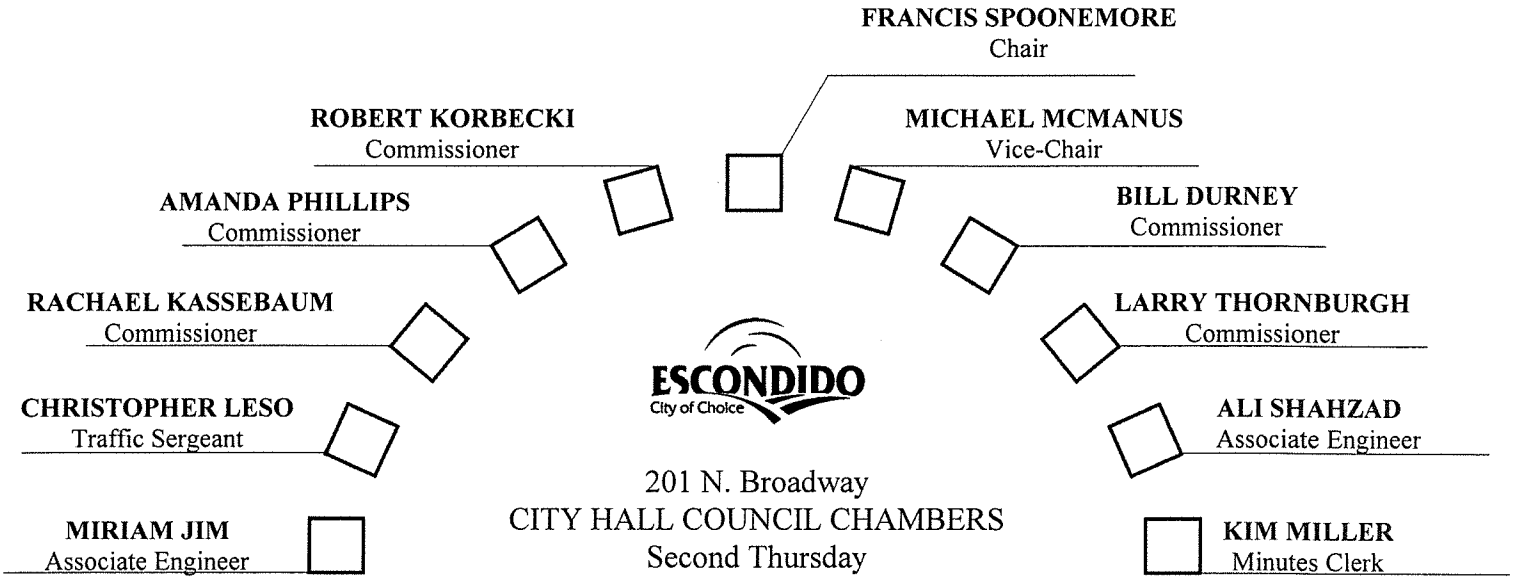
CITY OF ESCONDIDO

Transportation & Community Safety Commission



201 N. Broadway
CITY HALL COUNCIL CHAMBERS
Second Thursday
3:00 p.m.

AGENDA
October 10th, 2019

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 JULY, 11th, 2019 MEETING

E. CONSENT ITEMS – None.

F. NEW BUSINESS

1. Traffic Signal and Left Turn Phasing Priority List (TSPL)

   Source: Staff

   Recommendation: Approval

   Previous action: None

2. Speed Surveys – Various locations Citywide

   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: Felicita/Escondido Blvd LTP signal modification – Design complete, part of ATP Fund project.
b. Traffic Signals - Under Construction: Hotel Traffic Signal on La Terraza Blvd. El Norte/Bike Path crossing near bridge over flood control channel with Bridge widening. Gateway Project adjacent to Transit Center two (2) pedestrian crossing signals. Signal Mod. At California Trust Bank on Quince/Valley for LT.
c. Traffic Signals - Completed: El Norte/Fig & East Valley Pkwy/Date – Turned on early July, 2019. NOC to City Council 9.11.19.

H. SCHOOL AREA SAFETY

a. Escondido High School – Field review of Traffic Management Plan with Principal, Escondido Police Dept. and Amanda Phillips regarding routing of drop-off /pick-up as portion of plan was implemented for Fall 2019.

b. Del Dios Academy – Bond Improvements. Signing/Striping design reviewed.
c. Mission Middle School – Bond Improvements. On site pedestrian design reviewed.
d. San Pasqual High School – Discussed with Principal regarding pick-up and drop-off on Mary Lane. New no stopping during school hour's signage on Mary Lane and around school.
e. Central Elementary – Discussed with Principal, safety concerns at crosswalks on Broadway and Maple. Potential future TMPL project.

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.

CITY OF ESCONDIDO

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

July 11, 2019

The regular meeting of the Escondido Transportation and Community Safety Commission was called to order at 3:05 p.m., Thursday, July 11, 2019 by Chair Spoonemore, in the City Council Chambers, 201 North Broadway, Escondido, California.

Commissioners Present: Chair Spoonemore, Vice Chair Mc Manus, Commissioner Kassebaum, Commissioner Phillips, Commissioner Durney.

Commissioners absent: Commissioner Korbecki & Commissioner Thornburg.

Staff present: Julie Procopio, Director of Engineering Services; Owen Tunnell, Assist. City Engineer, Ali Shahzad, Associate Engineer/Traffic Division; Miriam Jim, Associate Engineer, Virpi Kuukka-Ruotsalainen, Engineer I; and Kimberlianne Miller, Minutes Clerk.

