TRANSPORTATION SAFETY UPDATE

August 24, 2022

David Cramer, Chief of Police
Edd Alberto, City Traffic Engineer

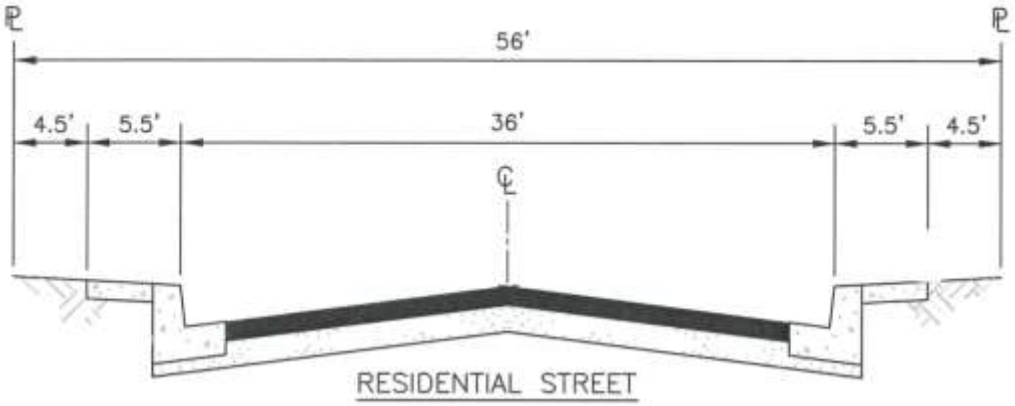
ESCONDIDO
City of Choice

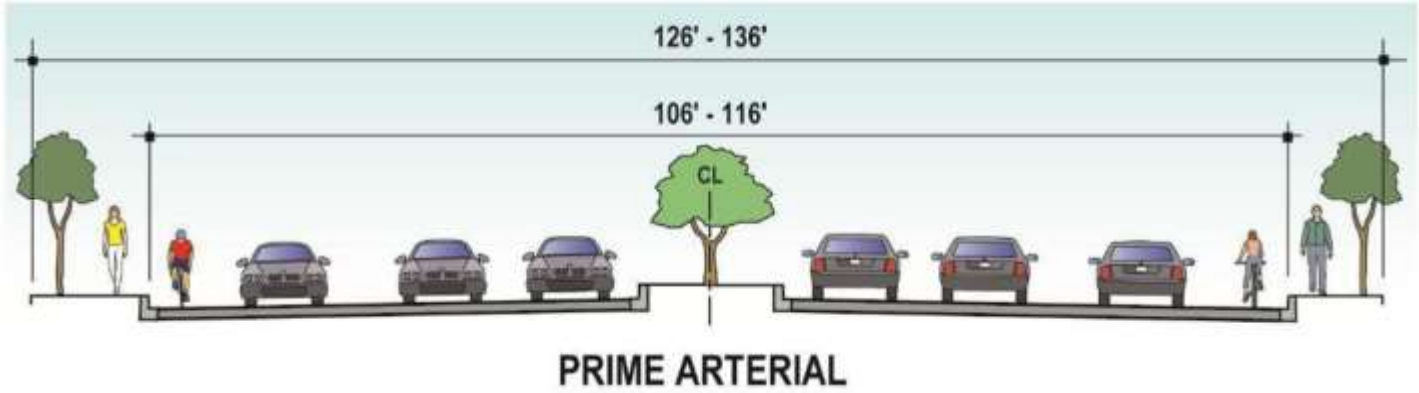
Overview

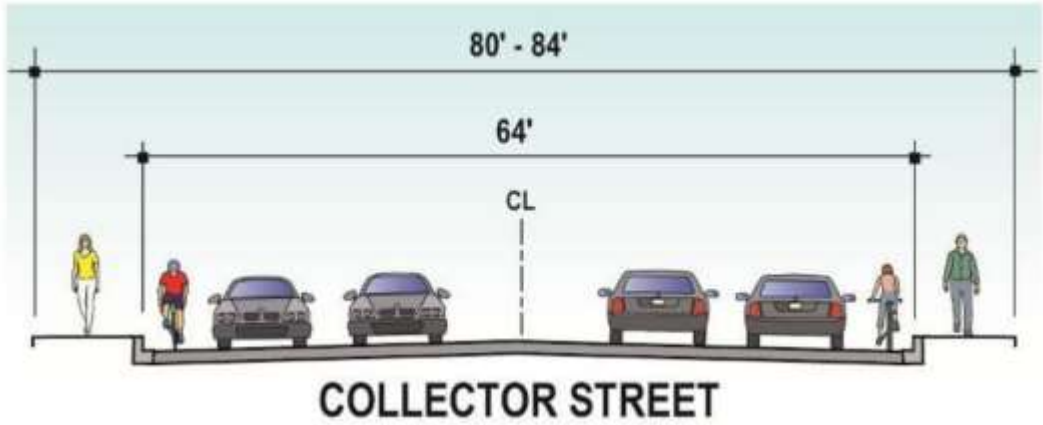
- Escondido's Safety Statistics
- Improving Transportation Safety
  - Programs
  - Projects
  - Education
  - Enforcement

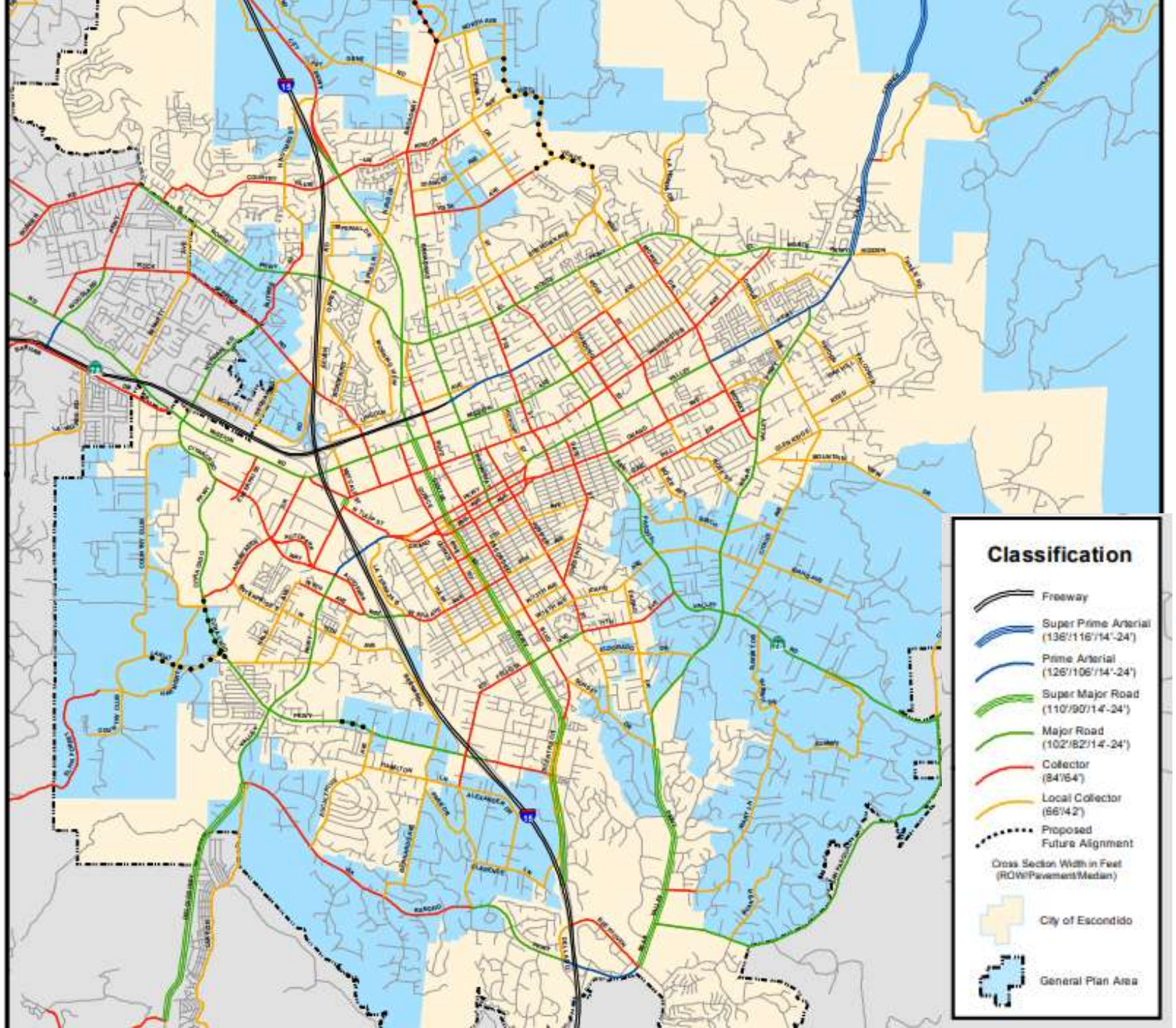
Escondido's Roadway System

- 315 centerline-miles of roadway
- State Route 78 – Maintained by Caltrans
- 170 Signalized Intersections
- Range of Roadway Types
  - Rural and Residential Streets
  - Collector Streets
  - Prime Arterials









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Escondido's Rankings (2019 Data)

Compared to 59 similar sized Cities:

- 13th highest for Alcohol Involved Crashes (down from 8th in 2018)
- 11th highest for Fatal and Injury Crashes (down from 9th in 2018)
- 33rd highest for Pedestrian Involved Crashes (down from 11th in 2018)
- 16th highest for Speed Related Crashes (down from 15th in 2018)

