

2016 Traffic Speed Zone Survey City of West Hollywood

October 2016

Prepared for:

City of West Hollywood
8300 Santa Monica Boulevard
West Hollywood, California 90069
323-848-6400 Phone

Prepared by:



1100 Corporate Center Drive, Suite 201
Monterey Park, CA 91754
323/260-4703 Phone

Job No: JB61076

Table of Contents

1.0 EXECUTIVE SUMMARY.....	1
1.1 EXECUTIVE SUMMARY	1
2.0 METHODOLOGY	4
2.1 STATUTORY AND REGULATORY REQUIREMENTS.....	4
2.2 COLLISION DATA.....	5
2.3 DATA COLLECTION.....	8
2.4 REVIEW CRITERIA	9
3.0 SUMMARY OF RECOMMENDATIONS.....	10
3.1 RECOMMENDATIONS.....	10
4.0 CERTIFICATION.....	12
APPENDIX A: APPLICABLE CALIFORNIA VEHICLE CODE SECTIONS.....	13
APPENDIX B: APPLICABLE CALIFORNIA MUTCD SECTIONS.....	22
APPENDIX C: ENGINEERING AND TRAFFIC SURVEYS FOR EACH SEGMENT	24
APPENDIX D: SPOT SPEED STUDIES.....	51
APPENDIX E: 24-HOUR COUNTS.....	126
APPENDIX F: COLLISION DATA.....	179

List of Figures

FIGURE 1: STUDY SEGMENTS WITH EXISTING SPEED LIMITS	2
---	---

List of Tables

TABLE 1 RECOMMENDED SPEED LIMITS.....	3
TABLE 2 CALIFORNIA STATE HIGHWAYS STATEWIDE COLLISION RATES.....	5
TABLE 3 WEST HOLLYWOOD COLLISION RATES, 2014 AND 2015.....	7

1.0 Executive Summary

1.1 Executive Summary

The 2016 Traffic Speed Zone Survey in the City of West Hollywood evaluated the speed limit of 26 roadway segments throughout the City. Figure 1 illustrates the street segments where engineering and traffic surveys were conducted. The engineering and traffic surveys are in Appendix C of this document. California Vehicle Code (CVC) Section 40802 requires that an engineering and traffic survey be prepared for each segment where enforcement of the speed limit involves the use of radar or any other electronic device. Each engineering and traffic survey is valid for five years, or for seven years in cases where the arresting officer has completed device training and the device has been recently calibrated. The previous traffic speed zone survey was completed in 2011.

The California Manual of Uniform Traffic Control Devices (MUTCD), as required under CVC 21400(b), defines standards for posting speed limits that rely upon collecting speed data in the field to determine the 85th percentile speed, which is subsequently rounded upward or downward to the nearest 5 mile per hour increment. The California MUTCD allows for options to further reduce the speed limit. That methodology was applied to the 26 segments. Table 1 summarizes the findings and recommendations for speed limits on those segments.

For 10 of the 26 street segments, the 85th percentile speed recorded in spot speed surveys, when rounded off to the nearest 5 mph increment, matched the existing posted speed limit. As a result, the posted speed limits for the 11 segments are recommended to remain unchanged.

For 15 of the 26 street segments, rounding off the 85th percentile speeds to the nearest 5-mph increment would result in a speed limit exceeding the existing posted speed limit by 5 miles per hour. However, after applying an applicable California MUTCD option for rounding down or reducing the speed limit, the posted speed limits for the 14 segments are recommended to remain unchanged.

For Vista Street between Santa Monica Boulevard and Romaine Street, currently posted with a 25 mph speed limit, the measured 85th percentile speed results in a 30 mph posted speed limit even after applying downward rounding as allowed in CVC 21400(b) and the California MUTCD. As a result, the engineering and traffic study for this segment recommends raising the posted speed limit on this segment from 25 mph to 30 mph.

Conclusion: Among the 26 roadway segments for which an engineering and traffic survey was conducted, only the segment of Vista Street between Santa Monica Boulevard and Romaine Street will require a change in posted speed limits. To conform to the California Vehicle Code and the state's Manual of Uniform Traffic Control Devices, the speed limit signs on Vista Street are required to be changed from 25 mph to 30 mph.



Figure 1: Study Segments with Existing Speed Limits

ID	Street Segment	Limits	Existing Speed Limit (mph)	85th Percentile Speed (mph)			Recommended Speed Limit	Applied Option
				Recorded	Rounded Up	Rounded Down		
1	Beverly Blvd.	Doheny Dr. to East City Limit	35	38	40	-	35	2
2	Carol Dr.	Sunset Blvd. to Phyllis Ave.	25	27	-	25	25	
3	Cory Ave.	Sunset Blvd. to Phyllis Ave.	25	27	-	25	25	
4	Crescent Heights Blvd.	North City Limit to Santa Monica Blvd.	35	37	-	35	35	
5	Crescent Heights Blvd.	Santa Monica Blvd. to Romaine St.	35	35	-	-	35	
6	Doheny Dr. NB	Sunset Blvd. to Santa Monica Blvd.	35	38	40	-	35	2
7	Doheny Dr. NB	Santa Monica Blvd. to South City Limit	35	35	-	-	35	
8	Doheny Road	West City Limit to Sunset Blvd.	25	29	30	-	25	2
9	Fairfax Ave.	Fountain Ave. to Willoughby Ave.	35	40	-	-	35	1
10	Fountain Ave.	La Cienega Blvd. to Fairfax Ave.	35	38	40	-	35	2
11	Fountain Ave.	Fairfax Ave. to La Brea Ave.	35	42	-	40	35	1
12	Gardner Street	Fountain Ave. to Santa Monica Blvd.	25	28	30	-	25	2
13	Holloway Dr.	Sunset Blvd. to Santa Monica Blvd.	30	35	-	-	30	1
14	La Brea Ave.	Fountain Ave. to Romaine Street	35	35	-	-	35	
15	La Cienega Blvd.	Sunset Blvd. to Romaine Street	30	33	35	-	30	2
16	La Cienega Blvd.	Melrose Place to Rosewood Ave.	35	39	40	-	35	2
17	Melrose Ave.	Doheny Dr. to East City Limit	35	34	35	-	35	
18	Robertson Blvd.	Santa Monica Blvd. to South City Limit	30	34	35	-	30	2
19	San Vicente Blvd.	Sunset Blvd. to Santa Monica Blvd.	35	40	-	-	35	1
20	San Vicente Blvd.	Santa Monica Blvd. to Beverly Blvd.	35	40	-	-	35	1
21	Santa Monica Blvd.	Doheny Dr. to Croft Ave.	35	36	-	35	35	
22	Santa Monica Blvd.	Croft Ave. to Fairfax Ave.	30	34	35	-	30	2
23	Santa Monica Blvd.	Fairfax Ave. to East City Limit	30	35	-	-	30	1
24	Sunset Blvd.	West City Limit to Holloway Dr.	35	33	35	-	35	
25	Sunset Blvd.	Holloway Dr. to East City Limit	35	36	-	35	35	
26	Vista Street	Santa Monica Blvd. to Romaine St.	25	34	35	-	30	2

