

ORDINANCE NO. 969

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF LANCASTER, CALIFORNIA TO ESTABLISH SPEED LIMITS IN THE CITY OF LANCASTER BASED ON THE ENGINEERING AND TRAFFIC SURVEY REPORT DATED JULY 7, 2011.

WHEREAS, Sections 22357 and 22358 of the California Vehicle Code require that certain local speed limits be determined based upon engineering and traffic surveys; and,

WHEREAS, once established, speed limits shall not thereafter be revised except upon the basis of an engineering and traffic survey; and,

WHEREAS, speed limits shall be established by local ordinance; and,

WHEREAS, Section 40801 of the California Vehicle Code requires that the engineering and traffic surveys be conducted within five, seven or ten years, depending on certain qualifications, prior to the date of an alleged violation; and,

WHEREAS, enforcement of the speed limits involve the use of radar or other electronic devices that measure the speed of moving objects; and

WHEREAS, the City has conducted the engineering and traffic surveys, compiled in the Engineering and Traffic Survey Report dated July 7, 2011 which is on file in the office of the City Clerk and incorporated herein by reference.

THE CITY COUNCIL OF THE CITY OF LANCASTER, CALIFORNIA, DOES HEREBY ORDAIN AS FOLLOWS:

Section 1. Section 10.04.020 of the Lancaster Municipal Code is hereby amended by adding Line No. 7 in Subparagraph D thereto relating to speed limits.

D. Speed Limits

“7. The speed limits as recommended in Nos. 8-11 of the Findings and Recommendations and in Table 4 of the Engineering and Traffic Survey Report dated July 7, 2011, incorporated herein by reference, are hereby established.”

Section 2. That the City Clerk shall certify to the passage of this Ordinance and will see that it is published and posted in the manner required by law.

Section 3. This Ordinance shall become effective 30 days after its adoption.

I, Geri K. Bryan, CMC, City Clerk of the City of Lancaster, do hereby certify that the foregoing ordinance was regularly introduced and placed upon its first reading on the 9th day of August, 2011, and placed upon its second reading and adoption at a regular meeting of the City Council on the _____ day of _____, 2011 by the following vote:

AYES:

NOES:

ABSTAIN:

ABSENT:

ATTEST:

APPROVED:

GERI K. BRYAN, CMC
City Clerk
City of Lancaster

R. REX PARRIS
Mayor
City of Lancaster

STATE OF CALIFORNIA)
COUNTY OF LOS ANGELES) ss
CITY OF LANCASTER)

CERTIFICATION OF ORDINANCE
CITY COUNCIL

I, _____, _____ City of Lancaster, California, do hereby certify that this is a true and correct copy of the original Ordinance No. 969, for which the original is on file in my office.

WITNESS MY HAND AND THE SEAL OF THE CITY OF LANCASTER, on this _____ day of _____, _____.

(seal)




ENGINEERING AND TRAFFIC SURVEY REPORT


July 7, 2011



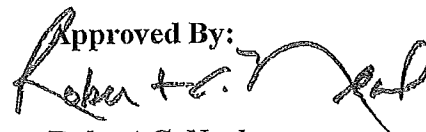
Prepared By:


Mario Enriquez, P.E.
Associate Traffic Engineer

Submitted By:


Michelle Cantrell
City Traffic Engineer

Approved By:


Robert C. Neal
Director of Public Works

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ENGINEERING AND TRAFFIC SURVEY REPORT

July 7, 2011

Background

This report recommends the establishment of speed limits on selected street segments in the City of Lancaster and documents the results of engineering and traffic surveys upon which the proposed speed limits are based. The surveys were conducted beginning in October 2010, in view of a few speed zones for which, the respective engineering and traffic surveys were about to expire. In addition, a few other zones involved streets which have since been significantly altered in roadway geometry, traffic controls or adjacent land uses. A third category of street segments are those for which no speed zone has been established yet.

The California Vehicle Code (CVC) regulates the way that speed limits are established, revised, and retained. By law, prima facie speed limits of 25 and 15 miles per hour are already established as described in CVC Section 22352. Section 22349 of the CVC also establishes a maximum speed limit of 65 miles per hour on any highway, and 55 miles per hour on two-lane undivided highways. A local jurisdiction may establish prima facie speed limits as determined upon the basis of an engineering and traffic survey. The CVC also requires that any speed enforcement involving the use of radar or other electronic speed measuring device must be upon the basis of a current engineering and traffic survey. An engineering and traffic survey is current if it was conducted within five years of the alleged violation. When certain minimum criteria on arresting officer training and electronic device calibration are met, an engineering and traffic survey's currency extends to 7 years, and up to 10 years, if no significant roadway and traffic conditions have occurred as determined by a registered engineer.

Section 627 of the CVC gives the definition of "engineering and traffic survey" for speed limit purposes, the conduct of which shall be according to stipulations provided by the state Department of Transportation through the California Manual of Uniform Traffic Control Devices (MUTCD). Further discussion and references to CVC and the California MUTCD provisions regarding speed limits and their enforcement may be found in Appendix A.

For some streets in this report, the latest speed zone surveys prior to 2010 were conducted in 2003. For others, the latest surveys were conducted in 2006. Most of these streets have since been widened or otherwise, experienced significant changes in traffic conditions, including changes in adjacent land uses. This report recommends to re-establish or to revise the existing speed limits for these streets, as indicated by the engineering and traffic survey findings.

Methodology

Speed zones are established to inform drivers of the safe speed limit and to protect the general public from unreasonable and reckless drivers. Research has shown that most drivers travel at speeds that are safe and reasonable. Therefore, speed limits are established primarily on the driving consensus of the majority of those who use the roads. The CVC requires that speed limits be established on the basis of engineering and traffic surveys, rather than by arbitrary methods.

In accordance with the appropriate sections of the CVC and the 2010 California MUTCD Section 2B.13, the engineering and traffic surveys in this report involved three major categories of data and analysis: (1) spot speed survey; (2) collision record; and (3) field observation.

