30	126	46	**202**	1257
Total Volume	119	1164	509	1792	769	1263	39	2071	107	142	85	334	130	488	163	781	4978
% App. Total	6.6	65	28.4		37.1	61	1.9		32	42.5	25.4		16.6	62.5	20.9		
PHF	.676	.967	.902	.935	.890	.875	.813	.933	.787	.866	.759	.908	.855	.961	.799	.967	.973

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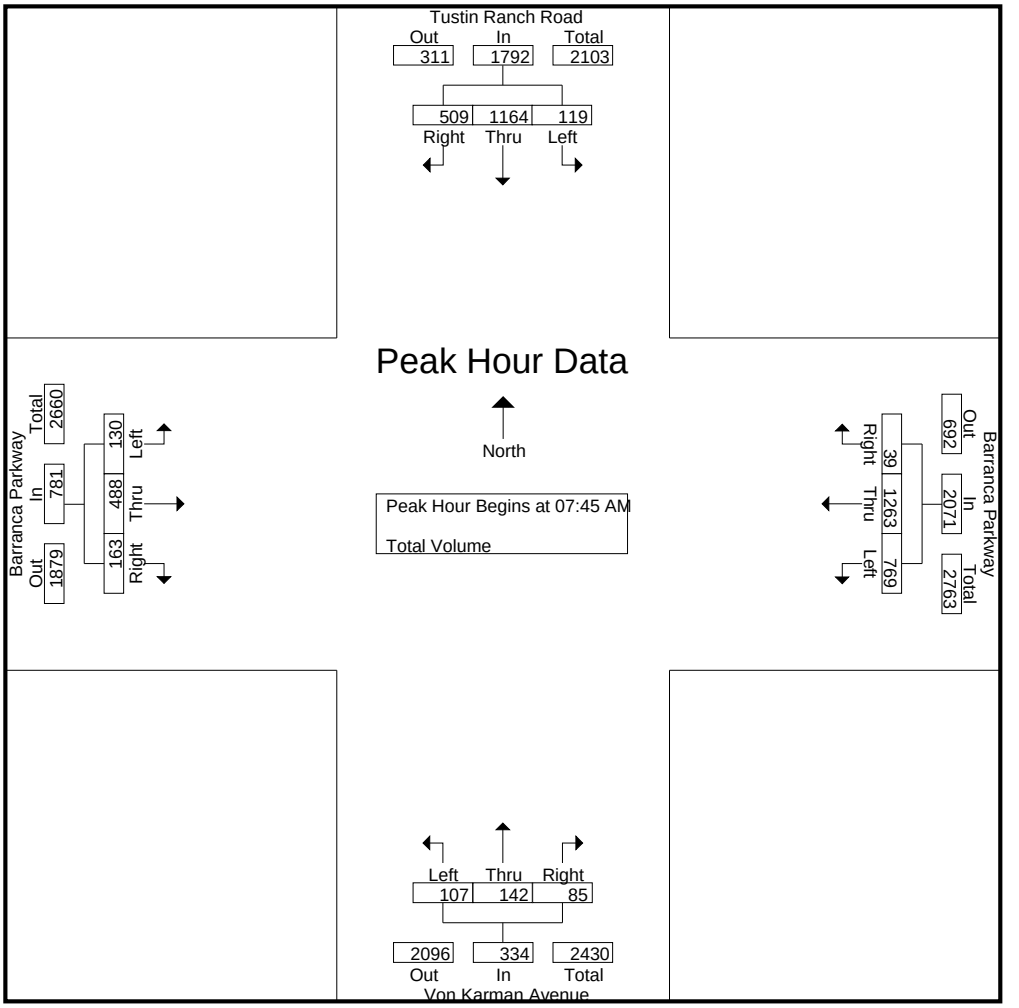
City of Irvine
N/S: Tustin Ranch Rd/Von Karman Ave
E/W: Barranca Parkway
Weather: Clear

File Name : 105_IRV_Von Karman_Barranca AM
Site Code : 20220171
Start Date : 3/12/2020



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	08:00 AM				07:45 AM				08:00 AM				07:45 AM			
+0 mins.	23	**301**	119	443	186	**361**	8	**555**	24	36	**28**	88	30	120	**51**	201
+15 mins.	**44**	294	**141**	**479**	175	290	**12**	477	**34**	36	22	92	**38**	115	31	184
+30 mins.	22	289	131	442	192	312	10	514	28	41	19	88	32	**127**	35	194
+45 mins.	30	269	134	433	**216**	300	9	525	28	**44**	23	**95**	30	126	46	**202**
Total Volume	119	1153	525	1797	769	1263	39	2071	114	157	92	363	130	488	163	781
% App. Total	6.6	64.2	29.2		37.1	61	1.9		31.4	43.3	25.3		16.6	62.5	20.9	
PHF	.676	.958	.931	.938	.890	.875	.813	.933	.838	.892	.821	.955	.855	.961	.799	.967

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City of Irvine
N/S: Tustin Ranch Rd/Von Karman Ave
E/W: Barranca Parkway
Weather: Clear

File Name : 105_IRV_Von Karman_Barranca PM
Site Code : 20220171
Start Date : 3/12/2020
Page No : 1

Groups Printed- Total Volume

	Tustin Ranch Road Southbound				Barranca Parkway Westbound				Von Karman Avenue Northbound				Barranca Parkway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	13	71	53	137	67	171	56	294	71	229	53	353	85	197	19	301	1085
04:15 PM	9	77	62	148	36	125	41	202	38	277	63	378	137	214	27	378	1106
04:30 PM	14	59	48	121	53	157	59	269	83	257	68	408	99	207	23	329	1127
04:45 PM	14	88	59	161	37	149	47	233	48	328	78	454	119	221	30	370	1218
Total	50	295	222	567	193	602	203	998	240	1091	262	1593	440	839	99	1378	4536
05:00 PM	17	74	51	142	53	168	58	279	71	311	81	463	123	284	29	436	1320
05:15 PM	16	103	64	183	54	136	53	243	43	332	64	439	168	285	50	503	1368
05:30 PM	20	78	62	160	60	193	62	315	62	319	58	439	150	233	34	417	1331
05:45 PM	15	96	55	166	56	147	41	244	47	294	50	391	115	243	33	391	1192
Total	68	351	232	651	223	644	214	1081	223	1256	253	1732	556	1045	146	1747	5211
Grand Total	118	646	454	1218	416	1246	417	2079	463	2347	515	3325	996	1884	245	3125	9747
Apprch %	9.7	53	37.3		20	59.9	20.1		13.9	70.6	15.5		31.9	60.3	7.8		
Total %	1.2	6.6	4.7	12.5	4.3	12.8	4.3	21.3	4.8	24.1	5.3	34.1	10.2	19.3	2.5	32.1	

	Tustin Ranch Road Southbound				Barranca Parkway Westbound				Von Karman Avenue Northbound				Barranca Parkway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	14	88	59	161	37	149	47	233	48	328	78	454	119	221	30	370	1218
05:00 PM	17	74	51	142	53	168	58	279	**71**	311	**81**	**463**	123	284	29	436	1320
05:15 PM	16	**103**	**64**	**183**	54	136	53	243	43	**332**	64	439	**168**	**285**	**50**	**503**	**1368**
05:30 PM	**20**	78	62	160	**60**	**193**	**62**	**315**	62	319	58	439	150	233	34	417	1331
Total Volume	67	343	236	646	204	646	220	1070	224	1290	281	1795	560	1023	143	1726	5237
% App. Total	10.4	53.1	36.5		19.1	60.4	20.6		12.5	71.9	15.7		32.4	59.3	8.3		
PHF	.838	.833	.922	.883	.850	.837	.887	.849	.789	.971	.867	.969	.833	.897	.715	.858	.957

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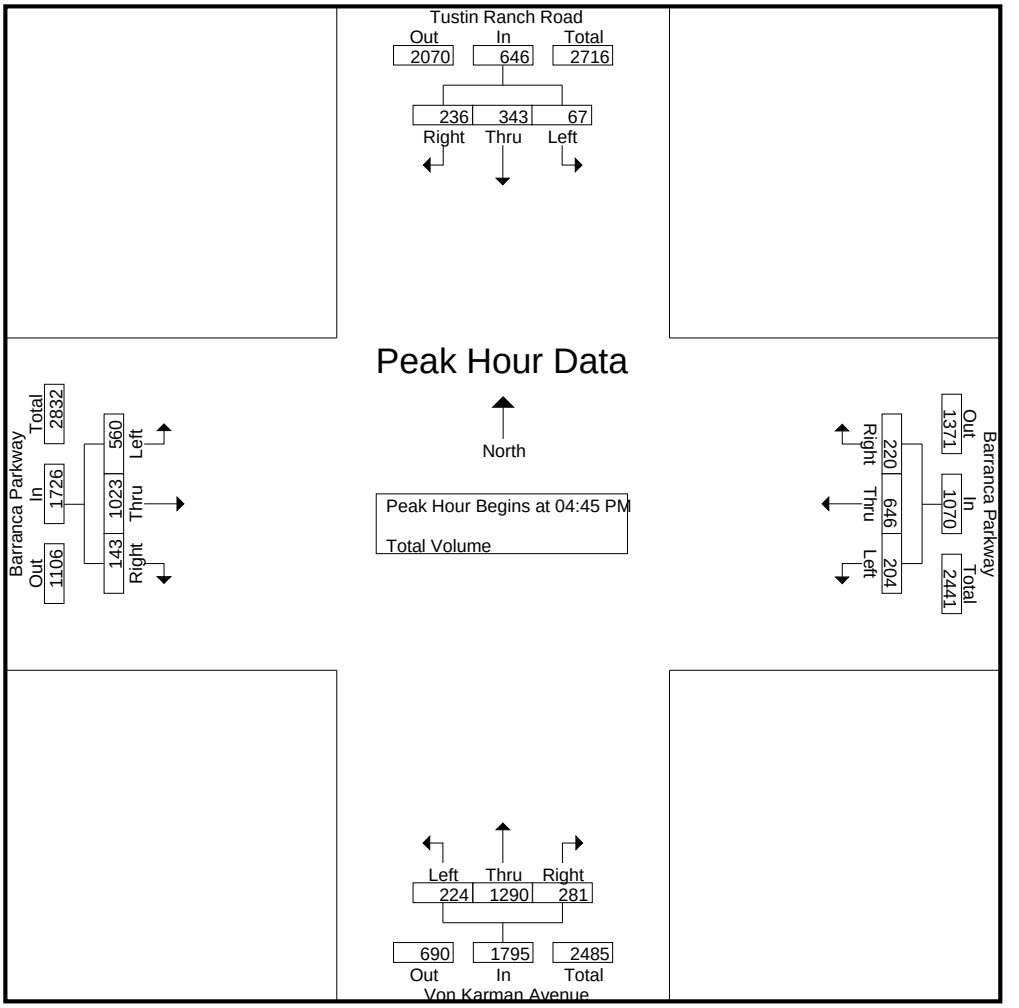
City of Irvine
N/S: Tustin Ranch Rd/Von Karman Ave
E/W: Barranca Parkway
Weather: Clear

File Name : 105_IRV_Von Karman_Barranca PM
Site Code : 20220171
Start Date : 3/12/2020
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	05:00 PM				05:00 PM				04:45 PM				05:00 PM			
+0 mins.	17	74	51	142	53	168	58	279	48	328	78	454	123	284	29	436
+15 mins.	16	**103**	**64**	**183**	54	136	53	243	**71**	311	**81**	**463**	**168**	**285**	**50**	**503**
+30 mins.	**20**	78	62	160	**60**	**193**	**62**	**315**	43	**332**	64	439	150	233	34	417
+45 mins.	15	96	55	166	56	147	41	244	62	319	58	439	115	243	33	391
Total Volume	68	351	232	651	223	644	214	1081	224	1290	281	1795	556	1045	146	1747
% App. Total	10.4	53.9	35.6		20.6	59.6	19.8		12.5	71.9	15.7		31.8	59.8	8.4	
PHF	.850	.852	.906	.889	.929	.834	.863	.858	.789	.971	.867	.969	.827	.917	.730	.868

INTERSECTION TURNING MOVEMENT COUNTS

T218

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Tustin	PROJECT #:	SC2143
Tue, May 21, 19	NORTH & SOUTH:	Red Hill	LOCATION #:	7
	EAST & WEST:	El Camino Real	CONTROL:	SIGNAL

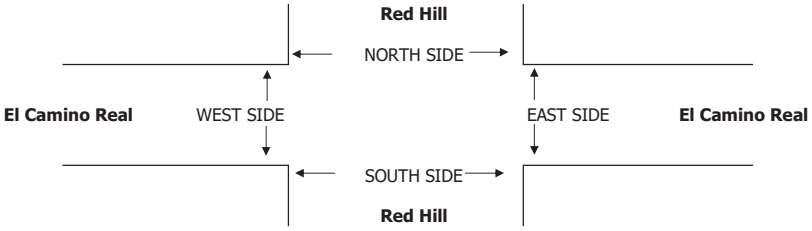
NOTES:

Queue AM SB, PM NB/SB

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

☒ Add U-Turns to Left Turns

		NORTHBOUND Red Hill			SOUTHBOUND Red Hill			EASTBOUND El Camino Real			WESTBOUND El Camino Real				U-TURNS				
	LANES:	NL 2	NT 3	NR 1	SL 1	ST 3	SR 0	EL 1	ET 1	ER 1	WL 1	WT 1	WR 0	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	55	107	23	4	208	10	16	20	43	54	18	1	559	0	1	0	0	1
	7:15 AM	85	195	51	1	287	20	15	30	44	67	32	2	829	0	0	0	0	0
	7:30 AM	108	203	98	8	294	30	29	50	40	70	83	2	1,015	0	1	0	0	1
	7:45 AM	70	197	69	5	388	11	17	46	45	69	70	5	992	2	0	0	0	2
	8:00 AM	39	182	32	3	321	18	7	28	33	62	34	6	765	0	0	0	0	0
	8:15 AM	47	135	29	5	313	15	7	26	43	56	31	2	709	0	0	0	0	0
	8:30 AM	43	126	11	4	269	8	5	17	41	47	19	2	592	0	0	0	0	0
	8:45 AM	52	123	20	4	220	15	5	15	38	37	24	2	555	0	0	0	0	0
	VOLUMES	499	1,268	333	34	2,300	127	101	232	327	462	311	22	6,016	2	2	0	0	4
	APPROACH %	24%	60%	16%	1%	93%	5%	15%	35%	50%	58%	39%	3%						
	APP/DEPART	2,100	/	1,393	2,461	/	3,091	660	/	597	795	/	935	0					
	BEGIN PEAK HR		7:15 AM																
	VOLUMES	302	777	250	17	1,290	79	68	154	162	268	219	15	3,601					
	APPROACH %	23%	58%	19%	1%	93%	6%	18%	40%	42%	53%	44%	3%						
	PEAK HR FACTOR		0.812			0.858			0.807			0.810		0.887					
	APP/DEPART	1,329	/	861	1,386	/	1,722	384	/	420	502	/	598	0					
PM	4:00 PM	77	251	66	2	149	29	17	37	51	71	72	10	832	0	1	0	0	1
	4:15 PM	66	277	53	7	174	22	14	26	45	57	92	2	835	0	1	0	0	1
	4:30 PM	98	281	52	5	173	34	17	31	39	40	91	10	871	1	0	0	0	1
	4:45 PM	79	292	54	4	155	28	19	23	42	50	100	7	853	0	0	0	0	0
	5:00 PM	93	299	59	8	169	14	13	37	50	46	91	12	891	1	0	0	0	1
	5:15 PM	99	327	52	5	207	29	25	34	50	56	69	7	960	1	0	0	0	1
	5:30 PM	107	337	65	2	178	17	14	45	52	45	82	10	954	0	1	0	0	1
	5:45 PM	111	338	63	4	166	35	17	35	47	50	83	8	957	1	0	0	0	1
	VOLUMES	730	2,402	464	37	1,371	208	136	268	376	415	680	66	7,153	4	3	0	0	7
	APPROACH %	20%	67%	13%	2%	85%	13%	17%	34%	48%	36%	59%	6%						
	APP/DEPART	3,596	/	2,607	1,616	/	2,166	780	/	766	1,161	/	1,614	0					
	BEGIN PEAK HR		5:00 PM																
	VOLUMES	410	1,301	239	19	720	95	69	151	199	197	325	37	3,762					
	APPROACH %	21%	67%	12%	2%	86%	11%	16%	36%	47%	35%	58%	7%						
	PEAK HR FACTOR		0.952			0.865			0.944			0.938		0.980					
	APP/DEPART	1,950	/	1,408	834	/	1,119	419	/	408	559	/	827	0					



		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	3	0	7	6	16	3	0	7	4	14	0	0	0	2	2
	7:15 AM	29	0	35	13	77	29	0	34	13	76	0	0	1	0	1
	7:30 AM	67	0	30	25	122	64	0	30	24	118	3	0	0	1	4
	7:45 AM	16	0	7	6	29	16	0	7	6	29	0	0	0	0	0
	8:00 AM	6	0	2	3	11	5	0	2	2	9	1	0	0	1	2
	8:15 AM	1	0	2	2	5	1	0	1	1	3	0	0	1	1	2
	8:30 AM	7	0	2	3	12	7	0	2	3	12	0	0	0	0	0
	8:45 AM	3	0	2	3	8	2	0	1	2	5	1	0	1	1	3
	TOTAL	132	0	87	61	280	127	0	84	55	266	5	0	3	6	14
	AM BEGIN PEAK HR			7:15 AM			114	0	73	45	232					
PM	4:00 PM	21	0	16	4	41	18	0	16	4	38	3	0	0	0	3
	4:15 PM	14	0	14	12	40	14	0	13	12	39	0	0	1	0	1
	4:30 PM	12	0	10	9	31	10	0	10	8	28	2	0	0	1	3
	4:45 PM	6	0	4	9	19	4	0	4	8	16	2	0	0	1	3
	5:00 PM	6	0	4	7	17	4	0	4	5	13	2	0	0	2	4
	5:15 PM	12	0	8	1	21	10	0	8	1	19	2	0	0	0	2
	5:30 PM	13	0	6	7	26	13	0	6	7	26	0	0	0	0	0
	5:45 PM	4	0	8	5	17	1	0	5	3	9	3	0	3	2	8
	TOTAL	88	0	70	54	212	74	0	66	48	188	14	0	4	6	24
	PM BEGIN PEAK HR			5:00 PM			28	0	23	16	67					

INTERSECTION TURNING MOVEMENT COUNTS

T218

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Tustin	PROJECT #:	SC2143
Tue, May 21, 19	NORTH & SOUTH:	Red Hill	LOCATION #:	6
	EAST & WEST:	I-5 NB Ramps	CONTROL:	SIGNAL

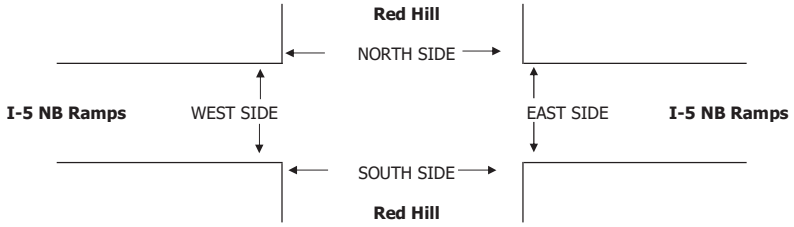
NOTES:

Queue AM NB, PM NB/SB

AM / PM / MD / OTHER / OTHER — N / W / E / S

Add U-Turns to Left Turns

		NORTHBOUND (Red Hill)			SOUTHBOUND (Red Hill)			EASTBOUND (I-5 NB Ramps)			WESTBOUND (I-5 NB Ramps)				U-TURNS				
	LANES:	NL 1	NT 3	NR X	SL X	ST 3	SR 1	EL X	ET X	ER X	WL 1.5	WT 0.5	WR 1	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	47	118	0	0	193	112	0	0	0	49	0	59	578	0	0	0	0	0
	7:15 AM	71	267	0	0	266	124	0	0	0	59	0	74	861	0	0	0	0	0
	7:30 AM	73	351	0	0	315	94	0	0	0	57	0	58	948	0	0	0	0	0
	7:45 AM	91	273	0	0	359	144	0	0	0	66	0	64	997	0	0	0	0	0
	8:00 AM	88	182	0	0	310	108	0	0	0	43	0	62	793	0	0	0	0	0
	8:15 AM	63	127	0	0	290	117	0	0	0	50	0	79	726	0	0	0	0	0
	8:30 AM	65	117	0	0	260	94	0	0	0	77	1	76	690	0	0	0	0	0
	8:45 AM	49	104	0	0	221	86	0	0	0	83	1	94	638	0	0	0	0	0
	VOLUMES	547	1,539	0	0	2,214	879	0	0	0	484	2	566	6,231	0	0	0	0	0
	APPROACH %	26%	74%	0%	0%	72%	28%	0%	0%	0%	46%	0%	54%						
	APP/DEPART	2,086	/	2,105	3,093	/	2,698	0	/	0	1,052	/	1,428	0					
	BEGIN PEAK HR		7:15 AM																
	VOLUMES	323	1,073	0	0	1,250	470	0	0	0	225	0	258	3,599					
	APPROACH %	23%	77%	0%	0%	73%	27%	0%	0%	0%	47%	0%	53%						
	PEAK HR FACTOR		0.823			0.855			0.000			0.908		0.902					
	APP/DEPART	1,396	/	1,331	1,720	/	1,475	0	/	0	483	/	793	0					
PM	4:00 PM	75	321	0	0	209	67	0	0	0	59	11	53	795	0	0	0	0	0
	4:15 PM	101	329	0	0	214	64	0	0	0	42	11	58	819	0	0	0	0	0
	4:30 PM	68	342	0	0	192	58	0	0	0	58	19	107	844	0	0	0	0	0
	4:45 PM	85	354	0	0	198	50	0	0	0	35	25	85	832	0	0	0	0	0
	5:00 PM	69	368	0	0	219	48	0	0	0	57	21	85	867	0	0	0	0	0
	5:15 PM	73	378	0	0	253	48	0	0	0	65	30	98	945	0	0	0	0	0
	5:30 PM	60	409	0	0	244	46	0	0	0	65	25	113	962	0	0	0	0	0
	5:45 PM	67	386	0	0	213	46	0	0	0	66	19	114	911	0	0	0	0	0
	VOLUMES	598	2,887	0	0	1,742	427	0	0	0	447	161	713	6,975	0	0	0	0	0
	APPROACH %	17%	83%	0%	0%	80%	20%	0%	0%	0%	34%	12%	54%						
	APP/DEPART	3,485	/	3,600	2,169	/	2,189	0	/	0	1,321	/	1,186	0					
	BEGIN PEAK HR		5:00 PM																
	VOLUMES	269	1,541	0	0	929	188	0	0	0	253	95	410	3,685					
	APPROACH %	15%	85%	0%	0%	83%	17%	0%	0%	0%	33%	13%	54%						
	PEAK HR FACTOR		0.965			0.928			0.000			0.933		0.958					
	APP/DEPART	1,810	/	1,951	1,117	/	1,182	0	/	0	758	/	552	0					



		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	0	0	10	4	14	0	0	10	3	13	0	0	0	1	1
	7:15 AM	0	0	33	3	36	0	0	29	3	32	0	0	4	0	4
	7:30 AM	0	0	29	24	53	0	0	26	23	49	0	0	3	1	4
	7:45 AM	0	0	7	6	13	0	0	7	6	13	0	0	0	0	0
	8:00 AM	0	0	3	5	8	0	0	3	3	6	0	0	0	2	2
	8:15 AM	0	0	4	1	5	0	0	2	0	2	0	0	2	1	3
	8:30 AM	0	0	5	0	5	0	0	4	0	4	0	0	1	0	1
	8:45 AM	0	0	2	3	5	0	0	1	2	3	0	0	1	1	2
	TOTAL	0	0	93	46	139	0	0	82	40	122	0	0	11	6	17
	AM BEGIN PEAK HR			7:15 AM			0	0	65	35	100					
PM	4:00 PM	0	0	16	3	19	0	0	15	3	18	0	0	1	0	1
	4:15 PM	0	0	10	14	24	0	0	9	14	23	0	0	1	0	1
	4:30 PM	0	0	6	1	7	0	0	6	0	6	0	0	0	1	1
	4:45 PM	0	0	7	5	12	0	0	7	3	10	0	0	0	2	2
	5:00 PM	0	0	5	12	17	0	0	5	9	14	0	0	0	3	3
	5:15 PM	0	0	4	3	7	0	0	4	3	7	0	0	0	0	0
	5:30 PM	0	0	3	4	7	0	0	3	4	7	0	0	0	0	0
	5:45 PM	0	0	10	3	13	0	0	6	1	7	0	0	4	2	6
	TOTAL	0	0	61	45	106	0	0	55	37	92	0	0	6	8	14
	PM BEGIN PEAK HR			5:00 PM			0	0	18	17	35					

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:					
Tue, May 21, 19	LOCATION:	Tustin	PROJECT #:	SC2143
	NORTH & SOUTH:	Red Hill	LOCATION #:	5
	EAST & WEST:	I-5 SB Ramps	CONTROL:	SIGNAL

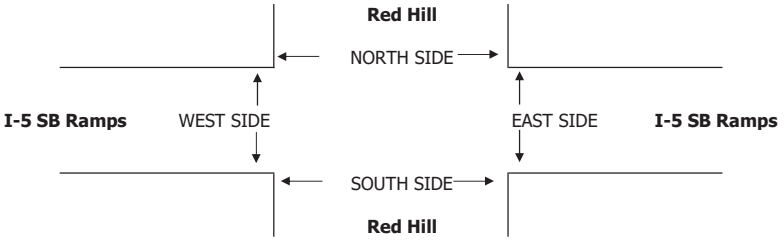
NOTES:

Queue AM WB/EB, PM EB.

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

Add U-Turns to Left Turns

		NORTHBOUND (Red Hill)			SOUTHBOUND (Red Hill)			EASTBOUND (I-5 SB Ramps)			WESTBOUND (I-5 SB Ramps)				U-TURNS				
	LANES:	NL X	NT 4	NR 1	SL 1	ST 3	SR X	EL 0.5	ET 0.5	ER 1	WL X	WT X	WR X	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	0	136	124	81	161	0	29	0	53	0	0	0	584	0	0	0	0	0
	7:15 AM	0	305	137	89	236	0	33	0	59	0	0	0	859	0	0	0	0	0
	7:30 AM	0	378	133	101	271	0	46	0	81	0	0	0	1,010	0	0	0	0	0
	7:45 AM	0	314	154	99	326	0	50	1	90	0	0	0	1,034	0	0	0	0	0
	8:00 AM	0	233	120	92	261	0	37	2	75	0	0	0	820	0	0	0	0	0
	8:15 AM	0	160	105	91	249	0	31	1	57	0	0	0	694	0	0	0	0	0
	8:30 AM	0	155	92	103	234	0	27	0	62	0	0	0	673	0	0	0	0	0
	8:45 AM	0	127	105	87	217	0	26	0	72	0	0	0	634	0	0	0	0	0
	VOLUMES	0	1,808	970	743	1,955	0	279	4	549	0	0	0	6,308	0	0	0	0	0
	APPROACH %	0%	65%	35%	28%	72%	0%	34%	0%	66%	0%	0%	0%						
	APP/DEPART	2,778	/	2,087	2,698	/	2,504	832	/	1,717	0	/	0	0					
	BEGIN PEAK HR		7:15 AM																
	VOLUMES	0	1,230	544	381	1,094	0	166	3	305	0	0	0	3,723					
	APPROACH %	0%	69%	31%	26%	74%	0%	35%	1%	64%	0%	0%	0%						
	PEAK HR FACTOR		0.868			0.868			0.840			0.000		0.900					
	APP/DEPART	1,774	/	1,396	1,475	/	1,399	474	/	928	0	/	0	0					
PM	4:00 PM	0	324	127	75	193	0	69	1	63	0	0	0	852	0	0	0	0	0
	4:15 PM	0	357	105	89	167	0	73	0	66	0	0	0	857	0	0	0	0	0
	4:30 PM	0	335	94	77	173	0	75	0	76	0	0	0	830	0	0	0	0	0
	4:45 PM	0	372	119	72	161	0	67	0	69	0	0	0	860	0	0	0	0	0
	5:00 PM	0	367	125	82	194	0	70	1	62	0	0	0	901	0	0	0	0	0
	5:15 PM	0	370	113	103	218	0	81	0	69	0	0	0	954	0	0	0	0	0
	5:30 PM	0	387	119	89	220	0	82	1	78	0	0	0	976	0	0	0	0	0
	5:45 PM	0	381	121	74	205	0	72	0	65	0	0	0	918	0	0	0	0	0
	VOLUMES	0	2,893	923	661	1,531	0	589	3	548	0	0	0	7,148	0	0	0	0	0
	APPROACH %	0%	76%	24%	30%	70%	0%	52%	0%	48%	0%	0%	0%						
	APP/DEPART	3,816	/	3,482	2,192	/	2,079	1,140	/	1,587	0	/	0	0					
	BEGIN PEAK HR		5:00 PM																
	VOLUMES	0	1,505	478	348	837	0	305	2	274	0	0	0	3,749					
	APPROACH %	0%	76%	24%	29%	71%	0%	52%	0%	47%	0%	0%	0%						
	PEAK HR FACTOR		0.980			0.923			0.902			0.000		0.960					
	APP/DEPART	1,983	/	1,810	1,185	/	1,111	581	/	828	0	/	0	0					



		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	0	0	17	4	21	0	0	17	3	20	0	0	0	1	1
	7:15 AM	0	0	33	3	36	0	0	30	3	33	0	0	3	0	3
	7:30 AM	0	0	26	25	51	0	0	25	24	49	0	0	1	1	2
	7:45 AM	0	0	7	4	11	0	0	7	4	11	0	0	0	0	0
	8:00 AM	0	0	1	4	5	0	0	1	3	4	0	0	0	1	1
	8:15 AM	0	0	5	2	7	0	0	3	0	3	0	0	2	2	4
	8:30 AM	0	0	5	0	5	0	0	3	0	3	0	0	2	0	2
	8:45 AM	0	0	2	3	5	0	0	0	2	2	0	0	2	1	3
	TOTAL	0	0	96	45	141	0	0	86	39	125	0	0	10	6	16
	AM BEGIN PEAK HR			7:15 AM			0	0	63	34	97					
PM	4:00 PM	0	0	14	3	17	0	0	12	3	15	0	0	2	0	2
	4:15 PM	0	0	6	9	15	0	0	5	9	14	0	0	1	0	1
	4:30 PM	0	0	7	2	9	0	0	7	1	8	0	0	0	1	1
	4:45 PM	0	0	8	6	14	0	0	8	4	12	0	0	0	2	2
	5:00 PM	0	0	5	7	12	0	0	3	5	8	0	0	2	2	4
	5:15 PM	0	0	6	6	12	0	0	5	6	11	0	0	1	0	1
	5:30 PM	0	0	3	4	7	0	0	3	4	7	0	0	0	0	0
	5:45 PM	0	0	11	3	14	0	0	7	0	7	0	0	4	3	7
	TOTAL	0	0	60	40	100	0	0	50	32	82	0	0	10	8	18
	PM BEGIN PEAK HR			5:00 PM			0	0	18	15	33					

INTERSECTION TURNING MOVEMENT COUNTS

T218

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Tustin	PROJECT #:	SC2143
Tue, May 21, 19	NORTH & SOUTH:	Red Hill	LOCATION #:	4
	EAST & WEST:	Nisson	CONTROL:	SIGNAL

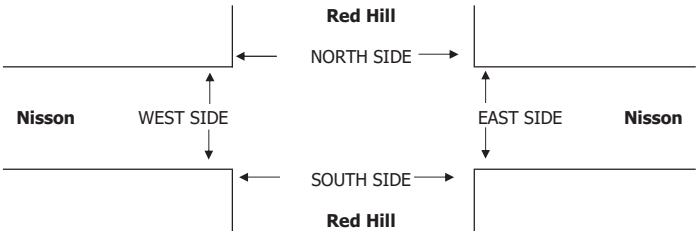
NOTES:

Queue AM/PM NB/SB

AM PM MD OTHER OTHER — ▲ N, ◄ W, E ►, S ▼

☐ Add U-Turns to Left Turns

		NORTHBOUND Red Hill			SOUTHBOUND Red Hill			EASTBOUND Nisson			WESTBOUND Nisson				U-TURNS				
	LANES:	NL 1	NT 3.5	NR 0.5	SL 1	ST 3	SR 0	EL 1	ET 1	ER 0	WL 1	WT 1	WR 0	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	1	191	3	13	182	10	41	5	5	9	5	35	500	0	0	0	0	0
	7:15 AM	2	329	4	29	250	19	61	14	11	11	6	51	787	0	0	0	0	0
	7:30 AM	5	387	5	35	292	22	63	11	8	16	9	55	908	0	0	0	0	0
	7:45 AM	5	334	7	55	306	53	61	23	14	9	6	54	927	1	0	0	0	1
	8:00 AM	4	235	7	31	284	24	54	10	14	12	4	52	731	0	0	0	0	0
	8:15 AM	0	175	1	17	272	13	48	8	4	6	8	35	587	0	0	0	0	0
	8:30 AM	6	190	4	21	266	16	37	5	1	9	5	25	585	0	0	0	0	0
	8:45 AM	0	157	5	17	253	16	48	6	9	7	2	23	543	0	1	0	0	1
	VOLUMES	23	1,998	36	218	2,105	173	413	82	66	79	45	330	5,568	1	1	0	0	2
	APPROACH %	1%	97%	2%	9%	84%	7%	74%	15%	12%	17%	10%	73%						
	APP/DEPART	2,057	/	2,742	2,496	/	2,251	561	/	335	454	/	240	0					
	BEGIN PEAK HR		7:15 AM																
	VOLUMES	16	1,285	23	150	1,132	118	239	58	47	48	25	212	3,353					
	APPROACH %	1%	97%	2%	11%	81%	8%	69%	17%	14%	17%	9%	74%						
	PEAK HR FACTOR		0.834			0.845			0.878			0.891		0.904					
	APP/DEPART	1,324	/	1,736	1,400	/	1,228	344	/	231	285	/	158	0					
PM	4:00 PM	7	376	8	48	200	20	44	19	4	9	16	26	777	0	0	0	0	0
	4:15 PM	5	377	6	40	162	22	51	17	4	15	23	31	753	1	2	0	0	3
	4:30 PM	5	342	5	41	203	15	46	19	4	7	15	36	738	0	0	0	0	0
	4:45 PM	2	396	7	32	168	16	59	20	6	19	23	28	776	0	2	0	0	2
	5:00 PM	10	386	4	39	213	17	60	23	8	12	19	38	829	0	0	0	0	0
	5:15 PM	7	390	11	42	223	21	55	22	4	8	19	39	841	0	0	0	0	0
	5:30 PM	8	391	8	42	229	27	65	26	14	7	15	33	865	0	0	0	0	0
	5:45 PM	4	400	8	43	191	21	64	18	13	20	29	29	840	0	0	0	0	0
	VOLUMES	48	3,058	57	327	1,589	159	444	164	57	97	159	260	6,419	1	4	0	0	5
	APPROACH %	2%	97%	2%	16%	77%	8%	67%	25%	9%	19%	31%	50%						
	APP/DEPART	3,163	/	3,766	2,075	/	1,744	665	/	544	516	/	365	0					
	BEGIN PEAK HR		5:00 PM																
	VOLUMES	29	1,567	31	166	856	86	244	89	39	47	82	139	3,375					
	APPROACH %	2%	96%	2%	15%	77%	8%	66%	24%	10%	18%	31%	52%						
	PEAK HR FACTOR		0.987			0.930			0.886			0.859		0.975					
	APP/DEPART	1,627	/	1,950	1,108	/	942	372	/	286	268	/	197	0					



		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	0	1	6	3	10	0	1	6	2	9	0	0	0	1	1
	7:15 AM	0	5	16	1	22	0	5	13	1	19	0	0	3	0	3
	7:30 AM	0	3	18	1	22	0	3	17	1	21	0	0	1	0	1
	7:45 AM	0	7	4	5	16	0	6	2	5	13	0	1	2	0	3
	8:00 AM	0	0	0	3	3	0	0	0	2	2	0	0	0	1	1
	8:15 AM	0	2	1	2	5	0	1	1	0	2	0	1	0	2	3
	8:30 AM	1	5	3	1	10	0	4	2	1	7	1	1	1	0	3
	8:45 AM	0	2	4	2	8	0	2	4	1	7	0	0	0	1	1
	TOTAL	1	25	52	18	96	0	22	45	13	80	1	3	7	5	16
	AM BEGIN PEAK HR			7:15 AM			0	14	32	9	55					
PM	4:00 PM	0	11	10	2	23	0	11	9	2	22	0	0	1	0	1
	4:15 PM	0	7	6	9	22	0	7	5	9	21	0	0	1	0	1
	4:30 PM	0	2	4	1	7	0	2	4	0	6	0	0	0	1	1
	4:45 PM	0	13	9	4	26	0	12	9	2	23	0	1	0	2	3
	5:00 PM	0	3	5	8	16	0	3	5	5	13	0	0	0	3	3
	5:15 PM	0	6	5	6	17	0	4	5	6	15	0	2	0	0	2
	5:30 PM	0	12	2	3	17	0	12	2	3	17	0	0	0	0	0
	5:45 PM	0	22	10	2	34	0	22	6	0	28	0	0	4	2	6
	TOTAL	0	76	51	35	162	0	73	45	27	145	0	3	6	8	17
	PM BEGIN PEAK HR			5:00 PM			0	41	18	14	73					

INTERSECTION TURNING MOVEMENT COUNTS

T218

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Tue, May 21, 19

LOCATION: Tustin
NORTH & SOUTH: Red Hill
EAST & WEST: Walnut

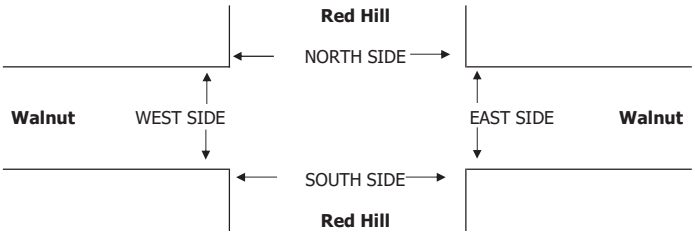
PROJECT #: SC2143
LOCATION #: 2
CONTROL: SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

☒ Add U-Turns to Left Turns

		NORTHBOUND Red Hill			SOUTHBOUND Red Hill			EASTBOUND Walnut			WESTBOUND Walnut				U-TURNS				
	LANES:	NL 1	NT 3	NR 0	SL 1	ST 3	SR 0	EL 1	ET 2	ER 0	WL 2	WT 2	WR 0	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	8	89	27	18	159	13	23	75	50	31	38	15	546	4	0	0	0	4
	7:15 AM	17	112	14	24	211	22	42	92	92	38	66	30	760	2	0	0	0	2
	7:30 AM	27	139	35	23	303	24	44	99	113	57	59	36	959	2	0	0	0	2
	7:45 AM	52	156	26	30	261	38	44	127	101	48	69	33	985	4	0	0	0	4
	8:00 AM	37	112	23	25	260	31	28	76	82	47	57	20	798	6	0	0	0	6
	8:15 AM	12	69	26	25	239	26	24	89	74	43	55	24	706	2	0	0	0	2
	8:30 AM	17	110	25	30	236	17	21	83	59	40	46	24	708	4	0	0	0	4
	8:45 AM	24	89	15	19	243	13	14	76	56	34	43	24	650	2	1	0	0	3
	VOLUMES	194	876	191	194	1,912	184	240	717	627	338	433	206	6,112	26	1	0	0	27
	APPROACH %	15%	69%	15%	8%	83%	8%	15%	45%	40%	35%	44%	21%						
	APP/DEPART	1,261	/	1,323	2,290	/	2,903	1,584	/	1,101	977	/	785	0					
	BEGIN PEAK HR		7:15 AM																
	VOLUMES	133	519	98	102	1,035	115	158	394	388	190	251	119	3,502					
	APPROACH %	18%	69%	13%	8%	83%	9%	17%	42%	41%	34%	45%	21%						
	PEAK HR FACTOR		0.801			0.894			0.864			0.921		0.889					
	APP/DEPART	750	/	796	1,252	/	1,627	940	/	594	560	/	485	0					
PM	4:00 PM	71	342	26	30	133	24	38	50	30	53	210	33	1,040	3	1	0	0	4
	4:15 PM	59	305	27	25	104	27	19	76	21	54	176	38	931	2	1	0	0	3
	4:30 PM	82	326	19	30	94	34	32	68	20	42	152	43	942	5	0	0	0	5
	4:45 PM	69	338	14	31	89	29	27	74	24	51	162	47	955	5	0	0	0	5
	5:00 PM	55	375	20	22	97	41	24	70	30	53	164	39	990	3	0	0	0	3
	5:15 PM	67	311	15	39	125	37	26	68	25	53	186	59	1,011	4	0	0	0	4
	5:30 PM	87	361	30	37	96	50	28	62	28	55	164	44	1,042	0	0	0	0	0
	5:45 PM	75	334	34	36	99	46	32	66	26	41	161	34	984	3	0	0	0	3
	VOLUMES	565	2,692	185	250	837	288	226	534	204	402	1,375	337	7,895	25	2	0	0	27
	APPROACH %	16%	78%	5%	18%	61%	21%	23%	55%	21%	19%	65%	16%						
	APP/DEPART	3,442	/	3,257	1,375	/	1,468	964	/	967	2,114	/	2,203	0					
	BEGIN PEAK HR		5:00 PM																
	VOLUMES	284	1,381	99	134	417	174	110	266	109	202	675	176	4,027					
	APPROACH %	16%	78%	6%	18%	58%	24%	23%	55%	22%	19%	64%	17%						
	PEAK HR FACTOR		0.923			0.902			0.978			0.883		0.966					
	APP/DEPART	1,764	/	1,667	725	/	738	485	/	499	1,053	/	1,123	0					



		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	2	3	0	10	15	0	3	0	6	9	2	0	0	4	6
	7:15 AM	1	1	1	12	15	1	1	1	11	14	0	0	0	1	1
	7:30 AM	2	4	4	8	18	2	4	4	8	18	0	0	0	0	0
	7:45 AM	1	1	1	6	9	1	1	1	6	9	0	0	0	0	0
	8:00 AM	1	3	2	2	8	1	3	0	2	6	0	0	2	0	2
	8:15 AM	0	3	4	5	12	0	1	2	4	7	0	2	2	1	5
	8:30 AM	0	3	1	1	5	0	2	0	1	3	0	1	1	0	2
	8:45 AM	2	2	0	5	9	2	2	0	3	7	0	0	0	2	2
	TOTAL	9	20	13	49	91	7	17	8	41	73	2	3	5	8	18
	AM BEGIN PEAK HR			7:15 AM			5	9	6	27	47					
PM	4:00 PM	0	3	1	0	4	0	3	0	0	3	0	0	1	0	1
	4:15 PM	0	4	6	3	13	0	3	4	2	9	0	1	2	1	4
	4:30 PM	1	9	1	1	12	0	8	1	1	10	1	1	0	0	2
	4:45 PM	1	4	4	8	17	1	3	4	7	15	0	1	0	1	2
	5:00 PM	0	4	2	2	8	0	3	1	2	6	0	1	1	0	2
	5:15 PM	0	2	1	10	13	0	2	0	7	9	0	0	1	3	4
	5:30 PM	0	4	5	9	18	0	3	4	5	12	0	1	1	4	6
	5:45 PM	1	5	2	9	17	1	4	2	7	14	0	1	0	2	3
	TOTAL	3	35	22	42	102	2	29	16	31	78	1	6	6	11	24
	PM BEGIN PEAK HR			5:00 PM			1	12	7	21	41					

INTERSECTION TURNING MOVEMENT COUNTS

T218

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Tue, Apr 16, 19

LOCATION: Tustin
NORTH & SOUTH: Red Hill
EAST & WEST: Valencia

PROJECT #: SC2143
LOCATION #: 6
CONTROL: SIGNAL

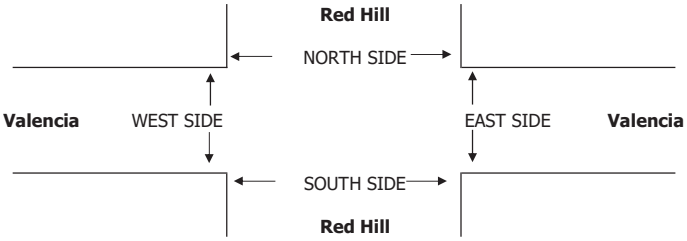
NOTES:

AM
PM
MD
OTHER
OTHER

▲ N
◄ W
E ►
S ▼

Add U-Turns to Left Turns

		NORTHBOUND Red Hill			SOUTHBOUND Red Hill			EASTBOUND Valencia			WESTBOUND Valencia				U-TURNS				
	LANES:	NL 1	NT 4	NR 0	SL 1	ST 3	SR 0	EL 1	ET 1	ER 1	WL 2	WT 1	WR 1	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	7	50	14	12	169	16	8	14	15	38	72	10	425	0	0	0	0	0
	7:15 AM	14	68	10	18	224	12	1	18	13	28	53	14	473	1	0	0	0	1
	7:30 AM	17	76	28	29	222	16	4	28	18	48	78	21	585	0	0	0	0	0
	7:45 AM	20	86	30	46	262	14	2	46	17	71	95	49	738	0	1	0	1	2
	8:00 AM	17	78	22	20	286	14	6	34	14	64	90	32	677	1	0	0	0	1
	8:15 AM	22	70	26	36	239	19	5	28	11	63	76	18	613	0	1	0	1	2
	8:30 AM	17	87	25	16	234	21	6	29	11	51	81	21	599	1	0	0	0	1
	8:45 AM	26	56	24	17	259	24	4	23	14	56	59	19	581	0	0	0	0	0
	VOLUMES	140	571	179	194	1,895	136	36	220	113	419	604	184	4,691	3	2	0	2	7
	APPROACH %	16%	64%	20%	9%	85%	6%	10%	60%	31%	35%	50%	15%						
	APP/DEPART	890	/	793	2,225	/	2,428	369	/	593	1,207	/	877	0					
	BEGIN PEAK HR		7:45 AM																
	VOLUMES	76	321	103	118	1,021	68	19	137	53	249	342	120	2,627					
	APPROACH %	15%	64%	21%	10%	85%	6%	9%	66%	25%	35%	48%	17%						
	PEAK HR FACTOR		0.919			0.937			0.804			0.827		0.890					
	APP/DEPART	500	/	462	1,207	/	1,323	209	/	358	711	/	484	0					
PM	4:00 PM	47	341	54	17	106	16	11	44	13	33	40	25	747	1	0	0	0	1
	4:15 PM	83	378	36	18	106	18	12	31	10	20	50	32	794	0	0	0	0	0
	4:30 PM	51	384	44	39	99	18	23	42	28	35	49	32	844	0	1	0	0	1
	4:45 PM	35	365	66	29	122	17	16	39	19	20	42	35	805	0	1	0	0	1
	5:00 PM	52	425	69	24	105	7	19	78	18	28	36	28	889	0	0	0	0	0
	5:15 PM	79	446	88	15	107	6	11	28	17	33	42	16	888	1	0	0	0	1
	5:30 PM	56	370	83	17	117	19	13	31	19	32	41	17	815	0	0	0	0	0
	5:45 PM	73	407	68	30	108	8	9	27	9	18	53	19	829	1	0	0	0	1
	VOLUMES	476	3,116	508	189	870	109	114	320	133	219	353	204	6,611	3	2	0	0	5
	APPROACH %	12%	76%	12%	16%	74%	9%	20%	56%	23%	28%	45%	26%						
	APP/DEPART	4,100	/	3,436	1,168	/	1,225	567	/	1,015	776	/	935	0					
	BEGIN PEAK HR		4:30 PM																
	VOLUMES	217	1,620	267	107	433	48	69	187	82	116	169	111	3,426					
	APPROACH %	10%	77%	13%	18%	74%	8%	20%	55%	24%	29%	43%	28%						
	PEAK HR FACTOR		0.858			0.875			0.735			0.853		0.963					
	APP/DEPART	2,104	/	1,802	588	/	632	338	/	559	396	/	433	0					



		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	1	0	1	0	2	1	0	0	0	1	0	0	1	0	1
	7:15 AM	0	0	0	1	1	0	0	0	1	1	0	0	0	0	0
	7:30 AM	0	1	0	1	2	0	1	0	0	1	0	0	0	1	1
	7:45 AM	0	1	0	1	2	0	0	0	1	1	0	1	0	0	1
	8:00 AM	0	0	1	0	1	0	0	1	0	1	0	0	0	0	0
	8:15 AM	1	0	0	2	3	0	0	0	2	2	1	0	0	0	1
	8:30 AM	0	0	1	0	1	0	0	1	0	1	0	0	0	0	0
	8:45 AM	0	2	0	2	4	0	1	0	2	3	0	1	0	0	1
	TOTAL	2	4	3	7	16	1	2	2	6	11	1	2	1	1	5
	AM BEGIN PEAK HR			7:45 AM			0	0	2	3	5					
PM	4:00 PM	2	0	3	0	5	1	0	0	0	1	1	0	3	0	4
	4:15 PM	0	0	0	2	2	0	0	0	2	2	0	0	0	0	0
	4:30 PM	1	0	2	1	4	0	0	0	0	0	1	0	2	1	4
	4:45 PM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1
	5:00 PM	1	1	0	1	3	0	1	0	0	1	1	0	0	1	2
	5:15 PM	0	0	1	1	2	0	0	1	0	1	0	0	0	1	1
	5:30 PM	0	0	2	1	3	0	0	2	1	3	0	0	0	0	0
	5:45 PM	0	2	0	2	4	0	0	0	1	1	0	2	0	1	3
	TOTAL	4	4	8	8	24	1	1	3	4	9	3	3	5	4	15
	PM BEGIN PEAK HR			4:30 PM			0	1	1	0	2					

INTERSECTION TURNING MOVEMENT COUNTS

T218

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

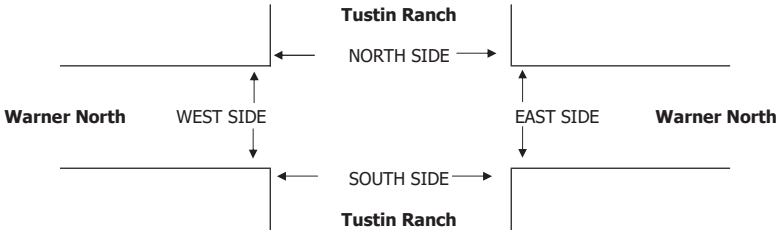
DATE:	LOCATION:	Tustin	PROJECT #:	SC2143
Thu, May 23, 19	NORTH & SOUTH:	Tustin Ranch	LOCATION #:	10
	EAST & WEST:	Warner North	CONTROL:	SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

□ Add U-Turns to Left Turns

		NORTHBOUND Tustin Ranch			SOUTHBOUND Tustin Ranch			EASTBOUND Warner North			WESTBOUND Warner North				U-TURNS				
	LANES:	NL X	NT 3	NR 1	SL 2	ST 3	SR X	EL X	ET X	ER X	WL 3	WT X	WR 2	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	0	51	40	75	177	0	0	0	0	53	0	59	455	0	0	0	0	0
	7:15 AM	0	52	46	65	226	0	0	0	0	73	0	40	502	0	0	0	0	0
	7:30 AM	0	70	59	58	284	0	0	0	0	97	0	30	598	0	0	0	0	0
	7:45 AM	0	71	66	134	342	0	0	0	0	163	0	44	820	0	0	0	0	0
	8:00 AM	0	67	62	118	322	0	0	0	0	138	0	30	737	0	0	0	0	0
	8:15 AM	0	82	65	100	327	0	0	0	0	148	0	51	773	0	0	0	0	0
	8:30 AM	0	49	67	99	285	0	0	0	0	136	0	47	683	0	0	0	0	0
	8:45 AM	0	62	55	90	271	0	0	0	0	143	0	46	667	0	0	0	0	0
	VOLUMES	0	504	460	739	2,234	0	0	0	0	951	0	347	5,235	0	0	0	0	0
	APPROACH %	0%	52%	48%	25%	75%	0%	0%	0%	0%	73%	0%	27%						
	APP/DEPART	964	/	851	2,973	/	3,185	0	/	1,199	1,298	/	0	0					
	BEGIN PEAK HR		7:45 AM																
	VOLUMES	0	269	260	451	1,276	0	0	0	0	585	0	172	3,013					
	APPROACH %	0%	51%	49%	26%	74%	0%	0%	0%	0%	77%	0%	23%						
	PEAK HR FACTOR		0.900			0.907			0.000			0.914		0.919					
	APP/DEPART	529	/	441	1,727	/	1,861	0	/	711	757	/	0	0					
PM	4:00 PM	0	342	151	73	104	0	0	0	0	86	0	99	855	0	0	0	0	0
	4:15 PM	0	337	174	74	107	0	0	0	0	98	0	95	885	1	0	0	0	1
	4:30 PM	0	369	169	83	102	0	0	0	0	98	0	105	926	2	0	0	0	2
	4:45 PM	0	355	170	73	115	0	0	0	0	98	0	113	924	0	0	0	0	0
	5:00 PM	0	429	228	82	126	0	0	0	0	112	0	120	1,097	0	0	0	0	0
	5:15 PM	0	346	222	97	136	0	0	0	0	108	0	111	1,020	0	0	0	0	0
	5:30 PM	0	407	248	87	121	0	0	0	0	142	0	96	1,101	0	0	0	0	0
	5:45 PM	0	424	248	81	127	0	0	0	0	112	0	101	1,093	0	0	0	0	0
	VOLUMES	0	3,009	1,610	650	938	0	0	0	0	854	0	840	7,904	3	0	0	0	3
	APPROACH %	0%	65%	35%	41%	59%	0%	0%	0%	0%	50%	0%	50%						
	APP/DEPART	4,622	/	3,849	1,588	/	1,795	0	/	2,260	1,694	/	0	0					
	BEGIN PEAK HR		5:00 PM																
	VOLUMES	0	1,606	946	347	510	0	0	0	0	474	0	428	4,311					
	APPROACH %	0%	63%	37%	40%	60%	0%	0%	0%	0%	53%	0%	47%						
	PEAK HR FACTOR		0.949			0.920			0.000			0.947		0.979					
	APP/DEPART	2,552	/	2,034	857	/	984	0	/	1,293	902	/	0	0					



		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	1	2	2	2	7	0	0	1	0	1	1	2	1	2	6
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	1	0	0	1	2	0	0	0	0	0	1	0	0	1	2
	8:00 AM	0	0	0	1	1	0	0	0	0	0	0	0	0	1	1
	8:15 AM	0	1	2	0	3	0	0	2	0	2	0	1	0	0	1
	8:30 AM	0	1	1	1	3	0	0	1	0	1	0	1	0	1	2
	8:45 AM	0	0	1	0	1	0	0	1	0	1	0	0	0	0	0
	TOTAL	2	4	6	5	17	0	0	5	0	5	2	4	1	5	12
	AM BEGIN PEAK HR			7:45 AM			0	0	3	0	3					
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	1	1	0	0	2	0	1	0	0	1	1	0	0	0	1
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	1	0	1	0	0	1	0	1	0	0	0	0	0
	5:15 PM	0	1	1	0	2	0	0	0	0	0	0	1	1	0	2
	5:30 PM	0	0	1	0	1	0	0	0	0	0	0	0	1	0	1
	5:45 PM	1	1	1	2	5	0	0	0	0	0	1	1	1	2	5
	TOTAL	2	3	4	2	11	0	1	1	0	2	2	2	3	2	9
	PM BEGIN PEAK HR			5:00 PM			0	0	1	0	1					

National Data & Surveying Services

Intersection Turning Movement Count

Location: Walnut Ave & Tustin Ranch Rd
City: Tustin
Control: Signalized

Project ID: 19-01171-001
Date: 8/27/2019

Total

NS/EW Streets:	Walnut Ave				Walnut Ave				Tustin Ranch Rd				Tustin Ranch Rd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	2	2	1	0	2	2	0	0	2	3	1	0	2	3	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	14	26	41	0	78	87	55	0	19	91	39	0	151	239	35	0	875
7:15 AM	16	30	35	0	133	123	46	0	8	93	27	0	116	266	40	0	933
7:30 AM	31	52	15	0	125	122	94	0	17	94	43	0	133	383	63	0	1172
7:45 AM	31	33	36	0	115	133	100	0	15	125	72	0	103	383	93	0	1239
8:00 AM	35	40	35	0	71	110	67	0	15	99	56	0	117	392	44	0	1081
8:15 AM	47	53	47	0	58	97	68	0	15	78	43	0	130	447	43	1	1127
8:30 AM	24	41	34	0	57	115	59	0	15	83	42	0	131	437	43	0	1081
8:45 AM	30	62	42	0	58	120	59	0	17	85	51	0	152	345	24	0	1045
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	228	337	285	0	695	907	548	0	121	748	373	0	1033	2892	385	1	8553
APPROACH %'s :	26.82%	39.65%	33.53%	0.00%	32.33%	42.19%	25.49%	0.00%	9.74%	60.23%	30.03%	0.00%	23.96%	67.08%	8.93%	0.02%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	144	178	133	0	369	462	329	0	62	396	214	0	483	1605	243	1	4619
PEAK HR FACTOR :	0.766	0.840	0.707	0.000	0.738	0.868	0.823	0.000	0.912	0.792	0.743	0.000	0.908	0.898	0.653	0.250	0.932
	0.774				0.833				0.792				0.939				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	2	2	1	0	2	2	0	0	2	3	1	0	2	3	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	33	234	203	0	33	51	27	0	70	326	42	0	47	138	78	0	1282
4:15 PM	37	154	128	0	45	45	28	0	107	381	46	2	63	159	98	1	1294
4:30 PM	31	185	178	0	48	59	26	1	79	429	41	1	49	147	88	2	1364
4:45 PM	27	192	144	0	46	56	26	0	86	442	28	0	46	150	90	0	1333
5:00 PM	42	204	174	1	50	55	35	0	105	439	44	1	61	157	111	0	1479
5:15 PM	44	224	169	0	47	69	34	0	104	424	41	2	51	143	101	1	1454
5:30 PM	37	222	166	0	39	48	35	0	104	448	44	1	60	151	113	0	1468
5:45 PM	32	214	129	0	52	59	41	0	92	397	59	0	68	149	95	0	1387
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	283	1629	1291	1	360	442	252	1	747	3286	345	7	445	1194	774	4	11061
APPROACH %'s :	8.83%	50.84%	40.29%	0.03%	34.12%	41.90%	23.89%	0.09%	17.04%	74.94%	7.87%	0.16%	18.41%	49.40%	32.02%	0.17%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	155	864	638	1	188	231	145	0	405	1708	188	4	240	600	420	1	5788
PEAK HR FACTOR :	0.881	0.964	0.917	0.250	0.904	0.837	0.884	0.000	0.964	0.953	0.797	0.500	0.882	0.955	0.929	0.250	0.978
	0.949				0.928				0.965				0.958				

INTERSECTION TURNING MOVEMENT COUNTS AVERAGE SHEET

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: AVERAGE FOR THREE DAYS

LOCATION: Santa Ana
NORTH & SOUTH: SB SR-55 Ramps
EAST & WEST: Irvine

PROJECT #: CMP2019
LOCATION #: 194
CONTROL: SIGNAL

NOTES:

AM PM MD OTHER OTHER — ▲ N ◄ W E ► S ▼

Add U-Turns to Left Turns

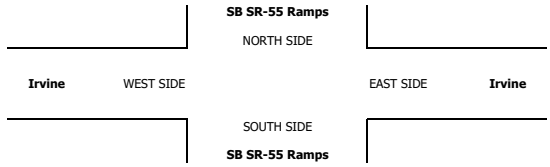
		NORTHBOUND (SB SR-55 Ramps)			SOUTHBOUND (SB SR-55 Ramps)			EASTBOUND (Irvine)			WESTBOUND (Irvine)			
	LANES:	NL X	NT X	NR X	SL 1.5	ST X	SR 1.5	EL X	ET 3	ER 0	WL 1	WT 3	WR X	TOTAL
AM	6:00 AM	0	0	0	38	0	37	0	70	45	38	41	0	269
	6:15 AM	0	0	0	43	0	37	0	76	70	56	64	0	346
	6:30 AM	0	0	0	29	0	28	0	86	123	83	85	0	434
	6:45 AM	0	0	0	17	0	20	0	96	171	94	119	0	517
	7:00 AM	0	0	0	12	0	21	0	97	215	116	131	0	592
	7:15 AM	0	0	0	14	0	10	0	115	247	125	156	0	667
	7:30 AM	0	0	0	10	0	15	0	136	259	117	207	0	744
	7:45 AM	0	0	0	11	0	13	0	153	273	110	261	0	821
	8:00 AM	0	0	0	12	0	13	0	148	256	101	254	0	784
	8:15 AM	0	0	0	18	0	17	0	138	259	105	277	0	814
	8:30 AM	0	0	0	20	0	24	0	130	233	104	260	0	771
	8:45 AM	0	0	0	27	0	41	0	116	199	98	262	0	743
	VOLUMES	0	0	0	251	0	276	0	1,361	2,350	1,147	2,117	0	7,502
	APPROACH %	0%	0%	0%	48%	0%	52%	0%	37%	63%	35%	65%	0%	
	APP/DEPART	0	/	0	527	/	3,497	3,711	/	1,612	3,264	/	2,393	
	BEGIN PEAK HR		7:45 AM											
	VOLUMES	0	0	0	61	0	67	0	569	1,021	420	1,052	0	3,190
	APPROACH %	0%	0%	0%	48%	0%	52%	0%	36%	64%	29%	71%	0%	
	PEAK HR FACTOR		0.000			0.727			0.933			0.963		0.971
	APP/DEPART	0	/	0	128	/	1,441	1,590	/	630	1,472	/	1,119	
PM	03:00 PM	0	0	0	88	0	84	0	185	101	77	229	0	764
	3:15 PM	0	0	0	80	0	81	0	183	105	82	233	0	764
	3:30 PM	0	0	0	93	0	80	0	176	111	72	266	0	798
	3:45 PM	0	0	0	94	0	84	0	183	108	71	269	0	809
	4:00 PM	0	0	0	89	0	76	0	185	120	81	249	0	800
	4:15 PM	0	0	0	98	0	84	0	187	107	89	284	0	849
	4:30 PM	0	0	0	97	0	90	0	192	125	88	271	0	863
	4:45 PM	0	0	0	99	0	76	0	214	142	81	259	0	871
	5:00 PM	0	0	0	116	0	58	0	219	168	103	255	0	919
	5:15 PM	0	0	0	106	0	63	0	221	130	89	261	0	870
	5:30 PM	0	0	0	108	0	59	0	199	135	95	283	0	879
	5:45 PM	0	0	0	130	0	64	0	175	116	83	281	0	849
	6:00 PM	0	0	0	110	1	62	0	172	115	89	272	0	821
	6:15 PM	0	0	0	107	0	63	0	141	93	79	250	0	733
	6:30 PM	0	0	0	99	1	59	0	136	87	74	220	0	676
	6:45 PM	0	0	0	74	1	58	0	138	73	74	222	0	640
	VOLUMES	0	0	0	1,588	3	1,141	0	2,906	1,836	1,327	4,104	0	12,905
	APPROACH %	0%	0%	0%	58%	0%	42%	0%	61%	39%	24%	76%	0%	
	APP/DEPART	0	/	0	2,732	/	3,166	4,742	/	4,494	5,431	/	5,245	
	BEGIN PEAK HR		4:45 PM											
	VOLUMES	0	0	0	429	0	256	0	853	575	368	1,058	0	3,539
	APPROACH %	0%	0%	0%	63%	0%	37%	0%	60%	40%	26%	74%	0%	
	PEAK HR FACTOR		0.000			0.979			0.922			0.943		0.963
	APP/DEPART	0	/	0	685	/	943	1,428	/	1,282	1,426	/	1,314	

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

Right-turn Overlap

NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0



		ALL PED AND BIKE					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	6:30 AM	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0
	6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:00 AM	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0
	7:15 AM	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0
	7:30 AM	3	0	0	0	3	2	0	0	0	2	1	0	0	0	1
	7:45 AM	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0
	8:00 AM	2	1	0	0	3	2	0	0	0	2	0	1	0	0	1
	8:15 AM	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0
	8:30 AM	1	1	0	0	2	1	1	0	0	2	0	0	0	0	0
	8:45 AM	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0
	TOTAL	11	3	0	0	14	10	2	0	0	12	1	1	0	0	2
	AM BEGIN PEAK HR			7:45 AM			5	1	0	0	6	0	1	0	0	1
PM	3:00 PM	1	1	0	0	2	1	1	0	0	2	0	0	0	0	0
	3:15 PM	2	0	0	0	2	0	0	0	0	0	2	0	0	0	2
	3:30 PM	0	2	0	0	2	0	1	0	0	1	0	1	0	0	1
	3:45 PM	1	2	0	0	3	1	2	0	0	3	0	0	0	0	0
	4:00 PM	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	2	0	0	0	2	1	0	0	0	1	1	0	0	0	1
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	1	1	0	0	2	1	1	0	0	2	0	0	0	0	0
	5:15 PM	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0
	6:00 PM	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0
	6:15 PM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1
	6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	6:45 PM	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0
	TOTAL	11	8	0	0	19	8	6	0	0	14	3	2	0	0	5
	PM BEGIN PEAK HR			4:45 PM			2	1	0	0	3	0	0	0	0	0

INTERSECTION TURNING MOVEMENT COUNTS AVERAGE SHEET

T319

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: AVERAGE FOR THREE DAYS

LOCATION: Tustin
NORTH & SOUTH: NB SR-55 Ramps
EAST & WEST: Irvine

PROJECT #: CMP2019
LOCATION #: 232
CONTROL: SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

Add U-Turns to Left Turns

		NORTHBOUND (NB SR-55 Ramps)			SOUTHBOUND (NB SR-55 Ramps)			EASTBOUND (Irvine)			WESTBOUND (Irvine)			
	LANES:	NL 1.5	NT X	NR 1.5	SL X	ST X	SR X	EL 1	ET 3	ER X	WL X	WT 3	WR 0	TOTAL
AM	6:00 AM	23	0	25	0	0	0	32	75	0	0	55	44	254
	6:15 AM	39	0	18	0	0	0	34	82	0	0	80	54	307
	6:30 AM	45	0	30	0	0	0	38	76	0	0	123	64	376
	6:45 AM	65	0	59	0	0	0	37	75	0	0	149	92	477
	7:00 AM	56	0	48	0	0	0	38	70	0	0	191	113	516
	7:15 AM	59	0	72	0	0	0	48	80	0	0	223	126	608
	7:30 AM	65	0	73	0	0	0	38	108	0	0	259	177	720
	7:45 AM	93	0	110	0	0	0	51	113	0	0	278	175	820
	8:00 AM	89	0	87	0	0	0	48	110	0	0	267	195	796
	8:15 AM	105	0	93	0	0	0	48	106	0	0	277	185	814
	8:30 AM	118	0	100	0	0	0	38	110	0	0	246	187	799
	8:45 AM	122	0	110	0	0	0	41	100	0	0	238	145	756
	VOLUMES	879	0	825	0	0	0	491	1,105	0	0	2,386	1,557	7,247
	APPROACH %	52%	0%	48%	0%	0%	0%	31%	69%	0%	0%	61%	39%	
	APP/DEPART	1,704	/	2,048	0	/	0	1,600	/	1,930	3,943	/	3,269	
	BEGIN PEAK HR		7:45 AM											
	VOLUMES	405	0	390	0	0	0	185	439	0	0	1,068	742	3,232
	APPROACH %	51%	0%	49%	0%	0%	0%	30%	70%	0%	0%	59%	41%	
	PEAK HR FACTOR		0.912			0.000			0.956			0.979		0.985
	APP/DEPART	795	/	927	0	/	0	627	/	829	1,810	/	1,476	
PM	03:00 PM	65	2	80	0	0	0	84	186	0	0	238	176	831
	3:15 PM	66	1	61	0	0	0	65	194	0	0	245	193	825
	3:30 PM	67	1	56	0	0	0	74	192	0	0	268	224	882
	3:45 PM	58	1	63	0	0	0	76	198	0	0	282	191	869
	4:00 PM	65	2	61	0	0	0	78	191	0	0	261	188	846
	4:15 PM	77	1	49	0	0	0	73	209	0	0	294	198	901
	4:30 PM	60	2	55	0	0	0	71	215	0	0	297	179	879
	4:45 PM	63	3	66	0	0	0	70	240	0	0	274	173	889
	5:00 PM	60	5	69	0	0	0	67	263	0	0	293	189	946
	5:15 PM	77	2	66	0	0	0	60	266	0	0	273	176	920
	5:30 PM	102	4	82	0	0	0	50	255	0	0	275	181	949
	5:45 PM	85	4	78	0	0	0	49	253	0	0	279	162	910
	6:00 PM	83	3	72	0	0	0	57	223	0	0	277	169	884
	6:15 PM	72	4	59	0	0	0	53	194	0	0	256	171	809
	6:30 PM	72	1	65	0	0	0	58	175	0	0	221	172	764
	6:45 PM	77	1	74	0	0	0	59	151	0	0	218	168	748
	VOLUMES	1,149	37	1,056	0	0	0	1,044	3,405	0	0	4,251	2,910	13,892
	APPROACH %	51%	2%	47%	0%	0%	0%	23%	76%	0%	0%	59%	41%	
	APP/DEPART	2,242	/	3,991	0	/	0	4,489	/	4,461	7,161	/	5,440	
	BEGIN PEAK HR		5:00 PM											
	VOLUMES	324	15	295	0	0	0	226	1,037	0	0	1,120	708	3,734
	APPROACH %	51%	2%	47%	0%	0%	0%	18%	82%	0%	0%	61%	39%	
	PEAK HR FACTOR		0.843			0.000			0.952			0.948		0.982
	APP/DEPART	634	/	949	0	/	0	1,272	/	1,332	1,828	/	1,453	

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	1	0	1
0	0	1	0	1
0	0	1	0	1
0	0	1	0	1
0	0	4	0	4
0	0	4	0	4
0	0	4	0	4
0	0	3	0	3
0	0	2	0	2
0	0	3	0	3
0	0	2	0	2
0	0	3	0	3
0	0	3	0	3
0	0	4	0	4
0	0	1	0	1
0	0	2	0	2
0	0	2	0	2
0	0	2	0	2
0	0	2	0	2
0	0	1	0	1
0	0	2	0	2
0	0	40	0	40

Right-turn Overlap

NRR X	SRR X	ERR X	WRR X
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

0 0 0 0

0 0 0 0

0 0 0 0

NB SR-55 Ramps

NORTH SIDE

Irvine WEST SIDE EAST SIDE **Irvine**

SOUTH SIDE

NB SR-55 Ramps

		ALL PED AND BIKE				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL
AM	6:00 AM	0	0	0	0	0
	6:15 AM	0	0	0	0	0
	6:30 AM	1	0	0	0	1
	6:45 AM	0	0	0	0	0
	7:00 AM	1	0	0	0	1
	7:15 AM	0	1	0	0	1
	7:30 AM	3	0	0	0	3
	7:45 AM	2	1	0	0	3
	8:00 AM	1	1	0	0	2
	8:15 AM	1	0	0	0	1
	8:30 AM	1	1	0	0	2
	8:45 AM	1	0	0	0	1
	TOTAL	11	4	0	0	15
	AM BEGIN PEAK HR	7:45 AM				
PM	3:00 PM	2	1	0	0	3
	3:15 PM	2	0	0	0	2
	3:30 PM	1	2	0	0	3
	3:45 PM	1	2	0	0	3
	4:00 PM	1	0	0	0	1
	4:15 PM	1	0	0	0	1
	4:30 PM	1	0	0	0	1
	4:45 PM	0	0	0	0	0
	5:00 PM	0	2	0	0	2
	5:15 PM	1	0	0	0	1
	5:30 PM	0	0	0	0	0
	5:45 PM	1	0	0	0	1
	6:00 PM	0	0	0	0	0
	6:15 PM	0	1	0	0	1
	6:30 PM	0	0	0	0	0
	6:45 PM	0	0	0	0	0
	TOTAL	11	8	0	0	19
	PM BEGIN PEAK HR	5:00 PM				

PEDESTRIAN CROSSINGS				
N SIDE	S SIDE	E SIDE	W SIDE	TOTAL
0	0	0	0	0
0	0	0	0	0
1	0	0	0	1
0	0	0	0	0
1	0	0	0	1
0	1	0	0	1
2	0	0	0	2
1	1	0	0	2
1	0	0	0	1
1	0	0	0	1
1	1	0	0	2
1	0	0	0	1
9	3	0	0	12
4	2	0	0	6
2	1	0	0	3
1	0	0	0	1
0	1	0	0	1
1	2	0	0	3
1	0	0	0	1
1	0	0	0	1
1	0	0	0	1
0	0	0	0	0
0	1	0	0	1
1	0	0	0	1
0	0	0	0	0
1	0	0	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
9	5	0	0	14
2	1	0	0	3

BICYCLE CROSSINGS				
NS	SS	ES	WS	TOTAL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
1	0	0	0	1
1	0	0	0	1
0	1	0	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
2	1	0	0	3
1	1	0	0	2
0	0	0	0	0
1	0	0	0	1
1	1	0	0	2
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	1	0	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	1	0	0	1
0	0	0	0	0
0	0	0	0	0
2	3	0	0	5
0	1	0	0	1

Transportation Studies, Inc.

2640 Walnut Avenue, Suite L

Tustin, CA. 92780

Location : FIRST STREET — Site: SANTA ANA

Segment : WEST CITY LIMIT TO EUCLID ST — Date: 09/11/19

Client : CITY SANTA ANA — Day: Wednesday

Interval	WB				EB				Combined			
Begin	AM		PM		AM		PM		AM		PM	
12:00	36	94	196	738	30	110	167	710	66	204	363	1,448
12:15	18		198		22		170		40		368	
12:30	20		178		28		187		48		365	
12:45	20		166		30		186		50		352	
01:00	18	62	170	710	12	41	163	702	30	103	333	1,412
01:15	17		172		10		172		27		344	
01:30	17		180		10		172		27		352	
01:45	10		188		9		195		19		383	
02:00	17	48	148	771	8	20	194	781	25	68	342	1,552
02:15	8		197		4		188		12		385	
02:30	10		212		3		176		13		388	
02:45	13		214		5		223		18		437	
03:00	8	38	224	860	8	53	210	848	16	91	434	1,708
03:15	8		208		12		220		20		428	
03:30	10		226		17		218		27		444	
03:45	12		202		16		200		28		402	
04:00	14	101	208	1,014	9	85	190	798	23	186	398	1,812
04:15	20		243		17		196		37		439	
04:30	36		280		25		196		61		476	
04:45	31		283		34		216		65		499	
05:00	26	184	276	1,178	47	194	260	950	73	378	536	2,128
05:15	37		303		31		252		68		555	
05:30	71		320		51		226		122		546	
05:45	50		279		65		212		115		491	
06:00	55	331	278	978	68	397	252	844	123	728	530	1,822
06:15	84		252		89		211		173		463	
06:30	78		246		98		197		176		443	
06:45	114		202		142		184		256		386	
07:00	118	685	214	743	182	865	170	576	300	1,550	384	1,319
07:15	136		151		204		138		340		289	
07:30	197		192		237		134		434		326	
07:45	234		186		242		134		476		320	
08:00	256	806	142	514	255	985	134	437	511	1,791	276	951
08:15	170		174		269		109		439		283	
08:30	182		102		233		92		415		194	
08:45	198		96		228		102		426		198	
09:00	175	737	110	414	152	641	101	351	327	1,378	211	765
09:15	188		108		188		100		376		208	
09:30	203		88		158		84		361		172	
09:45	171		108		143		66		314		174	
10:00	176	730	77	272	160	559	74	260	336	1,289	151	532
10:15	176		76		123		71		299		147	
10:30	201		53		138		56		339		109	
10:45	177		66		138		59		315		125	
11:00	176	709	51	203	178	696	58	160	354	1,405	109	363
11:15	146		50		168		33		314		83	
11:30	172		64		182		44		354		108	
11:45	215		38		168		25		383		63	
Totals	4,525		8,395		4,646		7,417		9,171		15,812	
Split%	49.3		53.1		50.7		46.9					
Day Totals		12,920				12,063				24,983		
Day Splits		51.7				48.3						
Peak Hour	07:30		04:45		07:30		04:45		07:30		04:45	
Volume	857		1,182		1,003		954		1,860		2,136	
Factor	0.84		0.92		0.93		0.92		0.91		0.96	

* Data File : D1909085

Transportation Studies, Inc.

2640 Walnut Avenue, Suite L

Tustin, CA. 92780

Location : EUCLID STREET — Site: SANTA ANA

Segment : NCFADDEN AVE TO FIRST ST — Date: 10/09/19

Client : CITY SANTA ANA — Day: Wednesday

Interval	NB				SB				Combined			
Begin	AM		PM		AM		PM		AM		PM	
12:00	58	202	246	964	44	131	224	983	102	333	470	1,947
12:15	52		242		34		258		86		500	
12:30	49		230		36		264		85		494	
12:45	43		246		17		237		60		483	
01:00	56	121	210	968	14	76	226	1,049	70	197	436	2,017
01:15	28		222		18		259		46		481	
01:30	18		266		26		280		44		546	
01:45	19		270		18		284		37		554	
02:00	20	72	316	1,292	12	68	266	1,194	32	140	582	2,486
02:15	15		288		23		284		38		572	
02:30	19		340		17		322		36		662	
02:45	18		348		16		322		34		670	
03:00	12	72	369	1,577	15	129	284	1,135	27	201	653	2,712
03:15	22		377		27		277		49		654	
03:30	20		424		40		322		60		746	
03:45	18		407		47		252		65		659	
04:00	26	126	396	1,693	46	347	302	1,177	72	473	698	2,870
04:15	30		418		60		278		90		696	
04:30	26		451		113		296		139		747	
04:45	44		428		128		301		172		729	
05:00	49	305	434	1,783	114	724	328	1,282	163	1,029	762	3,065
05:15	74		457		154		318		228		775	
05:30	82		446		198		312		280		758	
05:45	100		446		258		324		358		770	
06:00	88	576	411	1,520	197	1,327	337	1,167	285	1,903	748	2,687
06:15	123		393		288		294		411		687	
06:30	179		360		363		274		542		634	
06:45	186		356		479		262		665		618	
07:00	228	1,179	346	1,268	462	2,083	215	762	690	3,262	561	2,030
07:15	275		323		552		186		827		509	
07:30	299		326		593		201		892		527	
07:45	377		273		476		160		853		433	
08:00	314	1,212	206	759	474	1,930	171	613	788	3,142	377	1,372
08:15	352		211		521		164		873		375	
08:30	292		182		494		142		786		324	
08:45	254		160		441		136		695		296	
09:00	258	935	188	664	359	1,319	142	510	617	2,254	330	1,174
09:15	220		144		362		134		582		278	
09:30	240		148		310		127		550		275	
09:45	217		184		288		107		505		291	
10:00	213	829	172	547	234	965	100	356	447	1,794	272	903
10:15	208		158		252		100		460		258	
10:30	224		112		224		86		448		198	
10:45	184		105		255		70		439		175	
11:00	214	908	94	324	200	862	66	243	414	1,770	160	567
11:15	248		77		200		66		448		143	
11:30	226		92		232		60		458		152	
11:45	220		61		230		51		450		112	
Totals	6,537		13,359		9,961		10,471		16,498		23,830	
Split%	39.6		56.1		60.4		43.9					
Day Totals		19,896				20,432				40,328		
Day Splits		49.3				50.7						
Peak Hour	07:30		05:00		07:15		05:15		07:30		05:00	
Volume	1,342		1,783		2,095		1,291		3,406		3,065	
Factor	0.89		0.98		0.88		0.96		0.95		0.99	

* Data File : D1909059

Thursday, October 03, 2019 Location: Santa Ana PROJECT:

ADT227 SEVENTEENTH ST from HARBOR BL to CLINTON ST. **Prepared by AimTD tel. 714 253 7888**

AM Period	NB	SB	EB		WB			PM Period	NB	SB	EB		WB		
0:30			23		18			12:00			189		248		
0:15			24		19			12:15			191		232		
0:30			21		20			12:30			192		214		
0:45			16	84	14	71	155	12:45			182	754	223	917	1671
1:00			15		15			13:00			213		204		
1:15			27		11			13:15			194		230		
1:30			19		14			13:30			184		265		
1:45			15	76	9	49	125	13:45			220	811	245	944	1755
2:00			12		9			14:00			255		241		
2:15			11		7			14:15			258		234		
2:30			8		10			14:30			292		253		
2:45			9	40	11	37	77	14:45			277	1082	271	999	2081
3:00			10		9			15:00			229		256		
3:15			11		13			15:15			242		270		
3:30			9		8			15:30			275		263		
3:45			8	38	15	45	83	15:45			232	978	291	1080	2058
4:00			12		17			16:00			256		304		
4:15			20		23			16:15			262		289		
4:30			16		26			16:30			294		293		
4:45			24	72	32	98	170	16:45			307	1119	303	1189	2308
5:00			32		49			17:00			302		313		
5:15			59		57			17:15			321		235		
5:30			68		65			17:30			276		241		
5:45			83	242	76	247	489	17:45			312	1211	285	1074	2285
6:00			103		85			18:00			300		274		
6:15			100		95			18:15			311		245		
6:30			167		112			18:30			268		231		
6:45			209	579	146	438	1017	18:45			238	1117	234	984	2101
7:00			285		159			19:00			215		203		
7:15			307		193			19:15			182		214		
7:30			366		256			19:30			152		201		
7:45			407	1365	283	891	2256	19:45			143	692	184	802	1494
8:00			393		274			20:00			117		174		
8:15			332		242			20:15			132		170		
8:30			319		249			20:30			114		182		
8:45			267	1311	232	997	2308	20:45			125	488	167	693	1181
9:00			196		195			21:00			103		142		
9:15			217		185			21:15			95		132		
9:30			204		174			21:30			115		95		
9:45			234	851	177	731	1582	21:45			94	407	112	481	888
10:00			222		184			22:00			88		76		
10:15			187		204			22:15			58		81		
10:30			199		213			22:30			53		53		
10:45			212	820	206	807	1627	22:45			60	259	58	268	527
11:00			189		201			23:00			46		43		
11:15			203		204			23:15			40		26		
11:30			199		216			23:30			32		31		
11:45			217	808	224	845	1653	23:45			28	146	20	120	266
Total Vol.				6286		5256	**11542**					9064		9551	**18615**

Daily Totals

NB	SB	EB	WB	Combined
		15350	14807	**30157**

			AM				PM		
Split %			54.5%	45.5%	**38.3%**		48.7%	51.3%	**61.7%**
Peak Hour	0:30	0:30	7:30	7:30	**7:30**		16:30	16:15	**16:30**
Volume			1498	1055	**2553**		1224	1198	**2368**
P.H.F.			0.92	0.93	**0.93**		0.95	0.96	**0.96**

cs@aimtd.com Tell. 714 253 7888

Transportation Studies, Inc.

2640 Walnut Avenue, Suite L

Tustin, CA. 92780

Location : HARBOR BOULEVARD — Site: SANTA ANA

Segment : HAZARD AVE TO WESTMINSTER AVE — Date: 10/03/19

Client : CITY SANTA ANA — Day: Thursday

Interval	NB				SB				Combined			
Begin	AM		PM		AM		PM		AM		PM	
12:00	92	310	350	1,400	85	314	390	1,421	177	624	740	2,821
12:15	72		382		72		334		144		716	
12:30	84		316		84		361		168		677	
12:45	62		352		73		336		135		688	
01:00	68	206	422	1,653	65	198	354	1,420	133	404	776	3,073
01:15	48		418		40		366		88		784	
01:30	50		372		43		354		93		726	
01:45	40		441		50		346		90		787	
02:00	50	219	446	2,014	40	153	386	1,525	90	372	832	3,539
02:15	69		482		40		354		109		836	
02:30	54		552		39		379		93		931	
02:45	46		534		34		406		80		940	
03:00	50	223	428	1,995	38	251	380	1,504	88	474	808	3,499
03:15	52		526		48		380		100		906	
03:30	65		551		69		380		134		931	
03:45	56		490		96		364		152		854	
04:00	70	404	526	1,970	68	452	368	1,556	138	856	894	3,526
04:15	90		528		76		362		166		890	
04:30	124		457		139		396		263		853	
04:45	120		459		169		430		289		889	
05:00	133	700	461	1,833	144	816	440	1,675	277	1,516	901	3,508
05:15	178		460		184		426		362		886	
05:30	218		432		232		418		450		850	
05:45	171		480		256		391		427		871	
06:00	200	1,022	454	1,777	245	1,441	350	1,327	445	2,463	804	3,104
06:15	252		452		299		323		551		775	
06:30	262		432		416		346		678		778	
06:45	308		439		481		308		789		747	
07:00	295	1,392	394	1,388	538	2,071	322	1,324	833	3,463	716	2,712
07:15	356		362		531		375		887		737	
07:30	391		330		522		333		913		663	
07:45	350		302		480		294		830		596	
08:00	404	1,409	298	1,060	478	1,943	278	1,045	882	3,352	576	2,105
08:15	344		280		498		280		842		560	
08:30	324		228		493		258		817		486	
08:45	337		254		474		229		811		483	
09:00	302	1,082	263	851	396	1,736	239	934	698	2,818	502	1,785
09:15	260		248		462		254		722		502	
09:30	264		194		436		247		700		441	
09:45	256		146		442		194		698		340	
10:00	301	1,200	189	658	354	1,412	231	709	655	2,612	420	1,367
10:15	327		162		380		190		707		352	
10:30	308		146		368		150		676		296	
10:45	264		161		310		138		574		299	
11:00	294	1,268	146	473	328	1,337	154	530	622	2,605	300	1,003
11:15	293		108		337		126		630		234	
11:30	372		116		314		118		686		234	
11:45	309		103		358		132		667		235	
Totals	9,435		17,072		12,124		14,970		21,559		32,042	
Split%	43.8		53.3		56.2		46.7					
Day Totals		26,507				27,094				53,601		
Day Splits		49.5				50.5						
Peak Hour	07:15		03:30		06:45		04:45		07:15		02:30	
Volume	1,501		2,095		2,072		1,714		3,512		3,585	
Factor	0.93		0.95		0.96		0.97		0.96		0.95	

* Data File : D1909140

Transportation Studies, Inc.

2640 Walnut Avenue, Suite L

Tustin, CA. 92780

Location : FIRST STREET — Site: SANTA ANA

Segment : HARBOR BLVD TO FAIRVIEW ST — Date: 09/11/19

Client : CITY SANTA ANA — Day: Wednesday

Interval	EB				WB				Combined			
Begin	AM		PM		AM		PM		AM		PM	
12:00	42	129	196	749	38	124	238	843	80	253	434	1,592
12:15	30		185		34		222		64		407	
12:30	24		188		26		169		50		357	
12:45	33		180		26		214		59		394	
01:00	24	79	214	890	29	90	220	924	53	169	434	1,814
01:15	22		228		17		240		39		468	
01:30	15		216		32		222		47		438	
01:45	18		232		12		242		30		474	
02:00	17	74	248	982	14	70	213	962	31	144	461	1,944
02:15	21		228		19		258		40		486	
02:30	18		238		17		225		35		463	
02:45	18		268		20		266		38		534	
03:00	16	84	268	1,096	18	80	267	1,186	34	164	535	2,282
03:15	16		266		17		318		33		584	
03:30	20		280		20		280		40		560	
03:45	32		282		25		321		57		603	
04:00	32	178	274	1,115	26	168	326	1,453	58	346	600	2,568
04:15	36		279		24		374		60		653	
04:30	56		282		54		372		110		654	
04:45	54		280		64		381		118		661	
05:00	56	382	278	1,164	55	304	382	1,520	111	686	660	2,684
05:15	68		302		79		398		147		700	
05:30	114		298		84		354		198		652	
05:45	144		286		86		386		230		672	
06:00	124	780	249	983	102	517	360	1,278	226	1,297	609	2,261
06:15	160		256		115		342		275		598	
06:30	234		254		141		322		375		576	
06:45	262		224		159		254		421		478	
07:00	336	1,556	236	824	156	835	253	889	492	2,391	489	1,713
07:15	384		198		204		208		588		406	
07:30	368		202		227		224		595		426	
07:45	468		188		248		204		716		392	
08:00	362	1,334	164	585	274	862	158	603	636	2,196	322	1,188
08:15	334		160		180		160		514		320	
08:30	326		126		204		147		530		273	
08:45	312		135		204		138		516		273	
09:00	252	914	137	484	175	730	118	477	427	1,644	255	961
09:15	232		134		188		127		420		261	
09:30	228		109		202		120		430		229	
09:45	202		104		165		112		367		216	
10:00	166	710	94	348	164	734	96	316	330	1,444	190	664
10:15	168		111		196		82		364		193	
10:30	216		67		186		70		402		137	
10:45	160		76		188		68		348		144	
11:00	200	785	66	202	176	815	54	205	376	1,600	120	407
11:15	176		58		206		65		382		123	
11:30	204		36		229		46		433		82	
11:45	205		42		204		40		409		82	
Totals	7,005		9,422		5,329		10,656		12,334		20,078	
Split%	56.8		46.9		43.2		53.1					
Day Totals		16,427				15,985				32,412		
Day Splits		50.7				49.3						
Peak Hour	07:15		05:00		07:15		04:30		07:15		05:00	
Volume	1,582		1,164		953		1,533		2,535		2,684	
Factor	0.85		0.96		0.87		0.96		0.89		0.96	

Data File : D1909088

Transportation Studies, Inc.

2640 Walnut Avenue, Suite L

Tustin, CA. 92780

Location : EDINGER AVENUE — Site: SANTA ANA

Segment : SANTA ANA RIVER TO FAIRVIEW ST — Date: 09/17/19

Client : CITY SANTA ANA — Day: Tuesday

Interval	EB				WB				Combined			
Begin	AM		PM		AM		PM		AM		PM	
12:00	21	88	144	628	28	83	176	659	49	171	320	1,287
12:15	35		165		17		162		52		327	
12:30	18		167		14		162		32		329	
12:45	14		152		24		159		38		311	
01:00	11	49	176	794	10	53	144	685	21	102	320	1,479
01:15	17		169		18		157		35		326	
01:30	11		231		11		186		22		417	
01:45	10		218		14		198		24		416	
02:00	8	32	185	881	5	40	200	870	13	72	385	1,751
02:15	4		202		8		205		12		407	
02:30	16		196		9		206		25		402	
02:45	4		298		18		259		22		557	
03:00	5	51	291	1,015	16	61	253	1,096	21	112	544	2,111
03:15	12		270		10		291		22		561	
03:30	19		216		14		268		33		484	
03:45	15		238		21		284		36		522	
04:00	21	151	266	1,009	11	137	304	1,244	32	288	570	2,253
04:15	31		232		20		326		51		558	
04:30	48		264		46		294		94		558	
04:45	51		247		60		320		111		567	
05:00	40	298	250	994	42	255	336	1,367	82	553	586	2,361
05:15	74		290		64		343		138		633	
05:30	78		224		70		332		148		556	
05:45	106		230		79		356		185		586	
06:00	104	578	212	799	63	489	310	1,167	167	1,067	522	1,966
06:15	130		214		111		319		241		533	
06:30	158		175		144		264		302		439	
06:45	186		198		171		274		357		472	
07:00	212	1,072	169	692	168	956	210	737	380	2,028	379	1,429
07:15	306		185		230		190		536		375	
07:30	298		185		268		191		566		376	
07:45	256		153		290		146		546		299	
08:00	274	1,018	184	673	249	821	162	564	523	1,839	346	1,237
08:15	262		168		224		156		486		324	
08:30	262		188		188		124		450		312	
08:45	220		133		160		122		380		255	
09:00	200	699	125	443	147	526	108	408	347	1,225	233	851
09:15	189		128		130		112		319		240	
09:30	172		95		111		110		283		205	
09:45	138		95		138		78		276		173	
10:00	147	668	82	240	162	638	89	256	309	1,306	171	496
10:15	137		70		156		70		293		140	
10:30	206		50		159		52		365		102	
10:45	178		38		161		45		339		83	
11:00	139	615	42	161	178	635	52	167	317	1,250	94	328
11:15	170		38		162		43		332		81	
11:30	142		48		151		39		293		87	
11:45	164		33		144		33		308		66	
Totals	5,319		8,329		4,694		9,220		10,013		17,549	
Split%	53.1		47.5		46.9		52.5					
Day Totals		13,648				13,914				27,562		
Day Splits		49.5				50.5						
Peak Hour	07:15		02:45		07:15		05:00		07:15		05:00	
Volume	1,134		1,075		1,037		1,367		2,171		2,361	
Factor	0.93		0.90		0.89		0.96		0.96		0.93	

* Data File : D1909049

Thursday, October 10, 2019 Location: Santa Ana PROJECT:

ADT259 WARNER AVE from SANTA ANA RIVER to FAIRVIEW ST. **Prepared by AimTD tel. 714 253 7888**

AM Period	NB	SB	EB		WB			PM Period	NB	SB	EB		WB		
0:30			37		21			12:00			194		204		
0:15			26		23			12:15			180		201		
0:30			24		20			12:30			211		176		
0:45			32	119	17	81	200	12:45			201	786	152	733	1519
1:00			22		8			13:00			212		204		
1:15			8		9			13:15			200		185		
1:30			14		11			13:30			231		211		
1:45			20	64	13	41	105	13:45			214	857	270	870	1727
2:00			15		9			14:00			259		308		
2:15			13		11			14:15			265		324		
2:30			14		8			14:30			290		386		
2:45			14	56	14	42	98	14:45			257	1071	337	1355	2426
3:00			17		13			15:00			231		377		
3:15			20		20			15:15			233		357		
3:30			21		12			15:30			238		398		
3:45			31	89	15	60	149	15:45			234	936	387	1519	2455
4:00			34		23			16:00			271		348		
4:15			43		14			16:15			253		346		
4:30			65		45			16:30			246		397		
4:45			63	205	101	183	388	16:45			303	1073	365	1456	2529
5:00			99		69			17:00			237		391		
5:15			123		91			17:15			216		418		
5:30			148		114			17:30			242		447		
5:45			240	610	126	400	1010	17:45			224	919	426	1682	2601
6:00			144		137			18:00			251		379		
6:15			145		123			18:15			214		336		
6:30			170		164			18:30			198		311		
6:45			250	709	189	613	1322	18:45			201	864	220	1246	2110
7:00			304		176			19:00			181		212		
7:15			400		223			19:15			157		156		
7:30			387		242			19:30			153		161		
7:45			375	1466	254	895	2361	19:45			144	635	154	683	1318
8:00			398		220			20:00			121		117		
8:15			408		245			20:15			149		137		
8:30			346		213			20:30			127		124		
8:45			334	1486	225	903	2389	20:45			103	500	114	492	992
9:00			284		198			21:00			125		87		
9:15			203		156			21:15			92		76		
9:30			214		158			21:30			109		82		
9:45			225	926	196	708	1634	21:45			116	442	54	299	741
10:00			200		185			22:00			76		56		
10:15			189		168			22:15			64		46		
10:30			192		157			22:30			53		38		
10:45			168	749	156	666	1415	22:45			47	240	41	181	421
11:00			176		147			23:00			67		57		
11:15			159		157			23:15			46		38		
11:30			188		166			23:30			41		52		
11:45			180	703	174	644	1347	23:45			34	188	37	184	372
Total Vol.				7182		5236	**12418**					8511		10700	**19211**

Daily Totals

NB	SB	EB	WB	**Combined**
		15693	15936	**31629**

			AM				**PM**		
Split %			57.8%	42.2%	**39.3%**		44.3%	55.7%	**60.7%**
Peak Hour	0:30	0:30	7:30	7:30	**7:30**		16:00	17:00	**16:45**
Volume			1568	961	**2529**		1073	1682	**2619**
P.H.F.			0.96	0.95	**0.97**		0.89	0.94	**0.95**

cs@aimtd.com Tell. 714 253 7888

Transportation Studies, Inc.

2640 Walnut Avenue, Suite L

Tustin, CA. 92780

Location : HARBOR BOULEVARD — Site: SANTA ANA

Segment : MACARTHUR TO SEGERSTROM — Date: 10/03/19

Client : CITY SANTA ANA — Day: Thursday

Interval	NB				SB				Combined			
Begin	AM		PM		AM		PM		AM		PM	
12:00	67	199	312	1,356	41	122	402	1,498	108	321	714	2,854
12:15	54		340		24		373		78		713	
12:30	34		350		34		373		68		723	
12:45	44		354		23		350		67		704	
01:00	34	116	314	1,472	20	82	361	1,358	54	198	675	2,830
01:15	28		361		19		331		47		692	
01:30	26		382		28		356		54		738	
01:45	28		415		15		310		43		725	
02:00	25	100	385	1,670	16	78	314	1,316	41	178	699	2,986
02:15	26		440		13		330		39		770	
02:30	27		463		26		350		53		813	
02:45	22		382		23		322		45		704	
03:00	17	92	475	1,874	24	137	302	1,218	41	229	777	3,092
03:15	20		445		26		338		46		783	
03:30	26		498		41		289		67		787	
03:45	29		456		46		289		75		745	
04:00	20	134	515	1,899	56	408	308	1,239	76	542	823	3,138
04:15	22		473		70		282		92		755	
04:30	28		472		116		339		144		811	
04:45	64		439		166		310		230		749	
05:00	63	336	430	1,763	115	782	298	1,203	178	1,118	728	2,966
05:15	75		447		152		298		227		745	
05:30	90		432		221		316		311		748	
05:45	108		454		294		291		402		745	
06:00	116	561	488	1,876	236	1,432	280	1,016	352	1,993	768	2,892
06:15	121		458		310		260		431		718	
06:30	150		454		400		242		550		696	
06:45	174		476		486		234		660		710	
07:00	174	870	444	1,525	536	2,323	216	816	710	3,193	660	2,341
07:15	216		383		606		204		822		587	
07:30	204		388		599		210		803		598	
07:45	276		310		582		186		858		496	
08:00	282	1,104	239	905	575	2,323	192	666	857	3,427	431	1,571
08:15	291		218		574		177		865		395	
08:30	275		210		568		167		843		377	
08:45	256		238		606		130		862		368	
09:00	232	892	193	815	487	1,885	140	510	719	2,777	333	1,325
09:15	226		227		516		142		742		369	
09:30	228		203		455		122		683		325	
09:45	206		192		427		106		633		298	
10:00	250	930	226	667	362	1,490	103	339	612	2,420	329	1,006
10:15	226		193		376		104		602		297	
10:30	222		124		338		70		560		194	
10:45	232		124		414		62		646		186	
11:00	264	1,142	100	463	376	1,415	56	241	640	2,557	156	704
11:15	304		103		320		69		624		172	
11:30	278		114		353		56		631		170	
11:45	296		146		366		60		662		206	
Totals	6,476		16,285		12,477		11,420		18,953		27,705	
Split%	34.2		58.8		65.8		41.2					
Day Totals		22,761				23,897				46,658		
Day Splits		48.8				51.2						
Peak Hour	11:00		03:30		07:15		12:00		08:00		03:15	
Volume	1,142		1,942		2,362		1,498		3,427		3,138	
Factor	0.94		0.94		0.97		0.93		0.99		0.95	

Data File : D1909133

Transportation Studies, Inc.

2640 Walnut Avenue, Suite L

Tustin, CA. 92780

Location : FAIRVIEW STREET
Segment : MCFADDEN AVE TO FIRST ST
Client : CITY SANTA ANA

Site: SANTA ANA
Date: 10/01/19

Day: Tuesday

Interval	NB				SB				Combined			
Begin	AM		PM		AM		PM		AM		PM	
12:00	65	195	223	970	48	148	202	829	113	343	425	1,799
12:15	63		244		41		240		104		484	
12:30	37		235		29		202		66		437	
12:45	30		268		30		185		60		453	
01:00	26	105	264	1,148	23	100	192	853	49	205	456	2,001
01:15	28		287		31		205		59		492	
01:30	25		280		19		226		44		506	
01:45	26		317		27		230		53		547	
02:00	25	102	366	1,576	21	84	238	987	46	186	604	2,563
02:15	29		376		25		196		54		572	
02:30	18		405		16		272		34		677	
02:45	30		429		22		281		52		710	
03:00	27	121	394	1,672	25	159	277	1,011	52	280	671	2,683
03:15	26		425		30		256		56		681	
03:30	42		414		50		256		92		670	
03:45	26		439		54		222		80		661	
04:00	54	306	434	1,769	50	396	260	1,180	104	702	694	2,949
04:15	56		446		68		316		124		762	
04:30	94		431		110		308		204		739	
04:45	102		458		168		296		270		754	
05:00	98	568	439	1,784	152	865	360	1,463	250	1,433	799	3,247
05:15	150		475		189		350		339		825	
05:30	156		448		232		370		388		818	
05:45	164		422		292		383		456		805	
06:00	150	856	470	1,737	245	1,230	368	1,298	395	2,086	838	3,035
06:15	184		451		228		330		412		781	
06:30	246		434		349		335		595		769	
06:45	276		382		408		265		684		647	
07:00	314	1,491	372	1,346	444	1,797	286	982	758	3,288	658	2,328
07:15	391		352		458		260		849		612	
07:30	424		318		476		202		900		520	
07:45	362		304		419		234		781		538	
08:00	346	1,155	266	976	423	1,562	207	710	769	2,717	473	1,686
08:15	299		258		454		180		753		438	
08:30	272		242		360		163		632		405	
08:45	238		210		325		160		563		370	
09:00	210	902	194	753	298	1,168	154	579	508	2,070	348	1,332
09:15	238		194		271		158		509		352	
09:30	210		195		334		118		544		313	
09:45	244		170		265		149		509		319	
10:00	238	922	157	536	288	1,021	122	414	526	1,943	279	950
10:15	202		162		260		117		462		279	
10:30	235		116		244		82		479		198	
10:45	247		101		229		93		476		194	
11:00	222	930	104	346	246	815	82	266	468	1,745	186	612
11:15	232		84		206		78		438		162	
11:30	244		92		177		59		421		151	
11:45	232		66		186		47		418		113	
Totals	7,653		14,613		9,345		10,572		16,998		25,185	
Split%	45.0		58.0		55.0		42.0					
Day Totals		22,266				19,917				42,183		
Day Splits		52.8				47.2						
Peak Hour	07:15		04:45		07:00		05:15		07:15		05:15	
Volume	1,523		1,820		1,797		1,471		3,299		3,286	
Factor	0.90		0.96		0.94		0.96		0.92		0.98	

Data File : D1909072

Transportation Studies, Inc.

