



# staff report

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TO: Honorable Mayor and Members of the City Council

ATTENTION: Jeffrey L. Stewart, City Manager

FROM: Len Gorecki, Director of Public Works  
Jerry Stock, City Engineer

SUBJECT: Consideration and possible action to read by title only, waive further reading, and introduce Ordinance No. 13XX - An Ordinance amending Ordinance No. 1177 in its entirety and establishing speed limits in accordance with Vehicle Code § 22357 based upon an Engineering and Traffic Survey as defined by Vehicle Code § 627.

DATE: January 25, 2016

## **EXECUTIVE SUMMARY**

The proposed Ordinance would determine certain prima facie speed limits for public streets and highways within the City of Bellflower.

## **RECOMMENDATION TO THE CITY COUNCIL**

- 1) Read by title only, waive further reading, and introduce Ordinance No. 13XX; or
- 2) Alternatively, discuss and take other action related to this item.

## **FISCAL IMPACT**

The estimated cost to remove and replace any speed limit posting sign resulting from the Engineering and Traffic Survey findings is approximately \$250.00 per sign. Sufficient funds are available in the current fiscal year budget under Account No. 010-43180-3000.

## **BACKGROUND**

The requirement to perform Engineering and Traffic Surveys for speed limits is based on the California Vehicle Code (CVC). CVC Section 40802 states that at least once every five, seven, or ten years, States and local agencies should re-evaluate non-statutory speed limits on segments of their roadways. Recent changes to the California Manual on Uniform Traffic Control Devices (CA MUTCD) changed the policy and procedure for setting speed limits in California. Engineering and Traffic Surveys must be performed with the use of radar or other approved electronic devices if the use of radar is to be employed to enforce speed limits. If such a survey is not performed within five years (or seven years, or ten years) of the date of the preceding survey, then the new data and its use will constitute a speed trap. Hence, evidence using such data would not be admissible in court. From the CVC, a "speed trap" is either of the following:

## Staff Report – Citywide Engineering and Traffic Survey for Speed Limits

January 25, 2016

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“(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 provided by [the CVC] or by local ordinance ... 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 where enforcement involves the use of radar or other electronic devices that measures the speed of moving objects. This paragraph does not apply to a local street, road, or school zone.”

The definition of a Traffic and Engineering Survey is contained in Section 627 of the CVC and is as follows:

“Engineering and Traffic Survey, as used in this code, means a survey of highway and traffic conditions in accordance with methods determined by the California Department of Transportation (Caltrans) for use by State and local authorities. An Engineering and Traffic Survey shall include, among other requirements deemed necessary by the department, consideration of the following:

- (a) Prevailing speeds as determined by traffic engineering measurements.
- (b) Accident records.
- (c) Highway, traffic and roadside conditions not readily apparent to the driver.”

The CVC sets certain regulations regarding the posting and enforcement of speed zones. These regulations generally reflect the viewpoint that speed zoning should be based on traffic conditions and natural driver behavior and not because of an arbitrary response to a traffic event or occurrence. Therefore, it is important to have a general understanding of the "Basic Speed Law," "Prima Facie Speed Limits," and "Intermediate Speed Zones."

### **ANALYSIS**

In accordance with the requirements contained in the CVC, a speed survey was conducted beginning in December 2015.

### **Speed Zoning Methodology**

The CA MUTCD specifies a “short” method of determining speed limits on City and County through Highways, Arterial, and Collector Roads Procedures.

This short method of speed zoning is based on the premise that the reasonable speed limit is one that conforms to the actual behavior of the majority of motorists, and that by measuring motorist’s speeds, one will be able to select a speed limit that is both reasonable and effective. Other factors that need to be considered include, without

limitation, the most recent two-year collision record; roadway design speed; safe stopping sight distance; super-elevation; shoulder conditions; profile conditions; intersection spacing and offsets; commercial driveway characteristics; pedestrian traffic in the roadway without sidewalks.

### **Speed Zone Survey**

- Only one person is required for the fieldwork. Speeds can be read directly from a radar speed meter.
- A section of road should be selected with representative operating speeds. If speeds vary on a given road, additional surveys should be conducted. In this case, it may be necessary to establish additional speed zones with different speed limits. The section selected should be straight and should have no traffic signal, stop sign, or intersection with a major cross street.
- Speed measurements should be taken during off-peak hours on weekdays. The weather should be fair with no unusual conditions prevailing. It is important that the surveyor and his equipment be so inconspicuous as not to affect traffic speeds. For this reason, an unmarked car is recommended, with the radar speed meter located as inconspicuously as possible. It should be placed so as to be able to survey traffic in both directions and should not make an angle greater than 15 degrees with the roadway centerline.
- It is desirable to have a minimum sample of 100 automobiles in each survey. This may result in excessive survey periods for low-volume roads. Under these conditions, the survey should be conducted for a minimum of two hours, but in no case should the sample for any survey contain less than 50 automobiles.
- The CA MUTCD states that speed limits are established at or near the 85th percentile speed, which is defined as that speed at or below which 85 percent of the traffic is moving. This speed can be selected directly from the data sheet. However, roadway conditions not readily apparent to the motorist such as vertical or horizontal curves or other roadway conditions that may impact sight distance may result in a further reduction of 5 mph in the recommended speed limit.
- As a check on the validity of the proposed speed limit, an analysis should be made of the two-year accident record for the section of roadway under consideration. If this record shows an abnormally high percentage of accidents normally associated with excessive speeds, the proposed speed limit should be further reduced. This is a judgment situation, and will not usually be a factor.
- Short speed zones of less than half a mile should be avoided, except in transition areas.
- Speed zone changes should be coordinated with changes in roadway conditions or roadway development.

- Speed zoning in 5 mile per hour increments should be avoided if possible. A 10-mile per hour increment is preferable.
- Speed zoning should be coordinated between adjacent jurisdictions.

### **Radar Collection Time Frames**

The hours of radar operation were restricted to off-peak periods for heavily traveled streets and to uncongested peak periods on lightly traveled streets. All surveys were conducted in fair weather.

The radar unit was mounted at the top of the front dash of an unmarked vehicle with the meter-reading unit sustained inside the vehicle. The radar unit's calibration was checked periodically using a tuning fork.

The radar operator and assistant recorded the speed meter readings for each location on Radar Speed Survey Field Sheets included in the appendix of this report. A representative sampling of at least 50 vehicles were surveyed in each direction or a cumulative sample of 100 vehicles for both directions where possible. On low volume roads, where a total sample of 100 vehicles would result in an excessive time period, sampling was continued until a representative bell-shaped frequency distribution was attained.

### **Analysis Factors**

Several factors were used as input to our recommendations for speed limits. These include the 85th Percentile, the 10 MPH Pace, and others. These are described in detail below.

1. The **CRITICAL SPEED**, or the 85th percentile is defined as that speed at or below which 85 percent of the traffic is moving. Per the CVC, the critical speed is the primary factor in determining appropriate speed limits.

Hence, the accepted practice, and one that has been used in this case is to set the speed limit at or near the critical speed in accordance with the CVC. This recognizes that other factors could be present where the above may not be appropriate. When this procedure is used it not only conforms to that required by the State, but it also provides a strong base for law enforcement personnel to properly enforce speed limits.

2. The **10 MPH PACE** is that continuous 10 mph incremental range of speeds in which the largest number of recorded vehicles is contained. It is a measure of the dispersion of speeds within the sample surveyed. For this element, the accepted practice to the greatest extent possible is to try and keep the recommended speed limit within the 10 mph pace after considering the critical speed and any factors requiring a speed lower than the critical speed.
3. The **MEDIAN (MIDDLE) SPEED**, or 50th percentile speed, represents the mid-point

value within the range of recorded speeds for a particular roadway location. In other words, 50% of the vehicles travel faster and 50% travel slower than the median speeds. This value is another measure of the central tendency of the vehicle speed distribution.