- 50th in DUI Arrests (493 arrests)

Speed and Safety

- Speed Limits set based on 85th% speed as required by State Law
- Speeding is the leading cause of fatal car collisions in US
- Aggressive driving causes over 50% of collisions in US

Pedestrian Survivability

National Collision Trends

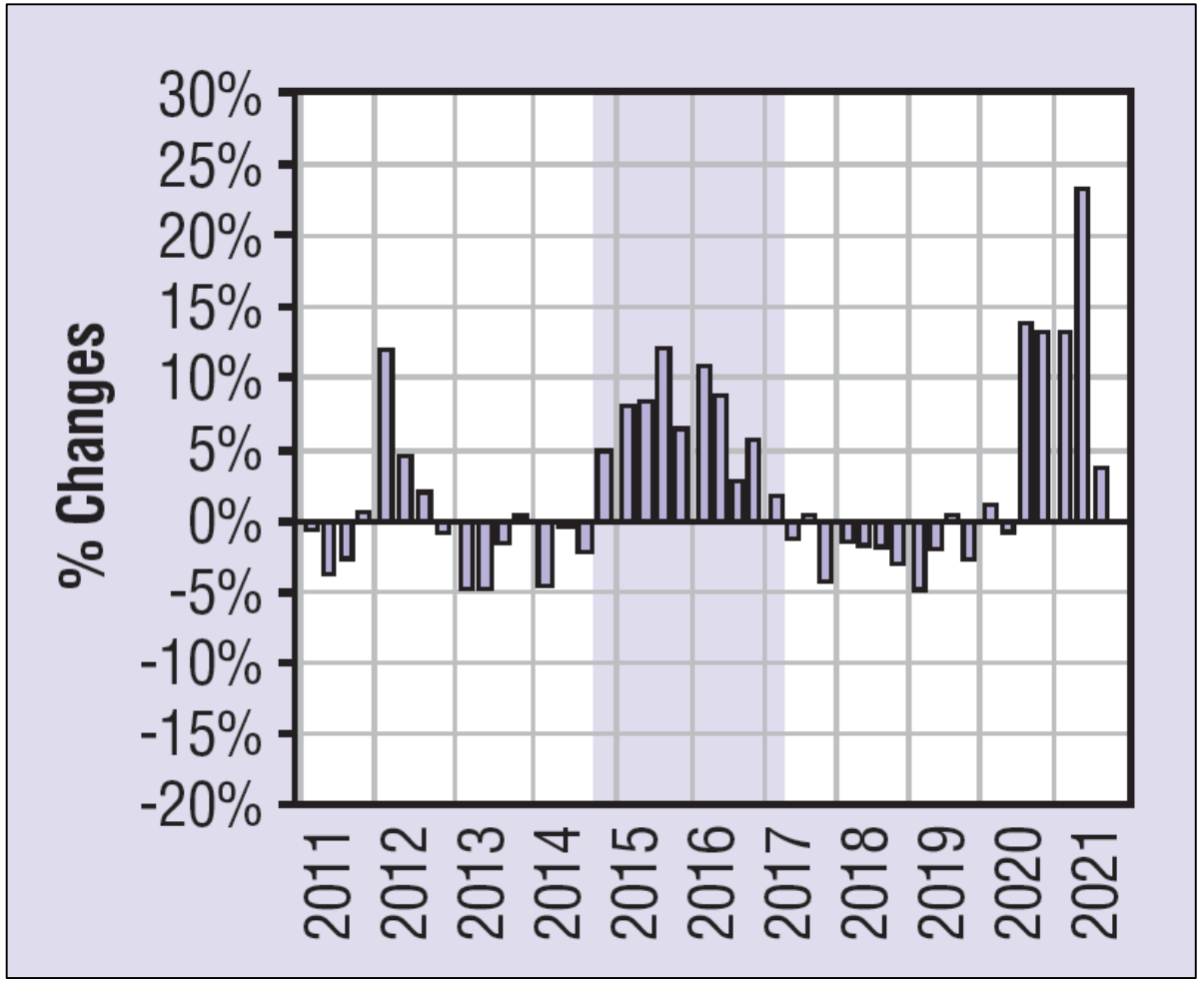
"During 2021 there was a **10.5% jump in fatalities nationwide**, the largest increase since data collection begin in 1975."

"Nearly **118 people died in U.S. traffic crashes every day last year**, according to the agency's figures. The Governors Highway Safety Association, a group of state traffic safety officials, **blamed the increase on dangerous behavior such as speeding, driving while impaired by alcohol and drugs, and distracted driving, as well as "roads designed for speed instead of safety**."

Source: Associated Press. "Nearly 43,000 people died on US roads last year, agency says." https://apnews.com/article/health-government-and-politics-pandemics-transportation-8388d8ca4b1ad141939fe07ce00f9c7f

National Collision Trends

- 2017-2020 national fatal collisions were trending lower each quarter over previous years
- First half of 2021 show 18.4% increase in fatal collisions over same period of 2020
  - Research shows changes in driver behavior
  - Increase in risky behaviors
    - Speeding
    - Not wearing seatbelts
    - Driving under the influence



NHTSA

Escondido Collision Statistics 2016-2021

crash Type

- Broadside (32%)
- Rear-End (26%)
- Sideswipe (15%)

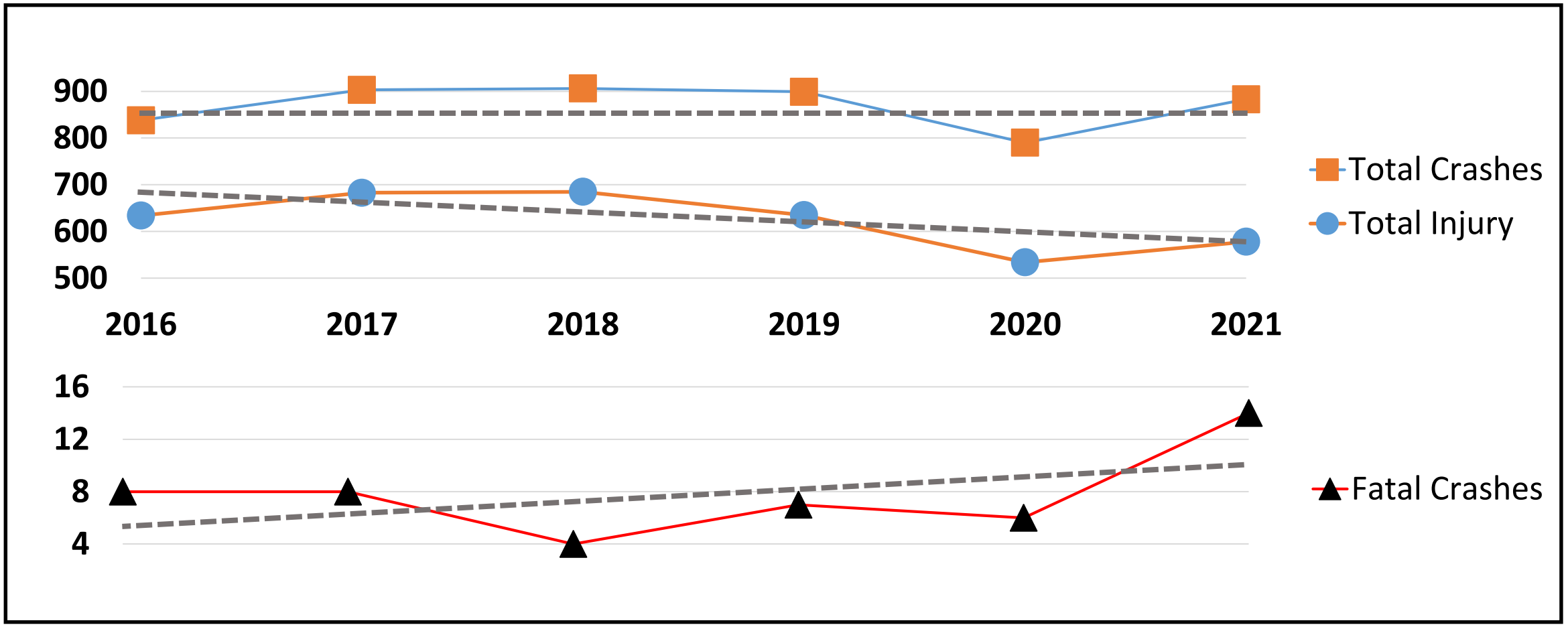
crash Cause

- Unsafe Speed (20%)
- Auto ROW Violation (19%)
- DUI (17%)

