

TECHNICAL MEMORANDUM

To: Chris Heldreth, Community Development Director, City of Barstow
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From: Kimley-Horn and Associates, Inc.
San Diego, CA 92101
Date: June 2, 2026
Subject: Engineering Basis for Establishing Roadway Speed Limits

PURPOSE

This memorandum summarizes the engineering considerations that inform the establishment of speed limits on California roadways and addresses the request to lower the existing 55 mile per hour (mph) speed limit on Main Street.

OVERVIEW

Speed limits are generally established through a systematic, data-driven engineering process called an Engineering and Traffic Survey (E&TS). As noted in the California Vehicle Code (CVC), speed limits are only enforceable on roadways where an E&TS has been completed within 5 years, or within 7 or 14 years if certain qualifying criteria are met. The CVC also requires that an E&TS considers prevailing speeds, collision records, and roadside conditions not readily apparent to the driver with the purpose of identifying a speed limit that is reasonable, safe, enforceable, and consistent with roadway conditions.

REGULATORY FRAMEWORK

The CVC includes several sections which provide the regulatory framework for speed limits in California, with some of the key sections summarized below. The California Manual for Setting Speed Limits contains a comprehensive list and summary of the CVC sections related to speed limits.

CVC § 627

CVC § 627 notes that an E&TS shall include consideration of the following:

- Prevailing speeds as determined by traffic engineering measurements
- Collision records
- Highway, traffic, and roadside conditions not readily apparent to the driver

An E&TS may also review residential density and bicyclist and pedestrian safety trends.

CVC § 22349

CVC § 22349 notes that 55 mph is the default maximum speed limit for two-lane, undivided highways, unless that highway has been posted for a higher speed based on an E&TS, in which case the maximum allowable speed is 65 mph.

CVC § 22352

CVC § 22352 provides the basis for “prima facie” speed limits. Prima facie speed limits are a type of statutory speed limit that apply in designated special areas or zones such as railway crossings and residential districts. An E&TS is not required for the speed limit if they are posted at the statutory prima facie speed value. They are enforceable by law even if the speed limit sign is not posted. CVC § 22352 includes the following prima facie speed limits, among others:

- 15 mph at railway at-grade crossings and in alleys
- 25 mph in business or residential districts, unless another speed limit is posted, and near schools when children are present

CVC § 40801 & CVC § 40802

CVC § 40801 and CVC § 40802 provide the legal basis for setting speed limits by an E&TS. CVC § 40801 states that speed limit violations are unenforceable when they are identified through a “speed trap.” CVC § 40802 defines a speed trap as any location where a speed limit greater than 25 mph is not determined by a speed survey within 5 years of violation (with caveats for locations where specific criteria are met, which may allow a speed survey to be conducted every 7 or even every 14 years as opposed to every 5 years).

DETERMINING AN APPROPRIATE SPEED LIMIT

The California Manual on Uniform Traffic Control Devices (CAMUTCD) Section 2B.21 Speed Limit Sign (R2-1) – identifies specific guidance on the data needed for an E&TS based on the three requirements outlined in CVC § 627. It states:

- Prevailing speeds shall be determined by a speed zone survey with the following characteristics.
 - No inclement weather
 - At least 100 vehicles surveyed
 - Surveyor should not affect travel speeds
 - Measurements should be taken at off-peak hours
- The following characteristics may also be considered in addition to prevailing speeds when determining an appropriate speed limit.
 - Residential density
 - Bicycle and pedestrian safety
 - Reported crash experience for a minimum 36-month period

The California Manual for Setting Speed Limits goes into further detail on the legislation and procedures which should be followed when determining a speed limit, including specific requirements for recording driver speeds and determining the 85th percentile speed, performing a crash analysis, and evaluating existing conditions. It further states that once an E&TS is completed, it must be reviewed and approved by the governing agency.

The results of an E&TS generally indicate that a speed limit should be rounded to the nearest 5 mph of the recorded 85th percentile speed of a roadway with a bias towards rounding up (e.g. an 85th percentile speed of 42 mph would result in a 40 mph speed limit, while an 85th percentile speed of 43 mph would result in a 45 mph speed limit). Cities can, however, choose to reduce a speed limit by 5 mph from the

nearest rounded 5 mph increment of the 85th percentile speed, if the reasons for doing so are documented in an E&TS pursuant to CVC § 627 and other relevant sections.

ADDITIONAL CONSIDERATIONS

The CAMUTCD Section 2B.21 page 172 states that “the establishment of a speed limit of more than 5 mph below the 85th percentile speed should be done with great care as studies have shown that establishing a speed limit less than the 85th percentile generally results in an increase in collision rates; in addition, this may make violators of a disproportionate number of the reasonable majority of drivers.” For this reason, in accordance with the E&TS guidance above, speed limits should not be arbitrarily altered. Instead, they should be adjusted to accommodate existing safety needs or user trends.

The California Manual for Setting Speed Limits, Section 6.2.4 states that “E&TS are based on current roadway condition. Public and political opinions or hypothetical situations are not reasons to change the results of an E&TS and cannot be used as justification to reduce a speed limit. The Engineer must be able to support their decisions based on engineering principles and substantiated data that a court can readily analyze.”

MAIN STREET

The BIG team is not aware of a recent E&TS completed for Main Street along the BIG frontage. However, the existing 85th percentile speeds and local roadway context are not anticipated to warrant a reduction in the speed limit based on recent roadway observations. Ultimately, the local roadway jurisdiction (City of Barstow or County of San Bernardino depending on the roadway segment) may review the speed limit based on an E&TS, but cannot do so as part of a project mitigation measure. Therefore, BIG does not propose to modify the existing 55 mile per hour (mph) speed limit on Main Street.