4. The **15th PERCENTILE SPEED** is that speed at or below which 15% of the vehicles are traveling. This value is important in determining the minimum allowable speed limit, given that the vehicles traveling below this speed tend to obstruct the flow of traffic, thereby increasing the accident potential.
5. **MODAL SPEED:** The modal speed is the speed, which occurs most frequently in the distribution (the most). It serves as another useful measure in verifying the correct recommendation for speed limits.
6. **STANDARD DEVIATION:** This is a mathematical element, which relates to measures of dispersion of data. It is used to assist in describing the center of speed distribution information around the arithmetic mean or the time mean speed. It also is used in the overall review of recommended speed limits and serves to verify the level of confidence of data used in making recommendations.
7. The **MEAN (AVERAGE)** is the sum of the speeds of the samples divided by the number of samples.

The numerical values of the above factors are derived from the speed distribution curves calculated for each survey location. These distribution curves represent a method of graphic analysis that compares the cumulative percentage of vehicles to the speed at which the vehicles are traveling.

### **Field Review**

In addition to the availability of the above statistical data, a significant aspect of speed limit recommendations is based on the field review. Its importance is that existing conditions may warrant a lower speed than is actually indicated by the application of survey data. Examples of the field data collected for the purposes of analyzing related roadway characteristics as they pertain to the determination of appropriate speed limits are listed below:

1. Segment length, width, and alignment
2. Level of pedestrian activity
3. Traffic flow characteristics
4. Vertical and/or horizontal curves
5. Driver sight distance constraints
6. Adjacent residential/commercial/industrial, etc. zoning
7. Number of lanes and other channelization/striping factors
8. Frequency of intersections, driveways, and on street parking
9. Location of stop signs, traffic signals, and other regulatory traffic control devices
10. Roadway conditions, bumps, and dips

11. Obstructions to pedestrian visibility
12. Land use and proximity of schools
13. Uniformity with existing speed zones to/with adjacent jurisdictions
14. Any other unusual conditions not readily apparent to the driver

**Accident History**

The Engineering and Traffic Survey forms summarize the available two-year accident information for the subject streets. The accident information includes the total number of accidents within each street segment and, of those accidents, the number that are speed-related. This information was obtained from the California Statewide Integrated Traffic Records System (SWITRS) for the City of Bellflower.

The annual accident rate figures represent the number of speed-related accidents divided by years of accident records. The evaluation of accidents is useful as a check on the accuracy of recommended or existing speed limits. Should this review show a high percentage of accidents associated with excessive speeds, consideration based on professional traffic engineering judgment should be directed toward reducing the posted or recommended speed limit.

A summary of the results and recommendations reveal that of the sixty-one (61) roadway segments surveyed, fifty-nine (59) segments are recommended to maintain the existing posted speed limit, two (2) segments are recommended for a speed limit reduction, and three (3) segments that are not posted in either one or both travel directions be posted.

The streets with changes in posted speeds and those that need to be posted are as follows:

<b>Street</b>	<b>Current Speed Limit</b>	<b>New Speed Limit</b>
Downey Ave. between north City limits and Artesia Blvd.	40	35
Downey Ave. between Artesia Blvd. and south City limits	40	35
Clark Ave. between Oak St. and Flower St.	Not Posted	35
Lakewood Blvd. between Rosecrans Ave. and Somerset Blvd.	Not Posted	40
Woodruff Ave. between Beach St. and Artesia Blvd.	Not Posted	40

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**CITY OF BELLFLOWER**

**ORDINANCE NO. 13XX**

**AN ORDINANCE AMENDING ORDINANCE NO. 1177 IN ITS ENTIRETY AND ESTABLISHING SPEED LIMITS IN ACCORDANCE WITH VEHICLE CODE § 22357 BASED UPON AN ENGINEERING AND TRAFFIC SURVEY AS DEFINED BY VEHICLE CODE § 627.**

**THE CITY COUNCIL DOES ORDAIN AS FOLLOWS:**

**SECTION 1.** The City Council finds as follows:

- A. Vehicle Code § 22352 establishes prima facie speed limits throughout the City;
- B. Vehicle Code § 22357 authorizes the City to establish certain speed limits based upon an engineering and traffic survey as defined by Vehicle Code § 627;
- C. In accordance with Vehicle Code § 40802, the speed limits authorized by Vehicle Code § 22357 must be justified by engineering and traffic surveys conducted every five years;
- D. The City adopted its last Engineering and Traffic Survey in March of 2009 (Resolution No. 09-09), which requires updating;
- E. The City completed a citywide speed zone engineering and traffic survey (meeting the requirements of Vehicle Code § 627) which, among other things, recommended changes to the City's speed limits. That engineering and traffic survey is dated January 2016 (entitled "Engineering and Traffic Survey for Speed Limits" and authored by Hartzog & Crabill, Inc.), and is incorporated by reference ("Survey"); and
- F. This Ordinance, and the speed limits established below, rely upon the Survey for purposes of Vehicle Code § 22357.

**SECTION 2.** Based upon the Survey, and in accordance with Vehicle Code §§ 22352 and 22357, the City Council amends Ordinance No. 1177, adopted April 13, 2009, in its entirety and establishes the following speed limits for the corresponding locations:

**Schedule 1**  
**Speed Limits**

**Street Segment**

**Speed Limit**

Allington Street

Carpintero Ave to Palo Verde Ave

Remain posted at 35 MPH

Alondra Boulevard

Hayter Ave to Lakewood Blvd

Remain posted at 40 MPH

Lakewood Blvd to Clark Ave

Remain posted at 40 MPH

Clark Ave to Bellflower Blvd

Remain posted at 40 MPH

Bellflower Blvd to Woodruff Ave

Remain posted at 40 MPH

Woodruff Ave to East City Limits

Remain posted at 40 MPH

Artesia Boulevard

Downey Ave to Lakewood Blvd

Remain posted at 40 MPH

Lakewood Blvd to Clark Ave

Remain posted at 40 MPH

Clark Ave to Bellflower Blvd

Remain posted at 40 MPH

Bellflower Blvd to Woodruff Ave

Remain posted at 40 MPH

Woodruff Ave to East City Limits

Remain posted at 40 MPH

Bellflower Boulevard

Foster Rd to Rosecrans Ave

Remain posted at 40 MPH

Rosecrans Ave to Somerset Blvd

Remain posted at 40 MPH

Somerset Blvd to Jefferson St

Remain posted at 40 MPH

Jefferson St to Alondra Blvd

Remain posted at 40 MPH

Alondra Blvd to Flora Vista St

Remain posted at 30 MPH

Flora Vista St to Flower St

Remain as "Business District"

Flower St to Park St

Remain posted at 30 MPH

Park St to Artesia Blvd

Remain posted at 30 MPH

Artesia Blvd to South City Limits

Remain posted at 35 MPH

Clark Avenue

Foster Rd to Rosecrans Ave

Remain posted at 40 MPH

Rosecrans Ave to Somerset Blvd

Remain posted at 40 MPH

Somerset Blvd to Alondra Blvd

Remain posted at 40 MPH

Alondra Blvd. to Oak St

Remain posted at 35 MPH

Oak St to Flower St

Post a 35 MPH Speed Limit

Flower St to Artesia Blvd

Remain posted at 35 MPH

Artesia Blvd to South City Limits

Remain posted at 35 MPH

Downey Avenue

North City Limit to Artesia Blvd

Reduce 40 to 35 MPH

Artesia Boulevard to South City Limit

Reduce 40 to 35 MPH

Flora Vista Street

Rendalia St to Alondra Blvd

Remain posted at 30 MPH

**City of Bellflower**  
**Ordinance No. 13XX**  
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Flower Street

West City Limits to Lakewood Blvd	Remain posted at 35 MPH
Lakewood Blvd to Clark Ave	Remain posted at 35 MPH
Clark Ave to Bellflower Blvd	Remain posted at 35 MPH
Bellflower Blvd to Flora Vista/Woodruff Ave	Remain posted at 30 MPH