Spot speed surveys were conducted to determine prevailing vehicular travel speeds under free flow conditions. Speed readings were recorded for each direction of travel, plotted and calculated for the 85th percentile speed, 10 mile-per-hour pace speeds, percentage of vehicles travelling within the 10 mile-per-hour pace, median speed and other pertinent data for analysis.

Collision data was obtained for the five-year period from 2006 through 2011 for each roadway segment. Where the 24-hour traffic volume (ADT) was available, the collision rate in collisions per million vehicle miles was calculated and compared with expected collision rates published for similar class streets by the County of Los Angeles Public Works' Traffic and Street Lighting Division.

Field observations were performed to determine existing roadway characteristics, condition and placement of signs, markings and other traffic control devices, and adjacent land uses. Some highway, traffic or roadside conditions may not be readily apparent to drivers, including traffic professionals. In such cases, higher-than-expected collision rates serve as red flags, demanding closer scrutiny to determine what may be conditions that could compromise traffic safety at 85th percentile speeds.

Recent California MUTCD Rule Changes

The primary indicator of what an appropriate speed limit should be has always been the 85th percentile speed, or *critical speed*, of traffic on the street during free flow conditions. In recent years, the California MUTCD has modified the way that the 85th percentile speed is used in arriving at a suitable speed limit for a given roadway segment. Before July 1, 2009, the speed limit could be established at the next 5 miles per hour increment of speed limits, up or down. A further lowering to the second 5 miles per hour increment could be made if there were conditions not readily apparent to the driver. For example, if the 85th percentile speed is 54 miles per hour, the next 5 miles per hour speed limit increment down is 50 miles per hour. With conditions not apparent, a further lowering to the next 5 miles per hour increment could be taken to finally establish the speed limit at 45 miles per hour. Likewise, a different but equally valid approach could be taken by going to the next 5 miles per hour increment up, from the critical speed of 54 miles per hour, to 55 miles per hour, and with conditions not apparent, end up with a speed limit of 50 miles per hour.

Beginning on July 1, 2009, the speed limit can only be established at the nearest, not either of the next, 5 miles per hour increment. In addition, a lowering to the next 5 miles per hour increment may be done only with specific language that supports a finding, approved by a registered Civil or Traffic Engineer, of conditions not readily apparent to the driver. For the example cited above, the 5 miles per hour increment nearest to the critical speed of 54 miles per hour would be 55 miles per hour. This would be the recommended speed limit, unless evidence of conditions not readily apparent is identified, in which case, the speed limit can be established at 50 miles per hour. Whereas before July 2009, there were two possible outcomes from a given set of data, only one outcome from the same set of data is possible today under current California MUTCD guidelines.

Study Results

Spot Speed Survey

The City of Lancaster Public Works Traffic Engineering Division conducted the radar speed surveys on the selected street segments according to the CVC and California MUTCD guidelines. All data obtained are bundled for each street segment in Appendix B, consisting of an "Engineering and Traffic Survey Summary", a plot of speed readings, highway, traffic and roadside notes, and collision record printouts. The data for all the selected street segments are also summarized in tables. Table 1, Survey Speeds, shows the following information for each street segment surveyed:

1. Street Name
2. Segment Limits (i.e., names of cross streets at ends)
3. Class of Highway
4. Direction (of vehicle travel on the street)
5. Date (spot speed survey was conducted)
6. Pace (10 mile-per-hour speed range with the highest no. of vehicles)
7. Percentage in Pace (proportion in % of vehicles within pace)
8. 85th Percentile (speed above which, 15% of vehicles travel)
9. Speed Limit, if posted

Collision Record

Table 2, Collision Rates (attached), shows the following information for each street segment surveyed:

1. Street Name
2. Segment Limits (i.e., names of cross streets at ends)
3. Length in feet
4. Length in miles
5. ADT (average daily traffic, 24-hour count)
6. Collisions (no. of reported collisions over 5 years)
7. Collision Rate (calculated from formula)
8. Expected Collision Rate (from County data)

Collision records for a recent five-year period were obtained and tabulated in Table 2. Where sufficient data was available, collision rates were calculated according to the following formula:

$$\text{Collisions Per Million Vehicle Miles} = \frac{\text{No. of Collisions in Five Years} \times 1,000,000}{\text{Segment length, mi} \times \text{ADT} \times \text{No. of Days in Five Years}}$$

Each street segment's collision rate can be compared to the Expected Collision Rate for a similar type of roadway as published by the County of Los Angeles Public Works' Traffic and Street Lighting Division. The County provides the following rates for comparison:

Type of Highway	Expected Rate (Collisions Per Million Veh-Mile)
2- and 3- lane Urban	1.98
4- or more lane Undivided Urban	3.55
4- or more lane Divided Urban	2.30
2- lane Expressway Urban	0.91
Divided Expressway	1.43

Field Observation

The surveyed street segments were observed by the City's Traffic Engineering Division staff for prevailing highway, traffic and roadside conditions. Where applicable, a condition that may not be readily apparent to the average driver is specially indicated. All pertinent information was noted in the speed survey plot sheet for each segment, and tabulated in Table 3, Lancaster Highway, Traffic and Roadside Conditions – Speed Zone Study 2011. The table shows the following information:

Lane Configuration (no. of traffic lanes, presence and type of median, bike lanes)

1. Jurisdiction (shared with the County or City of Palmdale)
2. Intersection Control (any intervening traffic controls)
3. Pavement Condition
4. Parking (allowed, limited, restricted)
5. Sidewalk (sides, continuity, curb and gutter)
6. Land Uses (type of adjacent, not necessarily fronting, land use)
7. Condition Not Apparent (material condition not readily apparent to average motorist)

Findings and Recommendations

The radar survey and the raw data collection were conducted per CVC Section 627.

1. Eighteen street segments on ten City streets were surveyed. Nine of the 18 segments are not currently zoned by City ordinance, although two of which have sign postings.
2. Of the nine existing speed zones surveyed, eight zones show 85th percentile speeds that are at least three miles per hour higher than the currently established speed limit, suggesting speed limit increases; only one speed zone is directly supported by the surveyed 85th percentile speed.
3. The collision rate (Table 2) for the majority of the street segments is well below the expected collision rate obtained for various types of roadway facilities in the County of Los Angeles. Only three street segments show collision rates that are higher than the County's expected rates, indicating traffic/roadway conditions not readily apparent to drivers in those street segments.