2640 Walnut Avenue, Suite L

Tustin, CA. 92780

Location : FIRST STREET — Site: SANTA ANA

Segment : FAIRVIEW ST TO RAITT ST — Date: 09/11/19

Client : CITY SANTA ANA — Day: Wednesday

Interval	WB				EB				Combined			
Begin	AM		PM		AM		PM		AM		PM	
12:00	50	149	268	1,002	50	161	230	914	100	310	498	1,916
12:15	41		266		50		217		91		483	
12:30	27		222		29		233		56		455	
12:45	31		246		32		234		63		480	
01:00	26	96	266	1,099	31	90	250	1,006	57	186	516	2,105
01:15	28		270		20		266		48		536	
01:30	30		289		21		232		51		521	
01:45	12		274		18		258		30		532	
02:00	25	85	292	1,206	15	74	276	1,054	40	159	568	2,260
02:15	20		316		17		248		37		564	
02:30	23		292		24		258		47		550	
02:45	17		306		18		272		35		578	
03:00	18	96	326	1,396	15	88	300	1,173	33	184	626	2,569
03:15	15		364		9		307		24		671	
03:30	30		350		26		294		56		644	
03:45	33		356		38		272		71		628	
04:00	26	176	372	1,563	30	205	296	1,192	56	381	668	2,755
04:15	43		376		40		300		83		676	
04:30	52		404		67		304		119		708	
04:45	55		411		68		292		123		703	
05:00	68	348	385	1,506	82	433	288	1,274	150	781	673	2,780
05:15	88		371		86		340		174		711	
05:30	92		360		115		318		207		678	
05:45	100		390		150		328		250		718	
06:00	106	582	334	1,328	155	842	284	1,101	261	1,424	618	2,429
06:15	128		364		185		276		313		640	
06:30	160		326		232		263		392		589	
06:45	188		304		270		278		458		582	
07:00	211	1,049	256	933	340	1,568	254	885	551	2,617	510	1,818
07:15	266		234		430		228		696		462	
07:30	274		237		398		215		672		452	
07:45	298		206		400		188		698		394	
08:00	250	899	195	695	410	1,426	172	652	660	2,325	367	1,347
08:15	210		182		357		178		567		360	
08:30	227		160		335		155		562		315	
08:45	212		158		324		147		536		305	
09:00	218	873	168	599	285	1,040	128	482	503	1,913	296	1,081
09:15	215		160		262		132		477		292	
09:30	232		153		249		124		481		277	
09:45	208		118		244		98		452		216	
10:00	211	872	118	357	206	822	104	334	417	1,694	222	691
10:15	231		96		188		82		419		178	
10:30	232		65		244		80		476		145	
10:45	198		78		184		68		382		146	
11:00	214	968	72	217	214	877	70	230	428	1,845	142	447
11:15	256		55		205		66		461		121	
11:30	262		42		216		54		478		96	
11:45	236		48		242		40		478		88	
Totals	6,193		11,901		7,626		10,297		13,819		22,198	
Split%	44.8		53.6		55.2		46.4					
Day Totals		18,094				17,923				36,017		
Day Splits		50.2				49.8						
Peak Hour	07:15		04:15		07:15		05:00		07:15		04:30	
Volume	1,088		1,576		1,638		1,274		2,726		2,795	
Factor	0.91		0.96		0.95		0.94		0.98		0.98	

* Data File : D1909089

Transportation Studies, Inc.

2640 Walnut Avenue, Suite L

Tustin, CA. 92780

Location : BRISTOL STREET — Site: SANTA ANA

Segment : SEVENTEENTH ST TO SANTA CLARA — Date: 09/17/19

Client : CITY SANTA ANA — Day: Tuesday

Interval	SB				NB				Combined			
Begin	AM		PM		AM		PM		AM		PM	
12:00	64	227	298	1,112	56	165	289	1,182	120	392	587	2,294
12:15	70		248		52		274		122		522	
12:30	39		288		23		321		62		609	
12:45	54		278		34		298		88		576	
01:00	58	179	274	1,147	22	111	312	1,288	80	290	586	2,435
01:15	48		288		27		316		75		604	
01:30	34		285		34		318		68		603	
01:45	39		300		28		342		67		642	
02:00	34	126	258	1,153	31	104	316	1,023	65	230	574	2,176
02:15	22		301		26		237		48		538	
02:30	36		292		24		214		60		506	
02:45	34		302		23		256		57		558	
03:00	28	102	340	1,457	28	173	257	1,238	56	275	597	2,695
03:15	22		363		34		231		56		594	
03:30	26		368		51		366		77		734	
03:45	26		386		60		384		86		770	
04:00	34	264	433	1,692	74	513	394	1,532	108	777	827	3,224
04:15	58		398		113		372		171		770	
04:30	74		422		158		400		232		822	
04:45	98		439		168		366		266		805	
05:00	82	514	412	1,684	179	919	440	1,645	261	1,433	852	3,329
05:15	113		454		226		406		339		860	
05:30	153		416		280		411		433		827	
05:45	166		402		234		388		400		790	
06:00	218	1,213	361	1,392	226	1,104	346	1,477	444	2,317	707	2,869
06:15	237		352		246		385		483		737	
06:30	356		358		332		386		688		744	
06:45	402		321		300		360		702		681	
07:00	388	1,469	296	1,065	288	1,307	354	1,254	676	2,776	650	2,319
07:15	344		284		290		322		634		606	
07:30	366		258		358		276		724		534	
07:45	371		227		371		302		742		529	
08:00	482	1,851	218	875	354	1,301	258	1,026	836	3,152	476	1,901
08:15	471		232		332		260		803		492	
08:30	455		238		302		238		757		476	
08:45	443		187		313		270		756		457	
09:00	324	1,360	225	866	278	1,036	264	949	602	2,396	489	1,815
09:15	328		224		260		252		588		476	
09:30	354		217		248		215		602		432	
09:45	354		200		250		218		604		418	
10:00	318	1,082	174	605	239	982	212	561	557	2,064	386	1,166
10:15	274		174		248		157		522		331	
10:30	244		133		250		102		494		235	
10:45	246		124		245		90		491		214	
11:00	268	1,061	142	472	242	1,122	84	244	510	2,183	226	716
11:15	261		128		262		66		523		194	
11:30	258		96		306		58		564		154	
11:45	274		106		312		36		586		142	
Totals	9,448		13,520		8,837		13,419		18,285		26,939	
Split%	51.7		50.2		48.3		49.8					
Day Totals		22,968				22,256				45,224		
Day Splits		50.8				49.2						
Peak Hour	08:00		04:30		07:30		05:00		08:00		04:45	
Volume	1,851		1,727		1,415		1,645		3,152		3,344	
Factor	0.96		0.95		0.95		0.93		0.94		0.97	

Data File : D1909020

Thursday, October 10, 2019 Location: Santa Ana PROJECT:

ADT230 SEVENTEENTH ST from COLLEGE AVE to BRISTOL ST. **Prepared by AimTD tel. 714 753 7888**

AM Period	NB	SB	EB	WB		PM Period	NB	SB	EB	WB	
0:30			10	34		12:00			278	256	
0:15			12	27		12:15			290	245	
0:30			9	20		12:30			286	251	
0:45			11 42	17 98	140	12:45			301 1155	242 994	2149
1:00			13	23		13:00			303	267	
1:15			10	15		13:15			298	242	
1:30			8	16		13:30			285	246	
1:45			7 38	13 67	105	13:45			274 1160	294 1049	2209
2:00			6	10		14:00			296	286	
2:15			8	9		14:15			314	275	
2:30			11	12		14:30			348	258	
2:45			7 32	8 39	71	14:45			332 1290	301 1120	2410
3:00			10	12		15:00			320	304	
3:15			12	14		15:15			325	321	
3:30			13	9		15:30			336	313	
3:45			17 52	11 46	98	15:45			342 1323	326 1264	2587
4:00			22	15		16:00			326	343	
4:15			32	13		16:15			358	356	
4:30			33	18		16:30			339	324	
4:45			29 116	26 72	188	16:45			346 1369	375 1398	2767
5:00			56	17		17:00			314	359	
5:15			102	24		17:15			380	356	
5:30			98	51		17:30			419	364	
5:45			105 361	54 146	507	17:45			439 1552	312 1391	2943
6:00			127	75		18:00			377	321	
6:15			170	93		18:15			384	303	
6:30			229	84		18:30			352	297	
6:45			330 856	114 366	1222	18:45			313 1426	316 1237	2663
7:00			392	152		19:00			294	284	
7:15			460	195		19:15			252	252	
7:30			428	266		19:30			213	234	
7:45			361 1641	278 891	2532	19:45			229 988	250 1020	2008
8:00			393	234		20:00			186	210	
8:15			368	201		20:15			173	185	
8:30			374	173		20:30			191	178	
8:45			353 1488	194 802	2290	20:45			179 729	187 760	1489
9:00			344	203		21:00			190	201	
9:15			360	183		21:15			203	194	
9:30			332	198		21:30			173	165	
9:45			318 1354	203 787	2141	21:45			145 711	134 694	1405
10:00			286	216		22:00			113	114	
10:15			273	205		22:15			94	95	
10:30			263	200		22:30			65	75	
10:45			279 1101	231 852	1953	22:45			43 315	82 366	681
11:00			309	217		23:00			24	68	
11:15			314	246		23:15			18	45	
11:30			301	237		23:30			23	47	
11:45			293 1217	228 928	2145	23:45			15 80	32 192	272
Total Vol.			8298	5094	**13392**				12098	11485	**23583**

	NB	SB	Daily Totals EB	WB	Combined
			20396	16579	**36975**
			AM	**PM**	
Split %			62.0%	38.0% **36.2%**	51.3% 48.7% **63.8%**
Peak Hour	0:30	0:30	7:15	11:45 **7:15**	17:30 16:45 **17:15**
Volume			1642	980 **2615**	1619 1454 **2968**
P.H.F.			0.89	0.96 **0.94**	0.92 0.97 **0.95**

pacific@aimtd.com Tell. 714 753 7888

Transportation Studies, Inc.

2640 Walnut Avenue, Suite L

Tustin, CA. 92780

Location : BRISTOL STREET — Site: SANTA ANA

Segment : CIVIC CENTER DR TO SEVENTEENTH — Date: 09/17/19

Client : CITY SANTA ANA — Day: Tuesday

Interval	NB				SB				Combined			
Begin	AM		PM		AM		PM		AM		PM	
12:00	71	177	288	1,161	56	212	288	1,028	127	389	576	2,189
12:15	48		274		64		254		112		528	
12:30	26		297		42		242		68		539	
12:45	32		302		50		244		82		546	
01:00	38	118	270	1,194	44	146	256	1,124	82	264	526	2,318
01:15	26		308		42		280		68		588	
01:30	27		300		26		308		53		608	
01:45	27		316		34		280		61		596	
02:00	36	113	318	1,221	30	115	262	1,084	66	228	580	2,305
02:15	34		315		24		230		58		545	
02:30	18		322		30		256		48		578	
02:45	25		266		31		336		56		602	
03:00	30	179	314	1,333	28	103	286	1,138	58	282	600	2,471
03:15	40		308		23		278		63		586	
03:30	45		353		28		274		73		627	
03:45	64		358		24		300		88		658	
04:00	64	432	356	1,479	32	233	340	1,221	96	665	696	2,700
04:15	88		373		52		277		140		650	
04:30	126		374		71		266		197		640	
04:45	154		376		78		338		232		714	
05:00	168	772	359	1,535	75	451	294	1,211	243	1,223	653	2,746
05:15	190		418		88		332		278		750	
05:30	214		366		150		290		364		656	
05:45	200		392		138		295		338		687	
06:00	190	1,082	364	1,510	177	946	298	1,021	367	2,028	662	2,531
06:15	270		408		191		204		461		612	
06:30	292		372		266		264		558		636	
06:45	330		366		312		255		642		621	
07:00	302	1,451	346	1,228	342	1,366	226	926	644	2,817	572	2,154
07:15	376		302		356		252		732		554	
07:30	398		282		342		228		740		510	
07:45	375		298		326		220		701		518	
08:00	356	1,262	225	904	336	1,343	200	863	692	2,605	425	1,767
08:15	334		233		314		219		648		452	
08:30	310		220		356		210		666		430	
08:45	262		226		337		234		599		460	
09:00	264	1,064	204	762	287	1,164	240	933	551	2,228	444	1,695
09:15	272		194		288		222		560		416	
09:30	276		178		292		258		568		436	
09:45	252		186		297		213		549		399	
10:00	283	1,016	136	445	309	1,056	206	629	592	2,072	342	1,074
10:15	245		118		275		179		520		297	
10:30	236		99		234		128		470		227	
10:45	252		92		238		116		490		208	
11:00	210	1,121	84	275	252	1,033	133	409	462	2,154	217	684
11:15	278		87		260		112		538		199	
11:30	341		48		233		80		574		128	
11:45	292		56		288		84		580		140	
Totals	8,787		13,047		8,168		11,587		16,955		24,634	
Split%	51.8		53.0		48.2		47.0					
Day Totals		21,834				19,755				41,589		
Day Splits		52.5				47.5						
Peak Hour	07:15		05:15		07:00		04:45		07:15		04:45	
Volume	1,505		1,540		1,366		1,254		2,865		2,773	
Factor	0.95		0.92		0.96		0.93		0.97		0.92	

Data File : D1909019

Transportation Studies, Inc.

2640 Walnut Avenue, Suite L

Tustin, CA. 92780

Location : FAIRVIEW STREET — Site: SANTA ANA

Segment : SEVENTEENTH ST TO TRASK AVE — Date: 10/01/19

Client : CITY SANTA ANA — Day: Tuesday

Interval	NB				SB				Combined			
Begin	AM		PM		AM		PM		AM		PM	
12:00	46	143	238	970	59	202	228	919	105	345	466	1,889
12:15	46		246		55		232		101		478	
12:30	23		238		48		204		71		442	
12:45	28		248		40		255		68		503	
01:00	24	109	225	1,056	38	131	214	968	62	240	439	2,024
01:15	29		258		36		234		65		492	
01:30	26		276		22		226		48		502	
01:45	30		297		35		294		65		591	
02:00	18	81	324	1,416	30	88	268	1,189	48	169	592	2,605
02:15	19		322		26		311		45		633	
02:30	21		380		13		276		34		656	
02:45	23		390		19		334		42		724	
03:00	30	178	379	1,461	20	107	342	1,267	50	285	721	2,728
03:15	38		334		19		298		57		632	
03:30	68		374		42		310		110		684	
03:45	42		374		26		317		68		691	
04:00	78	443	390	1,560	39	261	315	1,248	117	704	705	2,808
04:15	74		380		46		297		120		677	
04:30	144		394		78		304		222		698	
04:45	147		396		98		332		245		728	
05:00	167	819	420	1,635	102	634	338	1,280	269	1,453	758	2,915
05:15	202		404		132		336		334		740	
05:30	246		419		186		318		432		737	
05:45	204		392		214		288		418		680	
06:00	234	1,037	385	1,489	215	1,070	302	1,144	449	2,107	687	2,633
06:15	223		390		220		290		443		680	
06:30	286		388		287		288		573		676	
06:45	294		326		348		264		642		590	
07:00	296	1,230	362	1,197	359	1,401	225	908	655	2,631	587	2,105
07:15	302		304		322		264		624		568	
07:30	322		279		358		202		680		481	
07:45	310		252		362		217		672		469	
08:00	357	1,108	238	805	390	1,327	208	728	747	2,435	446	1,533
08:15	285		189		363		201		648		390	
08:30	256		186		306		146		562		332	
08:45	210		192		268		173		478		365	
09:00	184	851	188	728	274	1,156	188	636	458	2,007	376	1,364
09:15	245		200		280		145		525		345	
09:30	197		189		288		150		485		339	
09:45	225		151		314		153		539		304	
10:00	236	917	128	413	252	907	147	489	488	1,824	275	902
10:15	218		104		249		140		467		244	
10:30	226		95		204		94		430		189	
10:45	237		86		202		108		439		194	
11:00	197	908	84	261	213	863	94	294	410	1,771	178	555
11:15	213		60		189		65		402		125	
11:30	228		69		216		72		444		141	
11:45	270		48		245		63		515		111	
Totals	7,824		12,991		8,147		11,070		15,971		24,061	
Split%	49.0		54.0		51.0		46.0					
Day Totals		20,815				19,217				40,032		
Day Splits		52.0				48.0						
Peak Hour	07:15		04:45		07:30		04:45		07:30		04:45	
Volume	1,291		1,639		1,473		1,324		2,747		2,963	
Factor	0.90		0.98		0.94		0.98		0.92		0.98	

* Data File : D1909076

Transportation Studies, Inc.

2640 Walnut Avenue, Suite L

Tustin, CA. 92780

Location : BRISTOL STREET — Site: SANTA ANA

Segment : MCFADDEN AVE TO FIRST ST — Date: 09/17/19

Client : CITY SANTA ANA — Day: Tuesday

Interval	NB				SB				Combined			
Begin	AM		PM		AM		PM		AM		PM	
12:00	62	173	240	1,016	59	185	264	962	121	358	504	1,978
12:15	47		238		55		224		102		462	
12:30	30		253		37		230		67		483	
12:45	34		285		34		244		68		529	
01:00	32	114	234	1,114	44	135	202	943	76	249	436	2,057
01:15	24		302		38		218		62		520	
01:30	22		290		26		246		48		536	
01:45	36		288		27		277		63		565	
02:00	32	120	294	1,312	21	111	275	1,107	53	231	569	2,419
02:15	32		318		23		242		55		560	
02:30	29		324		27		306		56		630	
02:45	27		376		40		284		67		660	
03:00	27	136	412	1,701	26	107	316	1,282	53	243	728	2,983
03:15	33		468		17		342		50		810	
03:30	28		425		30		305		58		730	
03:45	48		396		34		319		82		715	
04:00	52	264	424	1,730	39	279	318	1,381	91	543	742	3,111
04:15	52		444		62		350		114		794	
04:30	84		435		100		338		184		773	
04:45	76		427		78		375		154		802	
05:00	117	493	432	1,778	94	499	360	1,504	211	992	792	3,282
05:15	112		448		82		394		194		842	
05:30	130		441		156		366		286		807	
05:45	134		457		167		384		301		841	
06:00	130	756	441	1,644	176	1,016	338	1,262	306	1,772	779	2,906
06:15	172		439		188		326		360		765	
06:30	216		393		264		296		480		689	
06:45	238		371		388		302		626		673	
07:00	239	1,371	346	1,289	412	1,829	262	1,004	651	3,200	608	2,293
07:15	352		344		484		296		836		640	
07:30	420		310		465		226		885		536	
07:45	360		289		468		220		828		509	
08:00	343	1,240	263	953	430	1,719	208	819	773	2,959	471	1,772
08:15	300		263		435		195		735		458	
08:30	292		189		446		227		738		416	
08:45	305		238		408		189		713		427	
09:00	208	872	168	677	265	1,107	223	820	473	1,979	391	1,497
09:15	220		190		260		191		480		381	
09:30	240		171		301		220		541		391	
09:45	204		148		281		186		485		334	
10:00	230	862	161	519	277	998	158	537	507	1,860	319	1,056
10:15	210		130		238		149		448		279	
10:30	216		110		240		122		456		232	
10:45	206		118		243		108		449		226	
11:00	205	967	78	286	218	942	82	306	423	1,909	160	592
11:15	254		76		227		96		481		172	
11:30	256		66		222		64		478		130	
11:45	252		66		275		64		527		130	
Totals	7,368		14,019		8,927		11,927		16,295		25,946	
Split%	45.2		54.0		54.8		46.0					
Day Totals		21,387				20,854				42,241		
Day Splits		50.6				49.4						
Peak Hour	07:15		05:15		07:15		05:00		07:15		05:00	
Volume	1,475		1,787		1,847		1,504		3,322		3,282	
Factor	0.88		0.98		0.95		0.95		0.94		0.97	

Data File : D1909017

Transportation Studies, Inc.

2640 Walnut Avenue, Suite L

Tustin, CA. 92780

Location : CIVIC CENTER DRIVE
Segment : BRISTOL ST TO FLOWER ST
Client : CITY SANTA ANA

Site: SANTA ANA
Date: 09/18/19
Day: Wednesday

Interval	EB				WB				Combined			
Begin	AM		PM		AM		PM		AM		PM	
12:00	13	36	98	441	8	42	139	489	21	78	237	930
12:15	8		97		13		122		21		219	
12:30	9		118		8		138		17		256	
12:45	6		128		13		90		19		218	
01:00	7	23	132	549	4	33	96	593	11	56	228	1,142
01:15	10		152		12		156		22		308	
01:30	3		145		15		186		18		331	
01:45	3		120		2		155		5		275	
02:00	6	21	122	507	5	19	129	572	11	40	251	1,079
02:15	4		130		6		129		10		259	
02:30	5		119		4		132		9		251	
02:45	6		136		4		182		10		318	
03:00	6	27	190	635	6	24	146	645	12	51	336	1,280
03:15	3		151		3		163		6		314	
03:30	9		160		12		170		21		330	
03:45	9		134		3		166		12		300	
04:00	7	65	154	588	7	60	206	859	14	125	360	1,447
04:15	11		138		7		181		18		319	
04:30	19		140		26		234		45		374	
04:45	28		156		20		238		48		394	
05:00	30	171	166	659	24	129	273	969	54	300	439	1,628
05:15	45		157		22		246		67		403	
05:30	41		168		28		250		69		418	
05:45	55		168		55		200		110		368	
06:00	67	425	156	501	58	310	198	573	125	735	354	1,074
06:15	83		130		58		140		141		270	
06:30	119		134		84		121		203		255	
06:45	156		81		110		114		266		195	
07:00	175	1,064	94	316	120	867	88	353	295	1,931	182	669
07:15	282		80		213		86		495		166	
07:30	293		82		258		92		551		174	
07:45	314		60		276		87		590		147	
08:00	240	836	62	240	196	571	78	260	436	1,407	140	500
08:15	243		61		177		74		420		135	
08:30	189		57		110		50		299		107	
08:45	164		60		88		58		252		118	
09:00	104	396	61	196	76	299	66	200	180	695	127	396
09:15	96		64		64		40		160		104	
09:30	92		40		76		46		168		86	
09:45	104		31		83		48		187		79	
10:00	70	322	40	122	90	324	45	127	160	646	85	249
10:15	82		33		68		34		150		67	
10:30	102		27		76		28		178		55	
10:45	68		22		90		20		158		42	
11:00	74	354	16	53	99	470	23	80	173	824	39	133
11:15	72		9		111		22		183		31	
11:30	88		12		128		20		216		32	
11:45	120		16		132		15		252		31	
Totals	3,740		4,807		3,148		5,720		6,888		10,527	
Split%	54.3		45.7		45.7		54.3					
Day Totals		8,547				8,868				17,415		
Day Splits		49.1				50.9						
Peak Hour	07:15		05:00		07:15		04:45		07:15		04:45	
Volume	1,129		659		943		1,007		2,072		1,654	
Factor	0.90		0.98		0.85		0.92		0.88		0.94	

Data File : D1909038

Transportation Studies, Inc.

2640 Walnut Avenue, Suite L

Tustin, CA. 92780

Location : FLOWER STREET — Site: SANTA ANA

Segment : MCFADDEN AVE TO FIRST ST — Date: 09/10/19

Client : CITY SANTA ANA — Day: Tuesday

Interval	NB				SB				Combined			
Begin	AM		PM		AM		PM		AM		PM	
12:00	22	58	65	330	24	82	69	305	46	140	134	635
12:15	13		88		15		76		28		164	
12:30	12		92		18		82		30		174	
12:45	11		85		25		78		36		163	
01:00	6	29	76	370	12	44	78	332	18	73	154	702
01:15	16		83		8		70		24		153	
01:30	5		101		10		93		15		194	
01:45	2		110		14		91		16		201	
02:00	5	17	100	575	11	37	100	438	16	54	200	1,013
02:15	5		150		9		110		14		260	
02:30	1		169		9		98		10		267	
02:45	6		156		8		130		14		286	
03:00	8	34	174	682	6	38	158	531	14	72	332	1,213
03:15	5		178		7		120		12		298	
03:30	8		164		14		121		22		285	
03:45	13		166		11		132		24		298	
04:00	15	86	172	729	9	76	136	536	24	162	308	1,265
04:15	20		187		11		124		31		311	
04:30	29		190		24		140		53		330	
04:45	22		180		32		136		54		316	
05:00	44	230	175	788	28	205	142	543	72	435	317	1,331
05:15	54		220		46		132		100		352	
05:30	62		186		70		130		132		316	
05:45	70		207		61		139		131		346	
06:00	70	365	209	754	54	332	134	490	124	697	343	1,244
06:15	81		197		92		106		173		303	
06:30	96		190		96		132		192		322	
06:45	118		158		90		118		208		276	
07:00	122	627	122	404	112	498	96	383	234	1,125	218	787
07:15	196		105		128		96		324		201	
07:30	182		96		126		96		308		192	
07:45	127		81		132		95		259		176	
08:00	156	519	90	309	137	548	80	297	293	1,067	170	606
08:15	124		83		133		82		257		165	
08:30	133		64		142		74		275		138	
08:45	106		72		136		61		242		133	
09:00	76	293	60	217	82	306	82	276	158	599	142	493
09:15	75		61		64		62		139		123	
09:30	68		49		74		68		142		117	
09:45	74		47		86		64		160		111	
10:00	68	283	35	144	62	293	60	195	130	576	95	339
10:15	62		42		78		49		140		91	
10:30	77		39		72		51		149		90	
10:45	76		28		81		35		157		63	
11:00	53	283	25	84	76	322	52	150	129	605	77	234
11:15	73		27		89		43		162		70	
11:30	77		19		77		25		154		44	
11:45	80		13		80		30		160		43	
Totals	2,824		5,386		2,781		4,476		5,605		9,862	
Split%	50.4		54.6		49.6		45.4					
Day Totals		8,210				7,257				15,467		
Day Splits		53.1				46.9						
Peak Hour	07:15		05:15		08:00		04:30		07:15		05:15	
Volume	661		822		548		550		1,184		1,357	
Factor	0.84		0.93		0.96		0.97		0.91		0.96	

Data File : D1909104

Thursday, October 03, 2019 Location: Santa Ana PROJECT:

ADT167 MAIN ST from SEVENTEENTH ST to SANTA CLARA AVE. **Prepared by AimTD tel. 714 253 7888**

AM Period	NB		SB		EB	WB		PM Period	NB		SB		EB	WB	
0:00	58		42					12:00	227		212				
0:15	53		30					12:15	236		221				
0:30	54		41					12:30	224		230				
0:45	36	201	35	148			349	12:45	239	926	219	882			1808
1:00	46		29					13:00	268		218				
1:15	35		28					13:15	266		224				
1:30	27		26					13:30	241		205				
1:45	21	129	22	105			234	13:45	267	1042	197	844			1886
2:00	34		20					14:00	274		198				
2:15	41		34					14:15	257		201				
2:30	30		25					14:30	286		213				
2:45	26	131	21	100			231	14:45	272	1089	219	831			1920
3:00	21		16					15:00	269		216				
3:15	25		12					15:15	327		234				
3:30	30		8					15:30	312		265				
3:45	32	108	11	47			155	15:45	313	1221	255	970			2191
4:00	35		12					16:00	306		233				
4:15	56		21					16:15	341		238				
4:30	76		32					16:30	335		295				
4:45	87	254	38	103			357	16:45	291	1273	248	1014			2287
5:00	101		40					17:00	286		254				
5:15	99		62					17:15	295		266				
5:30	137		64					17:30	321		267				
5:45	144	481	98	264			745	17:45	309	1211	270	1057			2268
6:00	137		114					18:00	326		253				
6:15	142		157					18:15	335		246				
6:30	161		234					18:30	320		216				
6:45	159	599	291	796			1395	18:45	284	1265	204	919			2184
7:00	187		318					19:00	260		180				
7:15	214		278					19:15	256		160				
7:30	204		258					19:30	240		139				
7:45	267	872	269	1123			1995	19:45	222	978	109	588			1566
8:00	234		298					20:00	197		125				
8:15	213		276					20:15	195		118				
8:30	204		293					20:30	178		113				
8:45	202	853	258	1125			1978	20:45	186	756	96	452			1208
9:00	215		242					21:00	195		99				
9:15	186		223					21:15	175		90				
9:30	170		210					21:30	155		124				
9:45	182	753	201	876			1629	21:45	138	663	106	419			1082
10:00	195		197					22:00	116		87				
10:15	177		185					22:15	124		76				
10:30	171		175					22:30	99		64				
10:45	185	728	204	761			1489	22:45	54	393	45	272			665
11:00	198		189					23:00	58		55				
11:15	213		195					23:15	62		47				
11:30	217		201					23:30	56		42				
11:45	235	863	214	799			1662	23:45	70	246	53	197			443
Total Vol.		5972		6247			**12219**			11063		8445			**19508**

Daily Totals

NB	SB	EB	WB	**Combined**
17035	14692			**31727**

	AM			**PM**		
Split %	48.9%	51.1%	**38.5%**	56.7%	43.3%	**61.5%**
Peak Hour	11:45	6:45	**7:45**	15:45	16:30	**17:30**
Volume	922	1145	**2054**	1295	1063	**2327**
P.H.F.	0.98	0.90	**0.96**	0.95	0.90	**0.99**

cs@aimtd.com Tell. 714 253 7888

Wednesday, October 02, 2019 Location: Santa Ana PROJECT:

ADT165 MAIN ST from CIVIC CENTER DR to WASHINGTON AVE. **Prepared by AimTD tel. 714 753 7888**

AM Period	NB		SB		EB	WB		PM Period	NB		SB		EB	WB	
0:00	57		48					12:00	229		189				
0:15	51		43					12:15	242		182				
0:30	50		47					12:30	257		213				
0:45	30	188	38	176			364	12:45	279	1007	209	793			1800
1:00	17		34					13:00	311		199				
1:15	14		28					13:15	256		213				
1:30	21		23					13:30	276		199				
1:45	35	87	19	104			191	13:45	277	1120	208	819			1939
2:00	33		22					14:00	310		231				
2:15	26		17					14:15	289		186				
2:30	30		19					14:30	297		194				
2:45	18	107	18	76			183	14:45	284	1180	213	824			2004
3:00	17		16					15:00	291		232				
3:15	12		20					15:15	275		214				
3:30	24		30					15:30	304		257				
3:45	37	90	32	98			188	15:45	329	1199	217	920			2119
4:00	49		27					16:00	335		230				
4:15	45		35					16:15	344		206				
4:30	71		43					16:30	365		241				
4:45	98	263	38	143			406	16:45	356	1400	274	951			2351
5:00	91		50					17:00	334		246				
5:15	112		70					17:15	302		232				
5:30	150		108					17:30	316		245				
5:45	145	498	133	361			859	17:45	324	1276	234	957			2233
6:00	153		152					18:00	315		215				
6:15	146		194					18:15	349		157				
6:30	208		202					18:30	331		139				
6:45	223	730	238	786			1516	18:45	297	1292	147	658			1950
7:00	242		250					19:00	279		162				
7:15	257		303					19:15	259		158				
7:30	268		300					19:30	219		148				
7:45	276	1043	337	1190			2233	19:45	218	975	165	633			1608
8:00	271		314					20:00	233		145				
8:15	238		286					20:15	197		150				
8:30	203		320					20:30	216		153				
8:45	194	906	297	1217			2123	20:45	198	844	134	582			1426
9:00	186		257					21:00	189		140				
9:15	203		231					21:15	176		157				
9:30	199		228					21:30	170		135				
9:45	186	774	230	946			1720	21:45	154	689	125	557			1246
10:00	214		198					22:00	180		90				
10:15	220		210					22:15	145		79				
10:30	212		178					22:30	118		78				
10:45	204	850	206	792			1642	22:45	106	549	85	332			881
11:00	201		193					23:00	85		92				
11:15	226		177					23:15	75		86				
11:30	217		189					23:30	56		44				
11:45	215	859	210	769			1628	23:45	52	268	57	279			547
Total Vol.	6395		6658				**13053**		11799		8305				**20104**

Daily Totals

NB	SB	EB	WB	Combined
18194	14963			**33157**

	AM			PM		
Split %	49.0%	51.0%	**39.4%**	58.7%	41.3%	**60.6%**
Peak Hour	7:15	7:45	**7:15**	16:00	16:45	**16:15**
Volume	1072	1257	**2326**	1400	997	**2366**
P.H.F.	0.97	0.93	**0.95**	0.97	0.91	**0.94**

pacific@aimtd.com Tell. 714 753 7888

Transportation Studies, Inc.

2640 Walnut Avenue, Suite L

Tustin, CA. 92780

Location : CIVIC CENTER DRIVE

Segment : FLOWER ST TO ROSS ST

Client : CITY SANTA ANA

Site: SANTA ANA

Date: 09/18/19

Day: Wednesday

Interval	WB				EB				Combined			
Begin	AM		PM		AM		PM		AM		PM	
12:00	10	48	122	473	17	53	148	517	27	101	270	990
12:15	17		114		10		131		27		245	
12:30	15		122		12		116		27		238	
12:45	6		115		14		122		20		237	
01:00	9	27	128	640	12	37	137	580	21	64	265	1,220
01:15	5		166		7		146		12		312	
01:30	10		170		12		178		22		348	
01:45	3		176		6		119		9		295	
02:00	4	10	142	510	1	22	149	622	5	32	291	1,132
02:15	4		116		3		138		7		254	
02:30	0		122		15		144		15		266	
02:45	2		130		3		191		5		321	
03:00	5	18	120	524	7	19	215	712	12	37	335	1,236
03:15	3		132		0		169		3		301	
03:30	4		140		4		174		8		314	
03:45	6		132		8		154		14		286	
04:00	6	48	172	710	6	46	172	827	12	94	344	1,537
04:15	4		144		11		182		15		326	
04:30	13		202		12		231		25		433	
04:45	25		192		17		242		42		434	
05:00	24	113	276	929	21	131	248	760	45	244	524	1,689
05:15	16		241		28		172		44		413	
05:30	23		240		40		162		63		402	
05:45	50		172		42		178		92		350	
06:00	52	255	174	490	53	366	163	568	105	621	337	1,058
06:15	54		124		68		154		122		278	
06:30	56		98		114		138		170		236	
06:45	93		94		131		113		224		207	
07:00	112	755	69	285	140	807	92	302	252	1,562	161	587
07:15	172		73		196		78		368		151	
07:30	224		78		214		80		438		158	
07:45	247		65		257		52		504		117	
08:00	238	750	66	220	218	682	66	233	456	1,432	132	453
08:15	218		64		176		50		394		114	
08:30	153		42		140		50		293		92	
08:45	141		48		148		67		289		115	
09:00	100	376	39	178	102	440	47	158	202	816	86	336
09:15	94		46		121		52		215		98	
09:30	100		47		116		35		216		82	
09:45	82		46		101		24		183		70	
10:00	87	335	32	101	94	402	26	101	181	737	58	202
10:15	84		23		104		36		188		59	
10:30	74		28		103		21		177		49	
10:45	90		18		101		18		191		36	
11:00	102	397	17	64	106	555	14	58	208	952	31	122
11:15	91		17		143		18		234		35	
11:30	88		15		150		14		238		29	
11:45	116		15		156		12		272		27	
Totals	3,132		5,124		3,560		5,438		6,692		10,562	
Split%	46.8		48.5		53.2		51.5					
Day Totals		8,256				8,998				17,254		
Day Splits		47.8				52.2						
Peak Hour	07:30		04:45		07:15		04:15		07:30		04:30	
Volume	927		949		885		903		1,792		1,804	
Factor	0.94		0.86		0.86		0.91		0.89		0.86	

Data File : D1909039

Wednesday, October 02, 2019 Location: Santa Ana PROJECT:

ADT208 SANTA ANA BLVD from FLOWER ST to ROSS ST. **Prepared by AimTD tel. 714 753 7888**

AM Period	NB	SB	EB		WB			PM Period	NB	SB	EB		WB		
0:30			7		9			12:00			98		97		
0:15			8		11			12:15			86		89		
0:30			7		9			12:30			94		104		
0:45			2	24	13	42	66	12:45			106	384	108	398	782
1:00			1		10			13:00			89		123		
1:15			1		7			13:15			86		132		
1:30			0		6			13:30			95		105		
1:45			3	5	8	31	36	13:45			79	349	101	461	810
2:00			2		11			14:00			108		96		
2:15			0		7			14:15			89		95		
2:30			2		4			14:30			87		103		
2:45			3	7	2	24	31	14:45			97	381	123	417	798
3:00			6		5			15:00			102		127		
3:15			4		1			15:15			113		145		
3:30			2		0			15:30			103		153		
3:45			3	15	2	8	23	15:45			107	425	167	592	1017
4:00			6		4			16:00			123		159		
4:15			10		5			16:15			156		153		
4:30			13		3			16:30			178		163		
4:45			11	40	8	20	60	16:45			168	625	175	650	1275
5:00			16		12			17:00			156		213		
5:15			24		24			17:15			134		234		
5:30			29		36			17:30			121		204		
5:45			39	108	65	137	245	17:45			102	513	195	846	1359
6:00			54		64			18:00			97		172		
6:15			75		75			18:15			87		142		
6:30			86		78			18:30			103		104		
6:45			103	318	95	312	630	18:45			76	363	123	541	904
7:00			123		121			19:00			86		96		
7:15			189		158			19:15			78		86		
7:30			254		175			19:30			64		74		
7:45			304	870	145	599	1469	19:45			61	289	76	332	621
8:00			234		157			20:00			58		78		
8:15			153		134			20:15			53		61		
8:30			145		109			20:30			43		56		
8:45			126	658	89	489	1147	20:45			37	191	64	259	450
9:00			103		76			21:00			45		64		
9:15			100		89			21:15			35		43		
9:30			87		75			21:30			32		63		
9:45			95	385	78	318	703	21:45			40	152	53	223	375
10:00			76		100			22:00			28		47		
10:15			68		89			22:15			17		41		
10:30			79		96			22:30			23		36		
10:45			81	304	78	363	667	22:45			24	92	27	151	243
11:00			74		86			23:00			14		32		
11:15			89		75			23:15			8		18		
11:30			94		95			23:30			12		20		
11:45			90	347	99	355	702	23:45			11	45	16	86	131
Total Vol.			3081		2698		**5779**				3809		4956		**8765**

Daily Totals

NB	SB	EB	WB	Combined
		6890	7654	**14544**

			AM					PM		
Split %			53.3%	46.7%	**39.7%**			43.5%	56.5%	**60.3%**
Peak Hour	0:30	0:30	7:15	7:15	**7:15**			16:15	17:00	**16:30**
Volume			981	635	**1616**			658	846	**1421**
P.H.F.			0.81	0.91	**0.90**			0.92	0.90	**0.96**

pacific@aimtd.com Tell. 714 753 7888

Transportation Studies, Inc.

2640 Walnut Avenue, Suite L

Tustin, CA. 92780

Location : FIRST STREET — Site: SANTA ANA

Segment : MAIN ST TO STANDARD AVE — Date: 09/11/19

Client : CITY SANTA ANA — Day: Wednesday

Interval	EB				WB				Combined			
Begin	AM		PM		AM		PM		AM		PM	
12:00	54	193	299	1,249	58	185	274	1,115	112	378	573	2,364
12:15	49		306		52		282		101		588	
12:30	42		320		46		269		88		589	
12:45	48		324		29		290		77		614	
01:00	38	144	325	1,375	28	112	316	1,211	66	256	641	2,586
01:15	32		362		34		248		66		610	
01:30	28		356		23		334		51		690	
01:45	46		332		27		313		73		645	
02:00	31	116	330	1,314	36	136	333	1,369	67	252	663	2,683
02:15	31		324		34		326		65		650	
02:30	25		323		36		350		61		673	
02:45	29		337		30		360		59		697	
03:00	22	163	352	1,395	21	117	378	1,446	43	280	730	2,841
03:15	37		356		24		360		61		716	
03:30	42		315		32		362		74		677	
03:45	62		372		40		346		102		718	
04:00	56	376	324	1,440	33	135	356	1,451	89	511	680	2,891
04:15	86		362		26		368		112		730	
04:30	101		392		38		352		139		744	
04:45	133		362		38		375		171		737	
05:00	135	791	381	1,560	60	304	374	1,454	195	1,095	755	3,014
05:15	162		380		61		358		223		738	
05:30	236		406		72		354		308		760	
05:45	258		393		111		368		369		761	
06:00	258	1,243	330	1,294	118	566	352	1,279	376	1,809	682	2,573
06:15	286		338		134		313		420		651	
06:30	365		324		133		306		498		630	
06:45	334		302		181		308		515		610	
07:00	378	1,557	310	1,171	230	1,266	298	1,109	608	2,823	608	2,280
07:15	394		339		311		273		705		612	
07:30	384		264		355		278		739		542	
07:45	401		258		370		260		771		518	
08:00	375	1,422	221	866	291	1,086	192	772	666	2,508	413	1,638
08:15	384		213		276		208		660		421	
08:30	331		210		269		184		600		394	
08:45	332		222		250		188		582		410	
09:00	344	1,238	166	639	259	1,014	171	659	603	2,252	337	1,298
09:15	322		183		213		162		535		345	
09:30	278		154		276		162		554		316	
09:45	294		136		266		164		560		300	
10:00	270	1,088	125	446	248	998	158	566	518	2,086	283	1,012
10:15	270		118		242		140		512		258	
10:30	256		119		242		136		498		255	
10:45	292		84		266		132		558		216	
11:00	276	1,157	90	285	246	1,068	102	336	522	2,225	192	621
11:15	270		69		268		80		538		149	
11:30	290		68		276		66		566		134	
11:45	321		58		278		88		599		146	
Totals	9,488		13,034		6,987		12,767		16,475		25,801	
Split%	57.6		50.5		42.4		49.5					
Day Totals		22,522				19,754				42,276		
Day Splits		53.3				46.7						
Peak Hour	07:00		05:00		07:15		04:15		07:15		05:00	
Volume	1,557		1,560		1,327		1,469		2,881		3,014	
Factor	0.97		0.96		0.90		0.98		0.93		0.99	

Data File : D1909094

Thursday, October 10, 2019 Location: Santa Ana PROJECT:

ADT161 MAIN ST from McFADDEN AVE to CHESTNUT AVE. **Prepared by AimTD tel. 714 753 7888**

AM Period	NB		SB		EB	WB		PM Period	NB		SB		EB	WB	
0:00	32		29					12:00	221		230				
0:15	21		24					12:15	195		205				
0:30	24		14					12:30	162		265				
0:45	18	95	17	84			179	12:45	182	760	257	957			1717
1:00	23		23					13:00	156		244				
1:15	14		16					13:15	186		214				
1:30	18		18					13:30	207		225				
1:45	16	71	21	78			149	13:45	174	723	251	934			1657
2:00	18		24					14:00	207		263				
2:15	22		25					14:15	173		236				
2:30	19		21					14:30	187		244				
2:45	23	82	24	94			176	14:45	201	768	303	1046			1814
3:00	21		17					15:00	197		285				
3:15	29		19					15:15	199		295				
3:30	20		25					15:30	178		300				
3:45	28	98	24	85			183	15:45	175	749	336	1216			1965
4:00	24		27					16:00	196		354				
4:15	34		48					16:15	204		313				
4:30	42		54					16:30	193		334				
4:45	39	139	66	195			334	16:45	213	806	326	1327			2133
5:00	52		94					17:00	264		295				
5:15	76		107					17:15	268		303				
5:30	92		100					17:30	248		265				
5:45	106	326	112	413			739	17:45	256	1036	314	1177			2213
6:00	148		122					18:00	224		317				
6:15	203		120					18:15	220		336				
6:30	261		126					18:30	189		309				
6:45	250	862	142	510			1372	18:45	176	809	299	1261			2070
7:00	268		210					19:00	187		275				
7:15	271		189					19:15	183		231				
7:30	294		264					19:30	164		207				
7:45	289	1122	252	915			2037	19:45	149	683	175	888			1571
8:00	285		231					20:00	139		154				
8:15	270		207					20:15	123		167				
8:30	316		197					20:30	110		125				
8:45	234	1105	179	814			1919	20:45	114	486	103	549			1035
9:00	205		155					21:00	99		132				
9:15	203		200					21:15	112		109				
9:30	187		185					21:30	118		113				
9:45	181	776	192	732			1508	21:45	96	425	94	448			873
10:00	175		200					22:00	75		104				
10:15	164		209					22:15	88		92				
10:30	160		184					22:30	78		108				
10:45	170	669	213	806			1475	22:45	63	304	85	389			693
11:00	158		197					23:00	52		81				
11:15	196		215					23:15	50		79				
11:30	209		194					23:30	46		56				
11:45	195	758	215	821			1579	23:45	34	182	38	254			436
Total Vol.	6103		5547				**11650**		7731		10446				**18177**

Daily Totals

NB	SB	EB	WB	Combined
13834	15993			**29827**

	AM			PM		
Split %	52.4%	47.6%	**39.1%**	42.5%	57.5%	**60.9%**
Peak Hour	7:45	7:30	**7:30**	17:00	15:45	**17:00**
Volume	1160	954	**2092**	1036	1337	**2213**
P.H.F.	0.92	0.90	**0.94**	0.96	0.94	**0.97**

pacific@aimtd.com Tell. 714 753 7888

Transportation Studies, Inc.

2640 Walnut Avenue, Suite L

Tustin, CA. 92780

Location : GRAND AVENUE — Site: SANTA ANA

Segment : SANTA CLARA AVE TO FAIRHAVEN — Date: 09/12/19

Client : CITY SANTA ANA — Day: Thursday

Interval	NB				SB				Combined			
Begin	AM		PM		AM		PM		AM		PM	
12:00	21	72	192	780	21	81	199	746	42	153	391	1,526
12:15	15		200		27		177		42		377	
12:30	20		212		17		170		37		382	
12:45	16		176		16		200		32		376	
01:00	12	43	190	804	10	41	214	722	22	84	404	1,526
01:15	11		213		12		156		23		369	
01:30	11		198		12		164		23		362	
01:45	9		203		7		188		16		391	
02:00	14	57	209	968	7	36	184	814	21	93	393	1,782
02:15	16		234		12		202		28		436	
02:30	15		251		6		222		21		473	
02:45	12		274		11		206		23		480	
03:00	10	59	248	1,055	8	51	208	900	18	110	456	1,955
03:15	12		244		14		254		26		498	
03:30	21		285		6		210		27		495	
03:45	16		278		23		228		39		506	
04:00	24	143	304	1,253	16	116	213	917	40	259	517	2,170
04:15	32		307		26		226		58		533	
04:30	41		316		38		250		79		566	
04:45	46		326		36		228		82		554	
05:00	62	302	353	1,463	26	260	287	1,099	88	562	640	2,562
05:15	62		332		56		294		118		626	
05:30	87		406		74		270		161		676	
05:45	91		372		104		248		195		620	
06:00	78	432	354	1,319	132	1,016	224	769	210	1,448	578	2,088
06:15	96		360		199		172		295		532	
06:30	132		320		306		180		438		500	
06:45	126		285		379		193		505		478	
07:00	140	777	228	799	383	1,728	176	659	523	2,505	404	1,458
07:15	192		214		414		178		606		392	
07:30	227		189		481		153		708		342	
07:45	218		168		450		152		668		320	
08:00	189	675	134	524	477	1,806	144	509	666	2,481	278	1,033
08:15	170		128		469		134		639		262	
08:30	168		142		415		117		583		259	
08:45	148		120		445		114		593		234	
09:00	148	575	126	404	422	1,174	124	427	570	1,749	250	831
09:15	125		102		274		111		399		213	
09:30	136		90		230		94		366		184	
09:45	166		86		248		98		414		184	
10:00	175	627	96	292	184	686	88	241	359	1,313	184	533
10:15	156		84		184		54		340		138	
10:30	150		64		164		49		314		113	
10:45	146		48		154		50		300		98	
11:00	164	693	43	149	166	674	48	170	330	1,367	91	319
11:15	160		46		152		42		312		88	
11:30	176		36		178		34		354		70	
11:45	193		24		178		46		371		70	
Totals	4,455		9,810		7,669		7,973		12,124		17,783	
Split%	36.7		55.2		63.3		44.8					
Day Totals		14,265				15,642				29,907		
Day Splits		47.7				52.3						
Peak Hour	07:15		05:30		07:30		05:00		07:30		05:00	
Volume	826		1,492		1,877		1,099		2,681		2,562	
Factor	0.91		0.92		0.98		0.93		0.95		0.95	

Data File : D1909127

Transportation Studies, Inc.

2640 Walnut Avenue, Suite L

Tustin, CA. 92780

Location : GRAND AVENUE — Site: SANTA ANA

Segment : FOURTH ST TO SANTA ANA BLVD — Date: 09/12/19

Client : CITY SANTA ANA — Day: Thursday

Interval	NB				SB				Combined			
Begin	AM		PM		AM		PM		AM		PM	
12:00	44	105	252	1,022	25	101	257	918	69	206	509	1,940
12:15	26		266		33		227		59		493	
12:30	15		250		24		237		39		487	
12:45	20		254		19		197		39		451	
01:00	27	103	292	1,179	23	84	242	842	50	187	534	2,021
01:15	20		270		21		187		41		457	
01:30	31		293		27		192		58		485	
01:45	25		324		13		221		38		545	
02:00	19	80	360	1,415	18	61	183	866	37	141	543	2,281
02:15	26		331		13		229		39		560	
02:30	22		336		10		204		32		540	
02:45	13		388		20		250		33		638	
03:00	14	103	386	1,579	13	85	224	872	27	188	610	2,451
03:15	27		379		14		218		41		597	
03:30	30		423		26		206		56		629	
03:45	32		391		32		224		64		615	
04:00	48	245	370	1,627	33	279	242	886	81	524	612	2,513
04:15	55		409		58		218		113		627	
04:30	62		398		80		212		142		610	
04:45	80		450		108		214		188		664	
05:00	95	492	442	1,780	85	614	224	947	180	1,106	666	2,727
05:15	110		462		134		271		244		733	
05:30	164		444		175		229		339		673	
05:45	123		432		220		223		343		655	
06:00	138	692	480	1,766	184	1,045	221	763	322	1,737	701	2,529
06:15	158		460		205		181		363		641	
06:30	206		410		260		175		466		585	
06:45	190		416		396		186		586		602	
07:00	225	1,055	350	1,080	384	1,448	176	605	609	2,503	526	1,685
07:15	260		270		382		148		642		418	
07:30	288		270		348		143		636		413	
07:45	282		190		334		138		616		328	
08:00	230	886	206	722	460	1,892	134	507	690	2,778	340	1,229
08:15	228		178		487		111		715		289	
08:30	224		180		499		142		723		322	
08:45	204		158		446		120		650		278	
09:00	210	912	141	564	257	1,028	123	448	467	1,940	264	1,012
09:15	226		144		316		115		542		259	
09:30	234		149		227		118		461		267	
09:45	242		130		228		92		470		222	
10:00	242	896	118	395	212	788	104	271	454	1,684	222	666
10:15	190		112		186		65		376		177	
10:30	225		85		194		46		419		131	
10:45	239		80		196		56		435		136	
11:00	264	1,003	63	219	182	877	44	168	446	1,880	107	387
11:15	245		62		237		48		482		110	
11:30	256		60		198		35		454		95	
11:45	238		34		260		41		498		75	
Totals	6,572		13,348		8,302		8,093		14,874		21,441	
Split%	44.2		62.3		55.8		37.7					
Day Totals		19,920				16,395				36,315		
Day Splits		54.9				45.1						
Peak Hour	07:15		05:15		08:00		05:00		08:00		05:15	
Volume	1,060		1,818		1,892		947		2,778		2,762	
Factor	0.92		0.95		0.95		0.87		0.96		0.94	

* Data File : D1909124

Tuesday, September 24, 2019 CITY: Santa Ana PROJECT: SC

ADT218 SANTA CLARA AVE from GR to AVE to TUSTIN AVE. **Prepared by AimTD tel. 714 253 7888**

AM Period	NB	SB	EB		WB			PM Period	NB	SB	EB		WB		
0:00			4		4			12:00			72		69		
0:15			8		3			12:15			77		73		
0:30			5		5			12:30			82		67		
0:45			3	20	3	15	35	12:45			69	300	87	296	596
1:00			6		5			13:00			82		66		
1:15			4		2			13:15			64		97		
1:30			2		3			13:30			88		85		
1:45			3	15	3	13	28	13:45			71	305	95	343	648
2:00			3		8			14:00			83		76		
2:15			0		0			14:15			95		81		
2:30			0		6			14:30			127		84		
2:45			2	5	0	14	19	14:45			108	413	88	329	742
3:00			4		2			15:00			93		99		
3:15			6		4			15:15			103		94		
3:30			3		6			15:30			110		97		
3:45			4	17	4	16	33	15:45			106	412	107	397	809
4:00			8		4			16:00			118		98		
4:15			6		4			16:15			110		115		
4:30			10		4			16:30			83		117		
4:45			16	40	11	23	63	16:45			115	426	113	443	869
5:00			11		16			17:00			117		136		
5:15			14		12			17:15			110		124		
5:30			28		26			17:30			144		136		
5:45			24	77	17	71	148	17:45			98	469	128	524	993
6:00			22		20			18:00			116		148		
6:15			42		34			18:15			92		98		
6:30			61		52			18:30			82		116		
6:45			49	174	58	164	338	18:45			77	367	87	449	816
7:00			70		61			19:00			52		79		
7:15			121		78			19:15			72		83		
7:30			119		108			19:30			68		53		
7:45			120	430	112	359	789	19:45			42	234	49	264	498
8:00			107		85			20:00			40		47		
8:15			92		67			20:15			55		25		
8:30			67		70			20:30			47		45		
8:45			77	343	68	290	633	20:45			35	177	39	156	333
9:00			81		57			21:00			48		34		
9:15			69		76			21:15			38		41		
9:30			72		54			21:30			28		27		
9:45			70	292	61	248	540	21:45			41	155	23	125	280
10:00			58		51			22:00			25		19		
10:15			80		61			22:15			25		19		
10:30			72		64			22:30			15		19		
10:45			65	275	62	238	513	22:45			19	84	19	76	160
11:00			61		51			23:00			15		18		
11:15			56		60			23:15			13		6		
11:30			82		68			23:30			8		6		
11:45			72	271	69	248	519	23:45			7	43	5	35	78
Total Vol.			1959		1699		**3658**				3385		3437		**6822**

Daily Totals

NB	SB	EB	WB	Combined
		5344	5136	**10480**

	AM			PM		
Split %	53.6%	46.4%	**34.9%**	49.6%	50.4%	**65.1%**
Peak Hour	7:15	7:15	**7:15**	16:45	17:15	**17:15**
Volume	467	383	**850**	486	536	**1004**
P.H.F.	0.96	0.85	**0.92**	0.84	0.91	**0.90**

Wednesday, September 25, 2019 CITY: Santa Ana PROJECT: SC

ADT258 TUSTIN AVE from SANTA CLARA AVE to FAIRHAVEN AVE. **Prepared by AimTD tel. 714 253 7888**

AM Period	NB		SB		EB	WB		PM Period	NB		SB		EB	WB	
0:00	19		25					12:00	196		232				
0:15	17		18					12:15	257		239				
0:30	21		24					12:30	219		251				
0:45	21	78	16	83			161	12:45	262	934	279	1001			1935
1:00	21		24					13:00	231		256				
1:15	9		14					13:15	246		221				
1:30	9		11					13:30	259		248				
1:45	9	48	4	53			101	13:45	272	1008	245	970			1978
2:00	11		12					14:00	263		229				
2:15	11		11					14:15	280		248				
2:30	8		12					14:30	270		220				
2:45	8	38	10	45			83	14:45	286	1099	253	950			2049
3:00	8		8					15:00	277		267				
3:15	2		8					15:15	279		300				
3:30	6		16					15:30	294		259				
3:45	20	36	16	48			84	15:45	318	1168	257	1083			2251
4:00	9		14					16:00	366		275				
4:15	24		26					16:15	348		267				
4:30	25		36					16:30	388		272				
4:45	24	82	41	117			199	16:45	432	1534	271	1085			2619
5:00	36		49					17:00	516		335				
5:15	50		58					17:15	437		307				
5:30	57		60					17:30	445		325				
5:45	69	212	110	277			489	17:45	429	1827	269	1236			3063
6:00	68		157					18:00	477		283				
6:15	74		218					18:15	347		224				
6:30	97		410					18:30	300		211				
6:45	92	331	481	1266			1597	18:45	310	1434	206	924			2358
7:00	119		548					19:00	260		208				
7:15	125		663					19:15	243		185				
7:30	148		672					19:30	203		156				
7:45	175	567	682	2565			3132	19:45	148	854	162	711			1565
8:00	166		671					20:00	205		162				
8:15	161		665					20:15	145		142				
8:30	156		647					20:30	117		125				
8:45	164	647	572	2555			3202	20:45	134	601	130	559			1160
9:00	172		479					21:00	108		125				
9:15	152		349					21:15	130		94				
9:30	168		270					21:30	94		94				
9:45	169	661	278	1376			2037	21:45	77	409	100	413			822
10:00	177		241					22:00	89		83				
10:15	181		238					22:15	61		62				
10:30	165		231					22:30	66		41				
10:45	187	710	221	931			1641	22:45	50	266	65	251			517
11:00	211		203					23:00	69		49				
11:15	188		240					23:15	40		32				
11:30	189		201					23:30	34		33				
11:45	233	821	234	878			1699	23:45	31	174	29	143			317
Total Vol.		4231		10194			**14425**			11308		9326			**20634**

Daily Totals

NB	SB	EB	WB	**Combined**
15539	19520			**35059**

	AM			**PM**		
Split %	29.3%	70.7%	**41.1%**	54.8%	45.2%	**58.9%**
Peak Hour	11:45	7:30	**7:30**	16:45	16:45	**16:45**
Volume	905	2690	**3340**	1830	1238	**3068**
P.H.F.	0.88	0.99	**0.97**	0.88	0.92	**0.90**

cs@aimtd.com Tell. 714 253 7888

Thursday, October 10, 2019 Location: Santa Ana PROJECT:

ADT239 SEVENTEENTH ST from CABRILLO PARK DR to TUSTIN AVE. **Prepared by AimTD tel. 714 253 7888**

AM Period	NB	SB	EB		WB			PM Period	NB	SB	EB		WB		
0:30			12		34			12:00			256		258		
0:15			15		23			12:15			262		290		
0:30			9		17			12:30			304		306		
0:45			8	44	19	93	137	12:45			256	1078	317	1171	2249
1:00			7		12			13:00			245		291		
1:15			10		14			13:15			215		295		
1:30			7		11			13:30			277		326		
1:45			9	33	8	45	78	13:45			244	981	283	1195	2176
2:00			7		10			14:00			283		278		
2:15			5		14			14:15			261		229		
2:30			10		16			14:30			258		263		
2:45			5	27	9	49	76	14:45			235	1037	293	1063	2100
3:00			7		8			15:00			252		276		
3:15			5		13			15:15			245		287		
3:30			9		15			15:30			250		263		
3:45			9	30	8	44	74	15:45			248	995	319	1145	2140
4:00			12		7			16:00			273		316		
4:15			15		13			16:15			319		276		
4:30			25		21			16:30			302		311		
4:45			41	93	27	68	161	16:45			313	1207	290	1193	2400
5:00			52		28			17:00			323		314		
5:15			67		41			17:15			356		313		
5:30			62		57			17:30			374		349		
5:45			68	249	54	180	429	17:45			309	1362	353	1329	2691
6:00			86		58			18:00			303		316		
6:15			104		70			18:15			256		332		
6:30			176		97			18:30			289		283		
6:45			197	563	134	359	922	18:45			259	1107	282	1213	2320
7:00			191		186			19:00			277		283		
7:15			189		201			19:15			226		265		
7:30			207		268			19:30			180		190		
7:45			224	811	218	873	1684	19:45			175	858	214	952	1810
8:00			251		234			20:00			165		155		
8:15			272		271			20:15			150		171		
8:30			261		262			20:30			116		156		
8:45			248	1032	256	1023	2055	20:45			118	549	127	609	1158
9:00			217		233			21:00			123		154		
9:15			208		198			21:15			104		127		
9:30			200		209			21:30			97		106		
9:45			195	820	194	834	1654	21:45			105	429	72	459	888
10:00			188		226			22:00			71		80		
10:15			213		228			22:15			79		86		
10:30			232		244			22:30			78		54		
10:45			217	850	194	892	1742	22:45			70	298	47	267	565
11:00			218		252			23:00			67		42		
11:15			238		235			23:15			45		53		
11:30			257		232			23:30			32		41		
11:45			242	955	238	957	1912	23:45			26	170	35	171	341
Total Vol.				5507		5417	**10924**					10071		10767	**20838**

Daily Totals

NB	SB	EB	WB	Combined
		15578	16184	**31762**

			AM				PM		
Split %			50.4%	49.6%	**34.4%**		48.3%	51.7%	**65.6%**
Peak Hour	0:30	0:30	11:45	11:45	**11:45**		16:45	17:30	**17:00**
Volume			1064	1092	**2156**		1366	1350	**2691**
P.H.F.			0.88	0.89	**0.88**		0.91	0.96	**0.93**

Tuesday, September 24, 2019 CITY: Santa Ana PROJECT: SC

ADT255 TUSTIN AVE from FOURTH ST to FRUIT ST. **Prepared by AimTD tel. 714 253 7888**

AM Period	NB		SB		EB	WB		PM Period	NB		SB		EB	WB	
0:00	12		11					12:00	197		198				
0:15	12		15					12:15	182		177				
0:30	12		12					12:30	192		195				
0:45	8	44	9	47			91	12:45	153	724	197	767			1491
1:00	6		4					13:00	178		196				
1:15	9		11					13:15	189		202				
1:30	7		8					13:30	199		181				
1:45	7	29	4	27			56	13:45	204	770	154	733			1503
2:00	5		7					14:00	185		162				
2:15	7		5					14:15	183		167				
2:30	3		7					14:30	192		153				
2:45	6	21	4	23			44	14:45	259	819	145	627			1446
3:00	3		6					15:00	259		176				
3:15	8		13					15:15	264		196				
3:30	8		6					15:30	286		191				
3:45	9	28	5	30			58	15:45	269	1078	187	750			1828
4:00	18		13					16:00	263		181				
4:15	24		10					16:15	316		152				
4:30	13		24					16:30	319		202				
4:45	24	79	25	72			151	16:45	311	1209	206	741			1950
5:00	27		27					17:00	327		247				
5:15	41		26					17:15	317		205				
5:30	30		57					17:30	340		201				
5:45	41	139	49	159			298	17:45	371	1355	166	819			2174
6:00	51		91					18:00	361		133				
6:15	65		130					18:15	332		110				
6:30	100		205					18:30	309		147				
6:45	102	318	216	642			960	18:45	296	1298	113	503			1801
7:00	115		310					19:00	189		105				
7:15	119		309					19:15	166		115				
7:30	138		320					19:30	143		106				
7:45	164	536	329	1268			1804	19:45	95	593	85	411			1004
8:00	245		354					20:00	96		74				
8:15	235		333					20:15	97		73				
8:30	199		337					20:30	91		84				
8:45	239	918	334	1358			2276	20:45	73	357	62	293			650
9:00	183		266					21:00	60		74				
9:15	187		240					21:15	77		51				
9:30	153		197					21:30	82		61				
9:45	197	720	195	898			1618	21:45	51	270	59	245			515
10:00	160		179					22:00	43		56				
10:15	178		159					22:15	44		40				
10:30	173		149					22:30	31		34				
10:45	154	665	129	616			1281	22:45	32	150	27	157			307
11:00	161		170					23:00	30		27				
11:15	177		158					23:15	20		35				
11:30	173		198					23:30	24		29				
11:45	172	683	210	736			1419	23:45	15	89	20	111			200
Total Vol.	4180		5876				**10056**		8712		6157				**14869**

Daily Totals

NB	SB	EB	WB	**Combined**
12892	12033			**24925**

	AM			**PM**		
Split %	41.6%	58.4%	**40.3%**	58.6%	41.4%	**59.7%**
Peak Hour	8:00	8:00	**8:00**	17:30	16:30	**17:00**
Volume	918	1358	**2276**	1404	860	**2174**
P.H.F.	0.94	0.96	**0.95**	0.97	0.87	**0.95**

cs@aimtd.com Tell. 714 253 7888

Transportation Studies, Inc.

2640 Walnut Avenue, Suite L

Tustin, CA. 92780

Location : FIRST STREET — Site: SANTA ANA

Segment : GRAND AVE TO LYON ST — Date: 09/10/19

Client : CITY SANTA ANA — Day: Tuesday

Interval	EB				WB				Combined			
Begin	AM		PM		AM		PM		AM		PM	
12:00	24	74	158	612	58	186	220	963	82	260	378	1,575
12:15	15		153		49		260		64		413	
12:30	14		158		43		225		57		383	
12:45	21		143		36		258		57		401	
01:00	15	48	162	668	30	139	243	976	45	187	405	1,644
01:15	12		172		34		236		46		408	
01:30	5		174		42		241		47		415	
01:45	16		160		33		256		49		416	
02:00	8	43	180	870	24	101	246	1,084	32	144	426	1,954
02:15	10		192		24		248		34		440	
02:30	14		260		25		300		39		560	
02:45	11		238		28		290		39		528	
03:00	6	65	202	800	15	101	289	1,137	21	166	491	1,937
03:15	14		209		28		271		42		480	
03:30	16		177		18		321		34		498	
03:45	29		212		40		256		69		468	
04:00	25	180	206	859	31	157	307	1,301	56	337	513	2,160
04:15	37		218		38		300		75		518	
04:30	50		229		39		326		89		555	
04:45	68		206		49		368		117		574	
05:00	70	375	186	505	70	335	344	1,360	140	710	530	1,865
05:15	78		62		70		342		148		404	
05:30	91		91		83		354		174		445	
05:45	136		166		112		320		248		486	
06:00	126	581	196	749	130	637	288	1,026	256	1,218	484	1,775
06:15	144		188		129		268		273		456	
06:30	148		187		164		240		312		427	
06:45	163		178		214		230		377		408	
07:00	170	608	147	497	240	1,222	222	852	410	1,830	369	1,349
07:15	172		140		305		210		477		350	
07:30	132		106		324		222		456		328	
07:45	134		104		353		198		487		302	
08:00	140	602	98	379	294	1,041	180	635	434	1,643	278	1,014
08:15	146		110		272		163		418		273	
08:30	150		101		234		150		384		251	
08:45	166		70		241		142		407		212	
09:00	162	620	78	283	236	938	130	581	398	1,558	208	864
09:15	150		86		266		162		416		248	
09:30	160		53		208		140		368		193	
09:45	148		66		228		149		376		215	
10:00	164	613	68	202	211	880	124	450	375	1,493	192	652
10:15	158		48		216		132		374		180	
10:30	138		42		220		104		358		146	
10:45	153		44		233		90		386		134	
11:00	144	630	40	138	240	948	94	303	384	1,578	134	441
11:15	148		36		234		64		382		100	
11:30	170		32		232		69		402		101	
11:45	168		30		242		76		410		106	
Totals	4,439		6,562		6,685		10,668		11,124		17,230	
Split%	39.9		38.1		60.1		61.9					
Day Totals		11,001				17,353				28,354		
Day Splits		38.8				61.2						
Peak Hour	06:30		02:30		07:15		04:45		07:15		04:15	
Volume	653		909		1,276		1,408		1,854		2,177	
Factor	0.95		0.87		0.90		0.96		0.95		0.95	

Data File : D1909096

Transportation Studies, Inc.

2640 Walnut Avenue, Suite L

Tustin, CA. 92780

Location : FIRST STREET — Site: SANTA ANA

Segment : SANTA ANA FWY TO GOLDEN CIRCLE — Date: 09/11/19

Client : CITY SANTA ANA — Day: Wednesday

Interval	WB				EB				Combined			
Begin	AM		PM		AM		PM		AM		PM	
12:00	22	85	132	605	21	78	212	691	43	163	344	1,296
12:15	31		148		24		162		55		310	
12:30	17		168		17		165		34		333	
12:45	15		157		16		152		31		309	
01:00	24	72	180	669	16	66	161	705	40	138	341	1,374
01:15	14		168		14		168		28		336	
01:30	17		158		19		186		36		344	
01:45	17		163		17		190		34		353	
02:00	18	54	172	664	20	56	164	732	38	110	336	1,396
02:15	17		164		12		166		29		330	
02:30	14		184		11		203		25		387	
02:45	5		144		13		199		18		343	
03:00	12	57	192	725	12	76	196	826	24	133	388	1,551
03:15	15		170		21		199		36		369	
03:30	14		169		19		203		33		372	
03:45	16		194		24		228		40		422	
04:00	14	80	222	795	21	135	188	871	35	215	410	1,666
04:15	14		177		29		232		43		409	
04:30	32		188		45		229		77		417	
04:45	20		208		40		222		60		430	
05:00	41	199	222	817	58	247	250	978	99	446	472	1,795
05:15	46		222		58		240		104		462	
05:30	54		186		44		228		98		414	
05:45	58		187		87		260		145		447	
06:00	62	354	194	654	90	448	251	860	152	802	445	1,514
06:15	69		170		90		224		159		394	
06:30	91		160		116		210		207		370	
06:45	132		130		152		175		284		305	
07:00	155	811	144	503	120	484	138	482	275	1,295	282	985
07:15	176		138		115		130		291		268	
07:30	240		119		136		122		376		241	
07:45	240		102		113		92		353		194	
08:00	192	787	94	342	172	742	102	400	364	1,529	196	742
08:15	216		94		186		92		402		186	
08:30	191		82		166		119		357		201	
08:45	188		72		218		87		406		159	
09:00	164	612	82	277	192	659	77	281	356	1,271	159	558
09:15	150		67		146		60		296		127	
09:30	160		62		157		78		317		140	
09:45	138		66		164		66		302		132	
10:00	140	497	66	218	130	533	56	205	270	1,030	122	423
10:15	127		57		143		61		270		118	
10:30	126		61		134		46		260		107	
10:45	104		34		126		42		230		76	
11:00	160	563	38	138	162	602	37	129	322	1,165	75	267
11:15	134		35		130		36		264		71	
11:30	123		27		162		26		285		53	
11:45	146		38		148		30		294		68	
Totals	4,171		6,407		4,126		7,160		8,297		13,567	
Split%	50.3		47.2		49.7		52.8					
Day Totals		10,578				11,286				21,864		
Day Splits		48.4				51.6						
Peak Hour	07:30		04:30		08:15		05:15		08:00		05:00	
Volume	888		840		762		979		1,529		1,795	
Factor	0.93		0.95		0.87		0.94		0.94		0.95	

* Data File : D1909141

Transportation Studies, Inc.

2640 Walnut Avenue, Suite L

Tustin, CA. 92780

Location : FAIRVIEW STREET — Site: SANTA ANA

Segment : HARVARD AVE TO EDINGER AVE — Date: 09/25/19

Client : CITY SANTA ANA — Day: Wednesday

Interval	SB				NB				Combined			
Begin	AM		PM		AM		PM		AM		PM	
12:00	18	72	204	942	56	175	268	969	74	247	472	1,911
12:15	21		254		44		211		65		465	
12:30	16		236		41		246		57		482	
12:45	17		248		34		244		51		492	
01:00	10	52	247	991	29	106	282	1,237	39	158	529	2,228
01:15	10		227		35		280		45		507	
01:30	16		245		21		328		37		573	
01:45	16		272		21		347		37		619	
02:00	14	66	283	1,116	39	110	440	1,615	53	176	723	2,731
02:15	16		265		23		352		39		617	
02:30	18		290		12		426		30		716	
02:45	18		278		36		397		54		675	
03:00	12	135	246	886	25	99	406	1,781	37	234	652	2,667
03:15	23		232		21		402		44		634	
03:30	42		206		21		475		63		681	
03:45	58		202		32		498		90		700	
04:00	64	471	216	841	43	183	462	1,914	107	654	678	2,755
04:15	68		226		38		486		106		712	
04:30	139		195		44		467		183		662	
04:45	200		204		58		499		258		703	
05:00	127	816	210	867	60	329	502	1,913	187	1,145	712	2,780
05:15	167		224		76		470		243		694	
05:30	228		204		96		467		324		671	
05:45	294		229		97		474		391		703	
06:00	218	1,231	195	685	124	600	454	1,687	342	1,831	649	2,372
06:15	278		170		140		399		418		569	
06:30	332		178		160		460		492		638	
06:45	403		142		176		374		579		516	
07:00	400	1,487	130	509	275	1,278	324	1,115	675	2,765	454	1,624
07:15	428		154		276		283		704		437	
07:30	350		113		375		256		725		369	
07:45	309		112		352		252		661		364	
08:00	370	1,480	107	403	250	886	238	829	620	2,366	345	1,232
08:15	374		118		220		207		594		325	
08:30	390		82		208		190		598		272	
08:45	346		96		208		194		554		290	
09:00	253	988	94	324	210	824	217	765	463	1,812	311	1,089
09:15	271		88		190		206		461		294	
09:30	239		68		234		165		473		233	
09:45	225		74		190		177		415		251	
10:00	182	812	52	190	181	731	136	531	363	1,543	188	721
10:15	205		45		181		159		386		204	
10:30	215		49		195		140		410		189	
10:45	210		44		174		96		384		140	
11:00	195	787	54	146	196	841	86	337	391	1,628	140	483
11:15	197		32		196		97		393		129	
11:30	191		33		226		88		417		121	
11:45	204		27		223		66		427		93	
Totals	8,397		7,900		6,162		14,693		14,559		22,593	
Split%	57.7		35.0		42.3		65.0					
Day Totals		16,297				20,855				37,152		
Day Splits		43.9				56.1						
Peak Hour	06:45		02:00		07:00		04:15		07:00		04:15	
Volume	1,581		1,116		1,278		1,954		2,765		2,789	
Factor	0.92		0.96		0.85		0.97		0.95		0.98	

* Data File : D1909070

Transportation Studies, Inc.

2640 Walnut Avenue, Suite L

Tustin, CA. 92780

Location : FAIRVIEW STREET — Site: SANTA ANA

Segment : SEGERSTROM AVE TO WARNER AVE — Date: 10/09/19

Client : CITY SANTA ANA — Day: Wednesday

Interval	NB				SB				Combined			
Begin	AM		PM		AM		PM		AM		PM	
12:00	51	162	218	888	22	96	239	996	73	258	457	1,884
12:15	40		222		30		222		70		444	
12:30	38		222		25		265		63		487	
12:45	33		226		19		270		52		496	
01:00	25	90	292	1,227	11	47	262	1,092	36	137	554	2,319
01:15	28		280		11		246		39		526	
01:30	19		310		14		284		33		594	
01:45	18		345		11		300		29		645	
02:00	17	87	394	1,627	22	81	292	1,070	39	168	686	2,697
02:15	15		380		14		251		29		631	
02:30	19		394		16		279		35		673	
02:45	36		459		29		248		65		707	
03:00	21	77	418	1,738	24	176	277	1,111	45	253	695	2,849
03:15	17		424		22		289		39		713	
03:30	17		428		56		277		73		705	
03:45	22		468		74		268		96		736	
04:00	26	152	518	1,919	58	435	267	1,071	84	587	785	2,990
04:15	25		483		98		234		123		717	
04:30	46		474		128		276		174		750	
04:45	55		444		151		294		206		738	
05:00	60	292	470	1,933	116	856	270	1,071	176	1,148	740	3,004
05:15	48		501		188		274		236		775	
05:30	96		486		269		267		365		753	
05:45	88		476		283		260		371		736	
06:00	86	482	434	1,618	264	1,511	243	879	350	1,993	677	2,497
06:15	132		406		312		208		444		614	
06:30	132		434		420		228		552		662	
06:45	132		344		515		200		647		544	
07:00	192	983	302	1,032	490	2,095	232	743	682	3,078	534	1,775
07:15	213		290		556		182		769		472	
07:30	293		228		555		179		848		407	
07:45	285		212		494		150		779		362	
08:00	219	829	190	726	549	2,197	138	558	768	3,026	328	1,284
08:15	218		196		558		142		776		338	
08:30	196		160		557		152		753		312	
08:45	196		180		533		126		729		306	
09:00	214	782	156	616	374	1,270	94	405	588	2,052	250	1,021
09:15	184		162		334		128		518		290	
09:30	198		154		284		109		482		263	
09:45	186		144		278		74		464		218	
10:00	192	720	156	522	192	900	74	243	384	1,620	230	765
10:15	174		144		234		52		408		196	
10:30	176		128		234		50		410		178	
10:45	178		94		240		67		418		161	
11:00	167	778	76	276	213	875	38	149	380	1,653	114	425
11:15	205		72		198		33		403		105	
11:30	209		66		220		41		429		107	
11:45	197		62		244		37		441		99	
Totals	5,434		14,122		10,539		9,388		15,973		23,510	
Split%	34.0		60.1		66.0		39.9					
Day Totals		19,556				19,927				39,483		
Day Splits		49.5				50.5						
Peak Hour	07:30		03:45		08:00		01:30		07:30		04:45	
Volume	1,015		1,943		2,197		1,127		3,171		3,006	
Factor	0.87		0.94		0.98		0.94		0.93		0.97	

Data File : D1909068

Wednesday, September 11, 2019 Location: Santa Ana PROJECT:

ADT147 MacARTHUR BL from SUSAN ST to FAIRVIEW ST. **Prepared by AimTD tel. 714 253 7888**

AM Period	NB	SB	EB		WB			PM Period	NB	SB	EB		WB		
0:30			16		15			12:00			217		153		
0:15			6		15			12:15			221		175		
0:30			9		14			12:30			213		145		
0:45			6	37	4	48	85	12:45			192	843	200	673	1516
1:00			7		6			13:00			191		187		
1:15			6		8			13:15			186		198		
1:30			13		5			13:30			217		199		
1:45			9	35	7	26	61	13:45			178	772	218	802	1574
2:00			6		4			14:00			210		215		
2:15			6		4			14:15			163		218		
2:30			11		0			14:30			259		210		
2:45			9	32	0	8	40	14:45			232	864	232	875	1739
3:00			18		6			15:00			220		315		
3:15			9		5			15:15			202		278		
3:30			21		6			15:30			232		290		
3:45			31	79	8	25	104	15:45			177	831	374	1257	2088
4:00			35		21			16:00			236		362		
4:15			25		10			16:15			235		385		
4:30			23		41			16:30			258		383		
4:45			42	125	64	136	261	16:45			234	963	386	1516	2479
5:00			35		32			17:00			313		414		
5:15			32		36			17:15			249		358		
5:30			62		62			17:30			262		341		
5:45			60	189	83	213	402	17:45			205	1029	407	1520	2549
6:00			62		55			18:00			219		379		
6:15			71		68			18:15			205		318		
6:30			129		73			18:30			180		240		
6:45			154	416	96	292	708	18:45			174	778	265	1202	1980
7:00			210		101			19:00			165		212		
7:15			246		127			19:15			131		162		
7:30			337		141			19:30			164		154		
7:45			390	1183	191	560	1743	19:45			104	564	135	663	1227
8:00			257		174			20:00			105		123		
8:15			336		132			20:15			127		81		
8:30			298		148			20:30			98		56		
8:45			291	1182	159	613	1795	20:45			96	426	86	346	772
9:00			219		144			21:00			106		85		
9:15			186		141			21:15			80		52		
9:30			169		142			21:30			74		51		
9:45			145	719	144	571	1290	21:45			57	317	34	222	539
10:00			143		142			22:00			64		55		
10:15			144		118			22:15			40		49		
10:30			158		139			22:30			41		34		
10:45			163	608	164	563	1171	22:45			33	178	29	167	345
11:00			180		117			23:00			40		25		
11:15			171		136			23:15			25		34		
11:30			165		152			23:30			19		26		
11:45			209	725	171	576	1301	23:45			11	95	26	111	206
Total Vol.				5330		3631	**8961**					7660		9354	**17014**

Daily Totals

NB	SB	EB	WB	Combined
		12990	12985	**25975**

			AM				PM		
Split %			59.5%	40.5%	**34.5%**		45.0%	55.0%	**65.5%**
Peak Hour	0:30	0:30	7:30	11:30	**7:30**		16:45	16:15	**16:15**
Volume			1320	651	**1958**		1058	1568	**2608**
P.H.F.			0.85	0.93	**0.84**		0.85	0.95	**0.90**

Transportation Studies, Inc.

2640 Walnut Avenue, Suite L

Tustin, CA. 92780

Location : EDINGER AVENUE
Site: SANTA ANA

Segment : FAIRVIEW ST TO RAITT ST
Date: 09/17/19

Client : CITY SANTA ANA
Day: Tuesday

Interval	EB				WB				Combined			
Begin	AM		PM		AM		PM		AM		PM	
12:00	35	112	166	666	34	104	172	665	69	216	338	1,331
12:15	32		158		22		160		54		318	
12:30	30		186		21		175		51		361	
12:45	15		156		27		158		42		314	
01:00	17	79	193	791	14	57	162	750	31	136	355	1,541
01:15	18		182		18		168		36		350	
01:30	30		202		12		194		42		396	
01:45	14		214		13		226		27		440	
02:00	8	45	194	961	8	55	202	865	16	100	396	1,826
02:15	8		229		14		204		22		433	
02:30	15		276		15		207		30		483	
02:45	14		262		18		252		32		514	
03:00	5	48	300	1,073	14	78	264	1,093	19	126	564	2,166
03:15	8		272		12		280		20		552	
03:30	16		231		20		273		36		504	
03:45	19		270		32		276		51		546	
04:00	24	163	298	1,053	22	199	284	1,197	46	362	582	2,250
04:15	31		234		33		308		64		542	
04:30	56		269		66		294		122		563	
04:45	52		252		78		311		130		563	
05:00	49	337	280	1,103	62	379	317	1,213	111	716	597	2,316
05:15	64		282		84		288		148		570	
05:30	104		276		116		287		220		563	
05:45	120		265		117		321		237		586	
06:00	105	624	251	951	100	558	296	1,112	205	1,182	547	2,063
06:15	146		224		134		292		280		516	
06:30	176		252		152		242		328		494	
06:45	197		224		172		282		369		506	
07:00	244	1,080	204	856	198	905	240	797	442	1,985	444	1,653
07:15	308		218		216		202		524		420	
07:30	273		238		239		196		512		434	
07:45	255		196		252		159		507		355	
08:00	222	900	236	796	218	727	166	645	440	1,627	402	1,441
08:15	238		197		169		188		407		385	
08:30	220		195		176		149		396		344	
08:45	220		168		164		142		384		310	
09:00	164	669	155	561	150	580	126	464	314	1,249	281	1,025
09:15	188		144		156		147		344		291	
09:30	172		120		138		109		310		229	
09:45	145		142		136		82		281		224	
10:00	150	620	105	328	153	644	99	311	303	1,264	204	639
10:15	146		94		174		81		320		175	
10:30	167		70		145		71		312		141	
10:45	157		59		172		60		329		119	
11:00	148	635	58	200	170	614	50	164	318	1,249	108	364
11:15	158		59		162		44		320		103	
11:30	151		42		148		39		299		81	
11:45	178		41		134		31		312		72	
Totals	5,312		9,339		4,900		9,276		10,212		18,615	
Split%	52.0		50.2		48.0		49.8					
Day Totals		14,651				14,176				28,827		
Day Splits		50.8				49.2						
Peak Hour	07:00		02:30		07:15		04:15		07:00		05:00	
Volume	1,080		1,110		925		1,230		1,985		2,316	
Factor	0.88		0.93		0.92		0.97		0.95		0.97	

Data File : D1909050

Thursday, October 10, 2019 Location: Santa Ana PROJECT:

ADT174 McFADDEN AVE from FAIRVIEW ST to RAITT ST. **Prepared by AimTD tel. 714 253 7888**

AM Period	NB	SB	EB		WB			PM Period	NB	SB	EB		WB		
0:30			21		35			12:00			103		104		
0:15			29		24			12:15			113		123		
0:30			23		20			12:30			98		113		
0:45			19	92	13	92	184	12:45			110	424	130	470	894
1:00			16		9			13:00			140		109		
1:15			10		11			13:15			158		121		
1:30			11		13			13:30			148		132		
1:45			14	51	12	45	96	13:45			156	602	126	488	1090
2:00			13		8			14:00			136		129		
2:15			8		5			14:15			169		132		
2:30			7		10			14:30			174		157		
2:45			12	40	16	39	79	14:45			184	663	184	602	1265
3:00			13		11			15:00			221		183		
3:15			19		13			15:15			193		203		
3:30			12		14			15:30			176		191		
3:45			15	59	17	55	114	15:45			187	777	205	782	1559
4:00			10		23			16:00			208		195		
4:15			19		25			16:15			194		175		
4:30			29		23			16:30			187		179		
4:45			35	93	41	112	205	16:45			181	770	190	739	1509
5:00			39		53			17:00			195		204		
5:15			58		62			17:15			204		195		
5:30			73		78			17:30			213		222		
5:45			87	257	86	279	536	17:45			217	829	216	837	1666
6:00			85		84			18:00			223		230		
6:15			91		78			18:15			197		200		
6:30			106		82			18:30			186		207		
6:45			127	409	101	345	754	18:45			181	787	189	826	1613
7:00			140		123			19:00			198		186		
7:15			178		164			19:15			179		175		
7:30			219		189			19:30			187		156		
7:45			229	766	196	672	1438	19:45			161	725	140	657	1382
8:00			218		187			20:00			124		117		
8:15			186		159			20:15			115		103		
8:30			174		122			20:30			134		111		
8:45			157	735	103	571	1306	20:45			110	483	100	431	914
9:00			125		98			21:00			102		98		
9:15			130		104			21:15			98		104		
9:30			108		91			21:30			94		68		
9:45			114	477	100	393	870	21:45			85	379	95	365	744
10:00			100		93			22:00			77		61		
10:15			109		98			22:15			79		71		
10:30			115		101			22:30			67		52		
10:45			116	440	109	401	841	22:45			68	291	38	222	513
11:00			123		117			23:00			56		27		
11:15			131		108			23:15			52		35		
11:30			119		107			23:30			47		24		
11:45			99	472	115	447	919	23:45			32	187	25	111	298
Total Vol.			3891		3451		**7342**				6917		6530		**13447**

Daily Totals

NB	SB	EB	WB	**Combined**
		10808	9981	**20789**

			AM				**PM**		
Split %			53.0%	47.0%	**35.3%**		51.4%	48.6%	**64.7%**
Peak Hour	0:30	0:30	7:30	7:15	**7:30**		17:15	17:30	**17:15**
Volume			852	736	**1583**		857	868	**1720**
P.H.F.			0.93	0.94	**0.93**		0.96	0.94	**0.95**

Thursday, October 03, 2019 Location: Santa Ana PROJECT:

ADT148 MacARTHUR BL from FAIRVIEW ST to RAITT ST. **Prepared by AimTD tel. 714 253 7888**

AM Period	NB	SB	EB		WB			PM Period	NB	SB	EB		WB		
0:30			13		17			12:00			199		185		
0:15			15		15			12:15			186		197		
0:30			12		13			12:30			170		183		
0:45			11	51	16	61	112	12:45			173	728	194	759	1487
1:00			7		12			13:00			168		199		
1:15			6		8			13:15			201		214		
1:30			8		11			13:30			234		221		
1:45			4	25	7	38	63	13:45			208	811	237	871	1682
2:00			4		5			14:00			206		264		
2:15			2		10			14:15			229		242		
2:30			8		11			14:30			312		278		
2:45			14	28	9	35	63	14:45			304	1051	341	1125	2176
3:00			13		6			15:00			281		359		
3:15			11		8			15:15			242		342		
3:30			15		12			15:30			235		336		
3:45			21	60	18	44	104	15:45			214	972	407	1444	2416
4:00			31		15			16:00			206		400		
4:15			34		23			16:15			211		395		
4:30			39		27			16:30			214		414		
4:45			46	150	37	102	252	16:45			231	862	463	1672	2534
5:00			42		43			17:00			240		486		
5:15			57		45			17:15			238		452		
5:30			76		41			17:30			242		463		
5:45			68	243	48	177	420	17:45			214	934	461	1862	2796
6:00			84		52			18:00			218		451		
6:15			96		50			18:15			196		355		
6:30			124		78			18:30			167		374		
6:45			206	510	107	287	797	18:45			139	720	311	1491	2211
7:00			241		112			19:00			156		273		
7:15			353		199			19:15			124		223		
7:30			429		266			19:30			127		184		
7:45			435	1458	343	920	2378	19:45			104	511	136	816	1327
8:00			407		257			20:00			118		104		
8:15			320		168			20:15			105		112		
8:30			356		152			20:30			94		85		
8:45			322	1405	131	708	2113	20:45			103	420	96	397	817
9:00			252		127			21:00			95		86		
9:15			153		132			21:15			100		75		
9:30			142		121			21:30			96		72		
9:45			145	692	136	516	1208	21:45			68	359	67	300	659
10:00			136		108			22:00			54		62		
10:15			127		114			22:15			46		54		
10:30			134		119			22:30			41		46		
10:45			125	522	127	468	990	22:45			34	175	41	203	378
11:00			135		157			23:00			31		36		
11:15			153		154			23:15			23		45		
11:30			188		152			23:30			17		34		
11:45			213	689	163	626	1315	23:45			12	83	28	143	226
Total Vol.				5833		3982	**9815**					7626		11083	**18709**

Daily Totals

NB	SB	EB	WB	**Combined**
		13459	15065	**28524**

			AM				**PM**		
Split %			59.4%	40.6%	**34.4%**		40.8%	59.2%	**65.6%**
Peak Hour	0:30	0:30	7:15	7:15	**7:15**		14:30	16:45	**16:45**
Volume			1624	1065	**2689**		1139	1864	**2815**
P.H.F.			0.93	0.78	**0.86**		0.91	0.96	**0.97**

Wednesday, October 02, 2019 Location: Santa Ana PROJECT:

ADT222 SEGERSTROM AVE from FAIRVIEW ST to RAITT ST. **Prepared by AimTD tel. 714 753 7888**

AM Period	NB	SB	EB		WB			PM Period	NB	SB	EB		WB		
0:30			34		35			12:00			94		89		
0:15			37		32			12:15			86		101		
0:30			26		29			12:30			68		85		
0:45			31	128	31	127	255	12:45			71	319	88	363	682
1:00			34		25			13:00			75		108		
1:15			26		21			13:15			78		93		
1:30			18		22			13:30			85		95		
1:45			20	98	19	87	185	13:45			104	342	113	409	751
2:00			19		17			14:00			87		105		
2:15			10		10			14:15			78		104		
2:30			11		12			14:30			90		101		
2:45			5	45	6	45	90	14:45			86	341	105	415	756
3:00			3		8			15:00			96		112		
3:15			5		7			15:15			105		103		
3:30			4		6			15:30			108		123		
3:45			6	18	11	32	50	15:45			110	419	147	485	904
4:00			7		12			16:00			106		139		
4:15			6		10			16:15			114		167		
4:30			4		9			16:30			195		184		
4:45			8	25	8	39	64	16:45			175	590	271	761	1351
5:00			6		6			17:00			189		242		
5:15			11		7			17:15			173		196		
5:30			16		8			17:30			191		207		
5:45			15	48	12	33	81	17:45			178	731	242	887	1618
6:00			21		8			18:00			172		257		
6:15			26		17			18:15			176		280		
6:30			27		23			18:30			163		268		
6:45			31	105	29	77	182	18:45			157	668	282	1087	1755
7:00			34		31			19:00			186		302		
7:15			42		51			19:15			188		330		
7:30			59		72			19:30			207		294		
7:45			84	219	68	222	441	19:45			193	774	280	1206	1980
8:00			81		63			20:00			198		271		
8:15			95		70			20:15			174		245		
8:30			134		80			20:30			137		179		
8:45			153	463	112	325	788	20:45			106	615	180	875	1490
9:00			156		135			21:00			96		156		
9:15			231		185			21:15			78		132		
9:30			276		249			21:30			86		83		
9:45			257	920	297	866	1786	21:45			89	349	73	444	793
10:00			252		251			22:00			101		80		
10:15			204		142			22:15			72		72		
10:30			178		123			22:30			61		70		
10:45			132	766	134	650	1416	22:45			52	286	64	286	572
11:00			104		108			23:00			56		54		
11:15			112		100			23:15			45		43		
11:30			101		96			23:30			37		42		
11:45			91	408	84	388	796	23:45			35	173	37	176	349
Total Vol.				3243		2891	**6134**					5607		7394	**13001**

Daily Totals

NB	SB	EB	WB	Combined
		8850	10285	**19135**

			AM					PM		
Split %			52.9%		47.1%	**32.1%**		43.1%	56.9%	**67.9%**
Peak Hour	0:30	0:30	9:15		9:15	**9:15**		19:15	18:45	**19:00**
Volume			1016		982	**1998**		786	1208	**1980**
P.H.F.			0.92		0.83	**0.90**		0.95	0.92	**0.96**

pacific@aimtd.com Tell. 714 753 7888

Transportation Studies, Inc.

2640 Walnut Avenue, Suite L

Tustin, CA. 92780

Location : BRISTOL STREET — Site: SANTA ANA

Segment : WARNER AVE TO EDINGER AVE — Date: 09/17/19

Client : CITY SANTA ANA — Day: Tuesday

Interval	NB				SB				Combined			
Begin	AM		PM		AM		PM		AM		PM	
12:00	72	181	226	944	34	130	234	885	106	311	460	1,829
12:15	42		228		40		222		82		450	
12:30	29		225		34		222		63		447	
12:45	38		265		22		207		60		472	
01:00	34	123	251	1,071	28	86	212	892	62	209	463	1,963
01:15	23		272		18		188		41		460	
01:30	38		282		24		246		62		528	
01:45	28		266		16		246		44		512	
02:00	29	120	279	1,293	18	83	233	1,003	47	203	512	2,296
02:15	30		288		23		236		53		524	
02:30	24		344		16		266		40		610	
02:45	37		382		26		268		63		650	
03:00	29	92	402	1.547	22	124	332	1.088	51	216	734	2.635
03:15	18		384		20		236		38		620	
03:30	21		384		32		278		53		662	
03:45	24		377		50		242		74		619	
04:00	22	121	394	1,549	51	395	228	924	73	516	622	2,473
04:15	30		378		84		226		114		604	
04:30	33		376		146		216		179		592	
04:45	36		401		114		254		150		655	
05:00	44	220	426	1,569	99	606	266	1,057	143	826	692	2,626
05:15	48		394		115		241		163		635	
05:30	64		377		186		272		250		649	
05:45	64		372		206		278		270		650	
06:00	94	425	362	1,401	211	1,195	234	933	305	1,620	596	2,334
06:15	90		379		234		228		324		607	
06:30	108		336		328		239		436		575	
06:45	133		324		422		232		555		556	
07:00	190	1,030	254	1,057	421	1,708	226	858	611	2,738	480	1,915
07:15	236		283		432		252		668		535	
07:30	302		264		425		206		727		470	
07:45	302		256		430		174		732		430	
08:00	309	1.125	230	793	384	1.640	198	712	693	2.765	428	1.505
08:15	346		192		375		199		721		391	
08:30	300		187		445		177		745		364	
08:45	170		184		436		138		606		322	
09:00	165	704	166	649	310	1,110	146	578	475	1,814	312	1,227
09:15	169		171		256		143		425		314	
09:30	194		164		276		145		470		309	
09:45	176		148		268		144		444		292	
10:00	170	718	151	531	220	866	88	367	390	1,584	239	898
10:15	188		126		212		103		400		229	
10:30	182		110		206		90		388		200	
10:45	178		144		228		86		406		230	
11:00	198	870	91	347	229	924	68	225	427	1,794	159	572
11:15	241		100		219		57		460		157	
11:30	221		82		234		50		455		132	
11:45	210		74		242		50		452		124	
Totals	5,729		12,751		8,867		9,522		14,596		22,273	
Split%	39.3		57.2		60.7		42.8					
Day Totals		18,480				18,389				36,869		
Day Splits		50.1				49.9						
Peak Hour	07:30		04:45		07:00		02:45		07:45		02:45	
Volume	1,259		1,598		1,708		1,114		2,891		2,666	
Factor	0.91		0.94		0.99		0.84		0.97		0.91	

Data File : D1909015

Transportation Studies, Inc.

2640 Walnut Avenue, Suite L

Tustin, CA. 92780

Location : BRISTOL STREET — Site: SANTA ANA

Segment : SEGERSTROM AVE TO WARNER AVE — Date: 09/17/19

Client : CITY SANTA ANA — Day: Tuesday

Interval	NB				SB				Combined			
Begin	AM		PM		AM		PM		AM		PM	
12:00	58	170	250	1,064	40	130	261	1,063	98	300	511	2,127
12:15	48		256		36		264		84		520	
12:30	25		278		31		288		56		566	
12:45	39		280		23		250		62		530	
01:00	34	113	256	1,083	20	83	256	1,022	54	196	512	2,105
01:15	30		254		22		214		52		468	
01:30	30		304		28		280		58		584	
01:45	19		269		13		272		32		541	
02:00	25	90	304	1,360	20	81	228	1,087	45	171	532	2,447
02:15	22		298		20		267		42		565	
02:30	20		342		23		282		43		624	
02:45	23		416		18		310		41		726	
03:00	18	58	409	1,493	18	113	342	1,115	36	171	751	2,608
03:15	12		340		19		257		31		597	
03:30	13		320		32		258		45		578	
03:45	15		424		44		258		59		682	
04:00	15	75	390	1,460	53	396	212	922	68	471	602	2,382
04:15	24		365		96		248		120		613	
04:30	14		373		120		234		134		607	
04:45	22		332		127		228		149		560	
05:00	26	150	400	1,480	106	604	271	1,092	132	754	671	2,572
05:15	32		370		121		277		153		647	
05:30	40		364		196		272		236		636	
05:45	52		346		181		272		233		618	
06:00	64	340	372	1,324	204	1,218	247	987	268	1,558	619	2,311
06:15	70		332		224		252		294		584	
06:30	98		308		348		234		446		542	
06:45	108		312		442		254		550		566	
07:00	158	913	277	1,092	408	1,907	235	922	566	2,820	512	2,014
07:15	212		290		491		252		703		542	
07:30	243		269		525		216		768		485	
07:45	300		256		483		219		783		475	
08:00	292	999	220	804	444	1,814	220	730	736	2,813	440	1,534
08:15	326		205		441		192		767		397	
08:30	223		201		464		166		687		367	
08:45	158		178		465		152		623		330	
09:00	154	685	192	648	394	1,306	124	511	548	1,991	316	1,159
09:15	184		162		306		131		490		293	
09:30	171		137		292		130		463		267	
09:45	176		157		314		126		490		283	
10:00	177	741	141	493	254	942	86	379	431	1,683	227	872
10:15	170		132		229		98		399		230	
10:30	200		106		215		107		415		213	
10:45	194		114		244		88		438		202	
11:00	239	989	104	352	244	1,034	58	197	483	2,023	162	549
11:15	276		100		232		43		508		143	
11:30	226		84		280		54		506		138	
11:45	248		64		278		42		526		106	
Totals	5,323		12,653		9,628		10,027		14,951		22,680	
Split%	35.6		55.8		64.4		44.2					
Day Totals		17,976				19,655				37,631		
Day Splits		47.8				52.2						
Peak Hour	07:30		03:45		07:15		02:15		07:30		02:30	
Volume	1,161		1,552		1,943		1,201		3,054		2,698	
Factor	0.89		0.92		0.93		0.88		0.98		0.90	

* Data File : D1909014

Wednesday, October 02, 2019 Location: Santa Ana PROJECT:

ADT261 WARNER AVE from RAITT ST to BRISTOL ST **Prepared by AimTD tel. 714 253 7888**

AM Period	NB	SB	EB		WB			PM Period	NB	SB	EB		WB		
0:30			32		32			12:00			182		187		
0:15			33		25			12:15			187		186		
0:30			25		29			12:30			177		222		
0:45			31	121	16	102	223	12:45			205	751	204	799	1550
1:00			14		24			13:00			189		232		
1:15			11		19			13:15			223		281		
1:30			13		14			13:30			240		270		
1:45			8	46	12	69	115	13:45			323	975	323	1106	2081
2:00			15		15			14:00			343		311		
2:15			7		14			14:15			386		303		
2:30			15		18			14:30			326		314		
2:45			16	53	13	60	113	14:45			312	1367	341	1269	2636
3:00			22		11			15:00			353		351		
3:15			23		13			15:15			321		376		
3:30			21		15			15:30			329		364		
3:45			34	100	18	57	157	15:45			319	1322	362	1453	2775
4:00			50		21			16:00			277		371		
4:15			55		31			16:15			298		395		
4:30			75		74			16:30			291		378		
4:45			111	291	85	211	502	16:45			321	1187	395	1539	2726
5:00			104		78			17:00			318		420		
5:15			130		96			17:15			348		421		
5:30			185		114			17:30			308		384		
5:45			204	623	127	415	1038	17:45			289	1263	397	1622	2885
6:00			195		121			18:00			296		393		
6:15			184		128			18:15			260		356		
6:30			231		139			18:30			275		324		
6:45			302	912	195	583	1495	18:45			231	1062	285	1358	2420
7:00			313		228			19:00			186		256		
7:15			363		324			19:15			165		241		
7:30			395		423			19:30			143		224		
7:45			408	1479	437	1412	2891	19:45			141	635	179	900	1535
8:00			274		313			20:00			134		165		
8:15			276		245			20:15			125		158		
8:30			241		213			20:30			114		132		
8:45			213	1004	194	965	1969	20:45			124	497	128	583	1080
9:00			202		185			21:00			118		124		
9:15			151		174			21:15			107		110		
9:30			179		170			21:30			114		116		
9:45			152	684	164	693	1377	21:45			96	435	98	448	883
10:00			153		169			22:00			86		94		
10:15			193		187			22:15			66		84		
10:30			175		168			22:30			71		100		
10:45			162	683	167	691	1374	22:45			40	263	78	356	619
11:00			177		189			23:00			45		64		
11:15			157		196			23:15			48		49		
11:30			171		185			23:30			34		51		
11:45			163	668	174	744	1412	23:45			29	156	37	201	357
Total Vol.				6664		6002	**12666**					9913		11634	**21547**

Daily Totals

NB	SB	EB	WB	**Combined**
		16577	17636	**34213**

			AM				**PM**		
Split %			52.6%	47.4%	**37.0%**		46.0%	54.0%	**63.0%**
Peak Hour	0:30	0:30	7:00	7:15	**7:15**		13:45	17:00	**16:45**
Volume			1479	1497	**2937**		1378	1622	**2915**
P.H.F.			0.91	0.86	**0.87**		0.89	0.96	**0.95**

Transportation Studies, Inc.