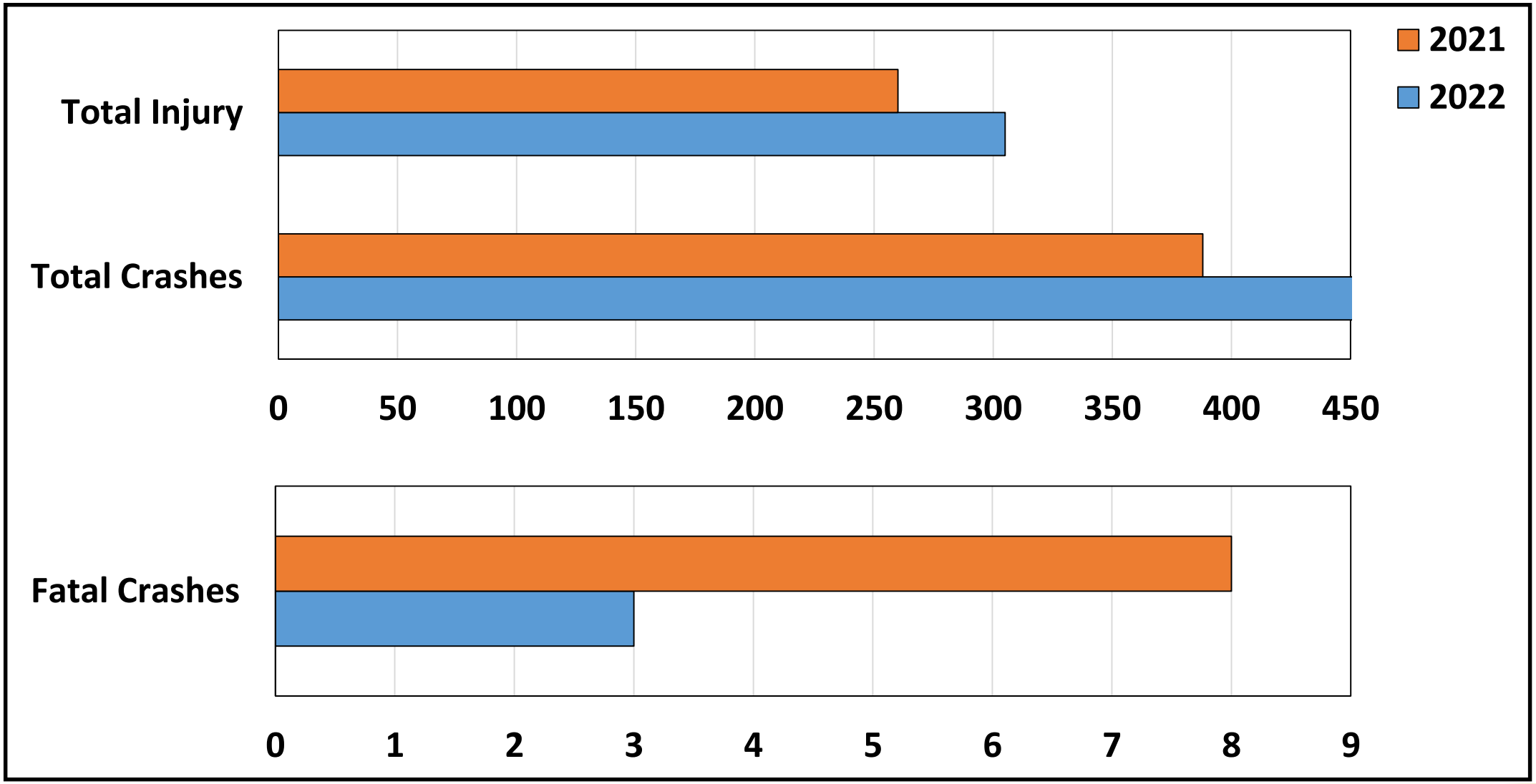
crash Severity

- Property Damage Only (29%)
- Complaint of Pain (40%)
- Visible Injury (28%)
- Severe Injury (2%)
- Fatal (1%)

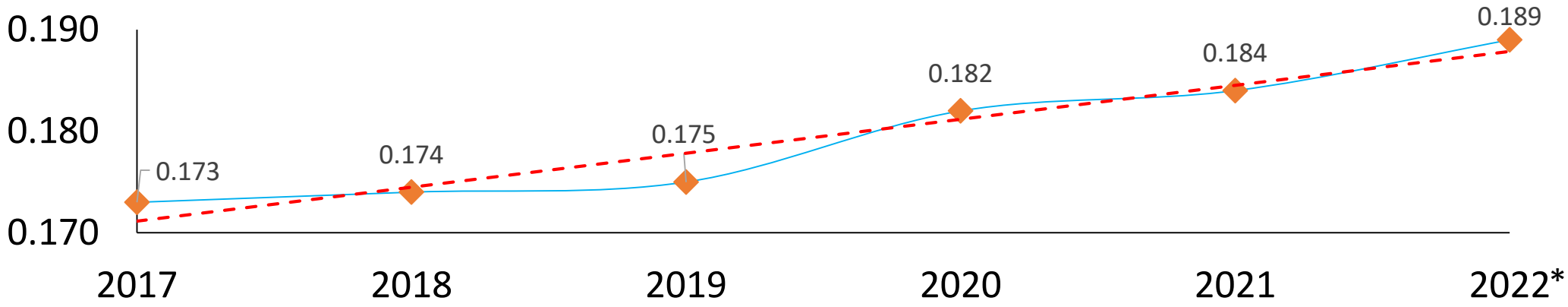
Escondido Collision Trends 2016-2021



Escondido First Half 2021 vs 2022



SD County Blood Alcohol Concentration Trends



- *2022 data for January through June
- San Diego County Sheriff's Crime Lab tested 49 percent of all DUI arrestee samples
- Tested samples included at least one additional drug; most commonly was THC
- The significant shift in increased mean BAC coincides with the beginning of COVID in 2020.

Traffic Management Toolbox

- Establishes framework on when and how to initiate traffic management
- Classifies tools into three groups
  - Class I – Enforcement, Education, Speed Trailer, Signs, Red Curb
  - Class II – Radar Speed Signs, High Visibility Crosswalks, Lane Narrowing, Buffers
  - Class III – Pedestrian Signals, Medians Islands, Curb Extensions, Roundabouts

Class I

Class II

Class III

Traffic Management Project List (TMPL)

- Community nominates Safety Improvement Projects
- Transportation and Community Safety Commission selects nominated projects for funding
- Annual budget of $50,000

Traffic Signal Priority Lists (TSPL)

- City monitors and maintains over 165 traffic signals
- Feedback from citizens, council members, and other departments
- Two separate lists:
  - New Traffic Signals
  - Modification of Existing Signals (addition of left turn arrows)
- Adopted scoring criteria
- Used as guidelines in recommending future projects for the Capital Improvement Budget and prioritize locations to seek grant funding
- Last Adopted by the City Council in April 2021

TSPL

Rank	Study Intersection	Status/Funding
New Signals		
1	Rock Springs Road / Lincoln Ave	Developer
2	Harding Street / Lincoln Ave	TBD
3	Lomas Serenas Dr / Via Rancho Pkwy	TBD
Signal Modifications - Add Left Turn Phasing		
1	Bear Valley Pkwy / Mary Lane	Construction*
2	Metcalf Street / Mission Ave	TBD
3	Quince Street / Washington Ave	HSIP Grant
4	Fig Street / East Valley Pkwy	HSIP Grant
5	Rose Street / Washington Av	In Design/HSIP Grant
6	Fig Street / Mission Avenue	HSIP Grant
7	Centre City Pkwy / Ninth Ave	HSIP Grant
8	Rock Springs Road / Mission Av	HSIP Grant
9	Juniper Street / Felicita Ave	Constructed
10	Escondido Boulevard /Grand Ave	HSIP Grant

Local Roadway Safety Plan

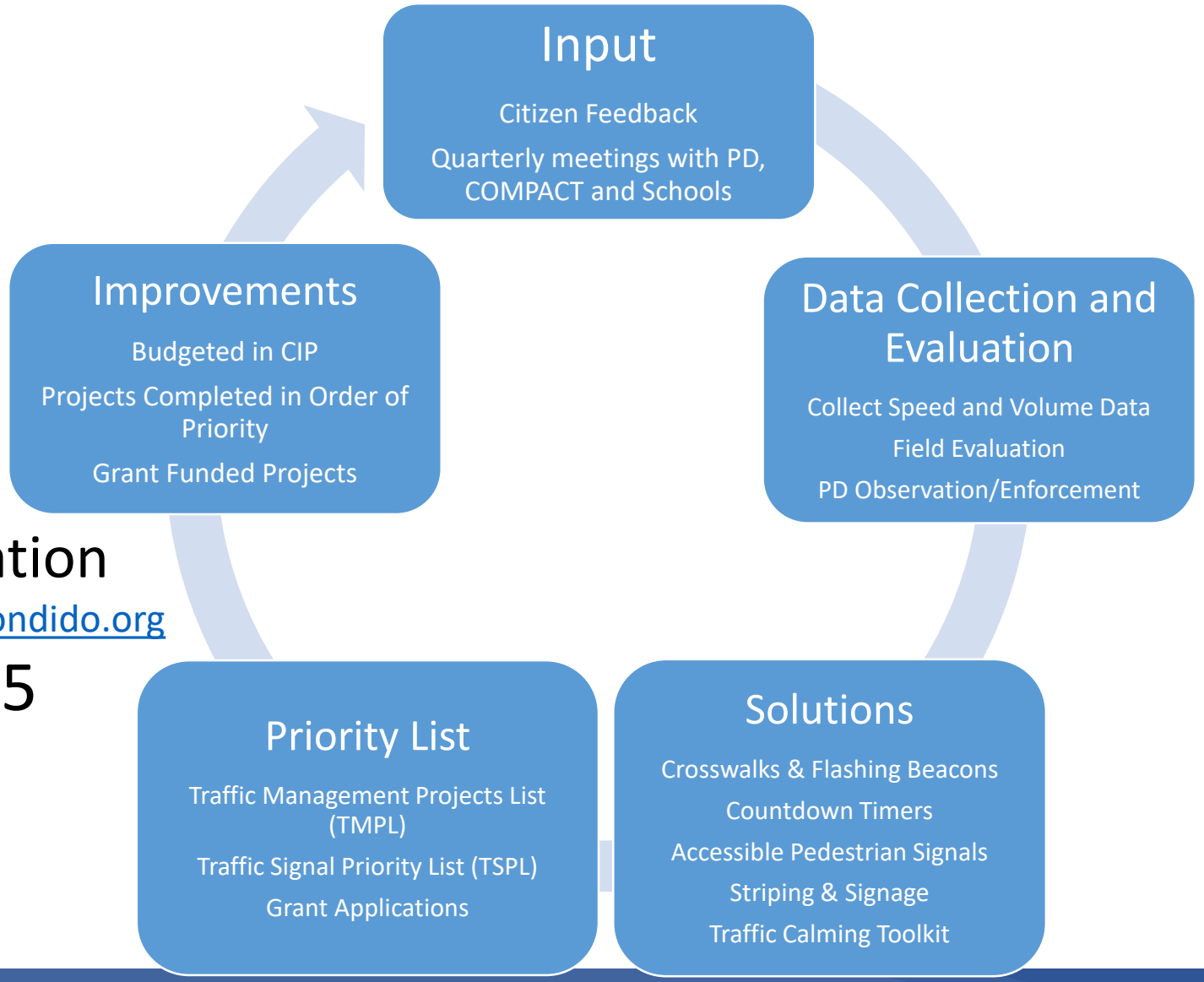
- Risk-based, data-driven, systemic approach to improving safety of Local Roadways
- Identifies highest priority locations for future safety improvements
- Defines cost-effective improvement strategies and countermeasures for each identified location
- Required for Highway Safety Improvement Program (HSIP) and Safe Streets 4 All Program (SS4A) grant funding