Options

Option 1: the posted speed limit may be reduced by 5 mph from the nearest 5 mph increment of the 85th-percentile speed, in compliance with CVC Sections 627 and 22358.5.

Option 2: For cases in which the nearest 5 mph increment of the 85th-percentile speed would require a rounding up, then the speed limit may be rounded down to the nearest 5 mph increment below the 85h percentile speed, if no further reduction is used. Refer to CVC Section 21400(b).

Table I Recommended Speed Limits

2.0 Methodology

2.1 Statutory and Regulatory Requirements

The 2016 Traffic Speed Zone Survey in the City of West Hollywood fulfills California Vehicle Code (CVC) Sections 22357 and 22358, which require local agencies to follow certain procedures established by Caltrans in establishing new speed limits and revising existing speed limits. Furthermore, CVC 40802 requires speed limits enforced by radar or any other electronic device that measures the speed of moving objects to be evaluated on a recurring basis by an engineering and traffic survey conforming to CVC 627. If the engineering and traffic surveys are more than 5 years old, the speed zone is considered to be a “speed trap” under CVC 40802 and courts may reject evidence of speeding obtained through radar or other electronic devices. Engineering and traffic surveys may be up to 7 years old if conditions under CVC 40802(c)(1) related to enforcement training and equipment certification have been met.

On January 1, 2012, CVC 21400(b) became effective requiring the Department of Transportation (i.e. Caltrans) to revise the California Manual of Uniform Traffic Control Devices so that speed limits are based on field-collected speed data. The procedure is built around a spot speed survey that typically consists of measuring speeds with a radar gun or other electronic device of motor vehicles traveling at free-flow speeds in each direction for a two-way street. The most important data point collected is the 85th percentile speed, which is the speed at or below which 85 percent of motor vehicles travel.

According to California MUTCD Section 2B.13 Paragraph 12a, the posted speed limit “shall be established at the nearest 5-mph increment of the 85th percentile speed of free-flowing traffic.” Thus, a segment with an 85th percentile speed of 32 mph would have a rounded-down posted speed limit of 30 mph, while another segment with an 85th percentile speed of 33 mph would have a rounded-up posted speed limit of 35 mph. The MUTCD allows the posted speed limit to be lowered by no more than 5 mph from a rounded speed, using one of two options that depend on whether the 85th percentile speed has been rounded down or up. The options may be applied as follows:

- Rounded down: Option 1 within MUTCD Section 2B.13 Paragraph 12a says “The posted speed may be reduced by 5 mph from the nearest 5-mph increment of the 85th percentile speed, in compliance with CVC Sections 627 and 22358.5.” The cited CVC Section 627 defines an engineering and traffic survey that is required to consider prevailing speeds, accident records, and conditions not readily apparent to the driver, and optionally consider residential density as well as pedestrian and bicycle safety. Presumably the basis for a speed limit that is more than 5 mph lower than the 85th percentile speed is something other than prevailing speeds. In regards to conditions not readily apparent to the driver, CVC 22358 states that “physical conditions such as width, curvature, grade and surface conditions, or any other condition readily apparent to a driver, in the absence of other factors, would not require special downward speed zoning.”
- Rounded up: Option 2 within MUTCD Section 2B.13 Paragraph 12a says “For cases in which the nearest 5-mph increment of the 85th percentile speed would require a rounding up, then the

speed limit may be rounded down to the nearest 5-mph increment below the 85th percentile speed, if no further reduction is used.” An Option 2 round-down, which became available when CVC Section 21400(b) went into effect January 1, 2012, requires no engineering and traffic survey to post the speed limit sign. The E&T survey is required nevertheless, however, to allow radar or similar devices to be used for enforcement.

Although Option 1 could also be applied where recorded speeds are rounded up, Option 2 achieves the same reduced speed limit with lesser documentation requirements. According to the MUTCD, Option 1’s documentation requirements consist of an E&T survey that “shall document in writing the conditions and justification for the lower speed limit and be approved by a registered Civil or Traffic Engineer.” Neither the Vehicle Code nor the MUTCD provide much specific guidance regarding accident data or pedestrian or bicycle safety. In contrast, CVC 627(c)(1) provides specific guidance on residential density. Many residential neighborhoods in West Hollywood meet the density threshold of 16 separate dwelling houses or business structures per quarter mile. The statute does not apply to roads within a business district.

While the California MUTCD allows two options for *lowering* the posted speed, it has no provision for *raising* the speed limit above the nearest 5-mph increment of the 85th percentile speed.

2.2 Collision Data

Collision summaries for the study segments during the years 2014 and 2015 are included in Appendix F. Consideration of accident data is a requirement for an engineering and traffic survey as defined in CVC 627. However, the passage of CVC 21400(b) in January 2012 restricted the deviation of the speed limit from the 85th percentile speed, thereby reducing the role of accident data in defining the posted speed limit.