Foster Road

Lakewood Blvd to Clark Ave	Remain posted at 35 MPH
Clark Ave to Bellflower Blvd	Remain posted at 35 MPH
Bellflower Blvd to Woodruff Ave	Remain posted at 35 MPH
Woodruff Ave to East City Limits	Remain posted at 35 MPH

Lakewood Boulevard

Foster/Gardendale St to Rosecrans Ave	Remain posted at 40 MPH; Post NB
Rosecrans Ave to Somerset Blvd	Post a 35 MPH Speed Limit
Somerset Blvd to Alondra Blvd	Remain posted at 40 MPH
Alondra Blvd to Flower St	Remain posted at 40 MPH
Flower St to Artesia Blvd	Remain posted at 40 MPH
Artesia Blvd to South City Limits	Remain posted at 40 MPH

Pacific Avenue

Alondra Blvd to Bellflower Blvd	Remain posted at 30 MPH
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Palo Verde Avenue

Artesia Blvd to Allington St	Remain posted at 40 MPH
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Rosecrans Avenue

Lakewood Blvd to Clark Ave	Remain posted at 40 MPH
Clark Ave to Bellflower Blvd	Remain posted at 40 MPH
Bellflower Blvd to Woodruff Ave	Remain posted at 40 MPH
Woodruff Ave to East City Limits	Remain posted at 40 MPH

Somerset Boulevard

Lakewood Blvd to Clark Ave	Remain posted at 40 MPH
Clark Ave to Bellflower Blvd	Remain posted at 40 MPH
Bellflower Blvd to Woodruff Ave	Remain posted at 40 MPH
Woodruff Ave to East City Limits	Remain posted at 35 MPH

Woodruff Avenue

Foster Rd to Rosecrans Ave	Remain posted at 45 MPH
Rosecrans Ave to Somerset Blvd	Remain posted at 40 MPH
Somerset Blvd to Alondra Blvd	Remain posted at 40 MPH
Alondra Blvd to Flora Vista St	Remain posted at 40 MPH
Flora Vista St to Beach St	Remain posted at 40 MPH
Beach St to Artesia Blvd	Remain posted at 40 MPH; Post SB
Artesia Blvd to South City Limits	Remain posted at 40 MPH

**SECTION 3.** The City Manager, or designee, is authorized and directed to (a) install signs providing notification of the speed limits established in Section 2 of this Ordinance; (b) update the Survey not later than five years from January 25, 2016; and (c) take any additional action required to implement this Ordinance.

**SECTION 4.** California Environmental Quality Act Exemption. The City Council determines that this ordinance is exempt from review under the California Environmental Quality Act (California Public Resources Code §§ 21000, *et seq.*, “CEQA”) and the regulations promulgated thereunder (14 California Code of Regulations §§ 15000, *et seq.*, the “CEQA Guidelines”) because it consists only of minor revisions and clarifications to an existing code of speed control regulations established in accordance with state law and will not have the effect of deleting or substantially changing any regulatory standards or findings. This ordinance, therefore, is an action being taken for enhanced protection of the environment and that does not have the potential to cause significant effects on the environment. Consequently, it is categorically exempt in accordance with CEQA Guidelines §§ 15301 as a minor alteration of existing public or private structures involving no expansion of use; 15305 as a minor alteration in land use limitations which do not result in any changes in land use or density; and 15308 as an action taken by a regulatory agency as authorized by California law to assure maintenance or protection of the environment.

**SECTION 5.** Repeal or amendment of any provision of the BMC or any other ordinance will not affect any penalty, forfeiture, or liability incurred before, or preclude prosecution and imposition of penalties for any violation occurring before this Ordinance’s effective date. Any such repealed part will remain in full force and effect for sustaining action or prosecuting violations occurring before the effective date of this Ordinance.

**SECTION 6.** If this the entire Ordinance or its application is deemed invalid by a court of competent jurisdiction, any repeal of the BMC or other city ordinance by this Ordinance will be rendered void and cause such BMC provision or other the city ordinance to remain in full force and effect for all purposes.

**SECTION 7.** The City Clerk, or duly appointed deputy, is directed to certify the passage and adoption of this Ordinance; cause it to be entered into the City of Bellflower’s book of original ordinances; make a note of the passage and adoption in the records of this meeting; and, within fifteen (15) days after the passage and adoption of this Ordinance, cause it to be published or posted in accordance with California law.

**SECTION 8.** This Ordinance will become effective on the thirty-first (31st) day following its passage and adoption.

ORDINANCE NO. 13XX HAD ITS FIRST READING ON \_\_\_\_\_, ITS  
SECOND READING ON \_\_\_\_\_, AND WAS DULY PASSED, APPROVED,  
AND ADOPTED BY THE CITY COUNCIL OF THE CITY OF BELLFLOWER AT ITS  
REGULAR MEETING OF \_\_\_\_\_.

\_\_\_\_\_  
Scott A. Larsen, Mayor

Attest:

\_\_\_\_\_  
Mayra Ochiqui, City Clerk

APPROVED AS TO FORM:

\_\_\_\_\_  
Karl H. Berger, Interim City Attorney

# **CITY OF BELLFLOWER**

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## **ENGINEERING AND TRAFFIC SURVEY FOR SPEED LIMITS**

**JANUARY 2016**

**PREPARED FOR:**

**CITY OF BELLFLOWER  
16600 CIVIC CENTER DRIVE  
BELLFLOWER, CALIFORNIA 90706**

**PREPARED BY:**

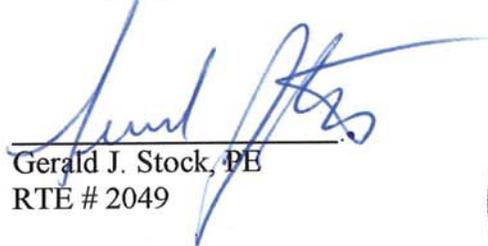
**HARTZOG & CRABILL, INC.  
17852 EAST 17<sup>TH</sup> STREET, SUITE 101  
TUSTIN, CALIFORNIA 92680  
(714) 731-9455**

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**CERTIFICATION**

I, Gerald J. Stock, do hereby certify that this Engineering and Traffic Survey for the City of Bellflower of 61 segments on 15 different roadways was performed under my supervision and is accurate and complete. I certify that I am both experienced in performing surveys of this type and duly registered in the State of California as a professional Traffic Engineer.

  
Gerald J. Stock, PE  
RTE # 2049



**CITY OF BELLFLOWER  
ENGINEERING AND TRAFFIC SURVEY FOR SPEED LIMITS**

**Introduction**

In accordance with procedures established by the State of California, this Engineering and Traffic Survey has been developed for the City of Bellflower as the basis for the establishment and enforcement of speed limits for selected streets within the City. The work provided herein was authorized by the City and was performed by the engineering consulting firm of Hartzog & Crabill, Inc. The goal of the review was to determine whether changes in pre-existing conditions have occurred where older speed limits should be modified.