Staff absent: Christopher Leso, Traffic Sargent.

ORAL COMMUNICATIONS: None

CONSENT ITEMS: None

ACTION: None

MINUTES:

Moved by Commissioner Kassebaum, Seconded by Commissioner Durney, to approve the minutes of the April 11, 2019, meeting. Motion carried unanimously.

NEW BUSINESS:

1. 2019 Traffic Management Project List (TMPL) List of Projects

Miriam Jim, Associate Engineer, referenced the staff report and indicated that a new project, new street light on Eucalyptus Ave, was added for ranking and consideration. Staff recommended the Commission approve the top three ranked projects for implementation.

Commissioner Durney indicated that lighting should have been placed by the developer and would have been placed across the street if they are to be staggered. Adding the light could be a concern to the homeowner at the end of the street.

ORAL COMMUNICATIONS:

Timothy Kohl, Escondido, resident of 2203 Eucalyptus Avenue, spoke in support of the new street light at the end of Eucalyptus Avenue. He indicated that the light would be for public safety; the gate at the end of the street has been hit by cars. He mentioned that the street light was not installed by the developer and he was told a few years ago that it was because the homeowner at the end of the street requested the streetlight be eliminated. He stated that his neighbor did not request the light to be eliminated.

ACTION: Motion to approve the staff member recommendation by Commissioner Spoonemore, Seconded by Commissioner McManus, Motion carried unanimously.

2. Speed Survey, Various Locations Citywide

Ali Shahzad, Associate Engineer, referenced the staff report and noted staff recommended the following:

Commissioner Kassebaum asked staff about the speed limit in the County portion of E. 17th Avenue. Mr. Shahzad noted that the county limit was within 5 mph speed of the City's 35 MPH posted speed limit and that he will ask the County's Traffic Engineer to post the speed limit on their segment of 17th Avenue in their Jurisdiction.

Commissioner Durney - asked staff if it was okay to approve 11th Avenue, if one (1) segment is 35 and adjacent segment is 40 mph. Mr. Shahzad noted that a 5 MPH speed differential is not a speed trap and in compliance the California Vehicle Code.

ACTION: Motion to approve the staff recommendation by Chair Spoonemore, Seconded by Commissioner Durney, Motion carried unanimously.

OLD BUSINESS:

a. Highway Safety Improvement Project (HSIP) signals activated.

b. School area safety: Escondido High School will implement drop off and pick up improvements for the new school year.

c. Del Dios Academy – Escondido Union School District has submitted concept striping plan on 9th Avenue.

COUNCIL ACTION: None.

TRANSPORTATION COMMISSIONERS:

Commissioner Durney recommended that the new street light request at Eucalyptus Avenue and Gamble Lane be included on the Traffic Management Project List (TMPL) for next year, 2020.

ADJOURNMENT:

Chair Spoonemore adjourned the meeting at 4:08 p.m. The next meeting of the Commission will be held October 10, 2019 at 3:00 p.m. in City Council Chambers, 201 North Broadway, Escondido.

Ali Shahzad, Associate Engineer

Kim Miller, Minutes Clerk

ESCONDIDO
City of Choice

CITY OF ESCONDIDO

TRANSPORTATION and
COMMUNITY SAFETY COMMISSION

Commission Report of: October 10th, 2019 **Item No.: F 1**

Location: Various locations Citywide

Initiated By: City Staff

Subject: Review and Discuss the 2019/2020 Traffic Signal Priority List (TSPL) and the Left Turn Priority List (LTPL) – Follow-Up from April 2019 meeting.

Overview: That the Transportation Commission discuss, analyze and make final recommendations for the formation of the Traffic Signal Priority List (TSPL), and the Left Turn Priority List (LTPL). At the April 11th, 2019 TCSC meeting the list of signals and locations to be evaluated was reviewed with the commission.

Staff has prepared a recommendation for the top three (3) locations for a new signal and top ten (10) locations for the addition of protected left turns in this report.

The Commission's recommendations will be forwarded to the City Council for their consideration and approval.

BACKGROUND – TRAFFIC SIGNAL PRIORITY LIST

Every five or so years the Traffic Engineering staff compiles an updated priority list for potential traffic signal projects. This list is reviewed and evaluated by the Transportation Commission. The recommendations of the commission are forwarded to the City Council for their consideration and adoption. The priority list is then used to determine which projects will be funded from the current and future capital budgets.

The use of the priority system has proven successful in Escondido for over 30 years. This method of analysis has gathered widespread use and support, because it answers two very basic questions:

(1) Do the traffic conditions at this intersection meet the basic criteria that reflect the benefits and costs of traffic signal control; and if so,

(2) How does each location compare with other candidate locations throughout the City?

The traffic signal priority analysis uses Traffic Engineering Policy No. 11, to evaluate locations of proposed new signals.

This procedure takes into account the relative delays on the intersecting streets, the history of accidents which could be preventable by traffic signals, the occurrence of gaps in the major and minor traffic streams, the volume of pedestrian crossings, and other similar factors. This evaluation method provides a rational and unbiased way of comparing one intersection location with another.

The analysis process results in a list of potential traffic signal projects. Each location on the list can be compared to others for relative need and priority. In this way, the City's limited funds can be allocated to areas of greatest need.