4. Fifteen street segments are proposed to have speed limits established based on the stipulation that the speed limit must be at the 5-mile-per-hour increment nearest to the surveyed 85th percentile speed. Nine street segments will be new speed zones. The other six are currently established speed zones. Of these six existing speed zones, four will have speed limit increases of 10 miles per hour and higher.
5. On the remaining three out of eighteen segments surveyed, the recommended speed limit is lowered by another five miles per hour from the speed indicated by the critical speed, on account of conditions that are not readily apparent to drivers.
6. The proposed speed limits on the following street segments will increase by 10 miles per hour or higher than the speed limit established in 2006:
 - a. Avenue J-8 between 35th Street West and 40th Street West. The current speed limit of 30 miles per hour, established in 2006, only applied to a quarter-mile of roadway east of 40th Street West. The roadway did not extend beyond 37th Street West. The 325-foot gap was closed on December 16, 2009, opening a new and shorter route to State Route 14. The latest speed survey shows a critical speed of 49 miles per hour, suggesting a speed limit of 50 miles per hour. However, as further discussed in Finding No. 7(a) below, strong indications of conditions not readily apparent justify a lowering to the next 5 miles per hour increment, to a speed limit of 45 miles per hour.
 - b. Avenue J-8 between 40th Street West and 45th Street West. The current speed limit of 30 miles per hour was established in 2006 when this segment was functioning only as a collector street with one lane in each direction and no median. With multiple lanes and a painted median today, volume and speed have increased. No homes front the street, and the collision rate indicates there is no ground for finding conditions that are not readily apparent to the average driver. Based on the surveyed 85th percentile speed of 49 miles per hour, a speed limit of 50 miles per hour is therefore recommended.
 - c. Avenue J-8 between 45th Street West and 50th Street West. The current speed limit of 30 miles per hour was also established in 2006 when this segment was functioning only as a collector street with one lane in each direction and no median. With multiple lanes and a painted median today, volume and speed have increased. No homes front the street, and the collision rate indicates there is no ground for finding conditions that are not readily apparent to the average driver. Based on the surveyed 85th percentile speed of 46 miles per hour, a speed limit of 45 miles per hour is therefore recommended.
 - d. Avenue H-8 between Division Street and Rodin Avenue. Since 2006 when the current speed limit of 25 miles per hour was established, two housing tracts were built along Avenue H-8, just east of Division, and the fronting roadway was fully improved to secondary arterial standards in conjunction. In addition, the segment surveyed in 2006 was only a half-mile long, terminating at 5th Street East. Extending up to Rodin Avenue today, it is now an uninterrupted reach that is three quarters of a mile long. The collision rate does not indicate that there is any ground for finding conditions that are not readily apparent to the average driver. Therefore, given an 85th percentile speed of 47 miles per hour, a speed limit of 45 miles per hour is recommended.

7. The following street segments were qualified for a further lowering of the speed limit as indicated by the 85th percentile speed due to conditions not readily apparent to drivers:

- a. Avenue J-8 between 35th Street West and 40th Street West. This segment of Avenue J-8 was previously a discontinuous roadway, and has only been open to traffic for over a year. Consequently, the collision record is not long enough to provide an indicative collision rate over a 5-year period. However, this is a half-mile segment with only two traffic lanes, no median, and no sidewalk, curb, nor gutter on the south side. Although West Wind Elementary School does not front Avenue J-8, there is quite a bit of school traffic turning into and out of 36th Street West and 37th Street West. Many school children walk or bicycle from neighborhoods east and west of the school. Currently posted only with a school zone speed limit of 25 miles per hour near the school, this segment of Avenue J-8 appears to be regarded by drivers as being no different from the other segments east and west of it, as demonstrated by their driving behavior. At the time of the speed survey which was when children were not present, they clocked an 85th percentile speed of 49 miles per hour, in spite of the narrow roadway and its unimproved condition on one side. Clearly, a lowered speed limit would be appropriate for this stretch of road. It will remind drivers that this segment of Avenue J-8 does not provide as much wiggle room for drivers and bicyclists as the wider, fully improved segments of Avenue J-8 do.

Therefore, a speed limit of 45 miles per hour is reasonable and appropriate on Avenue J-8 between 35th Street West and 40th Street West, due to conditions not readily apparent to the driver.

- b. Newgrove Street between 10th Street West and Sierra Highway. This two-thirds of a mile segment has a higher than expected collision rate for its highway class, indicating conditions not readily apparent to the driver. Newgrove Street is a through street for most of its length, with many, short blocks in-between. This character tends to obscure a driver's awareness of potentially conflicting traffic issuing from the many cross streets which serve both residential and business uses. It is therefore recommended that the speed limit be retained at 30 miles per hour, even if the surveyed 85th percentile speed was 36 miles per hour.
- c. 5th Street East between Avenue K and Avenue J-9. This quarter-mile segment of 5th Street East meets the California MUTCD definition of a residential street. Nineteen residential units front one side, and 35 residential units front both sides. The potential for collisions with traffic pulling in and out of driveways is elevated at such high residential density. The higher-than-expected collision rate experienced on the street is confirmation that there are conditions not readily apparent to the driver. Per California MUTCD guideline for residential streets, it is recommended that a speed limit of 25 miles per hour be established on 5th Street East between Avenue J-9 and Avenue K. This proposed speed limit reflects a 10 mile-per-hour reduction from the indicated, and currently posted, speed limit of 35 miles per hour.