2640 Walnut Avenue, Suite L

Tustin, CA. 92780

Location : BRISTOL STREET — Site: SANTA ANA

Segment : SUNFLOWER AVE TO MACARTHUR BL — Date: 09/17/19

Client : CITY SANTA ANA — Day: Tuesday

Interval	NB				SB				Combined			
Begin	AM		PM		AM		PM		AM		PM	
12:00	56	191	290	1,165	31	116	300	1,251	87	307	590	2,416
12:15	46		288		27		284		73		572	
12:30	51		296		34		324		85		620	
12:45	38		291		24		343		62		634	
01:00	31	96	290	1,166	24	76	300	1,126	55	172	590	2,292
01:15	26		274		13		260		39		534	
01:30	22		302		22		260		44		562	
01:45	17		300		17		306		34		606	
02:00	31	105	286	1,183	18	67	268	1,003	49	172	554	2,186
02:15	22		293		15		264		37		557	
02:30	20		298		14		232		34		530	
02:45	32		306		20		239		52		545	
03:00	10	43	313	1,196	15	99	268	955	25	142	581	2,151
03:15	14		266		22		230		36		496	
03:30	12		300		27		229		39		529	
03:45	7		317		35		228		42		545	
04:00	18	76	322	1,261	40	333	218	846	58	409	540	2,107
04:15	16		336		75		205		91		541	
04:30	20		303		108		227		128		530	
04:45	22		300		110		196		132		496	
05:00	36	171	338	1,277	96	555	200	872	132	726	538	2,149
05:15	34		323		129		214		163		537	
05:30	43		318		162		220		205		538	
05:45	58		298		168		238		226		536	
06:00	59	313	291	1,193	186	1,017	226	857	245	1,330	517	2,050
06:15	66		322		176		228		242		550	
06:30	84		286		311		183		395		469	
06:45	104		294		344		220		448		514	
07:00	110	549	261	1,019	328	1,535	222	854	438	2,084	483	1,873
07:15	147		234		368		218		515		452	
07:30	124		262		413		197		537		459	
07:45	168		262		426		217		594		479	
08:00	160	629	212	795	424	1,606	204	738	584	2,235	416	1,533
08:15	195		206		371		208		566		414	
08:30	161		208		409		180		570		388	
08:45	113		169		402		146		515		315	
09:00	140	637	180	639	350	1,093	142	500	490	1,730	322	1,139
09:15	155		164		260		126		415		290	
09:30	168		139		233		122		401		261	
09:45	174		156		250		110		424		266	
10:00	179	751	138	491	228	884	112	362	407	1,635	250	853
10:15	169		128		222		82		391		210	
10:30	193		106		252		84		445		190	
10:45	210		119		182		84		392		203	
11:00	240	1,081	93	332	254	1,052	82	231	494	2,133	175	563
11:15	276		104		258		56		534		160	
11:30	279		75		270		45		549		120	
11:45	286		60		270		48		556		108	
Totals	4,642		11,717		8,433		9,595		13,075		21,312	
Split%	35.5		55.0		64.5		45.0					
Day Totals		16,359				18,028				34,387		
Day Splits		47.6				52.4						
Peak Hour	11:00		04:45		07:30		12:00		07:45		12:00	
Volume	1,081		1,279		1,634		1,251		2,314		2,416	
Factor	0.94		0.95		0.96		0.91		0.97		0.95	

Data File : D1909011

Transportation Studies, Inc.

2640 Walnut Avenue, Suite L

Tustin, CA. 92780

Location : FLOWER STREET — Site: SANTA ANA

Segment : SEGERSTROM AVE TO WARNER AVE — Date: 09/10/19

Client : CITY SANTA ANA — Day: Tuesday

Interval	SB				NB				Combined			
Begin	AM		PM		AM		PM		AM		PM	
12:00	15	46	70	306	14	59	76	282	29	105	146	588
12:15	10		80		13		65		23		145	
12:30	10		78		19		65		29		143	
12:45	11		78		13		76		24		154	
01:00	3	15	80	295	11	29	96	361	14	44	176	656
01:15	2		60		9		78		11		138	
01:30	3		79		6		94		9		173	
01:45	7		76		3		93		10		169	
02:00	6	23	95	524	3	23	124	627	9	46	219	1,151
02:15	2		99		3		116		5		215	
02:30	5		140		8		172		13		312	
02:45	10		190		9		215		19		405	
03:00	3	34	109	425	8	23	275	935	11	57	384	1,360
03:15	7		113		0		217		7		330	
03:30	7		89		6		208		13		297	
03:45	17		114		9		235		26		349	
04:00	9	118	126	448	5	31	224	1,009	14	149	350	1,457
04:15	10		112		3		290		13		402	
04:30	44		105		9		236		53		341	
04:45	55		105		14		259		69		364	
05:00	30	260	120	506	10	90	320	1,217	40	350	440	1,723
05:15	61		124		20		321		81		445	
05:30	89		132		36		288		125		420	
05:45	80		130		24		288		104		418	
06:00	72	424	106	372	38	185	242	718	110	609	348	1,090
06:15	80		92		29		200		109		292	
06:30	122		92		48		156		170		248	
06:45	150		82		70		120		220		202	
07:00	171	727	92	331	84	538	118	418	255	1,265	210	749
07:15	186		79		127		102		313		181	
07:30	194		84		161		106		355		190	
07:45	176		76		166		92		342		168	
08:00	145	638	80	245	118	308	81	316	263	946	161	561
08:15	160		58		76		92		236		150	
08:30	164		61		62		79		226		140	
08:45	169		46		52		64		221		110	
09:00	115	346	41	146	57	186	47	204	172	532	88	350
09:15	78		38		40		53		118		91	
09:30	80		33		48		52		128		85	
09:45	73		34		41		52		114		86	
10:00	70	245	37	134	55	207	52	174	125	452	89	308
10:15	59		39		58		42		117		81	
10:30	56		30		42		42		98		72	
10:45	60		28		52		38		112		66	
11:00	59	262	11	54	48	253	45	109	107	515	56	163
11:15	62		15		78		28		140		43	
11:30	77		15		57		21		134		36	
11:45	64		13		70		15		134		28	
Totals	3,138		3,786		1,932		6,370		5,070		10,156	
Split%	61.9		37.3		38.1		62.7					
Day Totals		6,924				8,302				15,226		
Day Splits		45.5				54.5						
Peak Hour	07:00		02:30		07:15		05:00		07:15		05:00	
Volume	727		552		572		1,217		1,273		1,723	
Factor	0.94		0.73		0.86		0.95		0.90		0.97	

Data File : D1909101

Transportation Studies, Inc.

2640 Walnut Avenue, Suite L

Tustin, CA. 92780

Location : EDINGER AVENUE
Site: SANTA ANA
Segment : FLOWER ST TO BROADWAY
Date: 09/24/19
Client : CITY SANTA ANA
Day: Tuesday

Interval	EB				WB				Combined			
Begin	AM		PM		AM		PM		AM		PM	
12:00	36	91	176	638	50	123	237	1,094	86	214	413	1,732
12:15	23		136		19		323		42		459	
12:30	17		148		30		262		47		410	
12:45	15		178		24		272		39		450	
01:00	13	60	157	642	30	99	280	1,289	43	159	437	1,931
01:15	18		150		25		304		43		454	
01:30	11		161		23		339		34		500	
01:45	18		174		21		366		39		540	
02:00	20	59	176	892	15	74	403	1,786	35	133	579	2,678
02:15	17		210		12		413		29		623	
02:30	10		232		20		406		30		638	
02:45	12		274		27		564		39		838	
03:00	20	113	250	948	10	56	480	2,087	30	169	730	3,035
03:15	23		206		6		496		29		702	
03:30	32		226		16		564		48		790	
03:45	38		266		24		547		62		813	
04:00	48	381	244	905	15	116	556	2,316	63	497	800	3,221
04:15	72		210		14		568		86		778	
04:30	124		225		38		574		162		799	
04:45	137		226		49		618		186		844	
05:00	93	664	242	1,036	40	254	594	2,327	133	918	836	3,363
05:15	128		246		48		627		176		873	
05:30	190		280		80		598		270		878	
05:45	253		268		86		508		339		776	
06:00	211	1,018	225	839	86	482	566	1,836	297	1,500	791	2,675
06:15	247		232		98		434		345		666	
06:30	254		194		134		438		388		632	
06:45	306		188		164		398		470		586	
07:00	272	1,034	173	671	200	819	394	1,472	472	1,853	567	2,143
07:15	276		174		239		418		515		592	
07:30	234		164		206		341		440		505	
07:45	252		160		174		319		426		479	
08:00	230	997	168	606	180	759	302	1,013	410	1,756	470	1,619
08:15	252		164		226		283		478		447	
08:30	245		146		209		240		454		386	
08:45	270		128		144		188		414		316	
09:00	194	703	110	405	148	708	203	758	342	1,411	313	1,163
09:15	178		104		192		202		370		306	
09:30	155		100		176		215		331		315	
09:45	176		91		192		138		368		229	
10:00	144	576	82	257	184	725	163	558	328	1,301	245	815
10:15	123		65		165		160		288		225	
10:30	168		55		170		125		338		180	
10:45	141		55		206		110		347		165	
11:00	144	598	48	156	216	793	105	339	360	1,391	153	495
11:15	140		44		172		92		312		136	
11:30	164		40		213		74		377		114	
11:45	150		24		192		68		342		92	
Totals	6,294		7,995		5,008		16,875		11,302		24,870	
Split%	55.7		32.1		44.3		67.9					
Day Totals		14,289				21,883				36,172		
Day Splits		39.5				60.5						
Peak Hour	06:30		05:00		07:00		04:45		06:45		04:45	
Volume	1,108		1,036		819		2,437		1,897		3,431	
Factor	0.91		0.93		0.86		0.97		0.92		0.98	

Data File : D1909052

Thursday, October 03, 2019 Location: Santa Ana PROJECT:

ADT160 MAIN ST from EDINGER AVE to McFADDEN AVE. **Prepared by AimTD tel. 714 253 7888**

AM Period	NB		SB		EB	WB		PM Period	NB		SB		EB	WB	
0:00	34		46					12:00	176		167				
0:15	38		36					12:15	204		187				
0:30	30		27					12:30	197		209				
0:45	36	138	40	149			287	12:45	216	793	175	738			1531
1:00	26		26					13:00	197		181				
1:15	25		13					13:15	205		167				
1:30	23		15					13:30	247		159				
1:45	27	101	17	71			172	13:45	206	855	202	709			1564
2:00	21		25					14:00	228		173				
2:15	23		21					14:15	295		153				
2:30	29		17					14:30	278		151				
2:45	22	95	22	85			180	14:45	267	1068	197	674			1742
3:00	15		19					15:00	305		177				
3:15	8		29					15:15	322		205				
3:30	17		23					15:30	290		188				
3:45	25	65	26	97			162	15:45	307	1224	197	767			1991
4:00	29		41					16:00	286		215				
4:15	24		31					16:15	332		181				
4:30	41		42					16:30	341		187				
4:45	40	134	54	168			302	16:45	320	1279	218	801			2080
5:00	48		49					17:00	323		200				
5:15	55		68					17:15	336		217				
5:30	78		78					17:30	307		223				
5:45	89	270	131	326			596	17:45	289	1255	238	878			2133
6:00	75		173					18:00	275		206				
6:15	111		155					18:15	311		190				
6:30	121		173					18:30	271		187				
6:45	137	444	212	713			1157	18:45	229	1086	165	748			1834
7:00	159		317					19:00	184		161				
7:15	194		331					19:15	177		156				
7:30	243		324					19:30	180		152				
7:45	234	830	348	1320			2150	19:45	150	691	162	631			1322
8:00	204		349					20:00	140		127				
8:15	185		326					20:15	169		134				
8:30	172		357					20:30	109		115				
8:45	164	725	325	1357			2082	20:45	131	549	123	499			1048
9:00	131		298					21:00	113		133				
9:15	127		261					21:15	120		105				
9:30	135		208					21:30	104		101				
9:45	152	545	195	962			1507	21:45	110	447	90	429			876
10:00	165		169					22:00	97		86				
10:15	156		164					22:15	76		68				
10:30	146		171					22:30	86		76				
10:45	157	624	178	682			1306	22:45	65	324	58	288			612
11:00	185		180					23:00	73		47				
11:15	169		153					23:15	68		42				
11:30	152		166					23:30	42		41				
11:45	158	664	164	663			1327	23:45	31	214	34	164			378
Total Vol.		4635		6593			**11228**			9785		7326			**17111**

Daily Totals

NB	SB	EB	WB	**Combined**
14420	13919			**28339**

	AM			**PM**		
Split %	41.3%	58.7%	**39.6%**	57.2%	42.8%	**60.4%**
Peak Hour	7:15	7:45	**7:15**	16:30	17:15	**16:45**
Volume	875	1380	**2227**	1320	884	**2144**
P.H.F.	0.90	0.97	**0.96**	0.96	0.93	**0.97**

cs@aimtd.com Tell. 714 253 7888

Thursday, October 10, 2019 CITY: Santa Ana PROJECT: SC

ADT159 MAIN ST from WARNER AVE to EDINGER AVE. **Prepared by AimTD tel. 714 253 7888**

AM Period	NB		SB		EB	WB		PM Period	NB		SB		EB	WB	
0:00	49		24					12:00	160		169				
0:15	45		37					12:15	170		159				
0:30	36		25					12:30	146		139				
0:45	31	161	35	121			282	12:45	184	660	146	613			1273
1:00	26		26					13:00	188		170				
1:15	23		18					13:15	195		157				
1:30	26		19					13:30	235		177				
1:45	21	96	12	75			171	13:45	218	836	139	643			1479
2:00	24		8					14:00	207		167				
2:15	20		16					14:15	271		182				
2:30	37		18					14:30	260		194				
2:45	26	107	19	61			168	14:45	314	1052	204	747			1799
3:00	28		18					15:00	273		182				
3:15	13		15					15:15	274		186				
3:30	21		31					15:30	330		175				
3:45	11	73	41	105			178	15:45	346	1223	187	730			1953
4:00	17		37					16:00	323		171				
4:15	24		65					16:15	353		165				
4:30	27		104					16:30	343		176				
4:45	37	105	116	322			427	16:45	318	1337	173	685			2022
5:00	49		91					17:00	332		187				
5:15	52		119					17:15	342		229				
5:30	63		162					17:30	300		224				
5:45	57	221	197	569			790	17:45	301	1275	211	851			2126
6:00	59		169					18:00	294		170				
6:15	66		195					18:15	337		165				
6:30	90		281					18:30	287		128				
6:45	106	321	317	962			1283	18:45	283	1201	145	608			1809
7:00	106		305					19:00	222		133				
7:15	145		372					19:15	209		144				
7:30	171		292					19:30	170		118				
7:45	193	615	299	1268			1883	19:45	154	755	120	515			1270
8:00	157		327					20:00	141		107				
8:15	137		334					20:15	176		119				
8:30	134		336					20:30	193		105				
8:45	133	561	356	1353			1914	20:45	162	672	102	433			1105
9:00	126		272					21:00	198		90				
9:15	122		204					21:15	174		93				
9:30	139		176					21:30	111		100				
9:45	155	542	165	817			1359	21:45	118	601	80	363			964
10:00	148		162					22:00	105		65				
10:15	151		157					22:15	108		70				
10:30	128		157					22:30	85		68				
10:45	139	566	152	628			1194	22:45	63	361	56	259			620
11:00	143		151					23:00	64		44				
11:15	163		141					23:15	78		47				
11:30	151		146					23:30	48		46				
11:45	164	621	155	593			1214	23:45	50	240	35	172			412
Total Vol.		3989		6874			**10863**			10213		6619			**16832**

Daily Totals

NB	SB	EB	WB	**Combined**
14202	13493			**27695**

	AM			**PM**		
Split %	36.7%	63.3%	**39.2%**	60.7%	39.3%	**60.8%**
Peak Hour	7:15	8:00	**7:15**	15:45	17:00	**17:00**
Volume	666	1353	**1956**	1365	851	**2126**
P.H.F.	0.86	0.95	**0.95**	0.97	0.93	**0.93**

cs@aimtd.com Tell. 714 253 7888

Wednesday, September 11, 2019 Location: Santa Ana PROJECT:

ADT157 MAIN ST from ALTON AVE to DYER RD. **Prepared by AimTD tel. 714 253 7888**

AM Period	NB		SB		EB	WB		PM Period	NB		SB		EB	WB	
0:00	37		30					12:00	230		160				
0:15	25		33					12:15	206		177				
0:30	38		38					12:30	202		191				
0:45	34	134	57	158			292	12:45	226	864	172	700			1564
1:00	30		18					13:00	211		160				
1:15	26		19					13:15	277		171				
1:30	19		27					13:30	316		213				
1:45	16	91	20	84			175	13:45	291	1095	184	728			1823
2:00	33		23					14:00	247		189				
2:15	16		21					14:15	309		191				
2:30	68		21					14:30	364		180				
2:45	34	151	15	80			231	14:45	404	1324	186	746			2070
3:00	15		16					15:00	373		178				
3:15	17		16					15:15	340		174				
3:30	20		32					15:30	435		177				
3:45	20	72	34	98			170	15:45	359	1507	180	709			2216
4:00	16		47					16:00	384		162				
4:15	13		80					16:15	405		191				
4:30	25		123					16:30	379		202				
4:45	49	103	132	382			485	16:45	361	1529	193	748			2277
5:00	39		104					17:00	393		197				
5:15	32		125					17:15	435		191				
5:30	55		173					17:30	410		214				
5:45	79	205	209	611			816	17:45	444	1682	223	825			2507
6:00	75		209					18:00	435		165				
6:15	54		238					18:15	389		132				
6:30	84		319					18:30	400		152				
6:45	119	332	366	1132			1464	18:45	284	1508	118	567			2075
7:00	137		353					19:00	241		108				
7:15	146		348					19:15	210		126				
7:30	190		394					19:30	166		120				
7:45	163	636	395	1490			2126	19:45	158	775	119	473			1248
8:00	167		356					20:00	137		94				
8:15	133		434					20:15	119		101				
8:30	139		402					20:30	120		98				
8:45	132	571	355	1547			2118	20:45	104	480	84	377			857
9:00	140		236					21:00	101		78				
9:15	115		225					21:15	104		78				
9:30	141		208					21:30	111		70				
9:45	133	529	222	891			1420	21:45	74	390	64	290			680
10:00	128		152					22:00	112		75				
10:15	127		137					22:15	78		73				
10:30	144		156					22:30	90		56				
10:45	134	533	143	588			1121	22:45	75	355	62	266			621
11:00	181		165					23:00	83		43				
11:15	170		172					23:15	60		38				
11:30	169		180					23:30	58		35				
11:45	200	720	191	708			1428	23:45	39	240	42	158			398
Total Vol.		4077		7769			**11846**			11749		6587			**18336**

Daily Totals

NB	SB	EB	WB	**Combined**
15826	14356			**30182**

	AM			**PM**		
Split %	34.4%	65.6%	**39.2%**	64.1%	35.9%	**60.8%**
Peak Hour	11:45	7:45	**7:30**	17:15	17:00	**17:15**
Volume	838	1587	**2232**	1724	825	**2517**
P.H.F.	0.91	0.91	**0.96**	0.98	0.92	**0.94**

cs@aimtd.com Tell. 714 253 7888

Wednesday, September 11, 2019 Location: Santa Ana PROJECT:

ADT224 SEGERSTROM AVE from BRISTOL ST to FLOWER ST. **Prepared by AimTD tel. 714 253 7888**

AM Period	NB	SB	EB		WB			PM Period	NB	SB	EB		WB		
0:30			25		25			12:00			127		142		
0:15			20		15			12:15			125		116		
0:30			23		29			12:30			136		117		
0:45			29	97	23	92	189	12:45			144	532	111	486	1018
1:00			17		13			13:00			145		140		
1:15			12		8			13:15			161		166		
1:30			9		16			13:30			196		213		
1:45			6	44	7	44	88	13:45			213	715	206	725	1440
2:00			14		15			14:00			194		192		
2:15			11		6			14:15			165		187		
2:30			9		10			14:30			166		222		
2:45			13	47	12	43	90	14:45			182	707	250	851	1558
3:00			10		12			15:00			219		231		
3:15			11		14			15:15			177		204		
3:30			25		6			15:30			231		268		
3:45			29	75	17	49	124	15:45			194	821	303	1006	1827
4:00			29		17			16:00			209		315		
4:15			45		19			16:15			197		313		
4:30			59		36			16:30			244		332		
4:45			91	224	52	124	348	16:45			218	868	290	1250	2118
5:00			58		26			17:00			229		279		
5:15			97		36			17:15			251		265		
5:30			103		40			17:30			260		280		
5:45			135	393	49	151	544	17:45			225	965	285	1109	2074
6:00			90		57			18:00			212		318		
6:15			130		67			18:15			186		242		
6:30			159		83			18:30			144		214		
6:45			202	581	107	314	895	18:45			153	695	186	960	1655
7:00			261		125			19:00			116		145		
7:15			297		144			19:15			115		148		
7:30			312		191			19:30			124		132		
7:45			296	1166	160	620	1786	19:45			115	470	111	536	1006
8:00			212		123			20:00			111		100		
8:15			203		96			20:15			92		103		
8:30			212		148			20:30			96		90		
8:45			193	820	136	503	1323	20:45			81	380	80	373	753
9:00			153		95			21:00			84		90		
9:15			145		103			21:15			77		81		
9:30			132		100			21:30			60		77		
9:45			104	534	108	406	940	21:45			64	285	77	325	610
10:00			109		101			22:00			64		70		
10:15			97		93			22:15			48		64		
10:30			94		92			22:30			48		47		
10:45			104	404	88	374	778	22:45			38	198	40	221	419
11:00			100		111			23:00			38		43		
11:15			103		108			23:15			35		35		
11:30			103		114			23:30			26		32		
11:45			123	429	128	461	890	23:45			22	121	28	138	259
Total Vol.				4814		3181	**7995**					6757		7980	**14737**

Daily Totals

NB	SB	EB	WB	Combined
		11571	11161	**22732**

			AM				PM		
Split %			60.2%	39.8%	**35.2%**		45.9%	54.1%	**64.8%**
Peak Hour	0:30	0:30	7:00	7:00	**7:00**		17:00	15:45	**16:00**
Volume			1166	620	**1786**		965	1263	**2118**
P.H.F.			0.93	0.81	**0.89**		0.93	0.95	**0.92**

Thursday, October 10, 2019 | CITY: Santa Ana | PROJECT:

Prepared by: Field Data Services of Arizor

ADT152 MacArthur between Flower and Main | **Prepared by AimTD LLC tel. 714 253 7888**

AM Period	NB	SB	EB		WB			PM Period	NB	SB	EB		WB		
0:00			24		41			12:00			213		294		
0:15			21		35			12:15			245		288		
0:30			15		37			12:30			257		269		
0:45			14	74	25	138	212	12:45			285	1000	314	1165	2165
1:00			16		23			13:00			308		287		
1:15			11		25			13:15			303		275		
1:30			12		20			13:30			294		303		
1:45			14	53	16	84	137	13:45			312	1217	286	1151	2368
2:00			10		19			14:00			281		321		
2:15			9		15			14:15			313		312		
2:30			13		23			14:30			310		345		
2:45			16	48	25	82	130	14:45			287	1191	331	1309	2500
3:00			21		14			15:00			312		350		
3:15			23		18			15:15			279		398		
3:30			31		22			15:30			253		421		
3:45			36	111	21	75	186	15:45			237	1081	475	1644	2725
4:00			47		17			16:00			231		563		
4:15			62		28			16:15			252		514		
4:30			98		42			16:30			248		557		
4:45			101	308	38	125	433	16:45			240	971	586	2220	3191
5:00			121		52			17:00			227		617		
5:15			129		50			17:15			234		595		
5:30			175		64			17:30			242		582		
5:45			196	621	79	245	866	17:45			231	934	556	2350	3284
6:00			200		76			18:00			214		525		
6:15			234		86			18:15			236		512		
6:30			306		107			18:30			223		456		
6:45			372	1112	96	365	1477	18:45			220	893	423	1916	2809
7:00			421		131			19:00			198		302		
7:15			463		185			19:15			203		253		
7:30			521		197			19:30			187		194		
7:45			535	1940	176	689	2629	19:45			179	767	195	944	1711
8:00			501		175			20:00			176		168		
8:15			461		187			20:15			153		150		
8:30			452		157			20:30			134		178		
8:45			423	1837	162	681	2518	20:45			140	603	145	641	1244
9:00			345		142			21:00			142		133		
9:15			269		147			21:15			144		142		
9:30			204		164			21:30			121		145		
9:45			214	1032	153	606	1638	21:45			93	500	123	543	1043
10:00			196		158			22:00			101		131		
10:15			185		165			22:15			98		120		
10:30			157		172			22:30			76		96		
10:45			175	713	169	664	1377	22:45			53	328	65	412	740
11:00			168		197			23:00			56		79		
11:15			203		235			23:15			43		75		
11:30			184		268			23:30			31		89		
11:45			195	750	286	986	1736	23:45			25	155	53	296	451
Total Vol.			8599		4740		**13339**				9640		14591		**24231**

Daily Totals

NB	SB	EB	WB	Combined
		18239	19331	**37570**

	AM			PM		
Split %	64.5%	35.5%	**35.5%**	39.8%	60.2%	**64.5%**
Peak Hour	7:15	11:45	**7:15**	14:15	16:45	**16:45**
Volume	2020	1137	**2753**	1222	2380	**3323**
P.H.F.	0.94	0.97	**0.96**	0.98	0.96	**0.98**

cs@aimtd.com Tell. 714 253 7888

Wednesday, October 02, 2019 CITY: Santa Ana PROJECT:

Prepared by: Field Data Services of Arizor

ADT155 Main between Sunflower and MacArthur. **Prepared by AimTD LLC tel. 714 253 7888**

AM Period	NB		SB		EB	WB		PM Period	NB		SB		EB	WB	
0:00	23		16					12:00	167		141				
0:15	26		14					12:15	176		151				
0:30	21		12					12:30	206		158				
0:45	18	88	8	50			138	12:45	189	738	142	592			1330
1:00	13		9					13:00	198		152				
1:15	14		7					13:15	223		145				
1:30	15		6					13:30	208		136				
1:45	11	53	4	26			79	13:45	198	827	142	575			1402
2:00	9		6					14:00	206		121				
2:15	13		7					14:15	234		124				
2:30	15		4					14:30	254		117				
2:45	8	45	8	25			70	14:45	259	953	112	474			1427
3:00	11		5					15:00	276		98				
3:15	8		5					15:15	298		110				
3:30	7		11					15:30	342		123				
3:45	11	37	14	35			72	15:45	331	1247	142	473			1720
4:00	5		16					16:00	367		147				
4:15	12		24					16:15	389		136				
4:30	15		47					16:30	434		142				
4:45	16	48	75	162			210	16:45	456	1646	134	559			2205
5:00	21		71					17:00	521		152				
5:15	28		67					17:15	489		157				
5:30	37		86					17:30	456		175				
5:45	35	121	97	321			442	17:45	467	1933	154	638			2571
6:00	48		123					18:00	407		142				
6:15	54		156					18:15	342		113				
6:30	76		178					18:30	314		97				
6:45	70	248	207	664			912	18:45	286	1349	86	438			1787
7:00	87		245					19:00	234		65				
7:15	123		289					19:15	201		76				
7:30	145		305					19:30	142		65				
7:45	179	534	311	1150			1684	19:45	113	690	75	281			971
8:00	168		352					20:00	101		54				
8:15	143		316					20:15	87		46				
8:30	125		308					20:30	97		63				
8:45	112	548	298	1274			1822	20:45	67	352	45	208			560
9:00	104		251					21:00	86		53				
9:15	107		214					21:15	97		51				
9:30	98		156					21:30	76		47				
9:45	97	406	132	753			1159	21:45	86	345	32	183			528
10:00	87		121					22:00	76		25				
10:15	76		123					22:15	65		34				
10:30	73		108					22:30	70		31				
10:45	89	325	127	479			804	22:45	53	264	25	115			379
11:00	111		113					23:00	41		21				
11:15	104		134					23:15	42		16				
11:30	122		123					23:30	28		17				
11:45	136	473	125	495			968	23:45	32	143	20	74			217
Total Vol.	2926		5434				**8360**		10487		4610				**15097**

Daily Totals

NB	SB	EB	WB	**Combined**
13413	10044			**23457**

	AM			**PM**		
Split %	35.0%	65.0%	**35.6%**	69.5%	30.5%	**64.4%**
Peak Hour	11:45	7:45	**7:30**	17:00	17:00	**17:00**
Volume	685	1287	**1919**	1933	638	**2571**
P.H.F.	0.83	0.91	**0.92**	0.92	0.91	**0.96**

cs@aimtd.com Tell. 714 253 7888

Transportation Studies, Inc.

2640 Walnut Avenue, Suite L

Tustin, CA. 92780

Location : GRAND AVENUE — Site: SANTA ANA

Segment : WARNER AVE TO EDINGER AVE — Date: 09/12/19

Client : CITY SANTA ANA — Day: Thursday

Interval	NB				SB				Combined			
Begin	AM		PM		AM		PM		AM		PM	
12:00	6	20	120	487	4	22	149	543	10	42	269	1,030
12:15	5		115		6		132		11		247	
12:30	5		130		10		136		15		266	
12:45	4		122		2		126		6		248	
01:00	3	14	144	580	1	8	133	451	4	22	277	1,031
01:15	4		134		2		98		6		232	
01:30	3		169		4		132		7		301	
01:45	4		133		1		88		5		221	
02:00	2	14	164	745	2	11	96	469	4	25	260	1,214
02:15	6		182		2		109		8		291	
02:30	2		213		3		138		5		351	
02:45	4		186		4		126		8		312	
03:00	4	16	224	1,101	4	28	153	582	8	44	377	1,683
03:15	4		256		6		148		10		404	
03:30	6		308		6		137		12		445	
03:45	2		313		12		144		14		457	
04:00	3	44	304	1,263	10	90	160	664	13	134	464	1,927
04:15	3		294		16		170		19		464	
04:30	11		341		16		184		27		525	
04:45	27		324		48		150		75		474	
05:00	18	124	328	1,305	30	177	226	701	48	301	554	2,006
05:15	26		322		34		182		60		504	
05:30	28		346		52		156		80		502	
05:45	52		309		61		137		113		446	
06:00	42	229	258	901	46	320	129	451	88	549	387	1,352
06:15	56		259		70		112		126		371	
06:30	57		220		90		105		147		325	
06:45	74		164		114		105		188		269	
07:00	90	428	131	374	120	554	96	354	210	982	227	728
07:15	96		99		124		80		220		179	
07:30	110		84		158		96		268		180	
07:45	132		60		152		82		284		142	
08:00	114	410	60	175	162	675	52	197	276	1,085	112	372
08:15	114		38		152		48		266		86	
08:30	94		42		175		47		269		89	
08:45	88		35		186		50		274		85	
09:00	101	338	29	124	138	464	46	153	239	802	75	277
09:15	78		36		132		35		210		71	
09:30	78		31		103		44		181		75	
09:45	81		28		91		28		172		56	
10:00	65	304	32	92	92	377	50	136	157	681	82	228
10:15	58		20		100		30		158		50	
10:30	84		22		91		24		175		46	
10:45	97		18		94		32		191		50	
11:00	88	430	18	53	114	482	31	79	202	912	49	132
11:15	104		14		94		18		198		32	
11:30	118		9		126		18		244		27	
11:45	120		12		148		12		268		24	
Totals	2,371		7,200		3,208		4,780		5,579		11,980	
Split%	42.5		60.1		57.5		39.9					
Day Totals		9,571				7,988				17,559		
Day Splits		54.5				45.5						
Peak Hour	07:30		04:45		08:00		04:30		07:45		04:30	
Volume	470		1,320		675		742		1,095		2,057	
Factor	0.89		0.95		0.91		0.82		0.96		0.93	

* Data File : D1909119

Transportation Studies, Inc.

2640 Walnut Avenue, Suite L

Tustin, CA. 92780

Location : EDINGER AVENUE — Site: SANTA ANA

Segment : LYON ST TO NEWPORT FREEWAY — Date: 09/24/19

Client : CITY SANTA ANA — Day: Tuesday

Interval	EB				WB				Combined			
Begin	AM		PM		AM		PM		AM		PM	
12:00	29	101	286	1,162	47	137	310	1,168	76	238	596	2,330
12:15	30		278		25		284		55		562	
12:30	28		312		38		282		66		594	
12:45	14		286		27		292		41		578	
01:00	18	61	297	1,164	23	70	288	1,159	41	131	585	2,323
01:15	17		293		18		316		35		609	
01:30	16		300		16		286		32		586	
01:45	10		274		13		269		23		543	
02:00	15	67	251	1,217	16	74	315	1,382	31	141	566	2,599
02:15	17		303		27		355		44		658	
02:30	20		338		16		336		36		674	
02:45	15		325		15		376		30		701	
03:00	22	121	324	1,308	11	87	376	1,535	33	208	700	2,843
03:15	26		310		16		375		42		685	
03:30	37		367		26		390		63		757	
03:45	36		307		34		394		70		701	
04:00	47	374	352	1,393	38	329	376	1,582	85	703	728	2,975
04:15	66		324		49		420		115		744	
04:30	113		348		86		402		199		750	
04:45	148		369		156		384		304		753	
05:00	120	744	461	1,655	136	642	368	1,396	256	1,386	829	3,051
05:15	153		435		113		346		266		781	
05:30	235		415		180		320		415		735	
05:45	236		344		213		362		449		706	
06:00	224	1,226	292	1,048	252	1,030	375	1,326	476	2,256	667	2,374
06:15	284		254		220		384		504		638	
06:30	346		266		258		331		604		597	
06:45	372		236		300		236		672		472	
07:00	382	1,650	248	777	354	1,266	208	728	736	2,916	456	1,505
07:15	460		205		291		200		751		405	
07:30	424		162		285		180		709		342	
07:45	384		162		336		140		720		302	
08:00	385	1,439	134	541	338	1,299	174	553	723	2,738	308	1,094
08:15	372		148		378		127		750		275	
08:30	352		135		303		131		655		266	
08:45	330		124		280		121		610		245	
09:00	282	1,022	122	412	277	1,075	114	437	559	2,097	236	849
09:15	254		94		284		128		538		222	
09:30	240		106		264		102		504		208	
09:45	246		90		250		93		496		183	
10:00	260	1,012	108	294	292	1,059	120	342	552	2,071	228	636
10:15	250		68		250		90		500		158	
10:30	256		57		245		62		501		119	
10:45	246		61		272		70		518		131	
11:00	256	1,114	50	169	268	1,083	61	205	524	2,197	111	374
11:15	262		43		264		40		526		83	
11:30	306		42		264		52		570		94	
11:45	290		34		287		52		577		86	
Totals	8,931		11,140		8,151		11,813		17,082		22,953	
Split%	52.3		48.5		47.7		51.5					
Day Totals		20,071				19,964				40,035		
Day Splits		50.1				49.9						
Peak Hour	07:15		04:45		07:45		03:45		07:00		04:30	
Volume	1,653		1,680		1,355		1,592		2,916		3,113	
Factor	0.90		0.91		0.90		0.95		0.97		0.94	

Data File : D1909057

Wednesday, October 02, 2019 Location: Santa Ana PROJECT:

ADT267 WARNER AVE from GR to AVE to PULLMAN ST. **Prepared by AimTD tel. 714 253 7888**

AM Period	NB	SB	EB		WB			PM Period	NB	SB	EB		WB		
0:30			9		12			12:00			177		174		
0:15			8		9			12:15			159		165		
0:30			9		8			12:30			163		152		
0:45			11	37	7	36	73	12:45			150	649	144	635	1284
1:00			7		11			13:00			169		150		
1:15			8		7			13:15			156		167		
1:30			7		9			13:30			154		209		
1:45			6	28	6	33	61	13:45			178	657	187	713	1370
2:00			5		7			14:00			174		180		
2:15			8		9			14:15			170		254		
2:30			9		9			14:30			164		348		
2:45			7	29	5	30	59	14:45			163	671	312	1094	1765
3:00			7		6			15:00			156		301		
3:15			13		7			15:15			153		296		
3:30			27		10			15:30			154		303		
3:45			47	94	4	27	121	15:45			148	611	311	1211	1822
4:00			41		3			16:00			171		274		
4:15			51		5			16:15			155		315		
4:30			95		11			16:30			168		356		
4:45			113	300	14	33	333	16:45			197	691	302	1247	1938
5:00			97		18			17:00			224		324		
5:15			123		21			17:15			229		307		
5:30			175		20			17:30			205		310		
5:45			290	685	43	102	787	17:45			168	826	301	1242	2068
6:00			165		54			18:00			136		294		
6:15			209		59			18:15			146		237		
6:30			223		53			18:30			117		171		
6:45			242	839	79	245	1084	18:45			103	502	103	805	1307
7:00			231		112			19:00			85		78		
7:15			283		153			19:15			78		73		
7:30			272		158			19:30			73		82		
7:45			315	1101	164	587	1688	19:45			64	300	70	303	603
8:00			286		161			20:00			56		64		
8:15			274		158			20:15			46		60		
8:30			255		141			20:30			37		50		
8:45			258	1073	139	599	1672	20:45			55	194	64	238	432
9:00			166		111			21:00			43		44		
9:15			173		123			21:15			37		44		
9:30			142		127			21:30			35		49		
9:45			98	579	110	471	1050	21:45			49	164	46	183	347
10:00			125		116			22:00			32		42		
10:15			100		112			22:15			29		36		
10:30			107		106			22:30			24		37		
10:45			106	438	101	435	873	22:45			24	109	42	157	266
11:00			126		113			23:00			16		35		
11:15			143		92			23:15			14		24		
11:30			176		105			23:30			12		31		
11:45			175	620	125	435	1055	23:45			8	50	15	105	155
Total Vol.				5823		3033	**8856**					5424		7933	**13357**

Daily Totals

NB	SB	EB	WB	Combined
		11247	10966	**22213**

			AM				PM		
Split %			65.8%	34.2%	**39.9%**		40.6%	59.4%	**60.1%**
Peak Hour	0:30	0:30	7:15	7:30	**7:15**		16:45	16:15	**16:30**
Volume			1156	641	**1792**		855	1297	**2107**
P.H.F.			0.92	0.98	**0.94**		0.93	0.91	**0.96**

Thursday, October 03, 2019 Location: Santa Ana PROJECT:

ADT264 WARNER AVE from MAIN ST to HALLADAY ST. **Prepared by AimTD tel. 714 253 7888**

AM Period	NB	SB	EB		WB			PM Period	NB	SB	EB		WB		
0:30			16		27			12:00			167		152		
0:15			20		23			12:15			168		156		
0:30			13		25			12:30			193		164		
0:45			11	60	16	91	151	12:45			204	732	158	630	1362
1:00			5		14			13:00			231		175		
1:15			6		20			13:15			215		198		
1:30			5		18			13:30			244		204		
1:45			11	27	14	66	93	13:45			280	970	197	774	1744
2:00			16		20			14:00			252		188		
2:15			9		17			14:15			234		196		
2:30			18		9			14:30			241		218		
2:45			27	70	13	59	129	14:45			221	948	210	812	1760
3:00			20		19			15:00			236		229		
3:15			18		14			15:15			220		285		
3:30			21		8			15:30			227		270		
3:45			43	102	11	52	154	15:45			260	943	223	1007	1950
4:00			33		22			16:00			245		255		
4:15			54		13			16:15			235		277		
4:30			75		31			16:30			237		312		
4:45			71	233	28	94	327	16:45			213	930	263	1107	2037
5:00			94		34			17:00			241		275		
5:15			101		37			17:15			276		283		
5:30			230		63			17:30			319		267		
5:45			280	705	112	246	951	17:45			311	1147	253	1078	2225
6:00			224		103			18:00			265		248		
6:15			202		113			18:15			231		236		
6:30			209		109			18:30			208		245		
6:45			261	896	123	448	1344	18:45			178	882	213	942	1824
7:00			282		183			19:00			187		189		
7:15			322		231			19:15			153		156		
7:30			284		259			19:30			137		135		
7:45			324	1212	221	894	2106	19:45			123	600	115	595	1195
8:00			328		173			20:00			103		131		
8:15			286		150			20:15			106		96		
8:30			293		155			20:30			100		106		
8:45			267	1174	145	623	1797	20:45			92	401	115	448	849
9:00			196		147			21:00			94		108		
9:15			193		137			21:15			70		102		
9:30			141		153			21:30			87		88		
9:45			167	697	157	594	1291	21:45			52	303	68	366	669
10:00			146		149			22:00			61		92		
10:15			158		127			22:15			54		86		
10:30			151		135			22:30			47		58		
10:45			183	638	119	530	1168	22:45			42	204	47	283	487
11:00			158		158			23:00			26		42		
11:15			169		159			23:15			34		37		
11:30			145		146			23:30			26		36		
11:45			159	631	149	612	1243	23:45			30	116	33	148	264
Total Vol.				6445		4309	**10754**					8176		8190	**16366**

			Daily Totals		
	NB	SB	EB	WB	**Combined**
			14621	12499	**27120**

			AM				**PM**		
Split %			59.9%	40.1%	**39.7%**		50.0%	50.0%	**60.3%**
Peak Hour	0:30	0:30	7:15	7:00	**7:15**		17:15	16:30	**17:00**
Volume			1258	894	**2142**		1171	1133	**2225**
P.H.F.			0.96	0.86	**0.97**		0.92	0.91	**0.95**

Wednesday, October 02, 2019 CITY: Santa Ana PROJECT: SC

ADT172 McFADDEN AVE from NEWHOPE ST to HARBOR BL. **Prepared by AimTD tel. 714 253 7888**

AM Period	NB	SB	EB		WB			PM Period	NB	SB	EB		WB		
0:00			18		33			12:00			123		127		
0:15			23		19			12:15			125		119		
0:30			13		12			12:30			96		140		
0:45			10	64	13	77	141	12:45			120	464	106	492	956
1:00			7		16			13:00			115		127		
1:15			5		14			13:15			132		129		
1:30			7		7			13:30			124		106		
1:45			9	28	6	43	71	13:45			148	519	156	518	1037
2:00			11		18			14:00			155		162		
2:15			3		8			14:15			159		159		
2:30			5		9			14:30			145		165		
2:45			6	25	7	42	67	14:45			137	596	155	641	1237
3:00			10		3			15:00			166		180		
3:15			5		8			15:15			158		167		
3:30			11		5			15:30			139		183		
3:45			9	35	12	28	63	15:45			153	616	158	688	1304
4:00			12		12			16:00			151		163		
4:15			7		11			16:15			148		175		
4:30			20		20			16:30			148		194		
4:45			16	55	26	69	124	16:45			142	589	188	720	1309
5:00			25		22			17:00			166		233		
5:15			35		26			17:15			160		200		
5:30			32		40			17:30			171		211		
5:45			41	133	32	120	253	17:45			190	687	210	854	1541
6:00			52		44			18:00			184		178		
6:15			49		45			18:15			150		224		
6:30			69		64			18:30			152		181		
6:45			92	262	77	230	492	18:45			137	623	161	744	1367
7:00			108		95			19:00			136		159		
7:15			147		131			19:15			136		135		
7:30			159		170			19:30			128		129		
7:45			180	594	178	574	1168	19:45			96	496	129	552	1048
8:00			182		176			20:00			93		144		
8:15			207		145			20:15			92		96		
8:30			191		107			20:30			87		97		
8:45			160	740	117	545	1285	20:45			96	368	106	443	811
9:00			174		128			21:00			78		98		
9:15			140		111			21:15			87		108		
9:30			90		105			21:30			68		81		
9:45			106	510	106	450	960	21:45			67	300	70	357	657
10:00			113		115			22:00			60		76		
10:15			107		130			22:15			54		62		
10:30			108		108			22:30			41		75		
10:45			110	438	105	458	896	22:45			40	195	38	251	446
11:00			86		123			23:00			28		37		
11:15			96		107			23:15			34		32		
11:30			106		99			23:30			21		28		
11:45			120	408	114	443	851	23:45			21	104	27	124	228
Total Vol.			3292		3079		**6371**				5557		6384		**11941**

Daily Totals

NB	SB	EB	WB	**Combined**
		8849	9463	**18312**

	AM			**PM**		
Split %	51.7%	48.3%	**34.8%**	46.5%	53.5%	**65.2%**
Peak Hour	7:45	7:30	**7:30**	17:15	17:00	**17:00**
Volume	760	669	**1397**	705	854	**1541**
P.H.F.	0.92	0.94	**0.98**	0.93	0.92	**0.96**

cs@aimtd.com Tell. 714 253 7888

Tuesday, September 24, 2019 CITY: Santa Ana PROJECT: SC

ADT181 McFADDEN AVE from GR to AVE to LYON ST. **Prepared by AimTD tel. 714 253 7888**

AM Period	NB	SB	EB		WB			PM Period	NB	SB	EB		WB		
0:00			12		13			12:00			150		119		
0:15			16		21			12:15			118		118		
0:30			16		12			12:30			132		118		
0:45			10	54	13	59	113	12:45			119	519	130	485	1004
1:00			9		18			13:00			131		121		
1:15			5		13			13:15			126		135		
1:30			10		14			13:30			137		145		
1:45			15	39	13	58	97	13:45			124	518	159	560	1078
2:00			8		19			14:00			120		158		
2:15			9		9			14:15			157		148		
2:30			12		11			14:30			185		189		
2:45			11	40	16	55	95	14:45			186	648	166	661	1309
3:00			6		6			15:00			177		180		
3:15			7		8			15:15			203		196		
3:30			20		10			15:30			204		168		
3:45			33	66	24	48	114	15:45			176	760	221	765	1525
4:00			19		19			16:00			193		211		
4:15			37		20			16:15			172		191		
4:30			54		44			16:30			178		206		
4:45			58	168	51	134	302	16:45			173	716	191	799	1515
5:00			61		43			17:00			216		213		
5:15			88		50			17:15			196		191		
5:30			117		69			17:30			204		187		
5:45			137	403	80	242	645	17:45			182	798	181	772	1570
6:00			136		82			18:00			190		163		
6:15			159		82			18:15			155		193		
6:30			171		96			18:30			165		137		
6:45			195	661	115	375	1036	18:45			160	670	146	639	1309
7:00			180		121			19:00			133		143		
7:15			204		148			19:15			130		122		
7:30			179		150			19:30			117		122		
7:45			180	743	183	602	1345	19:45			127	507	104	491	998
8:00			237		154			20:00			118		98		
8:15			201		127			20:15			99		89		
8:30			145		122			20:30			99		79		
8:45			171	754	141	544	1298	20:45			69	385	93	359	744
9:00			158		97			21:00			79		66		
9:15			116		101			21:15			60		83		
9:30			114		119			21:30			72		57		
9:45			121	509	89	406	915	21:45			52	263	54	260	523
10:00			119		110			22:00			66		66		
10:15			96		95			22:15			45		62		
10:30			118		108			22:30			35		37		
10:45			94	427	96	409	836	22:45			39	185	52	217	402
11:00			125		126			23:00			40		39		
11:15			114		115			23:15			22		41		
11:30			131		126			23:30			19		35		
11:45			125	495	115	482	977	23:45			17	98	25	140	238
Total Vol.			4359		3414		**7773**				6067		6148		**12215**

Daily Totals

NB	SB	EB	WB	Combined
		10426	9562	**19988**

	AM			PM		
Split %	56.1%	43.9%	**38.9%**	49.7%	50.3%	**61.1%**
Peak Hour	7:15	7:15	**7:15**	17:00	15:45	**15:15**
Volume	800	635	**1435**	798	829	**1572**
P.H.F.	0.84	0.87	**0.92**	0.92	0.94	**0.97**

cs@aimtd.com Tell. 714 253 7888

Transportation Studies, Inc.

2640 Walnut Avenue, Suite L

Tustin, CA. 92780

Location : DYER ROAD — Site: SANTA ANA

Segment : PULLMAN ST TO RED HILL AVE — Date: 09/24/19

Client : CITY SANTA ANA — Day: Tuesday

Interval	EB				WB				Combined			
Begin	AM		PM		AM		PM		AM		PM	
12:00	20	52	214	769	38	198	228	930	58	250	442	1,699
12:15	10		190		38		234		48		424	
12:30	14		183		84		230		98		413	
12:45	8		182		38		238		46		420	
01:00	13	32	204	728	24	73	246	1,032	37	105	450	1,760
01:15	11		162		28		250		39		412	
01:30	2		186		13		285		15		471	
01:45	6		176		8		251		14		427	
02:00	12	66	186	687	16	63	297	1,179	28	129	483	1,866
02:15	7		155		17		278		24		433	
02:30	17		170		18		335		35		505	
02:45	30		176		12		269		42		445	
03:00	18	187	158	741	16	60	286	1,286	34	247	444	2,027
03:15	31		191		20		332		51		523	
03:30	56		192		11		323		67		515	
03:45	82		200		13		345		95		545	
04:00	56	480	183	852	26	115	370	1,350	82	595	553	2,202
04:15	85		206		24		316		109		522	
04:30	137		227		40		342		177		569	
04:45	202		236		25		322		227		558	
05:00	175	904	243	1,101	32	209	389	1,412	207	1,113	632	2,513
05:15	205		276		36		358		241		634	
05:30	228		294		58		308		286		602	
05:45	296		288		83		357		379		645	
06:00	214	900	230	844	88	460	322	1,197	302	1,360	552	2,041
06:15	241		215		134		329		375		544	
06:30	231		234		102		313		333		547	
06:45	214		165		136		233		350		398	
07:00	220	991	146	486	172	777	300	986	392	1,768	446	1,472
07:15	251		106		176		266		427		372	
07:30	264		120		186		232		450		352	
07:45	256		114		243		188		499		302	
08:00	228	950	124	380	245	1,001	214	748	473	1,951	338	1,128
08:15	222		90		253		168		475		258	
08:30	238		74		267		170		505		244	
08:45	262		92		236		196		498		288	
09:00	218	868	82	293	224	785	194	654	442	1,653	276	947
09:15	233		84		187		158		420		242	
09:30	211		60		195		172		406		232	
09:45	206		67		179		130		385		197	
10:00	170	677	42	195	193	739	150	488	363	1,416	192	683
10:15	168		54		191		122		359		176	
10:30	181		57		175		122		356		179	
10:45	158		42		180		94		338		136	
11:00	208	870	22	83	188	776	98	285	396	1,646	120	368
11:15	219		19		201		66		420		85	
11:30	199		25		184		65		383		90	
11:45	244		17		203		56		447		73	
Totals	6,977		7,159		5,256		11,547		12,233		18,706	
Split%	57.0		38.3		43.0		61.7					
Day Totals		14,136				16,803				30,939		
Day Splits		45.7				54.3						
Peak Hour	07:15		05:00		07:45		05:00		07:45		05:00	
Volume	999		1,101		1,008		1,412		1,952		2,513	
Factor	0.95		0.94		0.94		0.91		0.97		0.97	

Data File : D1909047

Tuesday, September 24, 2019 CITY: Santa Ana PROJECT: SC

ADT176 McFADDEN AVE from BRISTOL ST to FLOWER ST. **Prepared by AimTD tel. 714 253 7888**

AM Period	NB	SB	EB		WB			PM Period	NB	SB	EB		WB		
0:00			15		23			12:00			80		79		
0:15			23		15			12:15			103		90		
0:30			16		17			12:30			75		82		
0:45			15	69	14	69	138	12:45			74	332	73	324	656
1:00			12		15			13:00			100		78		
1:15			8		11			13:15			89		63		
1:30			5		11			13:30			79		103		
1:45			11	36	8	45	81	13:45			98	366	106	350	716
2:00			9		12			14:00			126		95		
2:15			7		9			14:15			122		116		
2:30			9		9			14:30			136		129		
2:45			4	29	8	38	67	14:45			113	497	146	486	983
3:00			7		7			15:00			147		160		
3:15			7		10			15:15			120		142		
3:30			17		10			15:30			125		137		
3:45			16	47	10	37	84	15:45			126	518	133	572	1090
4:00			18		10			16:00			115		139		
4:15			35		16			16:15			107		160		
4:30			36		26			16:30			117		154		
4:45			49	138	24	76	214	16:45			122	461	150	603	1064
5:00			50		26			17:00			109		140		
5:15			47		32			17:15			133		147		
5:30			83		45			17:30			143		143		
5:45			105	285	33	136	421	17:45			151	536	143	573	1109
6:00			87		60			18:00			125		131		
6:15			101		61			18:15			129		131		
6:30			103		73			18:30			132		138		
6:45			110	401	75	269	670	18:45			104	490	127	527	1017
7:00			119		96			19:00			116		123		
7:15			175		123			19:15			104		116		
7:30			194		118			19:30			102		100		
7:45			179	667	124	461	1128	19:45			98	420	104	443	863
8:00			161		119			20:00			90		102		
8:15			148		105			20:15			84		94		
8:30			124		66			20:30			85		56		
8:45			94	527	70	360	887	20:45			64	323	73	325	648
9:00			75		58			21:00			80		63		
9:15			85		74			21:15			75		47		
9:30			82		64			21:30			73		48		
9:45			70	312	63	259	571	21:45			63	291	62	220	511
10:00			70		84			22:00			40		61		
10:15			82		74			22:15			57		50		
10:30			87		68			22:30			35		38		
10:45			71	310	85	311	621	22:45			28	160	43	192	352
11:00			89		73			23:00			33		44		
11:15			68		75			23:15			30		33		
11:30			99		86			23:30			32		30		
11:45			84	340	93	327	667	23:45			28	123	15	122	245
Total Vol.			3161		2388		**5549**				4517		4737		**9254**

	Daily Totals			
NB	SB	EB	WB	**Combined**
		7678	7125	**14803**

	AM			**PM**		
Split %	57.0%	43.0%	**37.5%**	48.8%	51.2%	**62.5%**
Peak Hour	7:15	7:15	**7:15**	17:15	16:15	**17:15**
Volume	709	484	**1193**	552	604	**1116**
P.H.F.	0.91	0.98	**0.96**	0.91	0.94	**0.95**

cs@aimtd.com Tell. 714 253 7888

Wednesday, September 25, 2019 CITY: Santa Ana PROJECT: SC

ADT169 MAIN ST from MAINPLACE DR to GARDEN GROVE FWY. **Prepared by AimTD tel. 714 253 7888**

AM Period	NB		SB		EB	WB		PM Period	NB		SB		EB	WB	
0:00	27		46					12:00	233		223				
0:15	20		34					12:15	261		227				
0:30	21		42					12:30	230		211				
0:45	34	102	23	145			247	12:45	231	955	269	930			1885
1:00	31		32					13:00	197		240				
1:15	33		23					13:15	229		266				
1:30	34		19					13:30	199		247				
1:45	26	124	26	100			224	13:45	237	862	236	989			1851
2:00	31		11					14:00	214		230				
2:15	31		28					14:15	270		234				
2:30	34		25					14:30	248		222				
2:45	34	130	10	74			204	14:45	209	941	246	932			1873
3:00	23		30					15:00	174		251				
3:15	32		27					15:15	224		245				
3:30	34		24					15:30	245		254				
3:45	46	135	28	109			244	15:45	233	876	273	1023			1899
4:00	41		25					16:00	217		238				
4:15	67		26					16:15	260		318				
4:30	113		26					16:30	240		295				
4:45	115	336	38	115			451	16:45	309	1026	319	1170			2196
5:00	95		54					17:00	291		327				
5:15	52		58					17:15	341		302				
5:30	89		88					17:30	317		281				
5:45	87	323	88	288			611	17:45	296	1245	256	1166			2411
6:00	101		109					18:00	254		216				
6:15	117		109					18:15	270		211				
6:30	161		196					18:30	225		192				
6:45	211	590	207	621			1211	18:45	230	979	201	820			1799
7:00	144		308					19:00	186		189				
7:15	166		340					19:15	175		210				
7:30	194		373					19:30	160		189				
7:45	233	737	307	1328			2065	19:45	144	665	200	788			1453
8:00	264		353					20:00	129		186				
8:15	206		320					20:15	111		132				
8:30	211		320					20:30	113		137				
8:45	218	899	232	1225			2124	20:45	74	427	130	585			1012
9:00	175		251					21:00	70		143				
9:15	149		206					21:15	88		144				
9:30	163		175					21:30	54		103				
9:45	208	695	186	818			1513	21:45	63	275	87	477			752
10:00	190		169					22:00	155		86				
10:15	186		186					22:15	141		85				
10:30	206		190					22:30	135		76				
10:45	177	759	216	761			1520	22:45	106	537	89	336			873
11:00	194		190					23:00	88		92				
11:15	245		206					23:15	64		65				
11:30	235		203					23:30	69		69				
11:45	209	883	226	825			1708	23:45	56	277	68	294			571
Total Vol.	5713		6409				**12122**		9065		9510				**18575**

Daily Totals

NB	SB	EB	WB	**Combined**
14778	15919			**30697**

	AM			**PM**		
Split %	47.1%	52.9%	**39.5%**	48.8%	51.2%	**60.5%**
Peak Hour	11:30	7:15	**7:30**	16:45	16:15	**16:45**
Volume	938	1373	**2250**	1258	1259	**2487**
P.H.F.	0.90	0.92	**0.91**	0.94	0.96	**0.97**

cs@aimtd.com Tell. 714 253 7888

Transportation Studies, Inc.

2640 Walnut Avenue, Suite L

Tustin, CA. 92780

Location : FIRST STREET — Site: SANTA ANA

Segment : BRISTOL ST TO FLOWER ST — Date: 09/11/19

Client : CITY SANTA ANA — Day: Wednesday

Interval	EB				WB				Combined			
Begin	AM		PM		AM		PM		AM		PM	
12:00	54	172	264	1,057	56	179	214	903	110	351	478	1,960
12:15	44		275		39		220		83		495	
12:30	40		268		45		221		85		489	
12:45	34		250		39		248		73		498	
01:00	30	108	294	1,201	30	105	260	1,055	60	213	554	2,256
01:15	27		312		30		279		57		591	
01:30	25		321		26		238		51		559	
01:45	26		274		19		278		45		552	
02:00	30	117	308	1,210	32	129	306	1,227	62	246	614	2,437
02:15	24		288		24		298		48		586	
02:30	31		308		36		277		67		585	
02:45	32		306		37		346		69		652	
03:00	20	115	340	1,336	24	104	340	1,445	44	219	680	2,781
03:15	25		318		18		388		43		706	
03:30	30		320		28		338		58		658	
03:45	40		358		34		379		74		737	
04:00	52	286	333	1,393	33	155	374	1,478	85	441	707	2,871
04:15	74		363		24		374		98		737	
04:30	80		342		52		366		132		708	
04:45	80		355		46		364		126		719	
05:00	103	596	350	1,468	51	267	376	1,486	154	863	726	2,954
05:15	127		398		54		339		181		737	
05:30	174		343		76		381		250		724	
05:45	192		377		86		390		278		767	
06:00	213	1,098	326	1,240	92	494	384	1,369	305	1,592	710	2,609
06:15	255		324		130		342		385		666	
06:30	295		270		110		336		405		606	
06:45	335		320		162		307		497		627	
07:00	372	1,684	294	1,009	185	944	258	966	557	2,628	552	1,975
07:15	450		285		212		234		662		519	
07:30	455		218		253		252		708		470	
07:45	407		212		294		222		701		434	
08:00	356	1,452	201	754	253	865	228	719	609	2,317	429	1,473
08:15	362		207		207		184		569		391	
08:30	354		178		208		170		562		348	
08:45	380		168		197		137		577		305	
09:00	349	1,177	181	639	188	832	152	629	537	2,009	333	1,268
09:15	294		154		200		179		494		333	
09:30	269		152		220		142		489		294	
09:45	265		152		224		156		489		308	
10:00	244	992	129	381	224	846	130	464	468	1,838	259	845
10:15	230		98		214		122		444		220	
10:30	280		78		200		106		480		184	
10:45	238		76		208		106		446		182	
11:00	220	1,014	71	241	194	938	104	281	414	1,952	175	522
11:15	263		76		240		74		503		150	
11:30	243		45		236		52		479		97	
11:45	288		49		268		51		556		100	
Totals	8,811		11,929		5,858		12,022		14,669		23,951	
Split%	60.1		49.8		39.9		50.2					
Day Totals		20,740				17,880				38,620		
Day Splits		53.7				46.3						
Peak Hour	07:00		05:00		07:15		05:30		07:15		05:00	
Volume	1,684		1,468		1,012		1,497		2,680		2,954	
Factor	0.93		0.92		0.86		0.96		0.95		0.96	

Data File : D1909091

Transportation Studies, Inc.

2640 Walnut Avenue, Suite L

Tustin, CA. 92780

Location : FAIRHAVEN AVENUE — Site: SANTA ANA

Segment : CAMBRIDGE ST TO TUSTIN AVE — Date: 10/03/19

Client : CITY SANTA ANA

Interval	WB				EB				Combined				Day: Thursday
Begin	AM		PM		AM		PM		AM		PM		
12:00	10	25	59	223	6	27	68	280	16	52	127	503	
12:15	4		56		7		68		11		124		
12:30	7		46		4		70		11		116		
12:45	4		62		10		74		14		136		
01:00	4	11	66	269	2	13	68	261	6	24	134	530	
01:15	4		76		5		54		9		130		
01:30	1		64		4		69		5		133		
01:45	2		63		2		70		4		133		
02:00	1	7	78	376	3	8	73	315	4	15	151	691	
02:15	3		88		2		101		5		189		
02:30	0		94		1		78		1		172		
02:45	3		116		2		63		5		179		
03:00	0	6	118	452	3	8	114	360	3	14	232	812	
03:15	2		134		4		88		6		222		
03:30	4		104		1		68		5		172		
03:45	0		96		0		90		0		186		
04:00	0	11	96	532	5	17	85	359	5	28	181	891	
04:15	2		158		5		92		7		250		
04:30	3		116		5		102		8		218		
04:45	6		162		2		80		8		242		
05:00	5	35	155	657	7	43	108	418	12	78	263	1,075	
05:15	9		169		8		106		17		275		
05:30	10		175		11		100		21		275		
05:45	11		158		17		104		28		262		
06:00	12	93	135	457	24	207	70	276	36	300	205	733	
06:15	23		124		34		72		57		196		
06:30	26		110		73		74		99		184		
06:45	32		88		76		60		108		148		
07:00	41	354	66	209	118	705	46	187	159	1,059	112	396	
07:15	65		58		177		53		242		111		
07:30	100		48		198		46		298		94		
07:45	148		37		212		42		360		79		
08:00	139	362	30	108	172	567	30	117	311	929	60	225	
08:15	92		22		164		28		256		50		
08:30	72		34		111		28		183		62		
08:45	59		22		120		31		179		53		
09:00	50	194	18	78	74	304	22	93	124	498	40	171	
09:15	44		30		80		28		124		58		
09:30	54		17		70		27		124		44		
09:45	46		13		80		16		126		29		
10:00	66	220	23	57	51	225	14	70	117	445	37	127	
10:15	36		14		66		27		102		41		
10:30	56		14		44		20		100		34		
10:45	62		6		64		9		126		15		
11:00	56	221	8	20	68	248	10	32	124	469	18	52	
11:15	56		7		54		7		110		14		
11:30	49		3		56		9		105		12		
11:45	60		2		70		6		130		8		
Totals	1,539		3,438		2,372		2,768		3,911		6,206		
Split%	39.4		55.4		60.6		44.6						
Day Totals		4,977				5,140				10,117			
Day Splits		49.2				50.8							
Peak Hour	07:30		04:45		07:15		05:00		07:30		05:00		
Volume	479		661		759		418		1,225		1,075		
Factor	0.81		0.94		0.90		0.97		0.85		0.98		

Data File : D1909063

Transportation Studies, Inc.

2640 Walnut Avenue, Suite L

Tustin, CA. 92780

Location : FOURTH STREET — Site: SANTA ANA

Segment : FRENCH ST TO GRAND AVE — Date: 10/09/19

Client : CITY SANTA ANA — Day: Wednesday

Interval	EB				WB				Combined			
Begin	AM		PM		AM		PM		AM		PM	
12:00	10	34	78	296	21	71	122	509	31	105	200	805
12:15	9		66		13		125		22		191	
12:30	10		74		21		134		31		208	
12:45	5		78		16		128		21		206	
01:00	6	38	76	396	16	41	137	598	22	79	213	994
01:15	14		111		7		141		21		252	
01:30	12		115		8		180		20		295	
01:45	6		94		10		140		16		234	
02:00	5	24	106	388	10	40	155	575	15	64	261	963
02:15	6		84		12		148		18		232	
02:30	8		103		6		118		14		221	
02:45	5		95		12		154		17		249	
03:00	3	15	102	428	4	22	168	691	7	37	270	1.119
03:15	2		97		8		177		10		274	
03:30	6		120		4		164		10		284	
03:45	4		109		6		182		10		291	
04:00	7	78	116	480	11	47	190	728	18	125	306	1,208
04:15	16		112		12		172		28		284	
04:30	26		116		10		182		36		298	
04:45	29		136		14		184		43		320	
05:00	26	190	152	588	18	98	188	782	44	288	340	1,370
05:15	38		155		24		177		62		332	
05:30	56		135		26		231		82		366	
05:45	70		146		30		186		100		332	
06:00	54	345	116	342	32	162	202	610	86	507	318	952
06:15	67		82		40		135		107		217	
06:30	110		70		32		133		142		203	
06:45	114		74		58		140		172		214	
07:00	142	817	54	222	81	560	121	402	223	1,377	175	624
07:15	185		63		118		97		303		160	
07:30	266		56		167		98		433		154	
07:45	224		49		194		86		418		135	
08:00	202	494	28	156	144	418	68	254	346	912	96	410
08:15	118		32		92		69		210		101	
08:30	98		46		100		60		198		106	
08:45	76		50		82		57		158		107	
09:00	66	284	44	153	106	387	47	203	172	671	91	356
09:15	76		44		92		54		168		98	
09:30	63		33		88		53		151		86	
09:45	79		32		101		49		180		81	
10:00	61	247	50	123	87	396	47	170	148	643	97	293
10:15	61		33		97		36		158		69	
10:30	65		21		104		46		169		67	
10:45	60		19		108		41		168		60	
11:00	46	248	16	57	92	406	20	95	138	654	36	152
11:15	57		15		89		22		146		37	
11:30	76		16		116		30		192		46	
11:45	69		10		109		23		178		33	
Totals	2,814		3,629		2,648		5,617		5,462		9,246	
Split%	51.5		39.2		48.5		60.8					
Day Totals		6,443				8,265				14,708		
Day Splits		43.8				56.2						
Peak Hour	07:15		05:00		07:15		05:15		07:15		05:00	
Volume	877		588		623		796		1,500		1,370	
Factor	0.82		0.95		0.80		0.86		0.87		0.94	

Data File : D1909113

Transportation Studies, Inc.

2640 Walnut Avenue, Suite L

Tustin, CA. 92780

Location : BROADWAY
Segment : CIVIC CENTER TO SEVENTEENTH
Client : CITY SANTA ANA
File:

Site: SANTA ANA
Date: 09/19/19
D1909027

Day: Thursday

Interval	NB				SB				Combined			
Begin	AM		PM		AM		PM		AM		PM	
12:00	3	18	130	481	18	85	142	584	21	103	272	1,065
12:15	2		118		29		136		31		254	
12:30	8		129		18		138		26		267	
12:45	5		104		20		168		25		272	
01:00	8	15	94	440	7	46	162	686	15	61	256	1,126
01:15	5		108		16		164		21		272	
01:30	2		136		11		188		13		324	
01:45	0		102		12		172		12		274	
02:00	1	14	140	615	18	48	161	679	19	62	301	1,294
02:15	4		145		8		169		12		314	
02:30	4		168		9		163		13		331	
02:45	5		162		13		186		18		348	
03:00	0	11	208	908	9	33	186	678	9	44	394	1,586
03:15	1		223		6		170		7		393	
03:30	9		253		11		162		20		415	
03:45	1		224		7		160		8		384	
04:00	1	24	259	1,105	13	98	157	690	14	122	416	1,795
04:15	5		238		15		159		20		397	
04:30	8		316		22		170		30		486	
04:45	10		292		48		204		58		496	
05:00	16	70	312	1,050	48	271	188	723	64	341	500	1,773
05:15	15		228		44		201		59		429	
05:30	23		256		78		171		101		427	
05:45	16		254		101		163		117		417	
06:00	23	144	281	862	120	619	173	583	143	763	454	1,445
06:15	32		226		123		149		155		375	
06:30	54		195		146		139		200		334	
06:45	35		160		230		122		265		282	
07:00	52	368	143	443	276	1,279	114	456	328	1,647	257	899
07:15	58		114		322		126		380		240	
07:30	122		100		367		116		489		216	
07:45	136		86		314		100		450		186	
08:00	193	508	121	402	282	982	90	385	475	1,490	211	787
08:15	136		114		237		126		373		240	
08:30	91		92		213		86		304		178	
08:45	88		75		250		83		338		158	
09:00	67	312	85	300	212	668	100	329	279	980	185	629
09:15	74		82		153		80		227		162	
09:30	95		79		159		82		254		161	
09:45	76		54		144		67		220		121	
10:00	69	300	74	194	138	558	54	239	207	858	128	433
10:15	74		50		146		78		220		128	
10:30	73		44		142		54		215		98	
10:45	84		26		132		53		216		79	
11:00	72	402	15	62	100	493	51	166	172	895	66	228
11:15	102		26		133		47		235		73	
11:30	116		10		130		31		246		41	
11:45	112		11		130		37		242		48	
Totals	2,186		6,862		5,180		6,198		7,366		13,060	
Split%	29.7		52.5		70.3		47.5					
Day Totals		9,048				11,378				20,426		
Day Splits		44.3				55.7						
Peak Hour	07:30		04:15		07:15		04:45		07:15		04:30	
Volume	587		1,158		1,285		764		1,794		1,911	
Factor	0.76		0.92		0.88		0.94		0.92		0.96	

Data File : D1909027

Transportation Studies, Inc.

2640 Walnut Avenue, Suite L

Tustin, CA. 92780

Location : BROADWAY
Site: SANTA ANA

Segment : SANTA ANA BL TO CIVIC CENTER D
Date: 09/19/19

Client : CITY SANTA ANA

Day: Thursday

Interval	NB				SB				Combined			
Begin	AM		PM		AM		PM		AM		PM	
12:00	4	6	78	352	17	62	106	460	21	68	184	812
12:15	0		78		20		124		20		202	
12:30	1		106		13		106		14		212	
12:45	1		90		12		124		13		214	
01:00	3	9	99	389	6	31	126	498	9	40	225	887
01:15	4		86		10		119		14		205	
01:30	1		114		8		135		9		249	
01:45	1		90		7		118		8		208	
02:00	0	5	106	520	12	32	130	531	12	37	236	1,051
02:15	0		110		5		126		5		236	
02:30	1		156		5		136		6		292	
02:45	4		148		10		139		14		287	
03:00	0	8	189	753	4	19	154	566	4	27	343	1,319
03:15	0		196		2		148		2		344	
03:30	4		174		9		126		13		300	
03:45	4		194		4		138		8		332	
04:00	1	18	210	858	10	62	132	595	11	80	342	1,453
04:15	2		198		11		143		13		341	
04:30	5		238		13		148		18		386	
04:45	10		212		28		172		38		384	
05:00	5	33	203	836	24	154	168	641	29	187	371	1,477
05:15	7		209		24		192		31		401	
05:30	13		216		45		137		58		353	
05:45	8		208		61		144		69		352	
06:00	10	56	258	742	74	355	156	523	84	411	414	1,265
06:15	11		188		73		133		84		321	
06:30	17		164		82		124		99		288	
06:45	18		132		126		110		144		242	
07:00	36	200	129	353	154	690	100	405	190	890	229	758
07:15	42		92		186		103		228		195	
07:30	58		84		196		98		254		182	
07:45	64		48		154		104		218		152	
08:00	118	396	96	398	167	675	76	347	285	1,071	172	745
08:15	111		122		186		118		297		240	
08:30	82		100		148		86		230		186	
08:45	85		80		174		67		259		147	
09:00	67	270	82	305	141	482	84	299	208	752	166	604
09:15	70		84		108		86		178		170	
09:30	68		74		113		75		181		149	
09:45	65		65		120		54		185		119	
10:00	66	251	78	184	104	406	58	221	170	657	136	405
10:15	53		59		104		68		157		127	
10:30	80		39		106		50		186		89	
10:45	52		8		92		45		144		53	
11:00	50	284	8	21	88	390	45	156	138	674	53	177
11:15	78		6		113		44		191		50	
11:30	84		6		89		26		173		32	
11:45	72		1		100		41		172		42	
Totals	1,536		5,711		3,358		5,242		4,894		10,953	
Split%	31.4		52.1		68.6		47.9					
Day Totals		7,247				8,600				15,847		
Day Splits		45.7				54.3						
Peak Hour	08:00		05:15		07:15		04:30		08:00		04:30	
Volume	396		891		703		680		1,071		1,542	
Factor	0.84		0.86		0.90		0.89		0.90		0.96	

Data File : D1909026

Transportation Studies, Inc.

2640 Walnut Avenue, Suite L

Tustin, CA. 92780

Location : CHESTNUT AVENUE — Site: SANTA ANA

Segment : STANDARD AVE TO GRAND AVE — Date: 09/25/19

Client : CITY SANTA ANA — Day: Wednesday

Interval	EB				WB				Combined			
Begin	AM		PM		AM		PM		AM		PM	
12:00	0	1	20	55	0	4	16	70	0	5	36	125
12:15	0		9		1		16		1		25	
12:30	0		14		1		16		1		30	
12:45	1		12		2		22		3		34	
01:00	1	1	22	126	2	4	15	137	3	5	37	263
01:15	0		32		2		14		2		46	
01:30	0		50		0		70		0		120	
01:45	0		22		0		38		0		60	
02:00	0	1	18	69	0	2	30	96	0	3	48	165
02:15	0		16		0		16		0		32	
02:30	0		18		0		34		0		52	
02:45	1		17		2		16		3		33	
03:00	0	2	14	67	0	2	14	78	0	4	28	145
03:15	1		20		1		24		2		44	
03:30	1		13		0		20		1		33	
03:45	0		20		1		20		1		40	
04:00	0	4	20	64	0	9	32	112	0	13	52	176
04:15	2		16		1		24		3		40	
04:30	0		16		5		26		5		42	
04:45	2		12		3		30		5		42	
05:00	10	39	36	105	6	39	42	130	16	78	78	235
05:15	8		20		14		32		22		52	
05:30	11		23		9		26		20		49	
05:45	10		26		10		30		20		56	
06:00	10	75	25	63	15	69	24	78	25	144	49	141
06:15	19		12		14		14		33		26	
06:30	24		16		16		20		40		36	
06:45	22		10		24		20		46		30	
07:00	32	224	6	26	18	192	12	35	50	416	18	61
07:15	54		8		42		2		96		10	
07:30	80		7		78		11		158		18	
07:45	58		5		54		10		112		15	
08:00	13	52	10	23	18	56	13	26	31	108	23	49
08:15	13		3		14		6		27		9	
08:30	14		6		7		4		21		10	
08:45	12		4		17		3		29		7	
09:00	16	54	4	18	10	47	3	22	26	101	7	40
09:15	14		2		19		5		33		7	
09:30	10		6		14		9		24		15	
09:45	14		6		4		5		18		11	
10:00	21	54	2	13	17	63	4	16	38	117	6	29
10:15	18		4		20		3		38		7	
10:30	8		3		19		6		27		9	
10:45	7		4		7		3		14		7	
11:00	11	51	1	8	13	66	3	13	24	117	4	21
11:15	16		3		23		3		39		6	
11:30	14		3		14		5		28		8	
11:45	10		1		16		2		26		3	
Totals	558		637		553		813		1,111		1,450	
Split%	50.2		43.9		49.8		56.1					
Day Totals		1,195				1,366				2,561		
Day Splits		46.7				53.3						
Peak Hour	07:00		01:00		07:00		01:30		07:00		01:15	
Volume	224		126		192		154		416		274	
Factor	0.70		0.63		0.62		0.55		0.66		0.57	

Data File : D1909034

Transportation Studies, Inc.

2640 Walnut Avenue, Suite L

Tustin, CA. 92780

Location : CIVIC CENTER DRIVE
Segment : MAIN ST TO SANTIAGO
Client : CITY SANTA ANA

Site: SANTA ANA
Date: 09/18/19
Day: Wednesday

Interval	WB				EB				Combined			
Begin	AM		PM		AM		PM		AM		PM	
12:00	4	13	50	217	9	41	84	337	13	54	134	554
12:15	3		53		12		90		15		143	
12:30	2		54		10		94		12		148	
12:45	4		60		10		69		14		129	
01:00	3	9	71	268	4	19	70	357	7	28	141	625
01:15	2		71		6		70		8		141	
01:30	2		66		6		130		8		196	
01:45	2		60		3		87		5		147	
02:00	1	4	53	208	1	14	86	388	2	18	139	596
02:15	1		46		3		100		4		146	
02:30	1		63		8		92		9		155	
02:45	1		46		2		110		3		156	
03:00	2	7	79	315	5	15	116	503	7	22	195	818
03:15	0		98		2		121		2		219	
03:30	4		72		5		148		9		220	
03:45	1		66		3		118		4		184	
04:00	4	18	80	288	7	44	153	744	11	62	233	1,032
04:15	2		80		10		150		12		230	
04:30	4		66		11		191		15		257	
04:45	8		62		16		250		24		312	
05:00	10	63	64	270	18	101	234	654	28	164	298	924
05:15	9		57		17		188		26		245	
05:30	16		75		32		130		48		205	
05:45	28		74		34		102		62		176	
06:00	24	165	62	183	29	207	110	380	53	372	172	563
06:15	29		43		42		105		71		148	
06:30	26		35		66		93		92		128	
06:45	86		43		70		72		156		115	
07:00	76	529	39	144	68	472	74	223	144	1,001	113	367
07:15	116		42		100		56		216		98	
07:30	182		32		144		45		326		77	
07:45	155		31		160		48		315		79	
08:00	140	417	37	99	153	376	56	227	293	793	93	326
08:15	98		28		96		60		194		88	
08:30	109		22		60		57		169		79	
08:45	70		12		67		54		137		66	
09:00	62	226	24	84	54	222	26	124	116	448	50	208
09:15	68		20		60		40		128		60	
09:30	48		26		56		36		104		62	
09:45	48		14		52		22		100		36	
10:00	55	170	10	32	56	228	28	93	111	398	38	125
10:15	32		8		56		32		88		40	
10:30	48		10		56		22		104		32	
10:45	35		4		60		11		95		15	
11:00	50	203	4	15	90	384	11	64	140	587	15	79
11:15	46		4		89		20		135		24	
11:30	55		4		101		18		156		22	
11:45	52		3		104		15		156		18	
Totals	1,824		2,123		2,123		4,094		3,947		6,217	
Split%	46.2		34.1		53.8		65.9					
Day Totals		3,947				6,217				10,164		
Day Splits		38.8				61.2						
Peak Hour	07:15		03:15		07:15		04:30		07:15		04:30	
Volume	593		316		557		863		1,150		1,112	
Factor	0.81		0.81		0.87		0.86		0.88		0.89	

Data File : D1909042

Transportation Studies, Inc.

2640 Walnut Avenue, Suite L

Tustin, CA. 92780

Location : CIVIC CENTER DRIVE

Segment : FAIRVIEW ST TO RAITT ST

Client : CITY SANTA ANA

Site: SANTA ANA

Date: 09/18/19

Day: Wednesday

Interval	EB				WB				Combined			
Begin	AM		PM		AM		PM		AM		PM	
12:00	9	46	59	291	10	39	90	317	19	85	149	608
12:15	17		64		9		77		26		141	
12:30	14		82		14		76		28		158	
12:45	6		86		6		74		12		160	
01:00	13	30	96	347	13	39	80	403	26	69	176	750
01:15	10		96		14		88		24		184	
01:30	3		82		5		112		8		194	
01:45	4		73		7		123		11		196	
02:00	8	24	96	360	11	25	99	491	19	49	195	851
02:15	7		94		3		134		10		228	
02:30	3		82		6		142		9		224	
02:45	6		88		5		116		11		204	
03:00	2	17	136	482	3	30	142	524	5	47	278	1,006
03:15	3		112		11		154		14		266	
03:30	7		122		8		114		15		236	
03:45	5		112		8		114		13		226	
04:00	6	48	121	508	12	87	120	576	18	135	241	1,084
04:15	10		128		22		144		32		272	
04:30	16		128		24		160		40		288	
04:45	16		131		29		152		45		283	
05:00	32	127	144	661	34	167	162	660	66	294	306	1,321
05:15	26		174		26		196		52		370	
05:30	31		192		59		158		90		350	
05:45	38		151		48		144		86		295	
06:00	44	299	128	477	54	305	137	408	98	604	265	885
06:15	54		128		72		108		126		236	
06:30	82		126		74		91		156		217	
06:45	119		95		105		72		224		167	
07:00	147	831	96	326	107	437	76	310	254	1,268	172	636
07:15	186		70		102		72		288		142	
07:30	262		84		114		82		376		166	
07:45	236		76		114		80		350		156	
08:00	156	560	79	232	132	435	78	271	288	995	157	503
08:15	164		52		100		66		264		118	
08:30	118		53		103		62		221		115	
08:45	122		48		100		65		222		113	
09:00	74	290	54	190	64	272	67	240	138	562	121	430
09:15	61		60		60		68		121		128	
09:30	77		46		82		60		159		106	
09:45	78		30		66		45		144		75	
10:00	78	271	25	124	64	279	41	118	142	550	66	242
10:15	66		40		96		28		162		68	
10:30	70		27		65		32		135		59	
10:45	57		32		54		17		111		49	
11:00	62	252	20	61	64	285	24	64	126	537	44	125
11:15	53		11		65		19		118		30	
11:30	66		15		66		14		132		29	
11:45	71		15		90		7		161		22	
Totals	2,795		4,059		2,400		4,382		5,195		8,441	
Split%	53.8		48.1		46.2		51.9					
Day Totals		6,854				6,782				13,636		
Day Splits		50.3				49.7						
Peak Hour	07:15		05:00		07:15		04:30		07:15		05:00	
Volume	840		661		462		670		1,302		1,321	
Factor	0.80		0.86		0.88		0.85		0.87		0.89	

Data File : D1909036

Transportation Studies, Inc.

2640 Walnut Avenue, Suite L

Tustin, CA. 92780

Location : FLOWER STREET — Site: SANTA ANA

Segment : WARNER AVE TO EDINGER AVE — Date: 09/10/19

Client : CITY SANTA ANA — Day: Tuesday

Interval	NB				SB				Combined			
Begin	AM		PM		AM		PM		AM		PM	
12:00	15	46	52	209	7	36	66	262	22	82	118	471
12:15	12		48		6		78		18		126	
12:30	9		47		13		60		22		107	
12:45	10		62		10		58		20		120	
01:00	11	25	52	248	6	25	60	241	17	50	112	489
01:15	8		46		5		50		13		96	
01:30	3		71		4		62		7		133	
01:45	3		79		10		69		13		148	
02:00	0	11	73	391	8	23	77	381	8	34	150	772
02:15	2		86		2		83		4		169	
02:30	4		92		4		116		8		208	
02:45	5		140		9		105		14		245	
03:00	2	18	135	524	3	34	66	298	5	52	201	822
03:15	2		134		9		66		11		200	
03:30	6		131		10		86		16		217	
03:45	8		124		12		80		20		204	
04:00	2	27	122	481	10	101	74	336	12	128	196	817
04:15	5		121		13		84		18		205	
04:30	7		118		41		84		48		202	
04:45	13		120		37		94		50		214	
05:00	10	91	134	525	33	255	100	408	43	346	234	933
05:15	26		140		46		100		72		240	
05:30	23		127		86		90		109		217	
05:45	32		124		90		118		122		242	
06:00	35	161	130	465	61	342	94	339	96	503	224	804
06:15	29		120		77		96		106		216	
06:30	44		120		106		72		150		192	
06:45	53		95		98		77		151		172	
07:00	43	270	78	308	118	474	70	282	161	744	148	590
07:15	77		73		122		73		199		146	
07:30	79		84		130		72		209		156	
07:45	71		73		104		67		175		140	
08:00	89	302	83	258	132	466	65	207	221	768	148	465
08:15	80		69		104		54		184		123	
08:30	68		60		127		42		195		102	
08:45	65		46		103		46		168		92	
09:00	33	155	45	186	86	263	38	141	119	418	83	327
09:15	36		50		53		29		89		79	
09:30	47		46		62		40		109		86	
09:45	39		45		62		34		101		79	
10:00	48	175	36	138	50	219	30	115	98	394	66	253
10:15	40		31		66		28		106		59	
10:30	42		40		44		36		86		76	
10:45	45		31		59		21		104		52	
11:00	40	214	33	80	68	238	20	61	108	452	53	141
11:15	52		16		56		16		108		32	
11:30	66		18		62		11		128		29	
11:45	56		13		52		14		108		27	
Totals	1,495		3,813		2,476		3,071		3,971		6,884	
Split%	37.6		55.4		62.4		44.6					
Day Totals		5,308				5,547				10,855		
Day Splits		48.9				51.1						
Peak Hour	07:30		02:45		07:15		05:00		07:15		05:00	
Volume	319		540		488		408		804		933	
Factor	0.90		0.96		0.92		0.86		0.91		0.96	

Data File : D1909102

Thursday, September 26, 2019 CITY: Santa Ana PROJECT: SC

ADT138 HAZARD AVE from EUCLID ST to NEWHOPE ST. **Prepared by AimTD tel. 714 253 7888**

AM Period	NB	SB	EB		WB			PM Period	NB	SB	EB		WB		
0:00			10		18			12:00			46		69		
0:15			8		6			12:15			51		47		
0:30			4		5			12:30			55		63		
0:45			4	26	10	39	65	12:45			52	204	45	224	428
1:00			4		5			13:00			59		43		
1:15			6		4			13:15			53		60		
1:30			12		4			13:30			63		55		
1:45			6	28	6	19	47	13:45			77	252	73	231	483
2:00			4		0			14:00			61		74		
2:15			4		3			14:15			85		77		
2:30			0		0			14:30			78		64		
2:45			3	11	3	6	17	14:45			90	314	64	279	593
3:00			4		7			15:00			91		94		
3:15			7		2			15:15			90		81		
3:30			5		6			15:30			90		79		
3:45			0	16	3	18	34	15:45			117	388	76	330	718
4:00			4		4			16:00			86		84		
4:15			10		6			16:15			75		78		
4:30			10		14			16:30			78		96		
4:45			12	36	10	34	70	16:45			97	336	100	358	694
5:00			11		13			17:00			90		96		
5:15			12		12			17:15			89		146		
5:30			19		14			17:30			95		125		
5:45			28	70	15	54	124	17:45			105	379	132	499	878
6:00			27		18			18:00			84		133		
6:15			32		21			18:15			90		106		
6:30			40		31			18:30			88		90		
6:45			54	153	37	107	260	18:45			91	353	83	412	765
7:00			55		40			19:00			65		71		
7:15			94		81			19:15			65		67		
7:30			114		136			19:30			60		49		
7:45			156	419	172	429	848	19:45			46	236	46	233	469
8:00			110		126			20:00			56		33		
8:15			120		81			20:15			54		46		
8:30			121		64			20:30			39		36		
8:45			82	433	60	331	764	20:45			42	191	33	148	339
9:00			68		60			21:00			33		29		
9:15			58		79			21:15			41		27		
9:30			47		67			21:30			28		21		
9:45			50	223	71	277	500	21:45			26	128	40	117	245
10:00			70		42			22:00			23		25		
10:15			47		51			22:15			23		24		
10:30			49		52			22:30			16		17		
10:45			48	214	47	192	406	22:45			12	74	11	77	151
11:00			79		48			23:00			17		14		
11:15			54		66			23:15			8		16		
11:30			51		55			23:30			12		9		
11:45			68	252	34	203	455	23:45			9	46	13	52	98
Total Vol.			1881		1709		**3590**				2901		2960		**5861**

Daily Totals

NB	SB	EB	WB	Combined
		4782	4669	**9451**

	AM			PM		
Split %	52.4%	47.6%	**38.0%**	49.5%	50.5%	**62.0%**
Peak Hour	7:45	7:15	**7:30**	15:00	17:15	**17:15**
Volume	507	515	**1015**	388	536	**909**
P.H.F.	0.81	0.75	**0.77**	0.83	0.92	**0.96**

Tuesday, September 24, 2019 CITY: Santa Ana PROJECT: SC

ADT179 McFADDEN AVE from MAIN ST to STANDARD AVE. **Prepared by AimTD tel. 714 253 7888**

AM Period	NB	SB	EB		WB			PM Period	NB	SB	EB		WB		
0:00			15		24			12:00			76		89		
0:15			12		17			12:15			87		95		
0:30			13		14			12:30			92		79		
0:45			12	52	13	68	120	12:45			92	347	78	341	688
1:00			7		13			13:00			63		81		
1:15			7		14			13:15			87		86		
1:30			6		6			13:30			86		115		
1:45			10	30	11	44	74	13:45			95	331	106	388	719
2:00			15		11			14:00			95		125		
2:15			5		11			14:15			116		152		
2:30			5		6			14:30			130		187		
2:45			7	32	6	34	66	14:45			127	468	167	631	1099
3:00			6		5			15:00			130		181		
3:15			11		7			15:15			151		180		
3:30			23		5			15:30			107		196		
3:45			37	77	14	31	108	15:45			127	515	187	744	1259
4:00			18		7			16:00			108		182		
4:15			44		12			16:15			100		221		
4:30			55		27			16:30			100		196		
4:45			57	174	17	63	237	16:45			113	421	220	819	1240
5:00			60		20			17:00			114		208		
5:15			82		27			17:15			109		211		
5:30			109		41			17:30			120		203		
5:45			168	419	36	124	543	17:45			122	465	154	776	1241
6:00			136		43			18:00			134		175		
6:15			145		51			18:15			116		172		
6:30			157		37			18:30			110		157		
6:45			185	623	49	180	803	18:45			128	488	125	629	1117
7:00			214		67			19:00			114		110		
7:15			187		80			19:15			114		124		
7:30			220		84			19:30			99		103		
7:45			199	820	98	329	1149	19:45			88	415	101	438	853
8:00			164		107			20:00			101		88		
8:15			161		87			20:15			84		84		
8:30			125		77			20:30			71		44		
8:45			149	599	66	337	936	20:45			66	322	67	283	605
9:00			88		72			21:00			66		58		
9:15			97		68			21:15			71		63		
9:30			84		86			21:30			68		53		
9:45			83	352	73	299	651	21:45			55	260	62	236	496
10:00			76		92			22:00			60		69		
10:15			80		72			22:15			36		53		
10:30			87		64			22:30			25		46		
10:45			67	310	80	308	618	22:45			24	145	42	210	355
11:00			95		74			23:00			36		40		
11:15			90		101			23:15			31		28		
11:30			84		98			23:30			12		35		
11:45			85	354	78	351	705	23:45			21	100	20	123	223
Total Vol.			3842		2168		**6010**				4277		5618		**9895**

			Daily Totals		
	NB	SB	EB	WB	**Combined**
			8119	7786	**15905**

	AM			**PM**		
Split %	63.9%	36.1%	**37.8%**	43.2%	56.8%	**62.2%**
Peak Hour	7:00	7:30	**7:00**	14:30	16:15	**16:45**
Volume	820	376	**1149**	538	845	**1298**
P.H.F.	0.93	0.88	**0.94**	0.89	0.96	**0.97**

Thursday, October 03, 2019 Location: Santa Ana PROJECT:

ADT197 RAITT ST from FIRST ST to SANTA ANA BL. **Prepared by AimTD tel. 714 753 7888**

AM Period	NB		SB		EB	WB		PM Period	NB		SB		EB	WB	
0:00	9		5					12:00	56		71				
0:15	6		6					12:15	58		67				
0:30	5		3					12:30	61		56				
0:45	2	22	5	19			41	12:45	65	240	64	258			498
1:00	0		4					13:00	54		70				
1:15	0		0					13:15	53		65				
1:30	1		2					13:30	61		58				
1:45	1	2	4	10			12	13:45	74	242	62	255			497
2:00	0		2					14:00	101		58				
2:15	2		0					14:15	89		67				
2:30	3		1					14:30	86		89				
2:45	1	6	0	3			9	14:45	103	379	79	293			672
3:00	3		1					15:00	109		96				
3:15	1		4					15:15	129		74				
3:30	2		2					15:30	132		67				
3:45	2	8	0	7			15	15:45	152	522	78	315			837
4:00	0		2					16:00	132		91				
4:15	3		4					16:15	164		76				
4:30	1		1					16:30	152		51				
4:45	6	10	5	12			22	16:45	175	623	57	275			898
5:00	9		8					17:00	142		89				
5:15	16		16					17:15	151		93				
5:30	18		13					17:30	158		72				
5:45	23	66	14	51			117	17:45	173	624	59	313			937
6:00	44		24					18:00	168		56				
6:15	36		25					18:15	152		64				
6:30	41		30					18:30	111		76				
6:45	52	173	48	127			300	18:45	85	516	78	274			790
7:00	98		104					19:00	71		51				
7:15	141		132					19:15	58		57				
7:30	195		150					19:30	64		46				
7:45	153	587	114	500			1087	19:45	47	240	56	210			450
8:00	121		65					20:00	53		45				
8:15	98		53					20:15	56		39				
8:30	64		55					20:30	51		37				
8:45	51	334	49	222			556	20:45	42	202	46	167			369
9:00	75		42					21:00	50		35				
9:15	53		45					21:15	34		37				
9:30	48		43					21:30	42		32				
9:45	70	246	35	165			411	21:45	25	151	28	132			283
10:00	57		46					22:00	21		25				
10:15	67		40					22:15	16		21				
10:30	53		36					22:30	14		18				
10:45	69	246	35	157			403	22:45	18	69	16	80			149
11:00	58		43					23:00	9		10				
11:15	59		65					23:15	7		7				
11:30	70		56					23:30	5		5				
11:45	66	253	54	218			471	23:45	7	28	5	27			55
Total Vol.		1953		1491			**3444**			3836		2599			**6435**

Daily Totals

NB	SB	EB	WB	Combined
5789	4090			**9879**

	AM			PM		
Split %	56.7%	43.3%	**34.9%**	59.6%	40.4%	**65.1%**
Peak Hour	7:15	7:00	**7:00**	17:30	14:30	**16:45**
Volume	610	500	**1087**	651	338	**937**
P.H.F.	0.78	0.83	**0.79**	0.96	0.88	**0.96**

pacific@aimtd.com Tell. 714 753 7888

Wednesday, September 11, 2019 Location: Santa Ana PROJECT:

ADT193 RAITT ST from SEGERSTROM AVE to WARNER AVE. **Prepared by AimTD tel. 714 253 7888**

AM Period	NB		SB		EB	WB		PM Period	NB		SB		EB	WB	
0:00	21		10					12:00	77		66				
0:15	12		7					12:15	54		60				
0:30	14		6					12:30	69		59				
0:45	11	58	7	30			88	12:45	71	271	69	254			525
1:00	10		4					13:00	86		98				
1:15	7		5					13:15	100		87				
1:30	6		2					13:30	176		90				
1:45	4	27	5	16			43	13:45	206	568	89	364			932
2:00	4		2					14:00	127		78				
2:15	7		4					14:15	113		57				
2:30	7		7					14:30	139		102				
2:45	5	23	4	17			40	14:45	185	564	112	349			913
3:00	2		9					15:00	250		106				
3:15	5		4					15:15	175		86				
3:30	2		8					15:30	209		69				
3:45	0	9	16	37			46	15:45	239	873	89	350			1223
4:00	5		16					16:00	251		82				
4:15	8		14					16:15	257		70				
4:30	4		34					16:30	299		79				
4:45	4	21	33	97			118	16:45	268	1075	88	319			1394
5:00	6		38					17:00	261		85				
5:15	11		62					17:15	234		90				
5:30	13		82					17:30	301		105				
5:45	12	42	95	277			319	17:45	237	1033	109	389			1422
6:00	20		57					18:00	246		101				
6:15	21		106					18:15	210		89				
6:30	42		95					18:30	151		75				
6:45	103	186	156	414			600	18:45	143	750	89	354			1104
7:00	117		172					19:00	128		91				
7:15	114		197					19:15	117		74				
7:30	176		187					19:30	104		57				
7:45	165	572	184	740			1312	19:45	103	452	61	283			735
8:00	170		163					20:00	90		62				
8:15	74		143					20:15	73		56				
8:30	84		179					20:30	71		59				
8:45	146	474	207	692			1166	20:45	81	315	37	214			529
9:00	104		87					21:00	67		58				
9:15	40		59					21:15	70		38				
9:30	34		65					21:30	57		28				
9:45	48	226	65	276			502	21:45	75	269	24	148			417
10:00	38		51					22:00	51		24				
10:15	31		36					22:15	56		14				
10:30	43		61					22:30	44		19				
10:45	46	158	53	201			359	22:45	36	187	16	73			260
11:00	46		49					23:00	27		9				
11:15	47		55					23:15	31		15				
11:30	52		44					23:30	24		6				
11:45	60	205	57	205			410	23:45	22	104	9	39			143
Total Vol.		2001		3002			**5003**			6461		3136			**9597**

Daily Totals

NB	SB	EB	WB	**Combined**
8462	6138			**14600**

	AM			**PM**		
Split %	40.0%	60.0%	**34.3%**	67.3%	32.7%	**65.7%**
Peak Hour	7:15	7:00	**7:15**	16:15	14:30	**16:45**
Volume	625	740	**1356**	1085	406	**1432**
P.H.F.	0.89	0.94	**0.93**	0.91	0.91	**0.88**

cs@aimtd.com Tell. 714 253 7888

Thursday, October 03, 2019 CITY: Santa Ana PROJECT: SC

ADT211 SANTA ANA BLVD from MAIN ST to FRENCH ST **Prepared by AimTD tel. 714 253 7888**

AM Period	NB	SB	EB		WB			PM Period	NB	SB	EB		WB		
0:00			0		23			12:00			0		44		
0:15			0		14			12:15			0		69		
0:30			0		16			12:30			0		48		
0:45			0	0	13	66	66	12:45			0	0	62	223	223
1:00			0		18			13:00			0		71		
1:15			0		6			13:15			0		60		
1:30			0		13			13:30			0		79		
1:45			0	0	9	46	46	13:45			0	0	75	285	285
2:00			0		6			14:00			0		71		
2:15			0		17			14:15			0		85		
2:30			0		17			14:30			0		86		
2:45			0	0	11	51	51	14:45			0	0	90	332	332
3:00			0		4			15:00			0		88		
3:15			0		7			15:15			0		108		
3:30			0		17			15:30			0		94		
3:45			0	0	19	47	47	15:45			0	0	93	383	383
4:00			0		12			16:00			0		135		
4:15			0		19			16:15			0		151		
4:30			0		18			16:30			0		166		
4:45			0	0	24	73	73	16:45			0	0	171	623	623
5:00			0		27			17:00			0		178		
5:15			0		34			17:15			0		182		
5:30			0		53			17:30			0		178		
5:45			0	0	75	189	189	17:45			0	0	192	730	730
6:00			0		71			18:00			0		146		
6:15			0		55			18:15			0		124		
6:30			0		78			18:30			0		127		
6:45			0	0	117	321	321	18:45			0	0	121	518	518
7:00			0		132			19:00			0		102		
7:15			0		106			19:15			0		94		
7:30			0		118			19:30			0		96		
7:45			0	0	137	493	493	19:45			0	0	83	375	375
8:00			0		107			20:00			0		80		
8:15			0		72			20:15			0		77		
8:30			0		67			20:30			0		80		
8:45			0	0	52	298	298	20:45			0	0	73	310	310
9:00			0		68			21:00			0		38		
9:15			0		56			21:15			0		58		
9:30			0		61			21:30			0		70		
9:45			0	0	56	241	241	21:45			0	0	40	206	206
10:00			0		64			22:00			0		43		
10:15			0		58			22:15			0		46		
10:30			0		48			22:30			0		36		
10:45			0	0	53	223	223	22:45			0	0	42	167	167
11:00			0		68			23:00			0		30		
11:15			0		54			23:15			0		28		
11:30			0		58			23:30			0		26		
11:45			0	0	65	245	245	23:45			0	0	21	105	105
Total Vol.						2293	**2293**							4257	**4257**

Daily Totals				
NB	SB	EB	WB	**Combined**
			6550	**6550**

	AM		PM	
Split %	100.0%	**35.0%**	100.0%	**65.0%**
Peak Hour	7:00	**7:00**	17:00	**17:00**
Volume	493	**493**	730	**730**
P.H.F.	0.90	**0.90**	0.95	**0.95**

cs@aimtd.com Tell. 714 253 7888

Wednesday, October 02, 2019 CITY: Santa Ana PROJECT: SC

ADT206 SANTA ANA BLVD from RAITT ST to BRISTOL ST. **Prepared by AimTD tel. 714 253 7888**

AM Period	NB	SB	EB		WB			PM Period	NB	SB	EB		WB		
0:00			3		4			12:00			20		31		
0:15			0		7			12:15			18		40		
0:30			3		5			12:30			25		37		
0:45			2	8	4	20	28	12:45			23	86	27	135	221
1:00			2		0			13:00			35		26		
1:15			0		3			13:15			23		37		
1:30			0		0			13:30			21		28		
1:45			3	5	0	3	8	13:45			26	105	32	123	228
2:00			0		0			14:00			29		22		
2:15			2		0			14:15			15		28		
2:30			0		0			14:30			26		22		
2:45			0	2	0	0	2	14:45			25	95	40	112	207
3:00			0		0			15:00			28		47		
3:15			2		0			15:15			41		43		
3:30			3		2			15:30			35		45		
3:45			2	7	3	5	12	15:45			30	134	39	174	308
4:00			4		2			16:00			18		45		
4:15			3		2			16:15			27		55		
4:30			8		4			16:30			36		49		
4:45			11	26	9	17	43	16:45			34	115	67	216	331
5:00			8		2			17:00			33		76		
5:15			16		5			17:15			25		82		
5:30			10		19			17:30			33		71		
5:45			14	48	20	46	94	17:45			28	119	64	293	412
6:00			17		22			18:00			27		47		
6:15			21		15			18:15			30		31		
6:30			20		22			18:30			16		37		
6:45			31	89	23	82	171	18:45			27	100	34	149	249
7:00			42		23			19:00			19		30		
7:15			96		29			19:15			17		26		
7:30			108		39			19:30			19		29		
7:45			108	354	51	142	496	19:45			9	64	23	108	172
8:00			66		35			20:00			9		30		
8:15			60		43			20:15			9		16		
8:30			25		20			20:30			10		24		
8:45			37	188	26	124	312	20:45			11	39	14	84	123
9:00			27		18			21:00			12		13		
9:15			26		25			21:15			13		12		
9:30			23		20			21:30			14		21		
9:45			13	89	27	90	179	21:45			7	46	19	65	111
10:00			27		21			22:00			9		16		
10:15			14		28			22:15			6		14		
10:30			18		19			22:30			3		7		
10:45			28	87	21	89	176	22:45			9	27	12	49	76
11:00			18		26			23:00			3		9		
11:15			21		31			23:15			4		8		
11:30			26		33			23:30			2		2		
11:45			15	80	31	121	201	23:45			2	11	4	23	34
Total Vol.			983		739		**1722**				941		1531		**2472**

	NB	SB	EB	WB	**Combined**
Daily Totals			1924	2270	**4194**
			AM	**PM**	
Split %			57.1%	42.9% **41.1%**	38.1% 61.9% **58.9%**
Peak Hour			7:15	7:30 **7:15**	15:00 16:45 **16:45**
Volume			378	168 **532**	134 296 **421**
P.H.F.			0.88	0.82 **0.84**	0.82 0.90 **0.97**

cs@aimtd.com Tell. 714 253 7888

Wednesday, October 02, 2019 Location: Santa Ana PROJECT:

ADT243 STANDARD AVE from McFADDEN AVE to CHESTNUT AVE. **Prepared by AimTD tel. 714 753 7888**

AM Period	NB		SB		EB	WB		PM Period	NB		SB		EB	WB	
0:00	15		11					12:00	77		61				
0:15	11		9	9				12:15	73		56				
0:30	11		6					12:30	82		66				
0:45	12	49	13	39			88	12:45	80	312	85	268			580
1:00	8		5					13:00	75		113				
1:15	9		6					13:15	86		105				
1:30	11		7					13:30	79		109				
1:45	13	41	4	22			63	13:45	91	331	92	419			750
2:00	6		5					14:00	114		83				
2:15	6		4					14:15	115		92				
2:30	2		4					14:30	132		79				
2:45	4	18	8	21			39	14:45	129	490	85	339			829
3:00	3		3					15:00	134		98				
3:15	5		5					15:15	166		96				
3:30	4		6					15:30	172		84				
3:45	7	19	4	18			37	15:45	166	638	92	370			1008
4:00	3		10					16:00	184		106				
4:15	6		5					16:15	188		93				
4:30	10		8					16:30	196		107				
4:45	15	34	14	37			71	16:45	218	786	113	419			1205
5:00	18		18					17:00	209		123				
5:15	15		19					17:15	222		114				
5:30	28		47					17:30	207		100				
5:45	31	92	48	132			224	17:45	197	835	99	436			1271
6:00	24		40					18:00	172		97				
6:15	26		46					18:15	141		122				
6:30	52		60					18:30	153		95				
6:45	85	187	63	209			396	18:45	131	597	89	403			1000
7:00	95		97					19:00	105		72				
7:15	105		112					19:15	96		74				
7:30	113		114					19:30	87		85				
7:45	156	469	146	469			938	19:45	91	379	72	303			682
8:00	134		120					20:00	96		77				
8:15	104		99					20:15	68		64				
8:30	85		84					20:30	57		49				
8:45	103	426	74	377			803	20:45	48	269	51	241			510
9:00	78		55					21:00	55		51				
9:15	70		74					21:15	45		53				
9:30	64		80					21:30	49		40				
9:45	73	285	76	285			570	21:45	32	181	43	187			368
10:00	56		57					22:00	43		34				
10:15	53		46					22:15	35		19				
10:30	49		57					22:30	29		27				
10:45	45	203	63	223			426	22:45	23	130	25	105			235
11:00	50		67					23:00	25		15				
11:15	56		78					23:15	15		23				
11:30	64		64					23:30	17		15				
11:45	74	244	59	268			512	23:45	13	70	16	69			139
Total Vol.		2067		2100			**4167**			5018		3559			**8577**

Daily Totals

NB	SB	EB	WB	**Combined**
7085	5659			**12744**

	AM			**PM**		
Split %	49.6%	50.4%	**32.7%**	58.5%	41.5%	**67.3%**
Peak Hour	7:15	7:15	**7:15**	16:45	16:30	**16:45**
Volume	508	492	**1000**	856	457	**1306**
P.H.F.	0.81	0.84	**0.83**	0.98	0.93	**0.97**

pacific@aimtd.com Tell. 714 753 7888

Wednesday, September 11, 2019 Location: Santa Ana PROJECT:

ADT241 STANDARD AVE from WARNER AVE to EDINGER AVE. **Prepared by AimTD tel. 714 253 7888**

AM Period	NB		SB		EB	WB		PM Period	NB		SB		EB	WB	
0:00	23		12					12:00	92		75				
0:15	12		12					12:15	82		72				
0:30	14		12					12:30	78		65				
0:45	11	60	12	48			108	12:45	70	322	69	281			603
1:00	32		10					13:00	79		66				
1:15	13		9					13:15	91		73				
1:30	15		5					13:30	126		55				
1:45	7	67	10	34			101	13:45	109	405	65	259			664
2:00	8		6					14:00	120		75				
2:15	4		6					14:15	112		76				
2:30	15		5					14:30	147		95				
2:45	6	33	11	28			61	14:45	165	544	96	342			886
3:00	5		3					15:00	198		94				
3:15	4		7					15:15	151		75				
3:30	9		7					15:30	202		77				
3:45	12	30	16	33			63	15:45	188	739	70	316			1055
4:00	10		11					16:00	191		88				
4:15	9		29					16:15	188		88				
4:30	10		50					16:30	208		89				
4:45	23	52	74	164			216	16:45	257	844	86	351			1195
5:00	27		58					17:00	274		79				
5:15	38		67					17:15	241		107				
5:30	39		72					17:30	197		90				
5:45	38	142	123	320			462	17:45	146	858	103	379			1237
6:00	45		83					18:00	136		67				
6:15	51		79					18:15	149		65				
6:30	69		113					18:30	127		67				
6:45	67	232	120	395			627	18:45	102	514	71	270			784
7:00	94		112					19:00	74		60				
7:15	73		149					19:15	84		58				
7:30	89		160					19:30	79		65				
7:45	99	355	152	573			928	19:45	68	305	65	248			553
8:00	79		127					20:00	71		57				
8:15	78		112					20:15	56		47				
8:30	82		65					20:30	64		45				
8:45	72	311	80	384			695	20:45	47	238	44	193			431
9:00	54		68					21:00	42		39				
9:15	68		49					21:15	53		37				
9:30	62		67					21:30	37		35				
9:45	52	236	52	236			472	21:45	36	168	35	146			314
10:00	61		47					22:00	46		43				
10:15	53		50					22:15	35		30				
10:30	55		37					22:30	20		22				
10:45	47	216	48	182			398	22:45	33	134	20	115			249
11:00	67		33					23:00	24		20				
11:15	72		60					23:15	25		9				
11:30	74		59					23:30	18		11				
11:45	87	300	45	197			497	23:45	11	78	8	48			126
Total Vol.		2034		2594			**4628**			5149		2948			**8097**

Daily Totals

NB	SB	EB	WB	**Combined**
7183	5542			**12725**

	AM			**PM**		
Split %	43.9%	56.1%	**36.4%**	63.6%	36.4%	**63.6%**
Peak Hour	7:00	7:15	**7:00**	16:30	17:00	**16:30**
Volume	355	588	**928**	980	379	**1341**
P.H.F.	0.90	0.92	**0.92**	0.92	0.89	**0.95**

cs@aimtd.com Tell. 714 253 7888

Transportation Studies, Inc.