The requirement to perform Engineering and Traffic surveys for speed limits is based on the California Vehicle Code (CVC). CVC Section 40802 states that at least once every five (5), seven (7) or ten (10) years, States and local agencies should re-evaluate non-statutory speed limits on segments of their roadways. Recent changes to the CA. MUCTD changed the policy and procedure for setting speed limits in California. Engineering and Traffic Surveys must be performed with the use of radar or other approved electronic devices if the use of radar is to be employed to enforce speed limits. If such a survey is not performed within five years (or seven years, or ten years as stated previously) of the date of the preceding survey, then the new data and its use will constitute a speed trap. Hence, evidence using such would not be admissible in court. From the Vehicle Code, 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 provided by this code or by local ordinance under sub-paragraph (A) of paragraph (2) of subdivision (a) of Section 22352, or established pursuant to 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 where enforcement involves the use of radar or other electronic devices that measures the speed of moving objects. This paragraph does not apply to a local street, road, or school zone.

The definition of a Traffic and Engineering Survey is contained in Section 627 of the Vehicle Code and is as follows:

Engineering and Traffic survey, as used in this code, means a survey of highway and traffic conditions in accordance with methods determined by the California Department of Transportation (Caltrans) for use by State and local authorities. An engineering and traffic survey shall include, among other requirements deemed necessary by the department, consideration of the following:

- (a) Prevailing speeds as determined by traffic engineering measurements.
- (b) Accident records.
- (c) Highway, traffic and roadside conditions not readily apparent to the driver.

The California Vehicle code has set certain regulations regarding the posting and enforcement of speed zones. These regulations generally reflect the viewpoint that speed zoning should be based on traffic conditions and natural driver behavior and not because of an arbitrary response to a traffic event or occurrence. Therefore, it is important to have a general understanding of the "Basic Speed Law", "Prima Facie Speed Limits" and "Intermediate Speed Zones".

### **Basic Speed Law (CVC 22350)**

All fifty states base their speed regulations on the Basic Speed Law. In California, CVC 22350 defines the basic speed law as:

"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."

This law recognizes that driving conditions vary widely from time-to-time and place-to-place and, therefore, no set of fixed driving rules will adequately serve all conditions. The motorist will constantly adjust their driving behavior to fit the conditions encountered, and must learn to do this with a minimum of assistance from the police. The Basic Speed Law is founded on the belief that a majority of motorists are able to modify their driving behavior properly, as long as they are aware of the conditions around them.

### **Prima Facie Speed Limits (CVC 22352)**

All other speed limits are prima facie limits which, "on the face of it", are reasonable and prudent under normal conditions. The opportunity given to the driver to exceed a prima facie speed limit when it is safe to do so recognizes the fact that any posted speed limit cannot adequately reflect the many different conditions of traffic, weather, visibility, etc., that may be found on the same highway at different times.

Certain prima facie limits are automatically established by law (CVC 22352), including a 15 mph limit in alleys, blind intersections, blind railroad crossing, and the 25 mph limit in business and residence districts. There is also a part time 25 mph limit in school zones when children are present in route to or from school.

Business and residence districts are defined in the Vehicle Code as specific areas meeting a specified minimum density of roadside development. CVC Sections 235 and 515 define these regulations. A count of houses or active businesses facing on a highway must be made to determine whether or not a valid business or residence district exists. The law does not require posting these prima facie limits that are readily apparent.

### **Business District (CVC 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 distances specified in this section if the above ratio of business in use for business to the length of the highway exists.

### **Establishment of Speed Zones**

The reason that speed limit areas and their required postings are done is to guard reasonable drivers from the unreasonable behavior of reckless, unreliable, or otherwise dangerous drivers. As with other similar laws, the limits identified are based on the consensus of the majority of those who drive the highway as to what speed is reasonable and safe. It is this type of information that is reflected in the analysis section of this report. Namely, posted speed limits are a reflection of that speed which most people deemed to be safe as opposed to a minority of drivers who do not drive in a reasonable manner.

Speed zones are also established to advise drivers of road conditions or hazards that may not be readily apparent to a reasonable driver. For that reason, a field review of related road/traffic variables is conducted which considers the analytical data and accident history of a particular roadway segment to determine a safe and reasonable speed limit.

### **Data Collection Procedures**

Speed evaluation data was collected at 61 different roadway segments on 15 different roadways in the City of Bellflower. These areas and the number of segments on each are described as follows:

- |    |                          |     |                        |
|----|--------------------------|-----|------------------------|
| 1. | Allington Street (1)     | 9.  | Foster Road (4)        |
| 2. | Alondra Boulevard (5)    | 10. | Lakewood Boulevard (6) |
| 3. | Artesia Boulevard (5)    | 11. | Pacific Avenue (1)     |
| 4. | Bellflower Boulevard (9) | 12. | Palo Verde Avenue (1)  |
| 5. | Clark Avenue (7)         | 13. | Rosecrans Avenue (4)   |
| 6. | Downey Avenue (2)        | 14. | Somerset Boulevard (4) |
| 7. | Flora Vista Street (1)   | 15. | Woodruff Avenue (7)    |
| 8. | Flower Street (4)        |     |                        |

As described in various traffic engineering documents - including information provided by the State of California, the individual locations on which radar data collection procedures were used involved considerations for the following:

- a. Stop sign or traffic signal locations;
- b. Visibility issues;
- c. Traffic flow at intersections, cross-traffic, major driveways, crosswalks, railroad crossings and unusual turning movements;
- d. The influence of other traffic factors on the speed of cars: such as on street parking, roadway features, adjacent land uses, and lighting.

## **Speed Zoning Methodology**

The California Manual on Uniform Traffic Control Devices (CA. MUTCD) specifies a “short method of determining speed limits on City and County through Highways, Arterial and Collector Roads Procedures.

Introduction - This short method of speed zoning is based on the premise that the reasonable speed limit is one that conforms to the actual behavior of the majority of motorists, and that by measuring motorist’s 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 three-year collision record, roadway design speed, safe stopping sight distance, super-elevation, shoulder conditions, profile conditions, intersection spacing and offsets, commercial driveway characteristics, pedestrian traffic in the roadway without sidewalks.

## **Speed Zone Survey**

- Only one person is required for the fieldwork. Speeds can be read directly from a radar speed meter.
- A section of road should be selected with representative operating speeds. If speeds vary on a given road, additional surveys should be conducted. In this case, it may be necessary to establish additional speed zones with different speed limits. The section selected should be straight and should have no traffic signal, stop sign or intersection with a major cross street.
- Speed measurements should be taken during off-peak hours on weekdays. The weather should be fair with no unusual conditions prevailing. It is important that the surveyor and his equipment be so inconspicuous as not to affect traffic speeds. For this reason, an unmarked car is recommended, with the radar speed meter located as inconspicuously as possible. It should be placed so as to be able to survey traffic in both directions, and should not make an angle greater than 15 degrees with the roadway centerline.
- It is desirable to have a minimum sample of 100 automobiles in each survey. This may result in excessive survey periods for low-volume roads. Under these conditions, the survey should be conducted for a minimum of two hours, but in no case should the sample for any survey contain less than 50 automobiles.
- The California MUTCD states that speed limits are established at or near the 85th percentile speed, which is defined as that speed at or below which 85 percent of the traffic is moving. This speed can be selected directly from the data sheet. However, roadway conditions not readily apparent to the motorist such as vertical or horizontal curves or other roadway conditions that may impact sight distance may result in a further reduction of 5 mph in the recommended speed limit.
- As a check on the validity of the proposed speed limit, an analysis should be made of the two-year accident record for the section of roadway under consideration. If this record shows an abnormally high percentage of accidents normally associated with excessive speeds, the proposed speed limit should be further reduced. This is a judgment situation, and will not usually be a factor,

- Short speed zones of less than half a mile should be avoided, except in transition areas.
- Speed zone changes should be coordinated with changes in roadway conditions or roadway development.
- Speed zoning in 5 mile per hour increments should be avoided if possible. A 10-mile per hour increment is preferable.
- Speed zoning should be coordinated between adjacent jurisdictions.

