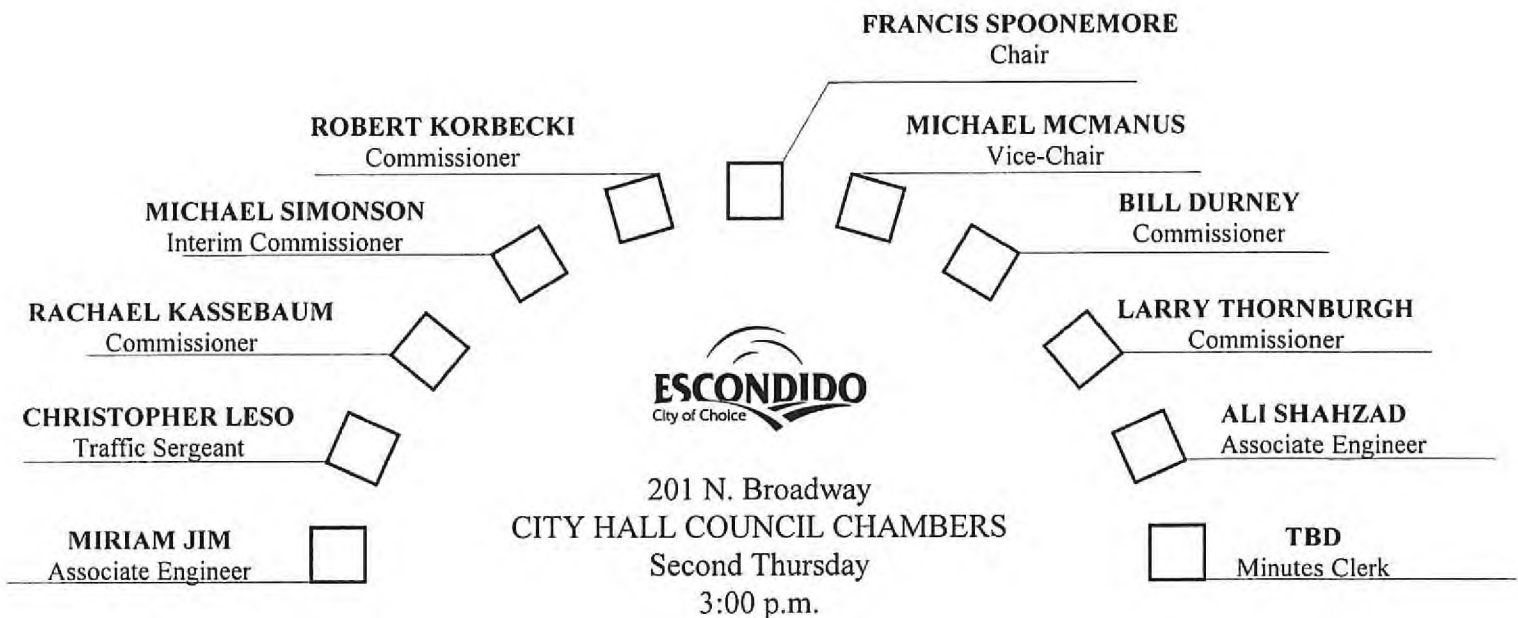


CITY OF ESCONDIDO

Transportation & Community Safety Commission



AGENDA

July 12th, 2018

Page | 1

- A. FLAG SALUTE
- B. ROLL CALL AND DETERMINATION OF QUORUM
- C. ORAL COMMUNICATIONS* (At this time, members of the public are encouraged to speak to the Commission concerning items not already on this agenda. A time limit of three [3] minutes per speaker and a total time allotment of fifteen [15] minutes will be observed.)

The Brown Act provides an opportunity for the members of the public to directly address the Commission on any item of interest to the public, before or during the Commission's consideration of the item. If you wish to speak regarding an agenda item, please fill out a speaker's slip and give it to the minute's clerk who will forward it to the Chairman.

If you wish to speak concerning an item not on the agenda, you may do so under "Oral Communications" which is listed on the agenda.

The City of Escondido recognizes its obligation to provide equal access to public meetings to those qualified individuals with disabilities. Please contact the Human Resources Department (839-4643) with any requests for reasonable accommodation, to include sign language interpreter, at least twenty-four (24) hours prior to the meeting.

D. APPROVAL OF MINUTES OF APRIL 12th, 2018 MEETING

E. CONSENT ITEMS – Staff will provide Overview for single vote.

1. FY18/19 Pavement Rehab and Maintenance Project - Striping cross-sections. (9 segments).

F. NEW BUSINESS

1. 2018/19 Traffic Management Projects List (TMPL)

Source: Staff

Recommendation: Approval

Previous action: None.

2. Before and After Travel Time report for signal timing synchronization – 2 corridors. West Valley Parkway and Bear Valley Parkway.

Source: Staff

Recommendation: None

Previous action: Note and File

3. Speed Surveys

Source: Staff

Recommendation: Approval

Previous action: None

G. OLD BUSINESS

1. An overview of various projects involving the City.

Source: Staff

Written or verbal reports may be presented on the following topics:

- a. Traffic Signals in Design: El Norte/Fig & East Valley Pkwy/Date – Design 100% complete, NEPA revalidation received from Caltrans. Construction Authorization of funds and Modified E-76 approved – Incorporating Federal specs. Felicita/Escondido Blvd LTP signal modification – Design in progress, awaiting ATP Fund Authorization.
- b. Traffic Signals – recently approved: Hotel Traffic Signal on La Terraza Blvd. Centre City/Mission. Signal modification for Centre City/Citracado Blvd. El Norte/Bike Path crossing near bridge over flood control channel (95% plancheck in progress). Under Construction: Escondido Blvd./Lincoln Ave., Broadway/Lincoln Ave. Modification: Fig/Lincoln Pkwy. Emmanuel Faith Traffic Signal on Encino/17th Ave.

H. SCHOOL AREA SAFETY

- a. Escondido High – Meeting for On-Site circulation in parking lot for Pick-up/Drop-off.
- b. Bond Projects coordination discussed at Quarterly School Zone meeting. Central School Bus bay on Broadway.
- c. APS installed for Escondido High signal.

I. COUNCIL ACTION* (A briefing on recent Council actions on Commission related items.)

- a. NONE

J. ORAL COMMUNICATIONS* (At this time, members of the public are encouraged to speak to the Commission.)

K. TRANSPORTATION COMMISSIONERS* (Commissioners may bring up questions or items for future discussion.)

L. ADJOURNMENT

In order for the Transportation Commission to take action or conclude discussion, an item must appear on the agenda which is posted 72 hours in advance of the meeting. Therefore, all items brought up under the categories marked with an asterisk () can have no action. Such items can be referred to staff or scheduled for a future agenda.

AVAILABILITY OF SUPPLEMENTAL MATERIALS AFTER AGENDA POSTING: Any supplemental writings or documents provided to the Commission regarding any item on this agenda will be made available for public inspection in the Engineering Office located at 201 N. Broadway during normal business hours, or in the Council Chambers while the meeting is in session.