A collision rate was calculated for each study segment and compared to the collision rate that can be reasonably expected to occur on streets and highways of the same characteristics statewide. These expected collision rates, developed by Caltrans, are shown in Table 2.

Table 2 California State Highways Statewide Collision Rates

Urban	Expected Collision Rates per Million Vehicle Miles
2 and 3 lane	1.98 /MVM
4 or more lanes undivided	3.55 /MVM
4 or more lanes divided	2.3 /MVM

Source: 1995 accident data on California State Highways published by State of California, Business, Transportation and Housing Agency, Department of Transportation Division of Traffic Operations.

The current collision rate for each segment was calculated using the following formula:

$$\text{Collision Rate} = (N * 1,000,000) / (ADT * L * D * Y)$$

- N: Number of all collisions (midblock and intersection) within the study segment
- Y: Number of years included in collision count
- ADT: Average daily traffic
- L: Length of segment in miles
- D: Number of days in 1 year (365)

Because of the highly urbanized nature of West Hollywood's street network, collision rates were generally higher than the statewide rates. Nevertheless, the California Vehicle Code restricts the range of speed limit reduction regardless of the collision rate. Table 3 shows the total number of collisions for each street segment, as well as collisions related to unsafe speed, pedestrians, and cyclists.

Table 3 West Hollywood Collision Rates, 2014 and 2015

ID	Street Segment	Limits	Collisions, Jan 2014 to Dec 2015				Average Daily Traffic	Length (miles)	Total Collision Rate per MVM	Lanes (UD undivided, D divided)	Statewide Collision Rate per MVM
			Unsafe Speed	Pedestrian-related	Bicycle-related	Total Collisions					
1	Beverly Blvd.	Doheny Dr. to East City Limit	4	2	1	26	30303	0.62	1.90	4 UD	3.55
2	Carol Dr.	Sunset Blvd. to Phyllis Ave.	0	0	1	1	957	0.12	11.93	2	1.98
3	Cory Ave.	Sunset Blvd. to Phyllis Ave.	1	0	0	3	5029	0.12	6.81	2	1.98
4	Crescent Heights Blvd.	North City Limit to Santa Monica Blvd.	3	2	1	45	26237	0.41	5.73	4 UD	3.55
5	Crescent Heights Blvd.	Santa Monica Blvd. to Romaine St.	0	0	0	11	24487	0.15	4.10	4 UD	3.55
6	Doheny Dr. NB	Sunset Blvd. to Santa Monica Blvd.	2	1	1	25	8524	0.65	6.18	2	1.98
7	Doheny Dr. NB	Santa Monica Blvd. to South City Limit	2	1	0	7	7563	0.27	4.70	2	1.98
8	Doheny Road	West City Limit to Sunset Blvd.	2	0	0	5	10354	0.13	5.09	2	1.98
9	Fairfax Ave.	Fountain Ave. to Willoughby Ave.	5	3	2	61	33366	0.50	5.01	4 D	2.30
10	Fountain Ave.	La Cienega Blvd. to Fairfax Ave.	12	4	1	124	39428	0.87	4.95	4	3.55
11	Fountain Ave.	Fairfax Ave. to La Brea Ave.	9	2	1	64	34722	1.00	2.52	4	3.55
12	Gardner Street	Fountain Ave. to Santa Monica Blvd.	0	0	1	5	744	0.25	36.82	2	1.98
13	Holloway Dr.	Sunset Blvd. to Santa Monica Blvd.	4	3	2	38	19452	0.51	5.25	2	1.98
14	La Brea Ave.	Fountain Ave. to Romaine Street	10	2	7	57	35040	0.38	5.86	6 UD	3.55
15	La Cienega Blvd.	Sunset Blvd. to Romaine Street	6	4	2	60	40506	0.39	5.20	4 UD	3.55
16	La Cienega Blvd.	Melrose Place to Rosewood Ave.	3	0	0	23	39572	0.12	6.63	4 UD	3.55
17	Melrose Ave.	Doheny Dr. to East City Limit	6	2	0	65	26817	0.77	4.31	2	1.98
18	Robertson Blvd.	Santa Monica Blvd. to South City Limit	5	7	1	45	18682	0.48	6.87	2	1.98
19	San Vicente Blvd.	Sunset Blvd. to Santa Monica Blvd.	1	1	2	29	16203	0.42	5.84	4 UD	3.55
20	San Vicente Blvd.	Santa Monica Blvd. to Beverly Blvd.	6	2	0	29	24934	0.65	2.45	4 D	2.30
21	Santa Monica Blvd.	Doheny Dr. to Croft Ave.	21	22	10	164	47174	1.10	4.33	4 D	2.30
22	Santa Monica Blvd.	Croft Ave. to Fairfax Ave.	3	8	10	106	40219	0.75	4.81	4 UD	3.55
23	Santa Monica Blvd.	Fairfax Ave. to East City Limit	13	8	10	114	40790	1.07	3.58	4 UD	3.55
24	Sunset Blvd.	West City Limit to Holloway Dr.	11	4	1	74	41372	0.63	3.89	4 UD	3.55
25	Sunset Blvd.	Holloway Dr. to East City Limit	19	10	1	159	47063	1.00	4.63	4 UD	3.55
26	Vista Street	Santa Monica Blvd. to Romaine St.	0	0	0	4	7686	0.13	5.48	2	1.98

2.3 Data Collection

Data was obtained regarding the prevailing speed of vehicles, traffic collisions, roadway conditions, pedestrian activities, on-street parking, proximity of schools, and land use adjacent to the roadways. Radar speed measurements were conducted in April 2016 by National Data Services, Inc. with additional speed surveys conducted for Gardner Street and the Sunset Boulevard segment east of Holloway Drive in June 2016. Daily traffic counts were also collected by National Data Services, Inc. in March and April 2016.