8. Therefore, pursuant to the guidelines established in the CVC and the California MUTCD, it is recommended that the existing speed limits on the following speed zones be retained as indicated:

- a. Lancaster Boulevard between 25th Street West and 30th Street West, at 50 miles per hour.
 - b. Newgrove Street between 10th Street West and Sierra Hwy, at 30 miles per hour.
9. It is further recommended that the speed limit of the following speed zones be increased as indicated:
- a. Avenue J-8 between 30th Street West and 35th Street West, at 45 miles per hour.
 - b. Avenue J-8 between 40th Street West and 35th Street West, at 45 miles per hour.
 - c. Avenue J-8 between 45th Street West and 40th Street West, at 50 miles per hour.
 - d. Avenue J-8 between 50th Street West and 45th Street West, at 45 miles per hour.
 - e. Lancaster Boulevard between 20th Street West and 25th Street West, at 45 miles per hour.
 - f. Avenue H-8 between Division Street and Rodin Avenue, at 45 miles per hour.
10. It is further recommended that the speed limit of the following speed zones be decreased as indicated:
- a. 5th Street East between Avenue J-9 and Avenue K, at 25 miles per hour.
11. It is finally recommended that the following new speed zones be established as indicated:
- a. Avenue K-8 between 5th Street East and Business Center Parkway, at 45 miles per hour.
 - b. Avenue K-8 between 5th Street East and Challenger Way, at 40 miles per hour.
 - c. Avenue K-8 between 15th Street East and Challenger Way, at 50 miles per hour.
 - d. Avenue K-8 between 15 Street East and 20th Street East, at 55 miles per hour
 - e. Avenue L-8 between 26th Street West and 30th Street West, at 40 miles per hour.
 - f. Avenue M-8 between 35th Street West and 40th Street West, at 50 miles per hour.
 - g. Avenue M-8 between 40th Street West and 45th Street West at 45 miles per hour.
 - h. 40th Street West between Avenue M-8 and Avenue N, at 45 miles per hour.
 - i. 65th Street West between Avenue L and Avenue L-8, at 50 miles per hour.

A summary of the study findings and proposed speed limits is shown in Table 4, Proposed Speed Limits, attached.

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Table 1
Survey Speeds

Street	Segment Limits	Class of Highway	Direction	Survey Date	Pace (mph)	% in Pace	85th %ile	Speed Limit	
								mph	Posted?
1 Avenue J-8	30th St West to 35th St West	Secondary	E/W	10/27/2010	38-47	76	47	40	Yes
2 Avenue J-8	35th St West to 40th St West*	Secondary	E/W	10/27/2010	40-49	67	49	30	Yes*
3 Avenue J-8	40th St West to 45th St West	Secondary	E/W	10/27/2010	37-46	69	49	30	Yes
4 Avenue J-8	45th St West to 50th St West	Secondary	E/W	10/20/2010	37-46	82	46	35	Yes
5 Avenue K-8	Business Center Py to 5th St East	Secondary	E/W	02/15/2011	35-44	74	44		No
6 Avenue K-8	5th St East to Challenger Way	Secondary	E/W	02/17/2011	33-42	70	42		No
7 Avenue K-8	Challenger Way to 15th St East	Secondary	E/W	02/17/2011	43-52	72	52		No
8 Avenue K-8	15th St East to 20th St East	Secondary	E/W	02/09/2011	45-54	66	55	35	Yes**
9 Avenue L-8	30th St West to 26th St West	Secondary	E/W	02/14/2011	33-42	56	43		No
10 Avenue M-8	35th St West to 40th St West	Secondary	E/W	02/15/2011	40-49	59	49		No
11 Avenue M-8	40th St West to 45th St West	Secondary	E/W	02/15/2011	30-39	49	45		No
12 Lancaster Blvd	25th St West to 30th St West	Secondary	E/W	02/09/2011	42-51	78	51	50	Yes
13 Lancaster Blvd	20th St West to 25th St West	Secondary Residential	E/W	07/06/2011	38-47	80	45	40	Yes
14 Newgrove Street	10th St West to Sierra Hwy	Collector	E/W	02/14/2011	27-36	62	36	30	Yes
15 40th St West	Avenue M-8 to Avenue N	Primary	N/S	03/23/2011	38-47	67	47		No
16 65th St West	Avenue L-8 to Avenue L	Secondary	N/S	02/14/2011	40-49	67	49	40	Yes**
17 Avenue H-8	Division St to Rodin Ave	Secondary Residential	E/W	04/12/2011	35-44	68	47	25	Yes
18 5th Street East	Avenue J-9 to Avenue K	Collector	N/S	09/18/2010	28-37	65	38	35	Yes

* This segment has been a continuous roadway for just over a year.

**Not a legally established limit. Sign may have been posted by private developer's contractor.

Table 2
Collision Rates

7/07/2011

Street	Segment Limits	Segment Length		ADT (ypd)	Collisions (5-yr total)	Collision Rate	Expected Rate
		ft	mi				
1 Avenue J-8	30th St West to 35th St West	2,640	0.50	3,824	4	1.15	2.30
2 Avenue J-8	35th St West to 40th St West*	2,640	0.50	2,706	0	0.00	1.98
3 Avenue J-8	40th St West to 45th St West	2,640	0.50	1,935	3	1.70	2.30
4 Avenue J-8	45th St West to 50th St West	2,640	0.50	802	1	1.37	2.30
5 Avenue K-8	Business Center Py to 5th St East	2,605	0.49	2,389	2	0.93	1.98
6 Avenue K-8	5th St East to Challenger Way	2,680	0.51	1,474	0	0.00	1.98
7 Avenue K-8	Challenger Way to 15th St East	2,663	0.50	2,663	2	0.82	1.98
8 Avenue K-8	15th St East to 20th St East	2,686	0.51	744	0	0.00	1.98
9 Avenue L-8	30th St West to 26th St West	1,973	0.37	272	0	0.00	1.98
10 Avenue M-8	35th St West to 40th St West	2,667	0.51	404	0	0.00	1.98
11 Avenue M-8	40th St West to 45th St West	2,634	0.50	1,172	1	0.94	1.98
12 Lancaster Blvd	25th St West to 30th St West	2,787	0.53	7,186	3	0.43	3.55
13 Lancaster Blvd	20th St West to 25th St West	2,627	0.50	12,740	14	1.21	3.55
14 Newgrove Street	10th St West to Sierra Hwy	3,534	0.67	2,560	9	2.88	1.98
15 40th St West	Avenue M-8 to Avenue N	2,674	0.51	765	0	0.00	1.98
16 65th St West	Avenue L-8 to Avenue L	2,674	0.51	1,327	0	0.00	1.98
17 Avenue H-8	Division St to Rodin Ave	3494	0.66	836	1	0.99	1.98
18 5th Street East	Avenue J-9 to Avenue K	2,480	0.47	2,137	9	4.91	1.98

* This segment has been a continuous roadway for just over a year.