(July 12th, 2018) TCSC Agenda

CITY OF ESCONDIDO

MINUTES OF THE REGULAR MEETING OF THE TRANSPORTATION AND COMMUNITY SAFETY COMMISSION

April 12, 2018

The regular meeting of the Escondido Transportation and Community Safety Commission was called to order at 3:04 p.m., Thursday, by Chair Durney, in the Mitchell Room, 201 North Broadway, Escondido, California.

Commissioners present: Commissioner Thornburgh, Commissioner McManus, Chair Durney, Commissioner Korbecki, and Commissioner Kassebaum.

Commissioners absent: Commissioner Simonson.

Staff present: Julie Procopio, Assistant Director of Engineering; Owen Tunnell, Assist. City Engineer, Ali Shahzad, Associate Engineer/Traffic Division; Miriam Jim, Associate Engineer, Virpi Kuukka-Ruotsalainen, Department Specialist;; Chris Leso, Traffic Sergeant; and Ty Paulson, Minutes Clerk.

ORAL COMMUNICATIONS: None.

MINUTES:

Moved by Commissioner McManus, seconded by Commissioner Spoonemore, to approve the minutes of the January 11, 2018, meeting. Motion carried unanimously. Commissioner Thornburgh was absent from the vote.

CONSENT ITEMS: None.

NEW BUSINESS:

1. 2018/19 Traffic Management Projects List (TMPL)

Miriam Jim, Associate Engineer, referenced the staff report and noted staff recommended the Commission review and approve the City of Escondido 2018 Traffic Management Projects List (TMPL) preliminary prioritization.

Chair Durney and staff discussed other funding opportunities for Traffic Management Projects.

Chair Durney and Commissioner Spoonemore discussed funding opportunities with the School District for projects in and round schools.

Commissioner Kassebaum suggested using the HAWK signal for Mission Middle School.

Discussion ensued regarding a clarification of the effectiveness of the Countdown Timer at crosswalks.

Chair Durney concurred with the priority list items and suggested considering a HAWK signal at Mission Middle School and possible cost sharing with the School District, which would allow for Traffic Priorities 2 and 3 to be done as well.

Commissioner McManus and Ms. Jim discussed other funding mechanisms for the projects near the schools.

Commissioner Korbecki and staff discussed doing projects in phases, noting his concern with visibility issues at the Glenview Elementary School crosswalk.

ACTION:

Moved by Chair Durney, seconded by Commissioner Spoonemore, to direct staff to provide a detailed cost analysis on the following prioritizations: 1) Glenview Elementary School Mid-block Crosswalk; 2) Countdown Pedestrian Signals in School Zones, and 3) Mission Middle School Mid-block Crosswalk with a cost sharing plan with the School District. Motion carried unanimously.

2. Discussion of the Duties and Authority of Transportation and Community Safety Commission

Ali Shahzad, Associate Engineer/Traffic Division, provided the report and requested input.

Discussion ensued the process for Commissioners adding items on the agenda.

3. Election of New Commission Chair and Vice-Chair

ACTION:

Moved by Chair Durney, seconded by Commissioner McManus, to nominate to Vice-chair Spoonemore to Chair. Motion carried unanimously.

ACTION:

Moved by Chair Spoonemore, seconded by Commissioner Durney, to nominate to Commissioner McManus to Vice-chair. Motion carried unanimously.

Elections were to take effect at the next meeting.

OLD BUSINESS:

1. An overview of various projects involving the City
 - a. Traffic Signals in Design. El Norte/Fig & East Valley Pkwy/Date – Design 100% complete, NEPA revalidation received from Caltrans. Construction Authorization of funds and Modified E-76 approved – Incorporating Federal specs. Felicita/Escondido Blvd LTP signal modification – Design in progress, awaiting ATP Fund Authorization.
 - b. Traffic Signals – recently approved: Hotel Traffic Signal on La Terraza Blvd. (2nd check). Centre City/Mission. Signal modification for Centre City/Citracado BLVD. El Norte/Bike Path crossing near bridge over flood control channel (95% plancheck in progress). Under Construction Escondido Blvd./Lincoln Ave., Broadway/Lincoln Ave. Modification: Fig/Lincoln Pkwy. Pending Construction: Emmanuel Faith Traffic Signal on Encino/17th Avenue.

Report received.

SCHOOL AREA SAFETY:

- a. Escondido High – On-Site circulation in parking lot for Pick-up/Drop-off.
- b. Bond Projects coordination discussion at Quarterly School Zone meeting.
- c. APS ordered for Escondido High signal
- d. Countdown Ped Heads installed at the intersection where countdown pedestrian signals were approved per TMPL. A total of 46 new countdown pedestrian signal heads will be installed at existing pedestrian signals at six (6) intersections. A 7th location was added due to proximity of a school.
 - 1) Bear Valley Parkway/Las Palmas Avenue (Bear Valley Middle School)
 - 2) Bear Valley Parkway/Canyon Road (Bear Valley Middle School)
 - 3) Bear Valley Parkway/Mary Ln (San Pasqual High School)
 - 4) Bear Valley Parkway/San Pasqual Road San Pasqual High School)
 - 5) 9th Avenue/Valley Parkway (Del Dios Academy of Arts and Science)
 - 6) 9th Avenue/Auto Park Way (Del Dios Academy of Arts and Science)
 - 7) East Valley Pkwy/Midway Dr. (Escondido Charter High School)

Report received.

COUNCIL ACTION: None.

ORAL COMMUNICATIONS: None.

TRANSPORTATION COMMISSIONERS:

Commissioner Kassebaum and staff discussed grant opportunities and the future status for Grand Avenue.

Chair Durney noted an issue with the left turn signal light timing at Citracado Parkway at Valley Parkway. Mr. Shahzad noted that the timing had just been repaired.

Commissioner Thornburgh asked staff to look into the stacking issues at the Felicita Town Center when trying to enter Centre City Parkway. Mr. Shahzad noted that staff would look into this and report back.

Commissioner Thornburgh expressed his concern with the amount of accidents occurring at Escondido Boulevard and South Centre City Parkway. Ms. Procopio noted that the City was requesting matching funds through the Highway Safety Improvement Plan for the area in question.

Chair Durney and staff discussed the road classification of Centre City Parkway.

Commissioner Spoonemore thanked Chair Durney for his services as Chair.

ADJOURNMENT:

Chair Durney adjourned the meeting at 3:48 p.m. The next meeting of the Commission would be held July 12, 2018, at 3:00 p.m. in City Council Chambers, 201 North Broadway, Escondido.