The California MUTCD provides some guidance in the performance of an engineering and traffic survey, including the following:

- *“The intent of the speed survey is to determine the actual speed of unimpeded traffic. The speed of traffic should not be altered by concentrated law enforcement or other means, just prior to, or while taking the speed measurements.”*
- *“Speed measurements should be taken during off peak hours on weekdays. If there is difficulty in obtaining the desired quantity, speed measurements may be taken during any period with free flowing traffic.”*

The criteria and procedures described below were applied when using the electronic radar to measure vehicle speeds on selected streets within the City of West Hollywood. Traffic speeds in both directions were recorded, although only the northbound data was applied for Doheny Drive where the southbound lanes lie within the City of Beverly Hills. The specific location on each street segment was selected after considering the following:

1. Minimum stop sign or traffic signal influence
2. Minimum visibility restrictions
3. Non-congested traffic flows away from intersections, major driveways, crosswalks, railroad crossings, and unusual turning movements
4. Minimum influence from parked vehicles, dips, curves, or roadway conditions that would affect the normal operation of a vehicle

The hours of radar operation were restricted to off-peak periods for heavily traveled streets, and to off-peak or non-congested peak periods on lightly traveled streets. All surveys were conducted in clear weather. The radar measurements were taken in an unmarked vehicle. At least 100 samples were obtained for each street segment surveyed.

Collision data was obtained from the City of West Hollywood for the period ranging from January 1, 2014 to December, 31 2015.

A review of all surveyed street segments was conducted to document highway, traffic, and roadside conditions not readily apparent to motorists.

2.4 Review Criteria

For the purposes of this document, the statutes and regulations that were in effect as of mid-2016 were interpreted as follows:

- CVC 40802 requires an engineering and traffic survey for segments where radar or similar devices are used for enforcement. Appendix C of this document contains a separate engineering and traffic survey for every segment.
- CVC 627 requires engineering and traffic surveys to consider prevailing speeds, accident data, and conditions not readily apparent to the driver, and to optionally consider residential density and pedestrian and bicycle safety.
- MUTCD 2B.13 Paragraph 12 requires posted speed limits to be in increments of 5 mph. Speed limits cannot be more than 2 ½ mph faster than or 7 ½ mph slower than the 85th percentile speed. Exceptions apply for streets adjacent to schools and senior centers, and for highways subject to maximum speed limits.
- The MUTCD's standards regarding rounding of the 85th percentile speeds and application of Option 1 or 2 reductions applies to the posting of speed limit sign, regardless of whether the speed limit is enforced by radar. Foregoing radar enforcement is not a justification to post a speed limit below the range allowed by the MUTCD.
- A recorded 85th percentile speed for which the nearest 5-mph increment requires rounding up may be rounded down in accordance with the MUTCD's Option 2, but no further reduction may be applied.
- A recorded 85th percentile speed for which the nearest 5-mph increment requires rounding down may be further reduced by 5 miles per hour in accordance with MUTCD's Option 1. The reduction must be documented in writing in the engineering and traffic survey and approved by a registered civil or traffic engineer based on considerations other than prevailing speeds, such as accident data, conditions not readily apparent to the driver, residential density, and pedestrian and bicycle safety.
 - According to CVC 22358.5, "Conditions not readily apparent to the driver" exclude roadway width, curvature, grade, and surface conditions.
 - If residential density is to be considered per CVC 627(c)(1), judgment will be applied as to whether a street lined with apartment buildings and condominiums should be considered a business district or a residential district.
 - For this study, an 85th percentile speed that coincided with a 5-mph increment was regarded as eligible for an Option 1 reduction, but not for an Option 2 round-down.

3.0 Summary of Recommendations

3.1 Recommendations

The engineering and traffic surveys contained in Appendix C of this report are intended to establish or justify posted speed limits that can be enforced by radar. Posted speed limits advise the motorist and enforcement agencies of reasonable speed for a particular section of highway for prevailing conditions. The posted speed limits are not absolute maximums, but rather prima facie speed limits for which violations would be cited under the Basic Speed Law (Section 22350 of the CVC). CVC 22350 states that a person shall not drive a vehicle at a speed greater than is safe, having regard for traffic, roadway and weather conditions. A prima facie limit merely suggests a safe speed under normal conditions.

For 10 of the 26 street segments, the 85th percentile speed recorded in spot speed surveys, when rounded off to the nearest 5 mph increment, matched the existing posted speed limit. As a result, the posted speed limits for the 10 segments are recommended to remain unchanged.

For 9 of the 26 street segments, the nearest 5 mph increment is greater than the 85th percentile speeds and would result in raising the speed limit by 5 miles per hour over the posted speeds. However, California Vehicle Code Section 21400(b), which became effective January 1, 2012, allows a local agency to round off a speed downward to the next 5-mph increment below, rather than upward to the nearest 5 mph increment above. The downward adjustment under CVC 21400(b) is described as “Option 2” within the California Manual of Uniform Traffic Control Devices (MUTCD), Section 2B.13 Paragraph 12a. The posted speed limits for the 9 segments are recommended to remain unchanged.

For 6 of the 26 street segments, the nearest 5 mph increment is less than or equal to the 85th percentile speed and would result in raising the speed limit by 5 miles per hour. California MUTCD Section 2B.13 Paragraph 12a provides an option, known as “Option 1,” that allows further reducing the posted speed limit to the next lower 5-mph increment provided that an engineering and traffic survey justifies the reduction in accordance with CVC 627 based on factors besides prevailing speed. The six segments, despite having prevailing speeds over the existing speed limit, are recommended to retain their existing posted speed limits based on the following reasons:

- Fairfax Avenue between Fountain Avenue to Willoughby Avenue: accident rate and presence of buffered bike lanes
- Fountain Avenue between La Cienega Boulevard and Fairfax Avenue: residential density
- Holloway Drive between Sunset Boulevard and Santa Monica Boulevard: accident rate
- San Vicente Boulevard between Sunset Boulevard and Santa Monica Boulevard: accident rate and residential density
- San Vicente Boulevard between Santa Monica Boulevard and Beverly Boulevard: presence of bike lanes
- Santa Monica Boulevard between Fairfax Avenue and La Brea Avenue: bicycle safety

Finally, on one segment, Vista Street between Santa Monica Boulevard and Romaine Street, rounding off the 85th percentile speed of 34 mph to the nearest 5-mph increment would result in the existing 25 mph speed limit being raised to 35 mph. Application of an Option 2 round-down would result in a 30 mph speed limit but no further reduction can be applied. A speed limit of 30 mph is the lowest that conforms to the MUTCD standard for a posted speed limit, regardless of whether radar enforcement is desired. This engineering and traffic survey therefore recommends increasing the speed limit of Vista Street between Santa Monica Boulevard and Romaine Street from 25 miles per hour to 30 miles per hour.