Table 3
Highway, Traffic and Roadside Conditions
7/07/2011

Street	Segment Limits	Jurisdiction	No. of Lanes			Traffic Controls	Pavement Condition	Parking	Sidewalk	Land Use	Cond. Not Apparent
			EB/NB	Med.	W/B/SB						
1 Avenue J-8	30th St West to 35th St West		2	Painted	1	Y	None	Y	Resdl		
2 Avenue J-8	35th St West to 40th St West*		1	None	1	Y	None	Y	Resdl	Yes	
3 Avenue J-8	40th St West to 45th St West		2	Painted	2	Y	None	Y	Resdl		
4 Avenue J-8	45th St West to 50th St West		2	Painted	2	Y	None	Y	Resdl		
5 Avenue K-8	Business Center Py to 5th St East		1	Painted	1	Y	None	Y	Business		
6 Avenue K-8	5th St East to Challenger Way		1	None	1	N	AWS @ 6E, 7E	R	Resdl		
7 Avenue K-8	Challenger Way to 15th St East		1	Painted	1	N	None	R	Resdl		
8 Avenue K-8	15th St East to 20th St East		1	Painted	1	Y	None	R	Resdl		
9 Avenue L-8	30th St West to 26th St West		1	None	1	N	None	Y	Resdl		
10 Avenue M-8	35th St West to 40th St West		1	Painted	1	N	None	R	Resdl		
11 Avenue M-8	40th St West to 45th St West		1	Painted	1	N	None	R	Resdl		
12 Lancaster Blvd	25th St West to 30th St West		2	Raised	2	Y	Signal @ 27W	R	Mixed		
13 Lancaster Blvd	20th St West to 25th St West		2	Raised / Painted	2	Y	Signal @ VC Wy	R	Mixed		
14 Newgrove Street	10th St West to Sierra Hwy		1	None	1	N	AWS @ Beech, Fern	Y	Resdl	Yes	
15 40th St West	Avenue M-8 to Avenue N		1	None	1	N	None	Y	Resdl		
16 65th St West	Avenue L-8 to Avenue L		1	Painted	2	N	None	Y	Resdl		
17 Avenue H-8	Division St to Rodin Ave		1	None	1	N	AWS @ 5E	N	Mixed		
18 5th Street East	Avenue J-9 to Avenue K		1	None	1	N	None	Y	Resdl	Yes	

* This segment has been a continuous roadway for just over a year.

Table 4
Proposed Speed Limits

7/07/2011

Street	Segment Limits	Class of Highway	Dir.	Speed Limit		Pace (mph)	% in Pace	85th %ile	Collision Rate > County?	Non-Apparent Conds.?	Proposed Speed Limit	
				mph	Posted?						Change	mph
1 Avenue J-8	30th St West to 35th St West	Secondary	E/W	40	Yes	38-47	76.4	47	No	No	Incr.	45
2 Avenue J-8	35th St West to 40th St West*	Secondary	E/W	30	Yes*	40-49	66.7	49	No	Yes	Incr.	45
3 Avenue J-8	40th St West to 45th St West	Secondary	E/W	30	Yes	37-46	69.4	49	No	No	Incr.	50
4 Avenue J-8	45th St West to 50th St West	Secondary	E/W	35	Yes	37-46	81.8	46	No	No	Incr.	45
5 Avenue K-8	Business Center Py to 5th St East	Secondary	E/W		No	35-44	73.9	44	No	No	Estab.	45
6 Avenue K-8	5th St East to Challenger Way	Secondary	E/W		No	33-42	70.0	42	No	No	Estab.	40
7 Avenue K-8	Challenger Way to 15th St East	Secondary	E/W		No	43-52	71.8	52	No	No	Estab.	50
8 Avenue K-8	15th St East to 20th St East	Secondary	E/W	35	Yes**	45-54	65.6	55	No	No	Estab.	55
9 Avenue L-8	30th St West to 26th St West	Secondary	E/W		No	33-42	55.8	43	No	No	Estab.	45
10 Avenue M-8	35th St West to 40th St West	Secondary	E/W		No	40-49	58.8	49	No	No	Estab.	50
11 Avenue M-8	40th St West to 45th St West	Secondary	E/W		No	30-39	48.9	45	No	No	Estab.	45
12 Lancaster Blvd	25th St West to 30th St West	Secondary	E/W	50	Yes	42-51	78.4	51	No	No	None	50
13 Lancaster Blvd	20th St West to 25th St West	Secondary	E/W	40	Yes	38-47	79.8	45	No	No	Incr.	45
14 Newgrove Street	10th St West to Sierra Hwy	Residential Collector	E/W	30	Yes	27-36	62.2	36	Yes	Yes	None	30
15 40th St West	Avenue M-8 to Avenue N	Secondary	N/S		No	38-47	66.7	47	No	No	Estab.	45
16 65th St West	Avenue L-8 to Avenue L	Secondary	N/S	40	Yes**	40-49	66.7	49	No	No	Estab.	50
17 Avenue H-8	Division St to Rodin Ave	Secondary	E/W	25	Yes	35-44	67.9	47	No	No	Incr.	45
18 5th Street East	Avenue J-9 to Avenue K	Residential Collector	N/S	35	Yes	28-37	64.8	38	Yes	Yes	Decr.	25

* This segment has been a continuous roadway for just over a year.

**Not a legally established limit. Sign may have been posted by private developer's contractor.

APPENDIX A

Regulations Governing Speed Limits

Section 40802 of the California Vehicle Code defines a speed limit enforced by radar and "... not justified by an engineering and traffic survey conducted within five years prior to the date of the alleged violation..." as constituting a speed trap, unless the following criteria are met:

If officers have completed specialized training courses that are approved by the Commission on Peace Officer Standards Training, the time span between studies can be extended to seven years.

If after seven years, "...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..." the time span between studies can be extended to ten years.