Ali Shahzad, Associate Engineer

Ty Paulson, Minutes Clerk



CITY OF ESCONDIDO
TRANSPORTATION and
COMMUNITY SAFETY COMMISSION

Commission Report of: July 12th, 2018

Item No.: E1

Location: Various Roadway Segments

Initiated By: City Staff

Subject: FY18/19 Pavement Rehabilitation and Maintenance Project – Striping Cross-Sections

Background:

In order to implement the current City of Escondido General Plan goal of “Complete Streets” to accommodate all modes of traffic including pedestrians and bicyclists and also in compliance with City of Escondido Bicycle Master Plan, City staff plans to design new striping to incorporate bike lanes or buffered bike lanes, and crosswalks at signalized intersections for streets that are being resurfaced each year as part of the Pavement Rehabilitation Program.

Discussion & Purpose:

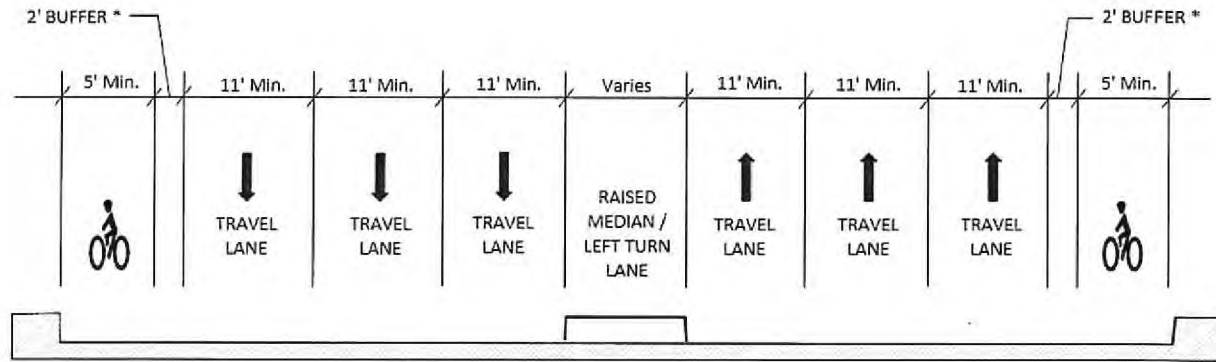
Various roadway segments that are scheduled to be resurfaced as part of the FY 2018/19 Pavement Rehabilitation Project are categorized as a Class II bike lane facility according to the City of Escondido Bicycle Master Plan. New striping design is planned for these roadways. These roadway segments are listed on Table 1 below.

Roadway	From	To
Bear Valley Pkwy	City Limit	Via Rancho Pkwy/Sunset Dr
Via Rancho Pkwy	Mantesano Rd	Beethoven Dr
Centre City Pkwy	5 th Ave	13 th Ave
Centre City Pkwy	Felicita Ave	City/Caltrans boundary
Del Lago Blvd	Via Rancho Pkwy	I-15 Southbound Ramp
El Norte Pkwy	Rose St	Lincoln Ave
El Norte Pkwy	Centre City Pkwy	Broadway
Felicita Rd	Brotherton Rd	City Limit south
Grand Ave	Ash St	Midway Dr

Table 1 – Roadway Segments

Considering the segments’ available widths and in compliance with standards given in CA MUTCD, index 301.2 of Highway Design Manual and its guidelines such as “*Reduction of Cross Section Elements Adjacent to Class II Bikeways: There are situations where it may be desirable to reduce the width of the lanes in order to add or widen bike lanes or shoulders. In determining the appropriateness of narrower traffic lanes, consideration should be given to factors such as motor vehicle speeds, truck volumes, alignment, bike lane width, sight distance, and the presence of on-street parking. When on-street parking is permitted adjacent to a bike lane, or on a shoulder where bicycling is not prohibited, reducing the width of the adjacent traffic lane may allow for wider bike lanes or shoulders, to provide greater clearance between bicyclists and driver-side doors when opened.*”, travel lane widths reduction may be considered for the purpose of traffic management to accommodate the necessary width for the class II bike lanes and add buffers to the existing

class II bike lanes. In addition to providing space for bike lanes and buffers, narrower lanes have been shown to calm traffic and reduce speeding. Based on the above standards and guidelines, City staff has designed the typical cross-sections for the mentioned roadway segments. These cross-sections will be used as a basis for the detailed striping plan design.