### **Local Street Exemptions (CVC 40802)**

Many streets are designated as "Local" streets per CVC 40802. These streets are exempt from the radar study. Therefore, the speed limit for these streets does not require an Engineering and Traffic Survey. The code is as follows:

"For the purpose 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.
3. Not more than one traffic lane in each direction.

### **Other Considerations**

Every street should be inspected for unusual traffic, roadway and roadside conditions not readily apparent to a motorist. A check should be made of the adequacy of traffic control devices, roadway alignment, width surface conditions, accident history and any unique traffic hazards that may exist. Any of these conditions may warrant the selection of a speed lower than the 85th percentile speed for speed zoning.

### **Radar Collection Time Frames**

The hours of radar operation were restricted to off-peak periods for heavily traveled streets and to uncongested peak periods on lightly traveled streets. All surveys were conducted in fair weather.

The radar unit was mounted at the top of the front dash of an unmarked vehicle with the meter-reading unit sustained inside the vehicle. The radar unit's calibration was checked periodically using a tuning fork.

The radar operator and assistant recorded the speed meter readings for each location on Radar Speed Survey Field Sheets included in the appendix of this report. A representative sampling of at least 50 vehicles were surveyed in each direction or a cumulative sample of 100 vehicles for

both directions where possible. On low volume roads, where a total sample of 100 vehicles would result in an excessive time period, sampling was continued until a representative bell-shaped frequency distribution was attained.

### Analysis Factors

Several factors were used as input to our recommendations for speed limits. These include the 85th Percentile, the 10 MPH Pace and others. These are described in detail below.

1. The **CRITICAL SPEED**, or the 85th percentile is defined as that speed at or below which 85 percent of the traffic is moving. Per the CVC, the critical speed is the primary factor in determining appropriate speed limits.

Hence, the accepted practice, and one that has been used in this case is to set the speed limit at or near the critical speed in accordance with the CVC. This recognizes that other factors could be present where the above may not be appropriate. When this procedure is used, it not only conforms to that required by the State but it also provides a strong base for law enforcement personnel to properly enforce speed limits.

2. The **10 MPH PACE** is that continuous 10 mph incremental range of speeds in which the largest number of recorded vehicles is contained. It is a measure of the dispersion of speeds within the sample surveyed. For this element, the accepted practice to the greatest extent possible is to try and keep the recommended speed limit within the 10 mph pace after considering the critical speed and any factors requiring a speed lower than the critical speed.
3. The **MEDIAN (MIDDLE) SPEED**, or 50th percentile speed, represents the mid-point value within the range of recorded speeds for a particular roadway location. In other words, 50% of the vehicles travel faster, and 50% travel slower than the median speeds. This value is another measure of the central tendency of the vehicle speed distribution.
4. The **15th PERCENTILE SPEED** is that speed at or below which 15% of the vehicles are traveling. This value is important in determining the minimum allowable speed limit, given that the vehicles traveling below this speed tend to obstruct the flow of traffic, thereby increasing the accident potential.
5. **MODAL SPEED**: The modal speed is the speed, which occurs most frequently in the distribution (the most). It serves as another useful measure in verifying the correct recommendation for speed limits.
6. **STANDARD DEVIATION**: This is a mathematical element, which relates to measures of dispersion of data. It is used to assist in describing the center of speed distribution information around the arithmetic mean or the time mean speed. It also is used in the overall review of recommended speed limits and serves to verify the level of confidence of data used in making recommendations.

7. The **MEAN (AVERAGE)** is the sum of the speeds of the samples divided by the number of samples.

The numerical values of the above factors are derived from the speed distribution curves calculated for each survey location. These distribution curves represent a method of graphic analysis that compares the cumulative percentage of vehicles to the speed at which the vehicles are traveling.

### **Field Review**

In addition to the availability of the above statistical data, a significant aspect of speed limit recommendations is based on the field review. Its importance is that existing conditions may warrant a lower speed than is actually indicated by the application of survey data. Examples of the field data collected for the purposes of analyzing related roadway characteristics as they pertain to the determination of appropriate speed limits are listed below:

1. Segment length, width and alignment
2. Level of pedestrian activity
3. Traffic flow characteristics
4. Vertical and/or horizontal curves.
5. Driver sight distance constraints.
6. Adjacent residential/commercial/industrial etc. zoning.
7. Number of lanes and other channelization/stripping factors
8. Frequency of intersections, driveways and on street parking;
9. Location of stop signs, traffic signals, and other regulatory traffic control devices;
10. Roadway conditions, bumps and dips;
11. Obstructions to pedestrian visibility;
12. Land use and proximity of schools;
13. Uniformity with existing speed zones to/with adjacent jurisdictions;
14. Any other unusual conditions not readily apparent to the driver.

The results of the field review of related road/traffic variables are summarized on the Engineering and Traffic Survey forms found in the Appendix of this report.

### **Accident History**

The Engineering and Traffic Survey forms summarize the available two-year accident information for the subject streets. The accident information includes the total number of accidents within each street segment and of those accidents, the number that are speed-related. This information was obtained from the California Statewide Integrated Traffic Records System (SWITRS) for the City of Bellflower.

The annual accident rate figures represent the number of speed-related accidents divided by years of accident records. The evaluation of accidents is useful as a check on the accuracy of recommended or existing speed limits. Should this review show a high percentage of accidents associated with excessive speeds, consideration based on professional traffic engineering judgment should be directed toward reducing the posted or recommended speed limit.

## Results and Recommendations

The following Summaries: No Speed Limit Changes, Business District, New Speed Limit Postings, Speed Limit Increases, Speed Limit Reductions and Summary of Recommendations presents the results of the radar survey for the selected 61 locations. As shown, the Summary of Recommendations chart presents the necessary analysis elements that in addition to the field review of a registered traffic engineer led to the recommendations indicated.

### Locations of No Speed Limit Changes

The Summary indicates that 56 of the 61 segments studied are recommended for no speed limit changes. The reason centers mostly on the fact that newly measured values of the 85th percentile and the 10 MPH pace are still within the parameters of the existing speed limits. Hence, the current postings should remain as is. At two (2) of these locations, one direction of travel is not currently posted and posting is required to allow for speed limit enforcement. These segments as well as the segments recommended for "No Change" are listed below:

#### Allington Street

Carpintero Ave to Palo Verde Ave	Remain posted at 35 MPH
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#### Alondra Boulevard

Hayter Ave to Lakewood Blvd	Remain posted at 40 MPH
Lakewood Blvd to Clark Ave	Remain posted at 40 MPH
Clark Ave to Bellflower Blvd	Remain posted at 40 MPH
Bellflower Blvd to Woodruff Ave	Remain posted at 40 MPH
Woodruff Ave to East City Limits	Remain posted at 40 MPH

#### Artesia Boulevard

Downey Ave to Lakewood Blvd	Remain posted at 40 MPH
Lakewood Blvd to Clark Ave	Remain posted at 40 MPH
Clark Ave to Bellflower Blvd	Remain posted at 40 MPH
Bellflower Blvd to Woodruff Ave	Remain posted at 40 MPH
Woodruff Ave to East City Limits	Remain posted at 40 MPH

#### Bellflower Boulevard

Foster Rd to Rosecrans Ave	Remain posted at 40 MPH
Rosecrans Ave to Somerset Blvd	Remain posted at 40 MPH
Somerset Blvd to Jefferson St	Remain posted at 40 MPH
Jefferson St to Alondra Blvd	Remain posted at 40 MPH
Alondra Blvd to Flora Vista St	Remain posted at 30 MPH
Flora Vista St to Flower St	Remain as "Business District"
Flower St to Park St	Remain posted at 30 MPH
Park St to Artesia Blvd	Remain posted at 30 MPH
Artesia Blvd to South City Limits	Remain posted at 35 MPH