2640 Walnut Avenue, Suite L

Tustin, CA. 92780

Location : GREENVILLE STREET — Site: SANTA ANA

Segment : WARNER AVE TO EDINGER AVE — Date: 10/01/19

Client : CITY SANTA ANA — Day: Tuesday

Interval	NB				SB				Combined			
Begin	AM		PM		AM		PM		AM		PM	
12:00	7	19	21	128	4	9	36	135	11	28	57	263
12:15	8		29		2		31		10		60	
12:30	2		38		2		33		4		71	
12:45	2		40		1		35		3		75	
01:00	7	20	43	172	4	12	23	155	11	32	66	327
01:15	4		43		1		42		5		85	
01:30	4		38		5		46		9		84	
01:45	5		48		2		44		7		92	
02:00	2	10	54	268	0	6	52	238	2	16	106	506
02:15	1		45		2		58		3		103	
02:30	1		77		2		48		3		125	
02:45	6		92		2		80		8		172	
03:00	2	11	110	433	0	14	68	212	2	25	178	645
03:15	2		114		4		46		6		160	
03:30	3		102		7		46		10		148	
03:45	4		107		3		52		7		159	
04:00	4	16	110	466	3	41	48	197	7	57	158	663
04:15	2		121		10		43		12		164	
04:30	6		113		16		56		22		169	
04:45	4		122		12		50		16		172	
05:00	7	45	113	499	15	107	60	226	22	152	173	725
05:15	11		135		16		54		27		189	
05:30	14		128		35		46		49		174	
05:45	13		123		41		66		54		189	
06:00	22	104	99	314	30	173	59	216	52	277	158	530
06:15	18		93		46		50		64		143	
06:30	28		69		43		58		71		127	
06:45	36		53		54		49		90		102	
07:00	50	272	44	149	70	340	50	195	120	612	94	344
07:15	70		35		102		52		172		87	
07:30	84		39		88		50		172		89	
07:45	68		31		80		43		148		74	
08:00	60	163	43	147	69	202	57	156	129	365	100	303
08:15	44		34		52		42		96		76	
08:30	36		35		42		34		78		69	
08:45	23		35		39		23		62		58	
09:00	20	107	34	114	31	127	30	101	51	234	64	215
09:15	32		34		30		28		62		62	
09:30	29		24		38		28		67		52	
09:45	26		22		28		15		54		37	
10:00	34	109	19	58	28	129	18	56	62	238	37	114
10:15	23		20		26		11		49		31	
10:30	20		12		43		17		63		29	
10:45	32		7		32		10		64		17	
11:00	32	138	17	38	24	146	7	27	56	284	24	65
11:15	40		15		33		8		73		23	
11:30	36		2		42		6		78		8	
11:45	30		4		47		6		77		10	
Totals	1,014		2,786		1,306		1,914		2,320		4,700	
Split%	43.7		59.3		56.3		40.7					
Day Totals		3,800				3,220				7,020		
Day Splits		54.1				45.9						
Peak Hour	07:15		05:00		07:00		02:15		07:15		05:00	
Volume	282		499		340		254		621		725	
Factor	0.84		0.92		0.83		0.79		0.90		0.96	

Data File : D1909132

Transportation Studies, Inc.

2640 Walnut Avenue, Suite L

Tustin, CA. 92780

Location : GREENVILLE STREET — Site: SANTA ANA

Segment : SEGERSTROM AVE TO WARNER AVE — Date: 10/01/19

Client : CITY SANTA ANA — Day: Tuesday

Interval	NB				SB				Combined			
Begin	AM		PM		AM		PM		AM		PM	
12:00	6	29	41	158	5	21	32	145	11	50	73	303
12:15	9		39		7		35		16		74	
12:30	4		36		9		36		13		72	
12:45	10		42		0		42		10		84	
01:00	3	15	46	187	3	12	32	193	6	27	78	380
01:15	6		43		2		48		8		91	
01:30	4		43		2		51		6		94	
01:45	2		55		5		62		7		117	
02:00	6	14	67	404	1	7	56	280	7	21	123	684
02:15	1		60		3		76		4		136	
02:30	2		84		1		72		3		156	
02:45	5		193		2		76		7		269	
03:00	1	5	192	642	4	14	66	219	5	19	258	861
03:15	2		138		0		52		2		190	
03:30	2		142		1		43		3		185	
03:45	0		170		9		58		9		228	
04:00	1	8	181	663	6	51	35	199	7	59	216	862
04:15	3		148		6		53		9		201	
04:30	1		178		17		47		18		225	
04:45	3		156		22		64		25		220	
05:00	4	24	174	666	16	122	57	229	20	146	231	895
05:15	8		190		29		54		37		244	
05:30	8		162		27		62		35		224	
05:45	4		140		50		56		54		196	
06:00	14	76	122	408	28	198	70	212	42	274	192	620
06:15	14		114		50		42		64		156	
06:30	21		93		44		50		65		143	
06:45	27		79		76		50		103		129	
07:00	26	231	52	205	94	571	39	184	120	802	91	389
07:15	57		54		147		57		204		111	
07:30	62		43		188		44		250		87	
07:45	86		56		142		44		228		100	
08:00	72	160	52	214	102	310	51	137	174	470	103	351
08:15	40		63		78		32		118		95	
08:30	30		53		54		31		84		84	
08:45	18		46		76		23		94		69	
09:00	31	117	47	136	36	153	22	90	67	270	69	226
09:15	22		41		36		27		58		68	
09:30	30		21		49		22		79		43	
09:45	34		27		32		19		66		46	
10:00	39	107	25	81	41	159	17	54	80	266	42	135
10:15	22		28		38		13		60		41	
10:30	18		10		34		11		52		21	
10:45	28		18		46		13		74		31	
11:00	32	141	15	61	40	153	5	28	72	294	20	89
11:15	30		15		28		4		58		19	
11:30	43		13		40		10		83		23	
11:45	36		18		45		9		81		27	
Totals	927		3,825		1,771		1,970		2,698		5,795	
Split%	34.4		66.0		65.6		34.0					
Day Totals		4,752				3,741				8,493		
Day Splits		56.0				44.0						
Peak Hour	07:15		04:30		07:15		02:15		07:15		04:30	
Volume	277		698		579		290		856		920	
Factor	0.81		0.92		0.77		0.95		0.86		0.94	

Data File : D1909131

Transportation Studies, Inc.

2640 Walnut Avenue, Suite L

Tustin, CA. 92780

Location : FLOWER STREET — Site: SANTA ANA

Segment : SANTA CLARA TO MEMORY LN — Date: 09/12/19

Client : CITY SANTA ANA — File: D1909110

Day: Thursday

Interval	NB				SB				Combined			
Begin	AM		PM		AM		PM		AM		PM	
12:00	3	9	58	187	14	30	82	302	17	39	140	489
12:15	4		50		3		74		7		124	
12:30	2		41		4		76		6		117	
12:45	0		38		9		70		9		108	
01:00	4	7	54	180	0	8	102	373	4	15	156	553
01:15	1		34		2		74		3		108	
01:30	2		49		0		87		2		136	
01:45	0		43		6		110		6		153	
02:00	0	4	68	314	4	16	127	484	4	20	195	798
02:15	2		96		6		148		8		244	
02:30	1		92		4		93		5		185	
02:45	1		58		2		116		3		174	
03:00	0	7	80	332	6	20	118	401	6	27	198	733
03:15	1		78		6		100		7		178	
03:30	1		94		4		73		5		167	
03:45	5		80		4		110		9		190	
04:00	3	9	81	392	2	44	92	466	5	53	173	858
04:15	3		74		10		132		13		206	
04:30	2		112		20		122		22		234	
04:45	1		125		12		120		13		245	
05:00	10	28	132	600	16	121	130	569	26	149	262	1,169
05:15	2		164		23		149		25		313	
05:30	6		162		48		162		54		324	
05:45	10		142		34		128		44		270	
06:00	10	90	128	404	40	299	136	457	50	389	264	861
06:15	18		104		47		113		65		217	
06:30	26		92		80		96		106		188	
06:45	36		80		132		112		168		192	
07:00	33	267	86	232	165	971	108	340	198	1,238	194	572
07:15	68		58		230		94		298		152	
07:30	82		40		284		80		366		120	
07:45	84		48		292		58		376		106	
08:00	132	285	34	129	178	531	81	251	310	816	115	380
08:15	74		32		138		68		212		100	
08:30	46		33		136		54		182		87	
08:45	33		30		79		48		112		78	
09:00	35	123	20	72	87	347	48	213	122	470	68	285
09:15	30		25		92		61		122		86	
09:30	32		13		78		58		110		71	
09:45	26		14		90		46		116		60	
10:00	28	142	8	29	58	262	47	140	86	404	55	169
10:15	52		10		66		50		118		60	
10:30	31		3		68		25		99		28	
10:45	31		8		70		18		101		26	
11:00	38	151	10	33	82	303	19	71	120	454	29	104
11:15	30		10		58		16		88		26	
11:30	46		7		88		30		134		37	
11:45	37		6		75		6		112		12	
Totals	1,122		2,904		2,952		4,067		4,074		6,971	
Split%	27.5		41.7		72.5		58.3					
Day Totals		4,026				7,019				11,045		
Day Splits		36.5				63.5						
Peak Hour	07:30		05:00		07:15		05:15		07:15		05:15	
Volume	372		600		984		575		1,350		1,171	
Factor	0.70		0.91		0.84		0.89		0.90		0.90	

Data File : D1909110

Transportation Studies, Inc.

2640 Walnut Avenue, Suite L

Tustin, CA. 92780

Location : DYER ROAD — Site: SANTA ANA

Segment : PULLMAN ST TO RED HILL AVE — Date: 09/24/19

Client : CITY SANTA ANA — Day: Tuesday

Interval	EB				WB				Combined			
Begin	AM		PM		AM		PM		AM		PM	
12:00	20	52	214	769	38	198	228	930	58	250	442	1,699
12:15	10		190		38		234		48		424	
12:30	14		183		84		230		98		413	
12:45	8		182		38		238		46		420	
01:00	13	32	204	728	24	73	246	1,032	37	105	450	1,760
01:15	11		162		28		250		39		412	
01:30	2		186		13		285		15		471	
01:45	6		176		8		251		14		427	
02:00	12	66	186	687	16	63	297	1,179	28	129	483	1,866
02:15	7		155		17		278		24		433	
02:30	17		170		18		335		35		505	
02:45	30		176		12		269		42		445	
03:00	18	187	158	741	16	60	286	1,286	34	247	444	2,027
03:15	31		191		20		332		51		523	
03:30	56		192		11		323		67		515	
03:45	82		200		13		345		95		545	
04:00	56	480	183	852	26	115	370	1,350	82	595	553	2,202
04:15	85		206		24		316		109		522	
04:30	137		227		40		342		177		569	
04:45	202		236		25		322		227		558	
05:00	175	904	243	1,101	32	209	389	1,412	207	1,113	632	2,513
05:15	205		276		36		358		241		634	
05:30	228		294		58		308		286		602	
05:45	296		288		83		357		379		645	
06:00	214	900	230	844	88	460	322	1,197	302	1,360	552	2,041
06:15	241		215		134		329		375		544	
06:30	231		234		102		313		333		547	
06:45	214		165		136		233		350		398	
07:00	220	991	146	486	172	777	300	986	392	1,768	446	1,472
07:15	251		106		176		266		427		372	
07:30	264		120		186		232		450		352	
07:45	256		114		243		188		499		302	
08:00	228	950	124	380	245	1,001	214	748	473	1,951	338	1,128
08:15	222		90		253		168		475		258	
08:30	238		74		267		170		505		244	
08:45	262		92		236		196		498		288	
09:00	218	868	82	293	224	785	194	654	442	1,653	276	947
09:15	233		84		187		158		420		242	
09:30	211		60		195		172		406		232	
09:45	206		67		179		130		385		197	
10:00	170	677	42	195	193	739	150	488	363	1,416	192	683
10:15	168		54		191		122		359		176	
10:30	181		57		175		122		356		179	
10:45	158		42		180		94		338		136	
11:00	208	870	22	83	188	776	98	285	396	1,646	120	368
11:15	219		19		201		66		420		85	
11:30	199		25		184		65		383		90	
11:45	244		17		203		56		447		73	
Totals	6,977		7,159		5,256		11,547		12,233		18,706	
Split%	57.0		38.3		43.0		61.7					
Day Totals		14,136				16,803				30,939		
Day Splits		45.7				54.3						
Peak Hour	07:15		05:00		07:45		05:00		07:45		05:00	
Volume	999		1,101		1,008		1,412		1,952		2,513	
Factor	0.95		0.94		0.94		0.91		0.97		0.97	

Data File : D1909047

Transportation Studies, Inc.

2640 Walnut Avenue, Suite L

Tustin, CA. 92780

Location : FAIRHAVEN AVENUE — Site: SANTA ANA

Segment : TUSTIN AVE TO NEWPORT FWY — Date: 10/03/19

Client : CITY SANTA ANA — Day: Thursday

Interval	WB				EB				Combined			
Begin	AM		PM		AM		PM		AM		PM	
12:00	18	24	89	408	18	50	79	376	36	74	168	784
12:15	2		128		14		94		16		222	
12:30	3		96		7		101		10		197	
12:45	1		95		11		102		12		197	
01:00	8	14	114	452	10	21	109	426	18	35	223	878
01:15	2		114		5		92		7		206	
01:30	0		106		4		101		4		207	
01:45	4		118		2		124		6		242	
02:00	3	9	142	604	6	19	107	516	9	28	249	1,120
02:15	2		134		10		144		12		278	
02:30	0		134		1		144		1		278	
02:45	4		194		2		121		6		315	
03:00	5	22	186	615	10	21	154	583	15	43	340	1,198
03:15	7		146		3		158		10		304	
03:30	3		133		4		147		7		280	
03:45	7		150		4		124		11		274	
04:00	9	62	159	690	5	20	131	607	14	82	290	1,297
04:15	16		203		3		160		19		363	
04:30	20		162		7		166		27		328	
04:45	17		166		5		150		22		316	
05:00	44	178	180	833	11	60	147	664	55	238	327	1,497
05:15	38		238		14		188		52		426	
05:30	48		231		12		139		60		370	
05:45	48		184		23		190		71		374	
06:00	58	437	183	651	24	217	138	463	82	654	321	1,114
06:15	107		170		49		118		156		288	
06:30	126		158		68		90		194		248	
06:45	146		140		76		117		222		257	
07:00	178	994	94	338	98	537	101	400	276	1,531	195	738
07:15	202		78		123		112		325		190	
07:30	284		84		162		89		446		173	
07:45	330		82		154		98		484		180	
08:00	300	900	54	211	112	387	73	272	412	1,287	127	483
08:15	230		51		102		68		332		119	
08:30	194		56		93		66		287		122	
08:45	176		50		80		65		256		115	
09:00	139	506	42	142	76	292	80	250	215	798	122	392
09:15	109		34		64		58		173		92	
09:30	132		35		64		56		196		91	
09:45	126		31		88		56		214		87	
10:00	110	433	42	110	80	298	74	207	190	731	116	317
10:15	104		24		74		47		178		71	
10:30	97		22		70		44		167		66	
10:45	122		22		74		42		196		64	
11:00	114	411	12	49	74	324	35	116	188	735	47	165
11:15	93		16		76		26		169		42	
11:30	102		11		76		32		178		43	
11:45	102		10		98		23		200		33	
Totals	3,990		5,103		2,246		4,880		6,236		9,983	
Split%	64.0		51.1		36.0		48.9					
Day Totals		9,093				7,126				16,219		
Day Splits		56.1				43.9						
Peak Hour	07:30		05:15		07:15		05:00		07:30		05:00	
Volume	1,144		836		551		664		1,674		1,497	
Factor	0.87		0.88		0.85		0.87		0.86		0.88	

Data File : D1909064

Tuesday, September 24, 2019 CITY: Santa Ana PROJECT: SC

ADT219 SANTA CLARA AVE from TUSTIN AVE to NEWPORT FWY. **Prepared by AimTD tel. 714 253 7888**

AM Period	NB	SB	EB		WB			PM Period	NB	SB	EB		WB		
0:00			10		7			12:00			68		47		
0:15			7		6			12:15			50		33		
0:30			3		0			12:30			72		51		
0:45			0	20	0	13	33	12:45			80	270	67	198	468
1:00			2		2			13:00			80		45		
1:15			4		0			13:15			69		66		
1:30			2		2			13:30			59		53		
1:45			2	10	4	8	18	13:45			52	260	87	251	511
2:00			3		3			14:00			58		64		
2:15			3		2			14:15			61		55		
2:30			0		2			14:30			110		72		
2:45			2	8	0	7	15	14:45			85	314	99	290	604
3:00			0		0			15:00			88		94		
3:15			0		2			15:15			85		76		
3:30			0		4			15:30			84		87		
3:45			0	0	4	10	10	15:45			58	315	77	334	649
4:00			0		2			16:00			82		64		
4:15			6		2			16:15			85		79		
4:30			0		5			16:30			88		96		
4:45			0	6	2	11	17	16:45			94	349	85	324	673
5:00			8		7			17:00			90		106		
5:15			9		13			17:15			111		118		
5:30			8		14			17:30			106		106		
5:45			9	34	15	49	83	17:45			87	394	108	438	832
6:00			11		13			18:00			94		81		
6:15			46		30			18:15			86		88		
6:30			55		43			18:30			72		80		
6:45			47	159	55	141	300	18:45			58	310	56	305	615
7:00			63		50			19:00			55		53		
7:15			151		76			19:15			48		46		
7:30			137		106			19:30			53		34		
7:45			130	481	116	348	829	19:45			46	202	41	174	376
8:00			106		122			20:00			51		41		
8:15			57		100			20:15			45		35		
8:30			52		72			20:30			45		31		
8:45			72	287	54	348	635	20:45			25	166	21	128	294
9:00			63		56			21:00			30		20		
9:15			67		53			21:15			27		25		
9:30			45		45			21:30			21		11		
9:45			45	220	47	201	421	21:45			27	105	18	74	179
10:00			35		44			22:00			26		22		
10:15			54		37			22:15			26		12		
10:30			46		35			22:30			18		11		
10:45			50	185	44	160	345	22:45			16	86	9	54	140
11:00			51		39			23:00			14		12		
11:15			49		41			23:15			10		5		
11:30			49		38			23:30			10		7		
11:45			58	207	38	156	363	23:45			10	44	5	29	73
Total Vol.			1617		1452		**3069**				2815		2599		**5414**

Daily Totals

NB	SB	EB	WB	**Combined**
		4432	4051	**8483**

	AM			**PM**		
Split %	52.7%	47.3%	**36.2%**	52.0%	48.0%	**63.8%**
Peak Hour	7:15	7:30	**7:15**	16:45	17:00	**17:00**
Volume	524	444	**944**	401	438	**832**
P.H.F.	0.87	0.91	**0.96**	0.90	0.93	**0.91**

cs@aimtd.com Tell. 714 253 7888

Transportation Studies, Inc.

2640 Walnut Avenue, Suite L

Tustin, CA. 92780

Location : HARBOR BOULEVARD — Site: SANTA ANA

Segment : EDINGER AVE TO MCFADDEN AVE — Date: 10/03/19

Client : CITY SANTA ANA — Day: Thursday

Interval	NB				SB				Combined			
Begin	AM		PM		AM		PM		AM		PM	
12:00	78	242	302	1,224	47	169	327	1,319	125	411	629	2,543
12:15	70		304		42		322		112		626	
12:30	46		316		45		312		91		628	
12:45	48		302		35		358		83		660	
01:00	72	160	328	1,382	27	98	286	1,272	99	258	614	2,654
01:15	36		326		25		308		61		634	
01:30	34		344		18		337		52		681	
01:45	18		384		28		341		46		725	
02:00	51	134	384	1,766	19	93	334	1,445	70	227	718	3,211
02:15	26		439		18		363		44		802	
02:30	29		426		34		350		63		776	
02:45	28		517		22		398		50		915	
03:00	35	113	508	2,114	28	234	295	1,197	63	347	803	3,311
03:15	27		548		42		311		69		859	
03:30	26		516		56		298		82		814	
03:45	25		542		108		293		133		835	
04:00	50	162	532	2,086	47	467	282	1,184	97	629	814	3,270
04:15	26		526		86		300		112		826	
04:30	42		520		138		296		180		816	
04:45	44		508		196		306		240		814	
05:00	60	312	541	2,221	168	973	332	1,307	228	1,285	873	3,528
05:15	73		561		198		324		271		885	
05:30	80		555		269		355		349		910	
05:45	99		564		338		296		437		860	
06:00	122	567	518	1,962	273	1,658	298	1,133	395	2,225	816	3,095
06:15	118		556		319		283		437		839	
06:30	154		478		480		268		634		746	
06:45	173		410		586		284		759		694	
07:00	200	1,001	402	1,431	572	2,472	268	1,013	772	3,473	670	2,444
07:15	224		394		612		262		836		656	
07:30	272		330		640		259		912		589	
07:45	305		305		648		224		953		529	
08:00	348	1,146	264	1,026	586	2,128	220	817	934	3,274	484	1,843
08:15	282		268		522		209		804		477	
08:30	248		272		520		222		768		494	
08:45	268		222		500		166		768		388	
09:00	228	945	197	777	444	1,714	184	626	672	2,659	381	1,403
09:15	216		204		427		156		643		360	
09:30	265		200		406		150		671		350	
09:45	236		176		437		136		673		312	
10:00	262	1,075	194	654	332	1,362	153	435	594	2,437	347	1,089
10:15	269		170		320		105		589		275	
10:30	276		166		352		101		628		267	
10:45	268		124		358		76		626		200	
11:00	290	1,193	107	455	306	1,189	98	340	596	2,382	205	795
11:15	303		94		253		80		556		174	
11:30	306		139		340		78		646		217	
11:45	294		115		290		84		584		199	
Totals	7,050		17,098		12,557		12,088		19,607		29,186	
Split%	36.0		58.6		64.0		41.4					
Day Totals		24,148				24,645				48,793		
Day Splits		49.5				50.5						
Peak Hour	07:30		05:00		07:15		02:00		07:15		05:00	
Volume	1,207		2,221		2,486		1,445		3,635		3,528	
Factor	0.87		0.98		0.96		0.91		0.95		0.97	

Data File : D1909136

Transportation Studies, Inc.

2640 Walnut Avenue, Suite L

Tustin, CA. 92780

Location : HARBOR BOULEVARD — Site: SANTA ANA

Segment : WARNER TO SANTA ANA RIVER — Date: 10/09/19

Client : CITY SANTA ANA — Day: Wednesday

Interval	NB				SB				Combined			
Begin	AM		PM		AM		PM		AM		PM	
12:00	74	265	359	1,359	42	128	330	1,343	116	393	689	2,702
12:15	58		330		30		332		88		662	
12:30	63		318		32		357		95		675	
12:45	70		352		24		324		94		676	
01:00	68	204	328	1,473	14	71	333	1,305	82	275	661	2,778
01:15	49		350		12		328		61		678	
01:30	50		390		24		336		74		726	
01:45	37		405		21		308		58		713	
02:00	52	156	494	1,931	30	115	400	1,374	82	271	894	3,305
02:15	34		428		24		324		58		752	
02:30	49		496		30		341		79		837	
02:45	21		513		31		309		52		822	
03:00	37	110	604	2,356	24	229	291	1,175	61	339	895	3,531
03:15	16		533		47		288		63		821	
03:30	29		631		50		300		79		931	
03:45	28		588		108		296		136		884	
04:00	43	149	626	2,489	66	569	237	995	109	718	863	3,484
04:15	24		604		91		237		115		841	
04:30	36		619		164		258		200		877	
04:45	46		640		248		263		294		903	
05:00	48	270	672	2,625	184	1,200	290	1,012	232	1,470	962	3,637
05:15	78		655		241		250		319		905	
05:30	66		624		339		234		405		858	
05:45	78		674		436		238		514		912	
06:00	90	456	584	2,265	338	1,964	236	960	428	2,420	820	3,225
06:15	90		628		420		258		510		886	
06:30	140		549		456		232		596		781	
06:45	136		504		750		234		886		738	
07:00	202	1,014	406	1,437	628	3,573	190	712	830	4,587	596	2,149
07:15	204		384		1,000		191		1,204		575	
07:30	272		340		974		176		1,246		516	
07:45	336		307		971		155		1,307		462	
08:00	274	970	246	925	1,004	3,226	144	598	1,278	4,196	390	1,523
08:15	220		231		703		158		923		389	
08:30	237		218		714		170		951		388	
08:45	239		230		805		126		1,044		356	
09:00	228	928	201	797	759	2,203	112	515	987	3,131	313	1,312
09:15	231		207		562		170		793		377	
09:30	243		187		430		132		673		319	
09:45	226		202		452		101		678		303	
10:00	255	998	238	729	370	1,366	96	300	625	2,364	334	1,029
10:15	228		174		332		66		560		240	
10:30	262		159		314		80		576		239	
10:45	253		158		350		58		603		216	
11:00	261	1,131	148	497	332	1,171	54	207	593	2,302	202	704
11:15	308		142		284		60		592		202	
11:30	260		128		277		46		537		174	
11:45	302		79		278		47		580		126	
Totals	6,651		18,883		15,815		10,496		22,466		29,379	
Split%	29.6		64.3		70.4		35.7					
Day Totals		25,534				26,311				51,845		
Day Splits		49.3				50.7						
Peak Hour	11:00		05:00		07:15		02:00		07:15		04:30	
Volume	1,131		2,625		3,949		1,374		5,035		3,647	
Factor	0.92		0.97		0.98		0.86		0.96		0.95	

Data File : D1909135

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Technical Memorandum

To/Attention	City of Santa Ana	**Date**	October 22, 2020
From	IBI Group	**Project No**	119772
cc			
Subject	Addendum to Santa Ana General Plan Traffic Impact Study		

Overview

This memo serves as an addendum to the Traffic Impact Study (October 2020) prepared in support of the Santa Ana General Plan Update Environmental Impact Report (EIR). Presented in this memo is the analysis for ten (10) additional study intersections identified by the City of Tustin and Orange County Transportation Authority (OCTA) as locations where impacts may occur due to the project. The study intersections are listed below are shown in Exhibit A attached to this memo.

106. Red Hill Avenue and El Camino Real (City of Tustin)
107. Red Hill Avenue and I-5 NB Ramps (City of Tustin)
108. Red Hill Avenue and I-5 SB Ramps (City of Tustin)
109. Red Hill Avenue and Nisson Road (City of Tustin)
110. Red Hill Avenue and Walnut Avenue (City of Tustin)
111. Red Hill Avenue and Valencia Avenue (City of Tustin)
112. Tustin Ranch Road and Warner Avenue North (City of Tustin)
113. Tustin Ranch Road and Walnut Avenue (City of Tustin)
114. SR-55 SB Ramps and Irvine Boulevard (Orange County CMP)
115. SR-55 NB Ramps and Irvine Boulevard (Orange County CMP)

This analysis follows the methodology outlined in the Traffic Impact Study (October 2020). Intersection level of service (LOS) analyses were conducted for the Existing Year (2020) No Project, Future Year (2045) No Project, and Future Year (2045) With Project scenarios. Significant impacts were assessed for the year 2045 scenarios using the impact criteria of the presiding agency.

Existing Year (2020) No Project

A summary of the AM and PM peak hour level of service analysis results for the Existing Year (2020) No Project condition is provided in Table 1. Intersections are considered unacceptable if the level of service (LOS) is “E” or “F”. It should be noted that Caltrans and OC CMP intersections have a minimum LOS of C and E, respectively. The following intersections are forecast to operate at an unacceptable level of service in the Existing Year (2020) No Project condition:

- INT 113 – Tustin Ranch Road and Walnut Avenue (City of Tustin)

Table 1: Existing Year (2020) No Project Intersection LOS Summary

ID	INTERSECTION	AM		PM	
		V/C or Delay	LOS	V/C or Delay	LOS
106	Red Hill Avenue and El Camino Real	0.71	C	0.62	B
107	Red Hill Avenue and I-5 NB Ramps	20.3	C	23.3	C
108	Red Hill Avenue and I-5 SB Ramps	22.0	C	22.8	C
109	Red Hill Avenue and Nisson Road	0.65	B	0.70	B
110	Red Hill Avenue and Walnut Avenue	0.68	B	0.79	C
111	Red Hill Avenue and Valencia Avenue	0.54	A	0.55	A
112	Tustin Ranch Road and Warner Avenue North	0.43	A	0.76	C
113	Tustin Ranch Road and Walnut Avenue	1.19	F	1.63	F
114	SR-55 SB Ramps and Irvine Boulevard	0.97	E	0.79	C
115	SR-55 NB Ramps and Irvine Boulevard	0.80	C	0.81	D

Notes: (1) LOS – Level of Service; (2) V/C – Volume to Capacity

Future Year (2045) No Project

A summary of the AM and PM peak hour level of service analysis results for the Future Year (2045) No Project condition is provided in Table 2. Intersections are considered unacceptable if the level of service (LOS) is “E” or “F”. It should be noted that Caltrans and OC CMP intersections have a minimum LOS of C and E, respectively. The following intersections are forecast to operate at an unacceptable level of service in the Future Year (2045) No Project condition:

- INT 113 – Tustin Ranch Road and Walnut Avenue (City of Tustin)
- INT 114 – SR-55 SB Ramps and Irvine Boulevard (Caltrans - CMP)

Table 2: Future Year (2045) No Project Intersection LOS Summary

ID	INTERSECTION	AM		PM	
		V/C or Delay	LOS	V/C or Delay	LOS
106	Red Hill Avenue and El Camino Real	0.65	B	0.78	C
107	Red Hill Avenue and I-5 NB Ramps	20.8	C	23.7	C
108	Red Hill Avenue and I-5 SB Ramps	23.7	C	22.2	C
109	Red Hill Avenue and Nisson Road	0.65	B	0.69	B
110	Red Hill Avenue and Walnut Avenue	0.64	B	0.74	C
111	Red Hill Avenue and Valencia Avenue	0.65	B	0.74	C
112	Tustin Ranch Road and Warner Avenue North	0.45	A	0.89	D
113	Tustin Ranch Road and Walnut Avenue	1.27	F	1.72	F
114	SR-55 SB Ramps and Irvine Boulevard	1.10	F	0.92	E

ID	INTERSECTION	AM		PM	
		V/C or Delay	LOS	V/C or Delay	LOS
115	SR-55 NB Ramps and Irvine Boulevard	0.91	E	0.93	E

Notes: (1) LOS – Level of Service; (2) V/C – Volume to Capacity

Future Year (2045) With Project

A summary of the AM and PM peak hour level of service analysis results for the Future Year (2045) With Project condition is provided in Table 3. Intersections are considered unacceptable if the level of service (LOS) is "E" or "F". It should be noted that Caltrans and OC CMP intersections have a minimum LOS of C and E, respectively. The following intersections are forecast to operate at an unacceptable level of service in the Future Year (2045) With Project condition:

- INT 112 – Tustin Ranch Road and Warner Avenue North
- INT 113 – Tustin Ranch Road and Walnut Avenue
- INT 114 – SR-55 SB Ramps and Irvine Boulevard (Caltrans - CMP)

Table 3: Future Year (2045) With Project Intersection LOS Summary

ID	INTERSECTION	AM		PM	
		V/C or Delay	LOS	V/C or Delay	LOS
106	Red Hill Avenue and El Camino Real	0.64	B	0.70	B
107	Red Hill Avenue and I-5 NB Ramps	20.1	C	23.6	C
108	Red Hill Avenue and I-5 SB Ramps	24.7	C	21.8	C
109	Red Hill Avenue and Nisson Road	0.66	B	0.72	C
110	Red Hill Avenue and Walnut Avenue	0.64	B	0.75	C
111	Red Hill Avenue and Valencia Avenue	0.68	B	0.75	C
112	Tustin Ranch Road and Warner Avenue North	0.46	A	0.92	E
113	Tustin Ranch Road and Walnut Avenue	1.31	F	1.77	F
114	SR-55 SB Ramps and Irvine Boulevard	1.18	F	0.93	E
115	SR-55 NB Ramps and Irvine Boulevard	0.82	D	0.84	D

Intersection Impact Assessment

Intersection impacts were determined using the criteria established by the presiding agency and further evaluated in order to determine the cause for the impact. Impacts are expected to occur due to the proposed land use changes, reclassifications, or a combination of both. The impacted intersections and the cause of impact is identified below:

- **INT 112 – Tustin Ranch Road and Warner Avenue North (PM peak hour / Tustin)**
    - The impact at this intersection is expected to occur as a result of the proposed land use changes. Specific improvements to this intersection to address this identified impact are presented in Table 5. Additionally, the City of Santa Ana will contribute to improvements based on the calculated fair-share percentage presented in Table 5.
- **113 – Tustin Ranch Road and Walnut Avenue (Tustin)**
    - The worsening of LOS at this intersection is expected to occur as a result of the proposed land use changes. Specific improvements to this intersection to address this identified impact are presented in Table 5. Additionally, the City of Santa Ana will contribute to improvements based on the calculated fair-share percentage presented in Table 5.

Table 6 summarizes intersection LOS for the future year scenario, with and without the project, as well as with the improvement measures implemented. All impacts are expected to be mitigated.

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Table 4: Future Year (2045) LOS Impact Summary

ID	INTERSECTION	PEAK HOUR	2045 No Project		2045 With Project		DELTA	LOS IMPACT?
			V/C or Delay	LOS	V/C or Delay	LOS		
106	Red Hill Avenue and El Camino Real	AM	0.65	B	0.64	B	-0.01	NO
		PM	0.78	C	0.70	B	-0.08	NO
107	Red Hill Avenue and I-5 NB Ramps	AM	20.8	C	20.1	C	-0.7	NO
		PM	23.7	C	23.6	C	-0.1	NO
108	Red Hill Avenue and I-5 SB Ramps	AM	23.7	C	24.7	C	1.0	NO
		PM	22.2	C	21.8	C	-0.4	NO
109	Red Hill Avenue and Nisson Road	AM	0.65	B	0.66	B	0.01	NO
		PM	0.69	B	0.72	C	0.03	NO
110	Red Hill Avenue and Walnut Avenue	AM	0.64	B	0.64	B	0.00	NO
		PM	0.74	C	0.75	C	0.01	NO
111	Red Hill Avenue and Valencia Avenue	AM	0.65	B	0.68	B	0.03	NO
		PM	0.74	C	0.75	C	0.01	NO
112	Tustin Ranch Road and Warner Avenue North	AM	0.45	A	0.46	A	0.01	NO
		PM	0.89	D	0.92	E	0.03	YES
113	Tustin Ranch Road and Walnut Avenue	AM	1.27	F	1.31	F	0.04	NO
		PM	1.72	F	1.77	F	0.05	NO
114	SR-55 SB Ramps and Irvine Boulevard	AM	1.10	F	1.18	F	0.08	NO
		PM	0.92	E	0.93	E	0.01	NO
115	SR-55 NB Ramps and Irvine Boulevard	AM	0.91	E	0.82	D	-0.09	NO
		PM	0.93	E	0.84	D	-0.09	NO

Table 5: Intersection LOS Improvement Measures

ID	INTERSECTION	IMPROVEMENT
112	Tustin Ranch Road and Warner Avenue North	• Convert single NB-RT to dual right-turn with overlap control. • Fair-Share: 29.1% (PM)
113	Tustin Ranch Road and Walnut Avenue	• Modify WB-RT to be a channelized RT. • Modify EB approach to be: 2LT, 2T, and 1RT. • Fair-Share: 84.5% (AM) / 24.0% (PM)

Table 6: Future Year (2045) With Project – Mitigated Impact Summary

ID	INTERSECTION	PEAK HOUR	2045 No Project		2045 With Project		DELTA	IMPACT?	2045 With Project – Mit.		DELTA	IMPACT?
			V/C or Delay	LOS	V/C or Delay	LOS			V/C or Delay	LOS		
112	Tustin Ranch Road and Warner Avenue North	AM	0.45	A	0.46	A	0.01	NO	0.46	A	0.01	NO
		PM	0.89	D	0.92	E	0.03	YES	0.75	C	-0.14	NO
113	Tustin Ranch Road and Walnut Avenue	AM	1.27	F	1.31	F	0.04	YES	1.18	F	-0.09	NO
		PM	1.72	F	1.77	F	0.05	YES	1.59	F	-0.13	NO

IBI GROUP
18401 Von Karman Avenue – Suite 300
Irvine CA 92612 USA
tel 949 833 5588 fax 949 833 5511
ibigroup.com

Conclusion

Ten (10) additional intersections were assessed in order to determine project-related impacts. In assessing the intersection LOS it was determined that an impact is expected to occur at one location. The impacted intersection is listed below:

- **INT 112 – Tustin Ranch Road and Warner Avenue North (PM / City of Tustin)**
    - An improvement measure was developed and proposed as part of this study; implementation of the measure is expected to improve intersection LOS and fully mitigate the impact. The fair-share contribution, based on the project's contribution to increased traffic volumes, was calculated to be 29.1% for the PM peak hour.
- **INT 113 – Tustin Ranch Road and Walnut Avenue (AM & PM / City of Tustin)**
    - An improvement measure was developed and proposed as part of this study; implementation of the measure is expected to improve intersection LOS and fully mitigate the impact. The fair-share contribution, based on the project's contribution to increased traffic volumes, was calculated to be 84.5% and 24.0% for the Am and PM peak hours, respectively.

Exhibit A - Study Intersection Locations



Appendix C Exhibit for Letter O10A

Appendices

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Exhibit A

WILLOWICK
COMMUNITY PARK PROPOSAL

Submitted to:
City of Garden Grove
Office of Economic Development
11222 Acacia Parkway
Garden Grove, California 92840
Attn: Grace Lee



Coastal Conservancy

THE TRUST FOR PUBLIC LAND

CLIFFORD BEERS HOUSING
Creating homes Building community Fostering hope


WWW.riseupwillowick.org
@riseupwillow
#riseupwillow
Residents Want...
Housing
Space | Parks
Centered Spaces
Wellness
Centered Spaces
Public L
HURLEY
sidentes Quieren
Espacios Abiertos
Asequible
Comunitarios
ess, Cultural, Educational
Para Jovenes

Table of Contents

1. PROPOSING ENTITY
2. TERMS OF PURCHASE
3. CONTINGENCIES
4. PROPOSED PROJECT
5. DEBT AND EQUITY



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1.

Proposing Entity Contact Information



BENITO JUAREZ PARK, MAYWOOD. THE TRUST FOR PUBLIC LAND.



BENITO JUAREZ PARK, MAYWOOD. THE TRUST FOR PUBLIC LAND.

City of Garden Grove
Office of Economic Development
11222 Acacia Parkway
Garden Grove, CA 92840
Attn: Grace Lee

August 20, 2020

RE: Willowick Submittal

THE TRUST FOR PUBLIC LAND

135 W Green St
Suite 200
Pasadena, CA
91105
t: 323.223.0441
f: 626.204.4444
tpl.org

Dear Ms. Lee,

Designating the Willowick Golf Course as surplus land and following California's State Surplus Land Act positions the City of Garden Grove as a leader, not only for preserving green and open space, but a champion for affordable housing. It is our collective intent not only to reward the residents of Garden Grove with a fair market value for the property, but we are also committed to working in partnership with the City, County, and State to ensure that Garden Grove is recognized for its contribution to affordable housing and preserving and enhancing public open space.

We are thrilled to submit this proposal for Willowick Community Park. In the following pages, you will find brief descriptions of our community-led proposal for a once-in-a-lifetime opportunity to transform a 100-acre parcel adjecent to the Santa Ana River and the planned OC Streetcar into a nature park with supportive, affordable housing. This proposal represents the wishes of the community and the latest thinking in anti-displacement development practices.

A property of this size, that sits in the middle of a diverse community, is adjacent to the Santa Ana River, and located in an area that can greatly benefit from the public health and economic benefits that a restored, and enhanced natural recreational area with low income affordable housing provides, is an opportunity that defines a region and destination. If the City of Garden Grove works with our community-led proposal it will usher in a new era of cooperation, mutual benefit and will have a lasting legacy for generations to come.

Please let me know if you have any questions. I look forward to hearing from you soon.

Respectfully,

Robin Mark
Los Angeles Program Manager
Pasadena, CA 91105
robin.mark@tpl.org
323.333.6310

Initial Letter of Interest

CLIFFORD BEERS HOUSING
Creating homes Building community Fostering hope

THE TRUST FOR PUBLIC LAND

July 6, 2020

Ms. Grace E. Lee
Sr. Economic Development Specialist
City of Garden Grove – Community & Economic Development Department
graceel@ggcity.org

RE: **Official Intention Notice of Availability of Surplus Land per Govt Code 54220, et seq. 3017W. 5th Street, Santa Ana, California, 92703**

Dear Ms. Lee,

In response to a certain Notice of Availability of Surplus Land, per Govt. Code Section 54220 et seq., dated March 12, 2020, and the subsequent Notice of Extension of the 60-day deadline to July 10, 2020 issued by the City of Garden Grove, in respect of the land located at 3017 W. 5th Street, Santa Ana, California 92703 (the "Subject Property") inviting responses from interested parties, Clifford beers Housing, Inc. ('CBH') and The Trust for Public Land ('TPL') submit this letter as their Notice of Intention to acquire and develop the site at 3017 W 5th Street, Santa Ana, California. 92703.

CBH is a nonprofit public benefit corporation, established to develop permanent, supportive and affordable housing through an integrated community approach. CBH recognizes the great need for open space *and* affordable housing throughout the State of California and has worked diligently on promoting both while still staying true to their mission to provide every Californian a home. While CBH's primary goal is to use the Subject Property as a site on which to develop much-needed affordable housing, we recognize that the site presents a unique opportunity to develop other compatible uses resulting in additional amenities for the community and, to that end, has partnered with TPL to acquire a majority of the Subject Property for eventual public ownership and use as an open space and recreational park open to all

TPL, a national nonprofit land conservation and park development organization, has more than 45 years of experience and expertise in successfully acquiring land for open space and recreational uses. Since its founding, TPL has conserved over 3.7 million acres of land for park, open space and conservation purposes, in over 4,600 transactions, with a value of $8.5 billion. TPL is seen as a leader in its field, working collaboratively with public agencies, landowners and a myriad of partners to successfully conclude complex real estate transactions and park development projects.

A significant portion of the Subject Property is well-suited to open-space recreational use, a use that would not only be compatible with the development of affordable housing on the site, but would further enhance the quality of such housing in the proximity of recreational open-space. Garden Grove's own Mayor Steve Jones, by signing on to TPL's 10 Minute Walk campaign, has pledged to

11739 Victory Boulevard, Los Angeles CA 91606 | phone. 213.316.0108 | fax.213.316.0111
www.cbhousing.org | info@cbhousing.org

Initial Letter of Interest

adopt long-term, system-wide strategies to make sure every Garden Grove resident has access to all the benefits parks provide.

CBH and TPL will collaboratively enter into negotiations with the City of Garden Grove, with the goal of acquiring a majority of the Subject Property for recreational open space uses. This portion of the property would subsequently be deed restricted and conveyed to a long-term public steward. In addition, CBH intends to develop approximately twelve (12) acres of the Subject Property for affordable housing uses under a long-term ground lease with the City of Garden Grove. Under this scenario, the City of Garden Grove would sell to TPL fee title to approximately ninety (90) acres of the Subject Property, with the balance, approximately twelve (12) acres, subject to a long-term lease between the City and CBH.

Please acknowledge timely receipt of this Notice of Intention. All correspondence in connection with this matter may be sent to Clifford Beers Housing at apeterson@cbhousing.org and The Trust for Public Land at Robin.Mark@tpl.org.

Sincerely Yours,

Audrey Peterson
Director of Housing Development
Clifford Beers Housing, Inc.

Robin Mark
Senior Project Manager
The Trust for Public Land

11739 Victory Boulevard, Los Angeles CA 91606 | phone. 213.316.0108 | fax.213.316.0111
www.cbhousing.org | info@cbhousing.org

Initial Letter of Interest

Coastal Conservancy

July 7, 2020

Ms. Grace E. Lee
Sr. Economic Development Specialist
City of Garden Grove – Community and Economic Development Department

VIA EMAIL

RE: Notice of Intention: Surplus Land Located at 3017 W. 5th Street, Santa Ana, California 92703

Dear Ms. Lee,

We refer to the Notice of Availability of Surplus Land, per Govt. Code Section 54220 et seq., dated March 12, 2020, issued by the City of Garden Grove, in respect to the land located at 3017 W. 5th Street, Santa Ana, California 92703 (the "Subject Property") inviting responses from interested parties.

This letter serves as the Notice of Intention of the State Coastal Conservancy's Santa Ana River Conservancy Program to support the conversion of the subject property into publicly accessible open space as part of the Santa Ana River Parkway. The Santa Ana River Conservancy is a program of the State Coastal Conservancy established under Senate Bill 1390, operating under the State Coastal Conservancy (Conservancy) and California Natural Resources Agency. The Conservancy is empowered to advocate and implement the recreational goals of the Santa Ana River region including open space, trails, wildlife habitat, agricultural land protection, water quality protection, educational use, and public access.

The Conservancy is interested in seeing the Subject Property acquired for its continued use for parks and open space purposes. In this undertaking, the Conservancy has requested technical assistance from The Trust for Public Land, a national nonprofit organization, with more than 45 years of experience and expertise in successfully conserving land for public stewardship. Since its founding, The Trust for Public Land has conserved over 3.7 million acres of land for park, open space and conservation purposes, in over 4,600 transactions, with a value of $8.5 billion.

The Conservancy designates The Trust for Public Land to enter into discussions and negotiations with The City of Garden Grove, with the goal of acquiring the Subject Property for parks and open space purposes.

Initial Letter of Interest

Please acknowledge timely receipt of this Notice of Intention. All correspondence in connection with this matter may be sent to our South Coast Regional Manager's email address: Megan.Cooper@scc.ca.gov with a copy to The Trust for Public Land at: Robin Mark, Senior Project Manager: Robin.Mark@tpl.org

Very truly yours,

Sam Schuchat

Sam Schuchat
Executive Officer
State Coastal Conservancy

CC: Robin Mark, Project Manager, The Trust for Public Land

Initial Letter of Interest: Response

GARDEN GROVE

CITY OF GARDEN GROVE

Steven R. Jones
Mayor
John R. O'Neill
Mayor Pro Tem - District 2
George S. Brietigam
Council Member - District 1
Diedre Thu-Ha Nguyen
Council Member - District 3
Patrick Phat Bui
Council Member - District 4
Stephanie Klopfenstein
Council Member - District 5
Kim Bernice Nguyen
Council Member - District 6

July 24, 2020

The Trust for Public Land
Attn: Robin Mark
135 W. Green St., Suite 200
Pasadena, CA 91105

RE: Sale of the property located 3017 W. 5th Street, Santa Ana, CA 92703 pursuant to California Government Code Section 54220 et. seq. (the "Surplus Land Act").

Dear Mr. Mark,

The City of Garden Grove (the "City") is seeking to dispose of approximately 100 plus acres of property currently operating as the Willowick Golf Course (the "Willowick Property") pursuant to California Government Code Section 54220 et. seq. (the "Surplus Land Act").

You are receiving this letter because you responded in the affirmative to a written Notice of Availability of the Willowick Property for low and moderate income housing purposes and/or open space purposes in accordance with the terms of the Surplus Land Act.

Under the Surplus Land Act, the next step in the process is to "... enter into good faith negotiations to determine a mutually satisfactory sales price or lease terms." Government Section Code 54223(a).

Based on the number of expressions of interest to the Notice of Availability, the City anticipates receiving a number of offers that could range from all cash offers to revenue based leases with a range of contingencies from soils and title to land-use approval by the City of Santa Ana.

The City of Garden Grove has determined that the fairest and most efficient way to balance alternative proposals and establish the priorities required by statute is to request that each specific proposal be submitted in a unified form. To this end, please complete and submit the following to commence negotiations to acquire the Willowick Property for low and moderate income housing use and/or open space use:

11222 Acacia Parkway • P.O.Box 3070 • Garden Grove, CA 92842
ggcity.org

Initial Letter of Interest: Response

1. Identify the proposing entity and the contact information for the individual(s) who will be negotiating with the City.
2. Describe in detail terms of purchase or lease, i.e., purchase price, contingent purchase price and/or rent payments.
3. Describe contingencies, if any, of purchase or lease, e.g., title, soils condition, regulatory approval, etc.
4. Describe the proposed project.
   (y) For residential, if any, specifically identify the unit count, unit size and affordability level.
   (z) For commercial, if any, specifically describe building sizes and proposed uses; and
   (aa) For open space, if any, please specifically describe the size, location, and proposed uses.
5. Identify source of debt and equity.

Please send the initial submittal information described above on standard 8 1/2"x 11" letter size paper. Drawings included with the proposal should be no larger than 11"x 17" folded. Proposal contents must be organized into separate tabbed sections, (i.e. Section 2.0, 2.1, etc.) and pages numbered. The proposing entity must submit one proposal signed in ink marked "Original" and four (4) copies, each marked "Copy." In addition to mail or hand-delivery, an electronic PDF copy must be sent via email to Grace Lee, Sr. Economic Development Specialist, at gracel@ggcity.org by the submittal deadline. The submittals will not be returned for any reason. Please submit all proposals either by hand-delivery or mail to:

City of Garden Grove
Office of Economic Development
Attention: Grace Lee
Title: Willowick Submittal
11222 Acacia Parkway
Garden Grove, California 92840

Please direct all questions or request for clarification to Grace Lee, Senior Economic Development Specialist at gracel@ggcity.org. Please deliver your submittals to be received by the City no later than 5:00 P.M. (PST) on Thursday, August 21, 2020.

Sincerely,

LISA L. KIM
Assistant City Manager
Community & Economic Development Department

Initial Letter of Interest: Response

GARDEN GROVE

CITY OF GARDEN GROVE

Steven R. Jones
Mayor
John R. O'Neill
Mayor Pro Tem - District 2
George S. Brietigam
Council Member - District 1
Diedre Thu-Ha Nguyen
Council Member - District 3
Patrick Phat Bui
Council Member - District 4
Stephanie Klopfenstein
Council Member - District 5
Kim Bernice Nguyen
Council Member - District 6

July 24, 2020

Clifford Beers Housing
Attn: Audrey Peterson
11739 Victory Blvd.
North Hollywood CA 91606

RE: Sale of the property located 3017 W. 5th Street, Santa Ana, CA 92703 pursuant to California Government Code Section 54220 et. seq. (the "Surplus Land Act").

Dear Ms. Peterson,

The City of Garden Grove (the "City") is seeking to dispose of approximately 100 plus acres of property currently operating as the Willowick Golf Course (the "Willowick Property") pursuant to California Government Code Section 54220 et. seq. (the "Surplus Land Act").

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11222 Acacia Parkway • P.O.Box 3070 • Garden Grove, CA 92842
ggcity.org

Initial Letter of Interest: Response

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   (j) For residential, if any, specifically identify the unit count, unit size and affordability level.
   (k) For commercial, if any, specifically describe building sizes and proposed uses; and
   (l) For open space, if any, please specifically describe the size, location, and proposed uses.
5. Identify source of debt and equity.

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City of Garden Grove
Office of Economic Development
Attention: Grace Lee
Title: Willowick Submittal
11222 Acacia Parkway
Garden Grove, California 92840

Please direct all questions or request for clarification to Grace Lee, Senior Economic Development Specialist at gracel@ggcity.org. Please deliver your submittals to be received by the City no later than 5:00 P.M. (PST) on Thursday, August 21, 2020.

Sincerely,

LISA L. KIM
Assistant City Manager
Community & Economic Development Department

Letters of Support

July 10, 2020

Mayor Steven Jones, Council Members, and City Manager Scott Stiles
City of Garden Grove
11222 Acacia Pkwy,
Garden Grove, CA 92840

Dear Mayor Steven Jones, Council Members, and City Manager Scott Stiles,

The Rise Up Willowick Coalition ("the Coalition") is comprised of residents from the City of Santa Ana, the City of Garden Grove ("the City"), and neighboring Orange County Cities as well as local organizations whose goal is to ensure that the Willowick Golf Course property ("Willowick") is developed to meet the needs of current local residents and their vision-- especially the most vulnerable such as, but not limited to, working class individuals, youth, and immigrant residents -- which includes deep affordable housing, parkland for active recreational use, and open-space. The entities at the end of the letter are signing on in support of this letter.

The purpose of this letter is to express support for the Trust for Public Land, Clifford Beers Housing and the Coastal Conservancy's Letter of Interest as the City of Garden Grove's 60-day notification period closes and the City enters the 90-day negotiating period as required by the CA Surplus Land Act (SLA).

Since April of 2019 the Rise Up Willowick Coalition has advocated to keep Willowick as open space to provide residents the much needed access to parks, affordable housing and community centered spaces. Willowick is one of the last remaining open spaces in central Orange County and it is incumbent upon you, the elected representatives of the community, to approach public land not as a commodity but as a valued public resource that can meet the goals of redressing the inequities of lack of access to parks and open space in Garden Grove and Santa Ana.

The City's attempts to use Willowick to "generate revenue" by selling and/or leasing the land for private development is not only unnecessary given that the City could create revenue by reallocating other parts of the budget, it is counterproductive to creating benefits for the community, and in fact, negatively impacts residents. The COVID-19 pandemic has unveiled the critical link between open spaces and physical and mental health, therefore the

Letters of Support

Trust for Public Land's mission of advocating and creating close-to-home parks aligns with our mission of creating these opportunities for low-income communities of color. Mayor Steve Jones has signed on to Trust for Public Land's #10MinuteWalk campaign. Additionally, Mayor Steve Jones and the Garden Grove City Council passed a resolution on May 12th, 2020 recognizing May 16th as "Parks to Kids Day." While it is necessary to acknowledge that open space is important, it is nowhere near enough to meet the residents' actual needs. The City must take immediate and direct action to address the lack of open space for residents and it can achieve this through Willowick.

The City of Garden Grove declared Willowick as surplus land on February 25, 2020 due to Rise Up Willowick's advocacy efforts, which included filing a lawsuit against both the City of Garden Grove and Santa Ana, and since then has issued Notices of Intent to dispose of this surplus property as required by the Surplus Land Act as amended by AB 1486. Currently, we know those same developers which submitted a proposal in April of 2019 when the City of Garden Grove issued an RFP, will most likely submit Letters of Interest. We urge you to remember the City of Garden Grove must comply with the CA Surplus Land Act and the Amendments provided by AB 1486 which grants first priority to an entity that agrees to use the site for park or recreational purposes if the land being offered is already being used and will continue to be used for park or recreational purposes. In terms of affordable housing "priority" is given to the entity proposing the most units at the deepest affordability. The community has continuously stated that they would like to use and are in need of quality park space and deeply affordable housing on the Willowick site, uses that as stated, are prioritized under the Surplus Land Act as amended by AB 1486.

Given that Willowick is a public resource, community residents should have the right to understand the process by which the City is making the decisions to dispose of Willowick and so we ask you for the following:

- **Prioritize meeting with residents from the Rise Up Willowick Coalition**
- **Discuss process of disposal during the open-session city council meetings**
- **Organize public meetings to specifically discuss Willowick**
- **Solicit community input with RiseUpWillowick advocates**

Understanding the importance of Willowick and the rare opportunity it provides to meet urgent community needs, we urge you to meet the residents' needs for quality parks and truly accessible affordable housing. We would like to schedule meetings to discuss this further. Please contact Cynthia Guerra at cguerra@riseupwillowick.org.

Sincerely,

RISE UP WILLOWICK COALITION

Letters of Support

List of entities signing this letter in support of the Rise Up Willowick Coalition:

Walter Muneton, Garden Grove Unified School District Board of Education President

Public Law Center

Viet Rise

Chispa

Resilience Orange County (ROC)

Kid Works

Santa Ana Building Healthy Communities (SABHC)

Clergy & Laity United for Economic Justice (CLUE)

Letters of Support

July 10, 2020

Mayor Steven R. Jones
Council Member George S. Breitigam III
Council Member John R. O'Neill
Council Member Diedre Thu-Ha Nguyen
Council Member Patrick Phat Bui
Council Member Stephanie Klopfenstein
Council Member Kim B. Nguyen
City of Garden Grove
11222 Acacia Parkway
Garden Grove, CA 92840
By U.S. Mail and Email: stevej@ggcity.org

Re: Support for the Rise Up Willowick Coalition

Dear Mayor Jones and Honorable Council Members:

The undersigned groups, which represent thousands of members and activists in Southern California, believe that everyone has the right to safe and affordable housing that provides meaningful access to nature. For this reason, we are writing to express our enthusiastic support for the Rise Up Willowick (RUW) Coalition's mission of ensuring that the Willowick Golf Course (Willowick) is developed to meet the needs of current and future residents — which include deep affordable housing, parkland for active recreational use, and community-centered spaces. We are reaching out to hold up the RUW Coalition's incredible work, dedication, and care for the most vulnerable residents living in central Orange County.

Our organizations are members of the Los Angeles Regional Open Space & Affordable Housing[1] (LA ROSAH) Collaborative, a diverse group of non-profit organizations and agencies that focus on improving urban land use by uplifting community-driven joint development projects, while at the same time increasing equal access to nature in park-poor communities that are overwhelmingly communities of color. We applaud the RUW Coalition's commitment to upholding the Surplus Land Act by increasing quality parks and accessible affordable housing on public land (Willowick) in central Orange County.

[1] LA ROSAH, *Pathways to Parks & Affordable Housing Joint Development* (2017), https://bit.ly/2CkxPsu.

Letters of Support

The RUW Coalition has built a campaign rooted in community-grounded research and data to support residents' lived experiences. The Coalition surveyed more than 325 local residents to better understand the needs and wishes of the community, of which 95% of the surveys were from respondents who live within a half-mile of Willowick. The residents surveyed prioritized open space and affordable housing over options like commercial developments and market-rate housing. According to the RUW Coalition's detailed survey, 62% of respondents said they would like to see more parks and open spaces, 54% of respondents said they wanted to see affordable housing, and 48% of respondents desire more community spaces.As established in the RUW Coalition's report[2] entitled *Willowick: Opportunity to Use Public Land for Public Good*, most local residents are opposed to market-rate housing (45%), stadiums (44%), and any other type of development that might deepen inequality or displace current residents and local businesses. Rather, the majority of these residents hope to see substantial reinvestment in the existing community and revitalization of open spaces and parks.

The COVID-19 pandemic has put a spotlight on California's affordable housing crisis and public health inequities that disproportionately plague communities of color and lower-income communities. The RUW Coalition is working tirelessly to prevent the development of Willowick into a project that threatens to perpetuate these social and environmental harms. In partnership with community groups and local residents, RUW's core team is campaigning to enhance both community health and climate resilience. Our organizations stand with the RUW Coalition's mission and vision to reinvest in vulnerable communities and keep public land public — allowing all Orange County residents to thrive. Thank you for considering our views.

Very truly yours,

Damon Nagami
Director, SoCal Ecosystems Project
Natural Resources Defense Council

Alison Hahm
Access to Nature Fellow
Natural Resources Defense Council

Ramya Sivasubramanian
Deputy Director, Environmental Justice
Natural Resources Defense Council

Tori Kjer, PLA
Executive Director
Los Angeles Neighborhood Land Trust

Sissy Trinh
Executive Director
Southeast Asian Community Alliance

[2] Rise Up Willowick Coalition, *Willowick: Opportunity to Use Public Land for Public Good* (2019), https://bit.ly/2BYwZ4P.



2.

Terms of Purchase or Lease

RISE UP WILLOWICK COMMUNITY MEETING.



RISE UP WILLOWICK COMMUNITY MEETING.

Terms of Purchase or Lease

THE TRUST FOR PUBLIC LAND

August 20, 2020

Ms. Grace E. Lee
Sr. Economic Development Specialist
City of Garden Grove – Community & Economic Development Department
11222 Acacia Parkway
Garden Grove, CA 92840

RE: Letter of Intent Regarding Sale of the property located at 3017 W. 5th Street, Santa Ana, CA 92703 pursuant to California Government Code 54220, et seq. ("Surplus Land Act")

Dear Ms. Lee,

In response to a certain Notice of Availability of Surplus Land, per Govt. Code Section 54220 et seq., dated March 12, 2020, in respect to the land located at 3017 W. 5th Street, Santa Ana, California 92703 (the "Subject Property") and subsequent response letters from the City of Garden Grove (the "City") dated July 24, 2020 inviting proposals from interested parties, The Trust for Public Land ("TPL"), is pleased to submit this Letter of Intent ("LOI") to acquire the Subject Property for open space, recreational and affordable housing uses.

Under the terms of this LOI, TPL proposes to purchase the Subject Property in order to collaboratively implement the local community's vision of increased access to safe public open spaces, restoration of lands along the Santa Ana River Trail and, in partnership with Clifford Beers Housing, Inc. ("CBH"), develop essential affordable housing units. As stated in the submitted Notice of Intention dated July 7, 2020, the State Coastal "Conservancy is interested in seeing the Subject Property acquired for its continued use for parks and open space purposes. In this undertaking, the Conservancy has requested technical assistance from The Trust for Public Land. The Conservancy designates The Trust for Public Land to enter into discussions and negotiations with the City of Garden Grove, with the goal of acquiring the Subject Property for parks and open space purposes". Once under contract, TPL would undertake and complete all due diligence and fundraising in order to close on the property acquisition in a timely fashion. Please note that while TPL would be the party closing escrow with the City, TPL would not be taking title to the land. Instead, at closing TPL would direct the deed effecting transfer of title from the City directly to a public agency steward. In other words, TPL would not enter the chain of title. After closing, an estimated 90 acres would be restricted to public open space and recreational uses, while an approximately 12-acre portion would be leased to CBH for a partial affordable housing development.

With the above-mentioned statements in mind, please consider the following terms for the acquisition of the property:

Earnest Money Deposit	$1,000.00 - As a non-profit organization dedicated to land conservation, TPL must manage our costs/internal capital and therefore proposes this nominal deposit;
Purchase Price	The fair market value of the Subject Property, estimated to be $21,000/acre, or $2,131,500, as recently determined by Elizabeth Finestone, MAI, AI-GRS, FRICS, CRE, with Integra Realty Resources, cash at closing;
Appraisal	TPL will cover the cost of the appraisal;
Timeline	Closing would occur within 18 months of execution of a purchase agreement;
Due Diligence	TPL would fund and complete all necessary due diligence for this acquisition, including contracting for title searches, surveys, environmental inspections and other activities required by TPL;
Title/Survey Issues	Seller shall be responsible for resolving any title matters, including any encroachments disclosed by inspection and/or encroachments noted on the prepared survey;
Closing Costs	Escrow closing costs shall be split 50/50 between Buyer and Seller.

Please acknowledge timely receipt of this LOI. All correspondence in connection with this LOI shall be sent to Ms. Robin Mark at Robin.Mark@tpl.org. Thank you for your consideration.

Respectfully,



Robin Mark
Los Angeles Program Manager
The Trust for Public Land



Contingencies

3.



HOLT FAMILY APTARTMENTS. CLIFFORD BEARS HOUSING.

Contingencies

ACQUISITION CONTINGENCIES

Close of escrow for the Williowick Golf Course (the "Subject Property") and by The Trust for Public Land ("TPL") would be subject to the following contingences:

- The Subject Property is found to be free of any Recognized Environmental Conditions (RECs) through a Phase I Environmental Site Assessment (ESA) performed by a certified environmental consultant;
- If a Phase II ESA is required due to the likely presence of an REC(s), any discovered REC(s) will be fully remediated prior to close of escrow;
- Condition of title must be approved by TPL's legal department. This includes removal from title those exceptions to which TPL counsel objects;
- A boundary survey is approved by TPL's legal department. This includes resolving any/all encroachments and excroachments, as well as any legal description discrepancies discovered by the surveyor;
- TPL receives and approves an appraisal report from an MAI appraiser detailing the current fair market value of the Subject Property;
- TPL successfully fundraises from public and private sources the required purchase price amount;
- The appraisal is approved by all partners providing funding to the proposed acquisition;
- The City of Garden Grove's lease with the current golf course operator is terminated;
- TPL's Board approves an authorization for staff to proceed with the closing, under terms agreed to by both TPL and the City of Garden Grove.

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Proposed Project

4.



SAN GABRIEL MOUNTAINS. THE TRUST FOR PUBLIC LAND. PHOTO BY JULIA STOLZ.



SAN GABRIEL MOUNTAINS. THE TRUST FOR PUBLIC LAND. PHOTO BY JULIA STOLZ.

Willowick Community Park

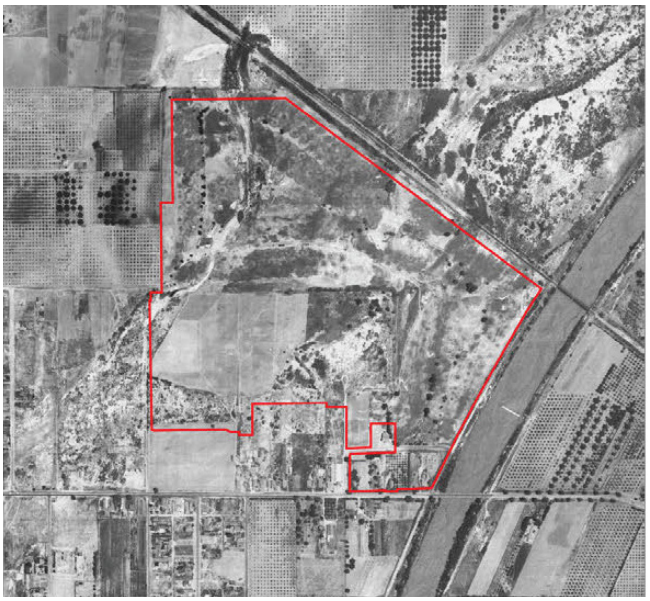
A NOW OR NEVER OPPORTUNITY

The sale of Willowick Golf Course is an unprecedented opportunity in several ways.

1. A 100-acre urban park: the size of 77 football fields, the Mall of America, or Christopher Robbins' 100-Acre Wood. It is rare to find a big enough parcel to create a regional park. This one sits at the intersection of the 30-mile long Santa Ana River Trail, and the OC Streetcar, promising attractive, sustainable access for millions who could benefit from the healing qualities of nature and respite.

2. A community on the brink of transition: anti-gentrification community groups and coalitions raise the alarm at the risk of losing working class families to unaffordable housing. As the County sees its highest unemployment rate since the Great Depression and COVID ravages our communities, the need for sustained affordable homeownership and rental properties must be addressed. The Willowick community has made it clear that affordable housing is not just needed, but wanted, at this site.

3. Land that has remained relatively undeveloped: There is so little land left in Southern California that hasn't been wholly transformed. The images to the right illustrate how much riparian habitat was lost to development. Only 2% remains intact. We have an opportunity to restore habitat along the Santa Ana River on soils that might retain some of their original character and quality.



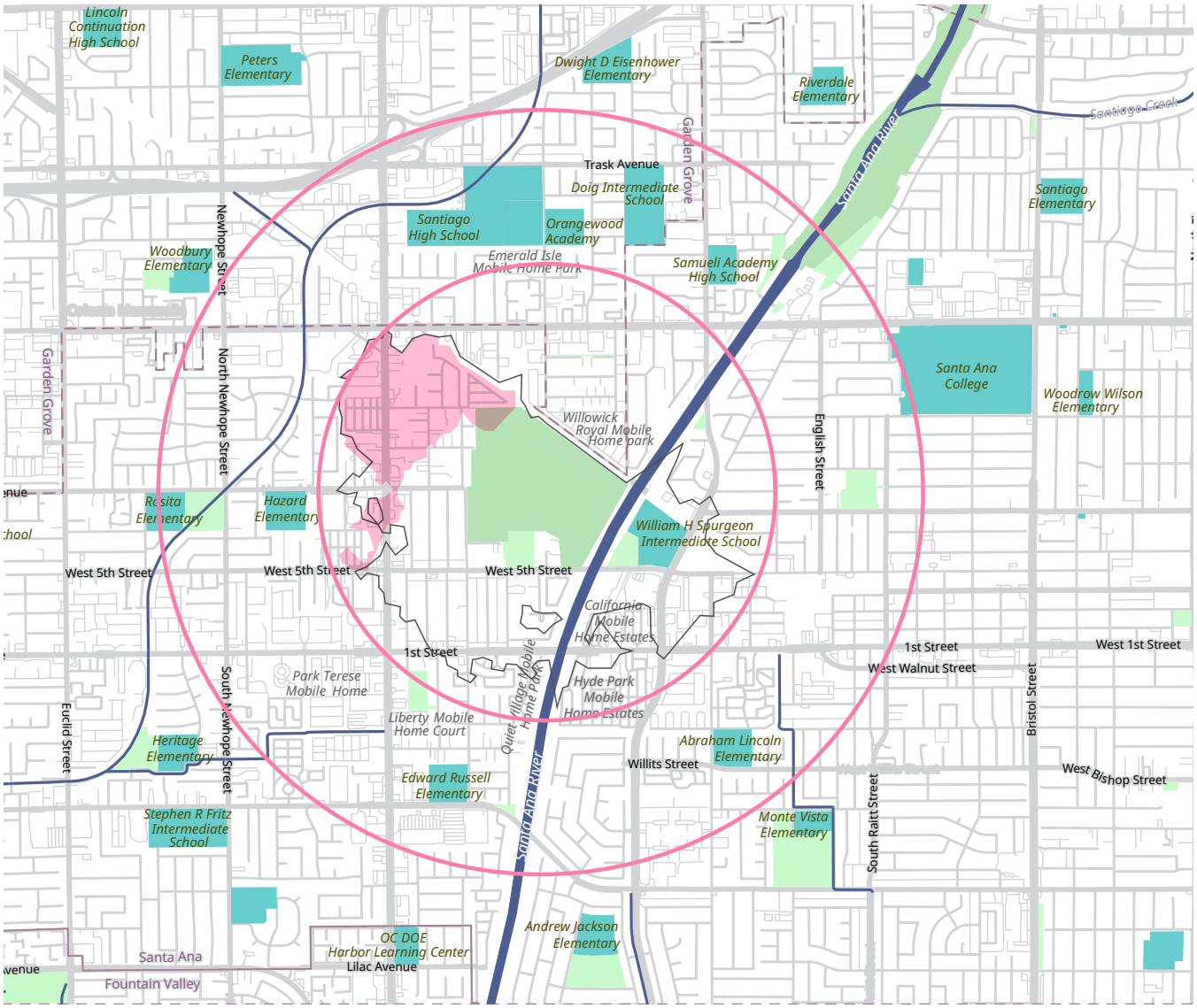
A 1938 AERIAL IMAGE OF WILLOWICK SHOWS ITS PREVIOUS LIFE AS PART OF THE SANTA ANA RIVERBED.



A 1901 USGS MAP OF ORANGE COUNTY REMEMBERS THE LOST WETLANDS, MARSHES, AND RIVERS

Willowick Community Park

NEW PARK ACCESS FOR 8500 PEOPLE



While listed as a public open space, Willowick Golf Course is not free to enter. Willowick Community Park will provide homes for 280 families, and new park access for 8500 people who cannot currently enjoy a nearby park (highlighted in pink in the map above). Those residents who do live within a ten-minute walk of a park currently have little choice in what they can do there. All the parks shown in this diagram are programmed for active, organized sports and structured play. Willowick Community Park is a different kind of park for Santa Ana and Garden Grove. It will have abundant nature and the healing power of the feeling of being away from daily responsibilities. Immersion in nature will provide new experiences for children, families, and people of all ages and abilities. New entries on every side of the park welcome neighbors from every direction.

Willowick Community Park

A HOUSING FIRST MODEL FOR JUSTICE

The Housing First Model is a method by which individuals who are experiencing homelessness are provided permanent housing as the first step to work towards their personal goals. Housing First acknowledges housing as the first basic need to ensure life stability. Once housed, individuals can work on personal goals such as individuals improving their medical health, mental health, behavioral health, or searching for a job. Housing First also values the individual's or family's choice of which permanent housing location they would like to live. The Housing First Model can help individuals and families who are experiencing short-term or long-term housing instability, often referred to as homeless or chronically homeless households. It all starts with supportive service teams outreaching to individuals and families on the streets, in shelters, or in temporary homes to help ready them for stable housing, register them with the local Coordinated Entry System, and eventually assist in transitioning them into their new home.

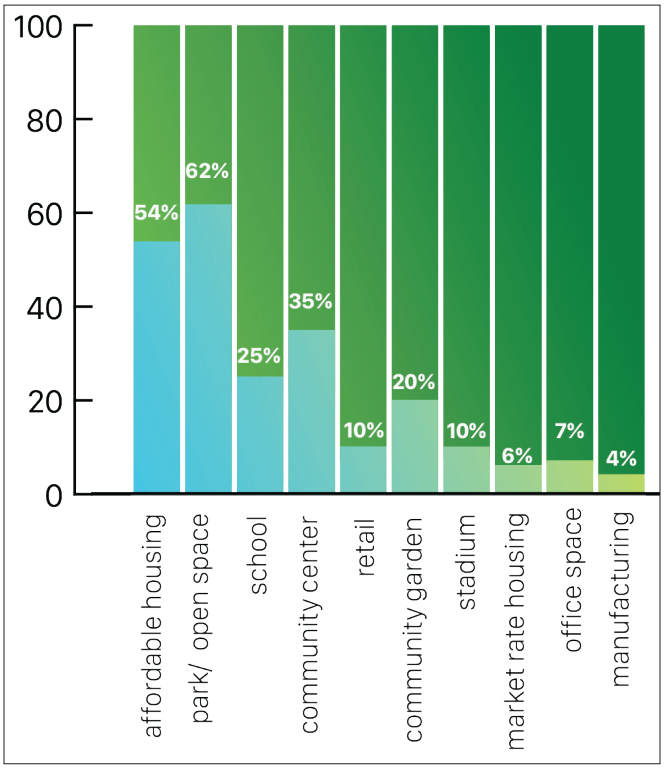
Permanent supportive housing (PSH) works hand-in-hand with the First Housing methodology. PSH provides long-term rental assistance and supportive services and has a long-term housing retention rate of up to 98 percent. Tenants in PSH/Housing First buildings perceive the supportive services as an option rather than an obligation which increases the participation level to accept services. PSH participants who use supportive services are more likely to join job training programs, enroll in school, treat substance abuse, and spend less time hospitalized than non-participants who are not willing to accept services. This all leads to a more cost-efficient society; while these households are aided through long-term rental assistance programs there are greater cost savings from the lower emergency services that may have otherwise gone to the same household (i.e. time in hospitals, jails, or use of emergency shelters). PSH research shows that in one instance a Housing First program could cost up to $23,000 less per consumer per year than a shelter program.

Willowick Community Park

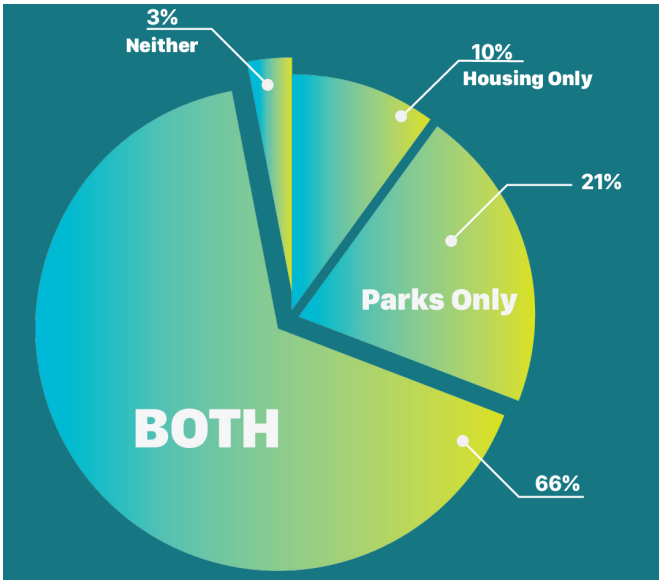
COMMUNITY NEEDS

The Rise Up Willowick Coalition worked to understand the needs of hundreds of immediate neighbors to the Willowick Golf Course. Rise Up Willowick serves as community liaison and advocate for the rights and wellbeing of the people who live in the community. These are the community needs identified by the Rise Up Willowick Coalition:

- **Parks and open space** that are safe and well-maintained, neighborhood friendly, and have walkable spaces
- **Affordable housing** that meets the needs of current residents around the Willowick area
- **A community center** that invests in youth, provides community-led programming, cultural related education and activities
- **Increased educational opportunities** that meets the needs of our community, like a preschool
- **Small and local businesses** that hire locally and cater to local residents



"If you could choose, what would you like to see happen to the land at Willowick?"



"Because this is publicly owned land, state law may require that it is prioritized for open space (like parks) and/or affordable housing. Would you like to see either of those, both or neither?"

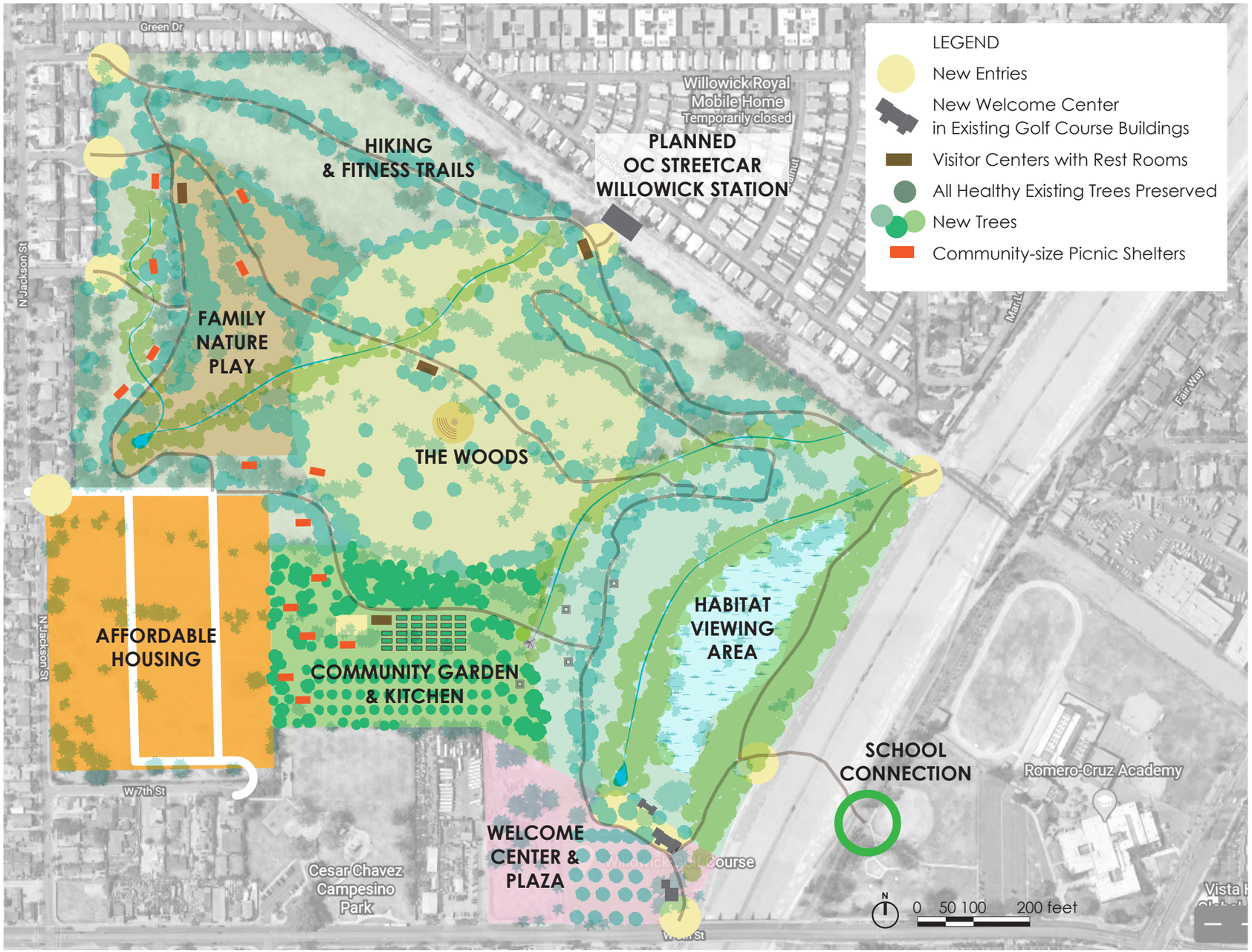
Willowick Community Park

A COMMUNITY-DRIVEN VISION

Non-profit park developers like TPL serve low-income households with high quality parks and urban greening. We base our practice on a foundation of engaging community residents to identify community needs that can be addressed through parks. This engagement will continue through design development and construction of the park and neighborhood. The idea of promoting affordable housing integrated with parks and urban greening creates long-term local park stewardship among adjacent residents, improving community health and supporting stable neighborhoods. Ultimately, local residents truly are the stewards of these open spaces in the long run and embody the broader goals of improving community health, safety, and economic opportunity.

Our proposal is driven by the community and for community benefit. The new Willowick Community Park honors the community's stated goals to create a park that reflects the unique natural character and social context of Santa Ana and Garden Grove. The site is organized into seven primary uses, with the Affordable Housing located in the southwest corner adjacent to the existing Santa Anita neighborhood. New entries welcome people into all sides of the park, with connections to the planned OC Streetcar Willowick Station, the Santa Ana River Trail and the school across the Santa Ana River.

Broadly, our design approach prioritizes park access, housing justice, environmental justice, public health, physical health, and mental health. For specific benefits, see the table on the reverse side of this plan.



Willowick Community Park

PROGRAMMING AND BENEFITS

LAND USES, SIZES, AND BENEFITS

Park Area	Size (Acres)	Programming	Benefits
Affordable Housing	**12**	270 units (see detail to the right)	• Housing justice and stability for those most at risk for displacement
Welcome Center & Plaza and Entries	**6**	The most developed part of the site becomes a multi-purpose plaza, parking, and community rooms in the former golf club building	• Closer park access for thousands of people • Improve health • Strengthen social cohesion
Habitat Viewing Area	**18**	Restored riparian habitat providing places for biodiversity and nature observation	• Build eco-literacy • Increase biodiversity and climate resilience • Works toward environmental justice
Community Garden & Kitchen	**12**	Provides shared growing space for annual vegetables, an orchard, food forest, and outdoor community kitchen	• Improve access to fresh local food • Build community and social cohesion • Improve physical and mental health
The Woods	**20**	A relatively wild area for immersive nature experiences, rest, community science, and environmental education	• Support mental health • Support physical health • Build eco-literacy • Works toward environmental justice
Family Nature Play	**12**	Gives people of all ages a place to interact with natural materials including water, sand, plants and trees	• Improves physical health • Improves mental health • Increases social skills and cooperation in children
Hiking & Fitness Trails	**22**	Dedicated routes and area connected to all 8 entries for walking, running, biking, and exercising	• Improves physical health • Improves mental health • Increases park equity
TOTAL	**102**		

PROPOSED HOUSING TYPES, AFFORDABILITY, AND SERVICES

Proposed Project	Size (SF)	Unit Count	Unit Size	Affordability Level	Purchase Type
Willowick	121,702	98	STU, 1-bed, 2-bed, 3-bed	0-60% AMI	Ground lease
Jackson Square	226,018	112	1-bed, 2-bed, 3-bed	0-90% AMI	Ground lease
LA ROSA (homeownership)	175,000	60	2-bed, 3-bed	60-120% AMI	Purchase @ construction loan closing
TOTAL	**522,720 (12 acres)**	**270**			

Clifford Beers Housing proposes twelve acres to develop approximately 270 affordable housing units. From this acreage, three distinct sites will be created, reflected in the table above.

Supportive services will accompany the housing to support the health, wellbeing, and housing stability of residents—some of whom have experienced homelessness.

Support services likely include:

- Benefits counseling and advocacy
- Mental and Physical Health services
- Substance Abuse Services
- Life Skills Training
- Employment counseling
- Education linkages to local schools, ESL/GED and, vocational programs
- Linkages to medication management and representative payee if required
- Green education regarding the features of the building by the service provider and the property management company
- Legal Assistance
- Linkages to community based services including housing outplacement
- Social and Recreational activities

Willowick Community Park

HOUSING CONSTRUCTION BENEFITS

Beyond the physical and mental health health and community building benefits of the new park, the project will bring new jobs both on the site and in the community. Through this affordable housing project, money will flow through the community in a variety of directions:

Direct benefit: salaries will go directly to the folks physically building the project, with priority placed on hiring local community members.

Indirect benefit: money also makes its way to the suppliers of the materials/products getting installed onsite or the other services required to get the building built (e.g. architects, lawyers).

Induced benefit: this is equally powerful (and relevant to current conversations around stimulus checks). When someone gets paid – either a construction worker onsite, an AC manufacturer owner, or a lawyer, all working in some fashion on the project – they don't hold onto their entire paycheck forever. They go spend it.

Studies have found that for every $1M of spending for an affordable housing project 2.2 jobs are induced. This means local restaurants, the car mechanic down the street, or the barbar or hairdresser will benefit from the added spending as a result of this project.

We tend to think of only the permanent jobs that are created by a housing project – the onsite building manager or services team members. But for a locality thinking in larger terms, it's important to consider all the other jobs (positively) affected by the project. A construction worker, for example, doesn't exist to build a single project. But they benefit when there is a project to work on. The added household spending adds tax revenue and pulls residents from under employment to full employment or requires new people to be hired, all of which benefit cities. This general line of thinking is why we support local hiring practices and prevailing wage standards—because they result in larger benefits for the local community.

JOBS SUPPORTED BY WILLOWICK AFFORDABLE HOUSING*

Housing Model	Willowick	Jackson Square	TOTAL
Direct	299	310	609
Indirect	86	89	175
Induced	91	95	186
TOTAL	476	494	970

*Methodology
Total Effect: Total of Direct + Indirect + Induced Effects
Jobs**: Over one year, # if hibs/people employed by company supported by $. NOT FTE, in proportion to full & part-time employees across LA region.
Labor Income: What portion of one million goes to employment including management (wages, salaries, business profit)
Total Value Added: Things bought upstream such as goods and services i.e. manufacturing company (i.e. concrete, lumber, sand). Upstream. Assembe & combine later. Portion of value at sale of 1$
Cost of Intermediate Inputs: Difference between Total Value Added and Output
Output**/Sales (Total Value Added + Cost of Intermediate Inputs): Sales for somebody/downstream. Value of household expenditures supported by project.

Willowick Community Park

PRECEDENT IMAGES



WILDLIFE VIEWING AREA. UCSB OCEAN MEADOWS GOLF COURSE, TPL.



COMMUNITY GARDEN. PATTON PARK, TPL.



COMMUNITY GARDEN. PATTON PARK, TPL.



THE WOODS. SAN GABRIEL MOUNTAINS. THE TRUST FOR PUBLIC LAND

Willowick Community Park

PRECEDENT IMAGES



NATURE PLAY. SAN GABRIEL MOUNTAINS, TPL.



NATURE PLAY. KELLOGG PARK, TPL.



NATURE PLAY. KELLOGG PARK, TPL



NATURE PLAY. ALISO PARK, TPL.



HIKING TRAILS. SAN GABRIEL MOUNTAINS, TPL.



COMMUNITY EXERCISE. RUNYAN CANYON, TPL.

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Debt and Equity

5.

The Trust for Public Land

SOURCES OF DEBT AND EQUITY

The Trust for Public Land has a robust history of funding land acquisition and park development projects through a combination of both public and private dollars. That said, TPL maintains two lines of credit for a total of $80M. We use these lines of credit for bridge financing for our land conservation work. A debt to equity of less than 1 is the covenant that both our banks require. TPL has never had a problem meeting that covenant. At the end of our recent fiscal year, June 2020, we were at .75. We have included this information to give you a better understanding of our fincanes as an organization, however, funding for our work typically comes from public sources. Below is a short list of potential funding sources TPL may utilize to acquire the Willowick site.

FEDERAL FUNDING

Land & Water Conservation Fund

The Land and Water Conservation Fund (LWCF) conserves land across the United States to improve outdoor recreational opportunities for millions of Americans. Working in partnership, federal, state and local agencies support the program to protect public land including national parks, national wildlife refuges, national forests and trails, and to support state and local parks and playgrounds, and preserve historic and cultural sites.

LWCF was created by and continues to utilize a portion of federal offshore drilling fees rather than taxpayer dollars to support its programs. LWCF includes several programs that The Trust for Public Land has utilized to conserve open space and create parks in California including the Outdoor Recreation Legacy Partnership (OLRP) Program, and the State Assistance Grants or 'Stateside formula.'

OLRP serves to address the lack recreational opportunities in urban communities by funding projects in specifically in cities such as the creation of new parks and playgrounds and the renovation of existing parks. Grants for projects have ranged in size from $250,000 to $750,000, and planning grants can be up to $75,000. Since 2014, $28.2 million in federal funds have supported 50 ORLP projects, including TPL's Zamora Park project in the City of El Monte ($750,000).

The LWCF State Assistance Grants or "stateside formula," like ORLP, includes funding for acquisition and/or development work. And while the program is federally funded, it is managed by the California State Parks Department. Earlier this year $227M was distributed to states across the US with CA receiving $19.2M. Due to the recent passage of Great American Outdoors Act we expect CA's apportionment to increase 40-60% in upcoming years. In previous years, TPL has been successful accessing LWCF Stateside funding for the acquisition of Runyon Canyon in the City of Los Angeles ($1,500,000), Kellogg

Park in Ventura County ($1,500,000), Pointed Rocks Ranch ($480,000), El Cerrito Hillsides ($250,000), and the development of the Urban Orchard in the City of South Gate ($3,000,000).

STATE FUNDING

Proposition 68

On June 5, 2018, California voters passed Proposition 68, the $4 billion "Parks, Environment, and Water Bond Act of 2018," by 57.6 percent. The Bond includes the Statewide Park Program (SPP), a competitive program to create new parks and new recreation opportunities in underserved communities across California. The SPP was first signed into law in 2008, and with passage of Prop 68, additional funding has become available for land acquisition and park development. The fourth and final round of SPP has already been released and $395.3M is available to communities throughout California. TPL has been extremely successful accessing SPP funding, totaling over $55M in funds to create and aquire sites for park development in California over the last 10 years.

Urban Greening Grant Program

Over the last 15 years, responding to the need to reduce greenhouse gas emissions, the California legislature has signed several bills to address climate change and improve the environment and natural resources while maintaining a robust economy. As a result of these efforts, including AB31, SB32, and SB859, the California Natural Resources Agency's Urban Greening Program, funded by the Greenhouse Gas Reduction Fund (GGRF), was created to support the development of green infrastructure projects that reduce GHG emissions and provide multiple benefits. While GGRF has various governing statutes that provide the framework for how the GGRF must be appropriated and expended, AB 1550 increased the percent of funds for projects located in disadvantaged communities from 10 to 25 percent and added a focus on investments in low-income communities and households, just like those in Santa Ana and Garden Grove. The Trust for Public Land has been successful at securing Urban Greening funding for various projects including the Ocean Meadows Golf Course Acquisition.

Additional funding may also be available through programs coming out of the State Coastal Conservancy, The Environmental Enhancement Mitigation Program (EEMP), and through private funders such as the Orange County Community Foundation, and The California Endowment.

Clifford Beers Housing

SOURCES OF DEBT AND EQUITY

TRADITIONAL PERMANENT AND CONSTRUCTION LOANS

- 9% Tax Credit Equity
- 4% Tax Credit Equity
- New Market Tax Credits
- No Place Like Home and/or Multifamily Housing Program (depending on availability)
- Measure A and/or Proposition 68
- CalHFA Mixed-Income Project funding
- Local Affordable Housing Funds (i.e. HOME, MHSA, etc.)
- Orange County Trust Fund

Pro Forma: Willowick Housing Model

SOURCES OF FUNDS

Willowick Sources & Uses	Total Project	per Unit	% of Total
Construction Period Uses	$ 49,411,477	$ 504,199	100.00%
Construction Period Sources			
Conventional Loan	$ 35,038,863	$ 357,539	70.91%
Local Funds	$ 2,000,000	$ 20,408	4.05%
OCHT	$ 2,000,000	$ 20,408	4.05%
GP Equity	$ 100	$ 1	0.00%
LP Capital	$ 6,900,000	$ 70,408	13.96%
Costs Deferred During Construction	$ 1,097,515	$ 11,199	2.22%
DDF	$ 2,375,000	$ 24,235	4.81%
TOTAL	$ 49,411,478	$ 504,199	100.00%

Permanent Period Uses			
Acquisition	$ 10,500	$ 107	0.02%
Hard Costs	$ 37,620,693	$ 383,885	76.14%
Soft Costs	$ 8,280,284	$ 84,493	16.76%
Developer Fee	$ 3,500,000	$ 35,714	7.08%
TOTAL	$ 49,411,478	$ 504,199	100.00%
Permanent Period Sources			
Conventional Loan	$ 5,302,463	$ 54,107	10.73%
NPLH	$ 16,108,915	$ 164,377	32.60%
Local Funds	$ 2,000,000	$ 20,408	4.05%
OCHT	$ 2,000,000	$ 20,408	4.05%
GP Equity	$ 100	$ 1	0.00%
LP Capital	$ 23,000,000	$ 234,694	46.55%
DDF	$ 1,000,000	$ 10,204	2.02%
TOTAL	$ 49,411,478	$ 504,199	100.00%

Pro Forma: Jackson Square Housing Model

SOURCES OF FUNDS

Jackson Square Sources & Uses	Total Project	per Unit	% of Total
Construction Period Uses	$ 51,601,579	$ 460,728	100.00%
Construction Period Sources			
Conventional Loan	$ 40,669,766	$ 363,123	78.81%
Local Funds	$ 2,000,000	$ 17,857	3.88%
GP Equity	$ 100	$ 1	0.00%
LP Capital	$ 5,206,754	$ 46,489	10.09%
Costs Deferred During Construction	$ 1,349,959	$ 12,053	2.62%
DDF	$ 2,375,000	$ 21,205	4.60%
TOTAL	$ 51,601,579	$ 460,728	100.00%

Permanent Period Uses			
Acquisition	$ 10,500	$ 94	0.02%
Hard Costs	$ 39,270,693	$ 350,631	76.10%
Soft Costs	$ 8,820,386	$ 78,753	17.09%
Developer Fee	$ 3,500,000	$ 31,250	6.78%
TOTAL	$ 51,601,579	$ 460,728	100.00%
Permanent Period Sources			
Conventional Loan	$ 12,347,040	$ 110,241	23.93%
NPLH	$ 13,898,591	$ 124,095	26.93%
MIP	$ 5,000,000	$ 44,643	9.69%
Local Funds	$ 2,000,000	$ 17,857	3.88%
GP Equity	$ 100	$ 1	0.00%
LP Capital	$ 17,355,848	$ 154,963	33.63%
DDF	$ 1,000,000	$ 8,929	1.94%
TOTAL	$ 51,601,579	$ 460,728	100.00%

Pro Forma: La Rosa Home Ownership Model

SOURCES OF FUNDS

La Rosa Project Sources & Uses	Total Project	per Unit	% of Total
Construction Period Uses of Funds:			
Total Project Costs	$33,341,487	$555,691	115%
less Costs paid from Sales Proceeds	($4,251,482)	($70,858)	-15%
Net Construction Period Project Costs	**$29,090,005**	**$484,833**	**100%**
Construction Period Sources of Funds:			
HHP Equity	$50,000	$833	0%
City of Santa Ana Homeownership Funds	$7,500,000	$125,000	26%
NMTC Net Equity	$3,198,000	$53,300	11%
Construction Loan	$18,342,005	$305,700	63%
Total Construction Period Funding Sources	**$29,090,005**	**$484,833**	**100%**
Inventory Period Sources of Funds:			
Unit Sales Proceeds	$22,249,400	$370,823	104%
less Seller Concession	($60,000)	($1,000)	0%
less Buyer's Title & Recording	($90,000)	($1,500)	0%
less Inventory Period Taxes	($42,329)	($705)	0%
less Inventory Period Interest	($150,263)	($2,504)	-1%
less Sales Commission	($556,235)	($9,271)	-3%
less Leveraged Loan Interest--Post Completion	($161,548)	($2,692)	-1%
less Inventory Period HOA Dues & Utility Costs	($41,108)	($685)	0%
less Post Completion Allowance for Repairs	($150,000)	($2,500)	-1%
plus Holdback Account	$394,088	$6,568	2%
plus CalHome	*$0*	*$0*	*0%*
plus Other Funds	*$0*	$0	0%
Subtotal	**$21,392,005**	**$356,533**	**100%**
Repay Construction Loan	($18,342,005)	($305,700)	-86%
Repay HHP Equity	($50,000)	($833)	0%
Subtotal	**$3,000,000**	**$50,000**	**-86%**
less Developer Fee	($3,000,000)	($50,000)	-14%
Surplus (Deficit)	**$0.00**	**$0**	**-100%**

Exhibit B



Executive Summary

RESEARCH SERIES | 2010

Air Quality Effects of Urban Trees and Parks

DAVID J. NOWAK

GORDON M. HEISLER

National Recreation and Park Association

Table of Contents

Executive Summary . . . 3
Air Temperature Reduction . . . 4
Air Pollution Reduction . . . 4
Ultraviolet Radiation Reduction . . . 4
Carbon Dioxide (Climate Change) Reduction . . . 5
Recommendations and Goals for Park Management . . . 5
Introduction . . . 6
Trees and Parks in Our Cities . . . 6
Highlights . . . 6
Trees, Parks and Air Temperature . . . 12
Highlights . . . 12
Urban Heat Islands . . . 12
Baltimore Parks Case Study – Reducing Local Air Temperatures . . . 14
Air Temperature Effects of Parks in Other Cities . . . 19
Recommendations . . . 21
Trees, Parks and Air Pollution . . . 22
Highlights . . . 22
Tree Effects on Air Pollution . . . 22
1) Effects of trees on local microclimate . . . 22
2) Removal of air pollutants . . . 23
3) Emission of chemicals . . . 25
Overall Effect of Vegetation on Air Pollution . . . 26
Health Effects . . . 26
Importance of Parks to Clean Air . . . 26
Recommendations . . . 26
Trees, Parks and Ultraviolet Radiation . . . 27
Highlights . . . 27
Recommendations . . . 29
Trees, Parks and Climate Change . . . 29
Highlights . . . 29
Tree and Park Effects on Climate Change . . . 29
Carbon Storage . . . 29
Carbon Emissions . . . 33
Reduced Carbon Emissions through Cooler Temperatures and Reduced Energy Use . . . 33
Recommendations . . . 33

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Case Study—Chicago Parks 33
Appendix—Examples of Species with Relatively Large Air Quality Benefits. 35
Bibliography 38
Literature Cited 40

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Air Quality Effects of Urban Trees and Parks

David J. Nowak
Project Leader
United States Department of Agriculture – Forest Service

Gordon M. Heisler
Meteorologist
United States Department of Agriculture – Forest Service

Executive Summary

Estimated Value of Trees in U.S. Urban Parks

- Structural value = $300 billion
- Air temperature reduction = unknown, but likely in the billions of dollars per year
- Air pollution removal = $500 million per year
- Reduced ultraviolet radiation = unknown, but likely substantial
- Carbon storage (trees): $1.6 billion
- Annual carbon removal (trees): $50 million per year

Estimated Value of Trees in Parks in Chicago, Illinois

- Structural value = $192 million
- Air temperature reduction = unknown
- Air pollution removal = $344,000 per year
- Reduced ultraviolet radiation = unknown
- Carbon storage (trees): $1.1 million
- Annual carbon removal (trees): $32,800 per year

Parks are significant parts of the urban landscape and comprise about 6% of city and town areas in the conterminous United States. These urban parks are estimated to contain about 370 million trees with a structural value of approximately $300 billion. The number of park trees varies by region of the country, but they can produce significant air quality effects in and near parks, related to air temperatures, air pollution, ultraviolet radiation, and carbon dioxide (a dominant greenhouse gas related to global climate change). Additional open space and other vacant lands in cities, which may contain trees and other vegetation, contribute significant additional benefits. Effects of parks and open space at the city scale can vary significantly depending on the amount of parkland and amount of tree cover within the parkland.