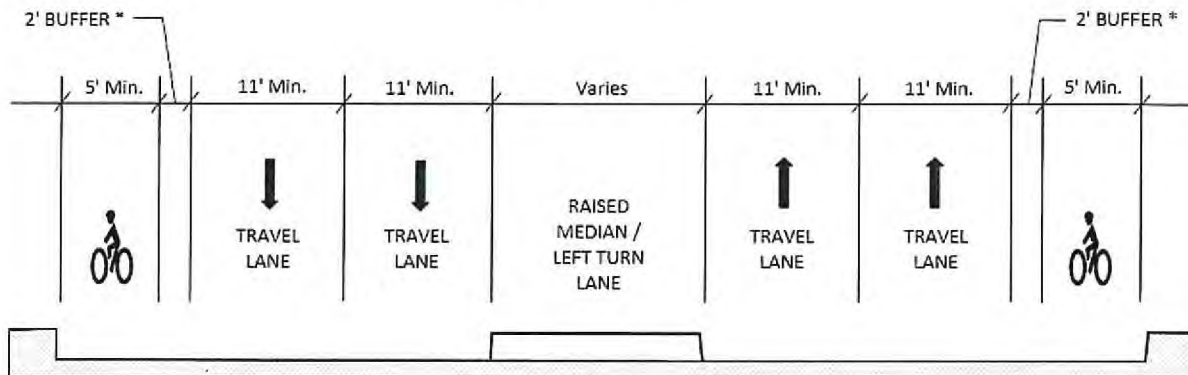


TYPICAL CROSS SECTION

NOT TO SCALE

* If roadway width allows

Via Rancho Pkwy

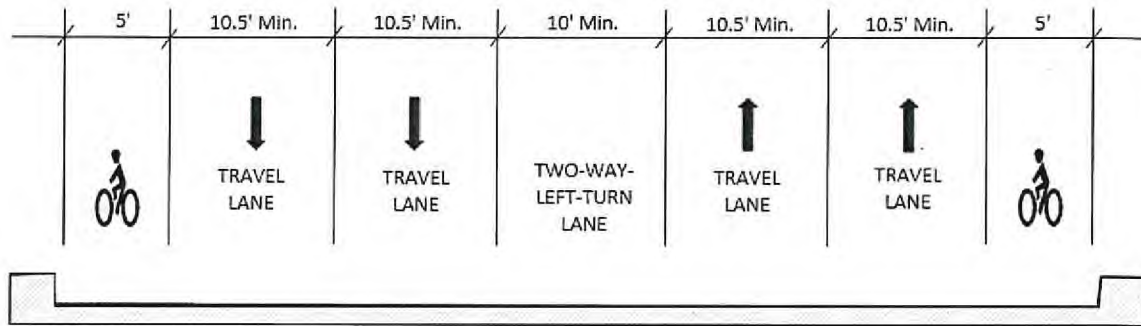


TYPICAL CROSS SECTION

NOT TO SCALE

* If roadway width allows

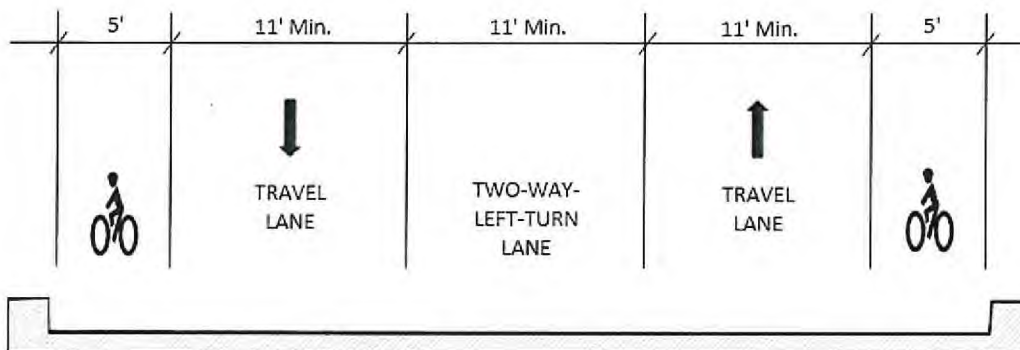
Bear Valley Pkwy/Centre City Pkwy/Del Lago Blvd/ El Norte Pkwy



TYPICAL CROSS SECTION

NOT TO SCALE

Grand Ave (Segment without on-street parking)



TYPICAL CROSS SECTION

NOT TO SCALE

Felicita Rd

Necessary Council Action: None

Respectfully submitted,

Prepared by:

Miriam Jim, PE, TE
Associate Engineer

Reviewed by:

Owen Tunnell, PE
Assistant City Engineer

Approved by:

Julie Procopio, PE
Director of Engineering Services/City Engineer



CITY OF ESCONDIDO
TRANSPORTATION and
COMMUNITY SAFETY COMMISSION

Commission Report of: July 12th, 2018

Item No.: F1

Location: Citywide

Initiated By: Staff

Request: Final Review and Budget Approval for Selected Projects of City of Escondido 2018 Traffic Management Projects List (TMPL)

Background:

At its January 9, 2014 meeting, the Transportation and Community Safety Commission (TCSC) adopted a policy to evaluate and prioritize traffic safety improvement projects using a Traffic Management Projects List (TMPL). A scoring criteria for prioritization of the projects was presented to and approved by TCSC on April 9, 2014. High priority projects are selected in April and staff reports back in July with detailed design and cost information for TCSC review and budget approval of the selected projects.

City of Escondido 2018 Traffic Management Projects List (TMPL) and the projects preliminary prioritization based on approved scoring criteria were presented to TCSC at the April 12, 2018 meeting. Three projects were selected for detailed design and possible funding in the 2018 funding cycle.

Discussion & Purpose:

The three top-ranked projects selected from 2018 Traffic Management Projects List (TMPL) with a brief description of the traffic concern together with the proposed solution are provided below for Transportation Commissions' review and approval.

2018 TMPL

1. Glenview Elementary School Mid-Block Crosswalk Improvements (estimated cost: \$25,000)

City staff has received complaints from residents and school staff regarding the mid-block crosswalk at Glenview Elementary School. Complaints included speeding on Mission Ave, and failure of vehicles to stop for students crossing the street. TCSC has selected this project to be included on this year's TMPL.

Glenview Elementary School, with student population of approximately 670, is located at 2201 E Mission Avenue. The existing mid-block crosswalk at Glenview Elementary School is located at the school frontage on Mission Avenue between Midway Drive and Citrus Avenue Street.

Mission Avenue between Midway Drive and Citrus Avenue is classified as a two-lane Local Collector. There is no center turn lane on the roadway. On-street parking is allowed and a short-term school pick-up and drop-off area along the frontage of the school is provided. The average daily traffic on this segment of Mission Avenue is 4,160 (data collected in May 2018) and the speed limit is 35 MPH.

Per City's Crosswalk Policy, "Std+RRFB" would be required, see Exhibit 1. The improvements would include 1) install high visibility crosswalk and advanced yield lines with Yield Here to Pedestrians signs

20 to 50 feet in advance of the crosswalk for both approaches; and 2) install rectangular rapid flashing beacons (RRFB) at the crosswalk. Figure 1 shows the proposed improvements at the Glenview Elementary School crosswalk.



Figure 1–Mid-block Crosswalk Improvements at Glenview Elementary School

2. Countdown Pedestrian Signals in School Zones (estimated cost: \$5,000)

COMPACT, who provides crossing guard services to the District, has provided input on the prioritization of these intersections based on the amount of students crossing at the location and its proximity to existing schools. The project to upgrade existing pedestrian signals to countdown pedestrian signals at the following four locations was selected by the TCSC to be included on this year's TMPL. The total number of new pedestrian countdown timers required for the upgrade is thirty-two (32) units.

- 1) Broadway and El Norte Parkway (Escondido High School)
- 2) Lincoln Avenue and Fig Street (Farr Elementary School)
- 3) Lincoln Avenue and Ash Street (Pioneer Elementary School)
- 4) Mission Avenue and Fig Street (Mission Middle School)

3. Mission Middle School Mid-Block Crosswalk Improvements (estimated cost: \$150,000-\$300,000)

Crosswalk at Mission Middle School was the third project selected to be evaluated for the TMPL this year. Mission Middle School, with student population of approximately 970, is located at 939 E Mission Avenue. According to the school district, a large number of students walk to school and utilize the existing crosswalk. Based on the estimate provided by COMPACT, 150 to 200 students utilize the crosswalk during the school peak hour.

Mission Avenue between Fig Street and Ash Street is classified as a four-lane Major Road per City's Circulation Element. Under existing conditions, Mission Avenue is a two-lane roadway with a center two-way-left-turn lane. On-street parking is prohibited. The average daily traffic on this segment of Mission Avenue is 13,320 (data collected in May 2018) and the speed limit is 35 MPH. Per City's Crosswalk Policy, the appropriate crosswalk treatments at this location would be Treatment D, see Exhibit 1.

Traffic signal warrant analysis per CA MUTCD was evaluated. The CA MUTCD signal warrant #5, School Crossing, states that the warrant is satisfied if both of the following criteria are met:

- 1) There are a minimum of 20 schoolchildren crossing during the highest crossing hour; and
- 2) The number of adequate gaps in the traffic stream during the period when the children are using the crossing is less than the number of minutes in the same period.