HSIP & SS4A

$3.7M HSIP funding for traffic safety improvements at 22 intersections

$1.5M SS4A funding for new traffic signal at Centre City Parkway and Brotherton Road

Improving Safety for All Modes of Transportation



Report It application

Traffic.engineering@escondido.org

(760) 839-4595

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Service Requests

- FY 2021-22, Development Services Staff logged over 350 service requests
- 39 Work Orders were issued
  - No Parking Signs
  - Parking Signs
  - Red Curb
  - Delineator replacement

Engineering Project Updates

- Traffic Signal Communications Grant
- Seven Creek Crossings
- Escondido Creek Trail Transit Center Bike Path Improvements
- Prop 68 Creek Trail Expansion Project
- Citracado Extension Project
- Grand Avenue Vision Project
- 2021 Street Rehabilitation and Maintenance Projects
- Bear Valley Parkway at Mary Lane Traffic Signal Modification
- Washington Avenue at Rose Street Traffic Signal Modification
- Juniper Safe Routes to School Phase 2

Grand Avenue Vision Phase 1

Grand Avenue Vision Phase 1

Education & Enforcement

- Escondido Police Department was awarded two grants for 2022-2023
- STEP grant funding of $485,000.
- Pedestrian and Bicycle Safety grant funding of $25,000.

OTS Selective Traffic Enforcement (STEP) grant

- Currently in Quarter 4 of the 2021-22 grant that provides $520,000 to fund:
  - DUI checkpoints
  - DUI Saturation Patrols
  - Distracted Driving enforcement
  - Primary Collision Factor (PCF) details
  - Motorcycle Enforcement details
  - “Know Your Limits” education campaigns
  - Collaborative details with other county agencies

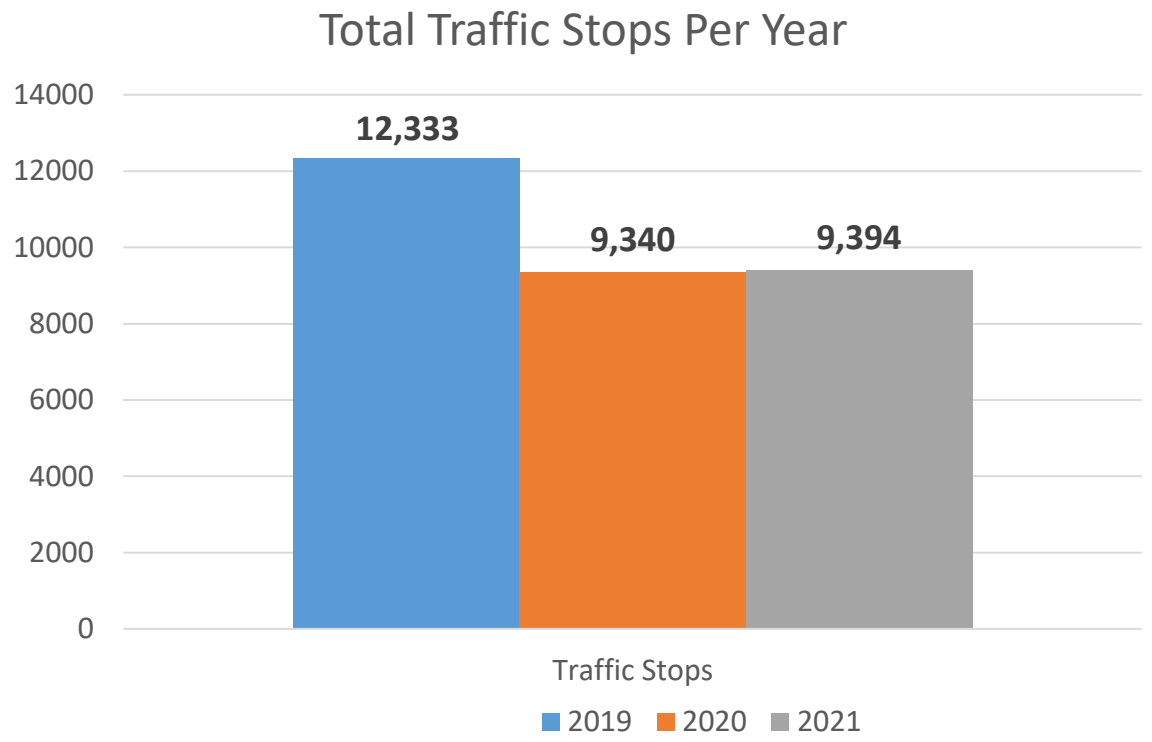
Pedestrian and Bicycle Safety grant

- Currently in Quarter 4 of the 2021-22 grant which provides $25,000 to fund:
  - Education campaigns aimed at youth and senior pedestrian and bicycle safety
  - Enforcement details aimed at bicycle and pedestrian safety.

Traffic Enforcement

- Total Traffic Stops Per Year*

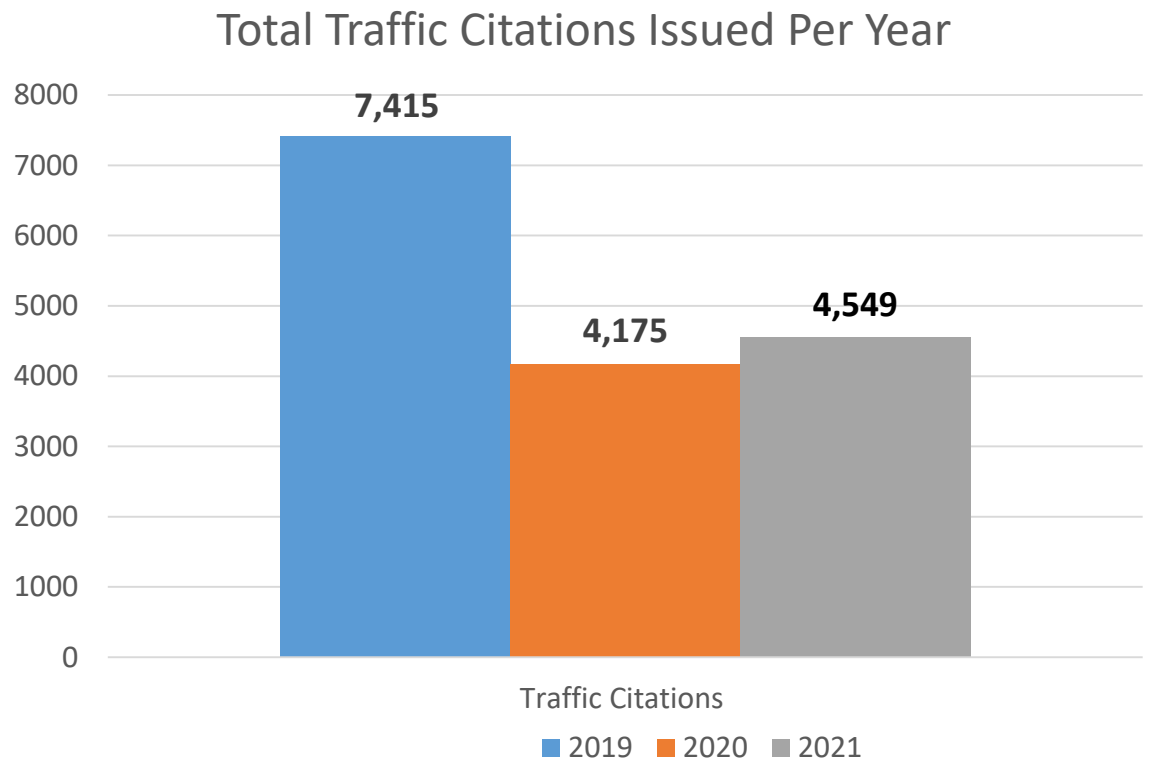
Escondido is ranked 5th out of 59 similar Cities for DUI arrests



*The Coronavirus Pandemic caused an anomaly in the 2020 traffic enforcement efforts and traffic statistics. Due to government restrictions and lockdown protocol, there were less drivers on the road. For a portion of 2020, Police Department personnel were directed to maintain social distancing standards and were responding only to emergency calls for service.