TABLE 9 – CRITERIA RANKING SUMMARY

Criteria	Description	Maximum Priority Points	Relative Weight	Criteria Summary
1	Total Vehicular Volume	15	16%	Considers total entering volume from the major street and minor street for a four-hour period (2:00 to 6:00 PM).
2	Interruption of Continuous Traffic	10	11%	Considers total entering volume on the side street in a four-hour period (2:00 to 6:00 PM).
3	Pedestrian Volume	10	11%	Considers number of pedestrians crossing major street in a four-hour period (2:00 to 6:00 PM).
4	School Area Traffic Signal	10	11%	Considers the number of school aged children crossing the major street relative to the volume on the major street.
5	Progressive Movement or Signal Systems	5	5%	Considers whether the installation of a signal is critical relative to the overall signal system and progression on a coordinated system.
6	Accident History	15	16%	Considers accidents correctable by a traffic signal over a 12-month period.
7	Four Hour Volumes	6	7%	Based on CA MUTCD Warrant #2.
8	Peak Hour Delay	N/A	N/A	This criterion was not considered in this study since Criterion 9 is very similar.
9	Peak Hour Volume	6	7%	Based on CA MUTCD Warrant #3.
10	Special Conditions	15	16%	To be determined on a case by case basis. Proximity to schools and ADA compliance were considered in this study.
TOTAL		**92**	**100%**	

The priority evaluation and citywide ranking includes 6 locations. The list is a result of a prescreening process, using the 2014 TSPL as a base point. Preliminary safety and volume data were reviewed for unsignalized locations and for the candidate locations remaining on the 2014 list. All remaining locations from the 2014 TSPL were included and three new intersections were added for evaluation. The higher-ranking intersections were analyzed further to produce the proposed 2019 list.

Locations evaluated for a new Traffic Signal

1 - Rock Springs Road / Lincoln Avenue
2 - Harding Street / Lincoln Avenue
3 - Lomas Serenas Drive / Via Rancho Parkway
4 - South Broadway / 5th Avenue
5 - Sierra Linda Drive / San Pasqual Road
6 - Rose Street / Oak Hill Drive

The following Table 5 from the consultant's report provide the ranking and prioritization for Traffic Signal Priority List (TSPL) and Table 7 for the Left Turn Priority List (LTPL).

TABLE 5 – SUMMARY OF TRAFFIC SIGNAL WARRANT ANALYSIS

Study Intersection		Was the Signal Warrant Met?									
		Warrant 1	Warrant 2	Warrant 3	Warrant 4	Warrant 5	Warrant 6	Warrant 7		Warrant 8	Traffic Signal Recommended?
		8-Hour Volume	4-Hour Volume	Peak Hour	Pedestrian Volume	School Crossing	Coord. Signal	# [1]	Crash Exp.	Roadway Network	
1	Rock Springs Road / Lincoln Avenue	YES	YES	YES	NO	NO	NO	5	YES	YES	YES
2	Harding Street / Lincoln Avenue	YES	YES	YES	NO	NO	NO	2	NO	YES	YES
3	Lomas Serenas Drive / Via Rancho Parkway	YES	YES	YES	NO	NO	NO	0	NO	NO	YES
4	South Broadway / 5th Avenue	NO	NO	NO	NO	NO	NO	0	NO	NO	NO
5	Sierra Linda Drive / San Pasqual Road	NO	NO	NO	NO	NO	NO	3	NO	NO	NO
6	Rose Street / Oak Hill Drive	NO	NO	NO	NO	NO	NO	2	NO	NO	NO

Note: Signal Warrants were evaluated using Synchro 10 Warrant software.
[1] Represents the highest number of crashes reported within a 12-month period between 1/1/2017 and 1/1/2019 based on the City's Collision Summary Report, refer to Appendix C. Warrant #7 is met when 5 or more crashes occur within a 12-month period involving personal injury or property damage and if vehicle and pedestrian volume thresholds are met per the CA MUTCD.

The below table 13 from the report summarizes the results of the traffic signal ranking analysis. As shown, the intersections are listed in order of highest to lowest total points based on Criterion 1 through 10. Because locations four (4) through six (6) did not met any warrants, they were not ranked.

TABLE 13 – TRAFFIC SIGNAL RANKING

Study Intersection	Criteria 1: Total Volume	Criteria 2: Interruption of Continuous Flow	Criteria 3: Pedestrian Volume	Criteria 4: School Area	Criteria 5: Signal System Warrant (Warrant 5)	Criteria 6: Accident History	Criteria 7: Four Hour Volume (Warrant 2)	Criteria 9: Peak Hour Volume (Warrant 3)	Criteria 10: Special Circumstances		Total Points (Max 92)
									School Proximity	ADA Compliant	
(Maximum Points per Criteria)	Points (15)	Points (10)	Points (10)	Points (10)	Points (5)	Points (15)	Points (6)	Points (6)	Points (5)	Points (10)	
1 - Rock Springs Road / Lincoln Avenue	15	5	0	0	0	1	6	2	0	10	**39**
2 - Harding Street / Lincoln Avenue	4	4	0	0	0	0	2	0	5	10	**25**
3 - Lomas Serenas Drive / Via Rancho Parkway	6	4	5	0	0	0	0	0	0	10	**25**

Note: Ranking of study intersections 2 & 3 was based on the number of accidents reported at each location since both locations have 25 points. Harding Street / Lincoln Avenue has three accidents reported and Lomas Serenas Drive / Via Rancho Parkway has no accidents reported, refer to Appendix C for collision reports. The level of service improvement for Harding Street / Lincoln Avenue (LOS F to LOS A) is greater than that for Lomas Serenas Drive / Via Rancho Parkway (LOS C/B to LOS B/A).

Locations evaluated for Traffic Signal Modifications for Left Turn Phasing

The Traffic signal modification list was selected from the compilation of the police reports of the Top 10 accident locations, school district request, and internal assessment.