The first condition is met with over 150 students crossing at this location during school peak hour. For the second condition, duration of gaps in traffic stream were collected in the afternoon school peak hour. The adequate gap is considered to be the amount of time required for the schoolchildren to cross the street from curb to curb and it was calculated to be 12 seconds for this crosswalk (42 feet roadway at a walking speed of 3.5 feet/second). Within the one hour of traffic gap data collected, there are 54 gaps with duration equal to or more than 12 seconds, which was less than the minutes in the study period (60 in this case). Based on the evaluation, the signal warrant #5 was satisfied at this crossing location. Per City's Crosswalk Policy, a traffic signal is required.

Since the existing crossing is in close proximity to Cedar Street, the signal may also need to control the side-street traffic per CA MUTCD guidelines unless the crosswalk is relocated to be 100 feet away from major driveways or side streets.

The estimated cost for a new traffic signal would range from \$150,000 to \$300,000 depending on whether it will be at an intersection or at a non-intersection location. As discussed at the April's TCSC meeting, the available 2018 TMPL budget would not be sufficient to fully fund this project and the City would review potential funding sources including discussion with the EUSD. The design of the project would be coordinated with the EUSD and the modernization efforts at Mission Middle School that will affect drop-off and pick-up locations. The installation of the traffic signal at the crosswalk would depend on the available funding in the future.



Figure 2 –Mid-block Crosswalk Improvement at Mission Middle School

Recommendations:

Staff recommends TCSC approval of the proposed designs and funding of the first two projects selected by the commission at the April 2018 meeting, Glenview Elementary School Mid-block Crosswalk Improvements and Countdown Pedestrian Signals at Four Intersections in School Zones. 2018 TMPL, their original ranking, selected projects and their estimated costs are provided on Table 1.

Project Name	Measures of Prioritization								Score (max. 30)	Ranking By TCSC	Selected for funding	Cost Estimate
	Road Condition (max. 6)		Road Usage (max. 6)		Anticipated Effectiveness (max. 6)		Problem Severity x 2 (max. 12)					
	Geometric Design	Roadside Improvement	Bike and Pedestrian Volume	Average Daily Traffic (ADT)	Feasibility of the Solution	Effectiveness of the Solution	Frequency of Accidents	Speeding Problem				
Glenview Elementary School Mid-block Crosswalk Improvements	1	1	3	2	2	3	2	2	16	1	✓	\$25,000
Countdown Pedestrian Signals at Four Intersections in School Zones	1	1	2	3	3	2	2	2	16	2	✓	\$5,000
Mission Middle School Mid-block Crosswalk Improvements	2	1	3	3	1	3	2	2	17	3	×	\$150,000 to \$300,000
Felicitia Road Mid-block Crosswalk Improvements	2	2	1	3	1	2	2	2	15	4	×	-
Note: ✓ Project selected by TCSC for funding × Project not selected by TCSC for funding												

Table 1 – 2018 TMPL

Necessary Council Action: None.

Respectfully submitted,

Prepared by:



Miriam Jim, PE, TE
Associate Engineer

Reviewed by:



Owen Tunnell, PE
Assistant City Engineer

Approved by:



Julie Procopio, PE
Director of Engineering Services/City Engineer

Exhibit 1: City's Crosswalk Policy – Treatments (1 of 2)

3. Treatments

If a proposed crossing location meets the criteria set by both the Basic and Point warrants, the next step is to evaluate the most appropriate crossing treatment(s) to be installed with the marked crosswalk.

Using paragraphs 09 and 09a of section 3B.18 of the new 2014 CA-MUTCD as a guideline, and also considering City of San Diego proposed treatments for different cross sections, ADTs and speed limits, the following treatment thresholds are proposed to be added to the new City of Escondido Crosswalk Policy.

ADT Cross Section	<1500	1500 - 5000	5000-12000	> 12000
Two-lane roads (without TWLTL)	Std.	Std. + RRFB**	Std. + RRFB** + one from (A)	D
Two-lane roads (with TWLTL)	Std. one measure from (B)	For SL < 35 Std. + RRFB** For SL ≥ 35 Std. + RRFB** + one measure from (B)	Std. + RRFB** + one measure from (B)	D
Four Lanes or more	N/A	Std. + RRFB** + one measure from (C)	For SL < 35 Std. + RRFB** + one measure from (C) For SL ≥ 35 Measure D	Signal or HAWK

* SL: Speed Limit of the roadway

** RRFB (Rectangular Rapid Flashing Beacons), or other approved flashing beacon.

Std.: Advanced yield lines with associated Yield Here to Pedestrians (R1-5, R1-5a) signs should be placed 20 to 50 feet in advance of the crosswalk, adequate visibility should be provided by parking prohibitions, pedestrian crossing (W11-2) warning signs with diagonal downward pointing arrow (W16-7p) plaques should be installed at the crosswalk, and a high-visibility crosswalk marking pattern should be used. All Signing and Striping shall comply with CA-MUTCD standards.

MEASURES:

(A)

1. Raised Crosswalk or other traffic calming treatment in accordance with C.O.E. TMPL Guidelines
2. Speed Radar Feedback Signs for both approaches

(B)

1. Raised Crosswalk
2. Speed Radar Feedback Signs for both approaches
3. Pedestrian refuge islands

(C)

1. Road Diet
2. Raised Crosswalk
3. Speed Radar Feedback Signs for both approaches
4. Pedestrian refuge islands
5. Road Diet

Exhibit 1: City's Crosswalk Policy – Treatments (2 of 2)

- (D)**
1. A Traffic Signal is required if the CA MUTCD warrants are met and it is recommended by a traffic engineering study. Otherwise at least one of the following is required.
 2. HAWK Hybrid Beacon if the CA MUTCD warrants are met.
 3. Horizontal deflection traffic Calming treatment (**) with RRFBs if the City of Escondido's Traffic Calming Guidelines are met to include:
 - a. Pedestrian refuge islands & Bulbouts
 - b. Road Diet
 - c. Roundabouts

(**) Horizontal deflection treatments include, but are not limited to: roundabouts, pedestrian refuge islands, and pedestrian bulb-outs.



CITY OF ESCONDIDO
TRANSPORTATION and
COMMUNITY SAFETY COMMISSION

Commission Report of: July 12th, 2018

Item No.: F2

**Location: Bear Valley Parkway between Sunset Drive and Sunset Drive/Ranchito Drive
West Valley Parkway between Auto Park Way and Citracado Parkway**

Initiated By: City Staff

Subject: 2017 Traffic Signal Timing Project – Before and After Travel Time Report

Background:

A consulting firm was hired by the city in 2017 to evaluate new signal timing coordination for the existing traffic signal systems along two major corridors in the City, Bear Valley Pkwy between Sunset Drive and Sunset Drive/Ranchito Drive and Valley Parkway between Auto Park Way and Citracado Parkway.

Bear Valley Parkway (BVP) has several schools along the corridor and is a major commute corridor to and from the I-15 and Valley Center. The traffic signals along this segment were coordinated in small groups for many years but were not coordinated comprehensively for the entire corridor. This project provided corridor-wide signal timing coordination and seven (7) intersections were included in the Bear Valley Parkway corridor as listed below.