Traffic Enforcement

- Total Traffic Citations Issued Per Year*



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Red Light Violator Detection Unit

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Education

- Walk Audits at 27 school sites
  - In partnership with COMPACT, District staff and School Principal
  - Drop-off/Pick-up Management
  - Walking and Biking Safety – Crossing Points
- Safe Routes to School Education – Juniper Elementary, Central Elementary and Oak Hill Elementary
  - Led by COMPACT and funded with ATP Grant
  - Walking, biking and driving audits
  - Prepare Education Program
  - Student-led outreach/encouragement
  - Motorist Education

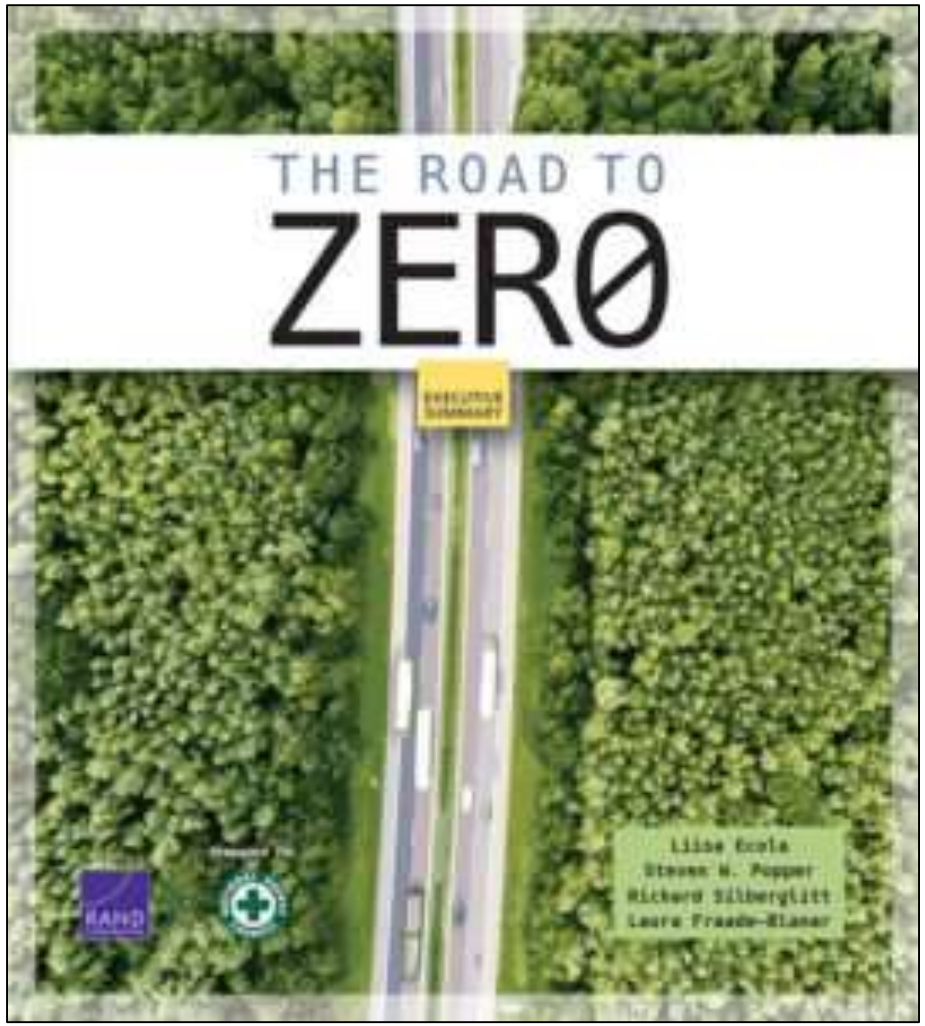
Education & Enforcement

- Bicycle and Pedestrian Safety OTS Grant
  - Bike Rodeos
  - Safety Equipment
  - Bicycle Safety Courses
  - Presentations to Schools, Older Adults, and Community Organizations
- Radar Speed Trailer
- GO SLOW IN ESCO!

GO SLOW IN ESCO!

Summary

Join Us



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QUESTIONS?

Escondido Report It!

Apple Store

Google Play

Back-Up Slides

Rank	Study Intersection	Recommended Improvements	Cost Estimate	Funding Status
Ranking for New Signals				
1	Rock Springs Road / Lincoln Ave	Signalization + 150 LF of sidewalk	$ 454,000	Developer Funded
2	Harding Street / Lincoln Ave	Signalization	$ 545,000	Pending Funding
3	Lomas Serenas Dr / Via Rancho Pkwy	Signalization	$ 358,000	Pending Funding
Ranking for Signal Modifications				
1	Bear Valley Pkwy / Mary Lane	Install left turn phasing on east and west approaches	$ 355,000	Budgeted and Under Design
2	Metcalf Street / Mission Ave	Install Protected Permissive Left Turn phasing on all approaches (pilot)	$ 500,000	Pending Funding
3	Quince Street / Washington Ave	Install left turn phasing on all approaches	$ 450,000	Pending Funding
4	Fig Street / East Valley Pkwy	Install left turn phasing on all approaches	$ 498,000	Pending Funding
5	Rose Street / Washington Av	Install left turn phasing on east and west approaches	$ 427,000	Pending Funding
6	Fig Street / Mission Avenue	Install left turn phasing on all approaches	$ 450,000	Pending Funding
7	Centre City Pkwy / Ninth Ave	Install left turn phasing on east and west approaches	$ 440,000	Pending Funding
8	Rock Springs Road / Mission Av	Install left turn phasing on north and south approaches	$ 320,000	Developer Funded
9	Juniper Street / Felicita Ave	Install left turn phasing on all approaches	$ 445,000	Grant Funded
10	Escondido Boulevard /Grand Ave	Install left turn phasing on east and west approaches	$ 350,000	Pending Funding
	TOTAL COST ESTIMATE (New Signals & Left Turn Phasing)		$ 5,592,000	$4,018,000

Signal Program Budget Projections (TransNet):

Budget Year	Funding
FY 22/23	$100,000
FY 23/24	$250,000
FY 24/25	$250,000
FY 25/26	$250,000

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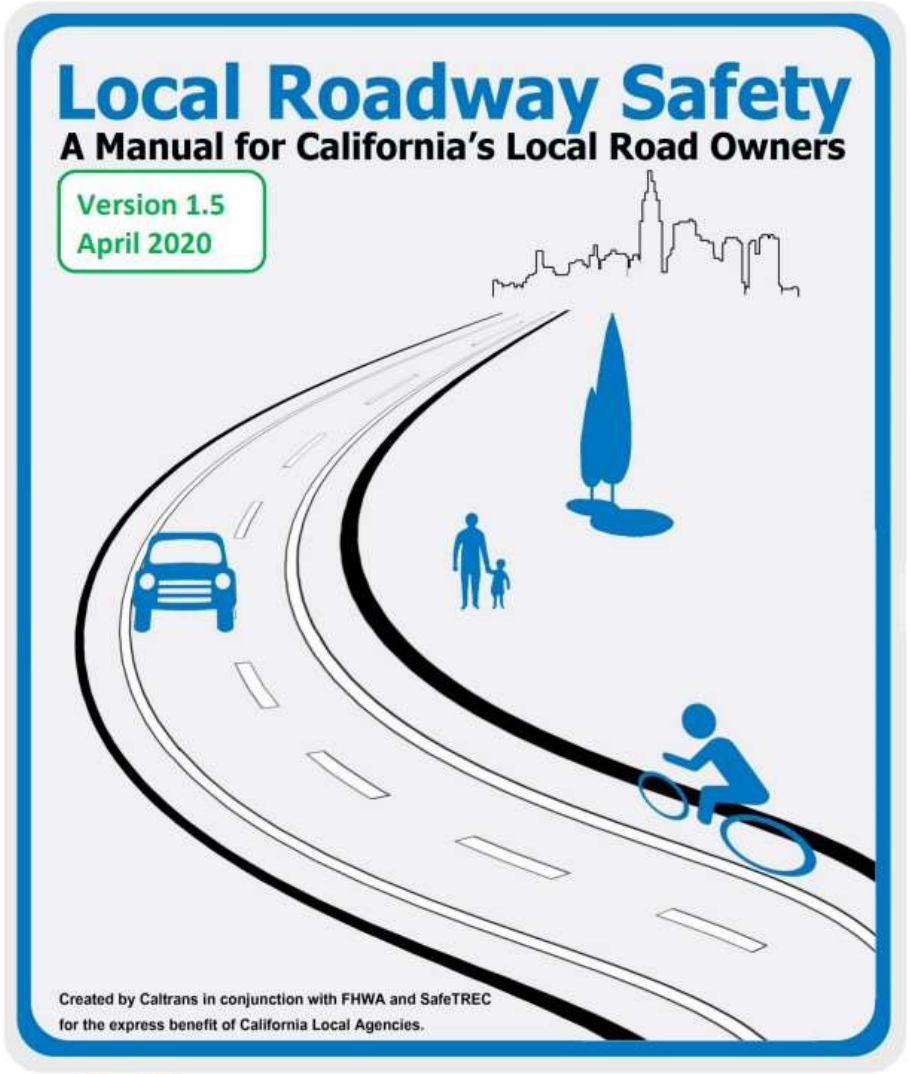

Caltrans

U. S. Department of Transportation
Federal Highway Administration

Safe Transportation Research & Education Center
SafeTREC

S03, Improve signal timing (coordination, phases, red, yellow, or operation)

For HSIP Calls-for-projects			
Funding Eligibility	Crash Types Addressed	CRF	Expected Life
50%	All	15%	10 years
Notes:	This CM only applies to crashes occurring on the approaches / influence area of the new signal timing. For projects coordination signals along a corridor, the crashes related to side-street movements should not be applied. This CM does not apply to projects that only 'study' the signal network and do not make physical timing changes, including corridor operational studies and improvements to Traffic Operation Centers (TOCs). In Caltrans calls for projects, this CM has a HSIP reimbursement ratio of 50%, considering that it will improve the signal operation rather than merely the safety.		