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Air Temperature Reduction

Parks generally have lower air temperatures than surrounding areas. Temperatures are usually cooler toward the center of a park than around its edges. At night, the center of a large park may be 13°F (7°C) cooler than surrounding city areas.

The cooler air from parks often moves out into adjacent developed neighborhoods. This cooling of surrounding areas tends to increase with park size and percentage of the park covered by trees.

Most studies show that temperature reductions by parks are greater at night than during the day. On clear nights with low wind speed, park lawn areas may be cooler than areas under trees. Thus, parks that include a variety of site conditions, areas with trees close together as well as open lawns, will maximize the options for comfort of visitors.

Cooler air temperatures provided by urban parks can have significant impacts on human health. During heat wave events, which can kill hundreds of people, park areas may provide city dwellers with some respite from high air temperatures, particularly in the evening. During hot, sunny days tree shade can greatly increase human comfort.

Because park influences on air temperature extend to developed areas outside of parks, local energy use for heating and cooling buildings is also affected. Although the net annual effect of parks on energy costs by reducing temperatures is difficult to estimate, at least in the southern United States the effect will usually be a net annual benefit. Furthermore, large park trees will reduce winds and may provide a benefit for winter heating of buildings near the park.

Although the overall economic effect of urban trees and parks on air temperature reduction is not fully known, it is likely on the order of billions of dollars annually at the national scale in terms of improved environmental quality and human health.

Air Pollution Reduction

Trees and vegetation in parks can help reduce air pollution both by directly removing pollutants and by reducing air temperatures and building energy use in and near parks. These tree effects can reduce pollutant emissions and formation. However, park vegetation can increase some pollutants by either directly emitting volatile organic compounds that can contribute to ozone and carbon monoxide formation or indirectly by the emission of air pollutants through vegetation maintenance practices such as operation of chain saws and use of transportation fuels.

Annual pollution removal and economic benefits by U.S. urban park trees is estimated at about:

- 75,000 tons ($500 million) or
- 80 pounds per acre of tree cover ($300 per acre of tree cover)

Ultraviolet Radiation Reduction

Park trees can shield people from ultraviolet (UV) radiation, as tree leaves absorb about 95% of UV radiation. The reduction in UV exposure to park visitors is important because excess exposure to UV is the cause or contributing factor for three types of skin cancer, and UV radiation is also blamed for contributing to cataracts of the eye.

While the overall economic effect of reduced UV exposure to park visitors is unknown, it is likely substantial. In 2004, the total direct cost associated with the treatment for the most common skin cancers, non-melanoma skin cancer, was $1.5 billion. The total expense for cataract operations is also great, because this is the most common surgery in the United States.

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Carbon Dioxide (Climate Change) Reduction

Trees and vegetation in parks can help reduce carbon dioxide (a dominant greenhouse gas) by directly removing and storing carbon dioxide and indirectly by reducing air temperature and building energy use in and near parks. Park vegetation can increase carbon dioxide by either directly emitting carbon dioxide from the vegetation (e.g., decomposition) or indirectly through emissions from vegetation maintenance practices.

Carbon storage and annual removal by urban park trees and soils in the United States is estimated at about:

- Carbon storage (trees): 75 million tons ($1.6 billion)
- Carbon storage (soils): 102 million tons of carbon ($2.1 billion)
- Annual carbon removal (trees): 2.4 million tons ($50 million)

On a per acre basis, carbon effects for U.S. parks are estimated to be:

- Carbon storage (per acre of tree cover): 40 tons ($800)
- Carbon storage (per acre of soil): 32 tons ($650)
- Annual carbon removal (per acre of tree cover): 1.2 tons ($25)

Recommendations and Goals for Park Management

- Consider that most of the effects of trees on microclimate and air quality are beneficial for park users and nearby residents.
- Park designs that include a variety of land cover—areas of dense trees, scattered trees, and lawn—are likely to provide the greatest opportunities for optimum physical comfort of visitors.
- Increase the number of healthy trees (increases pollution removal and carbon storage).
- Sustain existing tree cover (maintains pollution removal levels and carbon storage).
- Maximize use of low volatile organic compound (VOC) emitting trees (reduces ozone and carbon monoxide formation).
- Sustain large, healthy trees (large trees have greatest per tree effects on pollution and carbon removal).
- Use long-lived trees (reduces long-term pollutant emissions from planting and removal).
- Use low maintenance trees (reduces pollutants and carbon emissions from maintenance activities).
- Reduce fossil fuel use in maintaining vegetation (reduces pollutant and carbon emissions).
- Plant trees in energy conserving locations (reduces pollutant emissions from power plants).
- Plant trees to shade parked cars (reduces vehicular VOC emissions).
- Supply ample water to vegetation (enhances pollution removal and temperature reduction).
- Avoid pollutant sensitive species in heavily polluted areas (increases tree health).
- Utilize evergreen trees for particulate matter reduction (year-round removal of particles).
- Where feasible, provide park recreation areas with large trees to give visitors the option of being in shade.
- Consider posting for park visitors up-to-date recommendations from health authorities on avoiding excessive exposure to UV radiation. Usually these recommendations include seeking shade around midday.
- Utilize wood from removed trees for energy or in long-term products. (This reduces the need for fossil-based energy or reduces or delays carbon emissions.)

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Introduction

Trees in cities and parks have a significant impact on air quality for local residents. Not only do trees affect the concentration of air pollutants that we breathe, they also affect local air temperatures and the amount of ultraviolet radiation we are exposed to. Trees also can help reduce greenhouse gas concentration and emissions that affect climate change. Thus, there are four main factors of air quality being addressed in this chapter: air temperature, air pollution, ultraviolet radiation, and climate change. Trees and parks can affect each of these factors, and each factor has important implications for environmental quality and human health in our cities.

Park ecosystems often offer significant amounts of open space that allow for relatively high densities of trees, shrubs, grasses, and other vegetated surfaces. This chapter focuses mainly on the effects of trees, particularly in urban park settings. Other vegetation types such as shrubs and grasses will have similar effects to trees, but often to a lesser degree due to their smaller stature. For example, healthy shrubs and grass will remove air pollution to a lesser degree than trees. However, their effects are not always similar. For example, shrubs and grass will not have the same effect as trees in reducing ultraviolet radiation loads on humans because they often do not reach the height necessary to block solar radiation reaching humans.

This paper will explore how trees in cities, particularly in park settings, can improve air quality. It will discuss the current tree resources in cities in the United States, why each attribute of air quality is important to local residents, and how trees and parks can improve air quality in our cities. Because an important concern with air quality is human health, we also discuss the associated tree influences on air temperature and ultraviolet radiation, which also have implications for human health.

Trees and Parks in our Cities

Highlights

- On average, parks comprise about 6% of city land, but in addition, vacant and open-space lands, which may contain parklands, comprise another 24% of city area.
- Parks and open space land can comprise greater than 50% of a city area.
- Tree cover in parks varies locally and regionally.
- The structural value of U.S. urban park trees is on the order of $300 billion.

Trees in cities are a significant resource that varies across the nation. Tree canopies on average, when viewed from above, cover about 27% of urban areas in the United States or about 16 million acres of urban land (Figure 1). The influence of trees varies by geography, with cities developed in forested areas averaging about 34% tree cover, trees in grassland areas averaging about 18%, and trees in desert regions averaging about 9%.[1]

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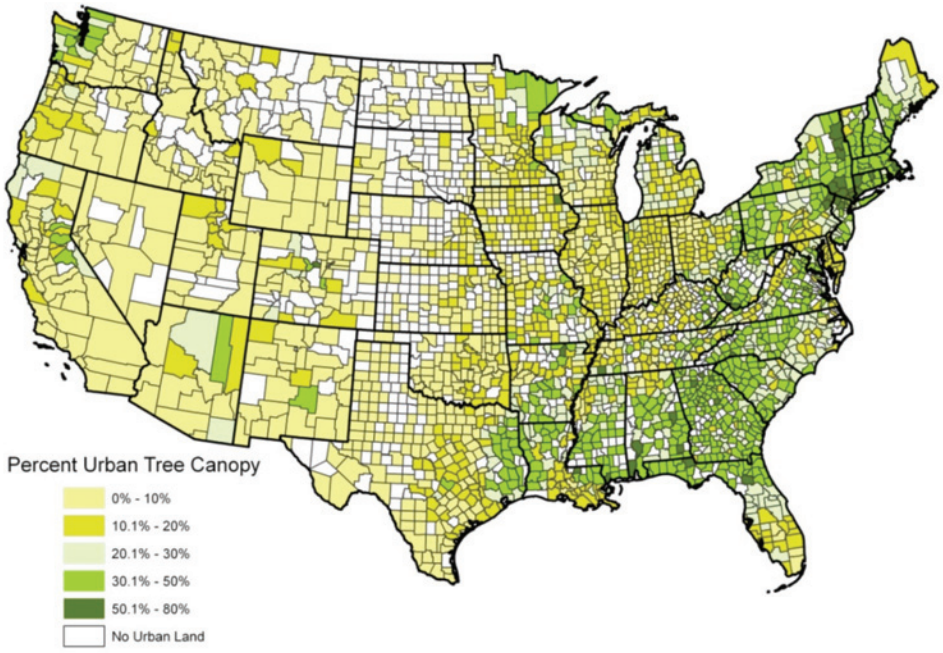

Figure 1. Percentage of tree cover in urban areas based on National Land Cover Data (NLCD) tree cover estimate[2]

Likewise, tree cover in parks tends to follow a similar pattern. While parks comprise only about 6% of a city's area, tree cover in parks also tends to be higher in cities developed in forested areas (49% tree cover) than parks in grassland cities (27%) and desert cities (11%). The amount of available space (i.e., space not covered by impervious surfaces or water) filled with tree canopies in parks also tends to be higher in forested areas (52%) than in grassland (34%) and desert (13%) areas. The 6% estimate of parkland is likely conservative, as the park area and tree cover estimates were derived from photo-interpretation. Some parklands that could not be clearly identified as parks (e.g., more natural parks) could be classified within the vacant land use category (24% of city area) (Figure 2).

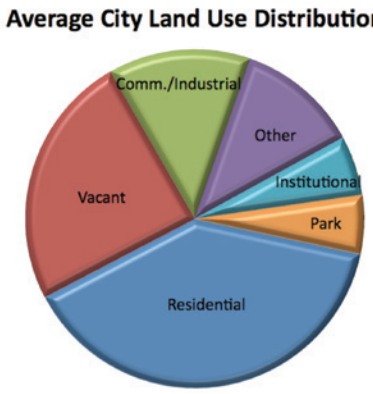

Figure 2. Mean proportion of city occupied by various land uses.[3] "Other" land use Includes agriculture, orchards, transportation (e.g., freeways, airports, shipyards), and miscellaneous. Vacant includes lands with no apparent land use (e.g., undeveloped areas).

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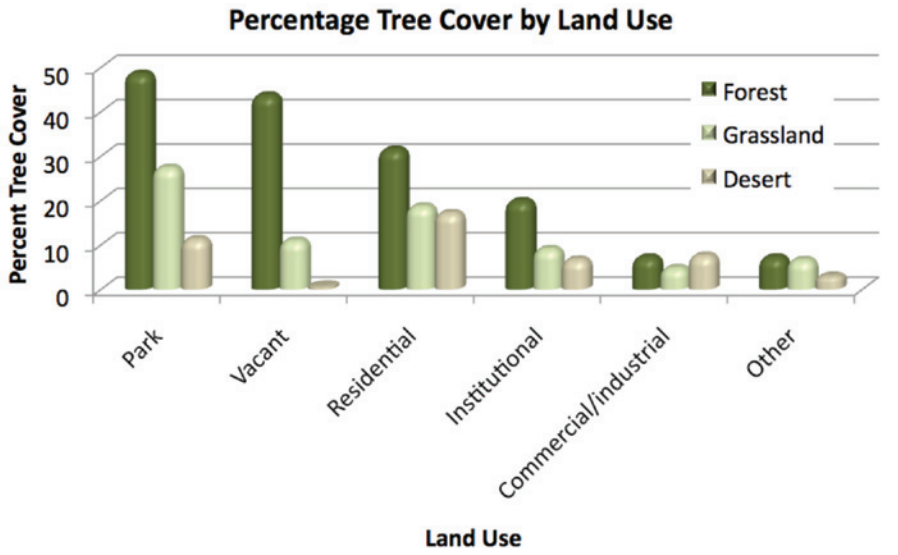

Figure 3. Mean percent tree cover for U.S. cities developed in different vegetation types by land use[3]

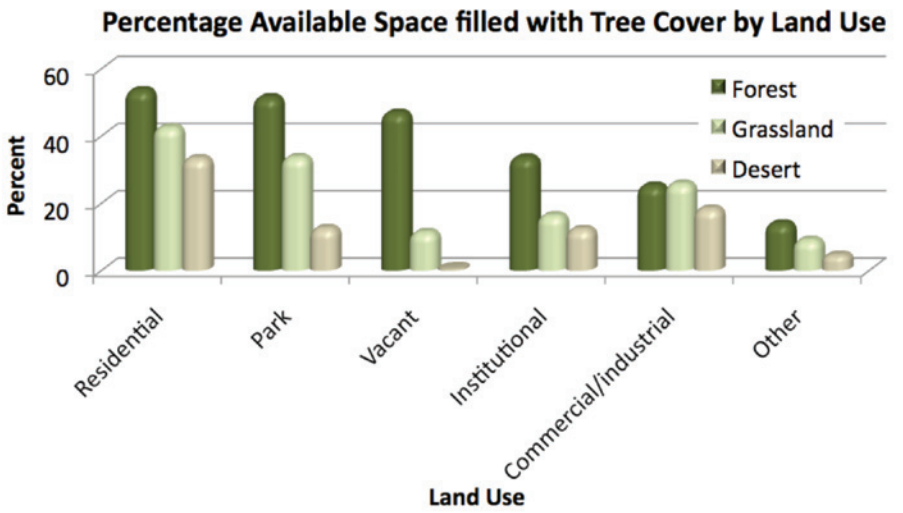

Figure 4. Mean percent of available space (land not covered with impervious cover or water) covered with tree canopies for U.S. cities in different vegetation types, by land use[3]

Overall, in the conterminous United States, there are an estimated 3.8 billion trees in urban areas. Given the estimated parkland and park tree cover among regions, there are an estimated 370 million urban park trees in the conterminous United States.[4] The proportion of total city tree populations within parks and/or open space varies from 7.6% (parks only) to 59.5% (parks and open space) in select cities (Table 1). This park and open space land contributes significant amounts of ecosystem services (i.e., benefits provided by natural ecosystem processes, for example, air pollution removal) from its trees and other

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vegetation, particularly in and around the parkland areas. The influence of parks extends beyond the parks into surrounding land uses. Thus park vegetation not only affects air quality in parks, but also can significantly affect the air quality of people who live near parks.

Table 1. Tree populations in parks and open space in select cities.

City	# of Trees	% of Total City Tree Population
Casper, WY (parks)[5]	13,900	11.3
Chicago, IL (parks)[6]	274,000	7.6
Chicago, IL (park/open space)[6]	1,039,000	29.0
New York, NY (open space)[7]	1,972,000	37.9
Philadelphia, PA (parks)[8]	183,000	8.7
San Francisco, CA (open space)[9]	207,000	30.9
Washington, DC (park/open space)[10]	1,147,000	59.5

Note: determining consistent park land categories from cities is difficult as some cities designate parks with an open space category, some within a park category, and some cities have both park and open space as land use categories.



Figure 5. Park trees (shown in darker red on this color-infrared image of Central Park, New York City) can significantly affect the surrounding environment and human population.

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Parks tend to have the highest percent tree cover of all land uses in cities (Figure 3 and Figure 4), with the exception of residential areas in desert regions. Thus, on an equal area basis, parklands have the greatest potential to provide numerous ecosystem services that are derived from trees and forests. However, trees may not be the most appropriate vegetation structure for all parks. For example, sustaining tree cover in parks in desert regions will often require significant amounts of water, which tends to be a limited resource in these areas. In water limited areas, more natural vegetation structure in parks may be most appropriate to sustain vegetation cover and associated influences on air quality. However, primary-treated wastewater may be used for irrigation of park vegetation in some dry climates.

The trees and other vegetation in urban areas and parks have structural value based on the physical resource itself (e.g., the cost of replacing the vegetation or estimated compensation value for trees that cannot be replaced). The estimated 3.8 billion urban trees in the lower United States have an estimated structural value of $2.4 trillion.[11] Average structural value per acre of tree cover is approximately $120,000 (Figure 6). Given the estimated parkland and park tree cover among regions, the structural value of U.S. urban park trees is on the order of $300 billion.[12] This value equates to an average value per park tree of about $800. However, the structural value of individual park trees can range from very low values for dead, unhealthy, or small trees to tens of thousands of dollars for large healthy trees in prominent landscape positions. In addition to the structural value of the trees, the trees also produce annual functional values or benefits that are derived related to air quality. The following text will discuss these annual benefits related to air quality, but it is important to note that vegetation in urban areas also has significant structural values, with larger healthier trees typically being of greater value on a per tree basis.

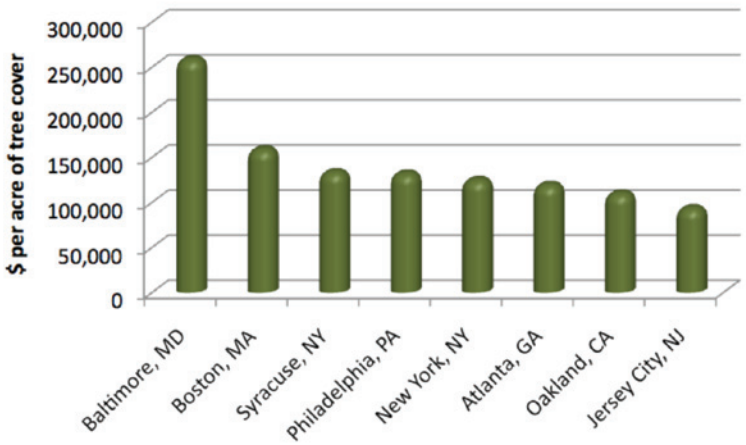

Figure 6. Average structural value per acre of tree cover in select cities[11]

The key to understanding these ecosystem services and values from trees and parks is to understand the structure (e.g., species composition, number of trees, vegetation sizes, distribution, and health) of the city or parklands, because structure directly determines that magnitude of many ecosystem services. For example, greater tree cover will likely lead to greater improved air quality, or different species configurations may lead to greater air temperature reductions. Park managers can directly influence parks structure (e.g., through tree planting, maintenance, and removals) and can therefore affect the benefits or ecosystem services derived from parks. These ecosystem services or benefits extend beyond air quality issues and include other benefits such as aesthetics, wildlife habitat, recreation, and improvements in water quality and human health.

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One of the first steps in developing management plans to improve parks is to assess the current structure of the park and its various ecosystem services. A free suite of tools known as i-Tree (www.itreetools.org) can help in this endeavor and has been used in many cities to assess the overall tree population and benefits based on sampling the city tree population (e.g., Casper, Chicago, Los Angeles, New York, Toronto, and Washington, D.C.).

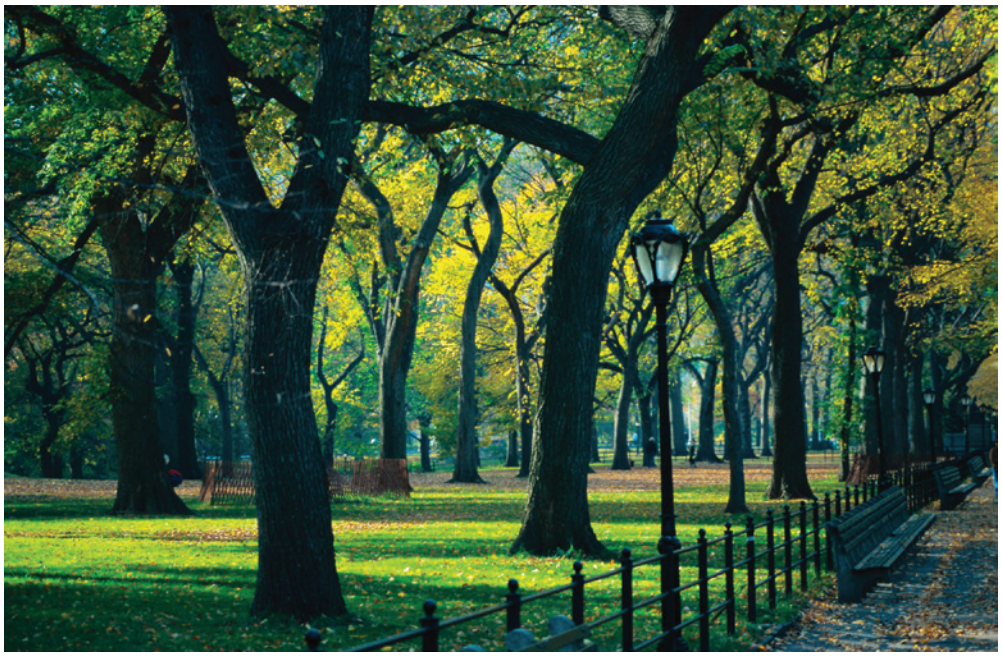

Figure 7. Park trees can serve as "lungs of the city" to improve air quality as well as provide numerous other benefits.

Several of the key ecosystem services derived from parks are related to air quality. In the 1800's, parks were referred to as the "lungs" of a city in reference to their ability to refresh the atmosphere (Figure 7). The Royal Parks of London were referred to as the "lungs of London" by several people in the early 1800s, and later Central Park in New York City was referred to as the "lungs of the city" by Fredrick Law Olmsted.[13] These early park advocates intuitively understood the role of parks in improving air quality. In more recent times, science has confirmed the substantial role that trees and parks play in improving air quality and the lives and health of urban populations.

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Trees, Parks and Air Temperature

Highlights

- Cities are generally warmer than surrounding agricultural or forest areas. The relative warmth is often referred to as the urban heat island (UHI) effect. UHIs have been documented in cities throughout the world.
- Parks with a large portion of their area in vegetation, especially trees, will reduce the UHI in the park as well as the area surrounding the park, sometimes for a distance as great as the diameter of the park.
- A measure of park effects on air temperature is the maximum difference in temperature between the coolest point in the park and areas surrounding the park. Measurements have shown such differences can be about 13°F (7°C).
- Park effects on air temperature moderate air pollution, save energy by cooling buildings, reduce ozone production, affect human comfort and health, and in heat-wave conditions may save lives.

Heat waves in cities can kill hundreds and sometimes thousands of people. For example, more than 700 deaths in Chicago were attributed to a heat wave in July 1995.[14] More than 30,000 excess deaths were related to the heat waves in Western Europe during the summer of 2003.[15] Having parks with vegetation and water features can produce cooler air temperatures and potentially help protect the lives of susceptible populations.

The physical processes that cause the UHI effect are related to the processes that cause most urban parks to be cooler than the developed parts of a city, and parks may significantly modify a city's UHI. Therefore we describe UHI effects before considering the park effects, which are usually at a smaller scale.

Urban Heat Islands

Cities are essentially islands of warmer temperatures in a sea of rural cooler temperatures (Figure 8 and Figure 9). The UHI effect is strongest after sundown when skies are free of clouds and wind speeds are low.

The magnitude of the urban-rural temperature difference and the timing of the maximum UHI depend on differences in rates of heating and cooling of the materials and soils in the urban and in the adjacent rural area that is used for the temperature comparison.[16, 17] In moist, temperate climates, the UHI effect causes cities to be slightly warmer in midday than rural areas. In dry climates, irrigation of vegetation in cities may cause slight midday cooling in comparison to rural areas—an urban oasis effect.[17]

In most climates, including in dry regions, maximum UHIs occur within a few hours after sunset on days with clear skies and calm winds; but the timing depends on the type of rural reference, for example whether the rural area is in short-crop agriculture or forest. Maximum UHI intensities increase with city size and may commonly reach 18°F (10°C) for the largest cities.[18]

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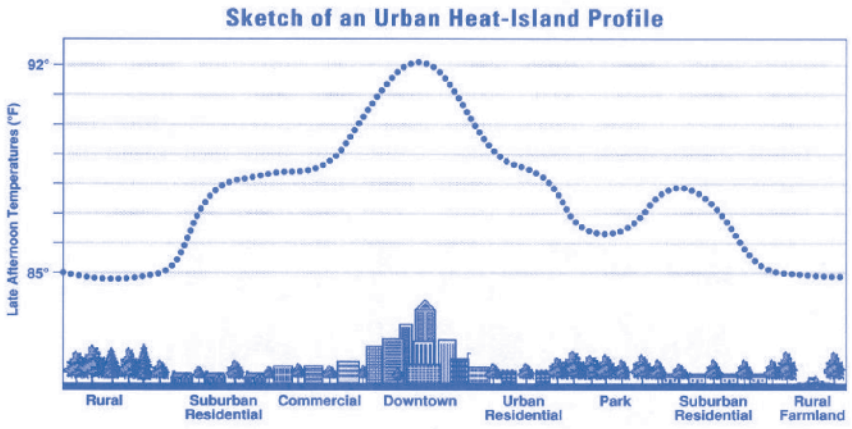

Figure 8. A frequently used representation of an urban heat island, suggesting the generally warmer temperatures in a city compared to the surrounding rural area, with variations in temperature in different land uses of the city, including a park. Typically, maximum heat island temperatures would be larger than depicted here, and would occur after sunset. (Original by Joe Huang appeared in a U.S. Environmental Protection Agency guidebook to heat island remediation.[19])

Although cities are generally warmer than surrounding rural areas, the patterns of air temperature across a city differ according to land use. Areas with high tree cover are usually cooler than areas with large percentages of built structures and impervious cover. Thus parks, which usually have low percentages of impervious cover and higher amounts of vegetation cover, tend to be cooler than nearby areas with high building density, resulting in a park cool island (PCI).[20]

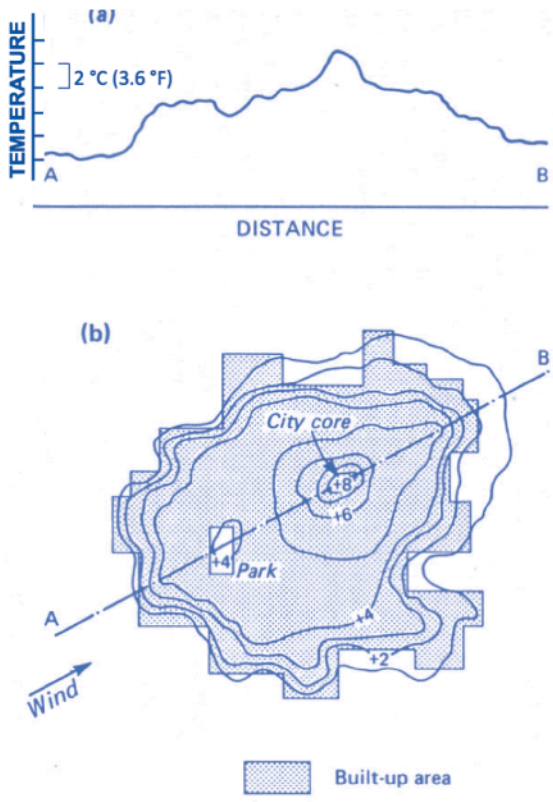

Figure 9. Hypothetical concept of the features of an urban heat island at about the 5-foot (1.5-meter) height for a large city near the time of maximum heat island formation, usually several hours after sunset on a clear night with calm winds.[21] Here the temperatures are in centigrade, and the maximum UHI is about 8°C or 14.4°F. A park area is depicted as being about 3°F cooler than the surrounding city.

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Baltimore Parks Case Study–Reducing Local Air Temperatures

Reports of park influences on air temperature vary depending on actual park effects, but also on methods of data collection, whether measurements were continuous or just samples over short time periods, whether temperature comparisons are for points or for area averages over the park. Furthermore, the reference temperature outside the park may be from park surroundings, the city center, or from the warmest point in the city. In this case study we present an example of park influences on temperature by methods that included computation of average temperatures over park and city areas.

A study of air temperature across the city of Baltimore, Maryland, produced maps of air temperature differences (ΔT) across the region. The ΔT was the difference in temperature between any point on the map and the warmest point on the map (Figure 10). Invariably, the warmest point was near the center of the city. The maximum ΔT was about -18°F (-10°C) with the temperature difference related to land use (particularly tree and impervious cover).[22] Parks were generally cooler than areas surrounding the parks.

Baltimore temperatures, including those in parks, are influenced by elevation. Parks at the higher elevations in the northern part of the city were about 2°F (1°C) cooler than parks at the lower elevations. Generally, more impervious surfaces tend to increase air temperatures, and more tree cover tends to cool air temperatures. The ΔT temperature difference depends in part on the time of day and general weather conditions; usually ΔT is larger at night and when wind is calm and skies are clear.

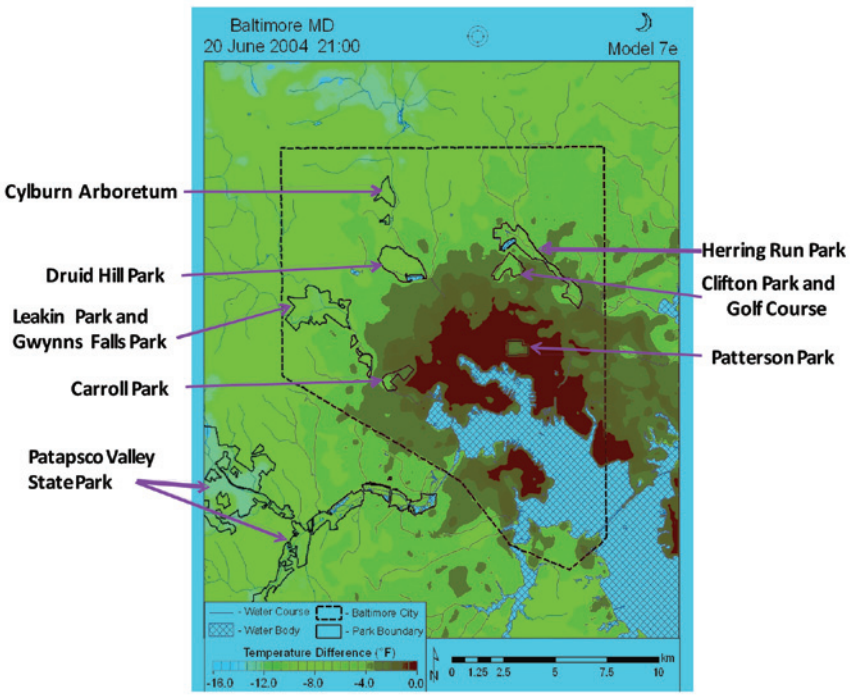

Figure 10. Predicted pattern of air temperature differences (ΔT) across the Baltimore, Maryland, region at a time of large urban heat island influence, June 20, 9 p.m.[22] The warmest locations (red) are in the more densely developed areas; compare this figure to land use in Figure 11. Temperatures are also influenced by elevation, with cooler temperatures in the higher elevations. Note that parks in this figure are generally cooler than their surrounding areas. Values of ΔT are given as temperature at a point minus temperature of the warmest point on the map. Therefore, points with more negative temperature differences are cooler.

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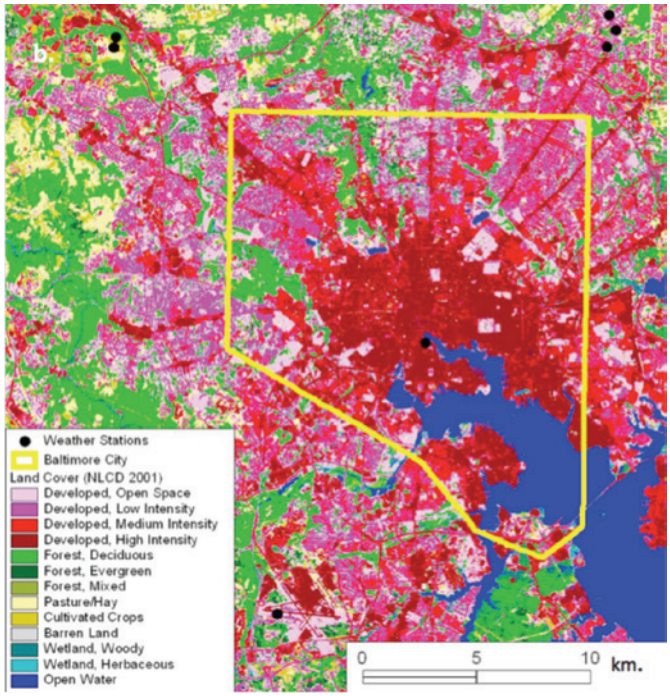

Figure 11. Land use in the region of Baltimore, Maryland, according to the 2001 NLCD.[23] Most parks are shown as light pink for the "Developed, Open Space" category. Note the close correlation between land use and predicted temperature differences in the previous figure.

A closer look at individual parks in Baltimore shows that park temperatures are strongly influenced by vegetation within the park as well as by surrounding land cover, but parks also influence temperatures of surrounding areas. Averaged over the whole park area, the largest park, Patapsco Valley State Park, had the coolest air temperatures of any of the parks in the analysis. Patapsco Valley Park, which is heavily forested with 68% tree cover, was 13°F (7.1°C) cooler in the evening and about 5°F (2.7°C) cooler in daytime relative to the warm inner city (Table 2). The park's very low impervious cover and relatively high elevation also led to cooler temperatures.

The finding of relatively larger reductions of temperatures in parks at night compared to daytime is consistent with most other studies of park temperatures,[24] but not all. Measurements for a large park in Nagoya, Japan, showed reductions in park air temperature that were larger in the day than after sunset.[25] However, in Nagoya, the park temperature was measured in a small dense forest stand within the park, but close to its edge. Nighttime temperatures in the park were probably cooler near the center of the park, especially because there was a large open area there, which would have led to more rapid cooling by outgoing longwave (thermal) radiation than under the forest canopy.

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Table 2. Modeled temperature differences (ΔT) in some parks in the Baltimore regions for June 20, 2004, relative to the warmest part of the inner city. Weather conditions were clear sky and light wind at 9 p.m. and light cloud cover and wind at 2 p.m.

					Average ΔT from warmest point in region			
					At 9:00 PM		At 2:00 PM	
Park Name	Area, Acres[1]	Average Elevation, in Feet	Tree[23] Canopy %	Impervious Cover %	°F	°C	°F	°C
Patapsco Valley S. P.	13,967	315	68	<1	-13	-7.1	-5	-2.7
Leakin Park	880	262	75	2	-11	-5.9	-5	-2.6
Cylburn Arboretum	154	325	71	1	-11	-5.9	-5	-2.8
Druid Hill Park	745	253	40	10	-8	-4.3	-5	-2.5
Gwynns Falls Park	116	128	37	10	-6	-3.4	-3	-1.9
Herring Run Park	641	112	21	10	-5	-2.8	-3	-1.9
Clifton Park	231	177	3	14	-4	-2.3	-4	-2.1
Carroll Park	167	49	8	14	-4	-2.0	-3	-1.5
Patterson Park	140	52	2	16	-2	-1.2	-3	-1.4

Like the Patapsco Valley State Park, Leakin Park[26] is large and heavily forested and well away from downtown Baltimore. At 9 p.m. local standard time on June 20, with clear sky and light wind, average ΔT in the park was 11 °F cooler than the downtown (Table 2). With low cloud cover and little wind speed at 2 p.m., the ΔT was about 5 °F cooler than city center (Figure 12). Leakin and adjacent Gwynns Falls Parks, which share a common border, constitute one of the largest municipal park tracts in the United States, having been included in a 1904 plan by the Olmsted brothers. The forest cover of 75% of the land area includes a stand of large oaks that date from the 19th century. About 1.6 °F of the ΔT in Leakin Park is caused by its higher elevations than downtown.

Druid Hill Park, the oldest of Baltimore's large municipal parks, was purchased by the city in 1860 as part of the national movement at that time to provide large parks for urban residents. The simulations indicated that on average, Druid Hill Park is a little warmer than similar-sized parks, because Druid Hill has somewhat less tree cover, averaging 40% overall, and more impervious cover (Table 2). Part of that impervious cover is in parking lots for the Maryland Zoo and other major facilities in the park. The northwestern half of the park has the most tree cover and is cooler than the southeastern more-developed portion.

The remaining four parks in Table 2—Herring Run, Clifton, Carroll, and Patterson—have lower values of ΔT in part because they have less tree cover and more impervious cover, are closer to the most developed part of the city, and are smaller than most of the other parks. Herring Run is long and thin, so that much of it is influenced strongly by adjacent highly developed areas. Clifton Park has low tree cover because much of it is a golf course. Carroll Park also has a golf course and an area of baseball fields.

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Figure 12. Heavy forest cover in the Leakin and Gwynns Falls Park complex can lead, under maximum UHI conditions, to cooling of more than 11°F compared to the city center. (Photo from Google Earth street view)

The effects of Patterson Park are especially interesting because it is the closest park to downtown Baltimore and is surrounded by dense residential areas. At 9 p.m. the park had average temperatures only about 2°F (1.2°C) cooler than the warmest city area (Figure 13), but the coolest temperatures in Patterson Park are near its center with cool temperatures extending beyond the park boundary. Thus, while temperatures in the park are influenced by the surrounding neighborhoods, the park also cools adjacent neighborhoods (Figure 14 and Figure 15).

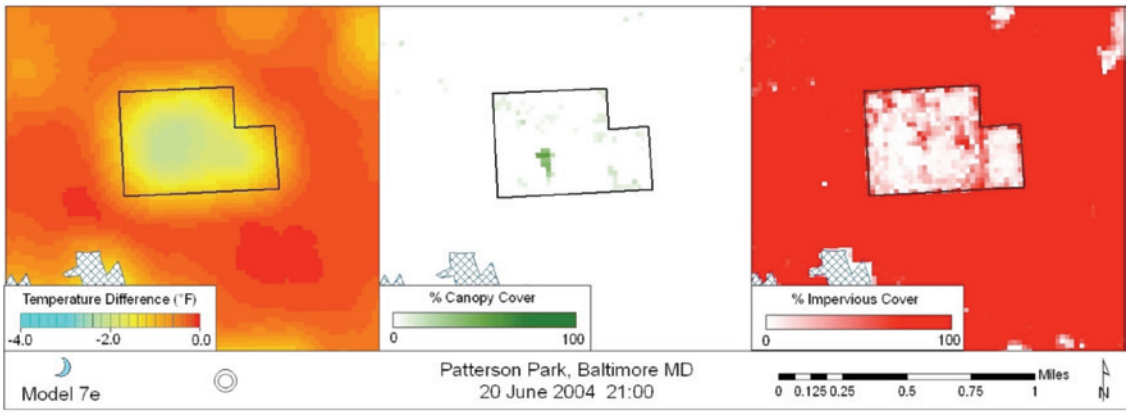

Figure 13. Differences in air temperature in and near Patterson Park at 9 p.m. on June 20 relative to the warmest point in the region (left). Also shown are tree canopy cover (center) and impervious cover (right). The park is surrounded by high impervious cover. Blue cross hatch is part of the Baltimore harbor. [Degrees C = (degrees F/1.8)].

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Figure 14. Residential area north of Baltimore's Patterson Park (left), and the north edge of the park (right). (Photo from Google Earth street view)



Figure 15. Aerial view of part of Patterson Park in Baltimore and the high-density residential area to its north. Trees in this inner-city park are scattered, rather than forming a dense canopy as in the forests of Leakin and Gwynns Falls Park. (Photo from Bing Maps)

Contrasts between temperatures inside a park and in zones at different distances around a park give some indication of the degree to which a park may influence temperatures in adjacent areas. That is, if the park is providing cooling to adjacent areas, we expect the park to be cooler than immediately surrounding zones, but that temperatures will increase as we go farther from the park. For parks in Baltimore, we estimated the limit of park influence to be approximately at the distance where air temperatures stabilized and no longer continued to increase with distance from the park (Table 3).

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Table 3. Modeled extent of park influences for several large parks in and near Baltimore, Maryland, on a representative clear summer afternoon and a clear evening with low wind speed. The parks are listed in order of evening temperature differences, from coolest to warmest, compared to the warmest location in the region. Distance of park influence is averaged around the park from park border into the surrounding community.

Park Name	Park Width ft.	Tree[23] Canopy %	Impervious Cover %	*Average extent of park influence on temperature*	
				At 9:00 PM ft.	*At 2:00 PM ft.*
Patapsco Valley S. P.	5800	68	<1	*4000*	*500*
Leakin/Gwynns combined	1900	71	3	*2000*	*500*
Cylburn Arboretum	1700	71	1	*1000*	*500*
Druid Hill Park	4000	40	10	*2000*	*500*
Herring Run Park	1500	21	10	*1000*	*500*
Clifton Park	1700	3	14	*2000*	*1000*
Carroll Park	1500	8	14	*1500*	*1000*
Patterson Park	1800	2	16	*1000*	*1000*

This analysis illustrates that for maximum UHI formation conditions at 9 p.m., park effects on temperature extended out to between 1000 and 4000 feet from park borders. There was some evidence that the extent of park influences increased with park size; the largest park with an average width of nearly 6000 feet had the 4000 feet distance of influence. The apparent extent of park influence depends not only on the character of the park but on the surrounding area. The Baltimore parks with low values of tree cover and moderately high values of impervious cover still had a fairly large extent of influence because their impervious cover was much lower than that of surrounding areas (for example, see Figure 13 for Patterson Park).

At 2 p.m., the extent of park influences on temperature was generally smaller—from 500 to 1000 feet from the parks (Table 3). At this time, the extent of influence was greater for the more inner-city parks.

On average, with conditions favorable for UHI formation, the large Baltimore parks that we analyzed had a nighttime influence on air temperature outside the parks for a distance out to 78% of park diameter. During the day, the distance of influence averaged about 36% of park diameter.

Air Temperature Effects of Parks in Other Cities

Several studies have measured maximum temperature reductions at points in parks of up to about 13°F (7°C)[27] when the comparison is with points or areas surrounding the parks. The apparent cooling by parks depends on the conditions of the park as well as the conditions of the nonpark area used as a reference.

In four small- to medium-sized parks with similar vegetation and impervious cover in Mexico City, air temperatures toward the center of the parks were up to 2 or 4 °F cooler than surrounding areas in daytime.[28] However, another park, Arboledes (see Figure 16), had temperatures as much as 8°F cooler than nearby areas. This large temperature difference is likely due to a large nearby shopping mall and parking lot that would tend to have high air temperatures relative to the park.

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Figure 16. Arboledas Park in Mexico City had the largest difference, up to 8°F (4.6°C) in daytime air temperatures compared to surrounding areas. The large temperature difference may be the result of a large nearby parking lot and shopping area that had contrastingly high temperatures. (Photo from Google Earth street view)

Irrigation may also contribute to the cool daytime temperatures in the parks of Mexico City. Irrigation of vegetation in urban areas leads to cooler temperatures,[29] including in parks.[30, 31] Especially in dry climates, parks with a high percentage of vegetation cover may be considerably cooled by evaporation from vegetation (transpiration) during the day. This has been termed an "oasis effect."[31] The extensive network of understory hedges in the Mexico City parks (Figure 16 and Figure 17) probably requires irrigation, at least during the dry season. In Mexico City, wastewater is given primary treatment and used for irrigation[32] of both agricultural crops and landscapes including parks.[33]



Figure 17. Twenty-five acre Luis G. Urbina Park in Mexico City with full tree canopy and understory hedges. During the day, interior air temperatures were up to 4°F (2.2°C) cooler than areas outside the park. (Photo from Google Earth street view)

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Perhaps the largest park effect reported anywhere was the intriguing 20°F (11°C) from measurements in 1952[34] for the nighttime temperature difference between Golden Gate Park in San Francisco and the city center. The study authors did not explain the large difference other than to indicate their belief it was not caused by effects of cool ocean temperature. There seem to be no recent measurements to confirm the 20°F difference. Although such a large park effect may be questioned, several factors do suggest a larger than typical effect. The park is very large; it has 1017 acres and a rectangular shape about one-half mile wide by 2 miles long. One of the especially cool points in the 1952 measurements was near a large garden that probably was irrigated in April at the start of the spring planting season. Furthermore, the 20°F difference was between the coolest point in the park and the warmest point in the city, whereas less dramatic park effects are reported for the difference between area-averaged temperatures in a park and locations in nearby areas outside the park that may have been somewhat cooler than the warmest city location.

Small parks with few trees and a high percentage of impervious cover may not be much cooler or may be warmer than surrounding areas. In Taipei,[35] at noon in summer, parks with more than 50% of the surface paved and without much tree and shrub cover were on average warmer than their surroundings. Interpreting the findings requires consideration of study methods. The 61 parks that were sampled in Taipei ranged in size from 0.01 hectares (0.025 acres or about 1100 feet^2) to a little more than 20 hectares (50 acres). All parks that were warmer than surroundings were less than 2 hectares (5 acres) in size—much smaller than the Baltimore parks and smaller than most of the Mexico City parks.

Studies in a variety of cities suggest that the area of park influence on temperatures in surrounding areas extends to about the width of the park away from its borders. This seemed to be true in Chapultepec Park, a 500-hectare (1240-acre) park in Mexico City, where air temperatures were 4° to 5°F (2° to 3°C) cooler than the area surrounding the park on nights with conditions for high UHI effects. The park's air temperature effects extended to a distance equal to the width of the park (2 km),[36] similar to the effects we found for Baltimore parks.

Along with the effects of the amount of vegetation and impervious surface in parks on air temperature, tree species can also have an effect (see the Appendix for a list of tree species with high evaporation potential). Large trees that evaporate large amounts of water can potentially cool air temperatures more than smaller trees with lower evaporation rates.

The air temperature reductions in areas surrounding parks can lead to savings in energy used for air conditioning. For example, near a park about of about 500 acres in a city near Tokyo, Japan, temperatures were estimated to be reduced by the park over an area of about 120 acres. The reduced temperatures led to savings of air conditioning electricity use estimated to be $650 (1998 U.S. dollars) per hour between 1 p.m. and 2 p.m.[37]

Recommendations

- Park effects on microclimate should be considered in park planning and management.
- Consider that tree influences on microclimate (modified air temperature, wind speed, humidity, shade) may be positive or negative, but most are beneficial for park users and nearby residents, especially for air temperature.
- Park designs that include a variety of land cover—areas of dense trees, scattered trees, and lawn—are likely to provide the greatest opportunities for optimum physical comfort of visitors.
- All the recommendations for the following section apply to considerations of air temperature as well.

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Trees, Parks and Air Pollution

Highlights

- Poor air quality affects 127 million people in the United States.
- Air pollution can significantly affect human and ecosystem health.
- Trees and parks affect air pollution by:
  - Reducing air temperatures and consequently pollutant emissions
  - Directly removing pollution from the air
  - Emitting chemicals that contribute to pollution formation
- Pollution removal by U.S. urban park trees is on the order of 75,000 tons per year ($500 million/year).

Since 1990, air quality in the United States has improved for the six common air pollutants. Despite these improvements in air quality, approximately 127 million people live in areas that exceeded the national ambient air quality standards (NAAQS) in 2008.[38]

Air pollution can significantly affect human and ecosystem health. Human health problems from air pollution include aggravation of respiratory and cardiovascular disease, decreased lung function, increased frequency and severity of respiratory symptoms (e.g., difficulty breathing and coughing, increased susceptibility to respiratory infections, effects on the nervous system (e.g., impacts on learning, memory, and behavior), cancer, and premature death. People with pre-existing conditions (e.g., heart disease, asthma, emphysema) and diabetes, and older adults and children are at greater risk for air pollution-related health effects.

Air pollution also affects the environment. Ozone and other pollutants can damage plants and trees and pollution can lead to acid rain. Acid rain can harm vegetation by damaging tree leaves and stressing trees through changing the chemical and physical composition of the soil. Particles in the atmosphere can also reduce visibility.

Tree Effects on Air Pollution

There are three main ways that trees in urban parks affect local air pollution levels.

1) Effects of trees on local microclimate

Trees evaporate significant amounts of water through their leaves (transpiration), which can significantly reduce local air temperatures (as discussed previously). Lower air temperatures can lead to lower emissions of pollutants (Figure 18), as pollutant emissions are often related to air temperatures (e.g., evaporation of volatile organic compounds, or VOCs).

In addition, reduced air temperatures in and around parks can reduce the amount of energy used to cool buildings in the summertime because people do not need to run their air conditioners as much when air temperatures are cooler. This reduced energy use consequently leads to reduced pollutant emissions from power plants that produce the energy used to cool buildings. Some utilities (e.g., Sacramento Municipal Utility District) fund millions of dollars for tree planting to reduce energy use.[39] Reduced air temperatures by trees and parks can not only lead to reduced emission of air pollutants from numerous sources (e.g. cars, power plants), it can also lead to reduced formation of ozone as ozone formation tends to increase with increasing air temperatures.

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In addition to temperature effects, trees affect wind speeds and mixing of pollutants in the atmosphere that affects local pollution concentrations. These changes in wind speeds can lead to both positive and negative effects related to air pollution.



Figure 18. Park trees can reduce local air temperatures, which can consequently reduce pollutant emissions from various sources in cities.

2) Removal of air pollutants

Trees remove gaseous air pollution primarily by uptake through the leaves, though some gases are removed by the plant surface. Trees also remove pollution by intercepting airborne particles. Many of the particles that are intercepted are eventually resuspended back to the atmosphere, washed off by rain, or dropped to the ground with leaf and twig fall.

Healthy trees in cities can remove significant amounts of air pollution. The amount of pollution removed is directly related to the amount or air pollution in the atmosphere. (If there is no air pollution, the trees will remove no air pollution.) Areas with a high proportion of tree cover (e.g., parks) will remove more pollution and have the potential for greater reduction in air pollution concentrations in and around these areas.

Pollution removal by trees in cities can range up to 11,100 tons per year with societal values ranging up $89 million per year (Jacksonville, Florida).[41] The values of pollution removal are based on economists' estimates of "externality values," which are used to place an economic value to the negative side effects of air pollution on society. Parks, being smaller in extent than entire cities, would have lower total removal rates and values, but could have greater removal effects per acre than the city average due to their relatively high tree cover.

One acre of tree cover in a park will likely have pollution removal totals around 80 pounds per year, but the total could exceed 200 pounds per year in more polluted areas with long growing seasons (e.g., Los Angeles).[40] The average value of pollution removal per acre of tree cover is about $300 per year[41] (Figure 19). These per acre pollution removal rates differ among cities according to the amount of air pollution, length of in-leaf season, precipitation, and other meteorological variables. Large healthy trees greater than 30 inches in stem diameter remove approximately 60 to 70 times more air pollution annually (3.1 pounds/year) than small healthy trees less than 3 inches in diameter (0.05 pounds/year).[42] (See Figure 20.)

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Estimated annual pollution removal values per tree range from about 16 cents for small trees to more than $10 per tree for trees in the largest diameter class[43] (Figure 21).

Although the individual tree and per acre tree cover values may be relatively small, the combined effects of large numbers of trees and tree cover in aggregate can lead to significant effects. Urban trees in the lower 48 United States are estimated to remove 783,000 tons of pollution per year with an estimated annual societal value of $5.6 billion per year.[41] Given the estimated parkland and park tree cover among regions, pollution removal by U.S. urban park trees is on the order of 75,000 tons per year ($500 million/year).[4]

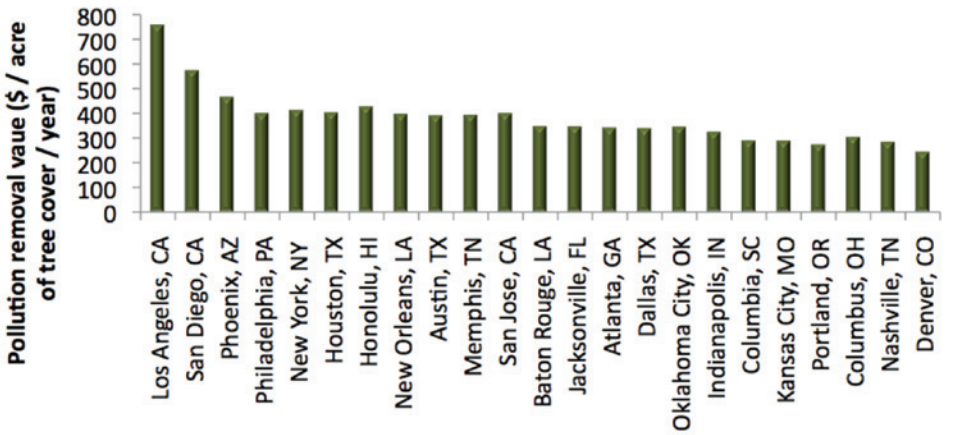

Figure 19. Pollution removal values per acre of tree cover in select cities[41]

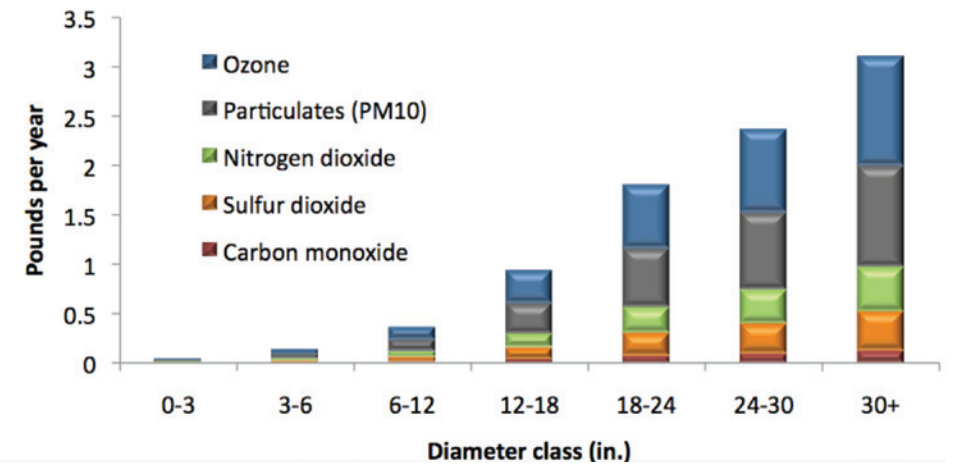

Figure 20. Estimated pollution removal by individual trees by diameter class in Chicago, Illinois[42]

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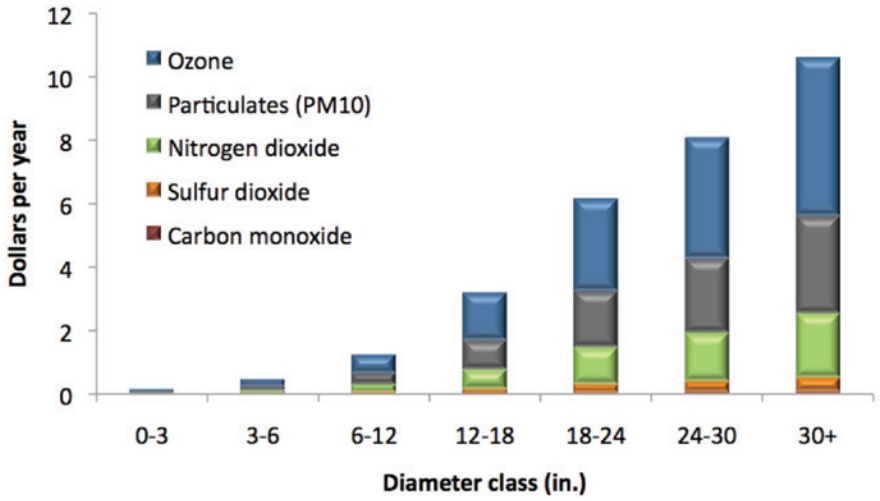

Figure 21. Estimated pollution removal value by individual trees by diameter class in Chicago, Illinois[43]

Though the amount of air pollution removal by trees may be significant, the percentage of air quality improvement in an area will depend upon on the amount of vegetation and meteorological conditions. Air quality improvement by trees in cities during daytime of the in-leaf season averages around 0.51% for particulate matter, 0.45% for ozone, 0.44% for sulfur dioxide, 0.33% for nitrogen dioxide, and 0.002% for carbon monoxide. However, in park areas with 100% tree cover (i.e., contiguous forest stands), air pollution improvements average around 4 times greater than city averages with short-term improvements in air quality (one hour) as high as 16% for ozone and sulfur dioxide, 13% for particulate matter, 8% for nitrogen dioxide, and 0.05% for carbon monoxide.

3) Emission of chemicals

While trees can reduce air pollution by changing the local microclimate and directly removing pollution, trees can also emit various chemicals that can contribute to air pollution. In addition, the maintenance of tree and other vegetation can emit pollutants. Because urban and park trees often require relatively large inputs of energy, primarily in the form of fossil fuels used to maintain trees and other vegetation, the emissions from these maintenance activities need to be considered in determining the ultimate net effect of the trees on air pollution.

One type of chemical that plants emit is volatile organic compounds. Emissions of volatile organic compounds by trees and other sources can also contribute to the formation of ozone. VOC emission rates vary by species. Because VOC emissions are temperature dependent and trees generally lower air temperatures, increased tree cover can lower overall VOC emissions and, consequently, ozone levels in urban areas.

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Overall Effect of Vegetation on Air Pollution

There are many factors that determine the ultimate effect of trees and parks on pollution. Many plant and park effects are positive in terms of reducing pollution concentrations. For example, trees can reduce temperatures and thereby reduce emissions from various sources, and they can directly remove pollution from the air. However the altering of wind patterns and speeds can affect pollution concentration in both positive and negative ways. Also, plant compound emissions and emissions from vegetation maintenance can contribute to air pollution. Various studies on ozone, a chemical that is not directly emitted, rather formed through chemical reactions, have helped to illustrate that the cumulative and interactive effects of trees is generally a reduction in air pollution concentrations.[44, 45, 46, 47, 48]

Health Effects

There are numerous studies that link air pollution to human health effects. With relation to trees, most studies have investigated the magnitude of the effect of trees on pollution removal or concentrations, while only a limited number of studies have looked at the estimated health effects of pollution removal by trees. In the United Kingdom, woodlands are estimated to save between five and seven deaths and between four and six hospital admissions per year due to reduced pollution of sulfur dioxide and particulate matter (PM10).[49] Modeling for London estimates that 25% tree cover removes 90.4 metric tons of PM10 pollution per year, which equates to a reduction of two deaths and two hospital stays per year.[50] Trees in U.S. cities remove about 215,000 tons of PM10 per year,[40] but because U.S. cities have different population densities than London, effects on human health will differ.

Importance of Parks to Clean Air

In September 2004, the U.S. Environmental Protection Agency (EPA) released a guidance document titled "Incorporating Emerging and Voluntary Measures in a State Implementation Plan (SIP)."[51] This EPA guidance details how new measures, which may include "strategic tree planting," can be incorporated in SIPs as a means to help meet air quality standards set by the EPA. As many of the standard strategies to meet clean air standards may not be sufficient to reach attainment, new and emerging strategies (e.g., tree planting, increasing surface reflectivity) may provide a means to help an area reach compliance with the new clean air standard for ozone. "In light of the increasing incremental cost associated with stationary source emission reductions and the difficulty of identifying additional stationary sources of emission reduction," the document says, "EPA believes that it needs to encourage innovative approaches to generating emissions reductions."[51] As many urban areas are designated as nonattainment areas for the ozone clean air standard and are required to reach attainment, trees in cities and parks may play an important role in reaching clean air standards and can be integrated within SIPs.[52]

Recommendations[53]

- Increase the number of healthy trees (increases pollution removal).
- Sustain existing tree cover (maintains pollution removal levels).
- Maximize use of low VOC emitting trees (reduces ozone and carbon monoxide formation).
- Sustain large, healthy trees (large trees have the greatest per tree effects).
- Use long-lived trees (reduces long-term pollutant emissions from planting and removal).
- Use low maintenance trees (reduces pollutant emissions from maintenance activities).
- Reduce fossil fuel use in maintaining vegetation (reduces pollutant emissions).
- Plant trees in energy conserving locations (reduces pollutant emissions from power plants).
- Plant trees to shade parked cars (reduces vehicular VOC emissions).

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- Supply ample water to vegetation (enhances pollution removal and temperature reduction).
- Avoid pollutant sensitive species in heavily polluted areas (increases tree health).
- Utilize evergreen trees for particulate matter reduction (year-round removal of particles).

In terms of vegetation designs for parks, some of the best designs are likely related to developing forest stands (where environmentally appropriate—for example, not in desert areas where water is scarce). Visitors to forest stands in parks will likely receive reduced air pollution concentrations while in the stand than exterior to the stand of trees. The farther into the stand the park visitor would go, the more likely and potentially greater the reduction in air pollution.[54] However, this is a generalization based on contiguous tree cover. As the tree cover becomes more disaggregated, pollution mixing within the stand from outside sources can lead to variable pollutant concentrations. Also, if vehicles are allowed to drive within the forest stand, concentrations from auto emissions may remain relatively high under the tree canopy as the dispersion of the emissions is reduced.

In general, in terms of vegetation designs for trees, the more tree cover the better, as the trees can reduce air temperatures and directly remove pollution. Tree cover that is aggregated together in forest stands can reduce pollutant concentrations toward the center of the stands. However, species composition can also affect pollution effects. For example, pollen allergenicity varies by species,[55] and species composition in parks can affect local pollen allergies. Recommended tree species for air quality improvement can be found in the Appendix.

Trees, Parks and Ultraviolet Radiation

Highlights

- Of the wavelengths of radiation from the sun that reach the surface of Earth, ultraviolet radiation (UV) has unique properties because of its very short wavelength.
- Medical authorities are divided on recommendations for human exposure to UV radiation, but they agree that exposure to the extent of receiving sun-burned skin should be avoided.
- Tree shade can reduce exposure of people to ultraviolet radiation.

Ultraviolet radiation is shortwave radiation from the sun that can have human health effects. Human diseases that are linked to UV radiation include several kinds of skin cancer that are often lethal (including melanoma), several eye diseases, and damage to the immune system. In addition, UV radiation is responsible for sunburn and for skin aging and wrinkling. Sunburn itself is a health issue, but more importantly, some cancers are believed to be related to episodes of sunburn. Exposure to UV radiation is also blamed for causing or contributing to cataracts of the eye, which creates the need for correction by eye operations.

There are also benefits to ultraviolet radiation exposure, including the production and regulation of vitamin D, which is claimed to reduce risk for many noncutaneous cancers.[56]

Estimating the monetary benefits of tree shade by reduced UV radiation to people is hardly feasible, but some idea comes from the fact that in 2004, the total direct cost associated with the treatment for nonmelanoma skin cancer was $1.5 billion.[57] Also, consider that cataract surgery is the most common surgery performed in the United States.

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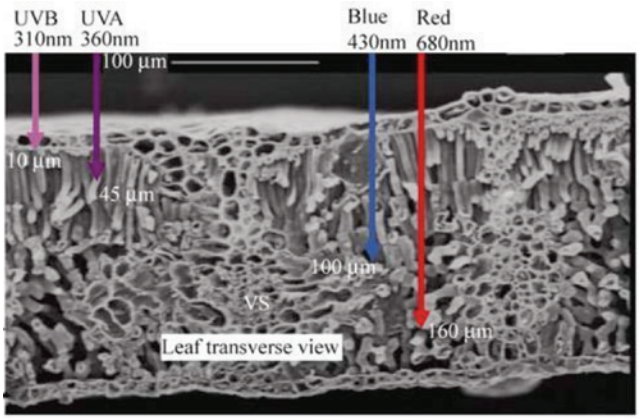

Figure 22. Broadleaf trees that block most of the sky from view are very effective in reducing UVB exposure of people below their canopies, because UVB radiation does not penetrate leaves. In this image of a leaf cross section, the penetration of UVB and UVA radiation, the shortest wavelengths that we get on Earth from the sun are compared to average penetration of blue and red light, which goes deep into leaves, a portion going entirely through.[58] (The abbreviation "nm" stands for nanometer, one-billionth of a meter. A µm is one millionth of a meter.)

Trees can reduce exposure to UV radiation for park visitors. Tree leaves can absorb around 95% of ultraviolet radiation (Figure 22), though using tree shade as protection from UV is not intuitively obvious. Under most conditions, 50% or more of the UV radiation reaching the lower atmosphere is not directly from sunbeams, rather from other parts of the sky due to scattering in the atmosphere. In the shade of a single tree, visible light may be reduced by 85% or 90% where UV radiation is reduced only about 60% due to the scattering of radiation from parts of the sky not obscured by the tree.

For people standing where tree crowns block the view of most of the sky, there is little UV radiation exposure. Where small canopy gaps allow sun rays to break through the canopy, protection from UV radiation is still substantial because most of the sky view will be blocked.

In recent years some health professionals have contended that some exposure to UV radiation is good if it is below the level that causes sunburn, because UV on the skin is required for production of vitamin D. Some believe that acquiring vitamin D naturally is more beneficial than taking vitamin D supplements. Although tree shade reduces exposure to UV radiation, in most park tree-shade settings, UV radiation sufficient for vitamin D production will be available even in the tree shade. Because the pleasures of park experiences encourage people to spend more time outdoors, especially in comfortable tree shaded locations, the net effect of park trees on UV exposure is probably positive for many individuals, because they will have sufficient time in the sun to acquire vitamin D without becoming sunburned.[59]

Although configurations of trees are important in reducing exposure to UV radiation from both sun and sky, tree species can have an impact because amount of shade from trees can vary based on tree size and crown density (Appendix).

Recommendations

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Where feasible, provide park recreation areas with large trees to give visitors the option of being in shade.

Consider posting, in prominent locations for park visitors, up-to-date recommendations from health authorities on avoiding excessive exposure to UV radiation. Usually these recommendations include seeking shade around midday.

Trees, Parks and Climate Change

Highlights

- Park trees affect atmospheric carbon levels by:
  - Removing carbon and storing it in their tissue
  - Reducing air temperatures and associated carbon emissions for building energy use
  - Emitting carbon through vegetation decomposition and maintenance activities
- One acre of park tree cover will likely store, on average, around 40 tons of carbon ($800) and remove about 1.2 tons of carbon per year ($25/year).
- Large trees greater than 30 inches in trunk diameter store approximately 800 to 900 times more carbon than small trees less than 3 inches in diameter.
- Park trees nationally store about 75 million tons of carbon ($1.6 billion).
- Park trees nationally annually remove about 2.4 million tons of carbon ($50 million).
- Park soils nationally store about 102 million tons of carbon ($2.1 billion).

Climate change refers to any significant change in measures of climate (e.g., temperature, precipitation) that occurs over an extended period (e.g., decades). This change could be due to natural factors and/or from human activities. The IPCC report[60] states, "Warming of the climate system is unequivocal, as is now evident from observations of increases in global average air and ocean temperatures, widespread melting of snow and ice, and rising average sea levels."

Tree and Park Effects on Climate Change

Tree effects on climate change are similar to the types of effects of trees on air pollution. There are three main ways that urban forests can affect carbon dioxide levels: (1) by removing carbon dioxide; (2) by emitting carbon dioxide either directly from the vegetation (e.g., decomposition) or indirectly through vegetation maintenance practices; and (3) by altering urban microclimates (e.g., air temperature reductions) and building energy use and consequently emissions from power plants.[53]

Carbon Storage

Trees, through their growth process, remove carbon dioxide from the atmosphere and sequester the carbon within their biomass. However, when a tree dies and the wood is allowed to decompose or is burned, most of the stored carbon goes back to the atmosphere, though some of the carbon can be retained in the park soils. Through their growth process, trees can sequester significant amounts of carbon in their biomass.

Carbon storage by trees in cities can range up to over 1.3 million tons of carbon with societal value of approximately $28 million (New York, New York). (See Figure 23 and 24.) Annual removal of carbon by trees in cities can reach more than 45,000 tons of carbon per year with a value of approximately $1.0 million per year (Atlanta, Georgia).[62] Parks, being smaller in extent, would have lower storage and removal

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rates and values, but they could have greater removal effects per acre than the city average due to relatively high tree cover (Figure 25). One acre of park tree cover will likely store, on average, around 40 tons of carbon and remove about 1.2 tons of carbon per year. The average value of carbon storage per acre of tree cover is about $800 (Figure 24), with an average removal value of about $25 per year[61] (Figure 26).

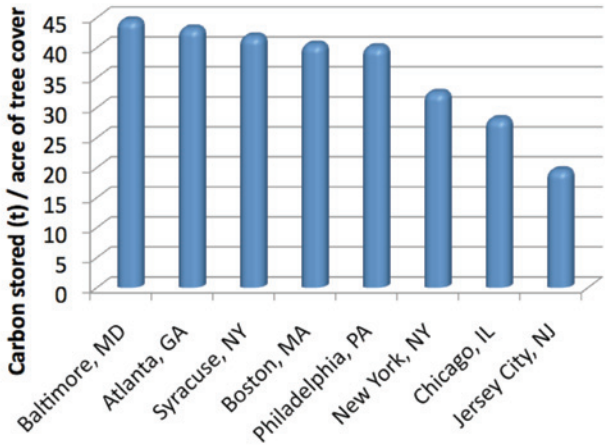

Figure 23. Carbon storage per acre of tree cover in select cities[61]

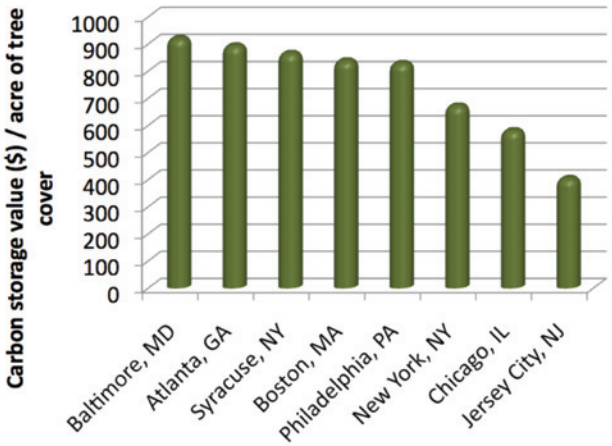

Figure 24. Carbon storage value per acre of tree cover in select cities[61]

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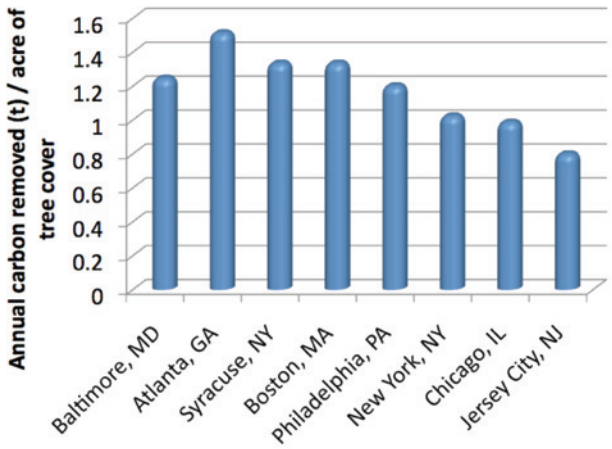

Figure 25. Annual carbon removed per acre of tree cover in select cities[61]

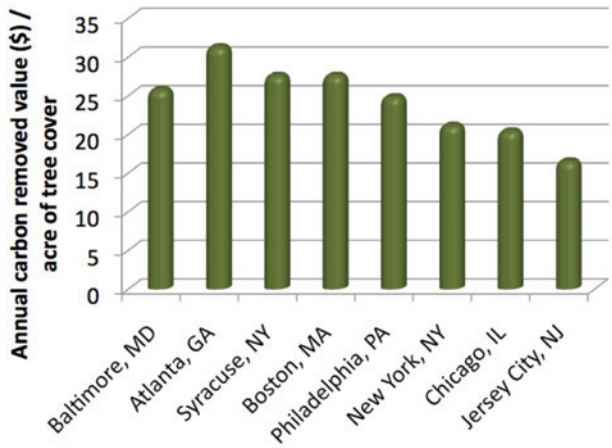

Figure 26. Annual carbon removed value per acre of tree cover in select cities[61]

Large trees greater than 30 inches in trunk diameter store approximately 800 to 900 times more carbon than small trees less than 3 inches in diameter. Large healthy trees also remove about 50 times more carbon annually than small healthy trees. In Chicago, estimated carbon storage values per tree range from about 6 cents for small trees to more than $53 per tree for trees in the largest diameter class[6] (Figure 27).

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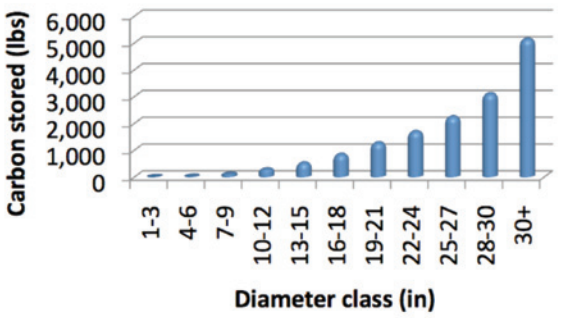

Figure 27. Average carbon stored per tree by diameter class in Chicago[6]

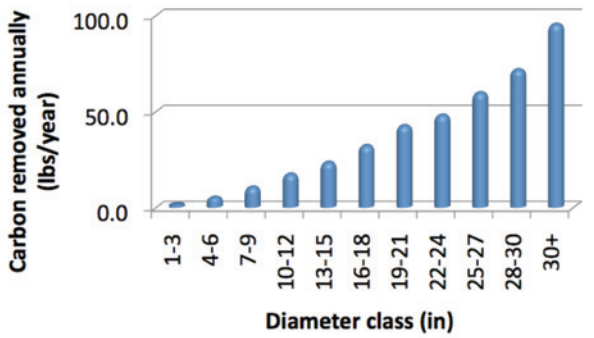

Figure 28. Average carbon removal per tree per year by diameter class in Chicago[6]

The combined effects of individual trees across a landscape can be significant in terms of carbon storage and annual removal. Urban trees in the lower 48 United States are estimated to store about 770 million tons of carbon ($16 billion) and remove about 25 million tons of carbon per year ($520 million).[61] Given the estimated park and tree cover among regions, carbon storage by U.S. park trees is estimated at around 75 million tons ($1.6 billion), with an additional estimated annual carbon removal of around 2.4 million tons ($50 million).

Some species that offer the potential for relatively large amounts of carbon storage are given in Appendix 1. Tree planting and carbon sequestration also offer the potential for carbon credits. Carbon credits provide ownership or "rental" rights to the sequestered carbon, and a company may buy, sell, or apply the credits to offset its own emissions.[62] The Chicago Climate Exchange is the first operating market in the U.S. for greenhouse gas emissions trading.[62]

Parks with forestlike conditions can enhance carbon storage through time because net carbon can be accumulated in the soil along with the carbon retained in the trees. In forest ecosystems in the United States, 61% of the total carbon is stored in the soil environment.[63] The amount of carbon in urban soils in parks in the United States is estimated at around 102 million tons or $2.1 billion. Parks are estimated to have soil organic carbon densities of about 32 tons per acre ($650 per acre).[64]

When forests are removed and/or soils disturbed, net carbon storage will diminish through time, as accumulated carbon in both trees and soil will convert back to carbon dioxide through decomposition. Various management practices can be used to help enhance the long-term impacts of forests on

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atmospheric carbon. Utilization of tree biomass into long-term products can delay carbon releases for long-periods. Keeping soils intact and using tree biomass in long-term products can delay carbon releases for long-periods.

Carbon Emissions

Urban forests lead to the emission of carbon dioxide through decomposition of stored carbon and through emissions due to urban tree maintenance (e.g., from vehicles, chain saws, backhoes, etc.). The amount of carbon stored by park trees can be lost back to the atmosphere when the trees die and decompose unless the wood from the tree is contained in some long-term storage capacity (e.g., wood products). Also, forest regeneration on the site can be used to maintain or enhance carbon storage levels, because regenerating trees can remove carbon to offset the carbon lost by decomposing trees. In addition, some carbon from dead trees will be retained in the soil.

Reduced Carbon Emissions Through Cooler Temperatures and Reduced Energy Use

As discussed previously, trees and parks can help mitigate heat island effects and reduce energy use and consequently carbon emissions from power plants.[65] In addition, utilizing removed park trees for energy production can reduce carbon emissions from fossil fuel burning power plants.[66] This cooling effect may be particularly important in the future, with projected warmer temperatures due to climate change occurring in an urban environment already warmer due to urban heat islands.

Recommendations

- Increase the number of healthy trees (increases carbon storage and annual removal).
- Sustain existing tree cover (maintains carbon storage).
- Sustain large, long-lived, healthy trees (provide greatest carbon benefits).
- Use low-maintenance trees (reduces carbon emissions from maintenance activities).
- Reduce fossil fuel use in maintaining vegetation (reduces carbon emissions).
- Plant trees in energy conserving locations (reduces greenhouse gas emissions from power plants).
- Utilize wood from removed trees for energy or in long-term products (reduces need for fossil-based energy, or reduces or delays carbon emissions).

Case Study–Chicago Parks

To illustrate some of the values of parks' related air quality effects of air pollution removal and carbon storage, some values for the parks in Chicago, Illinois, are given based on a recent assessment of Chicago.[6] For this assessment, 6,300 acres of parkland were assessed (out of the 7,700 acre total park system). This assessment revealed that there are approximately 274,000 parks trees (7.6% of the total city tree population) with an average tree density of 43.2 trees/acre. Over 58 different tree species were identified in the sampling of the parks (Figure 29), with park trees covering 31.6% of the park area. The trees contribute a total leaf surface area of approximately 12.5 square miles with an estimated structural value of $192 million (Figure 30). Additionally, these park trees:

- Store 52,700 tons of carbon ($1.1 million)
- Remove 1,600 additional tons of carbon per year ($32,800/year)
- Remove 64 tons of air pollution per year ($344,000/year)

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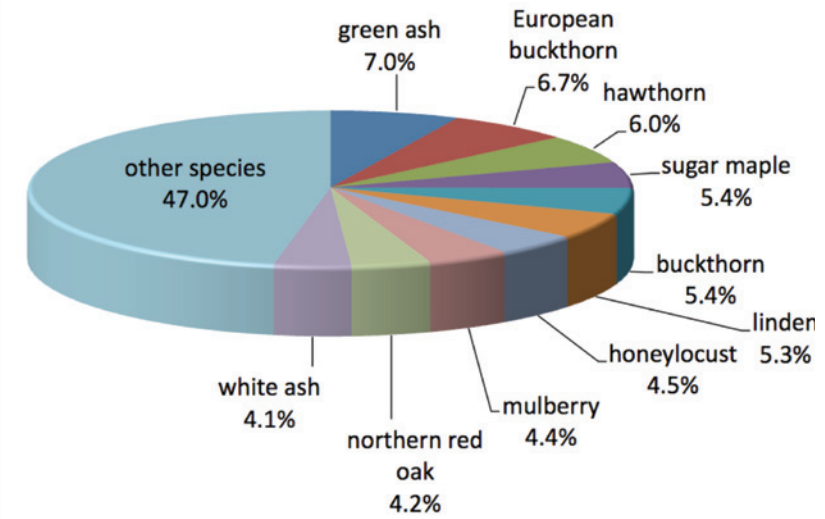

Figure 29. Tree species distribution in sampled Chicago parks



Figure 30. Trees in Chicago parks have a structural value of over $190 million and contribute hundreds of thousands of dollars of values related to air quality annually.

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Appendix–Examples of Species With Relatively Large Air Quality Benefits

Trees will have differing effects on air quality based on various species characteristics such as size when mature, estimated water use or evaporation, and leaf surface characteristics. The i-Tree Species program, www.itreetools.org, has compiled information from more than 1000 species and cultivars to help estimate some of the best species for various desired benefits. Using this program, the following species are rated as some of the best species for various air quality attributes based on trees at maturity.

Species on these lists may not be appropriate for all locations and selection of species for parks should be based on local expert tree knowledge on the best species for park site conditions, with consideration of other factors such as invasiveness of species, and insect pests and diseases. See the i-Tree Species program for specific local recommendations and model assumptions.

Table 4. Best Species for Air Temperature Cooling

Species Latin Name	Common Name
Acer rubrum	red maple
Aesculus hippocastanum	horse chestnut
Betula alleghaniensis	yellow birch
Cedrus deodara	deodar cedar
Celtis occidentalis	northern hackberry
Fagus grandifolia	American beech
Fraxinus americana	white ash
Juglans nigra	black walnut
Liquidambar styraciflua	sweetgum
Liriodendron tulipifera	tulip tree
Magnolia acuminata	cucumber tree
Picea abies	Norway spruce
Pinus strobus	eastern white pine
Platanus hybrida	London planetree
Populus deltoides	eastern cottonwood
Taxodium distichum	baldcypress
Tilia americana	American basswood
Tsuga canadensis	eastern hemlock
Ulmus americana	American elm
Zelkova serrata	Japanese zelkova

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Table 5. General recommendation of best tree species for reduction of various pollutants (not a comprehensive list, see i-Tree Species program (www.itreetools.org) for specific local recommendations)

Species Latin Name	Common Name
Carbon Monoxide	
Aesculus hippocastanum	horse chestnut
Betula alleghaniensis	yellow birch
Carpinus betulus	European hornbeam
Carya glabra	pignut hickory
Catalpa speciosa	northern catalpa
Celtis occidentalis	northern hackberry
Chamaecyparis thyoides	Atlantic white cedar
Fagus grandifolia	American beech
Fraxinus americana	white ash
Ligustrum sinense	Chinese privet
Liriodendron tulipifera	tulip tree
Paulownia tomentosa	royal paulownia
Picea rubens	red spruce
Prunus serotina	black cherry
Sassafras albidum	sassafras
Thuja plicata	western red cedar
Tilia americana	American basswood
Tsuga canadensis	eastern hemlock
Ulmus americana	American elm
Ozone	
Acer rubrum	red maple
Aesculus hippocastanum	horse chestnut
Betula alleghaniensis	yellow birch
Carpinus betulus	European hornbeam
Carya carolinae–septentrionalis	southern shagbark hickory
Celtis occidentalis	northern hackberry
Corylus colurna	Turkish hazelnut
Fagus grandifolia	American beech
Fraxinus americana	white ash
Juglans nigra	black walnut
Liriodendron tulipifera	tulip tree
Magnolia acuminata	cucumber tree
Metasequoia glyptostroboides	dawn redwood
Sassafras albidum	sassafras

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Sequoia sempervirens	coast redwood
Prunus serotina	black cherry
Tilia americana	American basswood
Tsuga canadensis	eastern hemlock
Ulmus americana	American elm
Zelkova serrata	Japanese zelkova
Sulfur and Nitrogen Oxides	
Acer rubrum	red maple
Aesculus hippocastanum	horse chestnut
Betula alleghaniensis	yellow birch
Cedrus deodara	deodar cedar
Celtis occidentalis	northern hackberry
Fagus grandifolia	American beech
Fraxinus americana	white ash
Ginkgo biloba	ginkgo
Gymnocladus dioicus	Kentucky coffeetree
Juglans nigra	black walnut
Liriodendron tulipifera	tulip tree
Magnolia acuminata	cucumber tree
Picea abies	Norway spruce
Pinus strobus	eastern white pine
Platanus hybrida	London planetree
Populus deltoides	eastern cottonwood
Tilia americana	American basswood
Tsuga canadensis	eastern hemlock
Ulmus americana	American elm
Zelkova serrata	Japanese zelkova
Particulate Matter, PM10	
Abies concolor	white fir
Calocedrus decurrens	incense cedar
Cedrus deodara	deodar cedar
Chamaecyparis thyoides	Atlantic white cedar
Cryptomeria japonica	Japanese red cedar
Cuppressus macrocarpa	Monterey cypress
Magnolia grandiflora	Southern magnolia
Picea abies	Norway spruce
Picea pungens	blue spruce
Picea rubens	red spruce
Pinus ponderosa	ponderosa pine

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Pinus strobus	eastern white pine
Pinus taeda	loblolly pine
Sequoia sempervirens	coast redwood
Taxus cuspidata	Japanese yew
Thuja plicata	western red cedar
Tilia americana	American basswood
Tsuga canadensis	eastern hemlock
Ulmus americana	American elm
Zelkova serrata	Japanese zelkova

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Air Quality Effects of Urban Trees and Parks

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David J. Nowak is a Project Leader with the USDA Forest Service, Northern Research Station in Syracuse, NY. Dr. Nowak received a B.S. and M.S. from SUNY College of Environmental Science and Forestry, and a Ph.D. from the University of California, Berkeley. He has authored over 190 publications and is a recipient of the National Arbor Day Foundation's highest honor - the J. Sterling Morton Award, which recognizes lifelong commitment to tree planting and conservation at a national or international level, American Forests' Urban Forest Medal recognizing outstanding national contributions in urban forest research, the Distinguished Science Award of the Northeastern Research Station, the Forest Service Chief's Honor Award for Engaging Urban America, New York State Arborists-ISA Chapter Research Award, and was a contributing member of the 2007 Nobel Peace Prize winning Inter-governmental Panel on Climate Change. His research investigates urban forest structure, health, and change, and its effect on air quality and greenhouse gases. He also leads teams developing software tools to quantify ecosystem services from urban vegetation (e.g., UFORE and i-Tree programs).

BIOGRAPHICAL PROFILE

Gordon M. Heisler

Meteorologist

United States Department of Agriculture – Forest Service

Dr. Gordon Heisler became interested in micrometeorology while studying what happens to snow landing on conifer forests for his Ph.D. thesis at the State University of New York College of Forestry in Syracuse in the late 1960's. After that Syracuse stint, he spent 2 years at a science resource center near Hartford, CT, where he taught ecology and meteorology to grades 1 to 12 and meteorology at the University of Hartford. Since 1972 he has been a research meteorologist with the U.S. Forest Service in New Jersey, Pennsylvania, and for 19 years in Syracuse, NY, the entire time collaborating in studies of environmental impacts of forests with researchers from universities including SUNY in Syracuse, Purdue, Princeton, Penn State, Rutgers, University of Connecticut, and Southern University in Baton Rouge. In 2005, SPIE—The International Society for Optical Engineering, presented Dr. Heisler with an award for "a career of excellence in pioneering studies on the effects of urban forests on UV radiation." He has been involved with the Baltimore Ecosystem Study, a Long Term Ecological Research program, for the last 13 years. He is active in the American Meteorological Society and the International Association for Urban Climate.

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Exhibit C



Written by Erica Gies

The Health Benefits *of* Parks





THE TRUST *for* PUBLIC LAND

CONSERVING LAND FOR PEOPLE

The Health Benefits of Parks

How Parks Help Keep Americans and Their Communities Fit and Healthy

By Erica Gies

Published by

THE TRUST for PUBLIC LAND



116 New Montgomery Street
Fourth Floor
San Francisco, CA 94105
(415) 495-4014
www.tpl.org

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The Trust for Public Land conserves land for people to enjoy as parks, gardens, and other natural places, ensuring livable communities for generations to come.

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ISBN-13: 978-1-932807-08-0
ISBN-10: 1-932807-08-X

$15

Table of Contents

Foreword: Will Rogers, President, The Trust for Public Land……..…3

Executive Summary……5

Parks Support Physical Activity for Health……7
- Physical Activity Improves Health
- Lack of Physical Activity Leads to Obesity and Poor Health
- Costs of Obesity
- Obesity May Affect Life Expectancy
- Access to Parks Increases Frequency of Exercise
- Lack of Park Space Hinders Health
- Park Access Inequitably Distributed
- Community Gardens for Health

Parks and Greenways Increase Health in Newer Communities……11
- Development Patterns Discourage Physical Activity
- Biking and Walking for Health
- Greenways for Healthy Living
- Reducing Air Pollution and Global Warming
- Reducing Accidents and Mental Stress

Benefits of Parks and Greenways to Psychological and Social Health……15
- Exposure to Nature and Greenery Makes People Healthier
- Parks Provide Therapy for Attention Deficit Disorder
- Exposure to Nature Promotes Coping and Health
- Why Exposure to Green Space May Benefit Health
- Parks Support Play and Brain Development
- Parks Promote the Social Health of Communities
- Getting the Community Involved

Notes……20

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Foreword

Several years ago The Trust for Public Land launched its Parks for People initiative to put a park within easy reach of every family—particularly in cities and metropolitan areas, where 85 percent of Americans live.

That work involves helping communities plan for parks and open space conservation, often through the use of an award-winning Geographic Information System (GIS) technology that TPL calls "greenprinting." TPL also helps communities raise funds for parks and open space conservation and complete the sometimes complicated real estate transactions needed to put parks on the ground. In some cities TPL is helping to turn abandoned or underused parks and playgrounds into valuable community resources.

Another key element of the Parks for People initiative is making the case for parks and their importance to people, communities, and the environment. This white paper on the health benefits of parks is the second in a planned series that began with the 2003 publication of an overview report, *The Benefits of Parks: Why America Needs More Parks and Open Space*. Future topics in the series include the economic and environmental benefits of parks.

Why start with the health benefits of parks? For one reason, health is a top concern of people and communities. Also, the topic is timely. Lately the press has paid much attention to the nation's crisis of physical inactivity and resulting health problems—including obesity, diabetes, and heart disease—especially among young people.

The opportunity for exercise in close-to-home parks, greenways, and other open space must be part of any comprehensive solution to this health crisis. And, as readers of the white paper will discover, supporting physical exercise is only one of many ways parks and open spaces help build the health of communities and their residents.

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TPL hopes this paper will contribute to the ongoing discussion of how the structure of communities contributes to health, and offers it as a resource for government and volunteer leaders in making the case that parks and open space are essential to the health and well-being of all Americans.

For more information, visit the Parks for People section of TPL's Web site (www.tpl.org/pforp) and sign up for TPL's Landlink/ Parks for People newsletter by clicking the Free E-Newsletter button from any TPL Web page.

TPL is pleased to bring you this report. Thanks for joining our effort to bring parks to America's people.



Will Rogers

President, The Trust for Public Land

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Executive Summary

Parks, playgrounds, greenways, trails, and community open spaces help keep Americans and their communities fit and healthy.

All people need physical activity to maintain fitness and health. Physical activity increases strength, flexibility, and endurance; relieves symptoms of depression and anxiety; improves mood; and enhances psychological well-being.

According to the Centers for Disease Control and Prevention (CDC), only 25 percent of American adults engage in recommended levels of physical activity, and 29 percent engage in no leisure-time physical activity at all. This sedentary lifestyle is contributing to an increased incidence of obesity along with obesity-related diseases, such as high blood pressure, diabetes, congestive heart failure, and stroke.

As one solution to the increased incidence of obesity, the CDC has called for more parks and playgrounds. Studies have shown that when people have access to parks, they exercise more.

Despite the importance of parks and other recreational open spaces to health, many Americans do not have adequate access to parks and open space. This is particularly true in American cities, where parkland is often inequitably distributed, putting certain populations at risk for health problems associated with inactivity. In Los Angeles, for example, more than 2.6 million people live too far (more than one-fourth mile) from the nearest park to walk there. Angelenos who live in low-income areas and in Latino, African American, and Asian American/Pacific Islander neighborhoods are less likely to be near parks, playgrounds, and exercise facilities than people who live in wealthier neighborhoods and in largely white neighborhoods.

Low-density, automobile-dependent patterns of development can discourage health-promoting incidental physical activity, such as walking or cycling to school or work or to run errands. Conversely, incorporating parks and greenways into communities can support increased exercise and healthier lifestyles. Parks, greenways, and trails make transportation corridors to shops, schools, and offices more attractive and pedestrian friendly. Greenways support dedicated exercise programs; incidental exercise; and healthy, human-powered transportation. To the extent that greenways decrease the number of cars on the road, they reduce air pollution, greenhouse gas emissions, and the accidents and stress that are by-products of driving.

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Exposure to nature in parks, gardens, and natural areas can improve psychological and social health. Surgical patients recover faster with windows that look out on trees. Horticultural therapy has evolved as a form of mental health treatment based on the therapeutic effects of gardening. Children who suffer from attention deficit disorder (ADD) can concentrate on schoolwork better after taking part in activities in green settings. Residents in housing projects with views of trees or grass experience reduced mental fatigue and report that they are better able to cope with life's problems.

Parks provide children with opportunities for play, and play is critical in the development of muscle strength and coordination, language, and cognitive abilities.

Parks also build healthy communities by creating stable neighborhoods and strengthening community development. Research shows that residents of neighborhoods with greenery in common spaces enjoy stronger social ties. Neighborhoods with community gardens are more stable, losing fewer residents over time.

Parks increase "social capital." That is, when people work together in a community garden or to create a park from a vacant lot, they get to know one another, trust one another, and look out for one another. The accomplishment of creating a new park helps people to believe that they can effect change.

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Parks Support Physical Activity for Health

Physical Activity Improves Health

A landmark report by the U.S. surgeon general found that people who engage in regular physical activity benefit from reduced risk of premature death; reduced risk of coronary heart disease, hypertension, colon cancer, and non-insulin-dependent diabetes; improved maintenance of muscle strength, joint structure, and joint function; reduced body weight and favorable redistribution of body fat; improved physical functioning if they suffer from poor health; and healthier cardiovascular, respiratory, and endocrine systems.[1]

"Americans can substantially improve their health and quality of life by including moderate amounts of physical activity in their daily lives," the report found. It also found that "health benefits appear to be proportional to the amount of activity; thus, every increase in activity adds some benefit."[2]

Physical activity also produces important psychological benefits, the surgeon general found. It relieves symptoms of depression and anxiety, improves mood, and enhances psychological well-being.[3]

Lack of Physical Activity Leads to Obesity and Poor Health

Despite these now well-known benefits of physical activity, however, only 25 percent of American adults engage in the recommended levels of physical activity, and 29 percent engage in no leisure-time physical activity, according to the Centers for Disease Control and Prevention (CDC). The numbers for children and adolescents are similar: only 27 percent of students in grades 9 through 12 engage in moderate to intensive physical activity.[4]

Such a sedentary national lifestyle has contributed to an epidemic of obesity. Among U.S. adults aged 20 and older, 66.3 percent were obese or overweight in 2003–4, according to the CDC. This is a sharp increase over the 56 percent falling into these categories a mere decade before, during the study period 1988–94.[5] Even more alarmingly, the percentage of children and adolescents who are overweight has quadrupled and trebled since the early 1970s; 18.8 percent of children aged 6–11 and 17.4 percent of adolescents aged 12–19 are now seriously overweight.[6]

People who are obese suffer increased risk of high blood pressure, high blood cholesterol, congestive heart failure, stroke, gallstones, osteoarthritis, some types of cancer (such as endometrial, breast, and prostate), complications of pregnancy, poor female reproductive health (such as menstrual irregularities, infertility, and irregular ovulation), and bladder

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control problems. They also suffer great risk of psychological disorders such as depression, eating disorders, distorted body image, and low self-esteem.[7]

Costs of Obesity

Many expenses result from caring for people with these conditions. They include preventative, diagnostic, and treatment health care; pharmaceuticals; rehabilitation; ambulance transportation; hospital and home care charges; and lost wages due to illness, disability, and early death. Expenses resulting from conditions related to obesity and overweight totaled $117 billion in 2000.[8]

Another study found that approximately 300,000 premature deaths per year in the United States were attributable to obesity and overweight.[9]

By the end of the decade, the number of people who die prematurely from obesity will be greater than the number who die from smoking, according to the *American Journal of Health Promotion* as reported in *HealthDay News*.[10]

Obesity May Affect Life Expectancy

Researchers publishing in the *New England Journal of Medicine* in 2005 asserted that average life expectancy in the United States will soon begin to decline as a result of the large number of people who are obese and overweight, reversing gains made in human life expectancy over the past 1,000 years and particularly in the last 150 years.

The researchers found that obesity currently reduces U.S. life expectancy by one-third to three-fourths of a year. But they predict that in the coming decades life expectancy could be curtailed by two to five years.[11]

Critics of the study contend that it is based on limited data and flawed methodology, is "excessively gloomy," and even suffers from a conflict of interest.[12] The researchers themselves admit that life expectancy gains could be preserved with advances in public health policy or medical treatment.

Access to Parks Increases Frequency of Exercise

Fortunately, strong evidence shows that when people have access to parks, they are more likely to exercise, which can reduce obesity and its associated problems and costs.

A group of studies reviewed in the *American Journal of Preventive Medicine* showed that "creation of or enhanced access to places for physical activity combined with informational outreach" produced a 48.4 percent increase in the frequency of physical

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activity.[13] The same studies showed that easy access to a place to exercise results in a 5.1 percent median increase in aerobic capacity, along with weight loss, a reduction in body fat, improvements in flexibility, and an increase in perceived energy.[14]

A national study by the RAND Corporation looked at the correlation between physical activity in adolescent girls and proximity to parks and schools. Researchers found that girls who live close to parks participate in more physical activity than those who live farther away.[15] Another RAND Corporation study found that Los Angeles residents who live near parks visit them and exercise more often than people who live greater distances from green spaces.[16]

Lack of Park Space Hinders Health

Unfortunately, residents of many American communities do not have easy access to a park or recreation facility. This is especially true in cities and urban areas, where 80 percent of Americans lived in 2000.[17]

For example, parkland covers a mere 3.8 percent of Atlanta's total area, and no public green space in the city is larger than one-third of a square mile.[18]

In New York City, nearly half the districts have less than 1.5 acres of parkland per 1,000 residents.[19]

Study after study shows that when people can't reach parks, they often go without exercise. This is especially true of low-income people who can't afford gym memberships. And exercise is a key determinant in avoiding obesity and maintaining health.

Park Access Inequitably Distributed

There is a notable paucity of parks in poor communities. More generally, there is a correlation among poverty, minority status, obesity, ill health, and neighborhood factors that discourage exercise, including the absence of parks and recreation facilities.

For one study, researchers observed 405 communities and made a statistical estimate of the likelihood that communities with differing poverty rates would include a bike path. They concluded that in communities with a 1 percent poverty rate there was a 57 percent chance of a bike path being present. In communities with a 10 percent poverty rate, there was only a 9 percent chance that a bike path would be present.[20]

For a paper published in *Pediatrics*, researchers studied nearly 20,000 adolescents nationwide, relating access to facilities for physical activity (mapped in distance from their homes) with frequency of exercise and obesity levels. Teens living in high-minority,

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lower-educated areas were half as likely as those in low-minority, higher-educated zones to have access to a facility in which to exercise. The odds of being overweight declined as the number of exercise facilities increased. Teens who lived in areas with seven facilities were 32 percent less likely to be overweight and 26 percent more likely to be highly active than those who lived in areas with no facilities.[21]

A 2005 University of Southern California study of park access in Los Angeles found that people who live in areas of low income or concentrated poverty and in Latino, African American, and Asian American/Pacific Islander neighborhoods are less likely than people living in largely white neighborhoods to have nearby access to parks, playgrounds, and other exercise facilities.[22] [23] In all, more than 2.6 million Angelenos live more than a quarter mile from the nearest park.

Lack of park access is likely a contributing factor to a lack of fitness among Los Angeles schoolchildren. In the 2003–4 school year, nearly one-third of the schools in the Los Angeles Unified School District had fewer than 10 percent of students meeting basic fitness levels. In 40 of the district's 605 schools, not a single student was rated as physically fit.[24]

The proximity of a park to where people live is not the only factor that influences whether they will exercise there. Features such as adequate lighting, availability of toilets and drinking water, and park design and maintenance all affect how much the park will be used.[25]

Community Gardens for Health

Inner-city neighborhoods often are at a disadvantage when it comes to finding healthful, nutritious food. Along with lack of exercise, poor diet can be a contributing factor to obesity and related health problems among people who live in these neighborhoods.

Community gardens provide both stress-reducing exercise and healthy, inexpensive or free produce. In 1999, 15 community gardens in New York City grew 11,000 pounds of fresh produce, of which they donated 50 percent to local soup kitchens and food pantries. The same year a single garden in the South Bronx grew 200 pounds of tomatoes and 75 pounds of peppers.[26] At many gardens throughout the city, gardeners give away their produce to neighbors and passersby.[27]

Gardening builds strength, endurance, and flexibility. For example, raking or carrying leaves builds endurance and strength, while pruning cultivates flexibility. Studies show that gardeners eat vegetables more frequently than nongardeners. And gardening helps people relax, unwind, and connect with others. It also reduces blood pressure and relieves muscle tension. Moreover, gardening is a form of physical activity that people can do at any age.

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Parks and Greenways Increase Health in Newer Communities

Development Patterns Discourage Physical Activity

The development pattern known as sprawl arose after World War II. Typified by freeways, strip malls, and cul-de-sac housing developments, it so heavily favors car use that most people are unable to walk or bicycle for transportation. San Diego State University researchers wrote in 2004: "Current reliance on personal vehicle use, along with other factors contributing to more sedentary lifestyles (e.g., application of technology to work and entertainment), has engineered physical activity for nonexercise purposes out of many Americans lives."[28]

A 2004 RAND study on sprawl found that "living in a high-sprawl area has the equivalent effect on your health as aging four years."[29]

In a landmark 2003 study, researchers related sprawl in U.S. counties with the body mass index (BMI) of people living in those counties. They found that people in sprawling counties walk less, weigh more, and have more hypertension than people who live in more compact counties, where they could more easily walk in the course of daily life. Comparing the most compact county, New York, with the most sprawled, Geauga County, Ohio, researchers found that New York residents walked 79 minutes more per month and weighed 6.3 pounds less.[30]

A 2004 study of nearly 11,000 people in Atlanta, Georgia, found that each hour spent in daily driving corresponded with a 6 percent increase in the odds of being obese, while each kilometer walked had a correlating 4.8 percent reduction in obesity risk.[31] The researchers also divided Atlanta's communities into four categories, ranging from residential (sprawled) to mixed-use (compact), and found that the relative risk of being obese was 35 percent higher in the sprawled areas.[32]

Biking and Walking for Health

One key way to incorporate exercise into daily activity is to walk or bike for errands near home. A 1997 study found that 83 percent of all trips are taken for short, nonwork purposes.[33] National data find that 14 percent of these trips are within one-half mile and 27 percent are within one mile of home—both considered walkable distances—and 63 percent were within five miles, considered reachable by bicycle.[34]

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Even short walks can make a difference. The CDC estimates that a difference of 100 calories of exercise per person per day—a 20-minute walk—could eliminate the nation's obesity epidemic.[35]

Health professionals promote the benefits of incidental exercise, such as gardening, climbing stairs, or biking to do errands, and they note that, whereas people might not maintain enthusiasm for a dedicated exercise program, incidental physical activity requires less motivation.[36]

Some urban planners are working to promote what they call *active living* communities, with compact layout, sidewalks, and greenways, where people can seamlessly integrate 30 minutes of physical activity into their daily routine.[37]

Active living finds common ground with *smart growth* and *new urbanism*, which attempt to address sprawl's effect on health and the environment.[38] Other movements with complementary goals include *healthy communities*, *sustainable development*, and *livable communities*.[39]

Greenways for Healthy Living

Leaders of all these movements highlight greenways as a way to fulfill the goals of healthy living. These sinuous, skinny parks and trails, ranging in length from a few blocks long to many miles, link larger parks, schools, offices, and stores. Often developed from abandoned railroad corridors or along waterfronts, they are a popular way for communities to promote healthy lifestyles. They support dedicated exercise programs; incidental exercise such as running errands; and healthy, human-powered transportation such as walking and biking to school or work.