The list below provides the locations analyzed for Traffic Signal Modification Priority List which includes 15 intersections.

Intersection ID #:

7 - Fig Street / Mission Avenue
8 - Quince Street / Washington Avenue
9 - Rose Street / Washington Avenue
10 - Metcalf Street / Mission Avenue
11 - Fig Street / East Valley Parkway
12 - Juniper Street / Felicita Avenue
13 - Escondido Boulevard / Fifth Avenue
14 - Centre City Parkway / Fifth Avenue
15 - Centre City Parkway / Ninth Avenue
16 - Centre City Parkway / Thirteenth Avenue
17 - Ash Street / Lincoln Avenue
18 - Escondido Boulevard / Grand Avenue
19 - Rock Springs Road / Mission Avenue
20 - Escondido Boulevard / Ninth Avenue
21 - Bear Valley Parkway / Mary Lane

Left Turn Warrants:

Left Turn Warrants were evaluated at fifteen (15) study intersections for left turn phasing using the HCM 6 analysis methodology. All of the study intersections met the minimum criteria for left turn phasing. **Table 14** from the report summarizes the left turn phasing recommendations. The percentage of warrants met at the intersection was based on whether left turn warrants were met in both the AM and PM peak period and whether the warrants were met in both directions of travel (northbound and southbound or eastbound and westbound). One point was assigned for each peak period and each direction for a maximum of eight (8) points per intersections for intersections with no existing left turn phasing and four (4) points per intersection with existing left turn phasing on at least one approach.

Recommendations for the Left Turn Warrants per the HCM 6 analysis methodology meeting the minimum criteria for left turn phasing. Summarized in **Table 7** for left turn phasing.

TABLE 7 – SUMMARY OF LEFT TURN PHASING RECOMMENDATIONS

Study Intersection	Existing North-South Left Turn Treatments	Existing East-West Left Turn Treatments	Recommendation
7 - Fig Street / Mission Avenue	Permitted	Permitted	Install left turn phasing on all approaches.
8 - Quince Street / Washington Avenue	Permitted	Permitted	Install left turn phasing on all approaches.
9 - Rose Street / Washington Avenue	Permitted	Permitted	Install left turn phasing on east and west approach only.
10 - Metcalf Street / Mission Avenue	Permitted	Permitted	Install left turn phasing on all approaches.
11 - Fig Street / East Valley Parkway	Permitted	Permitted	Install left turn phasing on all approaches.
12 - Juniper Street / Felicita Avenue	Permitted	Permitted[1]	Install left turn phasing on all approaches.
13 - Escondido Boulevard / Fifth Avenue	Permitted	Permitted	Install left turn phasing on north and south approach only.
14 - Centre City Parkway / Fifth Avenue	Protected	Permitted	Install left turn phasing on east and west approach.
15 - Centre City Parkway / Ninth Avenue	Protected	Permitted	Install left turn phasing on east and west approach.
16 - Centre City Parkway / Thirteenth Avenue	Protected	Permitted	Install left turn phasing on east and west approach.
17 - Ash Street / Lincoln Avenue	Split Phase	Permitted	Install left turn phasing on east and west approach.
18 - Escondido Boulevard / Grand Avenue	Permitted	Permitted	Install left turn phasing on east and west approach only.
19 - Rock Springs Road / Mission Avenue	Permitted	Protected	Install left turn phasing on north and south approach.
20 - Escondido Boulevard / Ninth Avenue	Protected	Permitted	Install left turn phasing on east and west approach.
21 - Bear Valley Parkway / Mary Lane	Protected	Permitted	Install left turn phasing on east and west approach.

[1] Protected Left Turn Phasing is currently provided at the eastbound approach of Felicita Avenue.

Table 8 summarizes the resulting levels of service with the recommended left turn phase modifications.

TABLE 8 – LEVEL OF SERVICE SUMMARY WITHOUT AND WITH LEFT TURN PHASING RECOMMENDATIONS

Int. ID - Study Intersection	Existing Conditions				Existing with Added Left Turn Phasing			
	AM		PM		AM		PM	
	Delay[1]	LOS	Delay[1]	LOS	Delay[1]	LOS	Delay[1]	LOS
7 - Fig Street / Mission Avenue	16.1	B	13.4	B	34.6	C	29.5	C
8 - Quince Street / Washington Avenue	16.9	B	20.0	B	26.3	C	30.2	C
9 - Rose Street / Washington Avenue	10.2	B	10.9	B	15.6	B	17.2	B
10 - Metcalf Street / Mission Avenue	31.0	C	22.3	C	31.4	C	34.1	C
11 - Fig Street / East Valley Parkway	19.1	B	24.1	C	33.6	C	34.7	C
12 - Juniper Street / Felicita Avenue	**35.3**	**D**	17.2	B	**37.1**	**D**	30.4	C
13 - Escondido Boulevard / Fifth Avenue	8.0	A	8.4	A	12.9	B	12.7	B
14 - Centre City Parkway / Fifth Avenue	35.2	D	35.2	D	46.4	D	46.8	D
15 - Centre City Parkway / Ninth Avenue	25.8	C	**40.1**	**D**	32.4	C	**41.1**	**D**
16 - Centre City Parkway / Thirteenth Avenue	30.0	C	**38.2**	**D**	34.0	C	**40.1**	**D**
17 - Ash Street / Lincoln Avenue	**61.4**	**E**	**41.1**	**D**	**76.2**	**E**	**50.0**	**D**
18 - Escondido Boulevard / Grand Avenue	19.3	B	23.2	C	23.8	C	29.5	C
19 - Rock Springs Road / Mission Avenue	33.6	C	26.0	C	33.8	C	33.7	C
20 - Escondido Boulevard / Ninth Avenue	17.9	B	22.5	C	25.0	C	32.0	C
21 - Bear Valley Parkway / Mary Lane	26.6	C	**36.6**	**D**	32.3	C	**36.8**	**D**

Note: Deficient intersection operation indicated in **bold**.
[1] Average seconds of delay per vehicle.
LOS = level of service.