4.0 Certification

This report includes the engineering and traffic surveys of speed limits within the City West Hollywood. The existing posted speed limits were reviewed for compliance with Section 40802 of the *California Vehicle Code (CVC)*, which requires the preparation of engineering and traffic surveys for road segments with enforcement by radar or other electronic devices. The following reference materials were also used in the preparation of this Traffic and Engineering Survey:

1. *California Vehicle Code (CVC)* – As of January 1, 2016.
2. *California Manual of Uniform Traffic Control Devices (MUTCD), 2014 Revision 1* – State of California, Department of Transportation, Sacramento, California.

All data utilized in this report is on file in the Engineering Department, City of West Hollywood, 8300 Santa Monica Boulevard, West Hollywood, CA 90069.

The firm of KOA Corporation, on behalf of the City of West Hollywood, has prepared this document.

I, Walter Okitsu, do hereby certify that I am a Registered Traffic Engineer in the State of California. I have conducted this study for the City of West Hollywood, and this report was prepared under my supervision. Its contents are true and accurate to the best of my knowledge.



Walter Okitsu, P.E.

Registered Traffic Engineer 1406



APPENDIX A: Applicable California Vehicle Code Sections

ENGINEERING AND TRAFFIC SURVEY DEFINED

627. (a) "Engineering and traffic survey," as used in this code, means a survey of highway and traffic conditions in accordance with methods determined by the Department of Transportation for use by state and local authorities.
- (b) An engineering and traffic survey shall include, among other requirements deemed necessary by the department, consideration of all of the following:
- (1) Prevailing speeds as determined by traffic engineering measurements.
 - (2) Accident records.
 - (3) Highway, traffic, and roadside conditions not readily apparent to the driver.
- (c) When conducting an engineering and traffic survey, local authorities, in addition to the factors set forth in paragraphs (1) to (3), inclusive, of subdivision (b) may consider all of the following:
- (1) Residential density, if any of the following conditions exist on the particular portion of highway and the property contiguous thereto, other than a business district:
 - (A) Upon one side of the highway, within a distance of a quarter of a mile, the contiguous property fronting thereon is occupied by 13 or more separate dwelling houses or business structures.
 - (B) Upon both sides of the highway, collectively, within a distance of a quarter of a mile, the contiguous property fronting thereon is occupied by 16 or more separate dwelling houses or business structures.
 - (C) The portion of highway is longer than one-quarter of a mile but has the ratio of separate dwelling houses or business structures to the length of the highway described in either subparagraph (A) or (B).
 - (2) Pedestrian and bicyclist safety.

Amended Sec. 1, Ch. 45, Stats. 2000. Effective January 1, 2001.

MUTCD AND SPEED LIMITS

21400 (b) The Department of Transportation shall revise the California Manual on Uniform Traffic Control Devices, as it read on January 1, 2012, to require the Department of Transportation or a local authority to round speed limits to the nearest five miles per hour of the 85th percentile of the free-flowing traffic. However, in cases in which the speed limit needs to be rounded up to the nearest five miles per hour increment of the 85th-percentile speed, the Department of Transportation or a local authority may decide to instead round down the speed limit to the lower five miles per hour increment, but then the Department of Transportation or a local authority shall not reduce the speed limit any further for any reason.

Amended by Stats. 2011, Ch. 528, Sec. 2. Effective January 1, 2012.

BASIC SPEED LAW

22350. No person shall drive a vehicle upon a highway at a speed greater than is reasonable or prudent having due regard for weather, visibility, the traffic on, and the surface and width of, the highway, and in no event at a speed which endangers the safety of persons or property.

Amended Ch. 252, Stats. 1963. Effective September 20, 1963.

PRIMA FACIE SPEED LIMITS

22352. The prima facie limits are as follows and shall be applicable unless changed as authorized in this code and, if so changed, only when signs have been erected giving notice thereof:

(a) Fifteen miles per hour:

(1) When traversing a railway grade crossing, if during the last 100 feet of the approach to the crossing the driver does not have a clear and unobstructed view of the crossing and of any traffic on the railway for a distance of 400 feet in both directions along the railway. This subdivision does not apply in the case of any railway grade crossing where a human flagman is on duty or a clearly visible electrical or mechanical railway crossing signal device is installed but does not then indicate the immediate approach of a railway train or car.

(2) When traversing any intersection of highways if during the last 100 feet of the driver's approach to the intersection the driver does not have a clear and unobstructed view of the intersection and of any traffic upon all of the highways entering the intersection for a distance of 100 feet along all those highways, except at an intersection protected by stop signs or yield right-of-way signs or controlled by official traffic control signals.

(3) On any alley.

(b) Twenty-five miles per hour:

(1) On any highway other than a state highway, in any business or residence district unless a different speed is determined by local authority under procedures set forth in this code.

(2) When approaching or passing a school building or the grounds thereof, contiguous to a highway and posted with a standard "SCHOOL" warning sign, while children are going to or leaving the school either during school hours or during the noon recess period. The prima facie limit shall also apply when approaching or passing any school grounds which are not separated from the

highway by a fence, gate, or other physical barrier while the grounds are in use by children and the highway is posted with a standard "SCHOOL" warning sign. For purposes of this subparagraph, standard "SCHOOL" warning signs may be placed at any distance up to 500 feet away from school grounds.