Greenways in a community have been shown in several studies to increase regular physical activity, particularly among people who live nearby. In a survey of trail users in southeastern Missouri, 55 percent of respondents said they were exercising more since the trail was built.[40] And users of six trails in Indiana reported that they were getting more exercise because of their trails.[41]

Trails also figure prominently in the Safe Route to School programs created by many communities over the last several years. These programs provide children with walking and biking zones completely separate from auto traffic and teach them good attitudes toward exercise while they are young and impressionable.[42]

And greenways share an important trait with private health clubs—a much more expensive way to get exercise. As in a health club, people on a community trail can see and interact with others who are also exercising, adding a key ingredient of social support that encourages participation in physical activity.[43]

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Dr. Ross Brownson of Saint Louis University led a study about how environmental and policy issues affect physical activity. He concluded, "[T]his study suggests that changing communities by making them safer and offering people access to community parks, public recreation facilities, and walking and biking trails may help reduce the prevalence of overweight by promoting physical activity and healthy lifestyles."[44]

Reducing Air Pollution and Global Warming

To the extent that greenways can reduce automobile miles traveled, they help mitigate health problems associated with fossil-fuel consumption.

One of these is respiratory disease resulting from increased air pollution. At the Third Ministerial Conference on Environment and Health, held in London in 1999, researchers presented results from a study on the health effects of air pollutants from traffic in Austria, France, and Switzerland and their related costs, and later republished the findings in a WHO report. They found that vehicle-related pollution caused more deaths than traffic accidents.[45]

Driving is also a major factor in global warming, causing 26 percent of greenhouse gas emissions in the United States. Greenhouse gases from vehicles increased 18 percent during the 1990s, mostly because people traveled more miles. Global warming is expected to threaten human health with more frequent and more intense heat waves and increased prevalence of infectious diseases.[46] [47] [48] [49]

Parks and greenways can mitigate air pollution and increased temperatures. Mature tree canopies can reduce air temperature five to ten degrees, helping to counteract the urban heat island effect, according to the University of Washington's Center for Urban Horticulture.[50] And trees filter pollutants out of the air. According to American Forests, trees in Atlanta remove 19 million pounds of pollutants annually, a service worth $47 million.[51]

Reducing Accidents and Mental Stress

Reducing miles driven by providing greenway transportation routes also helps reduce the frequency of highway accidents. By creating pedestrian routes separated from traffic, greenways also help reduce vehicle–pedestrian accidents, which now result in 6,000 deaths and 110,000 injuries each year in the United States.[52] [53] Accidents involving vehicles and pedestrians are less common in countries such as the Netherlands and Germany, which have separate pedestrian and cycling lanes.[54]

Long hours of driving also take a toll on mental health. One indicator that commuting is

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affecting people's peace of mind is the increase in road rage, when an angry driver tries to injure or kill another driver over a traffic dispute.[55] From 1990 to 1996, 10,000 incidents of road rage were documented, including 12,610 injuries and 218 deaths. Weapons included guns, knives, clubs, fists, feet, and vehicles. The documented period showed a 51 percent increase in incidents, according to the AAA Foundation for Traffic Safety.[56]

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Benefits of Parks and Greenways to Psychological and Social Health

Exposure to Nature and Greenery Makes People Healthier

A growing body of research shows that mere contact with the natural world improves physical and psychological health.

One important study reviewed the recovery of surgical patients in a Pennsylvania hospital. The rooms of some patients offered views of a stand of trees, while others faced a brown brick wall. A review of ten years of medical records showed that patients with tree views had shorter hospitalizations, less need for pain killers, and fewer negative comments in the nurses' notes, compared with patients with brick-wall views.[57]

The benefits extend to psychological health. "The concept that plants have a role in mental health is well established," according to a review of previous studies by Howard Frumkin in the *American Journal of Preventive Medicine*. "Horticultural therapy evolved as a form of mental health treatment, based on the therapeutic effects of gardening. It is also used today in community-based programs, geriatrics programs, prisons, developmental disabilities programs, and special education."[58] [59]

Further, "research on recreational activities has shown that savanna-like settings are associated with self-reported feelings of 'peacefulness,' 'tranquility,' or 'relaxation,'" Frumkin writes. "Viewing such settings leads to decreased fear and anger … [and] is associated with enhanced mental alertness, attention, and cognitive performance, as measured by tasks such as proofreading and by formal psychological testing."[60]

Parks Provide Therapy for Attention Deficit Disorder

About 2 million U.S. children suffer from attention deficit disorder (ADD), a condition that negatively impacts academic performance, peer relationships, and family harmony. In addition, children with ADD are at greater risk than their peers for low self-esteem, anxiety, and depression. Current treatments of medication and behavioral therapy have serious side effects or limited efficacy.

Researchers have recently discovered that children with ADD can concentrate on schoolwork and similar tasks better than usual after taking part in activities in green settings, such as walking through or playing in a park. And the greener a child's play area, the less severe the symptoms.[61]

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Exposure to Nature Promotes Coping and Health

A 2001 study examined how exposure to nature affected residents of Chicago housing projects and their ability to address major life challenges. These include crowding, noise, danger, and poverty; the demands of single parenting or other caretaker responsibilities; unemployment; paying the bills; getting enough food each month; running out of medicine; dealing with violence, including fear of bullets coming through the windows or children getting shot while playing; and parenting problems in this environment, such as keeping a son out of a gang or a daughter from getting pregnant. These stressors lead to chronic mental fatigue and can become overwhelming.[62]

Researchers found that residents with even limited views of trees or grass from their apartments reported less mental fatigue, less procrastination in dealing with life issues, and feeling that their problems were less severe, more solvable, and of shorter duration than residents with no views of nature. Even small amounts of nature, such as a few trees and a bit of grass, were shown to have an impact.[63]

Why Exposure to Green Space May Benefit Health

Important theoretical foundations in the area of nature and health were laid by Harvard biologist Edward O. Wilson, who in 1984 hypothesized the existence of biophilia, "the innately emotional affiliation of human beings to other living organisms."[64]

Howard Frumkin has extended this idea to postulate "an affinity for nature that goes beyond living things, to include streams, ocean waves, and wind."[65] This affinity may stem from evolutionary roots: "For the great majority of human existence, human biology has been embedded in the natural environment," Frumkin writes. "Those who could smell the water, find the plants, follow the animals, and recognize the safe havens, must have enjoyed survival advantages."[66]

These theories make the findings of the studies mentioned in this section easier to understand, especially when considered along with a related theory called habitat selection. This suggests that organisms gravitate toward environments in which they are likely to flourish,[67] and many researchers have documented a human preference for natural elements.[68] Conversely, animals stuck in unsuitable habitats suffer social and psychological breakdown.[69] Researcher Frances Kuo suggests that humans prefer nature in their landscapes because it is a key ingredient of human habitat, is essential to our psychological and social health, and has an apparent beneficial effect on blood pressure, heart rate, mood, day-to-day effectiveness, social behavior, cognitive functioning, and work performance.[70]

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Some experts advise that children today are not getting enough access to nature owing to fear of crime in distressed areas, parental paranoia about "stranger danger" in more affluent areas, media hype of infrequent child violence cases, and overexposure to technologies like computers and video games. Author Richard Louv calls this problem "nature-deficit disorder," and says that children miss out on all kinds of growth opportunities when they are not allowed to explore the relative edges of civilization.[71]

Parks Support Play and Brain Development

For small children, playing is learning. Play has proven to be a critical element in a child's future success. Play helps kids develop muscle strength and coordination, language, cognitive thinking, and reasoning abilities.

"Research on the brain demonstrates that play is a scaffold for development, a vehicle for increasing neural structures, and a means by which all children practice skills they will need in later life," according to the Association for Childhood Education International.[72] Play also teaches children how to interact and cooperate with others, laying foundations for success in school and the working world.

Exercise has been shown to increase the brain's capacity for learning. In 1999 researchers at the Howard Hughes Medical Institute found that running boosts the growth of new nerve cells and improves learning and memory in adult mice. The new nerve cells were concentrated in a part of the brain called the hippocampus, which plays a central role in memory formation, including spatial learning—locating objects in the environment—and the ability to consciously recall facts, episodes, and unique events.[73]

Parks Promote the Social Health of Communities

Among the most important benefits of city parks—though perhaps the hardest to quantify—is their role in the social health of communities. City parks make inner-city neighborhoods more livable. They offer opportunities for recreation and exercise to at-risk and low-income children, youth, and families who might not be able to afford them elsewhere. They also provide places in low-income neighborhoods where people can experience a sense of community.

Research shows that residents of neighborhoods with greenery in common spaces are more likely to enjoy stronger social ties than those who live surrounded by barren concrete.

A study by the University of Illinois and the University of Chicago found that for urban public housing residents, levels of vegetation in common spaces predicted the formation of neighborhood social ties. "In inner-city neighborhoods where common spaces are

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often barren no-man's lands, the presence of trees and grass supports common space use and informal social contact among neighbors," the study found. "In addition, vegetation and [neighborhood social ties] were significantly related to residents' senses of safety and adjustment."[74]

These benefits often arise in the context of community gardens. A 2003 study conducted by the University of Missouri–Saint Louis for the community development organization Gateway Greening found that Saint Louis neighborhoods with community gardens were more stable than other neighborhoods. In a city that lost nearly 50,000 residents between 1990 and 2000, neighborhoods with gardens did relatively better, losing 6 percent of their population over the decade compared with 13 percent for the city as a whole.[75]

Advocates of community gardens say they increase residents' sense of community ownership and stewardship, provide a focus for neighborhood activities, expose inner-city youth to nature, connect people from diverse cultures, reduce crime by cleaning up vacant lots, and build community leaders.

"The garden can take credit for bringing the neighborhood together," says Annie Thompson in Park Slope, Brooklyn, speaking about the Garden of Union, a community garden.[76]

More research is needed on this subject, as the evidence of these social benefits is often anecdotal. It is also difficult to isolate the benefits of a community garden from the effects of economic, demographic, and other changes on a neighborhood.

Getting the Community Involved

Research supports the widely held belief that community involvement in neighborhood parks is correlated with an increase in "social capital." That is, when people work together toward shared goals, such as working in a community garden or creating a park from a vacant lot, they get to know one another, trust one another, look out for one another, and feel invested in their neighborhood. These benefits may be abstract, but they lead to concrete community improvements such as fewer homicides and other violent crime; fewer property crimes, including graffiti; reduced juvenile delinquency; higher educational achievement; lower rates of asthma and teen pregnancy; and better response to the community's needs by central governments because they see a united front.[77]

A similar idea to social capital is "collective efficacy"—when neighbors feel part of a community, trust one another, and are willing to intervene for the common good when trouble arises.

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The Project on Human Development in Chicago Neighborhoods conducted a $50 million study on the causes of crime, substance abuse, and violence, finding that "in neighborhoods where collective efficacy was strong, rates of violence were low, regardless of sociodemographic composition and the amount of disorder observed. Collective efficacy also appears to deter disorder: Where it was strong, observed levels of physical and social disorder were low."[78]

Activities such as working together to create parks foster in individuals the belief that they can effect other changes in their lives. A community park comes to symbolize not only the accomplishment of creating a haven where there was once a vacant lot, but perhaps more important, the general ability to create change. They have had a success, a small bit of power—for some, maybe, the first in their lives.

When planning new parks in multicultural neighborhoods, it's important to consult the community to see what type of park people would be most likely to use. People of different ages have different health needs, and people from different backgrounds and ethnic groups have differing physical activity preferences and attitudes toward nature.[79] [80] Involving people in the planning stages also gives them a sense of ownership in their park.

Neighbors continue to remain an important resource once a park is established. John Kretzmann, co-director of the Asset-Based Community Development Institute at Northwestern University, says that park managers should think of local residents as people with assets who can contribute their gifts and skills, turning parks into resource exchanges and learning networks.

Kretzmann surveyed a four-block area in a poor district of Chicago. Residents were asked if they had any creative skills. Interviewers discovered that more than 50 percent of households contained people with talents as artists, storytellers, painters, comic-book writers, and practitioners of theater and crafts. "When asked: How many of you would be willing to contribute your arts and culture to the park?—about 80 percent of the folks said, Of course we would—we've never been asked." Rather than as a client or a consumer, a resident should be thought of as "somebody who comes out of the door every morning cognizant of her or his resources, ready to join with other resourceful neighbors to do problem-solving and to do community-building."[81]

By providing a venue for community building, parks contribute to social health as surely as they do to the physical and psychological health of people.

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Exhibit D



THE HEAT IS ON

With temperatures rising and quality parks too few and far between, communities of color face a dangerous disparity

THE TRUST FOR PUBLIC LAND



Table of contents

Introduction 2

The heat is on 3

- The perils of extreme heat 4
- Parks: nature's cooling centers 5
- In search of cooling shade, a growing disparity 7

Methodology 9

Citations 10

Introduction

The summer of 2020 is predicted to be the hottest ever recorded. Meanwhile, as the number of COVID-19 cases continues to surge nationwide, city officials are closing public beaches and pools and limiting the capacity of cooling centers. This is putting even more pressure on public parks, which were already in high demand as one of the few places where Americans can escape the confines of home.

Parks—especially those that are densely wooded and deep green—can counter urban temperatures exacerbated by heat-trapping buildings, pavement, and concrete. Given the increased importance of parks during this public health emergency, The Trust for Public Land analyzed park data from across the country to determine who does and doesn't have access to this vital public resource. We found:

- Communities with nearby parks can be dramatically cooler than those in so-called "park deserts." Our analysis of 14,000 cities and towns shows that nationwide, **areas within a 10-minute walk of a park are as much as 6 degrees cooler than areas beyond that range.**

- And yet, not everyone has equal access to the kinds of parks that lower temperatures and allow for safe social distancing. Our data reveals that across the United States, **parks serving primarily nonwhite populations are half the size of parks that serve majority white populations and nearly five times more crowded.**

- In addition **parks serving majority low-income households are, on average, four times smaller and nearly four times more crowded than parks that serve majority high-income households.**



ISTOCK USER ANDRESGARCIAM

The heat is on

Summer is here, and with it, extreme heat, which is the number one weather-related killer in the United States. This year, that risk is amplified by the coronavirus, which is complicating and in some cases even scuttling cities' plans to help residents stay cool. Many cities are closing pools, beaches, and spray parks in order to limit the spread of the virus, while others are scaling back the capacity of indoor cooling centers or closing them all together.

In the face of these pandemic-enhanced challenges, there's one piece of public infrastructure that is proving itself more vital and necessary than any other time in our history: parks. As the virus rages on, our nation's park systems are serving as a lifeline. They are where we go for exercise and to safely socialize, to blow off steam, barbecue, or give the kids a place to run and play. More recently, they've served as venues for protests against racism and police brutality that have stretched from coast to coast.

TIMOTHY SCHENCK



Explore neighborhood-by-neighborhood data on heat and parks in your community: visit tpl.org/parkscore

And now, parks are helping people cope with summer heat. Studies show that large parks – especially those with dense trees and vegetation – can be as much as 17 degrees cooler than the surrounding cityscape. That is due to the "urban heat island effect," a well-documented phenomenon in which densely packed buildings, concrete, and pavement trap heat, leading to increased temperatures in areas with the least amount of green space and vegetation. For the first time, The Trust for Public Land has assembled the highest-resolution heat data available for the entire United States, revealing a stark difference in temperature between neighborhoods that have parks nearby and those that do not. Specifically, our researchers studied satellite heat maps for 14,000 cities and towns and found that areas within a 10-minute walk of a park can be as much as 6 degrees cooler than neighborhoods outside that range.

More troublingly, the data indicates that not everyone has equal access to the cooling benefits of parkland. One hundred million people, or more than one in three Americans, do not have a park within a 10-minute walk of home. And a closer look reveals that nationwide, parks that serve majority nonwhite populations are, on average, half as large – 45 acres compared to 87 acres – and nearly five times as crowded as parks that serve majority-white populations.

Nationwide, parks that serve majority nonwhite populations are, on average, half as large–45 acres compared to 87 acres–and nearly five times as crowded as parks that serve majority-white populations.

With temperatures rising from coast to coast, that disparity means that Black, Indigenous, Latinx, Asian, Pacific Islander, and multiracial populations, as well as those with lower incomes, are at heightened risk.

A recent study by researchers at Portland State University and the Science Museum of Virginia found a strong correlation[1] between exposure to deadly heat and the historically racist housing policies known as "red-lining," in which banks withheld home mortgages from Black families. The researchers examined 108 cities in the United States and found that red-lined communities were the hottest neighborhoods in 94 percent of the cities. The study cited a lack of greenspace and tree canopy as the chief reasons for the disproportionate heat exposure.

"As cities struggle with extreme heat this summer, parks are one of the best ways for residents to find relief," said Diane Regas, president and CEO of The Trust for Public Land, a national organization that has built thousands of parks and protected millions of acres of land. "We all need and deserve parks – and all of the benefits they provide – all of the time. But during this period of compounded public health emergencies, unequal access to quality parks can be downright dangerous."

The perils of extreme heat

Over the last 30 years, extreme heat, on average, has been the deadliest form of weather – including floods, extreme cold, tornadoes, hurricanes, and other events – according to the National Weather Service. Climate change is making the problem increasingly more severe, with 19 of the hottest 20 years on record[2] occurring in the past two decades. The Union of Concerned Scientists predicts that, absent efforts to cut the greenhouse gas emissions responsible for climate change, the number of Americans[3] experiencing 30 or more days with a heat index above 105 degrees in an average year will balloon from 900,000 people today to more than 90 million by mid-century.

Extreme heat causes a range of health problems. According to the Centers for Disease Control and Prevention, heat exhaustion – characterized by heavy sweating, dizziness, a weak pulse, nausea and vomiting, muscle cramps, and headache – can easily escalate to the more dangerous condition known as heat stroke, a health emergency leading to symptoms that include confusion, elevated body temperature, and loss of consciousness.

Each year, more than 65,000 people visit an emergency room for heat-related illness and more than 600 people die, according to federal statistics. But new research indicates that the number of deaths may, in fact, be significantly higher than previously thought. A study[4] published this spring in the journal *Environmental Epidemiology* looked at deaths during a recent decade in 297 counties in the United States, representing about three-fifths of the population. Researchers from Boston University's School of Public Health and the University of British Columbia estimated that heat contributed to the deaths of 5,600 people each year, on average, from 1997 to 2006.

Experts estimated that extreme heat contributed to the deaths of an average of 5,600 people each year between 1997 and 2006.

Experts on heat-related illness, like Gregory A. Wellenius, a professor of environmental health at Boston University and senior author of the study, fear that the pandemic will only cause more Americans to suffer from heat this year, especially those who lack air-conditioning. In addition to shuttering beaches and public pools and limiting access to cooling centers, the pandemic has forced the closure of the air-conditioned spaces that many people rely on when the weather warms, including office buildings, stores, movie theaters, and museums.

Indeed, research shows that the expense of air-conditioning is a growing burden for low-income people worldwide, with climate change expected to worsen the problem. A recent study[5] of energy use in eight nations, including Australia, Spain, and Japan, found that people spent 35 to 42 percent more on electricity when they adopted air-conditioning, plunging some into what researchers called "energy poverty." Those who can't afford the increased cost simply do without.

As with many diseases and conditions, including COVID-19, nonwhite populations are disproportionately affected by heat-related illnesses. In California, for instance, emergency-room visits for heat-related illnesses jumped 35 percent from 2005 to 2015, but the increases were steeper[6] for certain groups. Hospital visits increased an average of 67 percent for Black Californians and 63 percent for Latinos; among White Californians, however, they rose only 27 percent. Urban heat islands and lack of access to air-conditioning are frequently cited as factors.

"This summer is projected to be one of the hottest summers on record," said Wellenius. "In addition, you have high levels of unemployment, commercial buildings are closed, and community resources are stretched thin. So there is a confluence of factors making people more vulnerable to extreme heat."



CHRISTOPHER T. MARTIN

Many cities are closing pools, beaches and spray parks in order to limit the spread of COVID-19.

Parks: nature's cooling centers

From Syracuse, New York to Southern California, city officials are having to balance preventing the spread of coronavirus with the need to protect residents from extreme heat. And in many locations, the virus is winning. During a hot spell in mid-June, officials in Syracuse decided not to open its cooling centers or spray parks on a 90-degree day, out of concern for upping the rate of transmission. And health officials in Los Angeles County, which was struggling with the state's biggest COVID-19 caseload in late June, decided to close all beaches over the Fourth of July weekend.

The Centers for Disease Control and Prevention recently issued guidelines on how best to operate cooling centers this summer, given social-distancing requirements, and presented alternatives. The federal agency, for example, urged cities to develop programs that help people pay their utility bills, since air-conditioning can be costly to run. And the agency suggested a temporary ban on utility shut-offs during heat waves, so residents behind on their bills do not have to go without air-conditioning.

As part of a multi-faceted plan to combat heat-related illness, New York City, which closed most of its public pools due to COVID-19, announced a $55 million program to provide 74,000 air conditioners to low-income residents who are at least 60 years old. About a third of the AC units will go to residents in public housing developments.

JOE MARTINEZ



Communities with nearby parks can be dramatically cooler than those in so-called "park deserts."

That announcement followed an open letter in April by New York City Comptroller Scott M. Stringer, calling on the city to prevent heat-related deaths. Stringer noted that more than 80 percent of the heat stroke deaths in recent years involved victims who were exposed to heat in homes without air-conditioning.

For cities that decide to operate cooling centers, the C.D.C. offered a range of recommendations: reducing capacity to allow for greater distancing, temperature screenings upon arrival, separate rooms for those who are symptomatic, and even emergency alternatives like parked air-conditioned buses.

Public health experts point out, however, that the coronavirus is much less likely to be transmitted outdoors. In Japan, for instance, health officials found that the chance of catching the coronavirus is almost 20 times higher indoors than out. Among the reasons, scientists say, are wind and sun, which dissipate and destroy the virus, respectively.

Surili Patel, director of the American Public Health Association's Center for Climate, Health and Equity, worries about the ability of governments to protect citizens from the dangers of summer heat. "Having enough cooling centers is certainly a concern, especially as those that exist will have to operate under diminished capacity," she said, adding that cities should partner with community and faith leaders to increase potential sites.

At the same time, she encouraged Americans to take advantage of parks, the "natural cooling centers" in their communities. "Greenery and trees bring down the overall temperature of an area, and at night they serve to cool the neighborhood rather than trap the heat," she said. "Parks will offer some reprieve for those who don't have air-conditioning."

A growing body of research recognizes the power of trees and plants to cool the air, not only inside parks, but beyond their borders as well. A few mechanisms are at work here: from the simple effect of tree shade to the complex process known as evapotranspiration. According to the Environmental Protection Agency, surfaces in shade can be up to 45 degrees cooler[7] than those in sun. (Tree canopy also lessens indoor temperature, especially when shade covers parts of rooftops and windows.) Evapotranspiration, meanwhile – the phenomenon by which trees pull moisture from the soil and release

it through leaves – cools air directly: anywhere from 2 to 9 degrees, depending on tree density, according to the E.P.A.

A 2016 report by The Trust for Public Land[8] explored the ability of trees and other "green infrastructure" to cut urban heat and emissions. As the report showed, the cooling effects of parks extend into the surrounding neighborhoods; one study detected reduced temperatures up to a half mile away. Moreover, parks combining lawn and trees are more effective at lowering air temperature than those comprised of grass only.

In the summer of 2018, a landmark citizen-science project[9] funded by the National Oceanic and Atmospheric Administration demonstrated the striking cooling properties of trees and vegetation. Temperature readings on a few of the hottest days that August, in both Washington and Baltimore, revealed differences of up to 17 degrees between parkland and neighborhoods dominated by buildings and pavement.

Brendan Shane, climate director at The Trust for Public Land, pointed out that the coolest temperature readings in Washington came from Rock Creek Park and the National Arboretum.

"It comes down to the size of the park and how deep-green the park is," he said. "In D.C., the parks were heavily forested, deep-green oases that can really magnify that cooling impact. The tiny neighborhood park or pocket park, by contrast, will have some benefits, but they are going to be a lot less significant than those larger, high-quality parks."

"It comes down to the size of the park and how deep-green the park is… heavily forested, deep-green oases can really magnify that cooling impact."

Scientists believe that street trees alone can prevent deaths. A new study[10] in Philadelphia, led by a social scientist with the U.S. Forest Service and published in the journal *Lancet Planetary Health*, looked at the potential impact of the city's plan to increase its tree canopy to 30 percent by 2025. Researchers estimated that the additional canopy could prevent up to 400 premature deaths a year in the city. Among other things, they cited the ability of trees and greenspace to reduce heat and air pollution, as well as boost physical activity and social connection.



ANDY ISAACSON

The cooling effects of parks can extend into the surrounding neighborhoods, reducing temperatures up to a half mile away.

Patrick L. Kinney, the Beverly A. Brown professor of urban health and sustainability at Boston University School of Public Health, believes that the term "urban heat island" over-simplifies the geography behind the plants-pavement dichotomy.

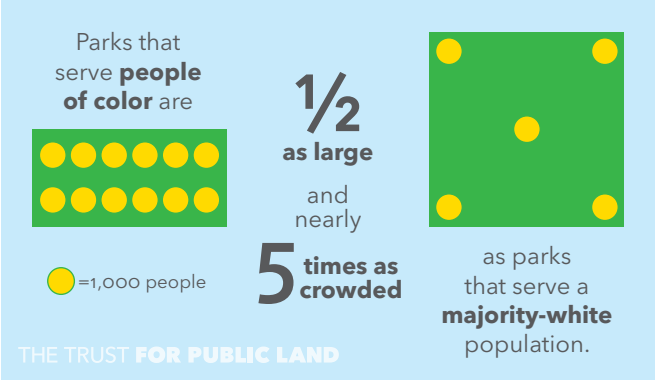
"The evidence has shown in the past ten years that it's not just that cities are hot and the country is cooler," he points out. "Within the city, there is a lot of variation in temperature from place to place. So it's not an island, but more of an archipelago. The higher the density of vegetation, the bigger the cool spot within the city."

City residents might have a renewed appreciation for verdant parks this summer, Kinney said. "Buildings absorb a lot of heat and that heat builds up over time," he observed. "Even at night, when temperatures usually go down during a heatwave, that doesn't happen indoors because a building has retained so much heat over the course of the summer."

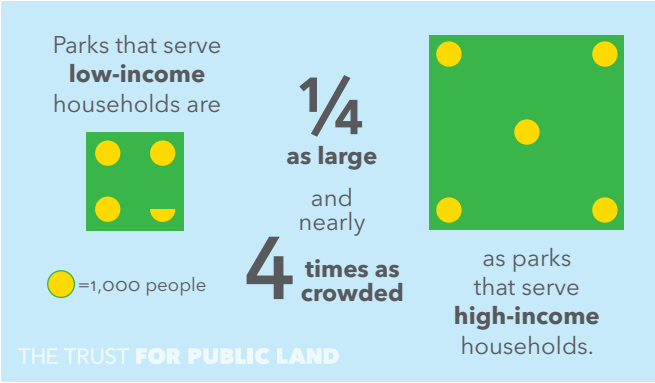
"So if you don't have cooling centers and you don't have air-conditioning, you should get to a tree-filled area and I'm sure it will be better than being inside, especially on the top floor of an apartment building," he added. "I think the parks have a lot of potential benefit, especially this summer."

In search of cooling shade, a growing disparity

But of course not everyone has easy access to a park, and if they do, that park might not be very large or very green. The Trust for Public Land analyzed data from 14,000 cities, towns, and census-designated places across the United States, finding that Black, Indigenous, Latinx, Asian, Pacific Islander, and multiracial populations – when they do have parks within a 10 minute walk – are likely to find small, crowded spaces, not the kind of parks that allow for easy social distancing or ample cooling shade.



In addition to the startling discovery that parks that serve a majority nonwhite population are, on average, half as large – 45 acres compared to 87 acres – and nearly five times as crowded as parks that serve a majority-white population, our analysis also found that parks serving primarily low-income households are, on average, four times smaller – 25 acres versus 101 acres – than parks that serve a majority of high-income households.



Data showing that low-income and nonwhite populations lack access to spacious, sylvan parks comes as no surprise to outdoor activists, especially those who advocate for marginalized communities. Jose Gonzalez, founder of Latino Outdoors, said that the history of park development is tied up with the history of white supremacy.

"We need to look at how parklands came to be," he said. "That's very true in terms of our national parks system and state parks. But even looking at cities, it's how they were designed, who they were designed for, and what the historical reasoning was for that. It's not surprising, when you look at parks and even tree cover, how that aligns with other metrics of socio-economic status."

The Trust for Public Land's 2020 ParkScore® Index, which ranks park systems in the one hundred most populous cities, shows, with the exception of New Orleans, a paucity of land devoted to greenspace among the half dozen cities with majority Black populations.

In Detroit, for instance, where 78 percent of residents are Black, the city devotes 6 percent of its land to park space, compared to the national median of 15 percent. In Memphis, Tennessee, just 5 percent of land area is comprised of parks, while in Baton Rouge, Louisiana, only 3 percent of the city is dedicated to parkland.

PARKLAND AS PERCENT OF CITY AREA IN MAJORITY BLACK CITIES ON THE PARKSCORE® INDEX

THE TRUST FOR PUBLIC LAND

National median	15%
Baton Rouge	3%
Memphis	5%
Detroit	6%
Atlanta	6%
Baltimore	10%
New Orleans	26%

Experts on race and discrimination assert that Black, Indigenous, Latinx, Asian, Pacific Islander, and multiracial populations don't always feel comfortable in parks, especially those that serve a majority-white population.

In May, on the same day that George Floyd died in Minneapolis with a police officer's knee on his neck, a White woman called the police on a Black bird watcher in Central Park after he asked her to leash her dog. The bird watcher, Christian Cooper, who happens to sit on the board of New York City Audubon Society, made a video recording that went viral. In it, the woman frantically claims during a 911 call that Cooper was physically threatening her, even as he moves farther and farther away.

For Carolyn Finney, author of *Black Faces, White Spaces: Reimagining the Relationship of African Americans to the Great Outdoors*, the episode illustrated the uneasy feeling that many Black people, including herself, can have in parks.

"For Black people," she wrote in an opinion piece in *The Guardian* in early June, "navigating both city streets and hiking trails can be charged; at worst, they are fraught terrains where we are at the mercy of someone else's interpretation of our presence. Too often, by default, Black people are perceived as threats to White people's physical safety. And as a consequence, it is our physical safety that is compromised…"

Finney, a scholar-in-residence at Middlebury College and a former member of the National Park System Advisory Board, said cities needed to redouble their efforts to include nonwhite communities as stakeholders in the process of creating and programming parks. She notes that this country's Jim Crow laws applied to not just restaurants and movie theaters, but to parks and beaches too.

"This is why a lot of us emphasize the issue of representation," she said. "If you want to represent Latinx people, for example, then bring in someone who is Lantinx. You're dealing with systemic racism that has been in place for many decades. It's not that people of color don't care about their parks. Sometimes, it's that no one has ever asked them what they think. Cities need to make space for their voices."

While park agencies may not have tremendous leeway in creating large new parks in highly developed cities, there are other ways to connect city dwellers to parkland, park advocates say.

Gonzalez says building new urban parks is important. But so is introducing residents to parks that, while farther afield, may be closer than many realize. He points to the Roving Ranger, a "park-mobile" operated by the Golden Gate National Parks Conservancy in San Francisco. The vehicle visits neighborhoods and community events to help educate residents about their nearby parks, as well as provide information on how to visit them using public transportation.

"It's a way to bring the park to the people, almost like an ice cream truck," Gonzalez says. "The park truck shares what is accessible and what the time-distance is, as well as the programming. In other words, 'here's what is available within a half hour; here's what is available within one hour or two hours.'"

For those lucky enough to live by a park, the cooling capacity of nature is readily apparent. Lory Pollina, a musician and artist in Buffalo, New York, where the coronavirus kept cooling centers closed during an unusually hot day in June, lives a block from Delaware Park. It is one of several Buffalo parks designed 150 years ago by Frederick Law Olmsted. Because Pollina's apartment does not have air conditioning, he seeks refuge from the summer heat during his early-morning strolls around the park's oblong Hoyt Lake.

"There are trees around the lake and there's usually a breeze," said Pollina, a volunteer with the Buffalo Olmsted Parks Conservancy. "I like to walk in the morning because it's cooler. Nature is very healing when the city is hot."



ISTOCK USER CREATIVE-FAMILY

Outdoor activists who advocate for marginalized communities say that the history of park development is tied up with the history of white supremacy.

Methodology

The Trust for Public Land prepared data for town and city boundaries by converting United States Census Bureau-based borders into an open-standard format representing geographical features. Using the Descartes Labs platform, we then accessed NASA's Landsat 8 thermal band data for 14,000 towns, cities, and census-designated places, focusing on the period of June 1 to September 30, 2019. Satellite data measure the temperature at the surface, rather than ambient temperatures, which are typically taken about six feet above the ground. While ambient temperature is a more accurate measure of how people experience heat, we used satellite data because it is more widely available and can reveal heat island information for all 14,000 towns and cities nationwide.

After performing a quality check on a statistically significant sample of the Landsat data, we detected errors along the edges of scenes, or digital images, in a very small percentage of the output datasets – about 1.5 percent. Typically two adjacent scenes for the same period would appear as one continuous image. When the edge of a scene is visible, that means there is enough of a difference in temperature between two images. For cities such as these where we could not find two 2019 scenes that were close enough in temperature to not show the scene boundaries, we used summer 2018 data in combination with the 2019 data to eliminate the scene boundary errors. Because the output data consists of billions of pixels, it is likely that a very small percentage of errors still exists in the output data.

The Trust for Public Land wrote software that converts thermal data into a heat value, expressed in degrees Fahrenheit, for every 30-meter by 30-meter geographic area, or pixel. The heat values were used to calculate the mean temperature value for a given municipality. The difference between the mean temperature value for an entire town or city and the heat value of a single pixel was then calculated. This difference is known as the heat anomaly.

To compare park size and crowding by race and income, we examined parks that serve residents in all 14,000 cities, towns, and census-designated places in the United States. We omitted parks that were greater than 70,000 acres, such as large conservation areas and National Forests. This ended up excluding 99 park areas out of a total of more than 123,000. To calculate average park size according to race and income, we looked at the population that lives within a 10-minute walk of each park. Population was derived from 2019 Forecast Census Block Groups provided by ESRI. Rather than using buffers, we used park service areas that were generated from a walkable street network derived from ESRI's StreetMap Premium. These parks and service areas were previously collected and created for our ParkServe® platform.

We focused our analysis to look at parks that serve a subset of race and income categories (majority low-income, majority White, majority-nonwhite, etc.) and calculated average park size for each subset. We used this same process to set up our analysis to calculate crowding. We calculated crowding by normalizing park size to one acre and calculating the proportion of people served by one park acre.

Citations

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3. Kristina Dahl et al., "Killer Heat in the United States: Climate Choices and the Future of Dangerously Hot Days," *Union of Concerned Scientists report* (July 2, 2019), https://www.ucsusa.org/resources/killer-heat-united-states-0.

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5. Teresa Randazzo, Enrica De Cian, and Malcolm N. Mistry, "Air Conditioning and Electricity Expenditure: The Role of Climate in Temperate Countries," *Economic Modelling 90* (August 2020): 273–287, https://www.sciencedirect.com/science/article/pii/S0264999319308168?via%3Dihub#!.

6. Manas Mishra, "Heat-Related Illness Affects Ethnic Groups Disproportionately," *Physician's Weekly* (February 26, 2019), https://www.physiciansweekly.com/heat-related-illness-affects-ethnic/.

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9. National Oceanic and Atmospheric Administration, "Hot Days in the City? It's All About Location" (October 15, 2018), https://www.noaa.gov/news/hot-days-in-city-it-s-all-about-location.

10. Michelle C. Kondo et al., "Health Impact Assessment of Philadelphia's 2025 Tree Canopy Cover Goals," *Lancet Planetary Health 4*, no. 4 (April 2020), https://www.thelancet.com/journals/lanplh/article/PIIS2542-5196(20)30058-9/fulltext.

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The Trust for Public Land creates parks and protects land for people, ensuring healthy, livable communities for generations to come.

PHOTOS: FRONT, ISTOCK USER TOMWANG112, JERRY MONKMAN

tpl.org

Exhibit E

REQUEST FOR COUNCIL ACTION

CITY COUNCIL MEETING DATE:

MARCH 17, 2020

CLERK OF COUNCIL USE ONLY:

TITLE:

CITY OF SANTA ANA GENERAL PLAN HOUSING ELEMENT ANNUAL PROGRESS REPORT

APPROVED
- ☐ As Recommended
- ☐ As Amended
- ☐ Ordinance on 1st Reading
- ☐ Ordinance on 2nd Reading
- ☐ Implementing Resolution
- ☐ Set Public Hearing For_____

CONTINUED TO _____

/s/ Kristine Ridge
CITY MANAGER

FILE NUMBER _____

RECOMMENDED ACTION

Authorize submittal of the General Plan Housing Element Annual Progress Report to the State of California Department of Housing and Community Development (HCD).

DISCUSSION

The General Plan Housing Element is a comprehensive planning document designed to address current and future housing needs for Santa Ana. The housing vision is expressed in the goals, policies, and implementation programs stated in the Housing Element. The purpose of the Housing Element Annual Progress Report (Exhibit 1) is to document housing-related activities and accomplishments achieved by the City in 2019, which are consistent with the City's housing vision and associated implementation programs.

The Housing Element Annual Progress Report also measures the City's progress to meet state-mandated housing goals as set forth in our 2014 - 2021 Regional Housing Needs Allocation (RHNA) . Through a process referred to as "RHNA", each jurisdiction is given a target for how many permits to issue in four housing income categories, ranging from very–low income (affordable to those who earn 50 percent or less of the $89,759 Area Median Income (AMI)) to above moderate income (more than 120 percent of AMI). According to data reported by jurisdictions to the California Department of Housing and Community Development for permits issued through 2018, Santa Ana is one of only 15 California jurisdictions (three percent) on track to meet state-mandated housing goals under the RHNA process. Further, Santa Ana is meeting all of our requirements for permitting low-income housing, which is the most costly to finance and develop, while only 22 percent of the State's jurisdictions are in compliance.

The Housing Element Annual Progress Report includes a summary of Santa Ana's progress in meeting its share of the RHNA allocation for the 2019 calendar year. There were a total of 702 building permits issued for new housing units in 2019; of which 23 percent or 163 housing units are affordable to low-income and very low-income families, respectively. With the issuance of these permits, the City substantially exceeds the overall target for Santa Ana's 204 RHNA unit allocation by over 3,226 units for the 2014-2021 reporting period.

The following are three major Housing Element program accomplishments in 2019:

1. Five General Plan Community Workshops were held to discuss potential new growth and development in Focus Areas located along major travel corridors, the future OC Streetcar line, and linkages to the Downtown. New land use designations in the focus areas could expand opportunities for a range of new housing choices.

2. With $8.5 million in funding from the City, AMCAL Multi-Housing, Inc. completed the construction of First Street Apartments — a 69-unit new affordable apartment community with two- and three-bedroom units for large families, including 34 units for extremely low-income families at 30 percent AMI.

3. New Project Ground Breakings:
    a. With $6 million in funding from the City, Community Development Partners broke ground on Tiny Tim Plaza – a 51-unit new affordable apartment community;

    b. With 56 project-based vouchers from the Santa Ana Housing Authority, Community Development Partners broke ground on Aqua Housing – a 56-unit new affordable apartment community serving chronically homeless individuals from the City of Santa Ana.

4. Following the issuance in 2018 of an RFP for Affordable Housing Development, the City awarded $9.1 million in affordable housing funds, one hundred (100) HUD-VASH project-based vouchers, and a 99-year ground lease for three Housing Authority owned properties. The awards will lead to the development of five affordable housing projects with more than 200 units of new affordable housing including over 100 two- and three-bedroom units for families.

Presently, the RHNA process does not allow for housing unit credits to be counted for new emergency homeless shelters. City staff will continue working with both the Southern California Association of Governments (SCAG) staff and State Housing and Community Development (HCD) for consideration of emergency homeless shelters to be counted toward the RHNA allocation as these facilities help to address the regions need for additional housing. In addition, the City staff will continue the dialogue with State and regional partners to identify options to reward communities like Santa Ana that exceeds our RHNA goals for Housing Element planning period.

Progress Towards 2014-2021 RHNA Goal (New Housing Units by Category and Year)										
Income	RHNA Allocation	2014	2015	2016	2017	2018	2019	Total Units	Total Units Exceeding RHNA Allocation	% Exceeding RHNA Allocation
Very Low	45	0	49	49	43	172	80	393	348	773.3%
Low	32	2	31	22	38	388	83	564	532	1,662.5%
Moderate	37	12	4	20	10	17	1	64	27	73 %
Above Moderate	90	80	442	130	424	795	538	2,409	2,319	2,576.7 %
Total:	204	94	526	221	515	1,372	702	3,430	3,226	1,581.4 %

Based on building permits issued

The Housing Element Annual Progress Reports are due to the State Department of Housing and Community Development (HCD) and the State Office of Planning and Research in April of each year. These reports are required in order for the City to continue to be in compliance with State Housing Law and be eligible for certain state funding programs such as the Housing Related Parks Program (HRP). In addition, the Governor's Office has proposed penalties for cities who do not meet their RHNA goals. Pursuant to Government Code Section 65400, the report is to be considered at a public meeting before the legislative body where members of the public may provide testimony and written comments.

STRATEGIC PLAN ALIGNMENT

Approval of this item supports the City's efforts to meet Goal #5 - Community Health, Livability, Engagement & Sustainability, Objective #3 (facilitate diverse housing opportunities and support efforts to preserve and improve the livability of Santa Ana neighborhoods), Strategy B (ensure compliance with the City's Housing Opportunity Ordinance by requiring rental and ownership housing projects that meet specified criteria to provide a minimum of 15 percent affordable units).

FISCAL IMPACT

There is no fiscal impact associated with this item.

_____

Minh Thai
Executive Director
Planning and Building Agency

RS:fg S:\Planning\Comprehensive.Planning\Housing\AnnualProgressReport\2019\StaffReport\RFCAmarch2020-RS.docx

Exhibit: 1. General Plan Housing Element Annual Progress Report

Exhibit F



SCAG™
INNOVATING FOR A BETTER TOMORROW

PRE-CERTIFIED

LOCAL HOUSING DATA

FOR THE CITY OF SANTA ANA

AUGUST 2020

TABLE OF CONTENTS

I. POPULATION, EMPLOYMENT, AND HOUSEHOLDS

II. SPECIALIZED HOUSEHOLD NEEDS: LARGE FAMILIES, SENIORS, AND FEMALE-HEADED HOUSEHOLDS

III. PEOPLE EXPERIENCING HOMELESSNESS

IV. PEOPLE WITH DISABILITIES, INCLUDING DEVELOPMENTAL DISABILITIES

V. HOUSING STOCK CHARACTERISTICS

VI. OVERPAYMENT AND OVERCROWDING

VII. ASSISTED UNITS AT RISK OF CONVERSION

VIII. REGIONAL HOUSING NEEDS ALLOCATION

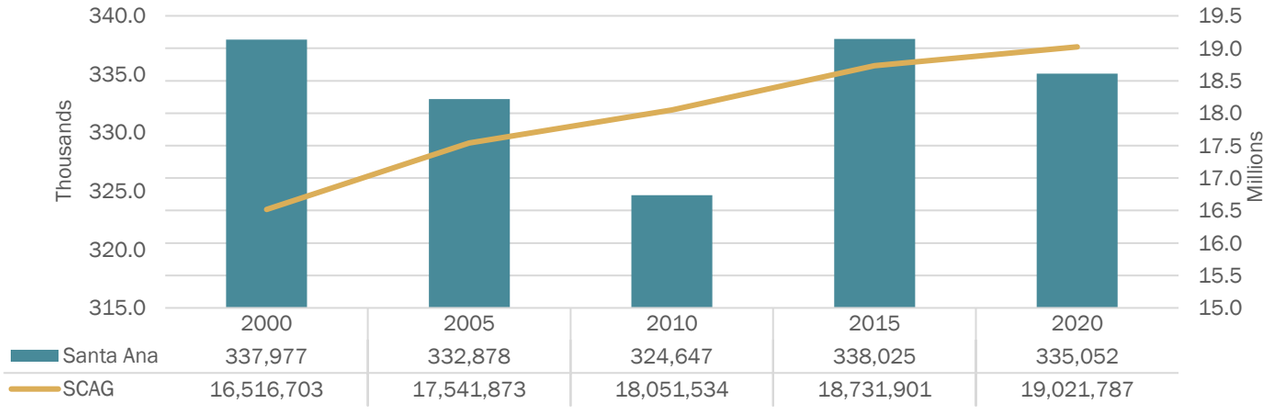
Pre-Certified Local Housing Data for Santa Ana

Developed by SCAG and pre-certified by the California Department of Housing and Community Development (HCD) for use in 6th cycle housing elements.

This report contains a wide range of jurisdiction-level data elements intended to provide an understanding housing need experienced in Santa Ana as a part of its 6th cycle housing element update. Data sources are noted below each table or figure.

I. POPULATION, EMPLOYMENT, AND HOUSEHOLDS

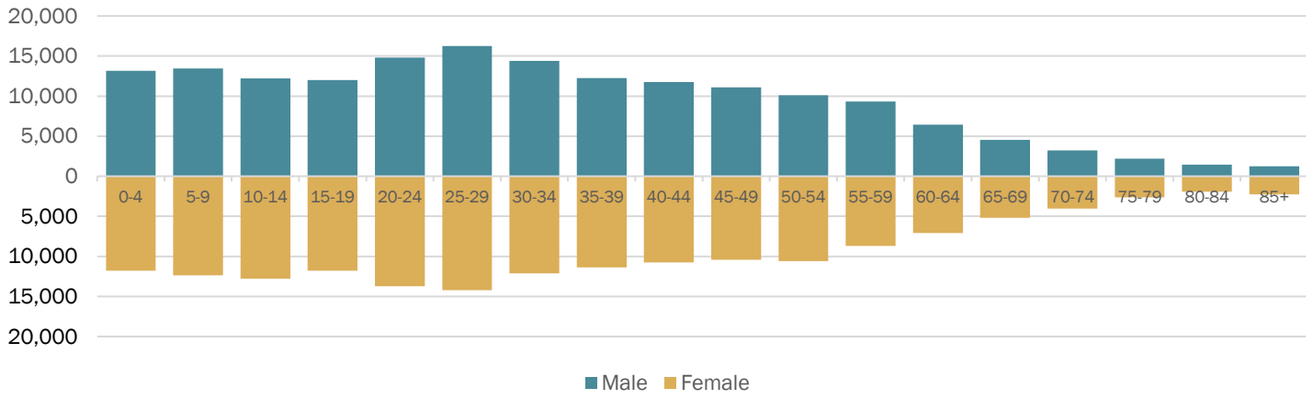
Population Trend, 2000-2020



CA DOF E-5 Population and Housing Unit Estimates

Santa Ana has a 2020 total population of 335,052 including 5,263 living in group quarters according to the California Department of Finance. The chart above describes the population trend in Santa Ana from 2000 to 2020. Over this period Santa Ana had an annual growth rate of 0% compared to 0.7% for the region.

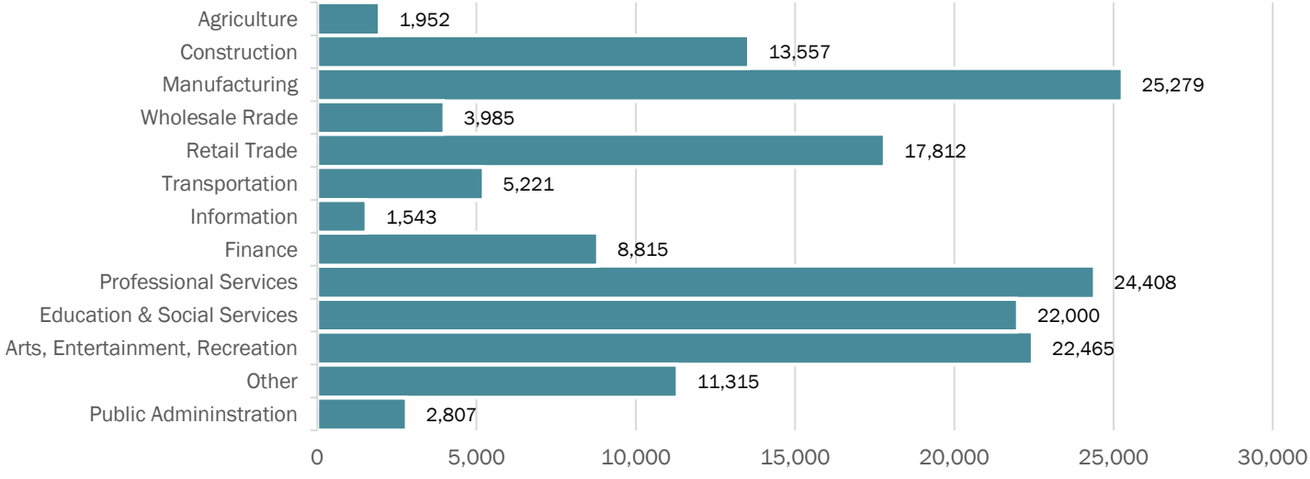
Current Population by Age and Sex



American Community Survey 2014-2018 5-year estimates

The population of Santa Ana is 50.9% male and 49.1% female. The share of the population of Santa Ana which is under 18 years of age is 27.1%, which is higher than the regional share of 23.4%. Santa Ana's seniors (65 and above) make up 8.6% of the population, which is lower than the regional share of 13%.

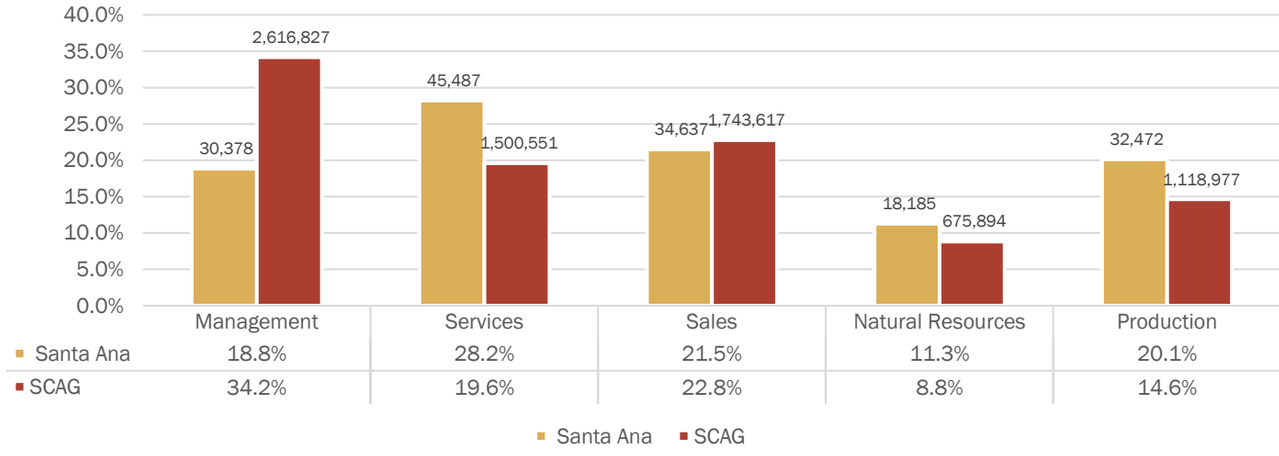
Employment by Industry



American Community Survey 2014-2018 5-year estimates using groupings of 2-digit NAICS codes.

Santa Ana has 161,159 workers living within its borders who work across 13 major industrial sectors. The chart above provides detailed employment information. The most prevalent industry is Manufacturing with 25,279 employees (15.7% of total) and the second most prevalent industry is Professional Svcs. with 24,408 employees (15.1% of total).

Employment by Occupation



American Community Survey 2014-2018 5-year estimates using groupings of SOC codes.

In addition to understanding the industries in which the residents of Santa Ana work, it is also possible to analyze the types of jobs they hold. The most prevalent occupational category in Santa Ana is Services, in which 45,487 (28.2% of total) employees work. The second-most prevalent type of work is in Sales, which employs 34,637 (21.5% of total) in Santa Ana.

Farmworkers

Farmworkers by Occupation:

Santa Ana	Percent of total Santa Ana workers:	SCAG Total	
1454	0.90%	57,741	Total jobs: Farming, fishing, and forestry occupations
729	0.66%	31,521	Full-time, year-round jobs: Farming, fishing, and forestry occupations

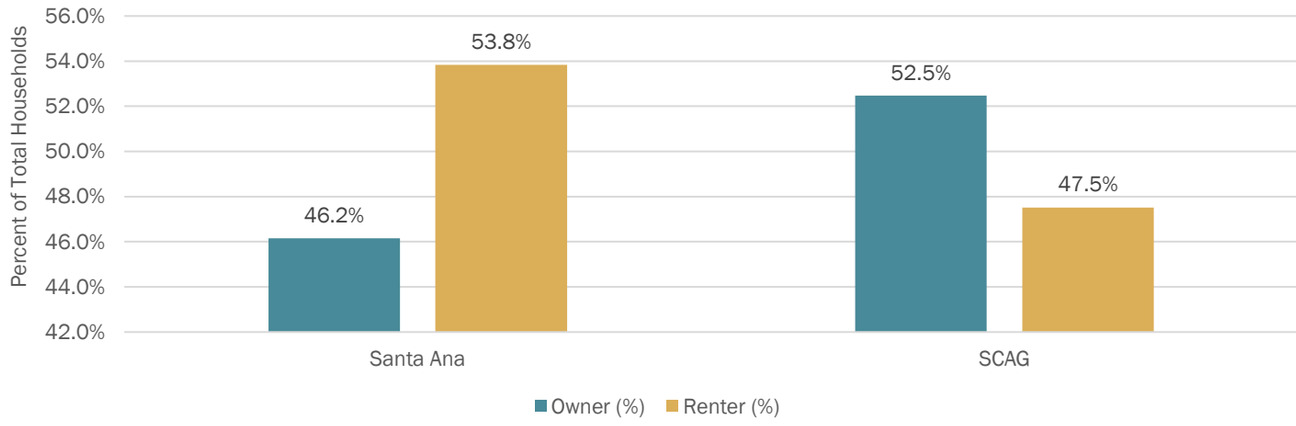
Employment in the Agricultural Industry:

Santa Ana	Percent of total Santa Ana workers:	SCAG Total	
1895	1.18%	73,778	Total in agriculture, forestry, fishing, and hunting
997	0.90%	44,979	Full-time, year-round in agriculture, forestry, fishing, and hunting

American Community Survey 2014-2018 5-year estimates using groupings of NAICS and SOC codes.

Statewide, farmworker housing is of unique concern and of unique importance. While only a small share of SCAG region jurisdictions have farmworkers living in them, they are essential to the region's economy and food supply.

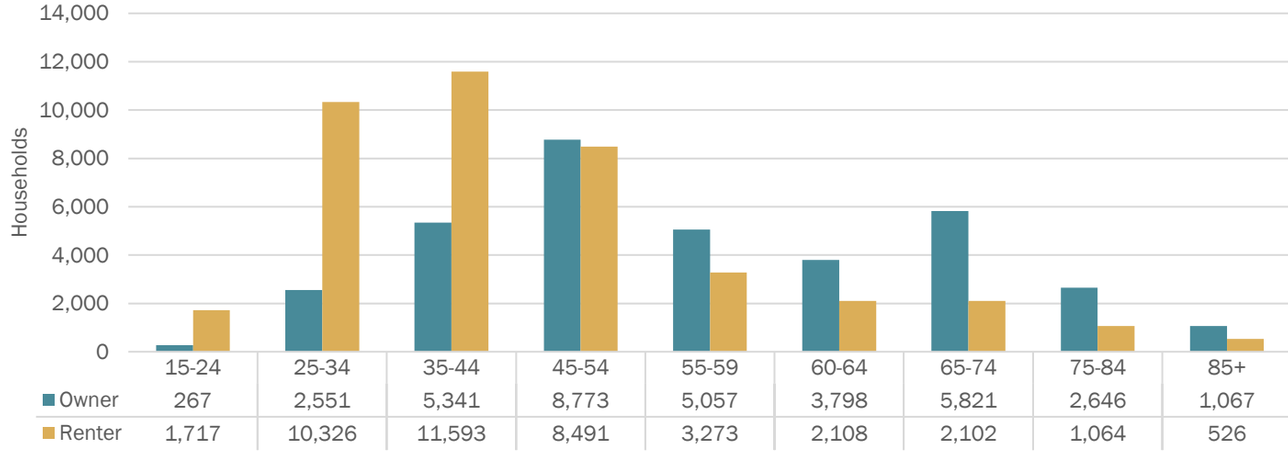
Housing Tenure



American Community Survey 2014-2018 5-year estimates.

Housing security can depend heavily on housing tenure, i.e. whether homes are owned or rented. Santa Ana's housing stock consists of 76,521 total units, 35,321 of which are owner-occupied and 41,200 of which are renter-occupied. The share of renters in Santa Ana is higher than in the SCAG region overall.

Housing Tenure By Age

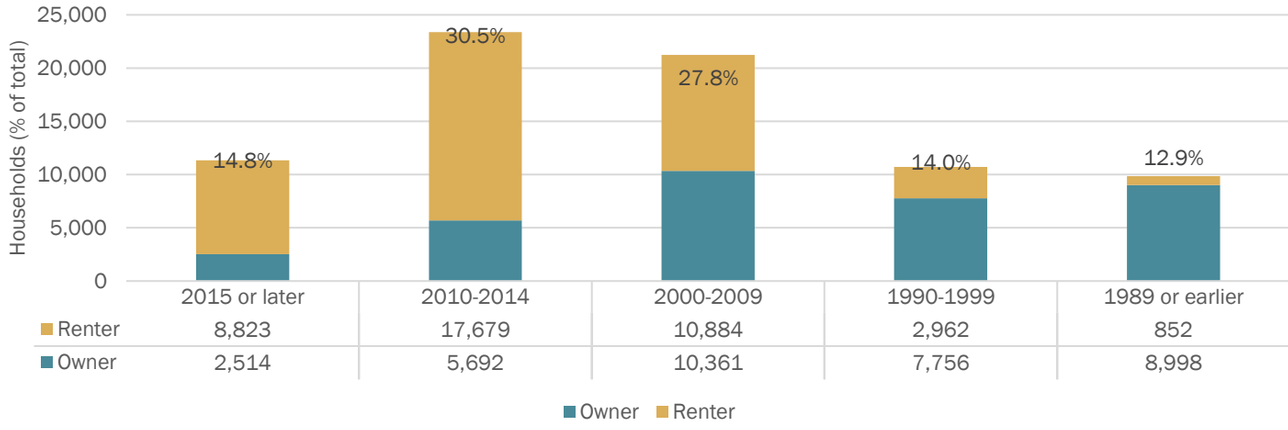


	15-24	25-34	35-44	45-54	55-59	60-64	65-74	75-84	85+
Owner	267	2,551	5,341	8,773	5,057	3,798	5,821	2,646	1,067
Renter	1,717	10,326	11,593	8,491	3,273	2,108	2,102	1,064	526

American Community Survey 2014-2018 5-year estimates.

In many places, housing tenure varies substantially based on the age of the householder. In Santa Ana, the age group where renters outnumber owners the most is 15-24 (by 73.1%). The age group where owners outnumber renters the most is 65-74 (by 46.9%).

Housing Tenure by Year Moved to Current Residence

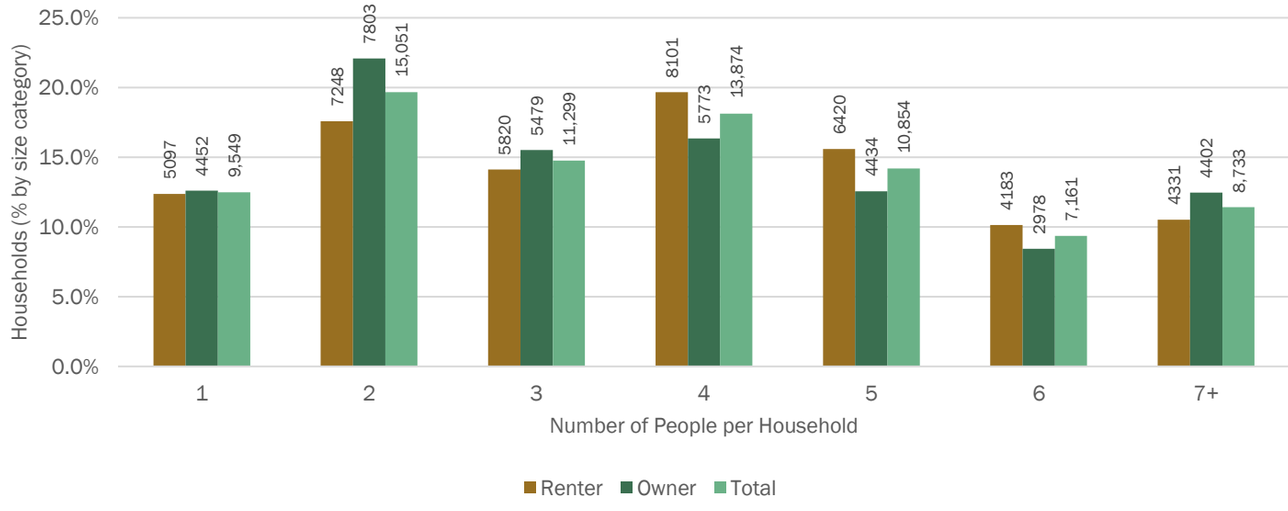


American Community Survey 2014-2018 5-year estimates.

Across the SCAG region, the most common move-in period was 2010-2014 (31.9%) followed by 2000-2009 (26.1%). In Santa Ana, the period during which most people started living in their current residence was 2010-2014 (30.5%) followed by 2000-2009 (27.8%).

II. SPECIALIZED HOUSEHOLD NEEDS: LARGE FAMILIES, SENIORS, AND FEMALE-HEADED

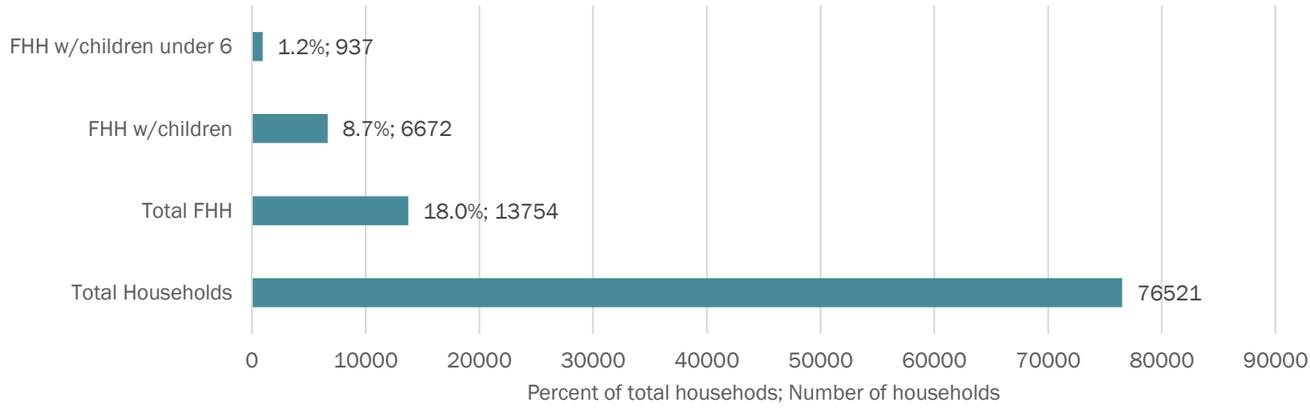
Households by Household Size



American Community Survey 2014-2018 5-year estimates.

This chart illustrates the range of household sizes in Santa Ana for owners, renters, and overall. The most commonly occuring household size is of two people (19.7%) and the second-most commonly occuring household is of four people (18.1%). Santa Ana has a lower share of single-person households than the SCAG region overall (12.5% vs. 23.4%) and a higher share of 7+ person households than the SCAG region overall (11.4% vs. 3.1%).

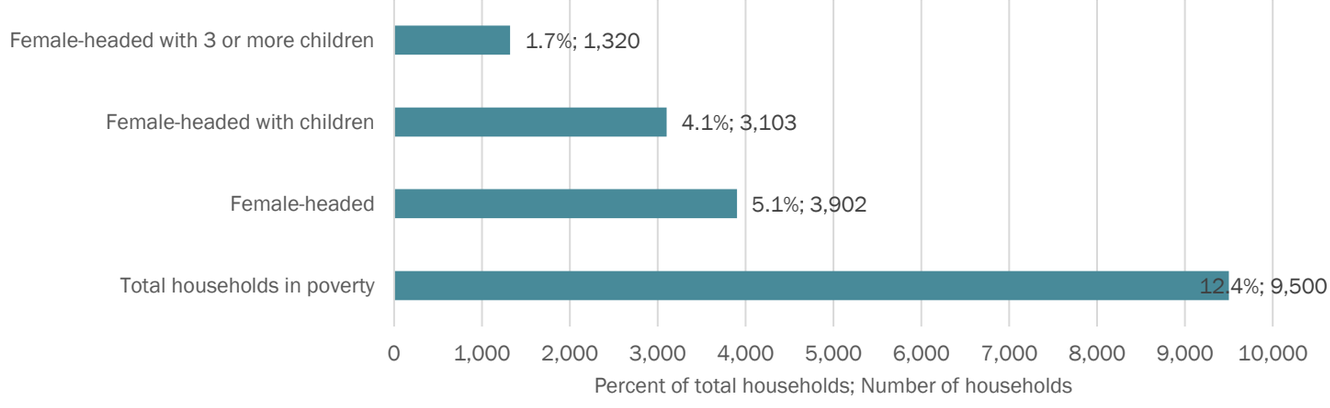
Female Headed Households (FHH)



American Community Survey 2014-2018 5-year estimates.

Statute requires analysis of specialized housing needs, including female-headed households in an effort to ensure adequate childcare or job training services. Of Santa Ana's 76,521 total households, 18% are female-headed (compared to 14.3% in the SCAG region), 8.7% are female-headed and with children (compared to 6.6% in the SCAG region), and 1.2% are female-headed and with children under 6 (compared to 1.0% in the SCAG region).

Households by Poverty Status



American Community Survey 2014-2018 5-year estimates.

12.4 percent of Santa Ana's households are experiencing poverty, compared to 7.9 percent of households in the SCAG region. Poverty thresholds, as defined by the ACS, vary by household type. More information can be found at M256. In 2018, a single individual under 65 was considered in poverty with a money income below $13,064/year while the threshold for a family consisting of 2 adults and 2 children was $25,465/year.

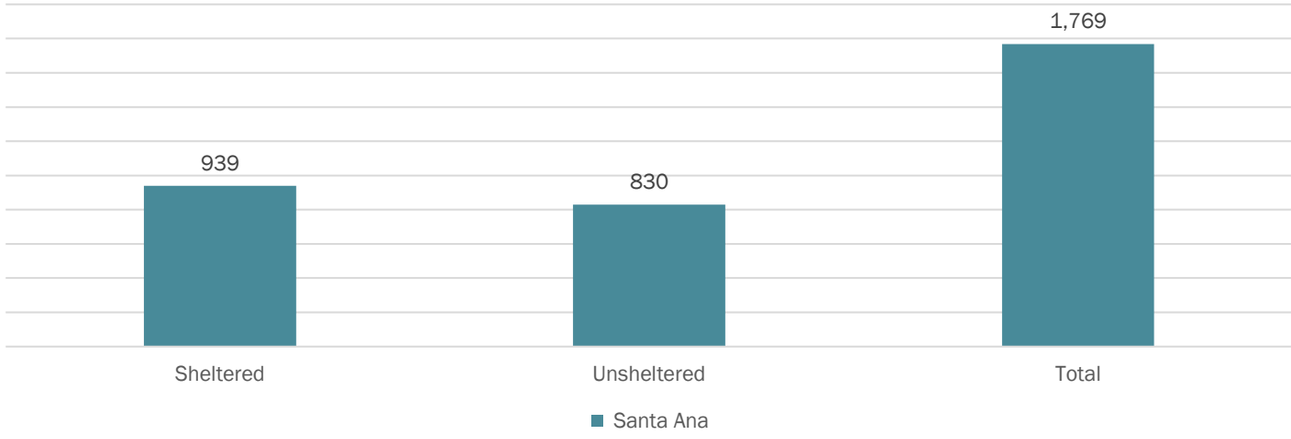
Elderly Households by Income and Tenure

		Owner	Renter	Total	Percent of Total Elderly Households:
Income category, relative to surrounding area:	< 30% HAMFI	1,660	2,080	3,740	33.7%
	30-50% HAMFI	1,725	755	2,480	22.4%
	50-80% HAMFI	1,645	375	2,020	18.2%
	80-100% HAMFI	690	270	960	8.7%
	> 100% HAMFI	1,510	380	1,890	17.0%
	TOTAL	7,230	3,860	11,090	

HUD CHAS, 2012-2016. HAMFI refers to Housing Urban Development Area Median Family Income.

Statute requires analysis of specialized housing needs, including housing needs for seniors. Federal housing data define a household type as 'elderly family' if it consists of two persons with either or both age 62 or over. Of Santa Ana's 11,090 such households, 33.7% earn less than 30% of the surrounding area income, (comared to 24.2% in the SCAG region), 56.1% earn less than 50% of the surrounding area income (compared to 30.9% in the SCAG region).

III. PEOPLE EXPERIENCING HOMELESSNESS

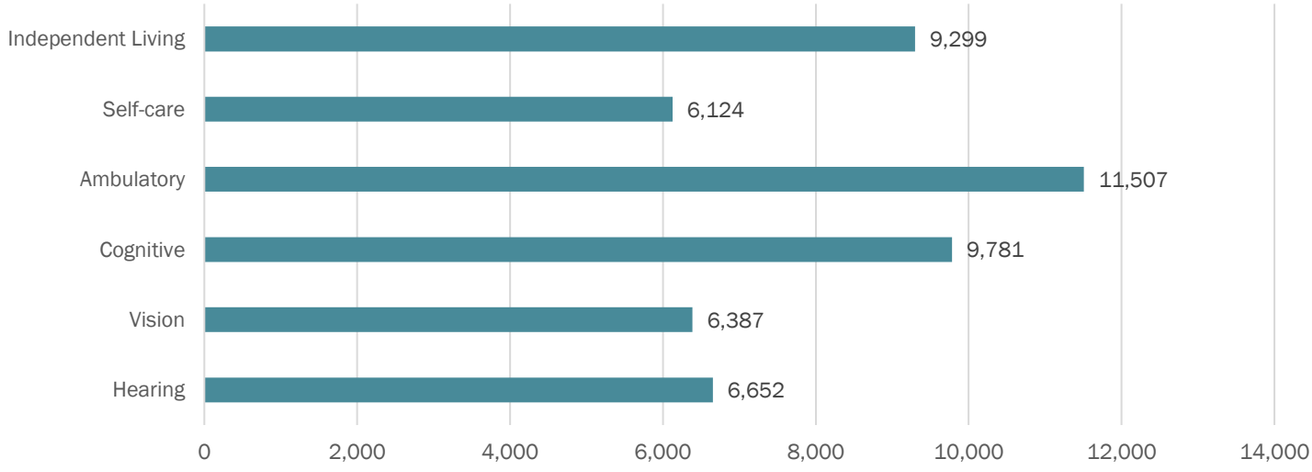


2019 city and county homelessness point-in-time counts processed by SCAG. Jurisdiction-level counts were not avialable in Imperial County and sheltered population (and thus total) counts were not available in Riverside County. As a result, SCAG region totals from this compilation of data sources likely undercount true totals.

#N/A

IV. PEOPLE WITH DISABILITIES, INCLUDING DEVELOPMENTAL DISABILITIES

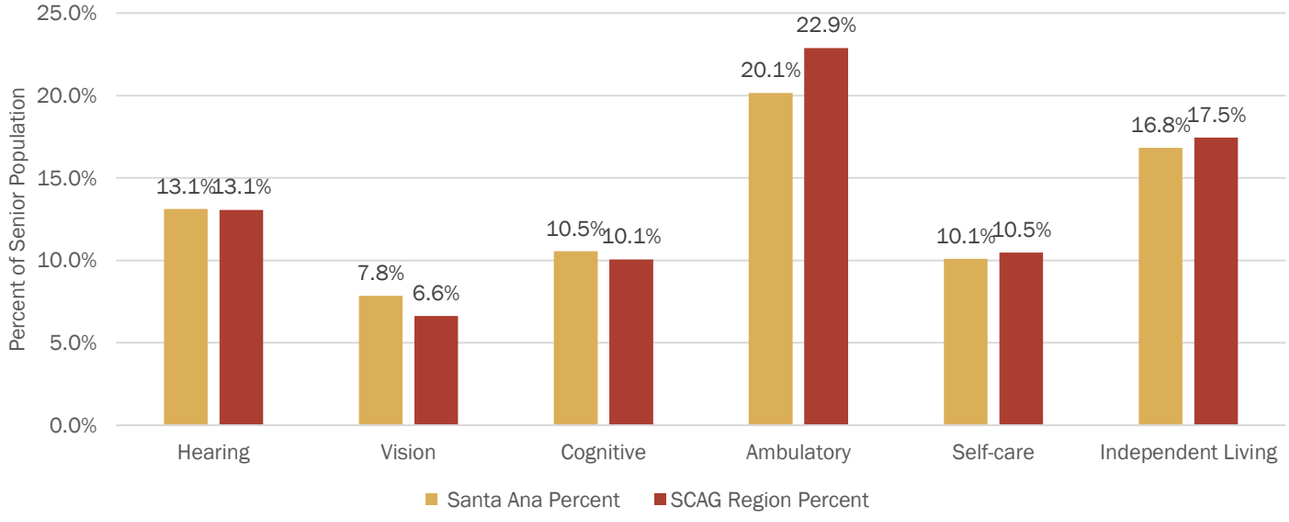
Disability by Type



American Community Survey 2014-2018 5-year estimates.

Disability data also provides valuable context for assessing current and future need for accessible housing units. Note that since some disability types are not recorded for children below a certain age, calculating disability as a percentage of total population may not be accurate.

Disability by Type - Seniors (65 and over)



American Community Survey 2014-2018 5-year estimates.

In Santa Ana, the most commonly occuring disability amongst seniors 65 and older was an ambulatory disability, experienced by 20.1% of Santa Ana's seniors (and 22.9% of seniors in the SCAG region).

Disability by Employment Status

	With a Disability	Percent of Total	No Disability	Percent of Total
Employed	4,859	39%	151,047	76%
Unemployed	704	6%	8,485	4%
Not in Labor Force	7,004	56%	39,979	20%
TOTAL	12,567		199,511	

American Community Survey 2014-2018 5-year estimates.

Understanding the employment status of people with disabilities may also be an important component in evaluating specialized housing needs. In Santa Ana, 38.7% of the population with a disability is employed, compared to 75.7% of the non-disabled population.

Developmental Disabilities

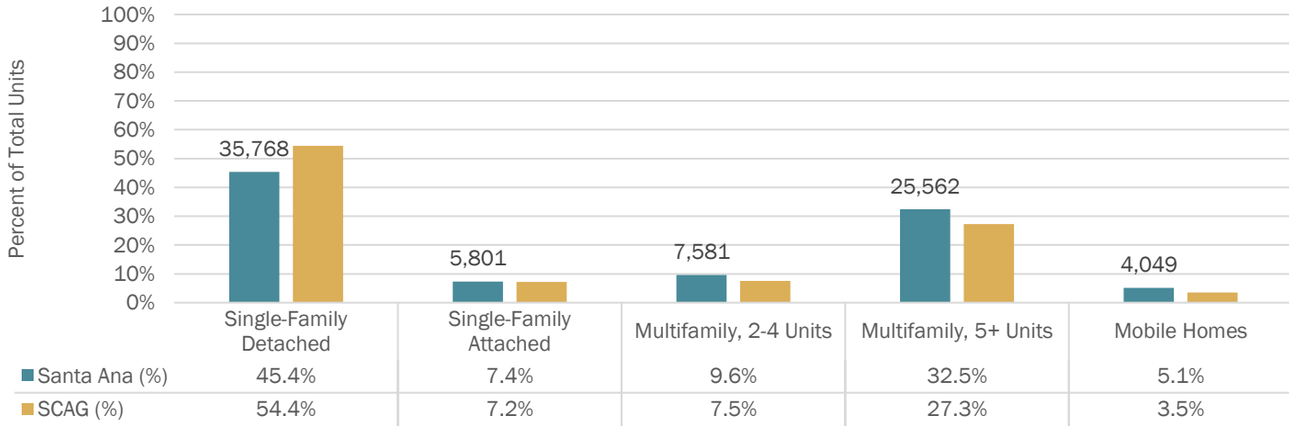
		Santa Ana
By Residence:	Home of Parent/Family/Guardian	2249
	Independent/Supported Living	83
	Community Care Facility	118
	Intermediate Care Facility	5
	Foster/Family Home	25
	Other	25
By Age:	0 - 17 Years	2505
	18+ Years	1341
TOTAL		6351

CA DDS consumer count by CA ZIP, age group and residence type for the end of June 2019. Data available in 161/197 SCAG jurisdictions.

The California Department of Developmental Services also provides data on developmental disabilities by age and type of residence. These data are collected at the ZIP-code level and were joined to the jurisdiction-level by SCAG. Totals may not match as counts below 11 individuals are unavailable and some entries were not matched to a ZIP code necessitating approximation.

V. HOUSING STOCK CHARACTERISTICS

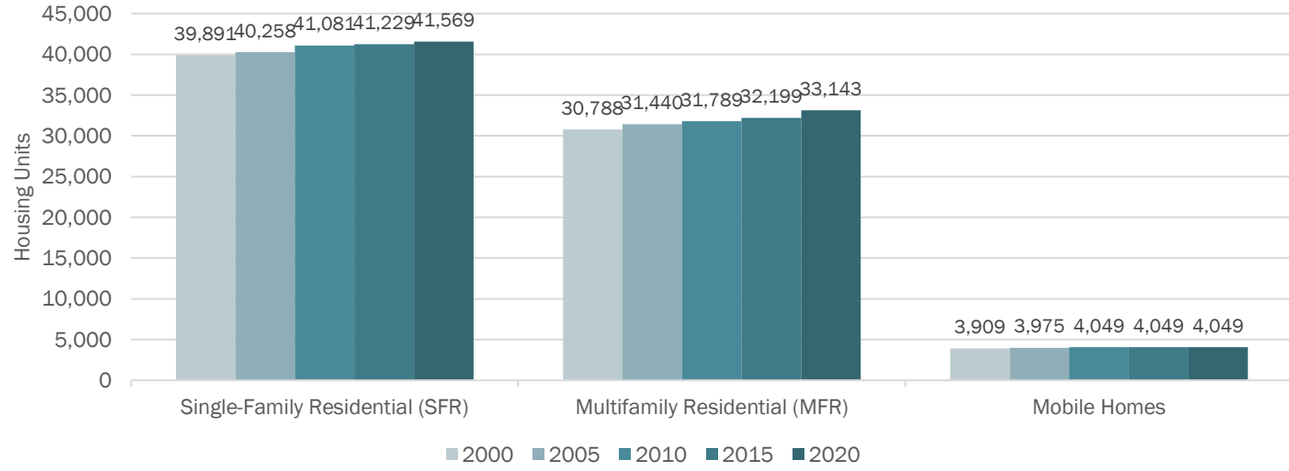
Housing Type



CA DOF E-5 Population and Housing Unit Estimates

The chart above provides detailed information on the housing stock in Santa Ana, which has a total of 78,761 housing units. The most prevalent housing type in Santa Ana is single-family detached with 35,768 units. The share of all single-family units in Santa Ana is 52.8%, which is lower than the 61.7% share in the SCAG region. Out of the total housing units in Santa Ana, there are 76,224 occupied-units, which equates to a 3.2% total vacancy rate. The average household size (as expressed by the population to housing unit ratio) is 4.327.

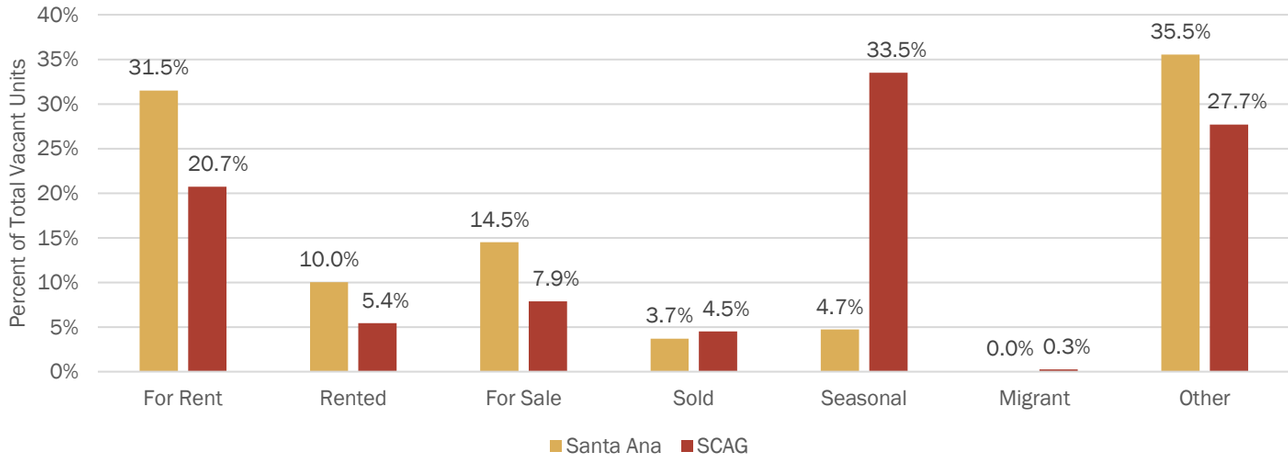
Housing Type Trend



CA DOF E-5 Population and Housing Unit Estimates

Over the past two decades (2000-2020), there has been more development in multi-family residential units than single-family residential units in Santa Ana. When comparing 2000 to 2020, SFR units increased by 1,678, MFR units increased by 2,355, and mobile units increased by 140.

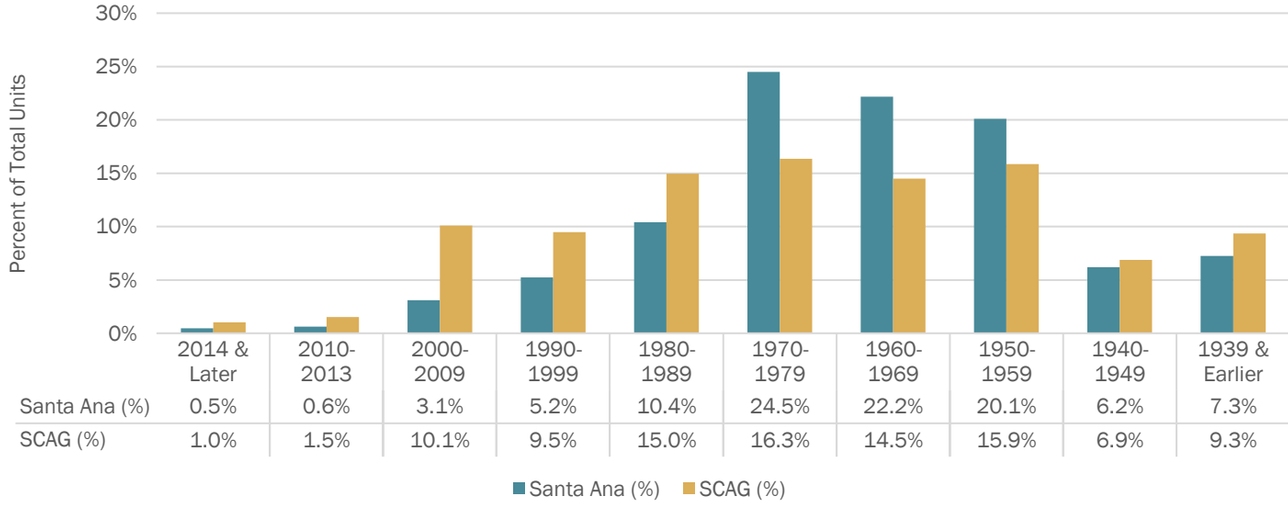
Vacant Units by Type



American Community Survey 2014-2018 5-year estimates.

The ACS provides additional detail on vacant housing units by category.

Housing Units by Year Structure Built

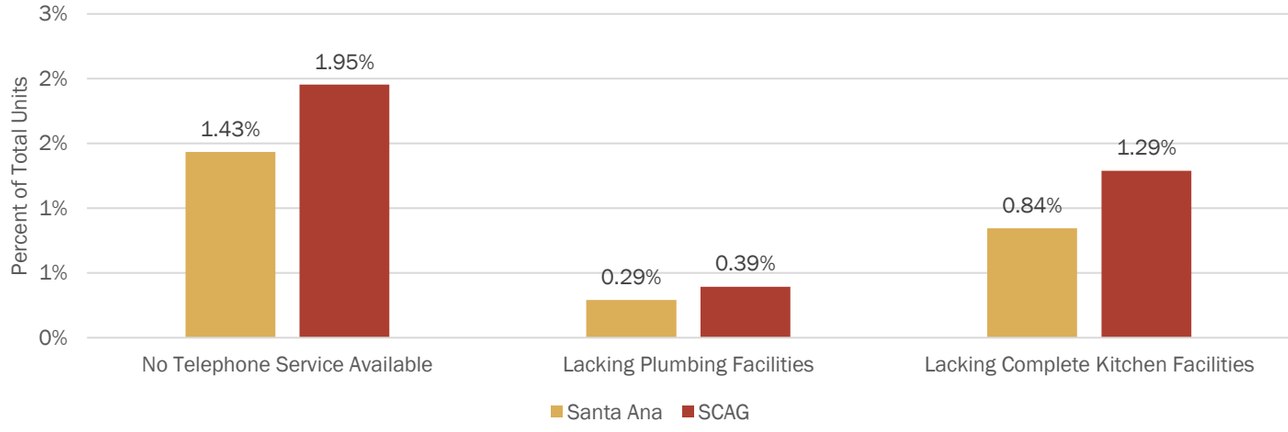


	2014 & Later	2010-2013	2000-2009	1990-1999	1980-1989	1970-1979	1960-1969	1950-1959	1940-1949	1939 & Earlier
Santa Ana (%)	0.5%	0.6%	3.1%	5.2%	10.4%	24.5%	22.2%	20.1%	6.2%	7.3%
SCAG (%)	1.0%	1.5%	10.1%	9.5%	15.0%	16.3%	14.5%	15.9%	6.9%	9.3%

American Community Survey 2014-2018 5-year estimates.

Examining the age of the current housing stock is one way to understand how historical development patterns have contributed to a city's form. The time period where the highest share of Santa Ana's housing units were built is 1970-1979, while in the SCAG region more units were built during 1970-1979 than any other period.

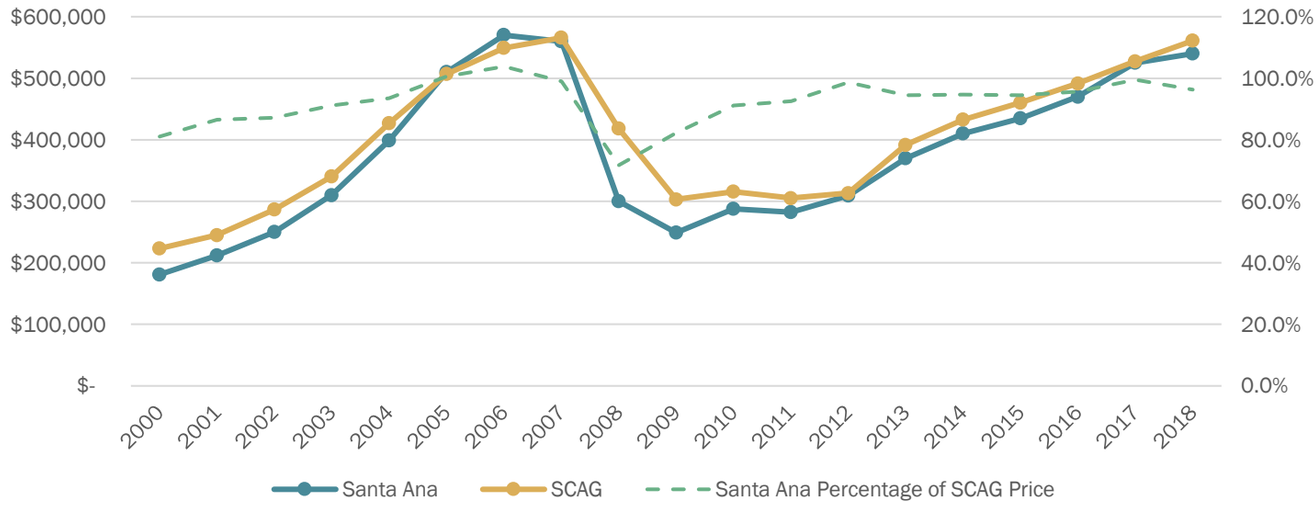
Substandard Housing



American Community Survey 2014-2018 5-year estimates.

The ACS includes surveys about three factors of what may be considered substandard housing. In Santa Ana, 1,098 units lack telephone service, 223 units lack plumbing facilities, and 646 units lack complete kitchen facilities.

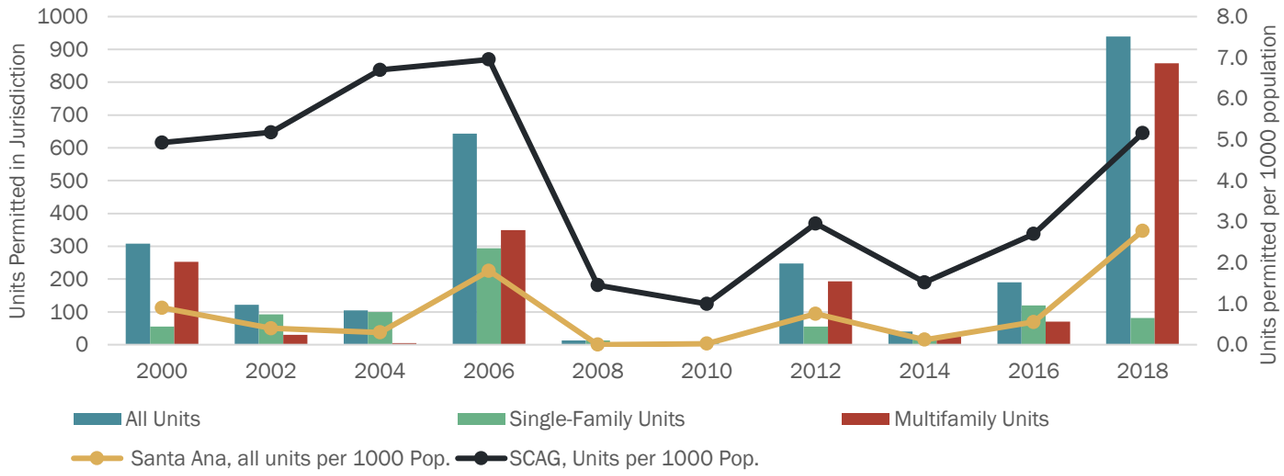
Median Home Sales Price for Existing Homes



SCAG Local Profiles, Core Logic/Data Quick. SCAG median home sales price calculated as household-weighted average of county medians.

Between 2000 and 2018, median home sales prices in Santa Ana increased 198% while prices in the SCAG region increased 151%. 2018 median home sales prices in Santa Ana were $540,000 and the highest experienced since 2000 was $570,000 in 2006. Prices in Santa Ana have ranged from a low of 71.7% of the SCAG region median in 2008 and a high of 103.8% in 2006.

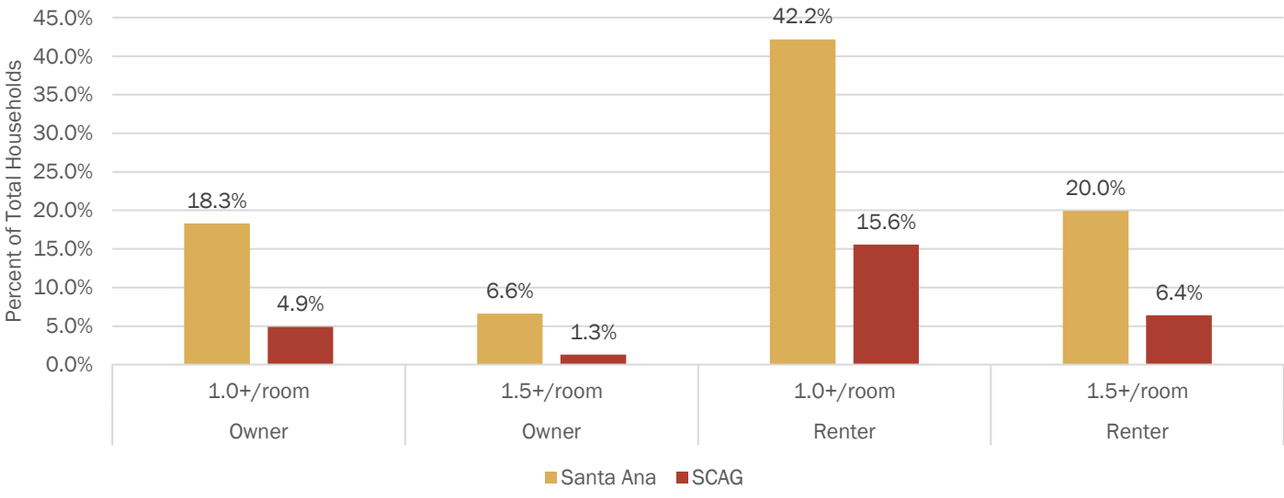
Housing Units Permitted



Core Logic/Data Quick. Additional detail available in SCAG 2019 Local Profiles. SCAG median home sales price calculated as household-weighted average of county medians.

VI. OVERPAYMENT AND OVERCROWDING

Crowding by Extent and Tenure



American Community Survey 2014-2018 5-year estimates.

In Santa Ana, 6,470 owner-occupied and 17,375 renter-occupied households had more than 1.0 occupants per room, which meets the ACS definition for overcrowding. 2,341 owner-occupied households and 8,220 renter-occupied households had more than 1.5 occupants per room, which meets the ACS definition for severe overcrowding.

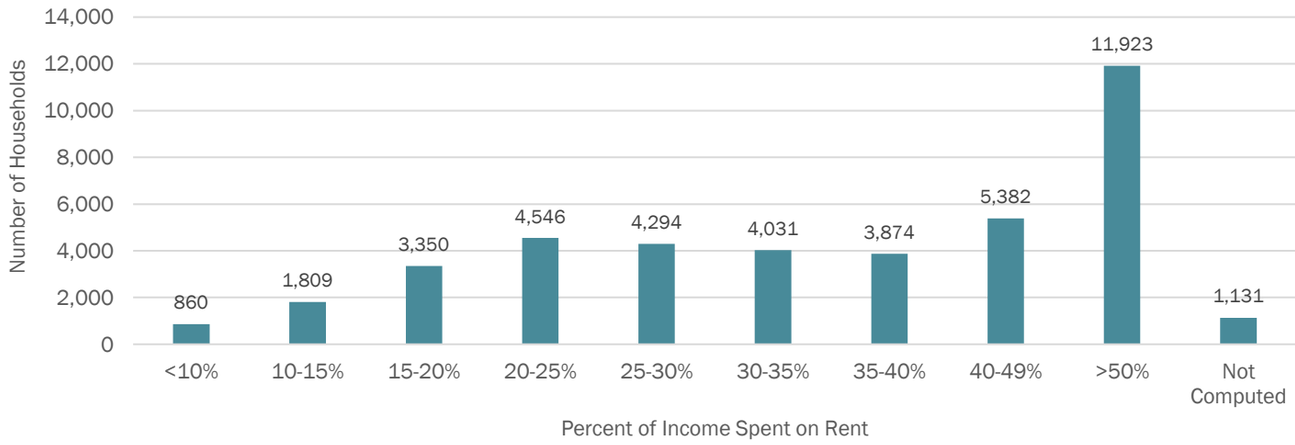
Cost Burden by Income

	Households by Share of Income Spent on Housing Cost:		
Income	< 30%	30-50%	> 50%
< 30% HAMFI	2,230	3,280	12,095
30-50% HAMFI	4,910	7,665	4,095
50-80% HAMFI	10,625	6,380	994
80-100% HAMFI	6,130	1,105	115
> 100% HAMFI	13,865	940	59
Total Households	*37,760*	*19,370*	*17,358*

HUD CHAS, 2012-2016. HAMFI refers to Housing Urban Development Area Median Family Income.

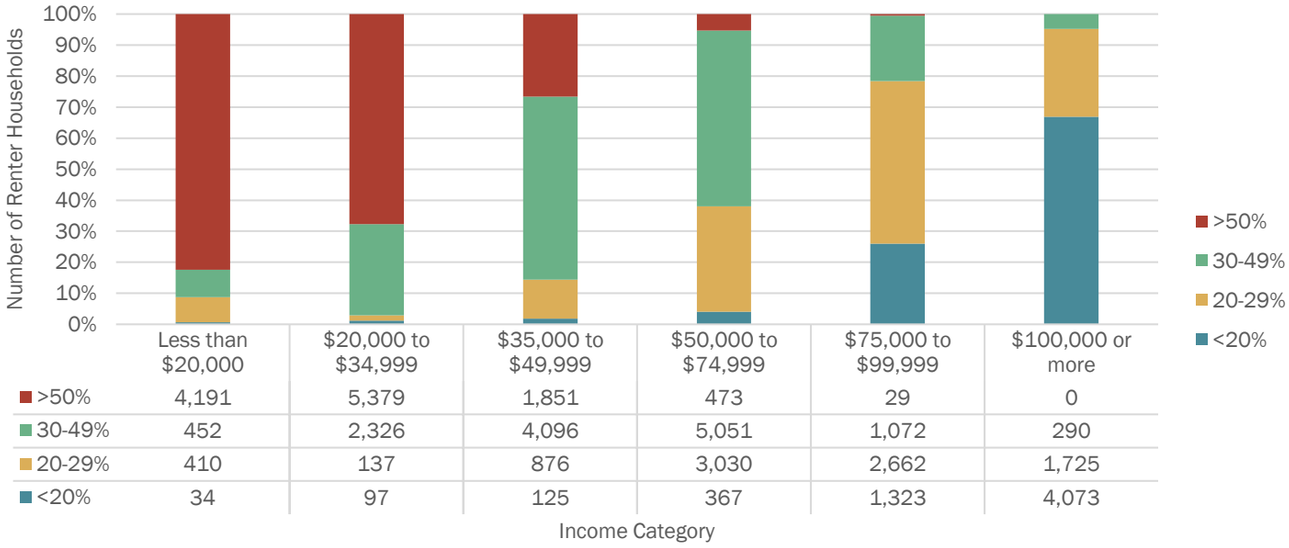
Housing cost burden is most commonly measured as the percentage of gross income spent on housing, with 30% a usual threshold for 'cost burden' and 50% the threshold for 'severe cost burden.' However, a lower-income household spending the same percent of income on housing as a higher-income household will likely experience more true 'cost burden.' These data indicate the number of households in Santa Ana by their income relative to the surrounding area and their share of income spent on housing.

Spending on Rent



Across Santa Ana's 41,200 renter households, 25,210 (61.2%) spend thirty percent or more of gross income on housing cost, compared to 55.3% in the SCAG region. Additionally, 11,923 renter households in Santa Ana (28.9%) spend fifty percent or more of gross income on housing cost, compared to 28.9% in the SCAG region.

Spending on Rent by Income

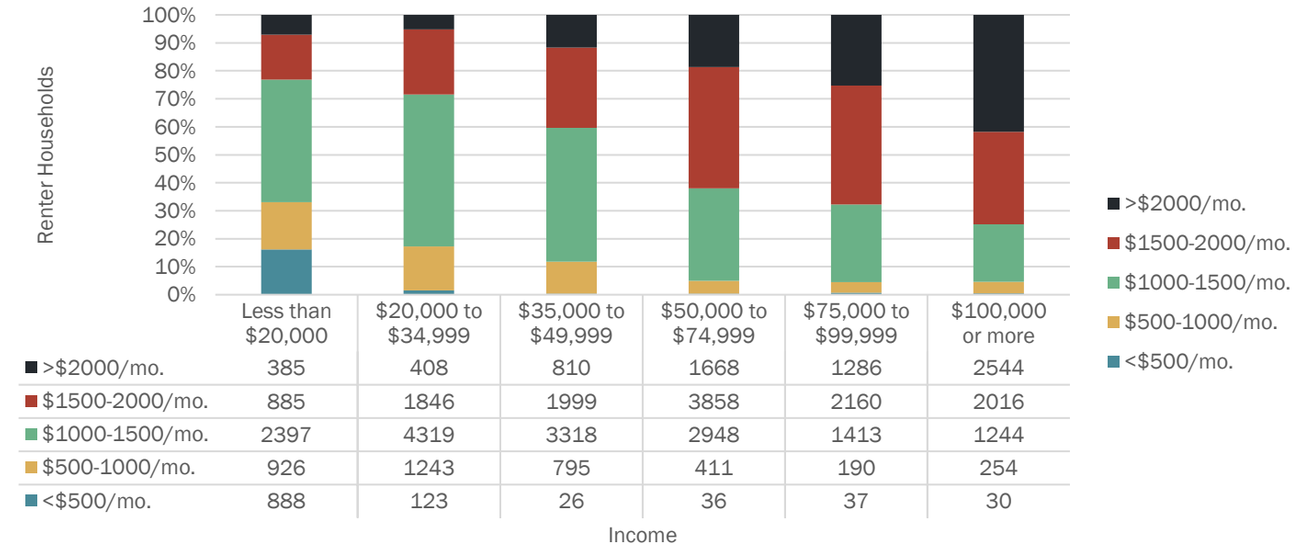


	Less than $20,000	$20,000 to $34,999	$35,000 to $49,999	$50,000 to $74,999	$75,000 to $99,999	$100,000 or more
>50%	4,191	5,379	1,851	473	29	0
30-49%	452	2,326	4,096	5,051	1,072	290
20-29%	410	137	876	3,030	2,662	1,725
<20%	34	97	125	367	1,323	4,073

American Community Survey 2014-2018 5-year estimates.