The trade off in installing left turn phasing is the Level of Service of the intersection drops.

The intersection of Ash Street at Lincoln Avenue is expected to increase the delay in the AM peak hour from 61.4 seconds (LOS E) without left turn phasing to 76.2 seconds (LOS E) with left turn phasing. This translates to an increase in 14.6 seconds of delay when left turn phasing is implemented at this location. Based on crash data over the last five year (January 2014 to January 2019), only 3 out of 28 crashes are related to motorists making left turns at Ash Street/Lincoln Avenue. Therefore, the decrease in level of service in adding a left turn phase versus the frequency of left turn related crashes does not warrant the installation of a left turn phase at Ash Street/Lincoln Boulevard. In addition, widening of Lincoln Avenue is planned in the City's General Plan Circulation Element to a Collector east of Ash Street and Prime Arterial west of Ash Street which would improve the level of service at this intersection.

Therefore, left turn phasing is <u>not recommended at Ash Street/Lincoln Avenue</u> and was not included in the ranking system, due to the intersection not meeting warrants, Level of Service operation beyond acceptable levels, causing higher delay and possibly future widening.

TABLE 14 – LEFT TURN WARRANT SUMMARY

Int. ID	Study Intersection		Existing Left Turn Treatment		Left Turn Phasing Recommendation	Met Warrant in AM?					Met Warrant in PM?					Total AM & PM Points	Max Available Points[1]	% of Warrants Met[2]
	(North/South)	(East/West)	N-S	E-W		North	South	East	West	AM Points	North	South	East	West	PM Points			
7	Fig Street	Mission Avenue	Perm.	Perm.	Install LT phasing on all approaches	No	Yes	Yes	No	2	No	Yes	Yes	Yes	3	5	8	63%
8	Quince Street	Washington Avenue	Perm.	Perm.	Install LT phasing on all approaches	Yes	No	Yes	Yes	3	Yes	No	No	Yes	2	5	8	63%
9	Rose Street	Washington Avenue	Perm.	Perm.	Install east-west left turn phasing	N/A[4]	N/A[4]	No	Yes	1	N/A[4]	N/A[4]	No	No	0	1	4	25%
10	Metcalf Street	Mission Avenue	Perm.	Perm.	Install LT phasing on all approaches	Yes	No	Yes	Yes	3	Yes	No	No	Yes	2	5	8	63%
11	Fig Street	East Valley Parkway	Perm.	Perm.	Install LT phasing on all approaches	No	No	Yes	No	1	Yes	Yes	Yes	Yes	4	5	8	63%
12	Juniper Street	Felicita Avenue	Perm.	Perm.[3]	Install LT phasing on all approaches	Yes	No	CP	No	1	No	No	Yes	No	1	2	7	29%
13	Escondido Boulevard	Fifth Avenue	Perm.	Perm.	Install north-south left turn phasing	Yes	No	N/A[4]	N/A[4]	1	No	No	N/A[4]	N/A[4]	0	1	4	25%
14	Centre City Parkway	Fifth Avenue	Prot.	Perm.	Install east-west left turn phasing	CP	CP	No	Yes	1	CP	CP	No	Yes	1	2	4	50%
15	Centre City Parkway	Ninth Avenue	Prot.	Perm.	Install east-west left turn phasing	CP	CP	No	No	0	CP	CP	No	Yes	1	1	4	25%
16	Centre City Parkway	Thirteenth Avenue	Prot.	Perm.	Install east-west left turn phasing	CP	CP	No	No	0	CP	CP	Yes	No	1	1	4	25%
17	Ash Street	Lincoln Boulevard	Split Phase	Perm.	Install east-west left turn phasing	Split	Split	No	No	0	Split	Split	No	Yes	1	1	4	25%
18	Escondido Boulevard	Grand Avenue	Perm.	Perm.	Install east-west left turn phasing	N/A[4]	N/A[4]	No	No	0	N/A[4]	N/A[4]	Yes	No	1	1	4	25%
19	Rock Springs Road	Mission Avenue	Perm.	Prot.	Install north-south left turn phasing	No	Yes	CP	CP	1	No	Yes	CP	CP	1	2	4	50%
20	Escondido Boulevard	Ninth Avenue	Prot.	Perm.	Install east-west left turn phasing	CP	CP	No	No	0	CP	CP	Yes	No	1	1	4	25%
21	Bear Valley Parkway	Mary Lane	Prot.	Perm.	Install east-west left turn phasing	CP	CP	No	Yes	1	CP	CP	No	Yes	1	2	4	50%

CP = Left Turn Phasing is Currently Protected. N/A = Not Applicable

[1] A maximum of eight points are assigned to an intersection with permitted left turn phasing on all approaches. A maximum of four points are assigned to intersections with permitted left turn phasing on only two approaches.

[2] Percentage of Warrants Met = Total AM & PM points divided by Maximum Points multiplied by 100%.

[3] Protected left turn phasing is currently provided at the eastbound approach of Felicita Avenue.

[4] Left turn phasing is not recommended at these approaches and therefore, a maximum of four points are assigned to these intersections.