- (3) When passing a senior center or other facility primarily used by senior citizens, contiguous to a street other than a state highway and posted with a standard "SENIOR" warning sign. A local authority is not required to erect any sign pursuant to this paragraph until donations from private sources covering those costs are received and the local agency makes a determination that the proposed signing should be implemented. A local authority may, however, utilize any other funds available to it to pay for the erection of those signs.

Added Sec. 1, Ch. 420, Stats. 2013. Effective January 1, 2014.

22357.(a) Whenever a local authority determines upon the basis of an engineering and traffic survey that a speed greater than 25 miles per hour would facilitate the orderly movement of vehicular traffic and would be reasonable and safe upon any street other than a state highway otherwise subject to a prima facie limit of 25 miles per hour, the local authority may by ordinance determine and declare a prima facie speed limit of 30, 35, 40, 45, 50, 55, or 60 miles per hour or a maximum speed limit of 65 miles per hour, whichever is found most appropriate to facilitate the orderly movement of traffic and is reasonable and safe. The declared prima facie or maximum speed limit shall be effective when appropriate signs giving notice thereof are erected upon the street and shall not thereafter be revised except upon the basis of an engineering and traffic survey. This section does not apply to any 25-mile-per-hour prima facie limit which is applicable when passing a school building or the grounds thereof or when passing a senior center or other facility primarily used by senior citizens.

- (b) This section shall become operative on the date specified in subdivision (c) of Section 22366.

(Repealed (in Sec. 28) and added by Stats. 1995, Ch. 766, Sec. 29. Effective January 1, 1996. This section became operative, by its own provisions, on the date described in Section 22366.)

DECREASE NEAR CHILDREN'S PLAYSGROUNDS

22357.1. Notwithstanding Section 22357, a local authority may, by ordinance or resolution, set a prima facie speed limit of 25 miles per hour on any street, other than a state highway, adjacent to any children's playground in a public park but only during particular hours or days when children are expected to use the facilities. The 25 miles per hour speed limit shall be effective when signs giving notice of the speed limit are posted.

Added Ch. 508, Stats. 1989. Effective January 1, 1990.

22358. (a) Whenever a local authority determines upon the basis of an engineering and traffic survey that the limit of 65 miles per hour is more than is reasonable or safe upon any

portion of any street other than a state highway where the limit of 65 miles per hour is applicable, the local authority may by ordinance determine and declare a prima facie speed limit of 60, 55, 50, 45, 40, 35, 30, or 25 miles per hour, whichever is found most appropriate to facilitate the orderly movement of traffic and is reasonable and safe, which declared prima facie limit shall be effective when appropriate signs giving notice thereof are erected upon the street.

- (b) This section shall become operative on the date specified in subdivision (c) of Section 22366.

(Repealed (in Sec. 30) and added by Stats. 1995, Ch. 766, Sec. 31. Effective January 1, 1996. This section became operative, by its own provisions, on the date described in Section 22366.)

DECREASE ON NARROW STREET

22358.3. Whenever a local authority determines upon the basis of an engineering and traffic survey that the prima facie speed limit of 25 miles per hour in a business or residence district or in a public park on any street having a roadway not exceeding 25 feet in width, other than a state highway, is more than is reasonable or safe, the local authority may, by ordinance or resolution determine and declare a prima facie speed limit of 20 or 15 miles per hour, whichever is found most appropriate and is reasonable and safe. The declared prima facie limit shall be effective when appropriate signs giving notice thereof are erected upon the street.

Amended Ch. 1095, Stats. 1972. Effective March 7, 1973. Supersedes Ch. 372.

22358.4. (a) (1) Whenever a local authority determines upon the basis of an engineering and traffic survey that the prima facie speed limit of 25 miles per hour established by paragraph (2) of subdivision (a) of Section 22352 is more than is reasonable or safe, the local authority may, by ordinance or resolution, determine and declare a prima facie speed limit of 20 or 15 miles per hour, whichever is justified as the appropriate speed limit by that survey.

(2) An ordinance or resolution adopted under paragraph (1) shall not be effective until appropriate signs giving notice of the speed limit are erected upon the highway and, in the case of a state highway, until the ordinance is approved by the Department of Transportation and the appropriate signs are erected upon the highway.

(b) (1) Notwithstanding subdivision (a) or any other provision of law, a local authority may, by ordinance or resolution, determine and declare prima facie speed limits as follows:

- (A) A 15 miles per hour prima facie limit in a residence district, on a highway with a posted speed limit of 30 miles per hour or slower, when approaching, at a distance of less than 500 feet from, or passing, a school building or the grounds of a school building, contiguous to a highway and posted with a school warning sign that indicates a speed limit of 15 miles per hour, while children are going to or leaving the school, either during school hours or during the noon recess period. The prima facie limit shall also apply when approaching, at a distance of less than 500 feet from, or passing, school grounds that are not separated from the highway by a fence, gate, or other physical barrier while the grounds are in use by children and the highway is posted with a school warning sign that indicates a speed limit of 15 miles per hour.
- (B) A 25 miles per hour prima facie limit in a residence district, on a highway with a posted speed limit of 30 miles per hour or slower, when approaching, at a distance of 500 to 1,000 feet from, a school building or the grounds thereof, contiguous to a highway and posted with a school warning sign that indicates a speed limit of 25 miles per hour, while children are going to or leaving the school, either during school hours or during the noon recess period. The prima facie limit shall also apply when approaching, at a distance of 500 to 1,000 feet from, school grounds that are not separated from the highway by a fence, gate, or other physical barrier while the grounds are in use by children and the highway is posted with a school warning sign that indicates a speed limit of 25 miles per hour.
- (2) The prima facie limits established under paragraph (1) apply only to highways that meet all of the following conditions:
- (A) A maximum of two traffic lanes.
- (B) A maximum posted 30 miles per hour prima facie speed limit immediately prior to and after the school zone.
- (3) The prima facie limits established under paragraph (1) apply to all lanes of an affected highway, in both directions of travel.
- (4) When determining the need to lower the prima facie speed limit, the local authority shall take the provisions of Section 627 into consideration.
- (5) (A) An ordinance or resolution adopted under paragraph (1) shall not be effective until appropriate signs giving notice of the speed limit are erected upon the highway and, in

the case of a state highway, until the ordinance is approved by the Department of Transportation and the appropriate signs are erected upon the highway.