While the previous table breaks down cost burden by area-relative income, the ACS also allows for the analysis of Santa Ana's 40,069 renter households (for which income data are available) by spending on rent by income bracket (dollar amounts). As one might expect, the general trend is that low-income households spend a higher share of income on housing (e.g. over 50%) while high-income households are more likely to spend under 20% of income on housing.

Household Income by (Cash) Rent

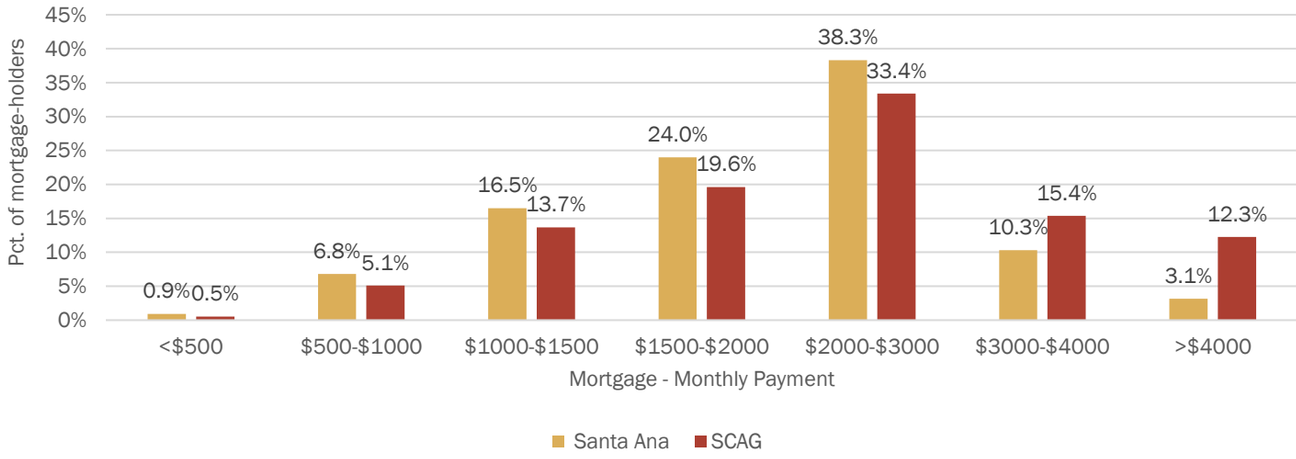


	Less than $20,000	$20,000 to $34,999	$35,000 to $49,999	$50,000 to $74,999	$75,000 to $99,999	$100,000 or more
>$2000/mo.	385	408	810	1668	1286	2544
$1500-2000/mo.	885	1846	1999	3858	2160	2016
$1000-1500/mo.	2397	4319	3318	2948	1413	1244
$500-1000/mo.	926	1243	795	411	190	254
<$500/mo.	888	123	26	36	37	30

American Community Survey 2014-2018 5-year estimates.

Santa Ana renter households' cash rent paid can be broken down by household incomes. As one might expect, the general trend is that lower-income households spend less on rent while higher-income households spend more on rent, though this may not be universally true. Rent categories range from <$500/month (2.8% of Santa Ana renters) to >$2000/month (17.5% of Santa Ana renters). The most common rent category in Santa Ana is $1000-1500/month with 38.7% of renters.

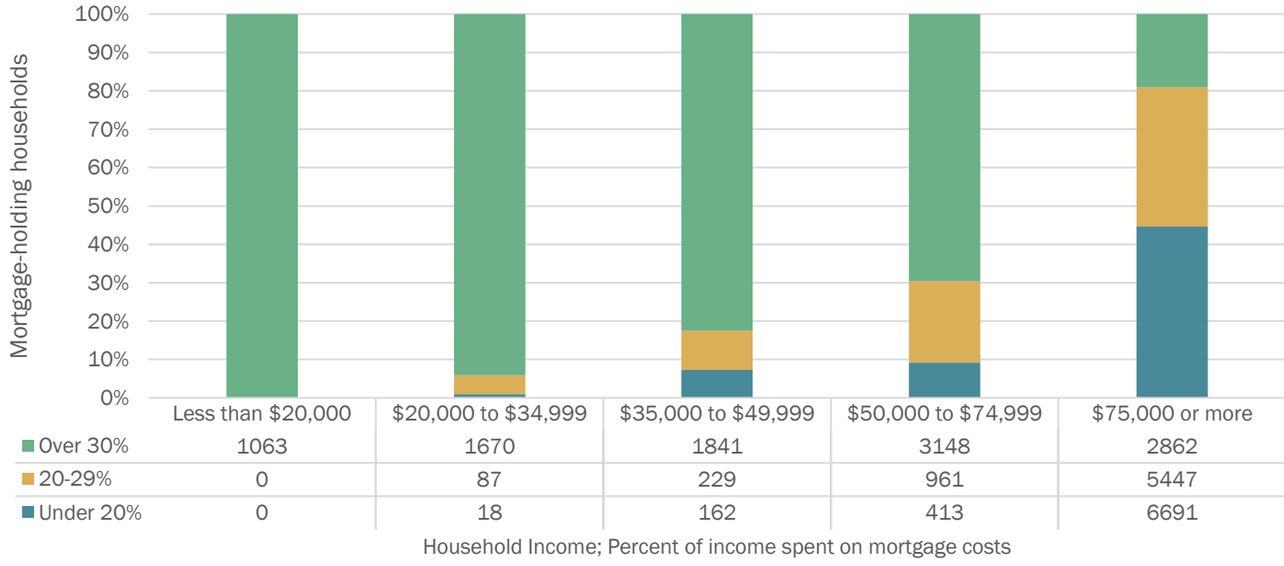
Monthly Owner Costs for Mortgage Holders



American Community Survey 2014-2018 5-year estimates.

While renter households receive much of the focus when it comes to housing cost analysis, owner households make up 46.2% of Santa Ana and 52.5% of the SCAG region. The most commonly occurring mortgage payment in Santa Ana is $2000-$3000/month and the most commonly occuring mortgage payment in the SCAG region is $2000-$3000/mo.

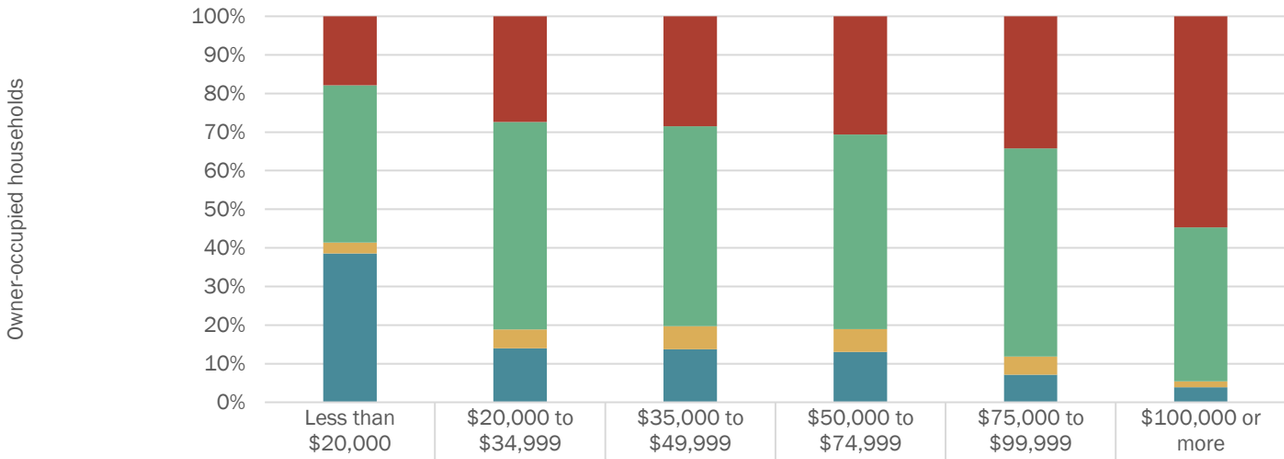
Costs for Mortgage Holders by Income



	Less than $20,000	$20,000 to $34,999	$35,000 to $49,999	$50,000 to $74,999	$75,000 or more
Over 30%	1063	1670	1841	3148	2862
20-29%	0	87	229	961	5447
Under 20%	0	18	162	413	6691

Mortgage-holding households in Santa Ana can be broken down by income and the percentage of income spent on mortgage costs. As one might expect, the general trend is that lower-income households spend a higher share of income on housing costs, while high-income households may spend a lower share of income on housing.The income category most prevalent amongst Santa Ana mortgage-holding households is $75,000 or more (15,000 households) and the most prevalent share of income spent on mortgage costs is over 30% (10,584 households).

Household Income by Home Value (for owned units)



	Less than $20,000	$20,000 to $34,999	$35,000 to $49,999	$50,000 to $74,999	$75,000 to $99,999	$100,000 or more
Above $500,000	618	857	1051	1981	1799	7818
$200,000 to $500,000	1410	1683	1913	3262	2835	5701
$100,000 to $200,000	100	154	223	386	250	220
Below $100,000	1334	437	506	843	375	551

Household Income; Home Value

Another approach to evaluating the relationship between housing and income is to compare incomes and home values in Santa Ana. The most commonly-occuring income category amongst owner households in Santa Ana is $100,000 or more (14,290 households) and the most commonly-occuring home value category is $200,000 to $500,000 (16,804 households).

Extremely Low Income Housing Needs

	Total Households	Households below 30% HAMFI	Share below 30% HAMFI
White, non-Hispanic	12,430	1,570	12.6%
Black, non-Hispanic	899	159	17.7%
Asian and other, non-Hispanic	10,821	2,895	26.8%
Hispanic	50,935	13,565	26.6%
TOTAL	**75,085**	**18,189**	**24.2%**
Renter-occupied	41,890	14,255	34.0%
Owner-occupied	33,205	3,930	11.8%
TOTAL	**75,095**	**18,185**	**24.2%**

HUD CHAS, 2012-2016. HAMFI refers to Housing Urban Development Area Median Family Income.

Housing the extremely-low income population (below 30% of area median income) can be especially challenging. HUD's CHAS dataset provides a wealth of information on such households in Santa Ana. The above table provides a breakdown of extremely low income households by race and ethnicity. The race/ethnicity with the highest share of extremely-low income households in Santa Ana is Asian and other, non-Hispanic (26.8% compared to 24.2% of total population). In the SCAG region, the highest share of extremely-low income households is Black, non-Hispanic (27.1% compared to 17.7% of total households).

VII. ASSISTED UNITS AT RISK OF CONVERSION

Assisted Units at Risk of Conversion

Risk Level	Definition:	Low-income units in jurisdiction	Percent of county's low-income units
Very High	At-risk of converting to market rate within the next year	3,204	86%
High	At-risk of converting to market rate in the next 1-5 years	0	0%
Moderate	At-risk of converting to market rate in the next 5-10 years	500	13%
Low	At-risk of converting to market rate in the next 10 or more years and/or are owned by a large/stable non-profit, mission-driven developer.	12	0%
TOTAL		**3,716**	**100%**

California Housing Partnership, July 2020. Includes HUD, Low-Income Housing Tax Credit (LIHTC), USDA, and CalHFA projects. Subsidized or assisted developments that do not have one of the aforementioned financing sources may not be included.

The California Housing Partnership (CHP) provides data on assisted housing units and assesses the level of risk to converting to market rate. These data identify homes without a known overlapping subsidy that would extend affordability beyond the indicated timeframe and unless otherwise noted are not owned by a large/stable non-profit, mission-driven developer. Detailed 2019 data can be found in SCAG's RHNA data appendix at http://scag.ca.gov/programs/Documents/RHNA/SCAG-Final-RHNA-Data-Appendix-030520.pdf. Complete, updated data can be requested from CHP through Danielle Mazzella, Preservation & Data Manager (dmazzella@chpc.net)

VIII. REGIONAL HOUSING NEEDS ALLOCATION

6th Cycle Regional Housing Needs Allocation for Santa Ana:

	Units
Very-Low Income (<50% of AMI)	583
Low Income (50-80% of AMI)	360
Moderate Income (80-120% of AMI)	522
Above Moderate Income (>120% of AMI)	1,621
TOTAL	**3,086**

SCAG, 2020. Estimate based on final adopted RHNA methodology (3/5/20). Final RHNA allocation will be issued following the conclusion of the RHNA appeals process in early 2021. Please note that for the housing element update, local jurisdictions will have to consider extremely low income (ELI) households as well. ELI housing needs may be calculated either by using Census data or simply assuming that 50 percent of the very low income households qualify as extremely low income households.

MAJOR DATA SOURCES USED

	DESCRIPTION	FOR MORE INFORMATION, PLEASE SEE
ACS	American Community Survey 2014-2018 5-year estimates	www.data.census.gov
DOF	CA DOF E-5 Population and Housing Unit Estimates	www.dof.ca.gov/forecasting/demographics/
CHAS	HUD CHAS, 2012-2016	www.huduser.gov/portal/datasets/cp.html
CA DDS	California Department of Developmental Services	www.dds.ca.gov/transparency/
SCAG LOCAL PROFILES	Including Construction Industry Research Board (CIRB) and Core Logic/DataQuick	www.scag.ca.gov/DataAndTools/Pages/LocalProfiles.aspx

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Appendix D Friant Ranch Case White Papers

Appendices

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We Can Model Regional Emissions, But Are the Results Meaningful for CEQA?

Authors: AEP Climate Change Committee (Michael Hendrix, Dave Mitchell, Haseeb Qureshi, Jennifer Reed, Brian Schuster, Nicole Vermilion, and Rich Walters)

On December 24, 2018, the California Supreme Court, *Sierra Club v. County of Fresno (Friant Ranch, L.P.] (2018) 6 Cal.5th 502, Case No. S219783 (Friant Ranch*), held that simply identifying that a project exceeds an emissions threshold is not sufficient to identify a project's significant effect on the environment relative to the health effects of project emissions. The Court found that an EIR should make a reasonable effort to substantively connect a project's criteria pollutant emissions to likely health consequences, or explain why it is not currently feasible to provide such an analysis. In 2019, there were several CEQA documents that included health effects modeling to provide additional analysis for projects with criteria air pollutant emissions that exceed a significance threshold. While it is technically possible to conduct this modeling, we argue that this additional layer of quantitative analysis may not always provide decision-makers and the public with additional meaningful information. It is the air districts that are best suited to provide frameworks for how to identify health effects of regional criteria pollutant emissions under CEQA.

Introduction

Significance thresholds for regional criteria pollutants used by California air districts and lead agencies represent the maximum emissions from a project that are not expected to cause or contribute to an exceedance of the most stringent applicable national or state ambient air quality standard (AAQS). By analyzing the project's emissions against these thresholds, the CEQA document assesses whether these emissions directly contribute to any regional or local exceedances of the applicable AAQS and exposure levels. The basis of the ruling in Friant Ranch was that the EIR did not provide a meaningful analysis of the adverse health effects that would be associated with the project's criteria pollutant emissions, which were identified as being far above the relevant thresholds. The discussion of the adverse health effects in the EIR was general in nature and did not connect the levels of the pollutants that would be emitted by the project to adverse health effects.

The process of correlating project-related criteria pollutant emissions to health-based consequences is called a health impact assessment (HIA). An HIA involves two steps: 1) running a regional photochemical grid model (PGM) to estimate the small increases in concentrations of ozone and particulate matter (PM) in the region as a result of a project's emissions of criteria and precursor pollutants; and 2) running the U.S. EPA Benefits Mapping and Analysis Program (BenMAP) to estimate the resulting health impacts from these increases in concentrations of ozone and PM.

Limitations of Regional-Scale Dispersion Models

It is technically feasible to conduct regional-scale criteria pollutant modeling for a development project. Particulate matter (PM) can be divided into two categories: directly emitted PM and secondary PM. Secondary PM, is formed via complex chemical reactions in the atmosphere between precursor chemicals such as sulfur oxides (SO_x) and NO_x, Ozone (O_3) is a secondary pollutant formed from the oxidation of reactive organic gases (ROGs) and nitrogen oxides (NOx) in the presence of sunlight. Rates of ozone formation are a function of a variety of complex physical factors, including the presence of sunlight and precursor pollutants, natural topography, nearby structures that cause building downwash, atmospheric stability, and wind patterns.. Secondary formation of PM and ozone can occur far from the original emissions source from regional transport due to wind and topography (e.g. low-level jet stream). As such, modeling concentrations of secondary PM and ozone require photochemical grid models (PGMs), such as CMAQ and CAMx. These models have a much larger "grid" system and much lower resolution than localized dispersion modeling (e.g., AERMOD). For example, common grid cells in PGMs are 4x4 kilometers, while AERMOD can identify concentrations at the meter-level.

Photochemical modeling also depends on all emission sources in the entire domain. Low resolution and spatial averaging produces "noise" and model uncertainty that can exceed a project's specific emissions. Additionally, regional-scale models are highly contingent upon background concentrations. Factors such as meteorology and topography greatly affect the certainty levels of predicted concentrations at receptor points. As a result, there are statistical ranges of uncertainty through all the modeling steps. Due to these factors, it is difficult to predict ground-level secondary PM and ozone concentrations associated with relatively small emission sources with a high degree of certainty. While it is possible to use a regional-scale model to predict these regional concentrations, when a project's emissions are less than the regional model's resolution, the resultant ambient air quality concentrations will be within the margin of uncertainty. In CEQA terms, this would fit the definition of "speculative". Only when the scale of emissions would result in changes in ambient air quality beyond the model margin of uncertainty would the results not be "speculative" as defined by CEQA.

Identifying Health Effects due to Ambient Air Quality Changes

BenMap is a model developed by the USEPA to understand the health effects from changes in ozone and PM concentrations. If there is an acceptable level of confidence that the results provided by the regional dispersion modeling are valid, then these concentrations can be translated into health outcomes using BenMap. The health outcomes in BenMap are based on changes in ambient air concentrations and the population exposed to these changes. Data provided by this analysis may indicate increased number of workdays lost to illness, hospital admissions (respiratory), emergency room visits (asthma), or mortality, among other health effects. These are called "health incidences."

Translating the incremental increase in PM and ozone concentrations to specific health effects is also subject to uncertainty. For example, regional models assign the same toxicity to PM regardless of the source of PM (such as road dust as exhaust), and thus potentially overpredict adverse health effects of PM. BenMap also assumes that health effects can occur at any concentration, including small incremental concentrations, and assumes that impacts seen at large concentration differences can be linearly scaled down to small increases in concentration, with no consideration of potential thresholds below which health impacts may not occur. Additionally, BenMap is used for assessing impacts over large areas and populations and was not intended to be used for individual projects. For health incidences, the number of hospitalizations or increase in morbidity predicted by BenMap is greatly affected by the population characteristics.[1] Small increases in emissions in an area with a high population have a much greater affect than large increases in emissions over an area with a small population. As a result, the same amount of emissions generated in an urban area could result in greater health consequences than if the same emissions occurred on the urban periphery, where fewer people may be affected. This will also depend on other factors including meteorology and photochemistry, as discussed above. Emissions in areas with conditions that favor high air dispersion or unfavorable ozone formation will likely have relatively lower effects on ambient air quality and health outcomes.

While BenMap provides additional statistical information about health consequences requested by the Court in the Friant Ranch decision, this information is only meaningful when presented with the full health context of the region or locality at hand. For example, if the BenMap analysis says that the project would result in two additional hospital admissions, this result alone is not useful unless one identifies how many hospital admissions are caused by poor air quality now (without the project) and how many hospital admissions occur

[1] BenMap assigns prevalence rate for asthma and other health effects based on indicators such as gender, race, age, ethnicity, etc. The BenMap user manual specifically states that there are a wide range of variables that can be included in the health effect function. The health effect function was developed based on epidemiological studies, and specifically states that "there are a number of issues that arise when deriving and choosing between health effect functions that go well beyond this user manual. Hence, it is important to have a trained health researcher assist in developing the impact function data file."

overall (due to air quality and other causes). Because health is not solely influenced by ambient air quality, and has many factors that are highly variable across geographies and populations, there is an added level of uncertainty in using a generalized identification of health effects due to air quality conditions overlaid onto a specific diverse set of health conditions and other factors. Regardless of the uncertainty levels, if regional health effects are identified for a project, then the CEQA analysis needs to provide a full health baseline for decision-makers and the public to be able to understand the marginal change due to project criteria pollutant emissions. Given the margin of uncertainty at each step in the process (regional scale modeling, existing ambient air quality effects on health, population health conditions vulnerability, and marginal health effects of air pollution), the identification of marginal health effects due to individual projects using regional air quality modelling and tools such as BenMap are likely to be within the level of uncertainty and thus defined as "speculative" per CEQA.

The Role of Air Districts

Regional, community, multiscale air quality modeling conducted by the air districts for each individual air basin or locality within the air basin would be the most appropriate indictor of health effects for projects. The AQMPs provide a forecast of regional emissions based on regional dispersion modeling for all sources within the air basin. Regional-scale models attempt to account for all emissions sources within an air basin.

The regional scale model requires inputs such as existing and future regional sources of pollutants and global meteorological data, which are generally not accessible by CEQA practitioners. Modeling of future years should consider future concentrations of air pollutants based on regional growth projections and existing programs, rules, and regulations adopted by Federal, State, and local air districts. In general, air pollution in California is decreasing as a result of Federal and State laws. Based on the air quality management plans (AQMPs) required for air districts in a nonattainment area, air quality in the air basins are anticipated to improve despite an increase in population and employment growth. Air districts are charged with assessing programs, rules, and regulations so that the increase in population and employment does not conflict with the mandate to achieve the AAQS. Because emissions forecasting and health outcomes based on the regional growth projections to achieve the AAQS is under the purview of the air districts, it should also fall on the air districts to identify the potential health outcomes associated with individual project's criteria pollutant emissions.

The South Coast Air Quality Management District (South Coast AQMD) and the Sacramento Metropolitan Air Quality Management District (Sacramento Metropolitan AQMD) are exploring concepts for project-level analysis in light of Friant Ranch to assist local lead agencies.

» South Coast AQMD is looking at the largest land use development project they have had in the air basin and doing a sensitivity analysis (using CAMx for photochemical grid modeling and BenMap for health outcomes) to see how locating a very large project in different parts of the air basin (Los Angeles, Inland Empire, v. Orange County) would affect the health incidence.

» Sacramento Metropolitan AQMD is also looking at a screening process. Rather than looking at the upper end (i.e., largest project in the air basin), Sacramento Metropolitan AQMD is starting at the smallest project that exceeds the regional significance threshold and running CAMx and BenMap at different locations in the air basin to see how it affects regional health incidences.

Guidance from Air Districts would be the most effective way to incorporate meaningful information concerning regional health effects of project criteria pollutants in CEQA analyses, including guidance as to when modelling is and is not useful and meaningful, how modelling should be conducted, and how to best present additional information to inform decision-makers and the public about a project's impacts.

So…until air districts do their part, what should we do?

PROJECTS WITH CRITERIA POLLUTANT EMISSIONS BELOW AIR DISTRICT THRESHOLDS

The Friant Ranch ruling was about providing disclosure of health effects of project emissions that were well over the significance thresholds. Since the air district thresholds are tied to a level the air districts find to not have a significant effect on ambient air quality, there should be no need to discuss the health effects of criteria pollutant emissions that are less than the significance thresholds.

PROJECTS WITH CRITERIA POLLUTANT EMISSIONS ABOVE AIR DISTRICT THRESHOLDS

Pursuant to Section 15125 of the CEQA Guidelines, the environmental setting will normally constitute the baseline physical conditions by which a lead agency determines whether an impact is significant. For CEQA, the health effects associated with buildout of a project would occur at the project's horizon year. Because CEQA requires an analysis of the change from existing conditions, the change in effects would be associated with changes in ambient air quality and associated health outcomes between existing conditions and the project's horizon year. Therefore, in order to show how a project affects health outcomes in an air basin, the CEQA documents will need to qualitatively or quantitatively address: (1) existing ambient criteria pollutant concentrations, health incidences due to existing air quality, and health incidences overall; 2) future (without project) ambient criteria pollutant concentrations and health incidences, and 3) future (with project) ambient criteria pollutant concentrations and health incidences.

Projects with significant criteria pollutant emissions could use regional modelling and BenMap to identify health effects of project emissions, but it is likely that many (or most) projects that are not regionally substantial in scale will be shown to have minimal regional changes in PM and ozone concentrations and therefore minimal changes in associated health effects. In addition, many projects may have emissions that are less than the uncertainty level of regional air quality models and BenMap health effects modeling; in these cases, quantitative results will not be meaningful. Thus, absent better direction from air districts, CEQA lead agencies will have to determine on a case by case basis whether a qualitative discussion of health effects will suffice, or whether regional modeling, despite its limitations, should be conducted for the project.

Where a project has substantial criteria pollutant emissions when considered on a regional scale, and there is reason to believe that the modeling of ambient air quality and regional health effects would produce non-speculative results when considering modeling uncertainties, then CEQA lead agencies should use regional modelling.

Conclusion

The purpose of CEQA is to inform the public as to the potential for a project to result in one or more significant adverse effects on the environment (including health effects). A CEQA document must provide an understandable and clear environmental analysis and provide an adequate basis for decision making and public disclosure. Regional dispersion modeling of criteria pollutants and secondary pollutants like PM and ozone can provide additional information, but that information may be within the margin of modelling uncertainty and/or may not be meaningful for the public and decision-makers unless a full health context is presented in the CEQA document. Simply providing health outcomes based on use of a regional-scale model and BenMap may not satisfy the goal to provide decision-makers and the public with information that would assist in weighting the environmental consequences of a project. A CEQA document must provide an analysis that is understandable for decision making and public disclosure. Regional scale modeling may provide a technical method for this type of analysis, but it does not necessarily provide a meaningful way to connect the magnitude of a project's criteria pollutant emissions to health effects without speculation.

In order to accurately connect the dots, we urge California air districts to provide more guidance on how to identify and describe the health effects of exceeding regional criteria pollutant thresholds. The air districts are the primary agency responsible for ensuring that the air basins attain the AAQS and ensure the health and welfare of its residents relative to air quality. Because emissions forecasting and health outcomes are based on the regional growth projections to achieve the AAQS is under the purview of the air districts, it should fall on the air districts to identify the potential health outcomes associated with exceeding the CEQA thresholds for projects. The air districts should provide lead agencies with a consistent, reliable, and meaningful analytical approach to correlate specific health effects that may result from a project's criteria pollutant emissions.

Glossary

AAQS – Ambient Air Quality Standards

BenMap – Benefits Mapping and Analysis Program

CAMx – Comprehensive Air Quality Model with extensions

CMAQ – Community Multiscale Air Quality

NOx – Nitrogen Oxides

PM – Particulate Matter

SOx – Sulfur Oxides

State – California

USEPA – United States Environmental Protection Agency

ASSESSING REGIONAL CRITERIA POLLUTANT EMISSIONS IMPACTS UNDER CEQA

IN LIGHT OF THE *FRIANT RANCH* RULING

Contributing Authors are the following members of the Association of Environmental Professionals Climate Change Committee: Dave Mitchell (First Carbon Solutions), Nicole Vermilion (PlaceWorks), Michael Hendrix (Atkins), and Rich Walter (ICF International, Inc.)[1]

California Environmental Quality Act (CEQA) practitioners continually adapt and expand how environmental assessments address impacts. Over the years impact analyses and how lead agencies determine what a 'significant' impact is has been clarified through case law and updates to the CEQA Guidelines. However, sometimes court rulings create uncertainty for CEQA practitioners to address them based on the information and tools at hand. Such is the case for requests made on regional air quality impacts in the *recent Sierra Club et al. v County of Fresno et al. and Friant Ranch, L.P,* (2014 266 Cal. App. 5th Dist, Case No. F066798), referred to as *Friant Ranch*.

Background

The Friant Ranch project is a proposed master planned retirement community for active adults (55 and older) on approximately 942 acres in central Fresno County. The regional air quality analysis was prepared in accordance with the adopted San Joaquin Valley Air Pollution Control District's (SJVAPCD) Guide for Assessing and Mitigating Air Quality Impacts (GAMAQI). While the SJVAPCD is in the process of updating the GAMAQI, in general, the regional air quality significance thresholds and methodology between the adopted 2002 GAMAQI and the draft GAMAQI are similar. The EIR used a threshold for ozone precursors from the SJVAPCD GAMAQI which was based on the New Source Review offset thresholds for stationary sources 10 tons per year for (ROG and NOx). This threshold approach was adopted by most air pollution control districts in California who have adopted CEQA air quality guidelines.

Based on the SJVAPCD significance thresholds for criteria air pollutants, air quality impacts of the Friant Ranch project were identified as a significant unavoidable impact of the project in the Environmental Impact Report (EIR). Due to the size of the project, emissions of reactive organic gases (ROGs) and oxides of nitrogen (NO_x) exceed the SJVAPCD's significance thresholds by 10 times in a region that is designated as non-attainment under the California and National ambient air quality standards (AAQS) for these pollutants. At build-out, the proposed Friant Community Plan would emit approximately 117.38 tons per year of PM_{10}, 109.52 tons per year of ROGs, and 102.19 tons per year of NO_x.

[1] This paper represents the personal opinions of the contributing authors and not an opinion of the consulting firms for which they work. This paper does not represent legal advice. CEQA lead agencies are advised to consult with their legal counsel in matters of CEQA legal adequacy.

The central issue in the court case was not the methodology applied to quantifying regional air quality impacts or the determination that the magnitude of emissions was substantial and therefore 'significant' but, that the EIR did not adequately relate the magnitude of emissions over the threshold to the health-based effects of the criteria air pollutants emissions. The court found that simply reporting that the emissions exceed the threshold was not sufficient. Per the *Friant Ranch* ruling:

> "*The discussion of the adverse health effects, however, was not connected to the levels of the pollutant that would be emitted by the completed project. Instead, the discussion of adverse health effects was general in nature."*

The court agreed with the plaintiffs that the EIR was inadequate because it did not explain what it meant to exceed the significance threshold by 10 times and because it didn't provide a meaningful analysis of the adverse health effects that would be associated with the project's estimated emissions. Per the ruling, the

> *"EIR, however, provided no information about the composition of the particulate matter that was expected to be produced by the project."*

Drawing from *Bakersfield Citizens* (supra, 124 Cal. App. 4th 1184), health impacts resulting from adverse air quality impacts must be identified and analyzed. Despite the fact that the Friant Ranch EIR included a general discussion of adverse health effects, the court found it was 'short' on analysis as it did not correlate the additional tons per year of regional emission that would be generated by the project (i.e., the adverse air quality impacts) to adverse human health impacts that could be expected to result from those regional emissions. The *Friant Ranch* ruling indicated that the EIR should have provided an analysis of the correlation between the project's regional emissions and human health impacts.

Specific examples cited include:

- *"The information provided doesn't enable a reader to determine whether the 100-plus tons per year of PM_{10}, ROG, and NO_x will require people with respiratory difficulties to wear filtering devices when they go outdoors in the project area or nonattainment basis or, in contrast, will be no more than a drop in the bucket to those people breathing the air containing the additional pollutants."*

- *"If an estimate of the project's impact on the "days exceeding standards" had been provided, the public and decision makers might have some idea of the magnitude of the air pollutant impact on human health. As presently written, the final EIR does not inform the reader what impact, if any, the project is likely to have on the days of nonattainment per year—it might double those days or it might not even add a single a day per year. Similarly, no connection or correlation is made between (1) the EIR's statement that exposure to ambient levels of ozone ranging from 0.10 to 0.40 parts per million for one to two hours has been found to significantly alter lung functions and (2) the emissions that the project is expected to produce*."

These examples, highlight the difficulty that air quality practitioner have with the *Friant Ranch* ruling, as discussed further below. The current practice in addressing air quality impacts in CEQA documents is to relate health impacts to the regional significance thresholds, which are related to the AAQS. However, as cited in the *Friant Ranch* ruling, the court found this disclosure too general and not specific enough. However, on the other end of the spectrum, there are not adequate tools available to characterize health impacts of a single project to the degree requested. The court did not provide guidance in this. Rather, the court cited that the "County has discretion in choosing what type of analysis to provide and we will not direct County on how to exercise that discretion. (§ 21168.5.) Nonetheless, there must be some analysis of the correlation between the project's [regional] emissions and human health impacts." So CEQA air quality practitioners are now left scratching their heads on how to comply with the ruling and are seeking guidance from the regional air districts.

The court in the *Friant Ranch* ruling is clearly viewing the EIR analysis of regional criteria pollutants through a project-level paradigm, when this is clearly a cumulative impact issue. As such, the court's suggestions as to a remedy are based on the wrong paradigm, which creates further substantial challenge for the CEQA practitioner.

Origin of Criteria Air Pollutant Significance Thresholds

Before we get into addressing the specific components of the ruling, it is important to discuss how the regional significance thresholds (lbs per day and/or tons per year) were developed for CEQA significance findings and how they related to human health and welfare.

Regional significance thresholds are derived from the United Stated Environmental Protection Agency (USEPA) health-based standards. Regional significance thresholds have been used by air districts in California for the last 25 years. Air quality practitioners prior to the development of bright-line significance threshold struggled with the need to define the level at which a project's emissions are deemed significant. It is important to note that regional criteria air pollutant emissions are by definition a cumulative impact.

Regional air quality impacts, similar to greenhouse gas (GHG) emissions impacts are inherently cumulative in nature. Land use projects on their own would not single-handedly cause emissions that exceed the ambient air quality standards. In fact, localized emissions modeling requires air quality modelers to consider the background concentrations when calculating localized impacts. An analysis of regional emissions impacts addresses whether the additional amount of emissions generated by a project should be considered significant in the context of the existing cumulative effect, which is based on criteria air pollutant emissions for which the air basin is designated as nonattainment for. Therefore, the regional criteria air pollutant analysis in a CEQA document is not a project-level analysis, but a cumulative impact analysis.

Therefore, the "one molecule rule", as defined in the *Communities for a Better Environment v. California Resources Agency and California Building Industry Association* (2002 126 Cal. Rptr. 2d. 441, Cal.App.3 Dist., 2002) (CBE Case), applies. As defined in the CBE case, just because criteria air pollutant emissions

adds to the effect in the nonattainment area does not necessarily create a significant cumulative effect, and the "one [additional] molecule rule" is not the law. Consequently, air districts have developed these bright-line thresholds to define what constitutes a significant impact.

For example, in the South Coast Air Basin, these bright-line significance thresholds were originally developed based on the annual emissions permitting thresholds in the USEPA Prevention of Significant Deterioration (PSD) of Air Quality regulation. The USEPA thresholds are the increment of air pollution an area is allowed to increase. PSD increments prevent the air quality in clean areas from deteriorating to the level set by the National AAQS. Similar to CEQA thresholds, the USEPA thresholds require projects that generate regulated sources of emissions to demonstrate that new emissions emitted from a proposed major stationary source or major modification, in conjunction with other applicable emissions increases and decreases from existing sources, will not cause or contribute to a violation of any applicable National AAQS or PSD increment. Consequently, the thresholds used by air districts in California to determine significant impacts are derived from the health based AAQS. Table 1 shows the primary health and welfare effects from the criteria air pollutant emissions of concern for land use projects.

Table 1 Primary Sources and Effects of Criteria Air Pollutants

Pollutants	**Primary Health and Welfare Effects**
Carbon Monoxide	Aggravation of some heart diseases (angina); Reduced tolerance for exercise; Impairment of mental function; Impairment of fetal development; Death at high levels of exposure
Nitrogen Dioxide	Aggravation of respiratory illness
Ozone ($O_{3)}$[1]	Aggravation of respiratory and cardiovascular diseases; Reduced lung function, Increased cough and chest discomfort
Particulate Matter (PM_{10} and $PM_{2.5)}$	Reduced lung function; Aggravation of respiratory & cardio-respiratory diseases; Increases in mortality rate; Reduced lung function growth in children

Source: South Coast Air Quality Management District (SCAQMD). 2005, May 6. Guidance Document for Addressing Air Quality, Issues in General Plans and Local Planning, http://www.aqmd.gov/docs/default-source/planning/air-quality-guidance/complete-guidance-document.pdf?sfvrsn=4

[1] Ozone is a secondary criteria air pollutant and not emitted directly by a project.

One way to think about the existing thresholds is to think about the regional inventory of criteria pollutants. While a project that exceeds the thresholds by itself cannot "bounce the needle" on the ambient concentrations of criteria pollutants, when you amalgamate all the land use and other sources that exceed the thresholds, then you are dealing with a meaningful majority of the regional criteria

pollutant emissions. The existing thresholds are a tool by which to ensure that CEQA evaluations are conducted for projects that meaningfully contribute to the regional inventory. But this does not mean that a single project would substantially change ambient conditions in a specifically measurable way in terms of health effect. Rather it means that without control, the cumulative projects above this threshold would contribute to meaningfully changes in ambient concentrations which would have measurable changes in health effects. Using CEQA terminology, the thresholds do not identify the level at which a project results in a significant impact, instead the thresholds identify when the project's emissions are a considerable contribution to a cumulatively significant impact.

Limits of Air Quality Dispersion Modeling for Regional Criteria Pollutants

As a measure of cumulative contribution, the regional significance thresholds for criteria pollutants only indirectly tie emissions generated by a project to the health-based standards of the AAQS. The health-based standards of the AAQS are based on the concentration of air pollutant emissions in the air and not the quantity of emissions (mass emissions) generated within an air basin. If the ruling requires something more than a general discussion of the health implications of exceeding the regional significance thresholds of the air district, how can lead agencies comply with the ruling?

Ozone and Secondary Particulate Matter

Ozone and secondary PM cannot be modeled with one of the dispersion models used for localized pollutants (such as diesel particulate matter) because they are formed with complex chemical reactions in the atmosphere sometimes many miles from the source of emissions. The models need to simulate dispersion, deposition, atmospheric chemistry, and meteorology, in a three dimensional scale. The models need to include all precursor emission sources in a gridded inventory that accounts for the time of day and location of the emission sources throughout a modeling domain. Some simplified models referred to as mesoscale models have been developed to model the impact on a smaller scale for large point sources such as power plants, but according to USEPA they are not considered a reliable predictor of actual concentrations of ozone. In addition, emissions from development projects are primarily generated by mobile sources. Cars and trucks travel an average of 7-10 miles for each trip resulting in emissions being spread throughout the road network, not from a single project site. Therefore, ozone, and to lesser extent PM_{10} must be modeled using a regional atmospheric model.

Ozone air quality attainment plans use regional atmospheric models to determine the emission carrying capacity of the air basin. If the carrying capacity is exceeded, locations within the modeling domain will exceed the ambient air quality standard. The more that the carrying capacity is exceeded, the higher the concentration experienced in the areas exceeding the standard. When air basins are close to attainment, the areas that exceed the standard become more isolated. Attainment modeling is used to determine the amount of reductions needed to reach attainment at the last location within the basin. This means that most locations in a basin, including those with very large projects, may have no exceedances of the standard and areas with less favorable meteorology with no projects and limited local sources can exceed the standard.

Nitrogen Dioxide/Oxides of Nitrogen

Theoretically, it would be possible to add the emissions from a large project such as Friant Ranch into the regional attainment model and look for increases in concentration throughout the air basin. This would be considered a sensitivity analysis. The analysis could hold the emissions in the rest of the grid constant and see what happens when emissions are added to the appropriate grid squares. The SJVAB inventory for the ozone precursor NO_x is about 545 tons per day or 198,925 tons per year. Friant Ranch would produce approximately 102 tons per year of NO_x or a 0.051 percent increase. A small increase in emissions of less than a tenth of a percent spread over several grid cells is not likely to move the concentration by an amount beyond the uncertainty in the model.

The regional models account for phenomenon like low level jet streams that can quickly transport emissions from where they are generated to distant locations and wind eddies that recirculate polluted air on a sub-regional basis. In addition, photochemical modeling, in the case of ozone, is dependent of the amount of the individual precursors at all locations in the domain. This is because in the absence of sunlight, NO_x destroys ozone, and areas deficient in NO_x such as rural and mountain areas will experience high ozone concentrations well into the evening while urban areas with many NO_x sources will see rapid decreases in ozone in the evening. Therefore, modeling that adds emissions from a development project in one part of the modeling domain may have a beneficial effect in one area and a negative effect in another. For Friant Ranch, the regional model would be the only way to accurately measure the increase in concentration, if any that would occur by adding the emissions at the project site on the road network receiving traffic from the project. However, the scale of the additional emissions is so small compared to the basin scale variables, that the effect on ambient concentrations would be lost in the "noise" of the model and would be highly unlikely to be directly attributable (or "correlated" in court's language) to the project itself

The San Joaquin Valley Air Basin (SJVAB) is considered NO_x limited, meaning reductions in NO_x have the most effect on ozone formation while the other ozone precursor, ROG, would have little effect because of its abundance in the atmosphere. Most ROG compounds are not considered to have health impacts except for those classified as toxic air contaminants that are regulated separately. ROG is generated by plants. Eliminating all ROG from manmade sources will still leave sufficient biogenic ROG to participate in the photochemical reaction to form ozone.

Inhalable Particulate Matter

PM_{10} is formed by chemical reactions in the atmosphere with precursor emissions and directly from combustion and from fugitive dust. For example, the particulate ammonium nitrate is formed when NO_x and ammonia react in a series of complex chemical reactions. PM_{10} is an amalgamation of numerous particles, and aerosols. The mix of chemicals varies day to day and season to season. In winter, wood smoke and ammonium nitrate are larger portions the mix with occasional days heavily influenced by fugitive dust. In the summer, fugitive dust provides a larger fraction and nitrate is reduced. This variation somewhat complicates the modeling process. Regional PM_{10} emissions in the SJVAB were modeled using a procedure called chemical mass balance. The individual PM_{10} species are allocated into

a grid and reductions from the control measures designed to reduce each constituent are applied to the inventory in each grid square to demonstrate attainment. This process could be done in reverse by adding pollutants generated by the project into the appropriate grid square to see if it would substantially increase concentrations to unhealthful levels. However, again, the regional scale effects and dispersion dwarf nearly all project level emission contributions such that meaningful attribution of ambient concentrations to the project itself will be difficult. More sophisticated atmospheric models for PM_{10} and $PM_{2.5}$ exist, but to our knowledge have not been used in the SJVAB.

Number of Days Air Basins Exceed AAQS

In addition to effects on peak concentration, it is also important to know how many days people are exposed to the unhealthful levels and whether a project would increase the number of days each year in which the air quality standard is exceeded. The modeling only tells what conditions will be during days with the worst conditions (most favorable for forming ozone) called an episode. Poor air quality builds up over a number of days when stagnant conditions occur. Eventually, more favorable conditions return and the air quality is improved. In Fresno the number of days exceeding the federal 8-hour ozone standard of 0.075 ppm was between 50 and 70 days per year between 2009 and 2012. This is down from over 100 days per year in the past. The peak 8-hour readings were as high as 0.116 ppm in 2013. This indicates that the existing conditions are well over the standard on many days. A sufficient regional cumulative increase in emissions could cause the concentration to go up on the worst days and to increase the number of days exceeding the standard. However, as described above, the Friant Ranch emissions are so small relevant to the regional inventory (NOx emission are only 0.051 percent of regional emissions) that any project-attributable change in conditions is likely to be within the model uncertainty and thus would not be a valid result that could be used as the basis for a significant determination under CEQA.

Criteria Air Pollutant Burden: Number of People Exposed to Unhealthful Concentrations

Another factor that is considered in assessing air quality health impacts is the number of people exposed to unhealthful air quality from regional criteria pollutants. Areas with large populations with high pollutant concentrations would expose more people to bad air than areas with small populations and equally poor air quality. It is not acceptable to expose anyone to poor air quality, but it may help prioritize actions to reduce the impacts by where the most people would be helped.

The health impacts of ozone can be presented in a number of ways. The clearest in comparison is to the state and federal ambient ozone standards. If ambient concentrations are below the standard, it is safe to say that no health impact would occur to anyone. When concentrations exceed the standard, impacts will vary based on how much the standard is exceeded. The USEPA developed the Air Quality Index (AQI) as an easy to understand measure of health impact.

> 75 ppb: AQI 100 – Moderate:
> **Sensitive Groups**: Children and people with asthma are the groups most at risk.
> **Health Effects Statements**: Unusually sensitive individuals may experience respiratory symptoms.

Cautionary Statements: Unusually sensitive people should consider limiting prolonged outdoor exertion.

95 ppb: AQI 150 – Unhealthful for Sensitive Groups:
Sensitive Groups: Children and people with asthma are the groups most at risk.
Health Effects Statements: Increasing likelihood of respiratory symptoms and breathing discomfort in active children and adults and people with respiratory disease, such as asthma.
Cautionary Statements: Active children and adults, and people with respiratory disease, such as asthma, should limit prolonged outdoor exertion.

115 ppb: AQI 200 – Unhealthy:
Sensitive Groups: Children and people with asthma are the groups most at risk.
Health Effects Statements: Greater likelihood of respiratory symptoms and breathing difficulty in active children and adults and people with respiratory disease, such as asthma; possible respiratory effects in general population.
Cautionary Statements: Active children and adults, and people with respiratory disease, such as asthma, should avoid prolonged outdoor exertion; everyone else, especially children, should limit prolonged outdoor exertion.

139 ppb: AQI 210 – Very Unhealthful:
Sensitive Groups: Children and people with asthma are the groups most at risk.
Health Effects Statements: Increasingly severe symptoms and impaired breathing likely in active children and adults and people with respiratory disease, such as asthma; increasing likelihood of respiratory effects in general population.
Cautionary Statements: Active children and adults, and people with respiratory disease, such as asthma, should avoid all outdoor exertion; everyone else, especially children, should limit outdoor exertion.

Based on the AQI scale, Fresno experienced one day in the last three years that would be categorized as unhealthful, and as many as 56 days that was unhealthful for sensitive groups or moderate at the worst monitoring station. This raises the question of what would be considered a significant project impact. Would a project need to be solely responsible for increasing the days over the standard by one day, five days, or ten days? Would a project need to increase the AQI to the next higher level – moderate to unhealthful for sensitive groups? This line of reasoning leads back to the basis of the 10 ton per year ozone precursor threshold that is based on a policy determination that this amount is a cumulative contribution deserving mitigation in consideration to the existing impact. Although this approach might in concept be thought useful, since nearly all projects would have such a small contribution in isolation[2], it is unlikely that any one project would change the modeled population exposed to concentrations above ambient thresholds.

[2] In the Friant Ranch case, using ozone precursors as an example, if regional cumulative emissions result in an AQI of 210 and the AQI is linearly related to the amount of emissions, then the project-only contribution would be an increase in the AQI of 0.1. Given the photochemistry issues described above for ozone formation, such a direct linear relationship is not a valid presumption and this points out that ultimately this is a cumulative impact, not a project-only impact.

The Air District's Shoes

The discussion above highlights the difficulties with doing macro-level dispersion modeling and relating mass emissions to the number of people requiring "filtering devices when they go outdoors" or the number of additional days a region may be in nonattainment for. However, do CEQA practitioners really need to go that far? As identified above, regional significance thresholds (lbs per day, and/or tons per year thresholds) are derived from the AAQS. Air basins are identified as either attainment or nonattainment of the California and National AAQS for criteria pollutants. If an air basin is designated as nonattainment, the regional air districts are required to prepare air quality management plans detailing strategies to meet the AAQS in the timeline specified. If air districts already need to forecast future emission levels based on growth, does the decision made by the court overstep into the shoes of the air district?

Projects that exceed the regional significance threshold contribute cumulatively to the nonattainment designation, but do not cause nonattainment in isolation. As the attainment designation is based on the AAQS, which are set at levels of exposure that are determined to not result in adverse health, a project in a nonattainment area with criteria pollutant emissions would cumulatively contribute to health impacts within the air basin. Therefore, in the absence of tools for equating regional emissions to more specific health-based affects, the appropriate place for evaluating how growth within the air basins affects the ability to meet the AAQS and attain the health based standards established by the State and EPA is the regional air quality management plans. Regional air quality management planning specifically accounts for new development in the region based on development patterns set forth in General Plan. The air district runs regional model simulations to determine whether or not an air basin can meet the AAQS. As addressed above, it would be exceedingly difficult to impossible for an individual project to accurately identify how it affects basin-wide concentrations within the uncertainty levels of available regional modeling tools. The air districts are the primary agencies responsible for ensuring the health and welfare of sensitive individuals to elevated concentrations of air quality. Therefore, the most appropriate discussion may be to relate when the air district anticipates the region attaining the health-based standards of the AAQS.

So….what is the CEQA practitioner to do?

As discussed above, regional scale modeling of project-level criteria pollutant emissions will be unrevealing and in nearly all cases will not result in any meaningful identification of changes in ambient levels and human health effects with any certainty. The court ruling is logically flawed in applying a project-level paradigm to a cumulative-level contribution and is asking for an unrealistic and unscientific level of disclosure. As the California Supreme Court has taken up the case, it may resolve the issues in its determination.

In the meantime, lead agencies would be wise to provide the following disclosure when analyzing regional criteria pollutant emissions to better "correlate" project-level criteria pollutant emissions to human health impacts:

1. Describe the cumulative context of regional criteria pollutant emissions and that regional health

effects occur due to the cumulative emissions of existing and future criteria pollutant sources.

2. Characterize the level of project criteria pollutant emissions in comparison to the regional inventory both in terms of tons and percentages.

3. Describe that regional criteria pollutant modeling cannot accurately capture the project-level effect on ambient pollutant concentrations beyond the uncertainty level of the modeling.

4. Disclose that cumulative contributions of regional criteria pollutant emissions collectively can and do have a real-world effect on human health and describe those in the impact analysis (not just in the setting section).

5. Disclose that in general, more criteria pollutant emissions will contribute to more health effects regionally, but that specifically attributing the project's emissions to a specifically defined quantitative or geographic health effect is beyond the resolution of current tools.

6. Differentiate between regional criteria pollutants that are a concern for regional air pollution and localized pollutants (like toxic air contaminants) that are a project-scale concern for the immediate surrounding area of a project. If localized pollutants are studied for their impacts on ambient air quality near the project, explain why this is not appropriate for regional-scale pollutants like ozone precursors.

The situation with the *Friant Ranch* ruling is not unlike the recent court rulings concerning CEQA baselines. In the first Sunnyvale baseline case (*Sunnyvale West Neighborhood Assn. v. City of Sunnyvale City Council*, 2010), the appellate court described in rather bold terms that sole reliance on a future year baseline is never appropriate and that only an existing year baseline is appropriate under CEQA. In a second Sunnyvale baseline case (*Pfeiffer v. City of Sunnyvale City Council* 2011), the same appellate court found that a future year baseline could be appropriate in a CEQA document provided that the analysis also compares project effects to existing conditions. A California Supreme Court ruling (*Neighbors for Smart Rail v. Exposition Metro Line Construction Authority, 4th Appellate District,* 2013) then resolved the issue by finding that use of a future-year baseline only without comparison to existing conditions could actually be appropriate when comparing project conditions to existing conditions would be misleading to the public and decision-makers. The Supreme Court ultimately overturned the original court's key finding, while adding requirements of substantiation that did not exist previously.

Depending on the actions of the Supreme Court, the *Friant Ranch* ruling may or may not be legal precedent on this issue. Given the pragmatic problems with trying to quantitatively correlate project-level criteria pollutant emissions to regional human health effects, it is hoped that future rulings are better informed by the science underlying regional criteria air pollution and associated health effects.

Appendix E Amicus Briefs Filed on the Friant Ranch Case

Appendices

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SUPREME COURT COPY

CASE NO. S219783

IN THE SUPREME COURT OF CALIFORNIA

SIERRA CLUB, REVIVE THE SAN JOAQUIN, and
LEAGUE OF WOMEN VOTERS OF FRESNO,
Plaintiffs and Appellants

v.

COUNTY OF FRESNO,
Defendant and Respondent

FRIANT RANCH, L.P.,
Real Party in Interest and Respondent

SUPREME COURT
FILED
APR 13 2015
Frank A. McGuire Clerk
Deputy

After a Decision by the Court of Appeal, filed May 27, 2014
Fifth Appellate District Case No. F066798

Appeal from the Superior Court of California, County of Fresno
Case No. 11CECG00726

APPLICATION FOR LEAVE TO FILE AMICUS CURIAE BRIEF OF SAN JOAQUIN VALLEY UNIFIED AIR POLLUTION CONTROL DISTRICT IN SUPPORT OF DEFENDANT AND RESPONDENT, COUNTY OF FRESNO AND REAL PARTY IN INTEREST AND RESPONDENT, FRIANT RANCH, L.P.

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APPLICATION

Pursuant to California Rules of Court 8.520(f)(1), proposed Amicus Curiae San Joaquin Valley Unified Air Pollution Control District hereby requests permission from the Chief Justice to file an amicus brief in support of Defendant and Respondent, County of Fresno, and Defendant and Real Parties in Interest Friant Ranch, L.P. Pursuant to Rule 8.520(f)(5) of the California Rules of Court, the proposed amicus curiae brief is combined with this Application. The brief addresses the following issue certified by this Court for review:

> Is an EIR adequate when it identifies the health impacts of air pollution and quantifies a project's expected emissions, or does CEQA further require the EIR to *correlate* a project's air quality emissions to specific health impacts?

As of the date of this filing, the deadline for the final reply brief on the merits was March 5, 2015. Accordingly, under Rule 8.520(f)(2), this application and brief are timely.

1. Background and Interest of San Joaquin Valley Unified Air Pollution Control District

The San Joaquin Valley Unified Air Pollution Control District ("Air District") regulates air quality in the eight counties comprising the San Joaquin Valley ("Central Valley"): Kern, Tulare, Madera, Fresno, Merced, San Joaquin, Stanislaus, and Kings, and is primarily responsible for attaining air quality standards within its jurisdiction. After billions of dollars of investment by Central Valley businesses, pioneering air quality regulations, and consistent efforts by residents, the Central Valley air basin has made historic improvements in air quality.

The Central Valley's geographical, topographical and meteorological features create exceptionally challenging air quality

conditions. For example, it receives air pollution transported from the San Francisco Bay Area and northern Central Valley communities, and the southern portion of the Central Valley includes three mountain ranges (Sierra, Tehachapi, and Coastal) that, under some meteorological conditions, effectively trap air pollution. Central Valley air pollution is only a fraction of what the Bay Area and Los Angeles produce, but these natural conditions result in air quality conditions that are only marginally better than Los Angeles, even though about ten times more pollution is emitted in the Los Angeles region. Bay Area air quality is much better than the Central Valley's, even though the Bay Area produces about six times more pollution. The Central Valley also receives air pollution transported from the Bay Area and northern counties in the Central Valley, including Sacramento, and transboundary anthropogenic ozone from as far away as China.

Notwithstanding these challenges, the Central Valley has reduced emissions at the same or better rate than other areas in California and has achieved unparalleled milestones in protecting public health and the environment:

- In the last decade, the Central Valley became the first air basin classified by the federal government under the Clean Air Act as a "serious nonattainment" area to come into attainment of health-based National Ambient Air Quality Standard ("NAAQS") for coarse particulate matter (PM10), an achievement made even more notable given the Valley's extensive agricultural sector. Unhealthy levels of particulate matter can cause and exacerbate a range of chronic and acute illnesses.
- In 2013, the Central Valley became the first air basin in the country to improve from a federal designation of "extreme" nonattainment to

actually attain (and quality for an attainment designation) of the 1-hour ozone NAAQS; ozone creates "smog" and, like PM10, causes adverse health impacts.

- The Central Valley also is in full attainment of federal standards for lead, nitrogen dioxide, sulfur dioxide, and carbon monoxide.
- The Central Valley continues to make progress toward compliance with its last two attainment standards, with the number of exceedences for the 8-hour ozone NAAQS reduced by 74% (for the 1997 standard) and 38% (for the 2008 standard) since 1991, and for the small particulate matter (PM2.5) NAAQS reduced by 85% (for the 1997 standard) and 61% (for the 2006 standard).

Sustained improvement in Central Valley air quality requires a rigorous and comprehensive regulatory framework that includes prohibitions (e.g., on wood-burning fireplaces in new residences), mandates (e.g., requiring the installation of best available pollution reduction technologies on new and modified equipment and industrial operations), innovations (e.g., fees assessed against residential development to fund pollution reduction actions to "offset" vehicular emissions associated with new residences), incentive programs (e.g., funding replacements of older, more polluting heavy duty trucks and school buses)[1], ongoing planning for continued air quality improvements, and enforcement of Air District permits and regulations.

The Air District is also an expert air quality agency for the eight counties and cities in the San Joaquin Valley. In that capacity, the Air District has developed air quality emission guidelines for use by the Central

[1] San Joaquin's incentive program has been so successful that through 2012, it has awarded over $ 432 million in incentive funds and has achieved 93,349 tons of lifetime emissions reductions. *See* SAN JOAQUIN VALLEY AIR POLLUTION CONTROL DISTRICT, 2012 PM2.5 PLAN, 6-6 (2012) *available at* http://www.valleyair.org/Workshops/postings/2012/12-20-12PM25/FinalVersion/06%20Chapter%206%20Incentives.pdf.

Valley counties and cities that implement the California Environment Quality Act (CEQA).[2] In its guidance, the Air District has distinguished between toxic air contaminants and criteria air pollutants.[3] Recognizing this distinction, the Air District's CEQA Guidance has adopted distinct thresholds of significance for *criteria* pollutants (i.e., ozone, PM2.5 and their respective precursor pollutants) based upon scientific and factual data which demonstrates the level that can be accommodated on a cumulative basis in the San Joaquin Valley without affecting the attainment of the applicable NAAQS.[4] For *toxic air* pollutants, the District has adopted different thresholds of significance which scientific and factual data demonstrates has the potential to expose sensitive receptors (i.e., children, the elderly) to levels which may result in localized health impacts.[5]

The Air District's CEQA Guidance was followed by the County of Fresno in its environment review of the Friant Ranch project, for which the Air District also served as a commenting agency. The Court of Appeal's holding, however, requiring correlation between the project's criteria

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[2] *See, e.g.*, SAN JOAQUIN VALLEY AIR POLLUTION CONTROL DISTRICT, PLANNING DIVISION, GUIDE FOR ASSESSING AND MITIGATING AIR QUALITY IMPACTS (2015), *available at* http://www.valleyair.org/transportation/GAMAQI_3-19-15.pdf ("CEQA Guidance").

[3] Toxic air contaminants, also known as hazardous air pollutants, are those pollutants that are known or suspected to cause cancer or other serious health effects, such as birth defects. There are currently 189 toxic air contaminants regulated by the United States Environmental Protection Agency ("EPA") and the states pursuant to the Clean Air Act. 42 U.S.C. § 7412. Common TACs include benzene, perchloroethylene and asbestos. *Id.* at 7412(b).

In contrast, there are only six (6) criteria air pollutants: ozone, particulate matter, carbon monoxide, nitrogen oxides, sulfur dioxide and lead. Although criteria air pollutants can also be harmful to human health, they are distinguishable from toxic air contaminants and are regulated separately. For instance, while criteria pollutants are regulated by numerous sections throughout Title I of the Clean Air Act, the regulation of toxic air contaminants occurs solely under section 112 of the Act. Compare 42 U.S.C. §§ 7407 – 7411 & 7501 – 7515 with 42 U.S.C. § 7411.

[4] See, e.g., CEQA Guidance at http://www.valleyair.org/transportation/GAMAQI_3-19-15.pdf, pp. 64-66, 80.

[5] See, e.g., CEQA Guidance at http://www.valleyair.org/transportation/GAMAQI_3-19-15.pdf, pp. 66, 99-101.

pollutants and local health impacts, departs from the Air District's Guidance and approved methodology for assessing criteria pollutants. A close reading of the administrative record that gave rise to this issue demonstrates that the Court's holding is based on a misunderstanding of the distinction between toxic air contaminants (for which a local health risk assessment is feasible and routinely performed) and criteria air pollutants (for which a local health risk assessment is not feasible and would result in speculative results).[6] The Air District has a direct interest in ensuring the lawfulness and consistent application of its CEQA Guidance, and will explain how the Court of Appeal departed from the Air District's long-standing CEQA Guidance in addressing criteria pollutants and toxic air contaminants in this amicus brief.

2. How the Proposed Amicus Curiae Brief Will Assist the Court

As counsel for the proposed amicus curiae, we have reviewed the briefs filed in this action. In addition to serving as a "commentary agency" for CEQA purposes over the Friant Ranch project, the Air District has a strong interest in assuring that CEQA is used for its intended purpose, and believes that this Court would benefit from additional briefing explaining the distinction between criteria pollutants and toxic air contaminants and the different methodologies employed by local air pollution control agencies such as the Air District to analyze these two categories of air pollutants under CEQA. The Air District will also explain how the Court of Appeal's opinion is based upon a fundamental misunderstanding of these two different approaches by requiring the County of Fresno to correlate the project's *criteria* pollution emissions with *local* health impacts. In doing

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[6] CEQA does not require speculation. *See, e.g., Laurel Heights Improvement Ass'n v. Regents of Univ. of Cal.*, 6 Cal. 4th 1112, 1137 (1993) (upholding EIR that failed to evaluate cumulative toxic air emission increases given absence of any acceptable means for doing so).

so, the Air District will provide helpful analysis to support its position that at least insofar as criteria pollutants are concerned, CEQA does not require an EIR to correlate a project's air quality emissions to specific health impacts, because such an analysis is not reasonably feasible.

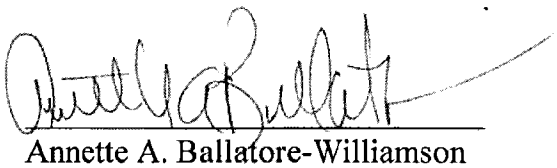
Rule 8.520 Disclosure

Pursuant to Cal. R. 8.520(f)(4), neither the Plaintiffs nor the Defendant or Real Party In Interest or their respective counsel authored this brief in whole or in part. Neither the Plaintiffs nor the Defendant or Real Party in Interest or their respective counsel made any monetary contribution towards or in support of the preparation of this brief.

CONCLUSION

On behalf of the San Joaquin Valley Unified Air Pollution Control District, we respectfully request that this Court accept the filing of the attached brief.

Dated: April 2, 2015



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SAN JOAQUIN VALLEY UNIFIED
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TABLE OF CONTENTS

APPLICATION.....1

1. Background and Interest of San Joaquin Valley Unified Air Pollution Control District.....1

2. How the Proposed Amicus Curiae Brief Will Assist the Court 5

CONCLUSION.....6

I. INTRODUCTION 1

II. THE COURT OF APPEAL ERRED IN FINDING THE FRIANT RANCH EIR INADEQUATE FOR FAILING TO ANALYZE THE SPECIFIC HUMAN HEALTH IMPACTS ASSOCIATED CRITERIA AIR POLLUTANTS.....3

A, Currently Available Modeling Tools are not Equipped to Provide a Meaningful Analysis of the Correlation between an Individual Development Project's Air Emissions and Specific Human Health Impacts.....4

B. The Court of Appeal Improperly Extrapolated a Request for a Health Risk Assessment for Toxic Air Contaminants into a Requirement that the EIR contain an Analysis of Localized Health Impacts Associated with Criteria Air Pollutants 11

III. CONCLUSION.....15

CERTIFICATE OF WORD COUNT.....17

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I. INTRODUCTION.

The San Joaquin Valley Unified Air Pollution Control District ("Air District") respectfully submits that the Court of Appeal erred when it held that the air quality analysis contained in the Environmental Impact Report ("EIR") for the Friant Ranch development project was inadequate under the California Environmental Quality Act ("CEQA") because it did not include an analysis of the correlation between the project's criteria air pollutants and the potential adverse human health impacts. A close reading of the portion of the administrative record that gave rise to this issue demonstrates that the Court's holding is based on a misunderstanding of the distinction between toxic air contaminants and criteria air pollutants.

Toxic air contaminants, also known as hazardous air pollutants, are those pollutants that are known or suspected to cause cancer or other serious health effects, such as birth defects. There are currently 189 toxic air contaminants (hereinafter referred to as "TACs") regulated by the United States Environmental Protection Agency ("EPA") and the states pursuant to the Clean Air Act. 42 U.S.C. § 7412. Common TACs include benzene, perchloroethylene and asbestos. *Id.* at 7412(b).

In contrast, there are only six (6) criteria air pollutants: ozone, particulate matter, carbon monoxide, nitrogen oxides, sulfur dioxide and lead. Although criteria air pollutants can also be harmful to human health,

they are distinguishable from TACs and are regulated separately. For instance, while criteria pollutants are regulated by numerous sections throughout Title I of the Clean Air Act, the regulation of TACs occurs solely under section 112 of the Act. *Compare* 42 U.S.C. §§ 7407 – 7411 & 7501 – 7515 *with* 42 U.S.C. § 7411.

The most relevant difference between criteria pollutants and TACs for purposes of this case is the manner in which human health impacts are accounted for. While it is common practice to analyze the correlation between an individual facility's TAC emissions and the expected localized human health impacts, such is not the case for criteria pollutants. Instead, the human health impacts associated with criteria air pollutants are analyzed and taken into consideration when EPA sets the national ambient air quality standard ("NAAQS") for each criteria pollutant. 42 U.S.C. § 7409(b)(1). The health impact of a particular criteria pollutant is analyzed on a regional and not a facility level based on how close the area is to complying with (attaining) the NAAQS. Accordingly, while the type of individual facility / health impact analysis that the Court of Appeal has required is a customary practice for TACs, it is not feasible to conduct a similar analysis for criteria air pollutants because currently available computer modeling tools are not equipped for this task.

It is clear from a reading of both the administrative record and the Court of Appeal's decision that the Court did not have the expertise to fully

appreciate the difference between TACs and criteria air pollutants. As a result, the Court has ordered the County of Fresno to conduct an analysis that is not practicable and not likely yield valid information. The Air District respectfully requests that this portion of the Court of Appeal's decision be reversed.

II. THE COURT OF APPEAL ERRED IN FINDING THE FRIANT RANCH EIR INADEQUATE FOR FAILING TO ANALYZE THE SPECIFIC HUMAN HEALTH IMPACTS ASSOCIATED CRITERIA AIR POLLUTANTS.

Although the Air District does not take lightly the amount of air emissions at issue in this case, it submits that the Court of Appeal got it wrong when it required Fresno County to revise the Friant Ranch EIR to include an analysis correlating the criteria air pollutant emissions associated with the project with specific, localized health-impacts. The type of analysis the Court of Appeal has required will not yield reliable information because currently available modeling tools are not well suited for this task. Further, in reviewing this issue de novo, the Court of Appeal failed to appreciate that it lacked the scientific expertise to appreciate the significant differences between a health risk assessment commonly performed for toxic air contaminants and a similar type of analysis it felt should have been conducted for criteria air pollutants.

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A. Currently Available Modeling Tools are not Equipped to Provide a Meaningful Analysis of the Correlation between an Individual Development Project's Air Emissions and Specific Human Health Impacts.

In order to appreciate the problematic nature of the Court of Appeals' decision requiring a health risk type analysis for criteria air pollutants, it is important to understand how the relevant criteria pollutants (ozone and particulate matter) are formed, dispersed and regulated.

Ground level ozone (smog) is not directly emitted into the air, but is formed when precursor pollutants such as oxides of nitrogen (NOx) and volatile organic compounds (VOCs) are emitted into the atmosphere and undergo complex chemical reactions in the process of sunlight.[1] Once formed, ozone can be transported long distances by wind.[2] Because of the complexity of ozone formation, a specific tonnage amount of NOx or VOCs emitted in a particular area does not equate to a particular concentration of ozone in that area. In fact, even rural areas that have relatively low tonnages of emissions of NOx or VOCs can have high levels of ozone concentration simply due to wind transport.[3] Conversely, the San Francisco Bay Area has six times more NOx and VOC emissions per square mile than the San Joaquin Valley, but experiences lower

[1] *See* United States Environmental Protection Agency, *Ground-level Ozone: Basic Information*, available at: http://www.epa.gov/airquality/ozonepollution/basic.html (visited March 10, 2015).
[2] *Id.*
[3] *Id.*

concentrations of ozone (and better air quality) simply because sea breezes disperse the emissions.[4]

Particulate matter ("PM") can be divided into two categories: directly emitted PM and secondary PM.[5] While directly emitted PM can have a localized impact, the tonnage emitted does not always equate to the local PM concentration because it can be transported long distances by wind.[6] Secondary PM, like ozone, is formed via complex chemical reactions in the atmosphere between precursor chemicals such as sulfur dioxides (SOx) and NOx.[7] Because of the complexity of secondary PM formation, the tonnage of PM-forming precursor emissions in an area does not necessarily result in an equivalent concentration of secondary PM in that area.

The disconnect between the *tonnage* of precursor pollutants (NOx, SOx and VOCs) and the *concentration* of ozone or PM formed is important because it is not necessarily the tonnage of precursor pollutants that causes human health effects, but the concentration of resulting ozone or PM. Indeed, the national ambient air quality standards ("NAAQS"), which are statutorily required to be set by the United States Environmental Protection

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[4] *San Joaquin Valley Air Pollution Control District 2007 Ozone Plan*, Executive Summary p. ES-6, available at: http://www.valleyair.org/Air_Quality_Plans/docs/AQ_Ozone_2007_Adopted/03%20Executive%20Summary.pdf (visited March 10, 2015).

[5] United States Environmental Protection Agency, *Particulate Matter: Basic Information*, available at: http://www.epa.gov/airquality/particlepollution/basic.html (visited March 10, 2015).

[6] *Id.*

[7] *Id.*

Agency ("EPA") at levels that are "requisite to protect the public health," 42 U.S.C. § 7409(b)(1), are established as concentrations of ozone or particulate matter and not as tonnages of their precursor pollutants.[8]

Attainment of a particular NAAQS occurs when the concentration of the relevant pollutant remains below a set threshold on a consistent basis throughout a particular region. For example, the San Joaquin Valley attained the 1-hour ozone NAAQS when ozone concentrations remained at or below 0.124 parts per million Valley-wide on 3 or fewer days over a 3-year period.[9] Because the NAAQS are focused on achieving a particular concentration of pollution region-wide, the Air District's tools and plans for attaining the NAAQS are regional in nature.

For instance, the computer models used to simulate and predict an attainment date for the ozone or particulate matter NAAQS in the San Joaquin Valley are based on regional inputs, such as regional inventories of precursor pollutants (NOx, SOx and VOCs) and the atmospheric chemistry and meteorology of the Valley.[10] At a very basic level, the models simulate future ozone or PM levels based on predicted changes in precursor

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[8] See, e.g., United States Environmental Protection Agency, *Table of National Ambient Air Quality Standards*, available at: http://www.epa.gov/air/criteria.html#3 (visited March 10, 2015).

[9] *San Joaquin Valley Unified Air Pollution Control District 2013 Plan for the Revoked 1-Hour Ozone Standard*, Ch. 2 p. 2-16, available at: http://www.valleyair.org/Air_Quality_Plans/OzoneOneHourPlan2013/02Chapter2ScienceTrendsModeling.pdf (visited March 10, 2015).

[10] *Id.* at Ch. 2 p. 2-19 (visited March 12, 2015); *San Joaquin Valley Unified Air Pollution Control District 2008 PM2.5 Plan*, Appendix F, pp. F-2 – F-5, available at: http://www.valleyair.org/Air_Quality_Plans/docs/AQ_Final_Adopted_PM2.5/20%20Appendix%20F.pdf (visited March 19, 2015).

emissions Valley wide.[11] Because the NAAQS are set levels necessary to protect human health, the closer a region is to attaining a particular NAAQS, the lower the human health impact is from that pollutant.

The goal of these modeling exercises is not to determine whether the emissions generated by a particular factory or development project will affect the date that the Valley attains the NAAQS. Rather, the Air District's modeling and planning strategy is regional in nature and based on the extent to which *all* of the emission-generating sources in the Valley (current and future) must be controlled in order to reach attainment.[12]

Accordingly, the Air District has based its thresholds of significance for CEQA purposes on the levels that scientific and factual data demonstrate that the Valley can accommodate without affecting the attainment date for the NAAQS.[13] The Air District has tied its CEQA significance thresholds to the level at which stationary pollution sources permitted by the Air District must "offset" their emissions.[14] This "offset"

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[11] *Id.*

[12] Although the Air District does have a dispersion modeling tool used during its air permitting process that is used to predict whether a particular project's directly emitted PM will either cause an exceedance of the PM NAAQS or contribute to an existing exceedance, this model bases the prediction on a worst case scenario of emissions and meteorology and has no provision for predicting any associated human health impacts. Further, this analysis is only performed for stationary sources (factories, oil refineries, etc.) that are required to obtain a New Source Review permit from the Air District and not for development projects such as Friant Ranch over which the Air District has no preconstruction permitting authority. *See* San Joaquin Valley Unified Air Pollution Control District Rule 2201 §§ 2.0; 3.3.9; 4.14.1, available at: http://www.valleyair.org/rules/currntrules/Rule2201041l.pdf (visited March 19, 2015).

[13] *San Joaquin Valley Unified Air Pollution Control District Guide to Assessing and Mitigating Air Quality Impacts*, (March 19, 2015) p. 22, available at: http://www.valleyair.org/transportation/CEQA%20Rules/GAMAQI%20Jan%202002%20Rev.pdf (visited March 30, 2015).

[14] *Id.* at pp. 22, 25.

level allows for growth while keeping the cumulative effects of all new sources at a level that will not impede attainment of the NAAQS.[15] In the Valley, these thresholds are 15 tons per year of PM, and 10 tons of NOx or VOC per year. *Sierra Club*, *supra*, 172 Cal.Rptr.3d at 303; AR 4554. Thus, the CEQA air quality analysis for criteria pollutants is not really a localized, project-level impact analysis but one of regional, "cumulative impacts."

Accordingly, the significance thresholds applied in the Friant Ranch EIR (15 tons per year of PM and 10 tons of NOx or VOCs) are not intended to be indicative of any localized human health impact that the project may have. While the health effects of air pollution are of primary concern to the Air District (indeed, the NAAQS are established to protect human health), the Air District is simply not equipped to analyze whether and to what extent the criteria pollutant emissions of an individual CEQA project directly impact human health in a particular area. This is true even for projects with relatively high levels of emissions of criteria pollutant precursor emissions.

For instance, according to the EIR, the Friant Ranch project is estimated to emit 109.52 tons per year of ROG (VOC), 102.19 tons per year of NOx, and 117.38 tons per year of PM. Although these levels well

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[15] [15] *San Joaquin Valley Unified Air Pollution Control District Environmental Review Guidelines* (Aug. 2000) p. 4-11, available at: http://www.valleyair.org/transportation/CEQA%20Rules/ERG%20Adopted%20_August%202000_.pdf (visited March 12, 2015).

exceed the Air District's CEQA significance thresholds, this does not mean that one can easily determine the concentration of ozone or PM that will be created at or near the Friant Ranch site on a particular day or month of the year, or what specific health impacts will occur. Meteorology, the presence of sunlight, and other complex chemical factors all combine to determine the ultimate concentration and location of ozone or PM. This is especially true for a project like Friant Ranch where most of the criteria pollutant emissions derive not from a single "point source," but from area wide sources (consumer products, paint, etc.) or mobile sources (cars and trucks) driving to, from and around the site.

In addition, it would be extremely difficult to model the impact on NAAQS attainment that the emissions from the Friant Ranch project may have. As discussed above, the currently available modeling tools are equipped to model the impact of *all* emission sources in the Valley on attainment. According to the most recent EPA-approved emission inventory, the NOx inventory for the Valley is for the year 2014 is 458.2 tons per day, or 167,243 tons per year and the VOC (or ROG) inventory is 361.7 tons per day, or 132,020.5 tons per year.[16] Running the photochemical grid model used for predicting ozone attainment with the

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[16] *San Joaquin Valley Unified Air Pollution Control District 2007 Ozone Plan*, Appendix B pp. B-6, B-9,
available at:
http://www.valleyair.org/Air_Quality_Plans/docs/AQ_Ozone_2007_Adopted/19%20Appendix%20B%20April%202007.pdf (visited March 12, 2015).

emissions solely from the Friant Ranch project (which equate to less than one-tenth of one percent of the total NOx and VOC in the Valley) is not likely to yield valid information given the relative scale involved.

Finally, even once a model is developed to accurately ascertain local increases in concentrations of photochemical pollutants like ozone and some particulates, it remains impossible, using today's models, to correlate that increase in concentration to a specific health impact. The reason is the same: such models are designed to determine regional, population-wide health impacts, and simply are not accurate when applied at the local level.

For these reasons, it is not the norm for CEQA practitioners, including the Air District, to conduct an analysis of the localized health impacts associated with a project's criteria air pollutant emissions as part of the EIR process. When the accepted scientific method precludes a certain type of analysis, "the court cannot impose a legal standard to the contrary." *Kings County Farm Bureau v. City of Hanford* (1990) 221 Cal.App.3d 692, 717 n. 8. However, that is exactly what the Court of Appeal has done in this case. Its decision upends the way CEQA air quality analysis of criteria pollutants occurs and should be reversed.

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B. The Court of Appeal Improperly Extrapolated a Request for a Health Risk Assessment for Toxic Air Contaminants into a Requirement that the EIR contain an Analysis of Localized Health Impacts Associated with Criteria Air Pollutants.

The Court of Appeal's error in requiring the new health impact analysis for criteria air pollutants clearly stems from a misunderstanding of terms of art commonly used in the air pollution field. More specifically, the Court of Appeal (and Appellants Sierra Club et al.) appear to have confused the health risk analysis ("HRA") performed to determine the health impacts associated with a project's toxic air contaminants ("TACs"), with an analysis correlating a project's criteria air pollutants (ozone, PM and the like) with specific localized health impacts.

The first type of analysis, the HRA, is commonly performed during the Air District's stationary source permitting process for projects that emit TACs and is, thus, incorporated into the CEQA review process. An HRA is a comprehensive analysis to evaluate and predict the dispersion of TACs emitted by a project and the potential for exposure of human populations. It also assesses and quantifies both the individual and population-wide health risks associated with those levels of exposure. There is no similar analysis conducted for criteria air pollutants. Thus, the second type of analysis (required by the Court of Appeal), is not currently part of the Air District's process because, as outlined above, the health risks associated

with exposure to criteria pollutants are evaluated on a regional level based on the region's attainment of the NAAQS.

The root of this confusion between the types of analyses conducted for TACs versus criteria air pollutants appears to stem from a comment that was presented to Fresno County by the City of Fresno during the administrative process.

In its comments on the draft EIR, the City of Fresno (the only party to raise this issue) stated:

> [t]he EIR must disclose the human health related effects of the Project's air pollution impacts. (CEQA Guidelines section 15126.2(a).) The EIR fails completely in this area. The EIR should be revised to disclose and determine the significance of TAC impacts, and of human health risks due to exposure to Project-related air emissions.

(AR 4602.)

In determining that the issue regarding the correlation between the Friant Ranch project's criteria air pollutants and adverse health impacts was adequately exhausted at the administrative level, the Court of Appeal improperly read the first two sentences of the City of Fresno's comment in isolation rather than in the context of the entire comment. *See Sierra Club v. County of Fresno* (2014) 172 Cal.Rptr.3d 271, 306. Although the comment first speaks generally in terms of "human health related effects" and "air pollution," it requests only that the EIR be revised to disclose "the significance of TACs" and the "human health risks due to exposure."

The language of this request in the third sentence of the comment is significant because, to an air pollution practitioner, the language would only have indicated only that a HRA for TACs was requested, and not a separate analysis of the health impacts associated with the project's criteria air pollutants. Fresno County clearly read the comment as a request to perform an HRA for TACs and limited its response accordingly. (AR 4602.)[17] The Air District submits that it would have read the City's comment in the same manner as the County because the City's use of the terms "human health risks" and "TACs" signal that an HRA for TACs is being requested. Indeed, the Air District was also concerned that an HRA be conducted, but understood that it was not possible to conduct such an analysis until the project entered the phase where detailed site specific information, such as the types of emission sources and the proximity of the sources to sensitive receptors became available. (AR 4553.)[18] The City of Fresno was apparently satisfied with the County's discussion of human health risks, as it did not raise the issue again when it commented on the final EIR. (AR 8944 – 8960.)

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[17] Appellants do not challenge the manner in which the County addressed TACs in the EIR. (Appellants' Answer Brief p. 28 fn. 7.)

[18] Appellants rely on the testimony of Air District employee, Dan Barber, as support for their position that the County should have conducted an analysis correlating the project's criteria air pollutant emissions with localized health impacts. (Appellants Answer Brief pp. 10-11; 28.) However, Mr. Barber's testimony simply reinforces the Air District's concern that a risk assessment (HRA) be conducted once the actual details of the project become available. (AR 8863.) As to criteria air pollutants, Mr. Barber's comments are aimed at the Air District's concern about the amount of emissions and the fact that the emissions will make it "more difficult for Fresno County and the Valley to reach attainment which means that the health of Valley residents maybe [sic] adversely impacted." Mr. Barber says nothing about conducting a separate analysis of the localized health impacts the project's emissions may have.

The Court of Appeal's holding, which incorrectly extrapolates a request for an HRA for TACs into a new analysis of the localized health impacts of the project's criteria air pollutants, highlights two additional errors in the Court's decision.

First, the Court of Appeal's holding illustrates why the Court should have applied the deferential substantial evidence standard of review to the issue of whether the EIR's air quality analysis was sufficient. The regulation of air pollution is a technical and complex field and the Court of Appeal lacked the expertise to fully appreciate the difference between TACs and criteria air pollutants and tools available for analyzing each type of pollutant.

Second, it illustrates that the Court likely got it wrong when it held that the issue regarding the criteria pollutant / localized health impact analysis was properly exhausted during the administrative process. In order to preserve an issue for the court, '[t]he "exact issue" must have been presented to the administrative agency....' [Citation.] *Citizens for Responsible Equitable Environmental Development v. City of San Diego*, (2011) 196 Cal.App.4th 515, 527 129 Cal.Rptr.3d 512, 521; *Sierra Club v. City of Orange* (2008) 163 Cal.App.4th 523, 535, 78 Cal.Rptr.3d 1, 13. "'[T]he objections must be sufficiently specific so that the agency has the

opportunity to evaluate and respond to them.' [Citation.]" *Sierra Club v. City of Orange*,163 Cal.App.4th at 536.[19]

As discussed above, the City's comment, while specific enough to request a commonly performed HRA for TACs, provided the County with no notice that it should perform a new type of analysis correlating criteria pollutant tonnages to specific human health effects. Although the parties have not directly addressed the issue of failure to exhaust administrative remedies in their briefs, the Air District submits that the Court should consider how it affects the issues briefed by the parties since "[e]xhaustion of administrative remedies is a jurisdictional prerequisite to maintenance of a CEQA action." *Bakersfield Citizens for Local Control v. City of Bakersfield* (2004) 124 Cal.App.4th 1184, 1199, 22 Cal.Rptr.3d 203.

III. CONCLUSION

For all of the foregoing reasons, the Air District respectfully requests that the portion of the Court of Appeal's decision requiring an analysis correlating the localized human health impacts associated with an individual project's criteria air pollutant emissions be reversed.

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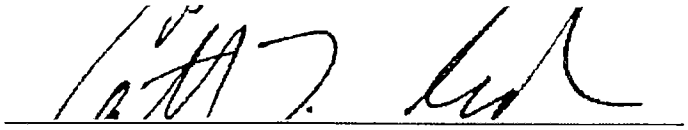
[19] *Sierra Club v. City of Orange*, is illustrative here. In that case, the plaintiffs challenged an EIR approved for a large planned community on the basis that the EIR improperly broke up the various environmental impacts by separate project components or "piecemealed" the analysis in violation of CEQA. In evaluating the defense that the plaintiffs had failed to adequately raise the issue at the administrative level, the Court held that comments such as *"the use of a single document for both a project-level and a program-level EIR [is] 'confusing',"* and *"[t]he lead agency should identify any potential adverse air quality impacts that could occur from all phases of the project and all air pollutant sources related to the project,"* were too vague to fairly raise the argument of piecemealing before the agency. *Sierra Club v. City of Orange*, 163 Cal.App.4th at 537.

correlating the localized human health impacts associated with an individual project's criteria air pollutant emissions be reversed.

Respectfully submitted,

Dated: April 2, 2015



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SAN JOAQUIN VALLEY
UNIFIED
AIR POLLUTION CONTROL
DISTRICT

CERTIFICATE OF WORD COUNT

Pursuant to Rule 8.204 of the California Rules of Court, I hereby certify that this document, based on the Word County feature of the Microsoft Word software program used to compose and print this document, contains, exclusive of caption, tables, certificate of word count, signature block and certificate of service, 3806 words.

Dated: April 2, 2015

Annette A. Ballatore-Williamson
District Counsel (SBN 192176)

Sierra Club et al, v. County of Fresno, et al
Supreme Court of California Case No.: S219783
Fifth District Court of Appeal Case No.: F066798
Fresno County Superior Court Case No.: 11CECG00726

PROOF OF SERVICE

I am over the age of 18 years and not a p[arty to the above-captioned action; that my business address is San Joaquin Valley Unified Air Pollution Control District located at 1990 E. Gettysburg Avenue, Fresno, California 93726.

On April 2, 2015, I served the document described below:

APPLICATION FOR LEAVE TO FILE AMICUS CURIAE BRIEF OF SAN JOAQUIN VALLEY UNIFIED AIR POLLUTION CONTROL DISTRICT IN SUPPORT OF DEFENDANT AND RESPONDENT, COUNTY OF FRESNO

On all parties to this action at the following addresses and in the following manner:

PLEASE SEE ATTACHED SERVICE LIST

(XX) **(BY MAIL)** I caused a true copy of each document(s) to be laced in a sealed envelope with first-class postage affixed and placed the envelope for collection. Mail is collected daily at my office and placed in a United State Postal Service collection box for pick-up and delivery that same day.

( ) **(BY ELECTRONIC MAIL)** I caused a true and correct scanned image (.PDF file) copy to be transmitted via electronic mail transfer system in place at the San Joaquin Valley Unified Air Pollution Control District ("District"), originating from the undersigned at 1990 E. Gettysburg Avenue, Fresno, CA, to the address(es) indicated below.

( ) **(BY OVERNIGHT MAIL)** I caused a true and correct copy to be delivered via Federal Express to the following person(s) or their representative at the address(es) listed below.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct and that I executed this document on April 2, 2015, at Fresno, California.

Esthela Soto

SERVICE LIST

Sierra Club et al, v. County of Fresno, et al
Supreme Court of California Case No.: S219783
Fifth District Court of Appeal Case No.: F066798
Fresno County Superior Court Case No.: 11CECG00726

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S219783

IN THE SUPREME COURT OF C ALIFORNIA

SIERRA CLUB, REVIVE THE SAN JOAQUIN, and
LEAGUE OF WOMEN VOTERS OF FRESNO,

Plaintiffs and Appellants,

v.

COUNTY OF FRESNO,

Defendant and Respondent,

and,

FRIANT RANCH, L.P.,

Real Party in Interest and Respondent.

SUPREME COURT
FILED
APR 13 2015
Frank A. McGuire Clerk
Deputy

After a Published Decision by the Court of Appeal, filed May 27, 2014
Fifth Appellate District Case No. F066798

Appeal from the Superior Court of California, County of Fresno
Case No. 11CECG00726
Honorable Rosendo A. Pena, Jr.

APPLICATION OF THE SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT FOR LEAVE TO FILE BRIEF OF *AMICUS CURIAE* IN SUPPORT OF NEITHER PARTY AND *[PROPOSED]* BRIEF OF *AMICUS CURIAE*

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TABLE OF CONTENTS

APPLICATION FOR LEAVE TO FILE *amicus curiae* brief..... App-1

HOW THIS BRIEF WILL ASSIST THE COURT App-1

STATEMENT OF INTEREST OF *AMICUS CURIAE* App-3

CERTIFICATION REGARDING AUTHORSHIP & FUNDING App-4

BRIEF OF AMICUS CURIAE 1

SUMMARY OF ARGUMENT 1

ARGUMENT 2

I. RELEVANT FACTUAL AND LEGAL FRAMEWORK. 2

A. Air Quality Regulatory Background 2

B. The SCAQMD's Role Under CEQA 6

II. THIS COURT SHOULD NOT SET A HARD-AND-FAST RULE CONCERNING THE EXTENT TO WHICH AN EIR MUST CORRELATE A PROJECT'S EMISSION OF POLLUTANTS WITH RESULTING HEALTH IMPACTS..... 8

III. THE QUESTION OF WHETHER AN EIR CONTAINS SUFFICIENT ANALYSIS TO MEET CEQA'S REQUIREMENTS IS A MIXED QUESTION OF FACT AND LAW GOVERNED BY TWO DIFFERENT STANDARDS OF REVIEW. 16

A. Standard of Review for Feasibility Determination and Sufficiency as an Informative Document 16

B. Friant Ranch's Rationale for Rejecting the Independent Judgment Standard of Review is Unsupported by Case Law. 23

IV. COURTS MUST SCRUPULOUSLY ENFORCE THE REQUIREMENTS THAT LEAD AGENCIES CONSULT WITH AND OBTAIN COMMENTS FROM AIR DISTRICTS 26

CONCLUSION 29

TABLE OF AUTHORITIES

State Cases

Association of Irritated Residents v. County of Madera (2003)
107 Cal App.4th 1383 ..... 1, 9

Bakersfield Citizens for Local Control v. City of Bakersfield (2004)
124 Cal.App.4th 1184 ..... 9, 22

Berkeley Keep Jets Over the Bay v. Board of Port Commissioners
(2007) 91 Cal.App.4th 1344 ..... 21, 28

Center for Biological Diversity v. County of San Bernardino (2010)
185 Cal.App.4th 866. 20

Citizens of Goleta Valley v. Bd. of Supervisors (1990)
52 Cal.3d 553 8-9

County of Amador v. El Dorado County Water Agency (1999)
76 Cal.App.4th 931 23

Crocker National Bank v. City and County of San Francisco (1989)
49 Cal.3d 881 18

Ebbetts Pass Forest Watch v. California Dept. of Forestry & Fire
Protection (2008) 43 Cal.4th 936 21

Fall River Wild Trout Foundation v. County of Shasta, (1999)
70 Cal.App.4th 482 ..... 27, 28

Gray v. County of Madera (2008)
167 Cal.App.4th 1099 25

Laurel Heights Improvement Assn. v.
Regents of the Univ of Cal. ("*Laurel Heights I*")
(1988) 47 Cal.3d 376 ..... 1, 8, 19, 20, 21, 22

Natural Res. Def. Council v SCAQMD,
Los Angeles Superior Court No. BS110792 12

Neighbors for Smart Rail v. Exposition Metro Line (2013)
57 Cal.4th 439 ..... 15, 20

State Cases (cont'd)

Orange County Air Pollution Control District v. Public Util. Com. (1971) 4 Cal.3d 945 27

Save Our Peninsula Comm. v. Monterey County Bd. of Supervisors (2001) 87 Cal.App.4th 99 19

Schenck v. County of Sonoma (2011) 198 Cal.App.4th 949 ..... 26, 27

Sierra Club v. County of Fresno (2014) 226 Cal.App.4th 704 (superseded by grant of review) 172 Cal.Rptr.3d 271 ..... 9, 23

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Uphold Our Heritage v. Town of Woodside (2007) 147 Cal.App.4th 587 20

Vineyard Area Citizens for Responsible Growth, Inc. v. City of Rancho Cordova (2007) 40 Cal.4th 412 ..... 1, 17, 19, 24, 25, 26

Western Oil & Gas Assn. v. Monterey Bay Unified APCD (1989) 49 Cal.3d 408 5

California Statutes

Health & Saf. Code § 39666 5
Health & Saf. Code § 40000 3
Health & Saf. Code § 40001 3
Health & Saf. Code § 40410 3
Health & Saf. Code §§ 40460, et seq 4
Health & Saf. Code § 41508 5
Health & Saf. Code §§ 42300, et seq 5
Health & Saf. Code § 44320 5
Health & Saf. Code § 44322 5
Health & Saf. Code § 44360 5
Pub. Resources Code § 20180.3 27
Pub. Resources Code § 21061 19
Pub. Resources Code § 21061.1 16

California Statutes (cont'd)

Pub. Resources Code § 21080 6
Pub. Resources Code § 21080.5 6
Pub. Resources Code § 21083.1 26
Pub. Resources Code § 21100 27
Pub. Resources Code § 21104 ..... 6, 7 26
Pub. Resources Code §§ 21150-21154 7
Pub. Resources Code § 21151.8 25
Pub. Resources Code § 21153 ..... 6, 7, 26

California Regulations

Cal. Code Regs., tit. 14, §§ 15000, et seq. ("CEQA Guidelines")

CEQA Guidelines § 15050 6
CEQA Guidelines § 15051 ..... 1, 6
CEQA Guidelines § 15073 6
CEQA Guidelines § 15086 6
CEQA Guidelines § 15088.5 28
CEQA Guidelines § 15096 6
CEQA Guidelines § 15126.2 25
CEQA Guidelines § 15131 26
CEQA Guidelines § 15144 ..... 19, 24
CEQA Guidelines § 15151 ..... 9, 18, 19
CEQA Guidelines § 15204 ..... 1, 9, 21
CEQA Guidelines § 15251 6
CEQA Guidelines § 15366 7
CEQA Guidelines § 15381 6

Cal. Code Regs., tit. 17, § 60104 3

Federal Statutes

42 U.S.C. § 7401; CAA § 101 4
42 U.S.C. § 7408; CAA § 108 3
42 U.S.C. § 7409; CAA § 109 4
42 U.S.C. § 7410; CAA § 110 ..... 4, 5
42 U.S.C. § 7412; CAA § 112 5
42 U.S.C. § 7502; CAA § 172 ..... 5, 13
42 U.S.C. § 7503; CAA § 173 ..... 5, 13
42 U.S.C. § 7511a; CAA § 182 13
42 U.S.C. § 7521; CAA § 202 4
42 U.S.C. § 7543; CAA § 209 4
42 U.S.C. § 7547; CAA § 213 4

Rules

SCAQMD Rule 1303 7
SCAQMD Rule 1401 ..... 5, 8, 9

Other

Association of Environmental Professionals, 2015 CEQA Statute and Guidelines (2015) (Appendix G, "Environmental Checklist Form." 24

CARB, *Health Impacts Analysis: PM Premature Death Relationship* 14

CARB, *Health Impacts Analysis: PM Mortality Relationship* 16

CARB, Resolution 98-35, Aug. 27, 1998 8

SCAQMD, *Air Quality Analysis Handbook* 13

SCAQMD, *Final 2012 AQMP (Feb. 2013)* 3, 11

SCAQMD, *Final Subsequent Mitigated Negative Declaration for: Warren E&P, Inc. WTU Central Facility, New Equipment Project (certified July 19, 2011)* 14-15

SCAQMD Governing Board Agenda, February 4, 2011, Agenda Item 26, *Assessment for: Re-adoption of Proposed Rule 1315 – Federal New Source Review Tracking System,* 12

SCAQMD Governing Board Agenda, April 3, 2015, Agenda Item 16, Attachment A 7

SCAQMD, Health Risk Assessment Summary form 10

SCAQMD, *Supplemental Guidelines for Preparing Risk Assessments for the Air Toxics "Hot Spots" Information and Assessment Act (AB2588)* 10

U.S. EPA, Ground Level Ozone 11

U.S. EPA, *Guideline on Ozone Monitoring Site Selection* (Aug. 1998) EPA-454/R-98-002 § 5.1.2 11

U.S. EPA, *Health Effects of Ozone in the General Population,* Figure 9, ... 11

U.S. EPA, National Ambient Air Quality Standards (NAAQS) 4

U.S. EPA, Particulate Matter (PM) 4

TO THE HONORABLE CHIEF JUSTICE AND JUSTICES OF THE SUPREME COURT:

APPLICATION FOR LEAVE TO FILE *AMICUS CURIAE* BRIEF

Pursuant to Rule 8.520(f) of the California Rules of Court, the South Coast Air Quality Management District (SCAQMD) respectfully requests leave to file the attached *amicus curiae* brief. Because SCAQMD's position differs from that of either party, we request leave to submit this amicus brief in support of neither party.

HOW THIS BRIEF WILL ASSIST THE COURT

SCAQMD's proposed amicus brief takes a position on two of the issues in this case. In both instances, its position differs from that of either party. The issues are:

1) Does the California Environmental Quality Act (CEQA) require an environmental impact report (EIR) to correlate a project's air pollution emissions with specific levels of health impacts?
2) What is the proper standard of review for determining whether an EIR provides sufficient information on the health impacts caused by a project's emission of air pollutants?

This brief will assist the Court by discussing the practical realities of correlating identified air quality impacts with specific health outcomes. In short, CEQA requires agencies to provide detailed information about a project's air quality impacts that is sufficient for the public and decisionmakers to adequately evaluate the project and meaningfully understand its impacts. However, the level of analysis is governed by a rule of reason; CEQA only requires agencies to conduct analysis if it is reasonably feasible to do so.

With regard to health-related air quality impacts, an analysis that correlates a project's air pollution emissions with specific levels of health impacts will be feasible in some cases but not others. Whether it is feasible depends on a variety of factors, including the nature of the project and the nature of the analysis under consideration. The feasibility of analysis may also change over time as air districts and others develop new tools for measuring projects' air quality related health impacts. Because SCAQMD has among the most sophisticated air quality modeling and health impact evaluation capability of any of the air districts in the State, it is uniquely situated to express an opinion on the extent to which the Court should hold that CEQA requires lead agencies to correlate air quality impacts with specific health outcomes.

SCAQMD can also offer a unique perspective on the question of the appropriate standard of review. SCAQMD submits that the proper standard of review for determining whether an EIR is sufficient as an informational document is more nuanced than argued by either party. In our view, this is a mixed question of fact and law. It includes determining whether additional analysis is feasible, which is primarily a factual question that should be reviewed under the substantial evidence standard. However, it also involves determining whether the omission of a particular analysis renders an EIR insufficient to serve CEQA's purpose as a meaningful, informational document. If a lead agency has not determined that a requested analysis is infeasible, it is the court's role to determine whether the EIR nevertheless meets CEQA's purposes, and courts should not defer to the lead agency's conclusions regarding the legal sufficiency of an EIR's analysis. The ultimate question of whether an EIR's analysis is "sufficient" to serve CEQA's informational purposes is predominately a question of law that courts should review de novo.

This brief will explain the rationale for these arguments and may assist the Court in reaching a conclusion that accords proper respect to a lead agency's factual conclusions while maintaining judicial authority over the ultimate question of what level of analysis CEQA requires.

STATEMENT OF INTEREST OF *AMICUS CURIAE*

The SCAQMD is the regional agency primarily responsible for air pollution control in the South Coast Air Basin, which consists of all of Orange County and the non-desert portions of the Los Angeles, Riverside, and San Bernardino Counties. (Health & Saf. Code § 40410; Cal. Code Regs., tit. 17, § 60104.) The SCAQMD participates in the CEQA process in several ways. Sometimes it acts as a lead agency that prepares CEQA documents for projects. Other times it acts as a responsible agency when it has permit authority over some part of a project that is undergoing CEQA review by a different lead agency. Finally, SCAQMD also acts as a commenting agency for CEQA documents that it receives because it is a public agency with jurisdiction by law over natural resources affected by the project.

In all of these capacities, SCAQMD will be affected by the decision in this case. SCAQMD sometimes submits comments requesting that a lead agency perform an additional type of air quality or health impacts analysis. On the other hand, SCAQMD sometimes determines that a particular type of health impact analysis is not feasible or would not produce reliable and informative results. Thus, SCAQMD will be affected by the Court's resolution of the extent to which CEQA requires EIRs to correlate emissions and health impacts, and its resolution of the proper standard of review.

CERTIFICATION REGARDING AUTHORSHIP AND FUNDING

No party or counsel in the pending case authored the proposed amicus curiae brief in whole or in part, or made any monetary contribution intended to fund the preparation or submission of the brief. No person or entity other than the proposed *Amicus Curiae* made any monetary contribution intended to fund the preparation or submission of the brief.

Respectfully submitted,

DATED: April 3, 2015

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BRIEF OF AMICUS CURIAE

SUMMARY OF ARGUMENT

The South Coast Air Quality Management District (SCAQMD) submits that this Court should not try to establish a hard-and-fast rule concerning whether lead agencies are required to correlate emissions of air pollutants with specific health consequences in their environmental impact reports (EIR). The level of detail required in EIRs is governed by a few, core CEQA (California Environmental Quality Act) principles. As this Court has stated, "[a]n EIR must include detail sufficient to enable those who did not participate in its preparation to understand and to consider meaningfully the issues raised by the proposed project." (*Laurel Heights Improvement Assn. v. Regents of the Univ of Cal.* (1988) 47 Cal.3d 376, 405 ["*Laurel Heights I*"]) Accordingly, "an agency must use its best efforts to find out and disclose all that it reasonably can." (*Vineyard Area Citizens for Responsible Growth, Inc. v. City of Rancho Cordova* (2007) 40 Cal.4th 412, 428 (quoting CEQA Guidelines § 15144)[1].). However, "[a]nalysis of environmental effects need not be exhaustive, but will be judged in light of what is reasonably feasible." (*Association of Irritated Residents v. County of Madera* (2003) 107 Cal.App.4th 1383, 1390; CEQA Guidelines §§ 15151, 15204(a).)

With regard to analysis of air quality related health impacts, EIRs must generally quantify a project's pollutant emissions, but in some cases it is not feasible to correlate these emissions to specific, quantifiable health impacts (e.g., premature mortality; hospital admissions). In such cases, a general description of the adverse health impacts resulting from the pollutants at issue may be sufficient. In other cases, due to the magnitude

[1] The CEQA Guidelines are found at Cal. Code Regs., tit. 14 §§ 15000, *et seq.*

or nature of the pollution emissions, as well as the specificity of the project involved, it may be feasible to quantify health impacts. Or there may be a less exacting, but still meaningful analysis of health impacts that can feasibly be performed. In these instances, agencies should disclose those impacts.

SCAQMD also submits that whether or not an EIR complies with CEQA's informational mandates by providing sufficient, feasible analysis is a mixed question of fact and law. Pertinent here, the question of whether an EIR's discussion of health impacts from air pollution is sufficient to allow the public to understand and consider meaningfully the issues involves two inquiries: (1) Is it feasible to provide the information or analysis that a commenter is requesting or a petitioner is arguing should be required?; and (2) Even if it is feasible, is the agency relying on other policy or legal considerations to justify not preparing the requested analysis? The first question of whether an analysis is feasible is primarily a question of fact that should be judged by the substantial evidence standard. The second inquiry involves evaluating CEQA's information disclosure purposes against the asserted reasons to not perform the requested analysis. For example, an agency might believe that its EIR meets CEQA's informational disclosure standards even without a particular analysis, and therefore choose not to conduct that analysis. SCAQMD submits that this is more of a legal question, which should be reviewed de novo as a question of law.

ARGUMENT

I. RELEVANT FACTUAL AND LEGAL FRAMEWORK.

A. Air Quality Regulatory Background

The South Coast Air Quality Management District (SCAQMD) is one of the local and regional air pollution control districts and air quality

management districts in California. The SCAQMD is the regional air pollution agency for the South Coast Air Basin, which consists of all of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino Counties. (Health & Saf. Code § 40410, 17 Cal. Code Reg. § 60104.) The SCAQMD also includes the Coachella Valley in Riverside County (Palm Springs area to the Salton Sea). (SCAQMD, *Final 2012 AQMP (Feb. 2013)*, http://www.aqmd.gov/home/library/clean-air-plans/air-quality-mgt-plan/final-2012-air-quality-management-plan; then follow "chapter 7" hyperlink; pp 7-1, 7-3 (last visited Apr. 1, 2015).) The SCAQMD's jurisdiction includes over 16 million residents and has the worst or nearly the worst air pollution levels in the country for ozone and fine particulate matter. (SCAQMD, *Final 2012 AQMP (Feb. 2013)*, http://www.aqmd.gov/home/library/clean-air-plans/air-quality-mgt-plan/final-2012-air-quality-management-plan; then follow "Executive Summary" hyperlink p. ES-1 (last visited Apr. 1, 2015).)