TABLE 15 – LEFT TURN PHASE RANKING

Int. ID	Study Intersection		Existing Left Turn Treatment		Left Turn Phasing Recommendation	Left Turn & Opposing Through Volume (Critical Peak 1-hour)					Volume Score[1]	Left Turn Related Crashes	Left Turn Crash Rate[2]	Crash Score[3]	85% Speed (MPH)	Speed Score[4]	Weighted Average Score[5]	Overall Rank
						AM		PM										
	(North/South)	(East/West)	N-S	E-W		Left Turn	Opp. Thru	Left Turn	Opp. Thru	Total								
21	Bear Valley Parkway	Mary Lane	Prot.	Perm.	Install east-west left turn phasing	26	1253	44	1239	2,562	14	1	0.014	5	45	14	**11.8**	1
10	Metcalf Street	Mission Avenue	Perm.	Perm.	Install LT phasing on all approaches	10	855	44	971	1,880	12	3	0.056	11	40	12	**11.8**	2
8	Quince Street	Washington Avenue	Perm.	Perm.	Install LT phasing on all approaches	11	798	54	773	1,636	11	11	0.159	14	38	11	**11.8**	3
11	Fig Street	East Valley Parkway	Perm.	Perm.	Install LT phasing on all approaches	36	1175	59	828	2,098	13	5	0.053	10	33	8	**11.0**	4
9	Rose Street	Washington Avenue	Perm.	Perm.	Install east-west left turn phasing	22	621	59	618	1,320	9	7	0.086	13	41	13	**11.0**	5
7	Fig Street	Mission Avenue	Perm.	Perm.	Install LT phasing on all approaches	95	561	23	650	1,329	10	2	0.017	6	40	12	**9.5**	6
15	Centre City Parkway	Ninth Avenue	Prot.	Perm.	Install east-west left turn phasing	22	486	27	540	1,075	7	2	0.041	9	40	12	**8.8**	7
19	Rock Springs Road	Mission Avenue	Perm.	Prot.	Install north-south left turn phasing	54	404	100	494	1,052	6	3	0.019	8	41	13	**8.3**	8
12	Juniper Street	Felicita Avenue	Perm.	Perm.[6]	Install LT phasing on all approaches	76	385	9	639	1,109	8	1	0.012	4	40	12	**8.0**	9
18	Escondido Boulevard	Grand Avenue	Perm.	Perm.	Install east-west left turn phasing	43	284	68	485	880	4	7	0.053	12	40	12	**8.0**	10
13	Escondido Boulevard	Fifth Avenue	Perm.	Perm.	Install north-south left turn phasing	86	281	25	500	892	5	2	0.018	7	37	10	**6.8**	11
20	Escondido Boulevard	Ninth Avenue	Prot.	Perm.	Install east-west left turn phasing	71	382	112	236	801	3	2	0.011	3	34	9	**4.5**	12
16	Centre City Parkway	Thirteenth Avenue	Prot.	Perm.	Install east-west left turn phasing	54	195	57	227	533	2	1	0.009	2	32	7	**3.3**	13
14	Centre City Parkway	Fifth Avenue	Prot.	Perm.	Install east-west left turn phasing	87	102	93	166	448	1	1	0.006	1	37	10	**3.3**	14

CP = Left Turn Phasing is Currently Protected. N/A = Not Applicable

[1] Volume Score was based on the total AM and PM left turns and opposing through volume ranked from the highest volume (14 points) to the lowest volume (1 point).

[2] Left Turn Crash Rate = (# of left turn related crashes) / (Critical AM & PM Peak Hour Left Turn Volume)

[3] Crash Score is based on the crash rate from the highest crash rate (14 points) to lowest crash rate (1 point).

[4] Speed Score is based on the highest speeds (14 points) to lowest speeds (1 point).

[5] Overall Rank is based on Weighted Average Score = 50% x Volume Score + 25% x Crash Score + 25% x Speed Score. For Weighted Average Scores that are tied, the intersection with the higher volume is ranked higher on the Overall Rank.

[6] Protected left turn phasing is currently provided at the eastbound approach of Felicita Avenue.

Left Turn Phase Ranking:

Ranking for the left turn phase is based on three criteria: volumes, crashes and speeds.

> **Criteria 1 (Volumes)** was based on the sum of the critical left turn and opposing through volumes during the AM and PM peak hour for each intersection. For study intersections with permitted phasing on all approaches, the highest left turn and opposing through volume during the AM and PM peak hour was selected. Left turn and opposing through volumes with left turn phasing that is currently protected were not considered in this criterion.
> **Criteria 2 (Crashes)** was based on left turn crash rate which is equal to the left turn related crashes (January 2014 to January 2019) divided by the critical AM and PM peak hour left turn volume at the study intersection.
> **Criteria 3 (Speeds)** was based on the highest 85th percentile speed recorded for each approach of the intersection.

The results of the left turn ranking are summarized in **Table 15**. To calculate the weighted average score for each intersection, a weight of 50% was assigned to the volumes, 25% to the crashes, and 25% to the speeds for a total of 100%. As shown, the intersections are listed in order from the highest weighted average score (11.8) to the lowest weighted average score (3.3). Bear Valley Parkway/Mary Lane, Metcalf Street/Mission Avenue, and Quince Street/Washington Avenue have the same weighted average score of 11.8. For ranking purposes, volumes were used to rank intersections with the same weighted average score, so that the protected left turns were prioritized where they would benefit the highest number of drivers.