1. Via Rancho Pkwy/Sunset Dr
2. Via Rancho Pkwy/Beethoven Dr
3. Bear Valley Pkwy/San Pasqual Rd
4. Bear Valley Pkwy/Mary Ln
5. Bear Valley Pkwy/Canyon Rd
6. Bear Valley Pkwy/Las Palmas Ave
7. Bear Valley Pkwy/Sunset Dr/Ranchito Dr

West Valley Pkwy corridor between Auto Park Way and Citracado Pkwy is another major commute corridor. The traffic signals along this segment were coordinated again in groups but not coordinated comprehensively for the entire corridor. This project provided corridor-wide signal timing coordination and seven (7) intersections were included in the W Valley Parkway corridor as listed below.

1. W Valley Pkwy/Auto Park Way
2. W Valley Pkwy/9th Ave
3. W Valley Pkwy/Home Depot
4. W Valley Pkwy/11th Ave
5. W Valley Pkwy/Avenida Del Diablo
6. W Valley Pkwy/Citracado Pkwy
7. Auto Park Way/9th Ave

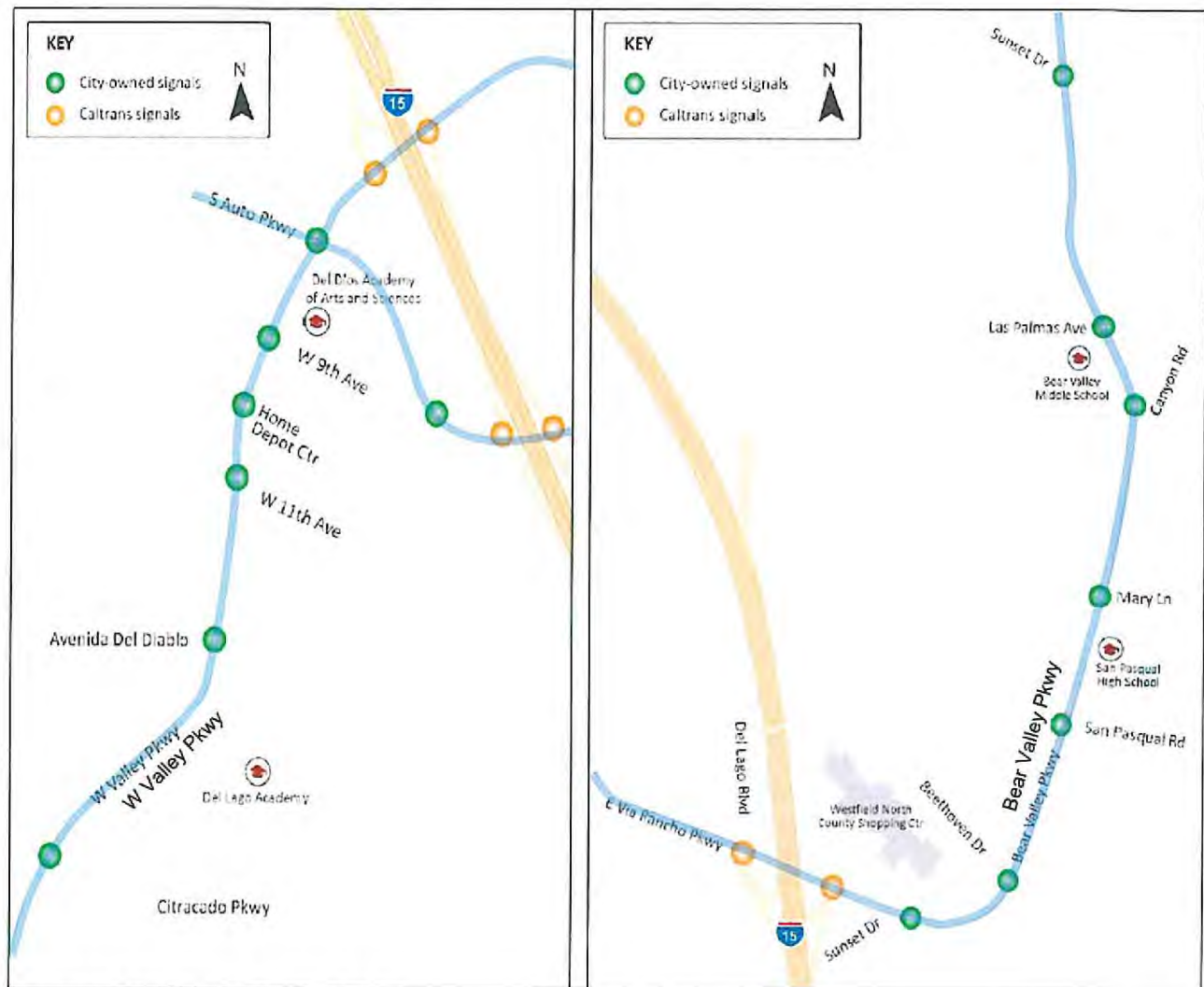


Figure 1 - Project Study Corridors

Field observation and verification on intersection geometric and signal operations were conducted for each study intersection. This effort included assessment of intersection configuration, peak hour traffic conditions, existing signal timing and phasing, intersection spacing, lane configurations, and pedestrian activities. Turning movement counts were collected at each study intersection for the following time periods: AM Peak (7am-9am), Midday (2pm-4pm) and PM Peak (4pm-6pm). 24-hour traffic counts were also collected at two locations along each study corridor.

SYNCHRO 8.0 software was used for the development of signal timing plans. A SYNCHRO model was prepared for all the study intersections and was used as a tool to optimize signal timing for the study peak periods. The optimized timing plans were implemented and fine-tuned in the field and minor timing adjustments were incorporated.

Discussion & Purpose:

The goals of the signal timing project are 1) to provide traffic progression along the main corridors during the peak periods; 2) to accommodate peak school traffic along Bear Valley Parkway; and 3) to update the signal timing to meet the latest CA MUTCD requirements.

Base signal timing values that were updated to meet the latest CA MUTCD requirements included: 1) yellow times based on roadway speed limits; and 2) pedestrian crossing times based on the 3.5 feet/second walking speed (previous standard was 4 feet/second). New cycle lengths were then recommended based on the evaluation of the existing traffic conditions and the above timing updates. Before and after cycle lengths were shown on Table 1.