Under California law, the local and regional districts are primarily responsible for controlling air pollution from all sources except motor vehicles. (Health & Saf. Code § 40000.) The California Air Resources Board (CARB), part of the California Environmental Protection Agency, is primarily responsible for controlling pollution from motor vehicles. (*Id.*) The air districts must adopt rules to achieve and maintain the state and federal ambient air quality standards within their jurisdictions. (Health & Saf. Code § 40001.)

The federal Clean Air Act (CAA) requires the United States Environmental Protection Agency (EPA) to identify pollutants that are widely distributed and pose a threat to human health, developing a so-called "criteria" document. (42 U.S.C. § 7408; CAA § 108.) These pollutants are frequently called "criteria pollutants." EPA must then establish "national ambient air quality standards" at levels "requisite to protect public health",

allowing "an adequate margin of safety." (42 U.S.C. § 7409; CAA § 109.) EPA has set standards for six identified pollutants: ozone, nitrogen dioxide, sulfur dioxide, carbon monoxide, particulate matter (PM), and lead. (U.S. EPA, National Ambient Air Quality Standards (NAAQS), http://www.epa.gov/air/criteria.html (last updated Oct. 21, 2014).)[2]

Under the Clean Air Act, EPA sets emission standards for motor vehicles and "nonroad engines" (mobile farm and construction equipment, marine vessels, locomotives, aircraft, etc.). (42 U.S.C. §§ 7521, 7547; CAA §§ 202, 213.) California is the only state allowed to establish emission standards for motor vehicles and most nonroad sources; however, it may only do so with EPA's approval. (42 U.S.C. §§ 7543(b), 7543(e); CAA §§ 209(b), 209(c).) Sources such as manufacturing facilities, power plants and refineries that are not mobile are often referred to as "stationary sources." The Clean Air Act charges state and local agencies with the primary responsibility to attain the national ambient air quality standards. (42 U.S.C. § 7401(a)(3); CAA § 101(a)(3).) Each state must adopt and implement a plan including enforceable measures to achieve and maintain the national ambient air quality standards. (42 U.S.C. § 7410; CAA § 110.) The SCAQMD and CARB jointly prepare portion of the plan for the South Coast Air Basin and submit it for approval by EPA. (Health & Saf. Code §§ 40460, et seq.)

The Clean Air Act also requires state and local agencies to adopt a permit program requiring, among other things, that new or modified "major" stationary sources use technology to achieve the "lowest achievable emission rate," and to control minor stationary sources as

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[2] Particulate matter (PM) is further divided into two categories: fine particulate or $PM_{2.5}$ (particles with a diameter of less than or equal to 2.5 microns) and coarse particulate (PM_{10}) (particles with a diameter of 10 microns or less). (U.S. EPA, Particulate Matter (PM), http://www.epa.gov/airquality/particlepollution/ (last visited Apr. 1, 2015).)

needed to help attain the standards. (42 U.S.C. §§ 7502(c)(5), 7503(a)(2), 7410(a)(2)(C); CAA §§ 172(c)(5), 173(a)(2), 110(a)(2)(C).) The air districts implement these permit programs in California. (Health & Saf. Code §§ 42300, et seq.)

The Clean Air Act also sets out a regulatory structure for over 100 so-called "hazardous air pollutants" calling for EPA to establish "maximum achievable control technology" (MACT) for sources of these pollutants. (42 U.S.C. § 7412(d)(2); CAA § 112(d)(2).) California refers to these pollutants as "toxic air contaminants" (TACs) which are subject to two state-required programs. The first program requires "air toxics control measures" for specific categories of sources. (Health & Saf. Code § 39666.) The other program requires larger stationary sources and sources identified by air districts to prepare "health risk assessments" for impacts of toxic air contaminants. (Health & Saf. Code §§ 44320(b), 44322, 44360.) If the health risk exceeds levels identified by the district as "significant," the facility must implement a "risk reduction plan" to bring its risk levels below "significant" levels. Air districts may adopt additional more stringent requirements than those required by state law, including requirements for toxic air contaminants. (Health & Saf. Code § 41508; *Western Oil & Gas Assn. v. Monterey Bay Unified APCD* (1989) 49 Cal.3d 408, 414.) For example, SCAQMD has adopted a rule requiring new or modified sources to keep their risks below specified levels and use best available control technology (BACT) for toxics. (SCAQMD, *Rule 1401-New Source Review of Toxic Air Contaminants*, http://www.aqmd.gov/home/regulations/rules/scaqmd-rule-book/regulation-xiv; then follow "Rule 1401" hyperlink (last visited Apr. 1, 2015).)

B. The SCAQMD's Role Under CEQA

The California Environmental Quality Act (CEQA) requires public agencies to perform an environmental review and appropriate analysis for projects that they implement or approve. (Pub. Resources Code § 21080(a).) The agency with primary approval authority for a particular project is generally the "lead agency" that prepares the appropriate CEQA document. (CEQA Guidelines §§ 15050, 15051.) Other agencies having a subsequent approval authority over all or part of a project are called "responsible" agencies that must determine whether the CEQA document is adequate for their use. (CEQA Guidelines §§ 15096(c), 15381.) Lead agencies must also consult with and circulate their environmental impact reports to "trustee agencies" and agencies "with jurisdiction by law" including "authority over resources which may be affected by the project." (Pub. Resources Code §§ 21104(a), 21153; CEQA Guidelines §§ 15086(a)(3), 15073(c).) The SCAQMD has a role in all these aspects of CEQA.

Fulfilling its responsibilities to implement its air quality plan and adopt rules to attain the national ambient air quality standards, SCAQMD adopts a dozen or more rules each year to require pollution reductions from a wide variety of sources. The SCAQMD staff evaluates each rule for any adverse environmental impact and prepares the appropriate CEQA document. Although most rules reduce air emissions, they may have secondary environmental impacts such as use of water or energy or disposal of waste—e.g., spent catalyst from control equipment.[3]

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[3] The SCAQMD's CEQA program for its rules is a "Certified Regulatory Program" under which it prepares a "functionally equivalent" document in lieu of a negative declaration or EIR. (Pub. Resources Code § 21080.5, CEQA Guidelines § 15251(l).)

The SCAQMD also approves a large number of permits every year to construct new, modified, or replacement facilities that emit regulated air pollutants. The majority of these air pollutant sources have already been included in an earlier CEQA evaluation for a larger project, are currently being evaluated by a local government as lead agency, or qualify for an exemption. However, the SCAQMD sometimes acts as lead agency for major projects where the local government does not have a discretionary approval. In such cases, SCAQMD prepares and certifies a negative declaration or environmental impact report (EIR) as appropriate.[4] SCAQMD evaluates perhaps a dozen such permit projects under CEQA each year. SCAQMD is often also a "responsible agency" for many projects since it must issue a permit for part of the projects (e.g., a boiler used to provide heat in a commercial building). For permit projects evaluated by another lead agency under CEQA, SCAQMD has the right to determine that the CEQA document is inadequate for its purposes as a responsible agency, but it may not do so because its permit program already requires all permitted sources to use the best available air pollution control technology. (SCAQMD, *Rule 1303(a)(1) – Requirements*, http://www.aqmd.gov/home/regulations/rules/scaqmd-rule-book/regulation-xiii; then follow "Rule 1303" hyperlink (last visited Apr. 1, 2015).)

Finally, SCAQMD receives as many as 60 or more CEQA documents each month (around 500 per year) in its role as commenting agency or an agency with "jurisdiction by law" over air quality—a natural resource affected by the project. (Pub. Resources Code §§ 21104(a), 21153; CEQA Guidelines § 15366(a)(3).) The SCAQMD staff provides comments on as many as 25 or 30 such documents each month.

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[4] The SCAQMD's permit projects are not included in its Certified Regulatory Program, and are evaluated under the traditional local government CEQA analysis. (Pub. Resources Code §§ 21150-21154.)

(SCAQMD Governing Board Agenda, Apr. 3, 2015, Agenda Item 16, Attachment A, http://www.aqmd.gov/home/library/meeting-agendas-minutes/agenda?title=governing-board-meeting-agenda-april-3-2015; then follow "16. Lead Agency Projects and Environmental Documents Received by SCAQMD" hyperlink (last visited Apr. 1, 2015).) Of course, SCAQMD focuses its commenting efforts on the more significant projects.

Typically, SCAQMD comments on the adequacy of air quality analysis, appropriateness of assumptions and methodology, and completeness of the recommended air quality mitigation measures. Staff may comment on the need to prepare a health risk assessment detailing the projected cancer and noncancer risks from toxic air contaminants resulting from the project, particularly the impacts of diesel particulate matter, which CARB has identified as a toxic air contaminant based on its carcinogenic effects. (California Air Resources Board, Resolution 98-35, Aug. 27, 1998, http://www.arb.ca.gov/regact/diesltac/diesltac.htm; then follow Resolution 98-35 hyperlink (last visited Apr. 1, 2015).) Because SCAQMD already requires new or modified stationary sources of toxic air contaminants to use the best available control technology for toxics and to keep their risks below specified levels, (SCAQMD Rule 1401, supra, note 15), the greatest opportunity to further mitigate toxic impacts through the CEQA process is by reducing emissions—particularly diesel emissions—from vehicles.

II. THIS COURT SHOULD NOT SET A HARD-AND-FAST RULE CONCERNING THE EXTENT TO WHICH AN EIR MUST CORRELATE A PROJECT'S EMISSION OF POLLUTANTS WITH RESULTING HEALTH IMPACTS.

Numerous cases hold that courts do not review the correctness of an EIR's conclusions but rather its sufficiency as an informative document. (*Laurel Heights 1, supra*, 47 Cal.3d at p. 392; *Citizens of Goleta Valley v.*

Bd. of Supervisors (1990) 52 Cal.3d 553, 569; *Bakersfield Citizens for Local Control v. City of Bakersfield* (2004) 124 Cal.App.4th 1184, 1197.)

As stated by the Court of Appeal in this case, where an EIR has addressed a topic, but the petitioner claims that the information provided about that topic is insufficient, courts must "draw[] a line that divides *sufficient* discussions from those that are *insufficient*." (*Sierra Club v. County of Fresno* (2014) 226 Cal.App.4th 704 (superseded by grant of review) 172 Cal.Rptr.3d 271, 290.) The Court of Appeal readily admitted that "[t]he terms themselves – sufficient and insufficient – provide little, if any, guidance as to where the line should be drawn. They are simply labels applied once the court has completed its analysis." (*Id.*)

The CEQA Guidelines, however, provide guidance regarding what constitutes a sufficient discussion of impacts. Section 15151 states that "the sufficiency of an EIR is to be reviewed in light of what is reasonably feasible." Case law reflects this: "Analysis of environmental effects need not be exhaustive, but will be judged in light of what was reasonably feasible." (*Association of Irritated Residents v. County of Madera, supra,* 107 Cal.App.4th at p. 1390; see also CEQA Guidelines § 15204(a).)

Applying this test, this Court cannot realistically establish a hard-and-fast rule that an analysis correlating air pollution impacts of a project to quantified resulting health impacts is always required, or indeed that it is never required. Simply put, in some cases such an analysis will be "feasible"; in some cases it will not.

For example, air pollution control districts often require a proposed new source of toxic air contaminants to prepare a "health risk assessment" before issuing a permit to construct. District rules often limit the allowable cancer risk the new source may cause to the "maximally exposed individual" (worker and residence exposures). (*See, e.g.*, SCAQMD Rule 1401(c)(8); 1401(d)(1), *supra* note 15.) In order to perform this analysis, it

is necessary to have data regarding the sources and types of air toxic contaminants, location of emission points, velocity of emissions, the meteorology and topography of the area, and the location of receptors (worker and residence). (SCAQMD, *Supplemental Guidelines for Preparing Risk Assessments for the Air Toxics "Hot Spots" Information and Assessment Act (AB2588), pp. 11-16*; (last visited Apr. 1, 2015) http://www.aqmd.gov/home/library/documents-support-material; "Guidelines" hyperlink; AB2588; then follow AB2588 Risk Assessment Guidelines hyperlink.)

Thus, it is feasible to determine the health risk posed by a new gas station locating at an intersection in a mixed use area, where receptor locations are known. On the other hand, it may not be feasible to perform a health risk assessment for airborne toxics that will be emitted by a generic industrial building that was built on "speculation" (i.e., without knowing the future tenant(s)). Even where a health risk assessment can be prepared, however, the resulting maximum health risk value is only a calculation of risk—it does not necessarily mean anyone will contract cancer as a result of the project.

In order to find the "cancer burden" or expected additional cases of cancer resulting from the project, it is also necessary to know the numbers and location of individuals living within the "zone of impact" of the project: i.e., those living in areas where the projected cancer risk from the project exceeds one in a million. (SCAQMD, Health Risk Assessment Summary form, http://www.aqmd.gov/home/forms ; filter by "AB2588" category; then "Health Risk Assessment" hyperlink (last visited Apr. 1, 2015).) The affected population is divided into bands of those exposed to at least 1 in a million risk, those exposed to at least 10 in a million risk, etc. up to those exposed at the highest levels. (*Id.*) This data allows agencies to calculate an approximate number of additional cancer cases expected from

the project. However, it is not possible to predict which particular individuals will be affected.

For the so-called criteria pollutants[5], such as ozone, it may be more difficult to quantify health impacts. Ozone is formed in the atmosphere from the chemical reaction of the nitrogen oxides (NO_x) and volatile organic compounds (VOC) in the presence of sunlight. (U.S. EPA, Ground Level Ozone, http://www.epa.gov/airquality/ozonepollution/ (last updated Mar. 25, 2015).) It takes time and the influence of meteorological conditions for these reactions to occur, so ozone may be formed at a distance downwind from the sources. (U.S. EPA, *Guideline on Ozone Monitoring Site Selection* (Aug. 1998) EPA-454/R-98-002 § 5.1.2, http://www.epa.gov/ttnamti1/archive/cpreldoc.html (last visited Apr. 1, 2015).) NO_x and VOC are known as "precursors" of ozone.

Scientifically, health effects from ozone are correlated with increases in the ambient level of ozone in the air a person breathes. (U.S. EPA, *Health Effects of Ozone in the General Population,* Figure 9, http://www.epa.gov/apti/ozonehealth/population.html#levels (last visited Apr. 1, 2015).) However, it takes a large amount of additional precursor emissions to cause a modeled increase in ambient ozone levels over an entire region. For example, the SCAQMD's 2012 AQMP showed that reducing NO_x by 432 tons per day (157,680 tons/year) and reducing VOC by 187 tons per day (68,255 tons/year) would reduce ozone levels at the SCAQMD's monitor site with the highest levels by only 9 parts per billion. (South Coast Air Quality Management District, *Final 2012 AQMP (February 2013)*, http://www.aqmd.gov/home/library/clean-air-plans/air-quality-mgt-plan/final-2012-air-quality-management-plan; then follow "Appendix V: Modeling & Attainment Demonstrations" hyperlink,

[5] See discussion of types of pollutants, supra, Part I.A.

pp. v-4-2, v-7-4, v-7-24.) SCAQMD staff does not currently know of a way to accurately quantify ozone-related health impacts caused by NO_x or VOC emissions from relatively small projects.

On the other hand, this type of analysis may be feasible for projects on a regional scale with very high emissions of NO_x and VOCs, where impacts are regional. For example, in 2011 the SCAQMD performed a health impact analysis in its CEQA document for proposed Rule 1315, which authorized various newly-permitted sources to use offsets from the districts "internal bank" of emission reductions. This CEQA analysis accounted for essentially *all* the increases in emissions due to new or modified sources in the District between 2010 and 2030.[6] The SCAQMD was able to correlate this very large emissions increase (e.g., 6,620 pounds per day NO_x (1,208 tons per year), 89,180 pounds per day VOC (16,275 tons per year)) to expected health outcomes from ozone and particulate matter (e.g., 20 premature deaths per year and 89,947 school absences in the year 2030 due to ozone).[7] (SCAQMD Governing Board Agenda, February 4, 2011, Agenda Item 26, *Assessment for: Re-adoption of Proposed Rule 1315 – Federal New Source Review Tracking System* (see hyperlink in fn 6*)* at p. 4.1-35, Table 4.1-29.)

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[6] (SCAQMD Governing Board Agenda, February 4, 2011, Agenda Item 26, Attachment G, *Assessment for: Re-adoption of Proposed Rule 1315 – Federal New Source Review Tracking System, Vol. 1, p.4.0-6,* http://www.aqmd.gov/home/library/meeting-agendas-minutes/agenda?title=governing-board-meeting-agenda-february-4-2011; the follow "26. Adopt Proposed Rule 1315 – Federal New Source Review Tracking System" (last visited April 1, 2015).)

[7] The SCAQMD was able to establish the location of future NO_x and VOC emissions by assuming that new projects would be built in the same locations and proportions as existing stationary sources. This CEQA document was upheld by the Los Angeles County Superior Court in *Natural Res. Def. Council v SCAQMD*, Los Angeles Superior Court No. BS110792).

However, a project emitting only 10 tons per year of NO_x or VOC is small enough that its regional impact on ambient ozone levels may not be detected in the regional air quality models that are currently used to determine ozone levels. Thus, in this case it would not be feasible to directly correlate project emissions of VOC or NO_x with specific health impacts from ozone. This is in part because ozone formation is not linearly related to emissions. Ozone impacts vary depending on the location of the emissions, the location of other precursor emissions, meteorology and seasonal impacts, and because ozone is formed some time later and downwind from the actual emission. (EPA Guideline on Ozone Monitoring Site Selection (Aug. 1998) EPA-454/R-98-002, § 5.1.2; https://www.epa.gov/ttnamti1/archive/cpreldoc.html; then search "Guideline on Ozone Monitoring Site Selection" click on pdf) (last viewed Apr. 1, 2015).)

SCAQMD has set its CEQA "significance" threshold for NO_x and VOC at 10 tons per year (expressed as 55 lb/day). (SCAQMD, *Air Quality Analysis Handbook*, http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook; then follow "SCAQMD Air Quality Significance Thresholds" hyperlink (last visited Apr. 1, 2015).) This is because the federal Clean Air Act defines a "major" stationary source for "extreme" ozone nonattainment areas such as SCAQMD as one emitting 10 tons/year. (42 U.S.C. §§ 7511a(e), 7511a(f); CAA §§ 182(e), 182(f).) Under the Clean Air Act, such sources are subject to enhanced control requirements (42 U.S.C. §§ 7502(c)(5), 7503; CAA §§ 172(c)(5), 173), so SCAQMD decided this was an appropriate threshold for making a CEQA "significance" finding and requiring feasible mitigation. Essentially, SCAQMD takes the position that a source that emits 10 tons/year of NO_x or VOC would contribute cumulatively to ozone formation. Therefore, lead agencies that use SCAQMD's thresholds of significance may determine

that many projects have "significant" air quality impacts and must apply all feasible mitigation measures, yet will not be able to precisely correlate the project to quantifiable health impacts, unless the emissions are sufficiently high to use a regional modeling program.

In the case of particulate matter ($PM_{2.5}$)[8], another "criteria" pollutant, SCAQMD staff is aware of two possible methods of analysis. SCAQMD used regional modeling to predict expected health impacts from its proposed Rule 1315, as mentioned above. Also, the California Air Resources Board (CARB) has developed a methodology that can predict expected mortality (premature deaths) from large amounts of $PM_{2.5}$. (California Air Resources Board, *Health Impacts Analysis: PM Premature Death Relationship*, http://www.arb.ca.gov/research/health/pm-mort/pm-mort_arch.htm (last reviewed Jan. 19, 2012).) SCAQMD used the CARB methodology to predict impacts from three very large power plants (e.g., 731-1837 lbs/day). (Final Environmental Assessment for Rule 1315, *supra*, pp 4.0-12, 4.1-13, 4.1-37 (e.g., 125 premature deaths in the entire SCAQMD in 2030), 4.1-39 (0.05 to 1.77 annual premature deaths from power plants.) Again, this project involved large amounts of additional $PM_{2.5}$ in the District, up to 2.82 tons/day (5,650 lbs/day of $PM_{2.5}$, or, or 1029 tons/year. (*Id.* at table 4.1-4, p. 4.1-10.)

However, the primary author of the CARB methodology has reported that this $PM_{2.5}$ health impact methodology is not suited for small projects and may yield unreliable results due to various uncertainties. [9] (SCAQMD, *Final Subsequent Mitigated Negative Declaration for: Warren*

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[8] SCAQMD has not attained the latest annual or 24-hour national ambient air quality standards for "$PM_{2.5}$" or particulate matter less than 2.5 microns in diameter.

[9] Among these uncertainties are the representativeness of the population used in the methodology, and the specific source of PM and the corresponding health impacts. (*Id.* at p. 2-24.)

E&P, Inc. WTU Central Facility, New Equipment Project (certified July 19, 2011), http://www.aqmd.gov/home/library/documents-support-material/lead-agency-permit-projects/permit-project-documents---year-2011; then follow "Final Subsequent Mitigated Negative Declaration for Warren E&P Inc. WTU Central Facility, New Equipment Project" hyperlink, pp. 2-22, 2-23 (last visited Apr. 1, 2015).) Therefore, when SCAQMD prepared a CEQA document for the expansion of an existing oil production facility, with very small $PM_{2.5}$ increases (3.8 lb/day) and a very small affected population, staff elected not to use the CARB methodology for using estimated $PM_{2.5}$ emissions to derive a projected premature mortality number and explained why it would be inappropriate to do so. (*Id.* at pp 2-22 to 2-24.) SCAQMD staff concluded that use of this methodology for such a small source could result in unreliable findings and would not provide meaningful information. (*Id.* at pp. 2-23, 2-25.) This CEQA document was not challenged in court.

In the above case, while it may have been technically possible to plug the data into the methodology, the results would not have been reliable or meaningful. SCAQMD believes that an agency should not be required to perform analyses that do not produce reliable or meaningful results. This Court has already held that an agency may decline to use even the "normal" "existing conditions" CEQA baseline where to do so would be misleading or without informational value. (*Neighbors for Smart Rail v. Exposition Metro Line* (2013) 57 Cal.4th 439, 448, 457.) The same should be true for a decision that a particular study or analysis would not provide reliable or meaningful results.[10]

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[10] Whether a particular study would result in "informational value" is a part of deciding whether it is "feasible." CEQA defines "feasible" as "capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social, and

Therefore, it is not possible to set a hard-and-fast rule on whether a correlation of air quality impacts with specific quantifiable health impacts is required in all cases. Instead, the result turns on whether such an analysis is reasonably feasible in the particular case.[11] Moreover, what is reasonably feasible may change over time as scientists and regulatory agencies continually seek to improve their ability to predict health impacts. For example, CARB staff has been directed by its Governing Board to reassess and improve the methodology for estimating premature deaths. (California Air Resources Board, *Health Impacts Analysis: PM Mortality Relationship*, http://www.arb.ca.gov/research/health/pm-mort/pm-mort.htm (last reviewed Dec. 29, 2010).) This factor also counsels against setting any hard-and-fast rule in this case.

III. THE QUESTION OF WHETHER AN EIR CONTAINS SUFFICIENT ANALYSIS TO MEET CEQA'S REQUIREMENTS IS A MIXED QUESTION OF FACT AND LAW GOVERNED BY TWO DIFFERENT STANDARDS OF REVIEW.

A. Standard of Review for Feasibility Determination and Sufficiency as an Informative Document

A second issue in this case is whether courts should review an EIR's informational sufficiency under the "substantial evidence" test as argued by Friant Ranch or the "independent judgment" test as argued by Sierra Club.

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technological factors." (Pub. Resources Code § 21061.1.) A study cannot be "accomplished in a *successful* manner" if it produces unreliable or misleading results.

[11] In this case, the lead agency did not have an opportunity to determine whether the requested analysis was feasible because the comment was non-specific. Therefore, SCAQMD suggests that this Court, after resolving the legal issues in the case, direct the Court of Appeal to remand the case to the lead agency for a determination of whether the requested analysis is feasible. Because Fresno County, the lead agency, did not seek review in this Court, it seems likely that the County has concluded that at least some level of correlation of air pollution with health impacts is feasible.

As this Court has explained, "a reviewing court must adjust its scrutiny to the nature of the alleged defect, depending on whether the claim is predominantly one of improper procedure or a dispute over the facts." (*Vineyard Area Citizens v. City of Rancho Cordova, supra,* 40 Cal.4th at 435.) For questions regarding compliance with proper procedure or other legal questions, courts review an agency's action de novo under the "independent judgment" test. (*Id.*) On the other hand, courts review factual disputes only for substantial evidence, thereby "accord[ing] greater deference to the agency's substantive factual conclusions." (*Id.*)

Here, Friant Ranch and Sierra Club agree that the case involves the question of whether an EIR includes sufficient information regarding a project's impacts. However, they disagree on the proper standard of review for answering this question: Sierra Club contends that courts use the independent judgment standard to determine whether an EIR's analysis is sufficient to meet CEQA's informational purposes,[12] while Friant Ranch contends that the substantial evidence standard applies to this question.

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[12] Sierra Club acknowledges that courts use the substantial evidence standard when reviewing predicate factual issues, but argues that courts ultimately decide as a matter of law what CEQA requires. (Answering Brief, pp. 14, 23.)

SCAQMD submits that the issue is more nuanced than either party contends. We submit that, whether a CEQA document includes sufficient analysis to satisfy CEQA's informational mandates is a mixed question of fact and law,[13] containing two levels of inquiry that should be judged by different standards.[14]

The state CEQA Guidelines set forth standards for the adequacy of environmental analysis. Guidelines Section 15151 states:

> An EIR should be prepared with a sufficient degree of analysis to provide decision makers with information which enables them to make a decision which intelligently takes account of environmental consequences. An evaluation of the environmental effects of a proposed project need not be exhaustive, but the sufficiency of an EIR is to be reviewed in light of what is reasonably feasible. Disagreement among experts does not make an EIR inadequate, but the EIR should summarize the main points of disagreement among the experts. The courts have looked not for perfection, but for adequacy, completeness, and a good-faith effort at full disclosure.

In this case, the basic question is whether the underlying analysis of air quality impacts made the EIR "sufficient" as an informative document. However, whether the EIR's analysis was sufficient is judged in light of what was reasonably feasible. This represents a mixed question of fact and law that is governed by two different standards of review.

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[13] Friant Ranch actually states that the claim that an EIR lacks sufficient relevant information is, "most properly thought of as raising mixed questions of fact and law." (Opening Brief, p. 27.) However, the remainder of its argument claims that the court should apply the substantial evidence standard of review to all aspects of the issue.

[14] Mixed questions of fact and law issues may implicate predominantly factual subordinate questions that are reviewed under the substantial evidence test even though the ultimate question may be reviewed by the independent judgment test. *Crocker National Bank v. City and County of San Francisco* (1989) 49 Cal.3d 881, 888-889.

SCAQMD submits that an EIR's sufficiency as an informational document is ultimately a legal question that courts should determine using their independent judgment. This Court's language in *Laurel Heights I* supports this position. As this Court explained: "The court does not pass upon the correctness of the EIR's environmental conclusions, but only upon its *sufficiency as an informative document.*" (*Laurel Heights I, supra,* 47 Cal.3d at 392-393) (emphasis added.) As described above, the Court in *Vineyard Area Citizens v. City of Rancho Cordova, supra,* 40 Cal.4th at 431, also used its independent judgment to determine what level of analysis CEQA requires for water supply impacts. The Court did not defer to the lead agency's opinion regarding the law's requirements; rather, it determined for itself what level of analysis was necessary to meet "[t]he law's informational demands." (*Id.* at p. 432.) Further, existing case law also holds that where an agency fails to comply with CEQA's information disclosure requirements, the agency has "failed to proceed in the manner required by law." (*Save Our Peninsula Comm. v. Monterey County Bd. of Supervisors* (2001) 87 Cal.App.4th 99, 118.)

However, whether an EIR satisfies CEQA's requirements depends in part on whether it was reasonably feasible for an agency to conduct additional or more thorough analysis. EIRs must contain "a detailed statement" of a project's impacts (Pub. Res. Code § 21061), and an agency must "use its best efforts to find out and disclose all that it reasonably can." (CEQA Guidelines § 15144.) Nevertheless, "the sufficiency of an EIR is to be reviewed in light of what is reasonably feasible." (CEQA Guidelines § 15151.)

SCAQMD submits that the question of whether additional analysis or a particular study suggested by a commenter is "feasible" is generally a question of fact. Courts have already held that whether a particular alternative is "feasible" is reviewed by the substantial evidence test.

(*Uphold Our Heritage v. Town of Woodside* (2007) 147 Cal.App.4th 587, 598-99; *Center for Biological Diversity v. County of San Bernardino* (2010) 185 Cal.App.4th 866, 883.) Thus, if a lead agency determines that a particular study or analysis is infeasible, that decision should generally be judged by the substantial evidence standard. However, SCAQMD urges this Court to hold that lead agencies must explain the basis of any determination that a particular analysis is infeasible in the EIR itself. An EIR must discuss information, including issues related to the feasibility of particular analyses "in sufficient detail to enable meaningful participation and criticism by the public. '[W]hatever is required to be considered in an EIR must be in that formal report; what any official might have known from other writings or oral presentations cannot supply what is lacking in the report.'" (*Laurel Heights I, supra*, 47 Cal.3d at p. 405 (quoting *Santiago County Water District v. County of Orange* (1981) 118 Cal.App.3d 818, 831) (discussing analysis of alternatives).) The evidence on which the determination is based should also be summarized in the EIR itself, with appropriate citations to reference materials if necessary. Otherwise commenting agencies such as SCAQMD would be forced to guess where the lead agency's evidence might be located, thus thwarting effective public participation.

Moreover, if a lead agency determines that a particular study or analysis would not result in reliable or useful information and for that reason is not feasible, that determination should be judged by the substantial evidence test. (See *Neighbors for Smart Rail v. Exposition Metro Line Construction Authority, supra*, 57 Cal.4th 439, 448, 457:

whether "existing conditions" baseline would be misleading or uninformative judged by substantial evidence standard.[15])

If the lead agency's determination that a particular analysis or study is not feasible is supported by substantial evidence, then the agency has not violated CEQA's information disclosure provisions, since it would be infeasible to provide additional information. This Court's decisions provide precedent for such a result. For example, this Court determined that the issue of whether the EIR should have included a more detailed discussion of future herbicide use was resolved because substantial evidence supported the agency's finding that "the precise parameters of future herbicide use could not be predicted." *Ebbetts Pass Forest Watch v. California Dept. of Forestry & Fire Protection* (2008) 43 Cal.4th 936, 955.

Of course, SCAQMD expects that courts will continue to hold lead agencies to their obligations to consult with, and not to ignore or misrepresent, the views of sister agencies having special expertise in the area of air quality. (*Berkeley Keep Jets Over the Bay v. Board of Port Commissioners* (2007) 91 Cal.App.4th 1344, 1364 n.11.) In some cases, information provided by such expert agencies may establish that the purported evidence relied on by the lead agency is not in fact "substantial". (*Id.* at pp. 1369-1371.)

In sum, courts retain ultimate responsibility to determine what CEQA requires. However, the law does not require exhaustive analysis, but only what is reasonably feasible. Agencies deserve deference for their factual determinations regarding what type of analysis is reasonably feasible. On the other hand, if a commenter requests more information, and the lead agency declines to provide it but does *not* determine that the

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[15] The substantial evidence standard recognizes that the courts "have neither the resources nor the scientific expertise" to weigh conflicting evidence on technical issues. (*Laurel Heights I, supra,* 47 Cal.3d 376, 393.)

requested study or analysis would be infeasible, misleading or uninformative, the question becomes whether the omission of that analysis renders the EIR inadequate to satisfy CEQA's informational purposes. (*Id.* at pp. 1370-71.) Again, this is predominantly a question of law and should be judged by the de novo or independent judgment standard of review. Of course, this Court has recognized that a "project opponent or reviewing court can always imagine some additional study or analysis that might provide helpful information. It is not for them to design the EIR. That further study...might be helpful does not make it necessary." (*Laurel Heights I, supra,* 47 Cal.3d 376, 415 – see also CEQA Guidelines § 15204(a) [CEQA "does not require a lead agency to conduct every test. . . recommended or demanded by commenters."].) Courts, then, must adjudicate whether an omission of particular information renders an EIR inadequate to serve CEQA's informational purposes.[16]

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[16] We recognize that there is case law stating that the substantial evidence standard applies to "challenges to the scope of an EIR's analysis of a topic" as well as the methodology used and the accuracy of the data relied on in the document "because these types of challenges involve factual questions." (*Bakersfield Citizens for Local Control v. City of Bakersfield, supra,* 124 Cal.App.4th 1184, 1198, and cases relied on therein.) However, we interpret this language to refer to situations where the question of the scope of the analysis really is factual—that is, where it involves whether further analysis is feasible, as discussed above. This interpretation is supported by the fact that the *Bakersfield* court expressly rejected an argument that a claimed "omission of information from the EIR should be treated as inquiries whether there is substantial evidence supporting the decision approving the project. " *Bakersfield, supra,* 124 Cal.App.4th at p. 1208. And the *Bakersfield* court ultimately decided that the lead agency must analyze the connection between the identified air pollution impacts and resulting health impacts, even though the EIR already included some discussion of air-pollution-related respiratory illnesses. *Bakersfield, supra,* 124 Cal.App.4th at p. 1220. Therefore, the court must not have interpreted this question as one of the "scope of the analysis" to be judged by the substantial evidence standard.

B. Friant Ranch's Rationale for Rejecting the Independent Judgment Standard of Review is Unsupported by Case Law.

In its brief, Friant Ranch makes a distinction between cases where a required CEQA topic is not discussed at all (to be reviewed by independent judgment as a failure to proceed in the manner required by law) and cases where a topic is discussed, but the commenter claims the information provided is insufficient (to be judged by the substantial evidence test). (Opening Brief, pp. 13-17.) The Court of Appeal recognized these two types of cases, but concluded that both raised questions of law. (*Sierra Club v. County of Fresno* (2014) 226 Cal.App.4th 704 (superseded by grant of review) 172 Cal.Rptr.3d 271, 290.) We believe the distinction drawn by Friant Ranch is unduly narrow, and inconsistent with cases which have concluded that CEQA documents are insufficient. In many instances, CEQA's requirements are stated broadly, and the courts must interpret the law to determine what level of analysis satisfies CEQA's mandate for providing meaningful information, even though the EIR discusses the issue to some extent.

For example, the CEQA Guidelines require discussion of the existing environmental baseline. In *County of Amador v. El Dorado County Water Agency* (1999) 76 Cal.App.4th 931, 954-955, the lead agency had discussed the environmental baseline by describing historic month-end water levels in the affected lakes. However, the court held that this was not an adequate baseline discussion because it failed to discuss the timing and amounts of past actual water releases, to allow comparison with the proposed project. The court evidently applied the independent judgment test to its decision, even though the agency discussed the issue to some extent.

Likewise, in *Vineyard Area Citizens* (2007) 40 Cal.4th 412, this Court addressed the question of whether an EIR's analysis of water supply impacts complied with CEQA. The parties agreed that the EIR was required to analyze the effects of providing water to the development project, "and that in order to do so the EIR had, in some manner, to identify the planned sources of that water." (*Vineyard Area Citizens, supra,* at p. 428.) However, the parties disagreed as to the level of detail required for this analysis and "what level of uncertainty regarding the availability of water supplies can be tolerated in an EIR . . . ." (*Id.*) In other words, the EIR had analyzed water supply impacts for the project, but the petitioner claimed that the analysis was insufficient.

This Court noted that neither CEQA's statutory language or the CEQA Guidelines specifically addressed the question of how precisely an EIR must discuss water supply impacts. (*Id.*) However, it explained that CEQA "states that '[w]hile foreseeing the unforeseeable is not possible, an agency must use its best efforts to find out and disclose all that it reasonably can.'" (*Id.*, [Guidelines § 15144].) The Court used this general principle, along with prior precedent, to elucidate four "principles for analytical adequacy" that are necessary in order to satisfy "CEQA's informational purposes." (*Vineyard Area Citizens, supra,* at p. 430.) The Court did not defer to the agency's determination that the EIR's analysis of water supply impacts was sufficient. Rather, this Court used its independent judgment to determine for itself the level of analysis required to satisfy CEQA's fundamental purposes. (*Vineyard Area Citizens, supra*, at p. 441: an EIR does not serve its purposes where it neglects to explain likely sources of water and "... leaves long term water supply considerations to later stages of the project.")

Similarly, the CEQA Guidelines require an analysis of noise impacts of the project. (Appendix G, "Environmental Checklist Form."[17]) In *Gray v. County of Madera* (2008) 167 Cal.App.4th 1099, 1123, the court held that the lead agency's noise impact analysis was inadequate even though it had addressed the issue and concluded that the increase would not be noticeable. If the court had been using the substantial evidence standard, it likely would have upheld this discussion.

Therefore, we do not agree that the issue can be resolved on the basis suggested by Friant Ranch, which would apply the substantial evidence standard to *every* challenge to an analysis that addresses a required CEQA topic. This interpretation would subvert the courts' proper role in interpreting CEQA and determining what the law requires.

Nor do we agree that the Court of Appeal in this case violated CEQA's prohibition on courts interpreting its provisions "in a manner which imposes procedural or substantive requirements beyond those explicitly stated in this division or in the state guidelines." (Pub. Resources Code § 21083.1.) CEQA requires an EIR to describe *all* significant impacts of the project on the environment. (Pub. Resources Code § 21100(b)(2); *Vineyard Area Citizens, supra,* at p. 428.) Human beings are part of the environment, so CEQA requires EIRs to discuss a project's significant impacts on human health. However, except in certain particular circumstances,[18] neither the CEQA statute nor Guidelines specify the precise level of analysis that agencies must undertake to satisfy the law's requirements. (see, e.g., CEQA Guidelines § 15126.2(a) [EIRs must describe "health and safety problems caused by {a project's} physical changes"].) Accordingly, courts must interpret CEQA as a whole to

[17] Association of Environmental Professionals, 2015 CEQA Statute and Guidelines (2015) p.287.

[18] E.g., Pub. Resources Code § 21151.8(C)(3)(B)(iii) (requiring specific type of health risk analysis for siting schools).

determine whether a particular EIR is sufficient as an informational document. A court determining whether an EIR's discussion of human health impacts is legally sufficient does not constitute imposing a new substantive requirement.[19] Under Friant Ranch's theory, the above-referenced cases holding a CEQA analysis inadequate would have violated the law. This is not a reasonable interpretation.

IV. COURTS MUST SCRUPULOUSLY ENFORCE THE REQUIREMENTS THAT LEAD AGENCIES CONSULT WITH AND OBTAIN COMMENTS FROM AIR DISTRICTS

Courts must "scrupulously enforce" CEQA's legislatively mandated requirements. (*Vineyard Area Citizens, supra*, 40 Cal.4th 412, 435.) Case law has firmly established that lead agencies must consult with the relevant air pollution control district before conducting an initial study, and must provide the districts with notice of the intention to adopt a negative declaration (or EIR). (*Schenck v. County of Sonoma* (2011) 198 Cal.App.4th 949, 958.) As *Schenck* held, neither publishing the notice nor providing it to the State Clearinghouse was a sufficient substitute for sending notice directly to the air district. (*Id.*) Rather, courts "must be satisfied that [administrative] agencies have fully complied with the procedural requirements of CEQA, since only in this way can the important public purposes of CEQA be protected from subversion." *Schenck,* 198 Cal.App.4th at p. 959 (citations omitted).[20]

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[19] We submit that Public Resources Code Section 21083.1 was intended to prevent courts from, for example, holding that an agency must analyze economic impacts of a project where there are no resulting environmental impacts (see CEQA Guidelines § 15131) , or imposing new procedural requirements, such as imposing additional public notice requirements not set forth in CEQA or the Guidelines.

[20] Lead agencies must consult air districts, as public agencies with jurisdiction by law over resources affected by the project, *before* releasing an EIR. (Pub. Resources Code §§ 21104(a); 21153.) Moreover, air

Lead agencies should be aware, therefore, that failure to properly seek and consider input from the relevant air district constitutes legal error which may jeopardize their project approvals. For example, the court in *Fall River Wild Trout Foundation v. County of Shasta,* (1999) 70 Cal.App.4th 482, 492 held that the failure to give notice to a trustee agency (Department of Fish and Game) was prejudicial error requiring reversal. The court explained that the lack of notice prevented the Department from providing any response to the CEQA document. (*Id.* at p. 492.) It therefore prevented relevant information from being presented to the lead agency, which was prejudicial error because it precluded informed decision-making. (*Id.*)[21]

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districts should be considered "state agencies" for purposes of the requirement to consult with "trustee agencies" as set forth in Public Resources Code § 20180.3(a). This Court has long ago held that the districts are not mere "local agencies" whose regulations are superseded by those of a state agency regarding matters of statewide concern, but rather have concurrent jurisdiction over such issues. (*Orange County Air Pollution Control District v. Public Util. Com.* (1971) 4 Cal.3d 945, 951, 954.) Since air pollution is a matter of statewide concern, *Id* at 952, air districts should be entitled to trustee agency status in order to ensure that this vital concern is adequately protected during the CEQA process.

[21] In *Schenck,* the court concluded that failure to give notice to the air district was not prejudicial, but this was partly because the trial court had already corrected the error before the case arrived at the Court of Appeal. The trial court issued a writ of mandate requiring the lead agency to give notice to the air district. The air district responded by concurring with the lead agency that air impacts were not significant. (*Schenck,* 198 Cal.App.4th 949, 960.) We disagree with the *Schenck* court that the failure to give notice to the air district would not have been prejudicial (even in the absence of the trial court writ) merely because the lead agency purported to follow the air district's published CEQA guidelines for significance. (*Id.*, 198 Cal.App.4th at p. 960.) In the first place, absent notice to the air district, it is uncertain whether the lead agency properly followed those guidelines. Moreover, it is not realistic to expect that an air district's published guidelines would necessarily fully address all possible air-quality related issues that can arise with a CEQA project, or that those

Similarly, lead agencies must obtain additional information requested by expert agencies, including those with jurisdiction by law, if that information is necessary to determine a project's impacts. (*Sierra Club v. State Bd. Of Forestry* (1994) 7 Cal.4th 1215, 1236-37.) Approving a project without obtaining that information constitutes a failure to proceed in the manner prescribed by CEQA. (*Id.* at p. 1236.)

Moreover, a lead agency can save significant time and money by consulting with the air district early in the process. For example, the lead agency can learn what the air district recommends as an appropriate analysis on the facts of its case, including what kinds of health impacts analysis may be available, and what models are appropriate for use. This saves the lead agency from the need to do its analysis all over again and possibly needing to recirculate the document after errors are corrected, if new significant impacts are identified. (CEQA Guidelines § 15088.5(a).) At the same time, the air district's expert input can help the lead agency properly determine whether another commenter's request for additional analysis or studies is reasonable or feasible. Finally, the air district can provide input on what mitigation measures would be feasible and effective.

Therefore, we suggest that this Court provide guidance to lead agencies reminding them of the importance of consulting with the relevant air districts regarding these issues. Otherwise, their feasibility decisions may be vulnerable to air district evidence that establishes that there is no substantial evidence to support the lead agency decision not to provide specific analysis. (*See Berkeley Keep Jets Over the Bay, supra,* 91 Cal.App.4th 1344, 1369-1371.)

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guidelines would necessarily be continually modified to reflect new developments. Therefore we believe that, had the trial court not already ordered the lead agency to obtain the air district's views, the failure to give notice would have been prejudicial, as in *Fall River, supra,* 70 Cal.App.4th 482, 492.

CONCLUSION

The SCAQMD respectfully requests this Court *not* to establish a hard-and-fast rule concerning whether CEQA requires a lead agency to correlate identified air quality impacts of a project with resulting health outcomes. Moreover, the question of whether an EIR is "sufficient as an informational document" is a mixed question of fact and law containing two levels of inquiry. Whether a particular proposed analysis is feasible is predominantly a question of fact to be judged by the substantial evidence standard of review. Where the requested analysis is feasible, but the lead agency relies on legal or policy reasons not to provide it, the question of whether the EIR is nevertheless sufficient as an informational document is predominantly a question of law to be judged by the independent judgment standard of review.

Respectfully submitted,

DATED: April 3, 2015

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
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CERTIFICATE OF WORD COUNT

Pursuant to Rule 8.520(c)(1) of the California Rules of Court, I hereby certify that this brief contains 8,476 words, including footnotes, but excluding the Application, Table of Contents, Table of Authorities, Certificate of Service, this Certificate of Word Count, and signature blocks. I have relied on the word count of the Microsoft Word Vista program used to prepare this Certificate.

DATED: April 3, 2015 Respectfully submitted,

Barbara Baird

PROOF OF SERVICE

I am employed in the County of Los Angeles, California. I am over the age of 18 years and not a party to the within action. My business address is 21865 Copley Drive, Diamond Bar, California 91765.

On April 3, 2015 I served true copies of the following document(s) described as **APPLICATION OF THE SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT FOR LEAVE TO FILE BRIEF OF *AMICUS CURIAE* IN SUPPORT OF NEITHER PARTY AND *[PROPOSED]* BRIEF OF *AMICUS CURIAE*** by placing a true copy of the foregoing document(s) in a sealed envelope addressed as set forth on the attached service list as follows:

BY MAIL: I enclosed the document(s) in a sealed envelope or package addressed to the persons at the addresses listed in the Service List and placed the envelope for collection and mailing following our ordinary business practices. I am readily familiar with this District's practice for collection and processing of correspondence for mailing. Under that practice, the correspondence would be deposited with the United States Postal Service, with postage thereon fully prepaid at Diamond Bar, California, in the ordinary course of business. I am aware that on motion of the party served, service is presumed invalid if postal cancellation date or postage meter date is more than one day after date of deposit for mailing in affidavit.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

Executed on April 3, 2015 at Diamond Bar, California.

Patricia Anderson

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Appendix F Changes Made to the Santa Ana General Plan Buildout Methodology

Appendices

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Santa Ana General Plan Buildout Methodology

September 2020

Purpose, Design, and Limitations

The following summarizes the methodology and factors used to calculate existing and buildout conditions for purposes of the General Plan and its analysis through an environmental impact report. All figures are estimates generated using the best available data for analysis at a citywide level, with additional detail provided by specific planning/focus areas and traffic analysis zones.

Whenever possible, the figures generated were derived from authoritative data sources, such as the U.S. Census or California Department of Finance. Such sources are subject to their own error rates and may summarize data at different geographic levels or in different categories. When more precise data was not available, figures generated for existing and projected figures were compared to aggregated or citywide totals from authoritative sources, understanding that such comparisons are primarily for the purpose of determining order-of-magnitude accuracy.

It is important to note that the buildout figures represent an informed but estimated projection of a future condition. The actual construction of development will likely vary by parcel and planning area in terms of location and mix of uses. The analysis in the General Plan Environmental Impact Report provides a programmatic assessment of potential impacts, enabling tiering for future projects that are consistent with the assumptions on some CEQA topics (other project-level impacts will still need to be evaluated through the appropriate environmental clearance under CEQA).

Existing Conditions

Housing Units and Building Square Footage

Existing conditions figures (see Table 1) reflects the built environment as of January 2020, using parcel data from the City of Santa Ana Planning Information Network, augmented by projects listed as already under construction in the City's January 2020 monthly development project report (see Table 5).

Households and Population

The number of households was generated by multiplying the total number of housing units by the occupancy rate as reported by the California Department of Finance for 2019 (see source notes in Table 4). Population was generated by multiplying the total number of households by persons per household rates, varying for single family and multi-family units, as reported in the 2018 American Community Survey 1-year estimates (see Table 4).

Students

The number of K-12 and college students currently attending schools in Santa Ana was obtained from the California Department of Education and Rancho Santiago Community College District, respectively (see Table 5).

Employment

The number of jobs (employment) in Santa Ana was generated by dividing building square footage (by land use) by employment generation factors (see Table 3). The building use and square footage data was obtained from the City of Santa Ana Planning Information Network, augmented by projects listed as already under construction in the City's January 2020 monthly development project report. The employment generation factors were derived by first dividing the building square footage by factors provided by the City and sourced to the Santa Ana OCP 2002/2006 Interagency Team. The results were compared to total employment figures reported citywide and by industry sector (with rough equivalents identified for each land use category), by the U.S. Census Bureau for 2017. The employment generation factors were adjusted as necessary to bring calculated figures for existing employment generally in line with figures reported by the U.S. Census in 2017.

Employed Persons

The number of employed persons is calculated exclusively as an input into the Orange County Traffic Analysis Model (OCTAM) to conduct the traffic analysis of the General Plan as part of the environmental impact report. The total estimated number of employed residents varies between different U.S. Census datasets. The Longitudinal Employer-Household Dynamics Origin-Destination Employment Statistics (LEHD) reports data based on W-2 and W-4 forms related to wages and worker's compensation, while the American Community Survey relies on statistical surveys of self-reported data. The LEHD figures are generally considered more appropriate for traffic analysis purposes since the job information is more consistent and more likely to involve vehicular travel outside of the home.

The number of employed persons in Santa Ana was generated by multiplying the total population in households by the percentage of population age 16 and over by the employment-to-population ratio, as reported by the U.S. Census Bureau in 2018 (see Table 4). These calculations, drawn from the ACS, are then reduced proportionally to bring figures in line with the total reported by LEHD.

Buildout Conditions

Proposed Plan

In coordination with a General Plan Advisory Group, the City identified five areas suited for new growth and development: South Main Street, Grand Avenue/17th Street, West Santa Ana Boulevard, 55 Freeway/Dyer Road, and South Bristol Street. These five areas are located along major travel corridors, the future OC Streetcar line, and/or linked to the Downtown. In general, many areas currently designated for General Commercial and Professional Office are expanding opportunities for residential development through a proposed change to the Urban Neighborhood or District Center General Plan land use designations. Industrial Flex would be introduced where Industrial land use designations currently exist within each of the five focus areas in order to allow for cleaner industrial and commercial uses with live-work opportunities.

There are seven other planning areas that represent specific plans and other special zoning areas that were previously adopted: Adaptive Reuse Overlay (2014), Bristol Street Corridor Specific Plan (1991/2018), Harbor Mixed Use Corridor Specific Plan (2014), MainPlace Specific Plan (2019), Metro East Mixed Use Overlay Zone (2007/2018), Midtown Specific Plan (1996), and Transit Zoning Code Specific Development (2010). The potential for new development in these areas is based on the forecasted buildout at the time of the respective zoning

document's adoption, minus the amount of new development built between their adoption date and 2019. The most recent adoption/amendment date for each zoning document is noted above in parentheses.

Growth outside of the focus areas and special planning areas is expected to be incremental and limited. Some growth was projected for the professional office surrounding the Orange County Global Medical Center and along Broadway north of the Midtown Specific Plan. Some growth was also projected for the commercial and retail area south of the West Santa Ana Boulevard focus area. Finally, some additional residential development is expected to occur on a small portion (five percent) of single-family and multi-family lots through the construction of second units.

Focus Areas

Parcels within focus areas were first evaluated for the potential for new uses (units or building square footage), through redevelopment, intensification, and/or turnover. The analysis was conducted by MIG in 2019, in support of the City of Santa Ana, using the City of Santa Ana Planning Information Network as of April 2019. MIG determined the potential based on the building-to-land-value ratio. Those parcels that were vacant or exhibited a building-to-land-value ratio below 1.0 were determined to have potential for new uses. Exceptions include religious and governmental institutions.

For parcels without the potential for new uses, existing building square footage (non-residential) and/or existing units (residential) were carried over into future buildout. For parcels with potential for new uses, buildout factors can be found in Table 2. These factors were established by the City, assisted by MIG, based on a comparison of development throughout southern California that matched the vision established for each focus area. MIG identified the density and intensity factors corresponding with such development to inform the City's focus area buildout factors.

After calculating future buildout conditions using the density/intensity factors, PlaceWorks assisted the City in evaluating the potential implications of the potential buildout figures for each focus area, informed by analyses by IBI Group (circulation) and AECOM (market) conducted in 2019 and 2020. PlaceWorks concluded that the City should not assume a maximum theoretical buildout based on maximum density/intensity standards but should forecast and plan for growth beyond current market demand. PlaceWorks recommended that the City apply a buildout factor of 80% to the totals generated using the factors in Table 2 to arrive at buildout projections for 2045 that are realistic, market-friendly, consistent with the visions for each focus area, and more compatible with the proposed roadway network. The following information substantiates the General Plan buildout development assumptions and adjustments.

Realistic vs Maximum Theoretical Buildout

Density and intensity standards are provided in a general plan to convey the maximum scale and intensity for broad land use categories. Zoning standards are then applied at a parcel level to guide and control density and intensity at a development project level. When calculating buildout, a jurisdiction is permitted to assume that every single parcel will develop at the maximum permitted density/intensity. However, this assumption of absolute buildout runs the risk of overestimating the amount of building space and residential units within the identified planning horizon (in this case the year 2045). Overestimating buildout can lead to unnecessary and misleading concerns, mitigation measures, and planning efforts, as well as a misallocation of current and future

public funds. Accordingly, the City of Santa Ana General Plan calculated a realistic or more likely buildout scenario for projecting growth between 2020 and 2045.

Past Development Trends

While 25 years is a long period of time, the City of Santa Ana is a highly urbanized place containing relatively few vacant lots. The process of intensifying and/or redeveloping parcels of land that already contain functional uses and structures is often substantially more complicated and costly compared to developing vacant land. A review of the City's property records indicates that the pace of new development, intensification, and redevelopment has occurred over a much longer period of time to reach where the City is today. The average floor area ratios (amount of building space compared to the total area of the parcel) throughout the focus areas are 0.22 to 0.41 for commercial, 0.28 to 0.43 for industrial, 0.26 to 1.29 for office, and 0.40 for mixed use. Average densities are 4.5 to 6.5 dwelling units per acre (du/ac) for single family units and 13.5 to 24.8 units per acre for multi-family units.

Current Development Trends

Of course, past development trends do not necessarily match the likely and/or desired scale, intensity, or pace of new development envisioned by the updated General Plan. Current development trends can be identified through recent development projects and applications. The following list contains projects that were under construction, entitled, or in review as of January 2020. The projects are listed by planning area, with the proposed project intensity details shown alongside the maximum intensity standards of the desired general plan or zoning designation. This list demonstrates that some current projects are building to their maximum potential, but the majority are building at roughly 60% to 75% of the maximum potential (either in terms of residential density and/or building space).

- Metro East Mixed Use Overlay
  - Active Urban District, no maximum on stories
    - AMG Family Affordable Apartments, 6 stories, 80 du/ac, 10,000 sq. ft. of commercial
    - Central Pointe Mixed-Use Development, 5 stories, 75 du/ac, 8,800 sq. ft. of commercial
    - The Madison, 6 stories, 93 du/ac, 6,600 sq. ft. of commercial
    - Wermers Elks Site "Elan" Mixed-Use Development, 6 stories, 97 du/ac, 20,000 sq. ft. of commercial
  - Neighborhood Transitional District, allows up to 4 stories
    - AMCAL First Street Apartments, 3 stories, 32 du/ac
- 55/Dyer Focus Area
  - District Center, up to 90 du/ac, up to 1.7 FAR (Heritage) and up to 5.0 FAR (Bowery)
    - The Bowery Mixed-Use Project, 79 du/ac, 80,000 sq. ft. of commercial
    - The Heritage, 65 du/ac, 18,400 sq. ft. of commercial, and 56,000 sq. ft. of office
- MainPlace Specific Plan
  - District Center, up to 90 du/ac, up to 2.1 FAR
    - 2700 N Main, 71 du/ac
    - Magnolia at the Park, 58 du/ac
- Adaptive Reuse Overlay
  - Adaptive reuse standards/incentives, minimum 500-sq. ft. units, can exceed general plan density
    - Meta Housing Santa Ana Arts Collective Adaptive Re-Use, 61 du/ac

- Transit Zoning Code
  - Transit Village Zone, up to 25 stories
    - Crossroads at Washington, 4 stories, 38 du/ac, 10,060 sq. ft. of commercial
  - Downtown Zone, up to 10 stories
    - 3rd & Broadway, 10 stories of residential, 14,816 sq. ft. of commercial, 75-room hotel
    - 4th and Mortimer Mixed-Use Development, 6 stories of residential, 49 du/ac, 15,800 sq. ft. of commercial
    - First American Title Co. Site, 7 stories of residential, 12,350 sq. ft. of commercial
  - Urban Neighborhood 2, up to 5 stories
    - Tom's Trucks Residential & Adaptive Reuse Development, 3 stories, 14 du/ac

Market Analysis

AECOM conducted a market analysis for the General Plan update in 2019 and 2020 (final Santa Ana Economic Indicators Report, May 2020). The report concluded that the demand for new residential development could reach upwards of 15,520 units through 2040 (including pipeline projects, per Figure 7.2 in the Economic Indicators Report Report), although the report also noted that housing demand could increase if the housing pipeline remains strong if it can increase its capture rate of countywide growth. AECOM determined that future demand for office and industrial space would continue to be in line with historical rates, and demand for retail would continue to be tied to household growth and spending. While such findings may seem to justify relatively low levels of growth (especially compared to maximum buildout standards), jurisdictions must plan increased capacity throughout planning areas to create responsive and flexible market areas. New development requires not only market demand but also property owners willing to sell and/or redevelop. This means that new development is often limited to a fraction of the land theoretically available and suitable for reuse and/or development.

Density Bonus Assumptions

State law allows a graduated density bonus for the inclusion of affordable housing units --- for an increasing number of affordable units (by percentage), a project is allowed an increasing ability to exceed the permitted density. The amount of density bonus is generally capped at 35 percent. Recent updates to state housing law (Assembly Bill 1763, effect January 1, 2020), enables projects that are 100 percent affordable (either 100% lower income or 80% lower and 20% moderate (as defined in Section 50053 of the Health and Safety Code), to obtain a density bonus of 80 percent, or no limit if within one-half mile of a major transit stop.

However, not every project will include affordable units and not every project that includes affordable units will need a density bonus. Projects are not required to build at densities that exceed maximum limits; the law only requires that jurisdictions grant the density bonus if requested. The buildout methodology was based on past development trends, current development trends, and a forecasted market analysis. These trends accounted for any units approved (density bonus or otherwise), to determine the appropriate density and amount of development to assume.

Additionally, the optimal density of affordable units is at or below the densities levels assumed for forecasting buildout. Generally, projects beyond 50 to 70 units per acre require Type 1 construction (steel and concrete structure), which is dramatically more expensive compared to Type V construction (wood structure).

Accordingly, affordable projects are rarely greater than 70 units per acre (exceptions for very small parcels). The average densities used to calculate projected buildout at 2045 are 50 to 90 units per acre in the three most intense focus areas (55/Dyer, 17th/Grand, and South Bristol), with the other two applying a residential assumption at 30 units per acre over a broad area to account for development at or above the maximum density of 30 units per acre (maximum is 20 units per acre for projects proposed exclusively residential in the South Main Focus Area; maximum is 30 units per acre for a relatively small part of the West Santa Ana Boulevard Focus Area).

Roadway Network Performance

IBI Group conducted an analysis of existing roadway conditions in 2019 (documented in Section 5 of Santa Ana General Plan Update Traffic Impact Study, June 2020), including an analysis of existing and future roadway segment and intersections that are likely to experience roadway congestion issues created by future growth, even with feasible mitigation. While roadway congestion (level-of-service or LOS) is not a topic evaluated in the environmental impact report (removed through Senate Bill 743, passed in 2013), the performance of the City's roadway network remains a concern of the City and its residents, businesses, and other stakeholders. PlaceWorks and IBI Group recommended reduced (below absolute maximum) buildout assumptions for the focus areas given known or likely roadway (segment and/or intersection) performance issues alongside the City's desire to make adjustments to a number of roadway classifications.

Adopted and Existing Plans

Adaptive Reuse (AR) Overlay Zone

In consultation with the City, it was determined that 1,000 residential units could be developed over the planning period. ~~A total of 800 units were distributed proportionally among parcels covered by AR Zone only (not in a specific plan or focus area). The remaining 200 units were distributed proportionally among parcels throughout the Midtown Specific Plan.~~ For non-residential building square footage, it was assumed that no additional growth would occur during the planning period, and existing building square footage was carried over into future buildout.

Bristol Street Corridor Specific Plan

The City was determined that parcels with existing single/multi-family units would not redevelop during the planning period, and therefore existing units were carried forward into future buildout. For non-residential building square footage, due to the location and age of existing non-residential development, turnover was considered to potentially occur during the planning period.

Harbor Street Corridor Specific Plan

The Harbor Corridor Specific Plan was adopted in 2014 and included a comprehensive buildout analysis that spanned a similar planning period. Accordingly, the buildout conditions were carried over as detailed in the Specific Plan, adjusting for new development constructed or entitled since 2014.

MainPlace Specific Plan

The MainPlace Specific Plan was adopted in 2019 and included a comprehensive buildout analysis that spanned a similar planning period. Accordingly, the buildout conditions were carried over as detailed in the Specific Plan, adjusting for new development constructed or entitled since 2019.

Metro East Overlay Zone

The Metro East Mixed Use Overlay Zone, adopted in 2007 and amended in 2018, included a cumulative buildout analysis that spanned a similar planning period. Accordingly, the buildout conditions were carried over as detailed in the Specific Plan, distributed proportionally throughout the plan area and adjusting for new development constructed or entitled since 2019.

Midtown Specific Plan

The City determined that the Midtown Specific Plan (adopted in 1996) would experience little net growth during the planning period, so existing single/multi-family units and building square footage were ~~largely~~ carried forward into future buildout. ~~To account for adaptive reuse projects, 200 multifamily units were distributed across eligible parcels~~Some properties may turn over during the planning period, but the City does not expect redevelopment at a greater density or intensity.

Transit Zoning Code

The Transit Zoning Code was adopted in 2010 and included a cumulative buildout analysis that spanned a similar planning period. The cumulative buildout conditions for residential and non-residential development were carried over as detailed in the Specific Plan, distributed proportionally throughout the plan area according to the block system established in working maps (previously identified under the Draft Renaissance Specific Plan).

All Other Areas of the City

The City assumed a small increase (five percent) of residential units through the construction of second units, which are distributed throughout the City by traffic analysis zone and is not concentrated in a subset of neighborhoods. A 10 percent increase in non-residential building square footage (and associated employment), was assumed for the professional offices surrounding the Orange County Global Medical Center and along Broadway north of the Midtown Specific Plan, as well as the commercial and retail areas along 1st Street south of the West Santa Ana Boulevard focus area. Current development projects as listed in the City of Santa Ana monthly development project report (as of January 2020), were incorporated as follows: projects under construction and nearing occupancy were factored into the existing conditions figures; all other projects were included as potential future growth.

Current General Plan

As part of the technical analyses, it is common to evaluate a buildout scenario that reflects the currently adopted General Plan. It is also important to keep the overall buildout approach generally consistent with that used in developing the Proposed Plan buildout, with obvious exceptions for areas that are planned differently—in this case, the focus areas. The buildout for focus areas was based on the land designations as of January 2020, using a combination of current assumptions stated in the 1998 Land Use Element (Table A-4, Land Use Plan Build-out Capacities), past and current trends, and the results of the 2020 Economic Indicators Report by AECOM.

Other Projections

Orange County Projections (OCP)

The Center for Demographic Research (CDR) is the entity through which jurisdictions in Orange County distribute and generate population, housing, and employment projections for Orange County. This includes the use of OCP

figures to communicate expected growth for the regional transportation plan. The latest OCP figures were finalized (September 2018) prior to the current land use planning and buildout efforts associated with the General Plan update. Interim adjustments can be made to the OCP figures if significant changes in land use or other policies will have a significant impact on the projections, and if these changes can be documented. The buildout for the Santa Ana General Plan will be finalized upon the adoption of the General Plan at the end of 2020, with implementation beginning in 2021. The General Plan land use plan and buildout projections will be incorporated into the OCP figures in 2021/2022.

Southern California Association of Governments (SCAG)

As the metropolitan planning organization SCAG is responsible for developing long-range transportation plans and a sustainability strategy for the vast majority of Southern California. The centerpiece of that planning work is Connect SoCal, the 2020-2045 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS). This effort includes population, housing, and employment projections for each jurisdiction between 2020 and 2045.

SCAG is required by federal law to prepare and update (ever four years) a long-range RTP that identifies a feasible transportation system, adequate financial plan, and strategies to move people and goods efficiently. SCAG must also develop a SCS to integrate land use and transportation strategies that will achieve California Air Resources Board (CARB) greenhouse gas emissions reduction targets. In regard to housing, the SCS must demonstrate, on a regional level, areas sufficient to house all the population of the region, including the eight-year projection of the Regional Housing Needs Assessment (RHNA).

SCAG is also responsible for preparing the RHNA, a quantification of the housing need in each jurisdiction during specified planning periods. SCAG is in the process of developing the 6th cycle RHNA allocation plan which will cover the planning period October 2021 through October 2029. It is planned for adoption by SCAG in October 2020. Per Senate Bill 375 (2008), the RHNA must be consistent with the adopted SCS. The update process for the 2020 RTP/SCS began in 2018, and a draft of the proposed RTP/SCS was released in November 2019. SCAG's Regional Council approved the final RTP/SCS (aka Connect SoCal) on May 7, 2020, for the limited purpose of federal transportation conformity, so that SCAG could submit the plan to the Federal Highway Administration and Federal Transit Administration for review prior to the June 1, 2020, deadline, as required by the federal Clean Air Act. As of June 2020, the Regional Council anticipates the approval of Connect SoCal in its entirety sometime in late 2020 (possibly 120 days from May 7, 2020), following additional engagement with stakeholders to consider the impacts of the novel coronavirus (COVID-19) pandemic on the plan and its implementation.

The period to file RHNA appeals is expected to commence on the eighth day after the Regional Council adopts the Connect SoCal in its entirety. The appeals process will then follow the adopted RHNA Appeals Procedures with timelines updated to reflect the delay of the Connect SoCal Plan adoption.

Note that the adoption dates for the RTP/SCS and RHNA may be pushed due to circumstances related to the novel coronavirus (COVID-19) crisis. The buildout for the Santa Ana General Plan will be finalized upon the adoption of the General Plan at the end of 2020, with implementation beginning in 2021. The General Plan land use plan and buildout projections will be incorporated into the 2024 RTP/SCS, for which the update process should being in 2022.

Table 1 Existing Conditions, Potential Growth, and Buildout Conditions in Santa Ana, 2020 to 2045

	EXISTING [1]			GROWTH [2]			BUILDOUT		
PLANNING AREA	Housing Units	Bldg. Sq. Ft.[3]	Jobs	Housing Units	Bldg. Sq. Ft.[3]	Jobs	Housing Units	Bldg. Sq. Ft.[3]	Jobs
FOCUS AREAS	**6,380**	**13,421,155**	**28,428**	**17,575**	**2,263,130**	**6,616**	**23,955**	**15,684,285**	**35,044**
55 Freeway/Dyer Road	1,221	5,666,453	8,898	8,731	475,830	4,404	9,952	6,142,283	13,302
Grand Avenue/17th Street	561	1,400,741	3,568	1,722	-696,847	-1,946	2,283	703,894	1,622
South Bristol Street	220	1,577,511	3,337	5,272	3,505,130	7,855	5,492	5,082,641	11,192
South Main Street	1,720	1,685,978	3,455	588	-739,316	-1,304	2,308	946,662	2,151
West Santa Ana Boulevard	2,658	3,090,472	9,170	1,262	-281,667	-2,393	3,920	2,808,805	6,777
SPECIFIC PLAN / SPECIAL ZONING	**4,685**	**13,924,891**	**38,548**	**15,839**	**3,033,554**	**1,154**	**20,524**	**16,958,445**	**39,702**
Adaptive Reuse Overlay Zone [4]	260	976,935	3,043	1,000	0	-476	1,260	976,935	2,567
Bristol Street Corridor Specific Plan	136	140,348	294	-1	2,791	-12	135	143,139	282
Harbor Corridor Specific Plan	1,324	1,767,937	3,286	3,298	200,045	-1,708	4,622	1,967,982	1,578
Main Place Specific Plan	0	1,108,080	2,216	1,900	1,318,843	3,164	1,900	2,426,923	5,380
Metro East Overlay Zone	844	2,516,056	7,524	4,707	2,169,891	4,734	5,551	4,685,947	12,258
Midtown Specific Plan	607	1,885,065	4,824	0	-66,812	-209	607	1,818,253	4,615
Transit Zoning Code	1,514	5,530,470	17,361	4,935	-591,204	-4,339	6,449	4,939,266	13,022
ALL OTHER AREAS OF THE CITY [5]	**67,727**	**39,772,550**	**92,004**	**2,847**	**552,536**	**3,666**	**70,574**	**40,325,086**	**95,670**
CITYWIDE TOTAL	**78,792**	**67,118,596**	**158,980**	**36,261**	**5,849,220**	**11,436**	**115,053**	**72,967,816**	**170,416**

Notes:

1. Existing represents conditions as of December 2019 as derived from the City of Santa Ana Planning Information Network and projects already under construction per the January 2020 monthly development project report.
2. The potential growth for new development in specific plan / special zoning area is based on the forecasted buildout at the time of the respective zoning document's adoption, minus the amount of new development built between its adoption date and 2019.
3. Only includes nonresidential building square footage.
4. The figures shown on the row for the Adaptive Reuse Overlay represents parcels that are exclusively in the Adaptive Reuse Overlay boundary. Figures for parcels that are within the boundaries of both the Adaptive Reuse Overlay Zone and a specific plan, other special zoning, or focus area boundary are accounted for in the respective specific plan, other special zoning, or focus area.
5. The City has included an assumption for growth on a small portion (five percent) of residential parcels through the construction of second units, which is distributed throughout the City and is not concentrated in a subset of neighborhoods. Additional growth includes known projects in the pipeline and an increase of 10 percent in building square footage and employment for the professional office surrounding the Orange County Global Medical Center and along Broadway north of the Midtown Specific Plan, as well as the commercial and retail along 1st Street south of the West Santa Ana Boulevard focus area.

Source: City of Santa Ana with assistance from PlaceWorks, 2020.

Table 2: Focus Area Buildout Factors

Focus Area	Density [1]	Intensity (FAR) [1]					Use Ratio (pct. of land) [1]						
Land Use	*DU/ac*	*Comm.*	*Off.*	*Ind.*	*Ins.*	*Hotel*	*Res.*	*Comm.*	*Off.*	*Ind.*	*Ins.*	*Hotel*	*O.S.*
55 Freeway / Dyer Road													
District Center	85	0.5	0.5	-	-	1.0	75%	15%	5%	-	-	-	5%
General Commercial	-	1.0	-	-	-	-	-	100%	-	-	-	-	-
Industrial / Flex	-	0.5	1.0	0.75	-	-	-	5%	30%	65%	-	-	-
Open Space	-	-	-	-	-	-	-	-	-	-	-	-	100%
17th Street / Grand Avenue													
District Center	50	0.5	0.5	-	-	-	75%	15%	5%	-	-	-	5%
General Commercial	-	0.28	-	-	-	-	-	100%	-	-	-	-	-
Industrial / Flex	-	0.5	0.75	0.6	-	-	-	5%	30%	65%	-	-	-
Open Space	-	-	-	-	-	-	-	-	-	-	-	-	100%
Urban Neighborhood	30	0.5	0.5	-	-	-	75%	15%	5%	-	-	-	5%
South Bristol Street													
District Center Area A [2]	80	1.0	2.0	-	-	3.0	35%	5%	50%	-	-	5%	5%
District Center Area B [3]	90	1.0	2.0	-	-	3.0	75%	7%	7%	-	-	3%	8%
Open Space	-	-	-	-	-	-	-	-	-	-	-	-	100%
Urban Neighborhood	30	0.5	0.5	-	-	-	65%	25%	5%	-	-	-	5%
South Main Street													
Industrial / Flex	-	0.75	0.5	0.3	-	-	-	15%	30%	55%	-	-	-
Institutional	-	-	-	-	0.36	-	-	-	-	-	100%	-	-
Low Density Residential	7	-	-	-	-	-	100%	-	-	-	-	-	-
Open Space	-	-	-	-	-	-	-	-	-	-	-	-	100%
Urban Neighborhood	30	0.5	0.5	-	-	-	70%	20%	5%	-	-	-	5%
West Santa Ana Boulevard													
Corridor Residential	30	-	-	-	-	-	100%	-	-	-	-	-	-
General Commercial	-	1.0	-	-	-	-	-	100%	-	-	-	-	-
Industrial / Flex	15	0.5	0.75	0.6	-	-	5%	15%	30%	50%	-	-	-
Institutional	-	-	-	-	1.09	-	-	-	-	-	100%	-	-
Low Density Residential	7	-	-	-	-	-	100%	-	-	-	-	-	-
Low-Medium Density Residential	13.7	-	-	-	-	-	100%	-	-	-	-	-	-
Medium Density Residential	24.8	-	-	-	-	-	100%	-	-	-	-	-	-
Open Space	-	-	-	-	-	-	-	-	-	-	-	-	100%
Professional and Administrative Office	-	-	2.0	-	-	-	-	-	100%	-	-	-	-
Urban Neighborhood	30	0.5	0.5	-	-	-	80%	10%	5%	-	-	-	5%

Notes:

1. Density, intensity, and use ratio figures determined by the City of Santa Ana in collaboration with MIG, 2019. The FAR figures address nonresidential building square footage only. The resulting buildout figures, with the exception of South Bristol Street District Center Area B, were then multiplied by a factor of 80% to arrive at projections for 2045.
2. Includes all District Center areas north of MacArthur Blvd and on the east side of Bristol south of MacArthur (~52 acres).
3. Includes all District Center areas south of Macarthur Blvd and west of Bristol (~58 acres).

Table 3: Employment Factors

Employment Generation Factors		
Land Use	**Existing Factor**	**Buildout Factor**
Commercial	500 sq. ft. / emp.	500 sq. ft. / emp.
Office / Office Park	286 sq. ft. / emp.	364 sq. ft. / emp.
Business Park / R&D	300 sq. ft. / emp.	333 sq. ft. / emp.
Light Industrial	400 sq. ft. / emp.	500 sq. ft. / emp.
Heavy Industrial	500 sq. ft. / emp.	500 sq. ft. / emp.
Warehouse	800 sq. ft. / emp.	800 sq. ft. / emp.
Medical	400 sq. ft. / emp.	222 sq. ft. / emp.
Government Office	286 sq. ft. / emp.	286 sq. ft. / emp.
Hospital	400 sq. ft. / emp.	364 sq. ft. / emp.
Religious Institution	800 sq. ft. / emp.	800 sq. ft. / emp.
Hotel / Motel	0.9 / room	0.9 / room
School	0.1 / student	0.1 / student
Park	0.75 / acre	0.75 / acre
Employed Persons Factors		
Population age 16+ (% of total)	76.8%	
Employment/working population ratio	63.7%	
LEHD / ACS employment	84.0%	

Source:
- Existing employment generation factors based on U.S. Census Bureau, Longitudinal Employer-Household Dynamics Origin-Destination Employment Statistics (LEHD), 2017, accessed and aggregated by PlaceWorks in March 2020.
- Buildout employment generation factors based on OCTA Typical Employment Conversion Factors, June 2001 allowable ranges; adjusted by Santa Ana OCP 2002/2006 Interagency Team.
- Population age 16+ derived by comparing total population in households and workforce population 16 and over, reported by the U.S. Census, American Community Survey (ACS) 2018 5-Year Estimates, Tables B25033 and S2301), accessed in March 2020.
- Employed/ working population ratio as reported by the U.S. Census, ACS 2018 5-Year Estimates, Table S2301), accessed in March 2020.
- LEHD / ACS employment compares the number of employed residents reported by LEHD to self-reported data in ACS 2017 5-Year Estimates, accessed in March 2020.

Table 4: Persons per Household Assumptions

Units in Structure	2000	2010	2011	2012	2013	2014	2015	2016	2017	2018	2045
Citywide	4.37	4.30	4.26	4.41	4.14	3.97	4.33	4.20	4.11	3.97	3.62
Single family[1]	5.01	4.92	4.98	4.94	4.84	4.81	5.00	4.85	4.73	**4.59[3]**	**4.30[4]**
Multi-family[2]	4.07	4.01	3.86	4.15	3.82	3.51	4.01	3.86	3.74	**3.58[3]**	**3.12[4]**
2 to 4	4.40	4.84	4.09	4.77	3.90	3.56	4.48	4.37	4.01	4.03	3.43
5 to 19	3.93	3.78	3.75	4.31	3.69	3.55	4.01	3.85	3.53	3.99	3.60
20 to 49	4.67	4.20	4.35	4.49	4.31	3.81	4.10	4.20	3.92	2.95	2.05
50 or more	3.71	3.58	3.67	3.55	3.71	3.19	3.43	3.18	3.74	2.77	2.41

Notes:
1. A category representing the aggregate figure for single family detached and single family attached units, as reported in the Census tables.
2. A category representing the aggregate figure for multi-family units with two or more units in the structure, as reported in the Census tables.
3. Factors used to generate population estimates for existing conditions.
4. Factors used to generate population estimates for buildout conditions.

Source:
- 2000 (Decennial Census Tables HCT003 and H033), accessed and aggregated (weighted average) by PlaceWorks in March 2020.
- 2010-218 (U.S. Census, American Community Survey 1-Year Estimates, Tables B25124 and B25033), accessed and aggregated (weighted average) by PlaceWorks in March 2020.
- 2045 derived through trendline analysis of 2000-2018 data by PlaceWorks in March 2020.
- Occupancy rate of 95.94% from the California Department of Finance, Table 2: E-5 City/County Population and Housing Estimates, 1/1/2019, downloaded in March 2020.

Table 5: Student Enrollment for Public and Private Schools in Santa Ana, 2018/2019

School	Enrollment	School	Enrollment
Garden Grove Unified School District		**Santa Ana Unified School District continued**	
Edward Russell Elementary	502	Manuel Esqueda Elementary	1,100
Heritage Elementary	452	Martin Elementary	645
Newhope Elementary	396	Martin Luther King Jr. Elementary	640
R. F. Hazard Elementary	468	Martin R. Heninger Elementary	1,151
Rosita Elementary	480	McFadden Intermediate	1,184
Stephen R. Fitz Intermediate	687	Middle College High	349
Bethel Baptist	225	Mitchell Child Development Center	419
Saint Barbara Elementary	325	Monroe Elementary	300
Santa Clara Nursery School	24	Monte Vista Elementary	516
Orange County Department of Education		Orange County School of the Arts	2,177
Samueli Academy	529	Pio Pico Elementary	563
Citrus Springs Charter	256	Raymond A. Villa Fund. Intermediate	1,390
College and Career Preparatory Academy	241	REACH Academy	34
Ednovate - Legacy College Prep.	189	Saddleback High	1574
Scholarship Prep	436	Santa Ana High	3,057
Vista Condor Global Academy	132	Santiago Elementary	1,152
Vista Heritage Global Academy	275	Segerstrom High	2,435
Orange Unified School District		Sierra Intermediate	757
Fairhaven Elementary	544	Taft Elementary	544
Panorama Elementary	404	Theodore Roosevelt Elementary	572
Santa Ana Unified School District		Thomas A. Edison Elementary	515
Edward B. Cole Academy	373	Valley High	2,150
Orange County Educational Arts Academy	622	Walker Elementary	401
Abraham Lincoln Elementary	790	Wallace R. Davis Elementary	538
Advanced Learning Academy	364	Washington Elementary	750
Andrew Jackson Elementary	745	Willard Intermediate	708
Carl Harvey Elementary	409	Wilson Elementary	578
Cesar E. Chavez High	385	**Tustin Unified School District**	
Century High	1,660	Arroyo Elementary	640
Community Day Intermediate and High	34	Foothill High	2,467
Diamond Elementary	509	Guin Foss Elementary	443
Douglas MacArthur Fundamental Intermediate	1,210	Hewes Middle	1,003
El Sol Santa Ana Science and Arts Academy	919	Loma Vista Elementary	454
Franklin Elementary	409	Red Hill Elementary	563
Fremont Elementary	536	Tustin Memorial Elementary	584
Garfield Elementary	723	**SBE – Magnolia Science Academy**	
George Washington Carver Elementary	386	Magnolia Science Academy Santa Ana	674
Gerald P. Carr Intermediate	1,405	**Private**	
Gonzalo Felicitas Mendez Fund. Intermediate	1,392	Ari Guiragos Minassian Armenian	109
Greenville Fundamental Elementary	1,043	Blind Children's Learning Center	60
Hector Godinez Fundamental High School	2,449	Calvary Chapel Private School	251
Heroes Elementary	565	Calvary Chapel High/Maranatha Christian Acad.	1,370
Hoover Elementary	357	Calvary Christian School	322
Jefferson Elementary	707	Fairmont Private School	300
Jim Thorpe Fundamental	927	Foothill Montessori School	76
John Adams Elementary	420	Mater Dei High School	2,200
John F. Kennedy Elementary	619	Nova Academy Early College High	430
John Muir Fundamental Elementary	876	Reedemer Christian School	19
Jose Sepulveda Elementary	372	Saint Anne School	220
Julia C. Lathrop Intermediate	948	Saint Joseph Elementary	220
Lorin Griset Academy	371	School of Our Lady	185
Lowell Elementary	709	The Prentice School	140
Lydia Romero-Cruz Elementary	196	**Rancho Santiago Community College District**	
Madison Elementary	1,009	Santa Ana College	36,411

Source: Santa Ana College student enrollment figure (2018 student headcount) from the Rancho Santiago Community College District, https://www.rsccd.edu/Discover-RSCCD/Pages/default.aspx, accessed in March 2020. All other student enrollment figures from the California Department of Education, California School Directory, 2018/2019 enrollment data, accessed in March 2020.

Table 6: Student Generation Rates

School District	Multi-Family Unit	Single Family Unit
Santa Ana Unified	0.4475	0.9099
Garden Grove Unified	0.3081	0.59877
Orange Unified	0.3735	0.4922
Tustin Unified	0.3072	0.6063

Sources:
- SAUSD, 2020 Residential Development School Fee Justification Study.
- GGUSD, 2020 Response to Service Questionnaire for Draft EIR. Multi-family rate reflects an average of rates for single family attached and multi-family units.
- OUSD, 2018 Fee Justification Report.
- TUSD, 2018 Fee Justification Report.

Table 7: Pipeline Projects as of January 2020

APN	Project Name	Address	Land Use	Res Units	Nonres Sq. Ft.	Status
198-081-28	The Line	3630 W Westminster Avenue	Residential Apartments and Commercial	228	4,248	Under Construction
002-312-35	Saint Thomas 3-Lot Subdivision	2828 N Flower Street	Single-Family Residential	3		Site Plan Review
002-210-40	2700 Main Street Apartments	2700 N Main Street	Residential Apartments	247		Site Plan Review
002-210-42	MainPlace Mall Revitalization Plan	2800 N Main Street	Residential	1900		DA Entitled
002-210-42	MainPlace Mall Revitalization Plan	2800 N Main Street	Hotel (400 rooms)		n/a	DA Entitled
002-210-42	MainPlace Mall Revitalization Plan	2800 N Main Street	Office		750,000	DA Entitled
002-210-42	MainPlace Mall Revitalization Plan	2800 N Main Street	Commercial		270,000	DA Entitled
041-213-04	Town and Country Manor (revise entitlement)	555 E Memory Lane	Senior Care Facility		46,218	Plan Check
390-171-03	Starbucks	2701 N Grand Avenue	Restaurant with Drive-thru		907	Under Construction
003-010-27	Magnolia at the Park	2525 N Main Street	Residential Apartments	347		Site Plan Review
003-010-27	Magnolia at the Park	2525 N Main Street	Demo Office Building for Apartments	0	-81,172	Site Plan Review
396-141-01	Starbucks Drive-thru & Retail Pad	2301 N Tustin Avenue	Restaurant with Drive-thru		3,567	Under Construction
003-113-41	Hampton Inn Hotel	2056 N Bush Street	Relocate SFD to 2125 North Main, change to commercial	-1	922	Plan Check
003-113-59	Hampton Inn Hotel	2115 N Main Street	SFD/Office Change to Commercial	-1	2,627	Plan Check
003-113-61	Hampton Inn Hotel	2058 N Bush Street	Demo SFD	-1		Plan Check
003-113-63	Hampton Inn Hotel	2119 N Main Street	Demo Office Building		-1,619	Plan Check
003-113-81	Hampton Inn Hotel	2129 N Main Street	Hampton Inn Hotel		73,322	Plan Check
399-031-23	The Academy Charter High School	1901 N Fairview Street	"Family" apartments	8		Under Construction
399-031-23	The Academy Charter High School	1901 N Fairview Street	Educational (High School)		146,136	Under Construction
399-031-24	Samuelli Academy Master Plan Revisions	1919 N Fairview Street	Master plan to modify schools classrooms		-6,530	Entitled
396-211-48	North Grand Car Wash	1821 N Grand Ave	Car Wash		5,243	Site Plan Review
396-211-48	North Grand Car Wash	1821 N Grand Ave	Demo Restaurant		-6,592	Site Plan Review

Table 7: Pipeline Projects as of January 2020

APN	Project Name	Address	Land Use	Res Units	Nonres Sq. Ft.	Status
396-031-16	Rocket Express Car Wash	1703 E Seventeenth Street	Car Wash		4,292	Entitled
396-031-16	Rocket Express Car Wash	1703 E Seventeenth Street	Demo Existing Commercial		-20,146	Entitled
396-052-43	Sexlinger Homes	1584 E Santa Clara Avenue	Single Family Residence	23		Under Construction
396-341-06	Tustin Service Station and Car Wash	2230 N Tustin Avenue	Commercial		3,600	Site Plan Review
405-262-20	In-N-Out Burger Bristol Rebuild & Expansion	815 N Bristol	Restaurant Rebuild & Expansion		1,776	Entitled
405-272-19	North Bristol Medical Project	1415 N Bristol	Medical Office Buildings		5,120	Plan Check
005-153-19	Arts Collective Meta Housing Adaptive Reuse	1666 N Main Street	Convert Office to Residential Apartments	58		Under Construction
398-522-18	Broadway Live/Work Units	1412 N Broadway	Live/work units	3		Site Plan Review
398-533-07	Craftsman Residential Duplex	1002 N Van Ness Avenue	Residential Apartments	2		Site Plan Review
398-541-13	The Orleans Adaptive Reuse Apartments	1212 N	Convert Existing Office to Residential Apartments	24		Under Construction
398-552-12	YCU Conversion of SFD to Office Use	1008 N Broadway	Convert Historic Structure SFD to Office	-1	2,800	Under Construction
398-561-18	One Broadway Plaza	1109 N Broadway	Office Tower		518,000	Entitled
398-561-18	One Broadway Plaza	1109 N Broadway	Restaurant		16,000	Entitled
003-153-48	Bridging the Aqua	317 E Seventeenth Street	Residential Apartments	57		Under Construction
100-161-46	Nguyen Medical Plaza	5030 Westminster Avenue	Commercial		5,800	Site Plan Review
004-020-12	Lam Residential	1514 N English Street	Single Family Residence	6		Site Plan Review
007-313-16	Tiny Tim Plaza Mixed Use	2223 W Fifth Street	Mixed Use Residential Apartments/Commercial	54	51,300	Under Construction
939-450-61	Vista Heritage School Expansion	2609 W Fifth Street	School Expansion (6-8th to K-8th/Enroll 470 to 870)		n/a	Site Plan Review
398-191-02	Certified Transportation	628 E Washington Avenue	Bus Terminal Maintenance Bldg		7,165	Plan Check
400-231-02	Target Shopping Center Commercial Pads	1330 E Seventeenth Street	Commercial		9,112	Under Construction
400-242-02	Ednovate Charter High School	1450 E Seventeenth Street	Convert 24,428 Office to School w/4,940 SF addition		4,940	Under Construction
400-062-01	Park Court Office Building A	1801 E Parkcourt Place	Office building		3,968	Site Plan Review
400-121-09	Raising Cane's Restaurant	2250 E Seventeenth Street	Demo Existing Restaurant		-10,000	Under Construction
400-121-09	Raising Cane's Restaurant	2250 E Seventeenth Street	Restaurant		3,935	Under Construction
400-164-10	Calvary Church Master Plan	1010 N Tustin Avenue	Master plan to modify center, classrooms, and office		50,000	Site Plan Review
198-101-07	Bewley Street Townhomes	1122 N Bewley Street	Residential Townhomes	11		Site Plan Review
198-102-20	John Le 5-Unit Development	1113 N Bewley Street	Residential Apartments	5		Site Plan Review
198-182-23	First & Harbor Commercial Development	121 N Harbor Boulevard	Commercial		36,606	Entitled
198-182-23	First & Harbor Commercial Development	121 N Harbor Boulevard	Demo Commercial		-6,400	Entitled
198-182-36	Fifth and Harbor Mixed Use Apartments	421 N Harbor Boulevard	Mixed Use Residential Apartments/Commercial	94	9,900	Entitled
198-281-05	Hue-Vo Two Unit Development	3402 W Seventh Street	Single-Family Residential	3		Site Plan Review
198-281-25	West Fifth Villas	3417 W Fifth Street	Residential Condos	8		Entitled
005-185-30	Eight Eight 8 - Adaptive Reuse	888 N Main Street	Convert Office to Mixed-Use/Residential Apartments	121	3,700	Plan Check
005-185-30	Eight Eight 8 - Adaptive Reuse	888 N Main Street	Convert Office to Mixed-Use/Residential Livework Aprt	25		Plan Check

Table 7: Pipeline Projects as of January 2020

APN	Project Name	Address	Land Use	Res Units	Nonres Sq. Ft.	Status
398-236-03	Legacy Square Mixed-Use Development	609 N Spurgeon Street	Demolition of Institutional Building	0	-8,030	Entitled
398-236-03	Legacy Square Mixed-Use Development	609 N Spurgeon Street	Demolition of Church	0	-22,330	Entitled
398-236-03	Legacy Square Mixed-Use Development	609 N Spurgeon Street	Mixed Use Residential Apartments/Commercial	93	7,267	Entitled
099-221-28	CN Square Office Building	402 N Euclid Street	Office Building		4,025	Site Plan Review
100-231-01	Euclid-Hazard 7-Eleven Service Station	813 N Euclid Street	Gas Station/Convenience Store		3,045	Site Plan Review
100-301-03	Euclid Commercial Plaza	111 N Euclid Street	Commercial		2,680	Plan Check
100-281-05	Bui 8-Unit Development	301 N Mountain View	Residential Apartments	8		Site Plan Review
398-214-01	Walnut Pump Station	723 W Walnut Street	Water Pump		3,800	Plan Check
398-325-01	4th and Mortimer (Block A)	409 E Fourth Street	Mixed Use Residential Apartments/Commercial	93	99,985	Site Plan Review
398-325-01	4th and Mortimer (Block A)	409 E Fourth Street	Demolition of Commercial Building		-22,330	Site Plan Review
398-327-09	201 E. 4th Street	401 N Bush Street	Residential Apartments	24		Under Construction
398-328-01	First American Site Mixed-Use Redevelopment	114 E Fifth Street	Mixed Use Residential Apartments/Commercial	218	8,900	Site Plan Review
398-330-08	4th and Mortimer (Block B)	509 E Fourth Street	Mixed Use Residential Apartments/Commercial	40	5,827	Site Plan Review
398-471-03	Tom's Trucks Residential Development	1008 E Fourth Street	Single Family Residence	117		Entitled
400-071-03	Madison Project	200 N Cabrillo Park Drive	Mixed Use Residential Apartments/Commercial	260	6,500	Entitled
402-181-11	AMG East First Senior Apartments	2222 E First Street	Residential Apartments	418	10,000	Under Construction
402-191-01	AMG East First Apartments/1st Point One	2114 E First Street	Mixed Use Residential Apartments/Commercial	552	10,000	Entitled
108-131-49	610 Newhope Condos	610 S Newhope Street	Residential Condos	9		Plan Check
188-021-08	4404 W. First Street	4404 W First Street	Commercial		3,662	Site Plan Review
144-341-04	Hoa Buddhist Center Addition	3222 W First Street	Church/Temple Expansion		9,256	Site Plan Review
144-551-51	Veteran's Village (Jamboree)	3314 W First Street	Residential Apartments	76		Under Construction
007-332-07	7-Eleven Store and Gas Station	1904 W First Street	Gas Station/Convenience Store		2,480	Site Plan Review
405-214-04	King Street Five Home Subdivision	1102 N King Street	Single Family Residence	5		Plan Check
011-154-43	AMCAL First Street Family Apartments	1440 E First Street	Residential Apartments	69		Under Construction
402-222-01	Wermers Properties Mixed-Use Development	1660 E First Street	Mixed Use Residential Apartments/Commercial	603	8,900	Entitled
108-073-14	Saigon Reformed Presbyterian	5321 W McFadden Avenue	Church/Temple Expansion		2,000	Site Plan Review
010-272-22	Star Wok	1019 S Bristol Street	Demo Apartment	-4		Plan Check
010-272-22	Star Wok	1019 S Bristol Street	Demo Mini Market		-1,645	Plan Check
010-272-22	Star Wok	1019 S Bristol Street	Restaurant		2,546	Plan Check
108-244-30	Archangel Michael Coptic Orthodox Church	4405 W Edinger Avenue	Church/Temple Expansion		9,928	Site Plan Review
108-244-30	Archangel Michael Coptic Orthodox Church	4319 W Edinger Avenue	Demo of SFD for church expansion	-1		Site Plan Review
108-244-30	Archangel Michael Coptic Orthodox Church	4325 W Edinger Avenue	Demo of SFD for church expansion	-1		Site Plan Review
108-244-30	Archangel Michael Coptic Orthodox Church	4326 W Regent Drive	Demo of SFD for church expansion	-1		Site Plan Review
108-244-30	Archangel Michael Coptic Orthodox Church	4330 W Regent Drive	Demo of SFD for church expansion	-1		Site Plan Review

Table 7: Pipeline Projects as of January 2020

APN	Project Name	Address	Land Use	Res Units	Nonres Sq. Ft.	Status
108-244-30	Archangel Michael Coptic Orthodox Church	4402 W Regent Drive	Demo of SFD for church expansion	-1		Site Plan Review
407-107-23	Haphan Housing	3025 W Edinger Avenue	Residential Townhomes	18		Entitled
402-111-36	McFadden Village Chevron	2120 E McFadden Avenue	Commercial		2,037	Under Construction
013-040-29	Mater Dei Park Structure	1202 W Edinger Avenue	Parking Structure		3 Story	Under Construction
403-164-08	TLC Care Facility	2032 S Cypress Avenue	Change of Use SF to Care Facility (12 Bed)		n/a	Site Plan Review
140-061-94	Shea Homes	2001 W MacArthur Boulevard	Single Family Residence	42		Under Construction
412-191-04	South Coast Speedwash	2402 S Bristol Street	Commercial Retail/Restaurant		8,183	Permits Issued
412-191-04	South Coast Speedwash	2402 S Bristol Street	Car Wash		26,153	Permits Issued
412-191-04	South Coast Speedwash	2402 S Bristol Street	Demo Existing Car Wash		-5,410	Permits Issued
016-051-28	Softscapes New Building	2605 S Cypress Avenue	Office/Industrial Building		2,665	Plan Check
016-082-48	Our Lady of Guadalupe Office/Residence	542 E Central	Office/Residential Apartment	1	6,372	Site Plan Review
016-151-11	Tapestry by Hilton and Restaurant	1580 E Warner Avenue	6-story Hotel		79,375	Site Plan Review
016-151-11	Tapestry by Hilton and Restaurant	1580 E Warner Avenue	Restaurant		5,000	Site Plan Review
430-221-13	Heritage Village Residential Phase A	1951 E Dyer Road	Mixed-Use Residential Apartments	335	65,700	Under Construction
430-221-13	Heritage Village Residential Phase B	1901 E Dyer Road	Mixed-Use Residential Apartments	403	4,100	Under Construction
430-221-13	Heritage Village Residential Phase C	2001 E Dyer Road	Mixed-Use Residential Apartments	483	4,200	Under Construction
430-222-07	Bowery: Redhill & Warner Mixed-Use	2300 S Redhill Ave	Residential Apartments and Commercial	1,150	80,000	Site Plan Review
411-141-12	Shea ITT	666 E Dyer Road	Industrial		40,000	Under Construction
411-074-03	Legado at the MET	200 E First American Way	Residential Apartments	278		Entitled
414-271-03	Shell Service Station Retail Building	3820 S Fairview Street	Demo Fuel Kiosk		-80	Site Plan Review
414-271-03	Shell Service Station Retail Building	3820 S Fairview Street	Gas Station/Convenience Store		1,600	Site Plan Review
412-541-07	Christ Our Savior Church	2000 W Alton Avenue	Demo Existing Modular Church		-7,190	Under Construction
412-541-07	Christ Our Savior Parcel Map	2000 W Alton Avenue	New Church, Community Center, and Office		46,307	Under Construction
410-111-02	Legacy Multi-Family Residential At Sunflower	651 W Sunflower Ave	Residential Apartments	226		Entitled
410-111-02	Legacy Multi-Family Residential At Sunflower	651 W Sunflower Ave	Demo Church	0	-9,875	Entitled
400-032-02	Russell/Fisher Gas Station & Com Ctr	325 N Tustin Avenue	Commercial		7,368	Entitled
400-032-02	Russell/Fisher Gas Station & Com Ctr	325 N Tustin Avenue	Demo Restaurant for commercial bldg.		-3,440	Entitled
400-032-02	Russell/Fisher Gas Station & Com Ctr	325 N Tustin Avenue	Car Wash		4,354	Site Plan Review
400-032-03	Russell/Fisher Gas Station & Com Ctr	301 N Tustin Avenue	Commercial		2,778	Entitled
400-032-03	Russell/Fisher Gas Station & Com Ctr	301 N Tustin Avenue	Demo Carwash for commercial gas station		-1,780	Entitled
400-032-03	Russell/Fisher Gas Station & Com Ctr	301 N Tustin Avenue	Commercial		2,778	Site Plan Review

Source: City of Santa Ana, Major Planning Projects and Monthly Development Reports, January 2020.

Table 8: Focus Area Buildout Factors for Current General Plan Scenario *(the GP land use plan adopted in 1998, with amendments through 2019)*

Focus Area	Density [1]	Intensity (FAR) [1]					Use Ratio (pct. of land) [1]						
Land Use	*DU/ac*	*Comm.*	*Off.*	*Ind.*	*Ins.*	*Hotel*	*Res.*	*Comm.*	*Off.*	*Ind.*	*Ins.*	*Hotel*	*O.S.*
55 Freeway / Dyer Road													
District Center	90	1.0	1.0	-	-	-	40%	10%	50%	-	-	-	-
General Commercial	-	0.5	-	-	-	-	-	100%	-	-	-	-	-
Industrial	-	-	-	0.45	-	-	-	-	-	100%	-	-	-
Open Space	-	-	-	-	-	-	-	-	-	-	-	-	100%
Professional and Administrative Office	-	-	0.5	-	-	-	-	-	100%	-	-	-	-
17th Street / Grand Avenue													
General Commercial	-	0.5	-	-	-	-	-	100%	-	-	-	-	-
Institutional	-	-	-	-	0.5	-	-	-	-	-	100%	-	-
Low Density Residential	7	-	-	-	-	-	-	-	-	-	-	-	-
Open Space	-	-	-	-	-	-	-	-	-	-	-	-	100%
Professional and Administrative Office	-	-	0.5	-	-	-	-	-	100%	-	-	-	-
South Bristol Street													
District Center	90	1.0	1.0	-	-	-	40%	10%	50%	-	-	-	-
General Commercial	-	0.5	-	-	-	-	-	100%	-	-	-	-	-
Medium Density Residential	15	-	-	-	-	-	100%	-	-	-	-	-	-
Open Space	-	-	-	-	-	-	-	-	-	-	-	-	100%
Professional and Administrative Office	-	-	0.5	-	-	-	-	-	100%	-	-	-	-
South Main Street													
District Center	90	1.0	1.0	-	-	-	40%	10%	50%	-	-	-	-
General Commercial	-	0.5	-	-	-	-	-	100%	-	-	-	-	-
Industrial	-	-	-	0.45	-	-	-	-	-	100%	-	-	-
Institutional	-	-	-	-	0.5	-	-	-	-	-	100%	-	-
Low Density Residential	7	-	-	-	-	-	100%	-	-	-	-	-	-
West Santa Ana Boulevard													
General Commercial	-	0.5	-	-	-	-	-	100%	-	-	-	-	-
Industrial	-	-	-	0.45	-	-	-	-	-	100%	-	-	-
Institutional	-	-	-	-	0.5	-	-	-	-	-	100%	-	-
Low Density Residential	7	-	-	-	-	-	100%	-	-	-	-	-	-
Medium Density Residential	15	-	-	-	-	-	100%	-	-	-	-	-	-
Open Space	-	-	-	-	-	-	-	-	-	-	-	-	100%
Professional and Administrative Office	-	-	0.5	-	-	-	-	-	100%	-	-	-	-
Urban Neighborhood	30	0.5	0.5	-	-	-	50%	30%	20%	-	-	-	-

Notes:

1. Density, intensity, and use ratio figures determined using a combination of current assumptions stated in the 1998 Land Use Element (Table A-4, Land Use Plan Build-out Capacities), past and current trends, and the results of the 2020 Economic Indicators Report by AECOM. Maximum densities/intensities were assumed for conventional residential and industrial categories, while commercial and office categories were assumed to build out below maximum intensities. A balance of residential and nonresidential uses, with maximum residential densities and below-maximum nonresidential intensities, was assumed for the mixed used categories of Urban Neighborhood and District Center.

Table 9: Citywide Figures by Orange County Traffic Analysis Model (OCTAM) Category

Statistic	Existing Conditions	2045 Projections		
		Current GP	80% / 50% Prop GP	Proposed GP
K-12 Enrollment [1]	58,097	69,074	72,675	75,480
College Enrollment [2]	36,411	36,411	36,411	36,411
Total Population [3]	334,774	383,202	411,804	431,629
Household Population	330,256	378,684	407,286	427,111
Employed Population	135,717	155,615	167,368	175,515
Total Households	76,314	94,104	103,864	109,883
Median HH Income [4]	see note	see note	see note	see note
Retail Employment [5,8]	20,738	22,957	17,297	18,002
Services Employment [6,8]	45,602	60,513	48,260	52,367
Other Employment [7,8]	95,324	98,967	96,580	98,875

Notes:

1. Only includes students attending schools within the city boundaries.
2. No projection data was available.
3. Total Population includes all individuals living in households, institutional group quarters, and non-institutional group quarters.
4. Median household income figures generated by the traffic model.
5. Retail employment estimated to account for 50% of jobs generated by commercial land uses.
6. Services employment estimated to account for 50% of jobs generated by commercial land uses, 70% of jobs generated by office land uses, and 100% of jobs generated by hotel land uses.
7. Other ("Base") employment estimated to account for 30% of jobs generated by office land uses and 100% of jobs generated by industrial, institutional, and open space land uses.
8. The employment figures are subject to rounding when aggregated by parcel into traffic analysis zones, resulting in a 0.69% rounding delta.

Source: Figures aggregated and projected by PlaceWorks, 2020.