SIGNAL MODIFICATION PROJECTS

The proposed ranking of traffic signal modification locations **Table 15** is presented to you for analysis. Additional detail is included in the separate consultant report, attached for reference.

Your recommendation to the Council for adopting a list does not necessarily commit the city to installing the traffic signals in the order they appear on the list. Three examples will illustrate this principle:

1. When preliminary engineering is conducted for one of the locations, it may be found that additional right-of-way is necessary to provide acceptable lane geometry to allow signalization. Instead of placing all other signal projects on hold while right-of-way or other concerns are satisfied, following intersections on the list may be funded and designed in the interim. The higher priority intersection would be funded and designed when the other complicating factors are resolved.
2. There may be property adjacent to the intersection that is proposed for development, which might mean that ultimate street improvements would be installed in the future. The intersection may function more efficiently and be signalized with less cost, if the signal installation is deferred until the frontage improvements are completed.
3. A traffic signal could be installed as a condition of a development project or a large street or intersection improvement project, or through grant funding.

Table 16 shows the recommended ranking along with a summary of the cost estimates for each ranked location. The cost estimates include construction costs, mobilization and demobilization, and traffic control, design, and environmental cost.

TABLE 16 – SUMMARY OF COST ESTIMATES

Rank	Study Intersection	Recommended Improvement	Cost Estimate
Signal Priority Ranked List			
1	Rock Springs Road / Lincoln Avenue	Signalization & 150 feet of sidewalk	$454,000
2	Harding Street / Lincoln Avenue	Signalization	$545,000
3	Lomas Serenas Drive / Via Rancho Parkway	Signalization	$358,000
Left Turn Phase Ranked List			
1	Bear Valley Parkway / Mary Lane	Install left turn phasing on east and west approach	$355,000
2	Metcalf Street / Mission Avenue	Install left turn phasing on all approaches	$473,000
3	Quince Street / Washington Avenue	Install left turn phasing on all approaches	$450,000
4	Fig Street / East Valley Parkway	Install left turn phasing on all approaches	$498,000
5	Rose Street / Washington Avenue	Install left turn phasing on east and west approaches	$427,000
6	Fig Street / Mission Avenue	Install left turn phasing on all approaches	$450,000
7	Centre City Parkway / Ninth Avenue	Install left turn phasing on east and west approaches	$440,000
8	Rock Springs Road / Mission Avenue	Install left turn phasing on north and south approaches	$320,000
9	Juniper Street / Felicita Avenue	Install left turn phasing on all approaches	$445,000
10	Escondido Boulevard / Grand Avenue	Install left turn phasing on east and west approaches	$350,000
TOTAL COST ESTIMATE (New Signals & Left Turn Phasing)			**$5,565,000**

RECOMMENDATIONS: We recommend that the Commission review the above ranked Traffic Signal Priority List and Left Turn Phasing Priority list as prepared by the consultant and make a recommendation for approval to City Council.

NECESSARY COUNCIL ACTION:

The Traffic Signal Priority List and Left Turn Phasing Priority List as reviewed and approved by the Transportation Commission recommendations will be presented to the City Council for their consideration and approval.

Respectfully submitted,

Prepared by:

Ali M. Shahzad, PE (Traffic)
Associate Engineer/ Traffic Division

Reviewed by:

Owen Tunnell, PE (Civil)
Assistant City Engineer

Approved by:

Julie Procopio, PE (Civil)
Director of Engineering Services

ESCONDIDO
City of Choice

CITY OF ESCONDIDO

TRANSPORTATION and
COMMUNITY SAFETY COMMISSION

Commission Report of: October 10th, 2019 **Item No.: F2**

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 4 dated March 29, 2019,

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 4 dated March 29, 2019,

> *"**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 4, 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 4 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 2 and 3 the recommended speed limit is set based on the 85th-percentile speed of the new speed survey. For speed survey 3 the posted speed limit will decrease by 5 mph.
- For speed survey 1 and 4, 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, the posted speed limit will remain unchanged for survey 1 and speed will decrease by 5mph for survey 4.

Table 1 - Overview of Speed Surveys

Segment No.	Street Name	Segment		Previous Speed Survey	Posted Speed Limit (MPH)	Classification	85th Percentile (MPH)	Rounded speed Limit (MPH)	Speed Limit to be posted, per Traffic Engineer
	Zone	From	To			Design Speed			
1	Eleventh Ave. 1	Hale Avenue	Valley Pkwy	05/23/12	30	LC	33	35	30**
2	Broadway 9	Grand Avenue	Third Avenue	09/27/13	30 (25WCAP)	C	29	30	30 (25WCAP)
3*	Rincon Ave. 1	Broadway	Conway Drive	05/23/12	45	C	42	40	40 ↓
4	West Country Club Ln. 7	Centre City Pkwy.	Broadway	12/22/11	40 (25WCAP)	C	45	45	40 ** (25WCAP)

* Indicates new established speed survey which requires City Council approval. Engineering and Traffic Survey attached to Commission Report

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

↓ Indicates speed going down.

↑ Indicates speed going up.

Necessary Council Action: Two (1) survey segment on Rincon Avenue for changes to existing speed limits.