- (B) For purposes of subparagraph (A) of paragraph (1), school warning signs indicating a speed limit of 15 miles per hour may be placed at a distance up to 500 feet away from school grounds.
- (C) For purposes of subparagraph (B) of paragraph (1), school warning signs indicating a speed limit of 25 miles per hour may be placed at any distance between 500 and 1,000 feet away from the school grounds.
- (D) A local authority shall reimburse the Department of Transportation for all costs incurred by the department under this subdivision.

(Amended by Stats. 2007, Ch. 384, Sec. 1. Effective January 1, 2008.)

DECREASE OF LOCAL LIMITS NEAR SCHOOLS OR SENIOR CENTERS

- 22358.4. (a) (1) Whenever a local authority determines upon the basis of an engineering and traffic survey that the prima facie speed limit of 25 miles per hour established by paragraph (2) of subdivision (a) of Section 22352 is more than is reasonable or safe, the local authority may, by ordinance or resolution, determine and declare a prima facie speed limit of 20 or 15 miles per hour, whichever is justified as the appropriate speed limit by that survey.
- (2) An ordinance or resolution adopted under paragraph (1) shall not be effective until appropriate signs giving notice of the speed limit are erected upon the highway and, in the case of a state highway, until the ordinance is approved by the Department of Transportation and the appropriate signs are erected upon the highway.
 - (b) (1) Notwithstanding subdivision (a) or any other provision of law, a local authority may, by ordinance or resolution, determine and declare prima facie speed limits as follows:
 - (A) A 15 miles per hour prima facie limit in a residence district, on a highway with a posted speed limit of 30 miles per hour or slower, when approaching, at a distance of less than 500 feet from, or passing, a school building or the grounds of a school building, contiguous to a highway and posted with a school warning sign that indicates a speed limit of 15 miles per hour, while children are going to or leaving the school, either during school hours or during the noon recess period. The prima facie limit shall also apply when approaching, at a distance of less than 500 feet from, or passing, school grounds that are not separated from the highway by a fence, gate, or other physical barrier while the grounds are in use by children and the highway is posted with a school warning sign that indicates a speed limit of 15 miles per hour.

- (B) A 25 miles per hour prima facie limit in a residence district, on a highway with a posted speed limit of 30 miles per hour or slower, when approaching, at a distance of 500 to 1,000 feet from, a school building or the grounds thereof, contiguous to a highway and posted with a school warning sign that indicates a speed limit of 25 miles per hour, while children are going to or leaving the school, either during school hours or during the noon recess period. The prima facie limit shall also apply when approaching, at a distance of 500 to 1,000 feet from, school grounds that are not separated from the highway by a fence, gate, or other physical barrier while the grounds are in use by children and the highway is posted with a school warning sign that indicates a speed limit of 25 miles per hour.
- (2) The prima facie limits established under paragraph (1) apply only to highways that meet all of the following conditions:
- (A) A maximum of two traffic lanes.
- (B) A maximum posted 30 miles per hour prima facie speed limit immediately prior to and after the school zone.
- (3) The prima facie limits established under paragraph (1) apply to all lanes of an affected highway, in both directions of travel.
- (4) When determining the need to lower the prima facie speed limit, the local authority shall take the provisions of Section 627 into consideration.
- (5) (A) An ordinance or resolution adopted under paragraph (1) shall not be effective until appropriate signs giving notice of the speed limit are erected upon the highway and, in the case of a state highway, until the ordinance is approved by the Department of Transportation and the appropriate signs are erected upon the highway.
- (B) For purposes of subparagraph (A) of paragraph (1), school warning signs indicating a speed limit of 15 miles per hour may be placed at a distance up to 500 feet away from school grounds.
- (C) For purposes of subparagraph (B) of paragraph (1), school warning signs indicating a speed limit of 25 miles per hour may be placed at any distance between 500 and 1,000 feet away from the school grounds.
- (D) A local authority shall reimburse the Department of Transportation for all costs incurred by the department under this subdivision.

Amended Sec. 1, Ch. 384, Stats. 2007. Effective January 1, 2008.

DOWNWARD SPEED ZONING

22358.5. It is the intent of the Legislature that physical conditions such as width, curvature, grade and surface conditions, or any other condition readily apparent to a driver, in the

absence of other factors, would not require special downward speed zoning, as the basic rule of Section 22350 is sufficient regulation as to such conditions.

Added Ch. 11, Stats. 1959. Effective September 18, 1959.

SPEED TRAPS

40802. (a) A "speed trap" is either of the following:

- (1) A particular section of a highway measured as to distance and with boundaries marked, designated, or otherwise determined in order that the speed of a vehicle may be calculated by securing the time it takes the vehicle to travel the known distance.
 - (2) A particular section of a highway with a prima facie speed limit that is provided by this code or by local ordinance under subparagraph (A) of paragraph (2) of subdivision (a) of Section 22352, or established under Section 22354, 22357, 22358, or 22358.3, if that prima facie speed limit is not justified by an engineering and traffic survey conducted within five years prior to the date of the alleged violation, and enforcement of the speed limit involves the use of radar or any other electronic device that measures the speed of moving objects. This paragraph does not apply to a local street, road, or school zone.
- (b) (1) For purposes of this section, a local street or road is one that is functionally classified as "local" on the "California Road System Maps," that are approved by the Federal Highway Administration and maintained by the Department of transportation. When a street or road does not appear on the "California Road System Maps," it may be defined as a "Local street or road" if it primarily provides access to abutting residential property and meets the following three conditions:
- (A) Roadway width of not more than 40 feet.
 - (B) Not more than one-half of a mile of uninterrupted length. Interruptions shall include official traffic control signals as defined in Section 445.
 - (C) Not more than one traffic lane in each direction.
- (2) For purposes of this section "school zone" means that area approaching or passing a school building or the grounds thereof that is contiguous to a highway and on which is posted a standard "SCHOOL" warning sign, while children are going to or leaving the school either during school hours or during the noon recess period. "School zone" also includes the area approaching or passing any school grounds that are not separated from the highway by a fence, gate, or other physical barrier while the grounds are in use by children if that highway is posted with a standard "SCHOOL" warning sign.
- (c) (1) When all of the following criteria are met, paragraph (2) of this subdivision shall be applicable and subdivision (a) shall not be applicable:
- (A) When radar is used, the arresting officer has successfully completed a radar operator course of not less than 24 hours on the use of police traffic radar, and the course was approved and certified by the Commission on Peace Officer Standards and Training.