General information
Where to use:
Locations that have a crash history at multiple signalized intersections. Signalization improvements may include adding phases, lengthening clearance intervals, eliminating or restricting higher-risk movements, and coordinating signals at multiple locations. Understanding the corridor or roadway's crash history can provide insight into the most appropriate strategy for improving safety.
Why it works:
Certain timing, phasing, and control strategies can produce multiple safety benefits. Sometimes capacity improvements come along with the safety improvements and other times adverse effects on delay or capacity occur. Corridor improvements often have the highest benefit but may take longer to implement. Projects focused on capacity improvements (without a separate focus on signal timing safety needs) may not result in a reduction in future crashes.
General Qualities (Time, Cost and Effectiveness):
In general, these low-cost improvements to multiple signalized intersections can be implemented in a short time. Typically these low cost improvements are funded through local funding by local maintenance crews. However, some projects requiring new interconnect infrastructure can have moderate to high costs making them more appropriate to seek state or federal funding. The expected effectiveness of this CM must be assessed for each individual project.

FHWA CMF Clearinghouse:	Crash Types Addressed:	All	CRF:	0 - 41%

S04, Provide Advanced Dilemma-Zone Detection for high speed approaches

For HSIP Calls-for-projects			
Funding Eligibility	Crash Types Addressed	CRF	Expected Life
100%	All	40%	10 years
Notes:	This CM only applies to crashes occurring on the approaches / influence area of the new detection and signal timing.		

General information
Where to use:
More rural/remote areas that have a high frequency of right-angle and rear-end crashes. The Advanced Dilemma-Zone Detection system enhances safety at signalized intersections by modifying traffic control signal timing to reduce the number of drivers that may have difficulty deciding whether to stop or proceed during a yellow phase. This may reduce rear-end crashes associated with unsafe stopping and angle crashes due to illegally continuing into the intersection during the red phase.
Why it works:
Clearance times provide safe, orderly transitions in ROW assignment between conflicting streams of traffic. An Advanced Dilemma-Zone Detection system has several benefits relative to traditional multiple detector systems, which have upstream detection for vehicles in the dilemma zone but do not take the speed or size of individual vehicles into account. These benefits include: Reducing the frequency of red-light violations; Reducing the frequency of crashes associated with the traffic signal phase change (for example, rear-end and angle crashes); Reducing delay and stop frequency on the major road and a reduction in overall intersection delay.
General Qualities (Time, Cost and Effectiveness):
Installation costs should be low and the time to implement short. Additional modifications to the traffic signal controller may also necessary. In general, This CM can be very effective and can be considered on a systematic approach. Video detection equipment is now available for this purpose, making installation and maintenance more efficient.

FHWA CMF Clearinghouse:	Crash Types Addressed:	All	CRF:	39%

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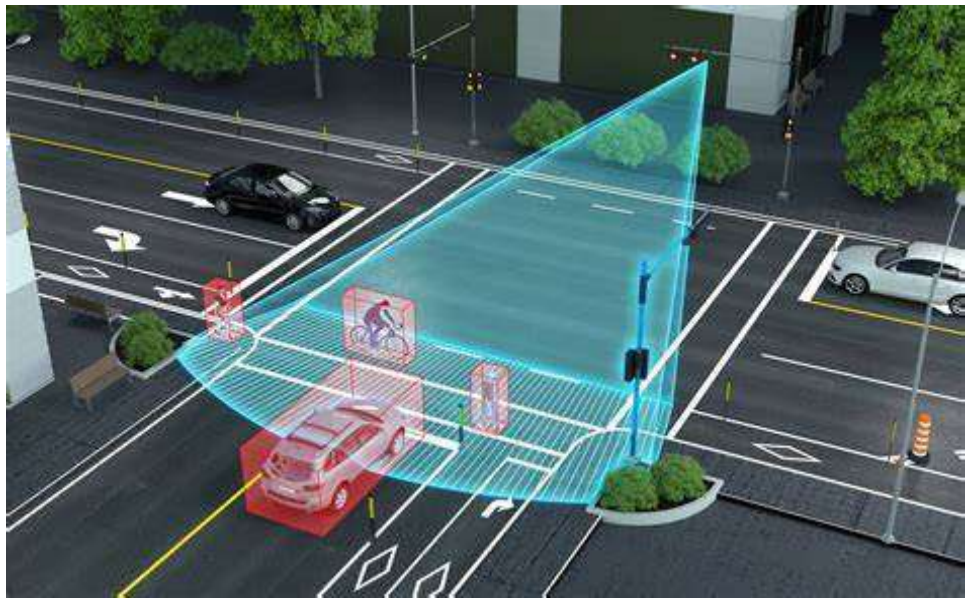
Signal Technology

Current Reality:

Outdated Detection

Unreliable Communication

Signal Controllers Lack Functionality



Vision for Smart Signals:

Video Detection: Bikes, Peds, Conflict Monitoring

Broadband Communication: View/Adjust Signals Remotely and Supports Connected Vehicles

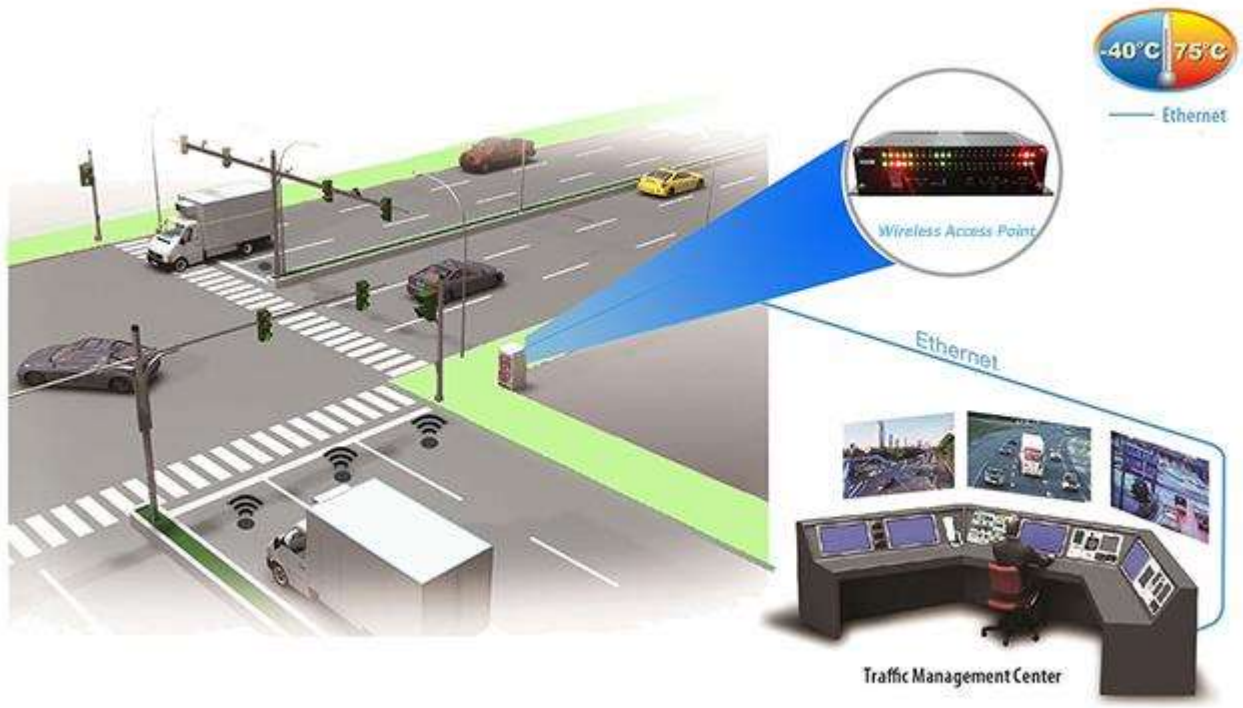
Detection Failure Alerts

More Responsive Signal Controllers

Signal Hardware & Communication Upgrades

Signal Hardware Upgrade Project

- Upgrade to SMART Signal Controller Citywide
- Upgrade to City-Operated Broadband Wireless Communication Citywide
- Install a Traffic Management Center (TMC) to allow immediate response to emergencies and severe congestion
- Optimize detection and coordination along major roadways
- $1,160,850 from Highway Safety Improvement Program with 50% City match



TSPL –Ranking Criteria for Traffic Signal Modifications for Protected Left-turns

- Left-turn Warrants using Highway Capacity Manual 6 Methodology

- Criteria 1 (Volumes 50%) Sum of the critical left turn and opposing through volumes.
- Criteria 2 (Crashes 25%) left turn crash rate
- Criteria 3 (Speeds 25%) based on the highest 85th percentile speed

Timing for Implementation

- Cost of Each Location is $350,000 - $500,000
- Projected revenues allow balance of funding for one location in FY21/23:
  - Recommend move forward with Bear Valley/Mary Lane signal modification
  - Highest ranked new signal (Rock Springs/Lincoln) is a condition of project development
  - CIP Budget to be considered by the City Council on May 12th and June 9th
- Second ranked signal (Lincoln/Harding) and signal modification (Metcalf/Mission) could be funded in FY23/24 and 25/26, respectively

New Traffic Signals - 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.