Since speed traps are illegal, the lack of an adequate study effectively precludes the police from using radar or laser enforcement. Through adoption of an adequate study, the police department will be able to enforce posted speed limits with radar equipment.

Under California law, the maximum speed limit for any passenger vehicle is 65 miles per hour (mph). All other speed limits are called prima facie limits which "on the face of it", are safe and prudent under normal conditions. Certain prima facie limits are established by law and include the 25 miles per hour limit in business and residential districts; the 15 miles per hour limit in alleys, at blind intersections and blind railroad grade crossings; and a part time 25 miles per hour in school zones when children are going to and from school.

Intermediate speed limits between 25 and 65 miles per hour may be established by local authorities based on traffic engineering surveys. Such surveys include the analysis of roadway conditions, collision records, and the prevailing speed of prudent drivers using the highway under study. If speed limits are established below what the majority of drivers consider reasonable, they are often not obeyed and consequently, are difficult to enforce. Those drivers who do not comply with posted reasonable speed limits are, conversely, subject to equitable enforcement action.

The Vehicle Code provides that the use of radar to enforce speed limits, which have not been based upon a Traffic and Engineering Study conducted within the preceding five years, constitutes a "speed trap". Since speed traps are also prohibited by the code, lack of the required study effectively prohibits local agencies from using radar enforcement.

Applicable California Vehicle Code Sections

Business District

235. A "business district" is that portion of a highway and the property contiguous thereto (a) upon one side of which highway, for a distance of 600 feet, 50 percent or more of the contiguous property fronting thereon is occupied by buildings in use for business, or (b) upon both sides of which highway, collectively, for a distance of 300 feet, 50 percent or more of the contiguous property fronting thereon is so occupied. A business district may be longer than the distance specified in this section if the above ratio of buildings in use for business to the length of the highway exists.

Business and Residence District: Determination

240. In determining whether a highway is within a business or residence district, the following limitations shall apply and shall qualify the definitions Section 235 and 515:
- a) No building shall be counted unless its entrance faces the highway and the front of the building is within 75 feet of the roadway.
 - b) Where a highway is physically divided into two or more roadways, only those buildings facing each roadway separately shall be counted for the purpose of determining whether the roadway is within a district.
 - c) All churches, apartments, hotels, multiple dwelling houses, clubs and public buildings, other than schools, shall be deemed to be business structures.
 - d) A highway or portion of a highway shall not be deemed to be within a district regardless of the number of buildings upon the contiguous property if there is no right of access to the highway by vehicles from the contiguous property.

Residence District

515. A "residence district" is that portion of a highway and the property contiguous thereto, other than a business district, (a) upon one side of which 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, or (b) upon both sides of which 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. A residence district may be longer than one quarter of a mile if the above ratio of separate dwelling houses or business structures to the length of the highway exists.

Engineering and Traffic Survey

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 the 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.

Maximum Speed Limit

22349. (a) Except as provided in Section 22356, no person shall drive a vehicle upon a highway at a speed greater than 65 miles per hour.

(b) Notwithstanding any other provision of law, no person may drive a vehicle upon a two-lane,

undivided highway at a speed greater than 55 miles per hour unless that highway, or portion thereof, has been posted for a higher speed by the Department of Transportation or appropriate local agency upon the basis of an engineering and traffic survey.

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 surface and width of, the highway, and in no event at a speed which endangers the safety of persons or property.

Speed Law Violations

22351. (a) The speed of any vehicle upon a highway not in excess of the limits specified in Section 22352 or established as authorized in this code is lawful unless clearly proved to be in violation of the basic speed law.

(b) The speed of any vehicle upon a highway in excess of the prima facie speed limits in Section 22352 or established as authorized in this code is prima facie unlawful unless the defendant establishes by competent evidence that the speed in excess of said limits did not constitute a violation of the basic speed law at the time, place and under the conditions then existing.

Prima Facie Speed Limits

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

(1) Fifteen miles per hour:

(A) 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 such 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 mechanical railway crossing signal device is installed but does not then indicate the immediate approach of a railway train or car.

(B) When traversing any intersection of highways if during the last 100 feet of his 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 such highways, except at an intersection protected by stop signs or yield right-of-way signs or controlled by official traffic control signals.

(C) On any alley.

(2) Twenty-five miles per hour:

(A) 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.

(B) When 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. Such prima facie limit

shall also apply when 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.

(C) When passing a senior center or 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.

(b) This section shall become operative on March 1, 2001.

Increase of Local Limits

22357. 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 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, 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. The provisions of this section shall not apply in respect 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.

Decrease of Local Limits

22358. 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 hours, 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.

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.

Boundary Line Streets

22359. With respect to boundary line streets and highways where portions thereof are within different jurisdictions, no ordinance adopted under Sections 22357 and 22358 shall be effective as to any such portion until all authorities having jurisdiction of the portions of the street concerned have approved the same. This section shall not apply in the case of boundary line streets consisting of separate roadways

within different jurisdictions.

Multiple-Lane Highways

22361. On multiple-lane highways with two or more separate roadways, different prima facie speed limits may be established for different roadways under any of the procedures specified in Sections 22354 to 22359, inclusive.

Speed Trap Prohibition

40801. No peace officer or other person shall use a speed trap in arresting, or participating or assisting in the arrest of, any person for any alleged violation of this code, nor shall any speed trap be used in securing evidence as to the speed of any vehicle for the purpose of an arrest or prosecution under this code.

Speed Trap

40802. 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) 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.

For purposes of this section, local streets and roads shall be defined by the latest functional usage and federal-aid system maps as submitted to the Federal Highway Administration. When these maps have not been submitted, the following definition shall be used: A local street or road primarily provides access to abutting residential property and shall meet the following three conditions:

1. Roadway width of not more than 40 feet.
2. Not more than one-half mile of uninterrupted length. Interruptions shall include official traffic control devices as defined in Section 445.
3. Not more than one traffic lane in each direction.

Speed Trap Evidence.