Bear Valley Pkwy Corridor						
Intersection	AM		MD		PM	
	Before	After	Before	After	Before	After
Bear Valley Pkwy/Sunset Dr/Rancito Dr	Free	120	Free	105	Free	120
Bear Valley Pkwy/Las Palmas Ave	110	120	Free	105	90	120
Bear Valley Pkwy/Canyon Rd	110	120	Free	105	90	120
Bear Valley Pkwy/Mary Ln	110	120	Free	105	90	120
Bear Valley Pkwy/San Pasqual Rd	110	120	Free	105	90	120
Via Rancho Pkwy/Beethoven Dr	110	120	Free	105	90	120
Via Rancho Pkwy/Sunset Dr	110	120	Free	105	90	120
W Valley Pkwy Corridor						
Intersection	AM		MD		PM	
	Before	After	Before	After	Before	After
W Valley Pkwy/Auto Park Way	105	120	100	125	110	125
W Valley Pkwy/Ninth Ave	105	120	100	125	110	125
W Valley Pkwy/Home Depot	105	120	100	125	110	125
W Valley Pkwy/Eleventh Ave	105	120	100	Free	110	125
W Valley Pkwy/Avenida Del Diablo	Free	120	Free	Free	Free	125
W Valley Pkwy/Citracado Pkwy	Free	Free	Free	Free	Free	Free
Auto Park Way/Ninth Ave	85	120	75	115	75	120

Table 1 - Before and After Cycle Lengths

Leading Pedestrian Interval was implemented at the intersections of Bear Valley Pkwy/Mary Ln and Bear Valley Pkwy/Las Palmas to reduce conflicts between pedestrians and turning vehicles. These two intersections are adjacent to schools and have heavy pedestrian traffic during school peak periods. With the permissive phase operation on the side streets (left-turn traffic yield to opposing traffic and conflicting pedestrians in the crosswalk), the turning vehicles observed often failed to yield to the pedestrians who started crossing the street during the green interval. The Leading Pedestrian Interval gives pedestrians a five (5) seconds head start entering the intersection before vehicles are given a green indication. With this head start, pedestrians can better establish their presence in the crosswalk before vehicles approach the intersection to make a left turn.

Before and after average travel time studies were conducted for the two study corridors during the three peak periods. The results are summarized in Tables 2 and 3.

Bear Valley Parkway Corridor									
Segment: Between Via Rancho Pkwy/Sunset Dr and Bear Valley Pkwy/Sunset Dr/Ranchito Dr									
No. of Intersections: 7 intersections									
Distance: 2 miles									
Northbound									
	AM			MD			PM		
	Before	After	% Difference	Before	After	% Difference	Before	After	% Difference
Average Travel Time (sec)	411	315	-23%	362	274	-24%	389	263	-32%
Average Stops (#)	4.2	2.6	-38%	3.1	1.8	-41%	4.0	1.4	-64%
Average Speed (mph)	22.5	28.4	26%	27.4	32.6	19%	23.1	33.8	46%
Average Total Delay (sec)	226	130	-42%	177	90	-49%	204	78	-62%
Southbound									
	AM			MD			PM		
	Before	After	% Difference	Before	After	% Difference	Before	After	% Difference
Average Travel Time (sec)	437	367	-16%	337	274	-19%	344	290	-16%
Average Stops (#)	4.8	3.8	-21%	2.8	2.4	-12%	3.2	3.3	3%
Average Speed (mph)	20.5	24.1	18%	26.9	32.6	21%	25.9	30	16%
Average Total Delay (sec)	254	185	-27%	154	92	-40%	162	107	-34%

Table 2 – Bear Valley Parkway Corridor Before and After Travel Time Run Results

W Valley Parkway Corridor										
Segment: Between W Valley Pkwy/Auto Park Way and W Valley Pkwy/Citracado Pkwy										
No. of Intersections: 6 intersections										
Distance: 1.3 miles										
Northbound										
	AM			MD			PM			
	Before	After	% Difference	Before	After	% Difference	Before	After	% Difference	
Average Travel Time (sec)	312	205	-34%	254	210	-17%	286	246	-14%	
Average Stops	3.3	1.5	-54%	2.8	1.9	-32%	3.2	2.0	-37%	
Average Speed (mph)	17.8	27.5	54%	22.5	27.5	22%	19.6	22.8	16%	
Average Total Delay (sec)	195	88	-55%	137	93	-32%	169	129	-24%	
Southbound										
	AM			MD			PM			
	Before	After	% Difference	Before	After	% Difference	Before	After	% Difference	
Average Travel Time (sec)	383	297	-22%	219	169	-23%	230	196	-15%	
Average Stops	3.8	2.8	-27%	2.0	0.6	-69%	2.5	1.3	-47%	
Average Speed (mph)	15.8	18.9	20%	25.6	34.1	33%	25.8	28.9	12%	
Average Total Delay (sec)	265	180	-32%	102	52	49%	113	78	-31%	

Table 3 – W Valley Parkway Corridor Before and After Travel Time Run Results

Conclusions:

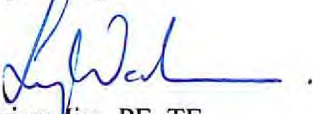
The before and after travel time run results indicated an average travel time saving of 16% to 32% in the peak periods along Bear Valley Parkway corridor and an average travel time saving of 14% to 34% along W Valley Parkway corridor with the new implemented signal coordination plans. It is estimated that the new timing plans resulted in a total travel time saving of approximately 103 and 72 vehicle-hours per day during the peak periods along the Bear Valley Parkway and W Valley Parkway corridor, respectively.

The project has successfully accomplished the following:

- Reduced motorists travel time and delay during the peaks by providing traffic progression along the Bear Valley Parkway and W Valley Parkway corridors
- Updated signal timings to meet the latest CA MUTCD requirements
- Enhanced pedestrian safety at key locations adjacent to schools by introducing Leading Pedestrian Interval

Necessary Council Action: Note and File report.

Prepared by:



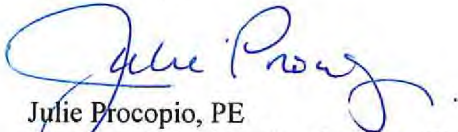
Miriam Jim, PE, TE
Associate Engineer

Reviewed by:



Owen Tunnell, PE
Assistant City Engineer

Approved by:



Julie Procopio, PE
Director of Engineering Services/City Engineer



CITY OF ESCONDIDO
TRANSPORTATION and
COMMUNITY SAFETY COMMISSION

Commission Report of: July 12th, 2018

Item No.: F3

Location: Various locations Citywide

Initiated By: City Staff

Request: Recommend approval to the City Council of updated Engineering & Traffic Surveys (E&TS) for posted speeds on various street segments Citywide.

Background & Survey Methodology:

To satisfy the requirements of Section 40802(b) of the California Vehicle Code (CVC), Engineering and Traffic Surveys are required by the State of California to establish speed limits and to enforce those limits using radar or other speed measuring devices. These surveys must be updated periodically (every 5, 7 or 10 years, depending upon specific criteria) to ensure the speed limits reflect current conditions as dictated by the 2018 California Vehicle Code (CVC). The surveys must be conducted in accordance with applicable provisions of Section 627 "Engineering and Traffic Survey" of the California Vehicle Code (CVC), following procedures outlined in the 2014 California Manual on Uniform Traffic Control Devices (CA-MUTCD) Revision 3 dated March 9, 2018,

A brief description of the procedure is presented below:

1. Measurement of Actual Prevailing Speeds

The actual speed of 100 vehicles on each street segment was measured using a calibrated radar meter. Both directions of travel were surveyed. From this data, the prevailing or 85th percentile speed (speed at or below which 85 percent of the vehicles sampled were traveling), ten miles per hour pace speed (increment of ten miles per hour containing the greatest number of measurements) and percent of vehicles in the pace were determined.