Ranking of New Traffic Signals – Accident Data

- Criteria 6: Accident History
- 5-year accident data (01/2014 – 01/2019)
- Average of the latest two years used to determine points
- Points assigned for accidents that could have been corrected with the installation of a new Traffic Signal AND only if less restrictive measures (warning signage, lighting, painted markings) have failed.

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).

No. Accidents	Points
<2	0
3	1
4	3
5	5
6	6
7	7
8	8
9	9
10	10
11	11
12	12
13	13
14	14
15+	15

Level Of Service Summary without and with Left Turn Phasing Recommendations

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**

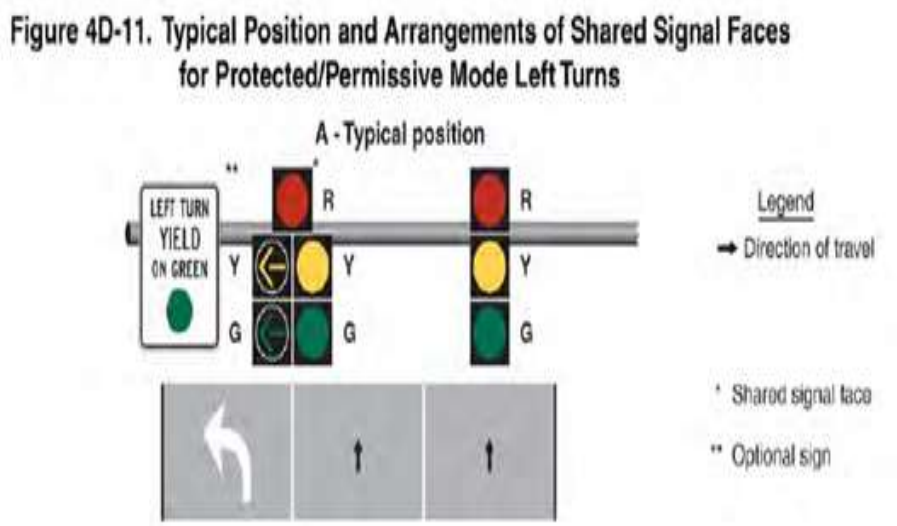
Note: Deficient intersection operation indicated in **bold**.
[1] Average seconds of delay per vehicle.
LOS = level of service.

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

The 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. Therefore, left turn phasing is not recommended at Ash Street/Lincoln Avenue 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.

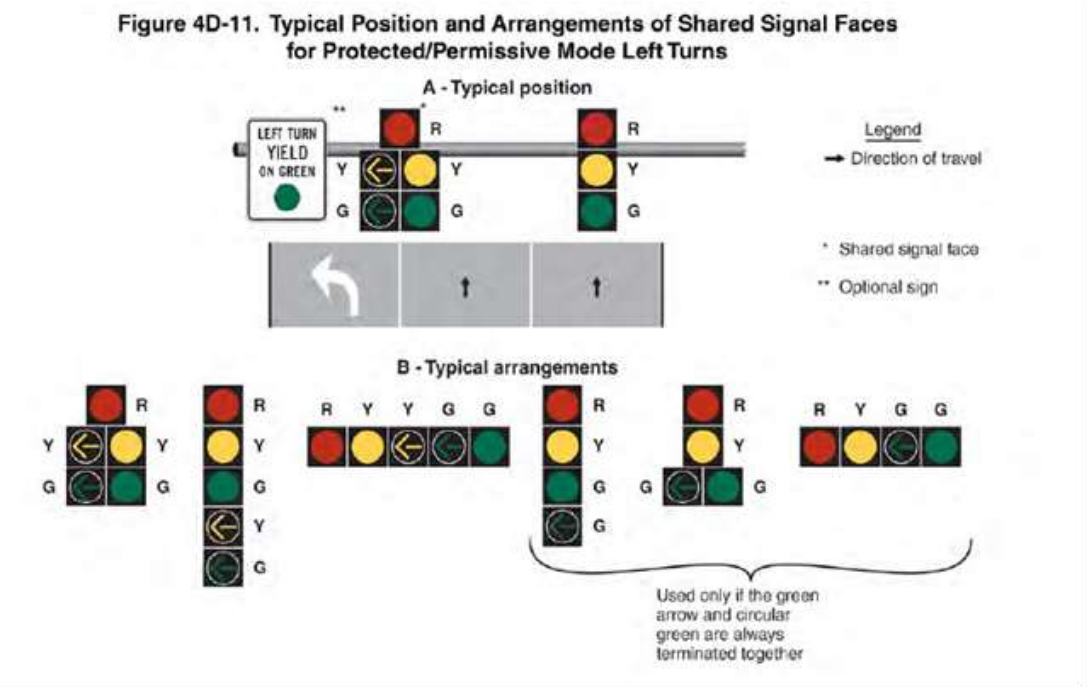
Protected Permitted Left Turn Phasing, PPLT

- Phasing:
  - Left Turns are protected with green arrow for specified time-frame
  - Yellow arrow then denotes when left turns are allowed when there is no conflicting traffic
- Metcalf St / Mission Ave recommended for PPLT (of top 3)
- Other locations have high pedestrian traffic where PPLT is not recommended
- Not widely used in Northern SD. 12 month Pilot recommended by TCSC



Protected Permitted Left Turn Phasing, PPLT

- Not widely used in Northern San Diego County
- Phasing:
  - Left Turns are protected with green arrow for specified time-frame
  - Yellow arrow then denotes when left turns are allowed when there is no conflicting traffic
- Metcalf St / Mission Ave recommended for PPLT (of top 3)
- Other locations have high pedestrian traffic where PPLT is not recommended
- If implemented, 12 month Pilot recommended by TCSC



TSPL –Ranking Criteria for Traffic Signal Modifications for Protected Left-turns

- Left-turn Warrants using Highway Capacity Manual 6 Methodology

- Criteria 1 (Volumes 50%) For the proposed LTP Phasing - the sum of the critical left turn and opposing through volumes during the AM and PM peak hour.
- Criteria 2 (Crashes 25%) left turn crash rate which is equal to the left turn related crashes (January 2014 to January 2019) divided by AM and PM Peak-Hour left-turn volume.
- Criteria 3 (Speeds 25%) based on the highest 85th percentile speed recorded for each approach of the intersection.

TSPS– Warrants and COE Ranking Criteria for New Traffic Signals

- Based on Traffic Policy #11, adopted in April 1991
- CA MUTCD Warrants need to be met

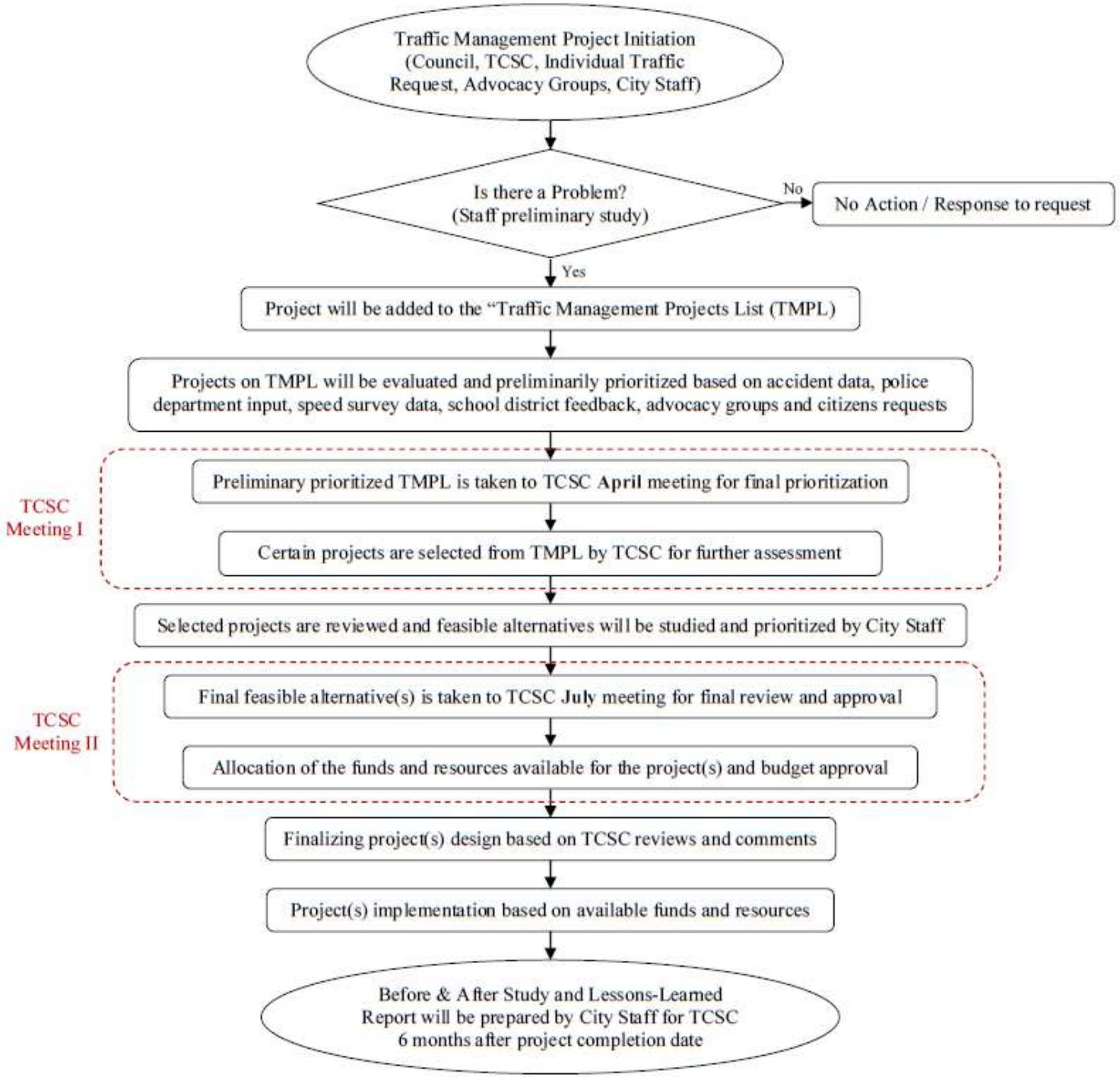
Warrant No.	CA MUTCD Warrant	Evaluated (Yes/No)
Warrant 1	Eight-Hour Vehicular Volume	Yes
Warrant 2	Four-Hour Vehicular Volume	Yes
Warrant 3	Peak Hour	Yes
Warrant 4	Pedestrian Volume	Yes
Warrant 5	School Crossing	Yes
Warrant 6	Coordinated Signal System	Yes
Warrant 7	Crash Experience	Yes
Warrant 8	Roadway Network	Yes
Warrant 9	Intersection Near a Grade Crossing	No