- (B) When laser or any other electronic device is used to measure the speed of moving objects, the arresting officer has successfully completed the training required in subparagraph (A) and an additional training course of not less than two hours approved and certified by the Commission on Peace Officer Standards and Training.
- (C) (i) The prosecution proved that the arresting officer complied with subparagraphs (A) and (B) and that an engineering and traffic survey has been conducted in accordance with subparagraph (B) of paragraph (2). The prosecution proved that, prior to the officer issuing the notice to appear; the arresting officer established that the radar, laser, or other electronic device conformed to the requirements of subparagraph (D).
- (ii) The prosecution proved the speed of the accused was unsafe for the conditions present at the time of alleged violation unless the citation was for a violation of Section 22349, 22356, or 22406.
- (D) The radar, laser, or other electronic device used to measure the speed of the accused meets or exceeds the minimal operational standards of the National Traffic Highway Safety Administration, and has been calibrated within the three years prior to the date of the alleged violation by an independent certified laser or radar repair and testing or calibration facility.
- (2) A "speed trap" is either of the following:
 - (A) A particular section of a highway measured as to distance and with boundaries marked, designated, or otherwise determined in order that the speed of a vehicle may be calculated by securing the time it takes the vehicle to travel the known distance.
 - (B) (i) A particular section of a highway or state highway with a prima facie speed limit that is provided by this code or by local ordinance under subparagraph (A) of paragraph (2) of subdivision (a) of Section 22352, or established under Section 22354, 22357, 22358, or 22358.3, if that prima facie speed limit is not justified by an engineering and traffic survey conducted within one of the following time periods, prior to the date of the alleged violation, and enforcement of the speed limit involves the use of radar or any other electronic device that measures the speed of moving objects:
 - (I) Except as specified in subclause (II), seven years.
 - (II) If an engineering and traffic survey was conducted more than seven years prior to the date of the alleged violation, and a registered engineer evaluates the section of the highway and determines that no significant changes in roadway or traffic conditions have occurred, including, but not limited to, changes in adjoining property or land use, roadway width, or traffic volume, 10 years.
 - (ii) This subparagraph does not apply to a local street, road, or school zone.

Amended Sec. 49, Ch. 491, Stats. 2010. Effective January 1, 2011.

APPENDIX B: Applicable California MUTCD Sections

Section 2B.13 Speed Limit Sign (R2-1) (November 7, 2014)

Standard: 12a When a speed limit is to be posted, it shall be established at the nearest 5 mph increment of the 85th-percentile speed of free-flowing traffic, except as shown in the two Options below.

Option:

1. The posted speed may be reduced by 5 mph from the nearest 5 mph increment of the 85th-percentile speed, in compliance with CVC Sections 627 and 22358.5. See Standard below for documentation requirements.
2. For cases in which the nearest 5 mph increment of the 85th-percentile speed would require a rounding up, then the speed limit may be rounded down to the nearest 5 mph increment below the 85th percentile speed, if no further reduction is used. Refer to CVC Section 21400(b).

Standard: 12b If the speed limit to be posted has had the 5 mph reduction applied, then an E&TS shall document in writing the conditions and justification for the lower speed limit and be approved by a registered Civil or Traffic Engineer. The reasons for the lower speed limit shall be in compliance with CVC Sections 627 and 22358.5.

Support: 12c The following examples are provided to explain the application of these speed limit criteria:

Example 1. Using Option 1 above and first step is to round down: If the 85th percentile speed in a speed survey for a location was 37 mph, then the speed limit would be established at 35 mph since it is the closest 5 mph increment to the 37 mph speed. As indicated by the option, this 35 mph established speed limit could be reduced by 5 mph to 30 mph if California MUTCD 2014 Edition Page 135 (FHWA's MUTCD 2009 Edition, including Revisions 1 & 2, as amended for use in California) Chapter 2B – Regulatory Signs, Barricades, and Gates November 7, 2014 Part 2 – Signs the conditions and justification for using this lower speed limit are documented in the E&TS and approved by a registered Civil or Traffic Engineer.

Example 2. Using Option 1 above and first step is to round up: If the 85th percentile speed in a speed survey for a location was 33 mph, then the speed limit would be established at 35 mph since it is the closest 5 mph increment to the 33 mph speed. As indicated by the option, this 35 mph speed limit could be reduced by 5 mph to 30 mph if the conditions and justification for using this lower speed limit are documented in the E&TS and approved by a registered Civil or Traffic Engineer.

Example 3. Using Option 2 above and first step is to round up: If the 85th percentile speed in a speed survey for a location was 33 mph, instead of rounding up to 35mph, the speed limit can be established at 30mph, but no further reductions can be applied (which is allowed in the two examples above).

Standard: 12d Examples 1 and 2 for establishing posted speed limits shall apply to engineering and traffic surveys (E&TS) performed on or after July 1, 2009 in accordance with Caltrans' Traffic Operations Policy Directive Number 09-04 dated June 29, 2009.

Option:

12e After January 1, 2012, Example 3 may be used to establish speed limits. Refer to CVC 21400(b). Support:

12f Any existing E&TS that was performed before July 1, 2009 in accordance with previous traffic control device standards is not required to comply with the new criteria until it is due for reevaluation per the 5, 7 or 10 year criteria.