40803. (a) No evidence as to the speed of a vehicle upon a highway shall be admitted in any court upon the trial of any person in any prosecution under this code upon a charge involving the speed of a vehicle when the evidence is based upon or obtained from or by the maintenance or use of a speed trap

- (b) In any prosecution under this code of a charge involving the speed of a vehicle, where enforcement involves the use of radar or other electronic devices which measure the speed of moving objects, the prosecution shall establish, as part of its prima facie case, that the

evidence or testimony presented is not based upon a speed trap as defined in paragraph (2) subdivision (a) of Section 40802.

- (c) When a traffic and engineering survey is required pursuant to subdivision (b) of Section 40802, evidence that a traffic and engineering survey has been conducted within five years of the date of the alleged violation or evidence that the offense was committed on a local street or road as defined in subdivision (b) of Section 40802 shall constitute a prima facie case that the evidence or testimony is not based upon a speed trap as defined in subdivision (b) 40802.

Applicable California MUTCD Sections

Section 2B.13 Speed Limit Sign (R2-1)

Support:

The setting of speed limits can be controversial and requires a rational and defensible determination to maintain public confidence. Speed limits are normally set near the 85th-percentile speed that statistically represents one standard deviation above the average speed and establishes the upper limit of what is considered reasonable and prudent. As with most laws, speed limits need to depend on the voluntary compliance of the greater majority of motorists. Speed limits cannot be set arbitrarily low, as this would create violators of the majority of drivers and would not command respect of the public.

Standard:

After an engineering and traffic survey (E & TS) has been made in accordance with established traffic engineering practices, the Speed Limit (R2-1) sign (see Figure 2B-1) shall display the limit established by law, ordinance, regulation, or as adopted by the authorized agency. The speed limits shown shall be in multiples of 10 km/h (5 mph).

Guidance:

At least once every 5, 7 or 10 years, in compliance with CVC Section 40802, State and local agencies should reevaluate non-statutory speed limits on segments of their roadways that have undergone a significant change in roadway characteristics or surrounding land use since the last review.

No more than three speed limits should be displayed on any one Speed Limit sign or assembly.

Standard:

When a speed limit sign is to be posted, it shall be established at the nearest 10 km/h (5 mph) increment of the 85th-percentile speed of free-flowing traffic, except as shown in the Option below.

Option:

The posted speed may be reduced by 10 km/h (5 mph) from the nearest 10 km/h or 5 mph increment of the 85th-percentile speed, in compliance with CVC Sections 627 and 22358.5.

Standard:

If the speed limit to be posted has had the 10 km/h (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:

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

1. 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 can be further 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.
2. 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 established speed limit can be further 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.
3. If the 85th percentile speed in a speed survey for a location was 38 mph, then the speed limit would be established at 40 mph since it is the closest 5 mph increment to the 38 mph speed. As indicated by the option, this 40 mph established speed limit can be further reduced by 5 mph to 35 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.

Standard:

This method of establishing posted speed limits shall apply to all engineering and traffic surveys (E&TS) performed after July 1, 2009 in accordance with the Department's Traffic Operations Policy Directive Number 09-04 dated June 29, 2009. .

Support:

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.

Option:

Other factors that may be considered when establishing speed limits are the following:

- A. Road characteristics, shoulder condition, grade, alignment, and sight distance;
- B. The pace speed;
- C. Roadside development and environment;
- D. Parking practices and pedestrian activity; and
- E. Reported crash experience for at least a 12-month period.

Two types of Speed Limit signs may be used: one to designate passenger car speeds, including any nighttime information or minimum speed limit that might apply; and the other to show any special speed limits for trucks and other vehicles.

A changeable message sign that changes the speed limit for traffic and ambient conditions may be installed provided that the appropriate speed limit is shown at the proper times.

A changeable message sign that displays to approaching drivers the speed at which they are traveling may be installed in conjunction with a Speed Limit sign.

Guidance:

If a changeable message sign displaying approach speeds is installed, the legend YOUR SPEED XX km/h (MPH) or such similar legend should be shown. The color of the changeable message legend should be a yellow legend on a black background or the reverse of these colors.

Support:

Advisory Speed signs are discussed in Sections 2C.36 and 2C.46 and Temporary Traffic Control Zone Speed signs are discussed in Part 6.

Speed limits in California are governed by the California Vehicle Code (CVC), Sections 22348 through 22413; also, pertinent sections are found in Sections 627 and 40802 and others referenced in this

section. See Section 1A.11 for information regarding this publication.

Refer to Part 6, Section 6C.01 for speed limit signs in temporary traffic control zones. Refer to Part 7 for speed limit signs in school areas.

Engineering and Traffic Survey (E&TS)

Support:

CVC Section 627 defines the term "Engineering and traffic survey" and lists its requirements.

Standard:

An engineering and traffic survey (E&TS) 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) Collision records.**
- (3) Highway, traffic, and roadside conditions not readily apparent to the driver.**

Guidance:

The E&TS should contain sufficient information to document that the required three items of CVC Section 627 are provided and that other conditions not readily apparent to a driver are properly identified. Prevailing speeds are determined by a speed zone survey. A speed zone survey should include:

- The intent of the speed measurements 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.
- Only one person is required for the field work. Speeds should be read directly from a radar or other electronic speed measuring devices; or,
- Devices, other than radar, capable of accurately distinguishing and measuring the unimpeded speed of free flowing vehicles may be used.
- A location should be selected where prevailing speeds are representative of the entire speed zone section. If speeds vary on a given route, more than one speed zone section may be required, with separate measurements for each section. Locations for measurements should be chosen so as to minimize the effects of traffic signals or stop signs.
- Speed measurements should be taken during off-peak hours between peak traffic periods on weekdays. If there is difficulty in obtaining the desired quantity, speed measurements may be taken during any period with free flowing traffic.
- The weather should be fair (dry pavement) with no unusual conditions prevailing.
- The surveyor and equipment should not affect the traffic speeds. For this reason, an unmarked car is recommended, and the radar speed meter located as inconspicuously as possible.
- In order for the sample to be representative of the actual traffic flow, the minimum sample should be 100 vehicles in each survey. In no case should the sample contain less than 50 vehicles.
- Short speed zones of less than 0.8 km (0.5 mi) should be avoided, except in transition areas.
- Speed zone changes should be coordinated with changes in roadway conditions or roadside development.
- Speed zoning should be in 20 km/h (10 mph) increments except in urban areas where 10 km/h (5 mph) increments are preferable.
- Speed zoning should be coordinated with adjacent jurisdictions.