2. Accident Records

From the accident reports, the number of accidents for each segment was used to calculate the accident rate, which is defined as the number of accidents per million vehicle miles (acc/mvm) of travel on that segment. The accident rate for each segment was then compared to the most recent statewide average for similar type roads. This information is shown on the survey summary sheets.

3. Traffic and Roadside Conditions

Each route was driven and notation made of its features, especially those not readily apparent to reasonable drivers, as well as those that might be combined with other factors to justify downward or upward speed zoning. These features are listed in the survey summary sheets for each segment.

4. Residential Density

A comprehensive review of the residential density was not done, but information regarding the adjacent land use to the roadway segments was noted and included in the survey summary sheets.

5. Pedestrian and Bicyclist Safety

The accident records were used to evaluate the pedestrian and bicyclist safety aspects of the roadway segments.

6. School Zones

Proximity to schools was taken into account to evaluate the speeds through the roadway segments.

The standard used followed procedures outlined in the California Manual on Uniform Traffic Control Devices (CA-MUTCD) Section 2B.13, Revision 3 dated March 9, 2018,

Standard:

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

Option:

1. The posted speed may be reduced by 5 mph from the nearest 5 mph increment of the 85th-percentile speed, in compliance with CVC Sections 627 and 22358.5. See Standard below for documentation requirements.

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

Discussion & Purpose:

Per California Vehicle Code Section 22354, in order for a posted speed limit to be legally enforceable by the Police Department radar detection, it must be all of the following:

- 1) Between 25 mph and 65 mph,
- 2) Supported by an engineering speed survey, and
- 3) Ratified by City Council by resolution or ordinance.

The guidelines for preparing an engineering speed survey are found within the California Manual on Uniform Traffic Control Devices (CA-MUTCD) 2014 edition Revision 3, a document published by the Federal Highway Administration and modified by CALTRANS for use in California. The 85th percentile speed (the speed at which 85% of drivers drive at or below) is often referred to as the critical speed; it is the primary speed that determines what drivers believe to be safe and reasonable. When determining speed limits, the California MUTCD gives guidance that states, *"The speed limit should be established at the nearest 5 mph increment of the 85th-percentile speed of free-flowing traffic."*

Additional guidance from the MUTCD California states, *"The establishment of a speed limit of more than 5 mph below the 85th percentile speed should be done with great care as studies have shown that establishing a speed limit 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 reasonable majority of drivers."*

Although conditions on the roadway such as width, curvature, surface conditions and any other readily apparent features do not provide a basis for downward speed zoning, the CA-MUTCD states that local authorities may consider residential density, as well as pedestrian and bicycle safety.

Recommendation:

As part of the City of Escondido's speed survey program, staff has performed speed surveys at 13 segment locations, with data being collected for each segment.

Based on the above guidelines, all of the surveyed segments were evaluated and speed limits recommended. The overview of the Speed Surveys is presented in Table 1; the last column shows the recommended speed limits on all study segments.

For speed surveys 3,4,5,6,7,8,11,12 and 13, the recommended speed limit is set based on the 85th-percentile speed of the new speed survey. For speed survey 12, the recommended speed limit is changing (decrease by 5mph) based on the 85th-percentile speed of the new speed survey. For speed survey 13, the recommended speed limit is changing (increase by 5mph) based on the 85th-percentile speed of the new speed survey.

For speed surveys 1,2,9 and 10 the recommended speed limit reflects a reduction of 5mph from the 85th-percentile speed based on Option 2 in the MUTCD standard, as delineated above. In this case, then, the posted speed limit will not change.

Table 1 - Overview of Speed Surveys

Segment No.	Street Name	Segment		Previous Speed Survey	Posted Speed Limit (MPH)	Classification	85 th Percentile (MPH)	Recommended Speed Limit (MPH)	Speed Limit to be posted, per Traffic Engineer
		From	To			Design Speed			
1	Felicita Ave/Road ***	Hamilton Lane/ City Limits	Montview Drive	11-06-13	40	C 40	44	45	40 (25WCAP)
2	Felicita Ave/Road ***	Montview Drive	Centre City Pkwy	11-06-13	35	C 40	40	40	35
3	Felicita Ave/Road ***	Centre City Pkwy	Escondido Blvd	11-03-13	35	M 50	35	35	35
4	W. Washington Avenue	Rock Springs Road	Hale Avenue	06-19-12	40	C 40	40	40	40
5	W. Washington Avenue	Quince Street	Rock Springs Road	06-14-12	40	C 40	41	40	40
6	El Norte Parkway	Nordahl/Nutmeg	I-15 ramps	05-23-12	45	M 50	45	45	45
7	El Norte Parkway ***	I-15	Centre City Parkway	03-04-15	45	M 50	43	45	45
8	El Norte Parkway	Broadway	Ash Street	11-03-10	45	M 50	46	45	45
9	El Norte Parkway	Ash Street	Lincoln Avenue	12-18-13	45 (25WCAP)	M 50	51	50	45 (25WCAP)
10	Escondido Boulevard	Fifth Avenue	Thirteenth Avenue	11-07-13	35	C 40	38	40	35
11	Escondido Boulevard	Thirteenth Avenue	Felicita Avenue	11-12-13	35	C 40	37	35	35
12	Broadway	Leslie Lane	Rincon Avenue	04-06-12	45 (25WCAP)	M 50	42	40	40 ↓(25WCAP)

13	Broadway (El Norte to Leslie Lane ***	El Norte	Leslie Lane	02-19-09 extended 06-14-16	35 (25WCAP)	M 50	42	40	↑ 40 (25WCAP)
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* Indicates new established speed survey which requires City Council approval.

** Indicates round down the speed limit to the lower five miles per hour increment, per CVC 21400 (b), or higher than average collision rate.

*** **Renewal before Expiration** due to changes to the roadway, such as increase or reduction of travel lanes or addition of Bike Lanes / Bike Routes.

↓ Indicates speed going down.

↑ Indicates speed going up.

Necessary Council Action: Two (2) survey segments on North Broadway for changes to existing speed limits.

Respectfully submitted,

Prepared by:



Ali M. Shahzad, PE (Traffic)/ Virpi Kuukka-Ruotsalainen
 Associate Engineer/Traffic Division

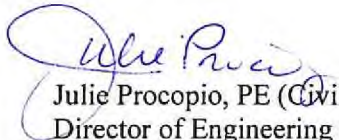


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 Assistant City Engineer

Approved by:



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 Director of Engineering Services/City Engineer