Respectfully submitted,

Prepared by:

Ali M. Shahzad, PE (Traffic)
Associate Engineer/Traffic Division

Virpi Kuukka-Ruotsalainen,
Engineer I/Traffic Division

Reviewed by:

Owen Tunnell,
Assistant City Engineer

Approved by:

Julie Procopio, PE (Civil)
Director of Engineering Services/City Engineer

Attachments:

Attachment 1: Speed Zone Evaluation Rincon Avenue Survey 3

CITY OF ESCONDIDO
TRAFFIC ENGINEERING DIVISION
SPEED ZONE EVALUATION

Location: Rincon Avenue (Broadway to Conway Drive)		**Date:** 09/17/2019
Time: 10:34 AM	**Weather:** Sunny, Clear	**Road Conditions:** Normal

ENGINEER'S FINDINGS

1. Prevailing Vehicular Speed Data			
Posted Speed(s):	45 MPH	School zone:	☐ Yes ☒ No
85% Speed:	42 MPH	10MPH Pace:	33-43 MPH
50% Speed:	39 MPH	% in Pace:	82%

2. Accident Data			
Street Classification:	Collector Rd	Approximate ADT:	6, 700 vehicles/day
Accident Rate:	1.62 accidents/mvm	For period:	January 2016 through December 2018
City-wide for streets of similar characteristics:	1.06 accidents/mvm (Urban Street, 2-3 lanes, District 11/CA)		

3. Traffic and Roadside Conditions			
Land Use:	Single & multiple family residential. Mobile Park. Golf course. Open space.		
Geometrics:	Flat. Essentially straight..		
Other Features:	90% fully improved. Two lanes east of Ash Street. Four lanes with turn lanes west of Ash Street. No on-street parking. Traffic signal at Broadway. Community with restricted access. All-Way Stops at Conway and Ash.		
Unusual Conditions:	Eastbound lane drop east of Ash. Gated community on north side of Rincon. School west of Broadway; crossing guard at Broadway for students. Rincon Middle School nearby.		
Density:	☒ Single Family ☒ Multiple Family	Presence of:	☒ Bicycles ☒ Pedestrians

4. Engineer's Recommendation	**Posted Speed 40** MPH

Explanation:

This speed zone has been reevaluated in accordance with the following:

a. California Manual on Uniform Traffic Control Devices for Streets and Highways (Nov. 07, 2014 Edition. Rev 4 March 29, 2018),

b. California Vehicle Code, 2019 version, with respect to design and prevailing speeds, accident history, pedestrian activity, driveway spacing, and roadway, weather, and traffic conditions,

c. And for stopping sight distance per American Association of State Highway and Transportation Officials (AASHTO), A Policy on Geometric Design of Highways and Streets 2011, 6th Edition.

➢ The combined Eastbound and Westbound 85th percentile of 42 mph would indicate posting a 40 mph speed limit.

5. Approvals

☐ Recertification of existing speed zone per Sections 22357 (Increase of Local Speed Limits to 65 MPH), 22358 (Decrease of Local Speed Limits), and 40802 (Speed Traps) of the California Vehicle Code.

Approved: _____
Traffic Engineer, RTE#: 2295

☒ Establishment of new speed zone

Approved: _____
City Engineer

Action Dates:

Transportation Commission: 10/10/2019 City Council: -- Ordinance No.:

Radar Speed Survey Data Collection Form

Jurisdiction: *City of Escondido*
Street: *Rincon*
Between: *Broadway to Conway* (nearest cross streets between)
Posted Speed: *45* (regulatory or warning speed)
Direction: *Eastbound* (Northbound or Eastbound)
Observer: *VKR*
Unusual Conditions: *none* (weather, visibility, accidents, other)
Date: *9/17/19*

		Correct Reading?
The radar gun was calibrated immediately before data collection commenced (initials)	*vkr*	☒
The radar gun calibration was checked immediately after data collection completed (initials)	vkr	☒

Veh.	Note Time:	Speed (mph)
1	*10:34*	*39*
2	*Westbound*	*37*
3		*36*
4		*43*
5		*38*
6		*39*
7		*25*
8		*35*
9		*36*
10		*34*
11		*32*
12		*35*
13		*37*
14		*36*
15		*29*
16		*30*
17		*39*
18		*30*
19		*42*
20		*37*
21		*39*
22		*38*
23		*36*
24		*40*
25		*33*
26		*29*
27		*38*
28		*39*
29		*37*
30		*39*
31		*31*
32		*52*
33		*45*
34		*42*
35		*35*

Veh.	Note Time:	Speed (mph)
36		*36*
37		*33*
38		*35*
39		*41*
40		*43*
41		*37*
42		*41*
43		*33*
44		*39*
45		*40*
46		*45*
47		*41*
48		*38*
49		*36*
50		*39*
51	*Eastbound*	*41*
52		*38*
53		*41*
54		*46*
55		*39*
56		*40*
57		*43*
58		*38*
59		*42*
60		*30*
61		*34*
62		*34*
63		*40*
64		*35*
65		*36*
66		*39*
67		*38*
68		*36*
69		*35*
70		*41*

Veh.	Note Time:	Speed (mph)
71		*38*
72		*36*
73		*49*
74		*45*
75		*39*
76		*43*
77		*38*
78		*41*
79		*39*
80		*49*
81		*40*
82		*42*
83		*40*
84		*38*
85		*36*
86		*42*
87		*45*
88		*39*
89		*40*
90		*41*
91		*33*
92		*36*
93		*35*
94		*42*
95		*39*
96		*49*
97		*45*
98		*37*
99		*39*
100	*11:10*	*37*

Average=	**38 mph**
Standard Deviation=	**5 mph**
85th %-ile=	**42 mph**
10 mph Pace=	**33 - 43 mph**
Current Posting=	**45 mph**
Recommended Posting=	**mph**
50th %-ile=	**38.5 mph**
% in pace=	**82 %**

City of Escondido
Traffic Division
201 N. Broadway
Escondido, CA 92025