Clark Avenue

Foster Rd to Rosecrans Ave	Remain posted at 40 MPH
Rosecrans Ave to Somerset Blvd	Remain posted at 40 MPH
Somerset Blvd to Alondra Blvd	Remain posted at 40 MPH
Alondra Blvd. to Oak Street	Remain posted at 35 MPH
Flower St to Artesia Blvd	Remain posted at 35 MPH
Artesia Blvd to South City Limits	Remain posted at 35 MPH

Flora Vista Street

Rendalia St to Alondra Blvd	Remain posted at 30 MPH
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Flower Street

West City Limits to Lakewood Blvd	Remain posted at 35 MPH
Lakewood Blvd to Clark Ave	Remain posted at 35 MPH
Clark Ave to Bellflower Blvd	Remain posted at 35 MPH
Bellflower Blvd to Flora Vista/Woodruff Ave	Remain posted at 30 MPH

Foster Road

Lakewood Blvd to Clark Ave	Remain posted at 35 MPH
Clark Ave to Bellflower Blvd	Remain posted at 35 MPH
Bellflower Blvd to Woodruff Ave	Remain posted at 35 MPH
Woodruff Ave to East City Limits	Remain posted at 35 MPH

Lakewood Boulevard

Foster/Gardendale St to Rosecrans Ave	Remain posted at 40 MPH - Post NB
Somerset Blvd to Alondra Blvd	Remain posted at 40 MPH
Alondra Blvd to Flower St	Remain posted at 40 MPH
Flower St to Artesia Blvd	Remain posted at 40 MPH
Artesia Blvd to South City Limits	Remain posted at 40 MPH

Pacific Avenue

Alondra Blvd to Bellflower Blvd	Remain posted at 30 MPH
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Palo Verde Avenue

Artesia Blvd to Allington St	Remain posted at 40 MPH
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Rosecrans Avenue

Lakewood Blvd to Clark Ave	Remain posted at 40 MPH
Clark Ave to Bellflower Blvd	Remain posted at 40 MPH
Bellflower Blvd to Woodruff Ave	Remain posted at 40 MPH
Woodruff Ave to East City Limits	Remain posted at 40 MPH

Somerset Boulevard

Lakewood Blvd to Clark Ave	Remain posted at 40 MPH
Clark Ave to Bellflower Blvd	Remain posted at 40 MPH
Bellflower Blvd to Woodruff Ave	Remain posted at 40 MPH
Woodruff Ave to East City Limits	Remain posted at 35 MPH

### Woodruff Avenue

Foster Rd to Rosecrans Ave	Remain posted at 45 MPH
Rosecrans Ave to Somerset Blvd	Remain posted at 40 MPH
Somerset Blvd to Alondra Blvd	Remain posted at 40 MPH
Alondra Blvd to Flora Vista St	Remain posted at 40 MPH
Flora Vista St to Beach St	Remain posted at 40 MPH
Beach St to Artesia Blvd	Remain posted at 40 MPH - Post SB
Artesia Blvd to South City Limits	Remain posted at 40 MPH

### Support Explanations of " No Speed Limit Changes "

The following are support explanations for roadway segments that the recommended speed limit is 5 mph lower or more than the newly measured 85<sup>th</sup> percentile speed. Although 56 of the surveyed segments will retain the existing speed limits, two of these segments have speed signs posted in only one direction and are recommended for "no change" in the speed limit. For enforcement these segments should be posted.

### Bellflower Boulevard

#### **Alondra Boulevard to Flora Vista Street**

This section of Bellflower Boulevard is a four lane roadway. Adjacent land uses include commercial, business, mobile homes and motels. Field observations indicate that this is a short segment with many direct driveways, heavy on-street parking, pedestrian activity and these factors result in areas of limited sight distance. The speed survey results show an 85th percentile speed of 36.6 mph and a 10 mph pace range of 28 to 37 mph. Although the speed data may suggest a 35 mph speed limit, due to limited sight distance, it is recommended that the existing 30 mph be maintained.

### Flower Street

#### **Lakewood Boulevard to Clark Avenue**

This portion of Flower Street is a four lane roadway with a 35 mph speed limit. This area is mainly residential with heavy direct driveways to the roadway and heavy on-street parking resulting in areas of limited sight distance. The E & T study resulted with a critical speed of 41.7 mph and 10 mph pace range of 33 to 42 mph. With the heavy residential nature of the area and in an effort to maintain consistency with speeds of adjacent segments, it is recommended that the existing 35 mph speed limit remain rather than 40 mph that the critical speed may suggest.

#### **Bellflower Boulevard to Flora Vista Street/Woodruff Avenue**

The adjacent land uses for this section are business, commercial, library, post office, federal building and City Hall. Field observations are short distances between signals and cross-streets, many driveways, heavy pedestrians and many pedestrians are not using the designated crosswalks. The speed data shows an 85th percentile speed of 36.9 mph. Although the 85th percentile speed may suggest a higher speed, due to area being the Civic Center dense with buildings, traffic and pedestrians, it is recommended speed limit of 30 mph be maintained.

## **Foster Road**

### **Lakewood Boulevard to Clark Avenue**

The roadway features for section are two lanes per direction and moderate to sweeping "S" curves. Adjacent land uses include business, residential (fronting and non-fronting), and a cemetery. The E & T study resulted with an 85th percentile speed of 40.8 mph and a 10 mph pace range of 32 to 41 mph. Field notes state that the sight distance is limited at curves, and in the adjacent westerly segment in the City of Downey the speed limit is 35 mph. With the limited sight distance and in effort of keeping consistency with speeds of adjacent roadway segments, it is recommended that the existing 35 mph be maintained.

### **Clark Avenue to Bellflower Boulevard**

The portion of Foster Road is a four lane collector roadway. Currently, the posted speed is 35 mph. Field observations include heavy residential (fronting and non-fronting), areas of dense driveway access to the roadway, and heavy on-street parking results in areas of limited sight distance at driveways.. Although, the speed data may suggest a higher speed limit, due to limited sight distance, it is recommended that the existing 35 mph be maintained.

### **Bellflower Boulevard to Woodruff Avenue**

This section is a four lane roadway with a 35 mph speed limit. This area has an elementary school and church, areas of residential with heavy driveways and heavy on-street parking which result in areas of limited sight distance. Although, the speed study results show an 85th percentile speed of 41.6 mph and may suggest a higher speed. Due to the areas of limited sight distance, it is recommended that the existing 35 mph be increased to 40 mph.

## **Lakewood Boulevard**

### **Foster Road-Gardendale to Rosecrans Avenue**

The section of Lakewood Boulevard is a four lane roadway with a 40 mph speed limit posted for the southbound direction only. The recommended speed limit of 40 mph is 4.9 mph below 85th percentile speed and meets CVC standards. For enforcement, it is recommended that a 40 mph speed sign be posted for the northbound direction.

## **Palo Verde Avenue**

### **Artesia Boulevard to Allington Street**

This section of Palo Verde Avenue is a four lane roadway. The adjacent land use is solely residential non-fronting the roadway. Field observations include areas of narrow and no shoulders, bus stops, schools nearby, and the speed limit of the segment southerly, in City of Lakewood is 40 mph. The speed study resulted with an 85th of 46.7 mph and may suggest a higher speed. With the nature of the area and in an effort of maintaining consistency, it is recommended that the existing 40 mph speed limit remain.



## **Lakewood Boulevard**

### **Rosecrans Avenue to Somerset Boulevard**

This section of Lakewood Boulevard has two lanes of travel in each direction and is currently, un-posted. Adjacent land uses are commercial, business and industrial. The speed study revealed an 85th percentile speed of 41.9 mph and a 10 mph pace range of 34 to 43 mph. With that, it is recommended that a 40 mph speed limit be established for this area and posted in both directions.