Support:

Physical conditions such as width, curvature, grade and surface conditions, or any other condition readily apparent to the driver, in the absence of other factors, would not require special downward speed zoning. Refer to CVC 22358.5.

Option:

When qualifying an appropriate speed limit, local authorities may also consider all of the following findings:

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 0.4 km (0.25 mi), 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 0.4 km (0.25 mi) the contiguous property fronting thereon is occupied by 16 or more separate dwelling houses or business structures.
 - c. The portion of highway is larger than 0.4 km (0.25 mi) 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.

The following two methods of conducting E&TS may be used to establish speed limits:

1. State Highways - The E&TS for State highways is made under the direction of the Department of Transportation's District Traffic Engineer. The data includes:
 - a. One copy of the Standard Speed Zone Survey Sheet (See Figure 2B-101(CA)) showing:
 - A north arrow
 - Engineer's station or post mileage
 - Limits of the proposed zones
 - Appropriate notations showing type of roadside development, such as "scattered business," "solid residential," etc. Schools adjacent to the highway are shown, but other buildings need not be plotted unless they are a factor in the speed recommendation or the point of termination of a speed zone.
 - Collision rates for the zones involved
 - Average daily traffic volume
 - Location of traffic signals, signs and markings
 - If the highway is divided, the limits of zones for each direction of travel
 - Plotted 85th percentile and pace speeds at location taken showing speed profile
 - b. A report to the District Director that includes:
 - The reason for the initiation of speed zone survey.
 - Recommendations and supporting reasons.
 - The enforcement jurisdictions involved and the recommendations and opinions of those officials.
 - The stationing or reference post in kilometers (mileage) at the beginning and ending of each proposed zone and any intermediate equations. Location ties must be given to readily identifiable physical features.
2. City and County Through Highways, Arterials, Collector Roads and Local Streets.
 - a. The short method of speed zoning is based on the premise that a reasonable speed limit is one that conforms to the actual behavior of the majority of motorists, and that by measuring motorists' speeds, one will be able to select a speed limit that is both reasonable and effective. Other factors that need to be considered include but are not limited to: the most recent two-year collision record, roadway design speed, safe stopping sight distance, superelevation, shoulder conditions, profile conditions, intersection spacing and offsets, commercial driveway characteristics, and pedestrian traffic in the roadway without sidewalks.

- b. Determination of Existing Speed Limits - Figures 2B-103(CA) & 2B-104(CA) show samples of data sheets which may be used to record speed observations. Specific types of vehicles may be tallied by use of letter symbols in appropriate squares.

In most situations, the short form for local streets and roads will be adequate; however, the procedure used on State highways may be used at the option of the local agency.

Guidance:

The factors justifying a reduction below the 85th percentile speed for the posted speed limit are the same factors mentioned above. Whenever such factors are considered to establish the speed limit, they should be documented on the speed zone survey or the accompanying engineering report.

The establishment of a speed limit of more than 10 km/h (5 mph) below the 85th percentile speed should be done with great care as studies have shown that establishing a speed limit at 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.

Support:

Generally, the most decisive evidence of conditions not readily apparent to the driver surface in collision histories.

Speed limits are established at or near the 85th percentile speed, which is defined as that speed at or below which 85th percent of the traffic is moving. The 85th percentile speed is often referred to as the critical speed. Pace speed is defined as the 16 km/h (10 mph) increment of speed containing the largest number of vehicles (See Figure 2B-102(CA)). The lower limit of the pace is plotted on the Speed Zone Survey Sheets as an aid in determining the proper zone limits. Speed limits higher than the 85th percentile are not generally considered reasonable and prudent. Speed limits below the 85th percentile do not ordinarily facilitate the orderly movement of traffic and require constant enforcement to maintain compliance. Speed limits established on the basis of the 85th percentile conform to the consensus of those who drive highways as to what speed is reasonable and prudent, and are not dependent on the judgment of one or a few individuals.

The majority of drivers comply with the basic speed law. Speed limits set at or near the 85th percentile speed provide law enforcement officers with a limit to cite drivers who will not conform to what the majority considers reasonable and prudent. Further studies show that establishing a speed limit at less than the 85th percentile (Critical Speed) generally results in an increase in collision rates.

Option:

When roadside development results in traffic conflicts and unusual conditions which are not readily apparent to drivers, as indicated in collision records, speed limits somewhat below the 85th percentile may be justified. Concurrence and support of enforcement officials are necessary for the successful operation of a restricted speed zone.

Guidance:

Speed zones of less than 0.8 km (0.5 mi) and short transition zones should be avoided.

Speed Traps

Support:

Refer to CVC 40802 for Speed Traps.

Standard:

A speed trap shall not apply to a local street, road, or school zone.

A section of highway shall be defined as a speed trap if the prima facie speed limit is not

justified by an engineering and traffic survey (E&TS) within five years, and the enforcement of the speed limit involves the use of radar or any other electronic device that measures the speed of moving objects.

This time provision shall be extended to seven years when using radar and all of the following criteria are met:

- The arresting officer has successfully completed a minimum of 24 hours of certified radar operator course training.
- The radar used to measure the speed meets or exceeds the minimal operational standards of the National Traffic Highway Safety Administration, and has been calibrated within three years of the alleged violation.

This time provision shall be extended to seven years when using laser or other electronic device (other than radar) and all of the following criteria are met:

- The arresting officer has successfully completed a minimum of 24 hours of certified radar operator course training.
- The arresting officer has successfully completed a minimum of 2 hours of additional approved certified training.
- The radar used to measure the speed meets or exceeds the minimal operational standards of the National Traffic Highway Safety Administration, and has been calibrated within three years of the alleged violation.

Option:

This time provision for an E&TS may be extended to ten years when all of the above conditions are met and no significant changes in roadway or traffic conditions have occurred, including changes in adjoining property or land use, roadway width, or traffic volume as determined by a registered engineer.