### **Locations of Speed Limit Decreases**

At two locations, the Engineering and speed study indicates a need for a speed limit reduction. The segments and reasons for these recommendations are listed below:

#### **Downey Avenue**

North City Limit to Artesia Boulevard

Reduce speed from 40 to 35 MPH

Artesia Boulevard to South City Limit

Reduce speed from 40 to 35 MPH

### **Support Explanations of "Speed Limit Decreases"**

#### **Downey Avenue**

##### **North City Limit to Artesia Boulevard**

This section of Downey Avenue is a four lane roadway. Currently, it has a posted speed limit of 40 mph. Field observations include this roadway is a truck route, it has several cross traffic intersections and many driveways. With the speed data showing an 85th percentile speed of 39.5 mph and a 10 mph pace range of 31-40 mph, it is recommended that the existing 40 mph speed limit be reduced to 35 mph.

##### **Artesia Boulevard to South City Limit**

The portion of Downey Avenue is a four lane roadway. Field observations includes dense residential with many driveways fronting the roadway and heavy on-street parking creating areas of limited sight distance that may not be expected by the motorists. The speed for the section adjacent to the south in the City of Lakewood is 35 mph. The two year accident history shows that 17 of 38 accidents reported were speed related. The speed survey resulted with an 85th percentile speed of 40.7 mph and a 10 mph pace range of 32.41 mph. With the areas of limited sight distance and a high speed related accident ratio of 3.50, it is recommended that the existing 40 mph speed limit be reduced to 35 mph.

## SUMMARY OF RECOMMENDATIONS - 2015

STREET LOCATION	EXISTING SPEED LIMIT	RECOMMENDED SPEED LIMIT	85 <sup>TH</sup> PERCENTILE SPEED	AVERAGE SPEED	10 MPH PACE RANGE	PERCENT OF VEHICLES IN PACE	RECOMMENDATION - JUSTIFICATION
<b><u>ALLINGTON STREET</u></b>							
CARPINTERO AVE TO PALO VERDE AVE	35 <sup>#</sup> 25	35	39.0	34.3	31-40	82.3	NO CHANGE - 85 <sup>TH</sup> PERCENTILE
<b><u>ALONDRA BOULEVARD</u></b>							
HAYTER AVE TO LAKEWOOD BLVD	40	40	40.7	36.7	32-41	76.1	NO CHANGE - 85 <sup>TH</sup> PERCENTILE
LAKWOOD BLVD TO CLARK AVE	40	40	40.2	35.6	31-40	78.6	NO CHANGE - 85 <sup>TH</sup> PERCENTILE
CLARK AVE TO BELLFLOWER BLVD	40	40	40.7	36.3	32-41	74.7	NO CHANGE - 85 <sup>TH</sup> PERCENTILE
BELLFLOWER BLVD TO WOODRUFF AVE	40	40	40.0	35.9	30-39	68.9	NO CHANGE - 85 <sup>TH</sup> PERCENTILE
WOODRUFF AVE TO EAST CITY LIMITS	40	40	40.2	35.3	31-40	74.8	NO CHANGE - 85 <sup>TH</sup> PERCENTILE
<b><u>ARTESIA BOULEVARD</u></b>							
DOWNNEY AVE TO LAKEWOOD BLVD	40	40	42.2	37.6	33-42	76.6	NO CHANGE - 85 <sup>TH</sup> PERCENTILE
LAKWOOD BLVD TO CLARK AVE	40	40	42.0	38.4	34-43	82.6	NO CHANGE - 85 <sup>TH</sup> PERCENTILE
CLARK AVE TO BELLFLOWER BLVD	40	40	40.2	36.7	32-41	79.4	NO CHANGE - 85 <sup>TH</sup> PERCENTILE
BELLFLOWER BLVD TO WOODRUFF AVE	40	40	40.3	37.0	32-41	81.2	NO CHANGE - 85 <sup>TH</sup> PERCENTILE
WOODRUFF AVE TO EAST CITY LIMITS	40	40	41.5	37.2	33-42	75.3	NO CHANGE - 85 <sup>TH</sup> PERCENTILE

\*25 = 25 mph When Children Present, School Zone

STREET LOCATION	EXISTING SPEED LIMIT	RECOMMENDED SPEED LIMIT	85 <sup>TH</sup> PERCENTILE SPEED	AVERAGE SPEED	10 MPH PACE RANGE	PERCENT OF VEHICLES IN PACE	RECOMMENDATION - JUSTIFICATION
<b><u>BELLFLOWER BOULEVARD</u></b>							
FOSTER ROAD TO ROSECRANS AVE	40/*25	40	43.6	39.2	35-44	80.0	NO CHANGE - 85 <sup>TH</sup> PERCENTILE
ROSECRANS AVE TO SOMERSET BLVD	40	40	44.3	39.7	36-45	80.0	NO CHANGE - 85 <sup>TH</sup> PERCENTILE
SOMERSET BLVD TO JEFFERSON ST	40	40	44.4	39.9	37-46	79.6	NO CHANGE - 85 <sup>TH</sup> PERCENTILE
JEFFERSON ST TO ALONDRA BLVD	40	40	42.0	38.4	35-44	83.4	NO CHANGE - 85 <sup>TH</sup> PERCENTILE
ALONDRA BLVD TO FLORA VISTA ST	30	30	36.6	31.8	28-37	74.8	NO CHANGE - SIGHT DISTANCE / PED ACTIVITY
FLORA VISTA TO FLOWER ST	25	25	-	-	-	-	DECLARED BUSINESS DISTRICT 2008
FLOWER ST TO PARK ST	30	30	32.8	29.2	25-34	88.1	NO CHANGE - 85 <sup>TH</sup> PERCENTILE
PARK ST TO ARTESIA BLVD	30	30	33.4	29.7	26-35	80.4	NO CHANGE - 85 <sup>TH</sup> PERCENTILE
ARTESIA BLVD TO SOUTH CITY LIMITS	35	35	39.6	34.6	31-40	68.4	NO CHANGE - 85 <sup>TH</sup> PERCENTILE
<b><u>CLARK AVENUE</u></b>							
FOSTER RD TO ROSECRANS AVE	40 / *25	40	44.1	39.3	35-44	77.3	NO CHANGE - 85 <sup>TH</sup> PERCENTILE
ROSECRANS AVE TO SOMERSET BLVD	40	40	42.5	38.4	35-44	72.3	NO CHANGE - 85 <sup>TH</sup> PERCENTILE
SOMERSET BLVD TO ALONDRA BLVD	40	40	43.8	38.9	35-44	73.4	NO CHANGE - 85 <sup>TH</sup> PERCENTILE
ALONDRA BLVD TO OAK ST	35	35	39.8	34.9	30-39	77.1	NO CHANGE - 85 <sup>TH</sup> PERCENTILE
OAK ST TO FLOWER ST	NP /*25	35	39.8	35.3	32-41	83.9	POST - 85 <sup>TH</sup> PERCENTILE
FLOWER ST TO ARTESIA BLVD	35	35	39.6	34.4	32-41	77.7	NO CHANGE - 85 <sup>TH</sup> PERCENTILE
ARTESIA BLVD TO SOUTH CITY LIMITS	35	35	39.9	35.0	31-40	78.6	NO CHANGE - 85 <sup>TH</sup> PERCENTILE

\*25 = 25 mph When Children Present, School Zone NP = Not Posted

STREET LOCATION	EXISTING SPEED LIMIT	RECOMMENDED SPEED LIMIT	85 <sup>TH</sup> PERCENTILE SPEED	AVERAGE SPEED	10 MPH PACE RANGE	PERCENT OF VEHICLES IN PACE	RECOMMENDATION - JUSTIFICATION
<b><u>DOWNNEY AVENUE</u></b>							
NORTH CITY LIMITS TO ARTESIA BLVD	40	35	39.5	34.3	31-40	75.1	REDUCE – 85 <sup>TH</sup> PERCENTILE
ARTESIA BLVD TO SOUTH CITY LIMITS	40	35	40.7	36.9	32-41	80.1	REDUCE – HIGH ACCIDENT RATE, CONSISTENCY
<b><u>FLORA VISTA STREET</u></b>							
RENDALIA ST TO ALONDRA BLVD	30	30	31.3	28.3	24-33	88.6	NO CHANGE – 85 <sup>TH</sup> PERCENTILE
<b><u>FLOWER STREET</u></b>							
WEST CITY LIMITS TO LAKEWOOD BLVD	35 / *25	35	39.2	34.7	31-40	81.6	NO CHANGE – 85 <sup>TH</sup> PERCENTILE
LAKEWOOD BLVD TO CLARK AVE	35 / *25	35	41.7	36.5	33-42	71.5	NO CHANGE – SIGHT DISTANCE, CONSISTENCY
CLARK AVE TO BELLFLOWER BLVD	35	35	36.3	32.5	27-36	77.2	NO CHANGE – 85 <sup>TH</sup> PERCENTILE
BELLFLOWER BLVD TO FLORA VISTA - WOODRUFF	30	30	36.9	31.0	26-35	73.4	NO CHANGE – DENSE CIVIC CENTER AREA
<b><u>FOSTER ROAD</u></b>							
LAKEWOOD BLVD TO CLARK AVENUE	35 / *25	35	40.8	37.0	32-41	77.9	NO CHANGE – LIMITED SIGHT DISTANCE
CLARK AVE TO BELLFLOWER BLVD	35 / *25	35	41.9	37.2	33-42	72.7	NO CHANGE – SIGHT DISTANCE, CONSISTENCY
BELLFLOWER BLVD TO WOODRUFF AVE	35 / *25	35	41.6	36.3	33-42	70.1	NO CHANGE – SIGHT DISTANCE, CONSISTENCY
WOODRUFF AVE TO EAST CITY LIMITS	35	35	36.4	33.4	30-39	89.7	NO CHANGE – 85 <sup>TH</sup> PERCENTILE

\*25 = 25 mph When Children Present, School Zone  
EB = Eastbound, WB = Westbound

STREET LOCATION	EXISTING SPEED LIMIT	RECOMMENDED SPEED LIMIT	85 <sup>TH</sup> PERCENTILE SPEED	AVERAGE SPEED	10 MPH PACE RANGE	PERCENT OF VEHICLES IN PACE	RECOMMENDATION - JUSTIFICATION
<b><u>LAKWOOD BOULEVARD</u></b>							
FOSTER-GARDENDALE TO ROSECRANS AVE	40 SB	40	44.9	40.4	37-46	72.9	NO CHANGE -- 85 <sup>TH</sup> PERCENTILE - POST NB
ROSECRANS AVE TO SOMERSET BLVD	NP	40	41.9	37.6	34-43	71.9	POST -- 85 <sup>TH</sup> PERCENTILE
SOMERSET BLVD TO ALONDRA BLVD	40	40	42.0	38.1	35-44	80.4	NO CHANGE -- 85 <sup>TH</sup> PERCENTILE
ALONDRA BLVD TO FLOWER ST	40	40	43.4	38.4	35-44	76.2	NO CHANGE -- 85 <sup>TH</sup> PERCENTILE
FLOWER ST TO ARTESIA BLVD	40	40	41.7	36.5	32-41	64.3	NO CHANGE -- 85 <sup>TH</sup> PERCENTILE
ARTESIA BLVD TO SOUTH CITY LIMITS	40	40	43.8	38.5	35-44	71.2	NO CHANGE -- 85 <sup>TH</sup> PERCENTILE
<b><u>PACIFIC AVENUE</u></b>							
ALONDRA BLVD TO BELLFLOWER BLVD	30	30	34.0	29.3	25-34	74.8	NO CHANGE -- 85 <sup>TH</sup> PERCENTILE
<b><u>PALO VERDE AVENUE</u></b>							
ARTESIA BLVD TO ALLINGTON ST	40	40	46.7	41.3	39-48	75.7	NO CHANGE - NATURE OF AREA, CONSISTENCY
<b><u>ROSECRANS AVENUE</u></b>							
LAKWOOD BLVD TO CLARK AVE	40	40	44.2	39.5	36-45	75.5	NO CHANGE -- 85 <sup>TH</sup> PERCENTILE
CLARK AVE TO BELLFLOWER BLVD	40	40	44.9	39.9	37-46	74.8	NO CHANGE -- 85 <sup>TH</sup> PERCENTILE
BELLFLOWER BLVD TO WOODRUFF AVE	40	40	44.4	39.6	37-46	78.0	NO CHANGE -- 85 <sup>TH</sup> PERCENTILE
WOODRUFF AVE TO EAST CITY LIMITS	40	40	42.5	37.9	34-43	78.6	NO CHANGE -- 85 <sup>TH</sup> PERCENTILE

\*25 = 25 mph When Children Present, School Zone  
 NB = Northbound, SB = Southbound

STREET LOCATION	EXISTING SPEED LIMIT	RECOMMENDED SPEED LIMIT	85 <sup>TH</sup> PERCENTILE SPEED	AVERAGE SPEED	10 MPH PACE RANGE	PERCENT OF VEHICLES IN PACE	RECOMMENDATION - JUSTIFICATION
<b><u>SOMERSET BOULEVARD</u></b>							
LAKWOOD BLVD TO CLARK AVE	40/*25	40	42.6	38.2	35-44	80.3	NO CHANGE – 85 <sup>TH</sup> PERCENTILE
CLARK AVE TO BELLFLOWER BLVD	40	40	41.8	37.5	33-42	74.8	NO CHANGE – 85 <sup>TH</sup> PERCENTILE
BELLFLOWER BLVD TO WOODRUFF AVE	40 / *25	40	41.6	37.6	34-43	84.0	NO CHANGE – 85 <sup>TH</sup> PERCENTILE
WOODRUFF AVE TO EAST CITY LIMITS	35 / *25	35	36.5	31.6	29-38	83.3	NO CHANGE – 85 <sup>TH</sup> PERCENTILE
<b><u>WOODRUFF AVENUE</u></b>							
FOSTER RD TO ROSECRANS AVE	45	45	46.1	41.1	39-48	68.4	NO CHANGE – 85 <sup>TH</sup> PERCENTILE
ROSECRANS AVE TO SOMERSET BLVD	40 / *25	40	43.6	39.2	34-43	76.4	NO CHANGE – 85 <sup>TH</sup> PERCENTILE
SOMERSET BLVD TO ALONDRA BLVD	40 / *25	40	42.9	38.8	35-44	83.2	NO CHANGE – 85 <sup>TH</sup> PERCENTILE
ALONDRA BLVD TO FLORA VISTA	40 / *25	40	43.5	39.4	35-44	81.9	NO CHANGE – 85 <sup>TH</sup> PERCENTILE
FLORA VISTA TO BEACH ST	40	40	41.5	38.2	34-43	87.2	NO CHANGE – 85 <sup>TH</sup> PERCENTILE
BEACH ST TO ARTESIA BLVD	40 NB	40	41.4	36.5	33-42	76.0	NO CHANGE – 85 <sup>TH</sup> PERCENTILE- POST SB
ARTESIA BLVD TO SOUTH CITY LIMITS	40	40	44.1	39.5	36-45	77.5	NO CHANGE – 85 <sup>TH</sup> PERCENTILE

\*25 = 25 mph When Children Present, School Zone  
 NB = Northbound  
 SB = Southbound

Appendix A  
available for  
viewing in the  
City Clerk's Office.