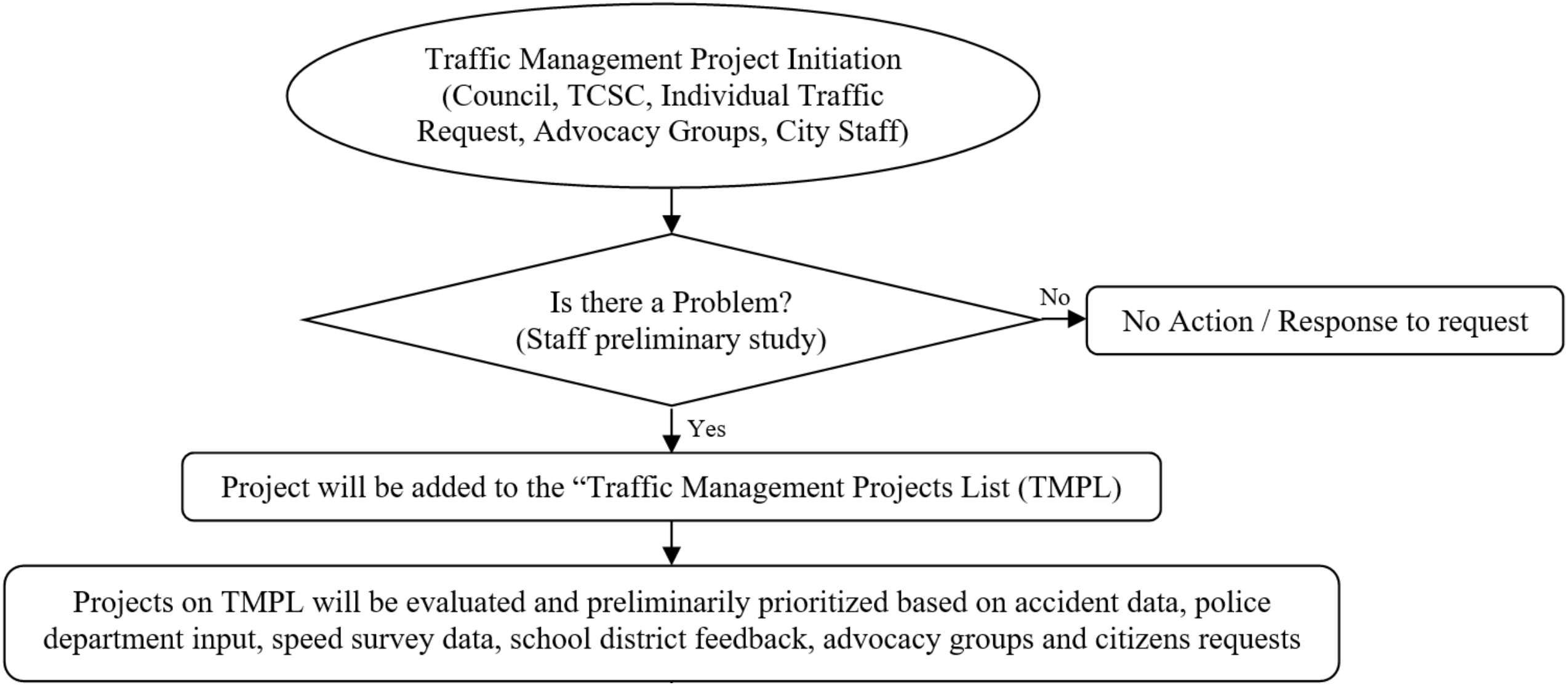
TABLE 9 – CRITERIA RANKING SUMMARY

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%	

Summary of Key Findings

Analysis Type	Key Finding
Crash Type	• Top 3 crash types: Broadside (34%), Rear-End (27%), and Sideswipe (11%). • 1,487 Broadside crashes throughout the City. • 1,146 Rear-End crashes. • 488 Sideswipe crashes.
Crash Cause	• Most common cause was Unsafe Speed (20%), followed by Auto Right-of-Way Violation (19%) and DUI (17%). • DUI crashes were reported throughout. • Pedestrian violations, such as peds crossing mid-block, jaywalking or crossing outside a marked crosswalk were primary cause of pedestrian-involved crashes, • Bicycle-involved crashes were primarily auto right-of-way violations.
Crash Severity	• Severe injuries reported in 2% of crashes • Fatalities were reported in 1% of crashes. • Fatalities involving motor vehicles generally occurred throughout the roadway network.
Time of Day Analysis	• 3 PM to 6 PM experienced greatest number of crashes with 970. • 113 of pedestrian and bicycle-involved crashes occur from 3 PM to 6PM. • 3 PM to 6 PM, 41% of pedestrian-involved crashes are caused by pedestrian violations such as crossing mid-block, jaywalking or crossing outside a marked crosswalk. • 33% of bicycle-involved crashes during this 3-hour time period is caused by bicyclists riding on the wrong side of the road.
Bicycle and Pedestrian Crashes	• 251 pedestrian crashes were reported, 10 of which were fatal crashes and 25 of which resulted in severe injury • 191 bicycle crashes were reported that resulted in 2 fatalities and an additional 183 injury crashes • The majority of pedestrian- or bicyclist crashes involved ages of 15 and 64 years old. • The majority of reported pedestrian- or bicyclist crashes occurred on roadways with a speed limit of 35 MPH.


Traffic Management Project Initiation (Council, TCSC, Individual Traffic Request, Advocacy Groups, City Staff)
Is there a Problem? (Staff preliminary study)
No
No Action / Response to request
Yes
Project will be added to the "Traffic Management Projects List (TMPL)
Projects on TMPL will be evaluated and preliminarily prioritized based on accident data, police department input, speed survey data, school district feedback, advocacy groups and citizens requests
TCSC Meeting I
Preliminary prioritized TMPL is taken to TCSC April meeting for final prioritization
Certain projects are selected from TMPL by TCSC for further assessment
Selected projects are reviewed and feasible alternatives will be studied and prioritized by City Staff
TCSC Meeting II
Final feasible alternative(s) is taken to TCSC July meeting for final review and approval
Allocation of the funds and resources available for the project(s) and budget approval
Finalizing project(s) design based on TCSC reviews and comments
Project(s) implementation based on available funds and resources
Before & After Study and Lessons-Learned Report will be prepared by City Staff for TCSC 6 months after project completion date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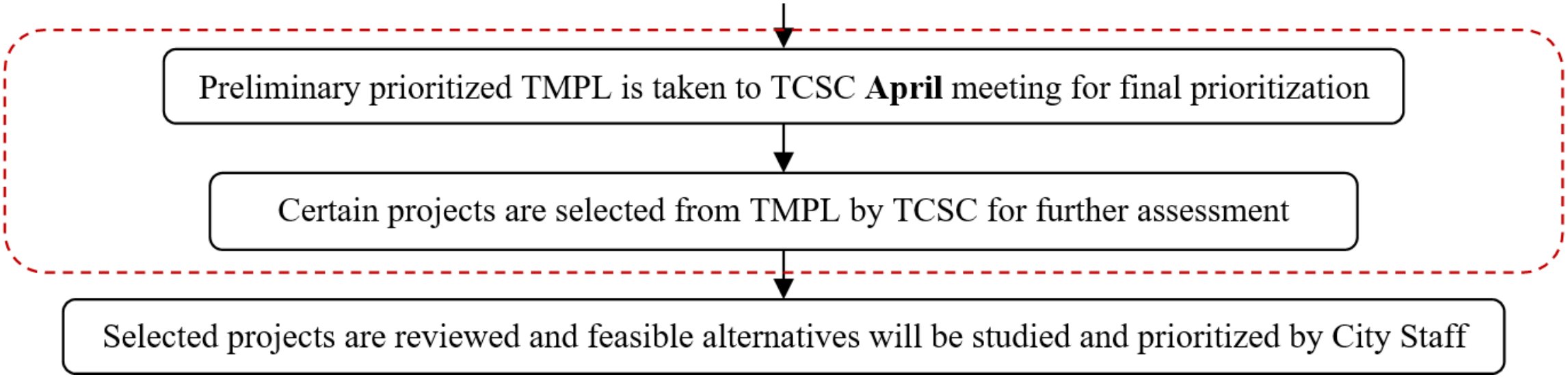
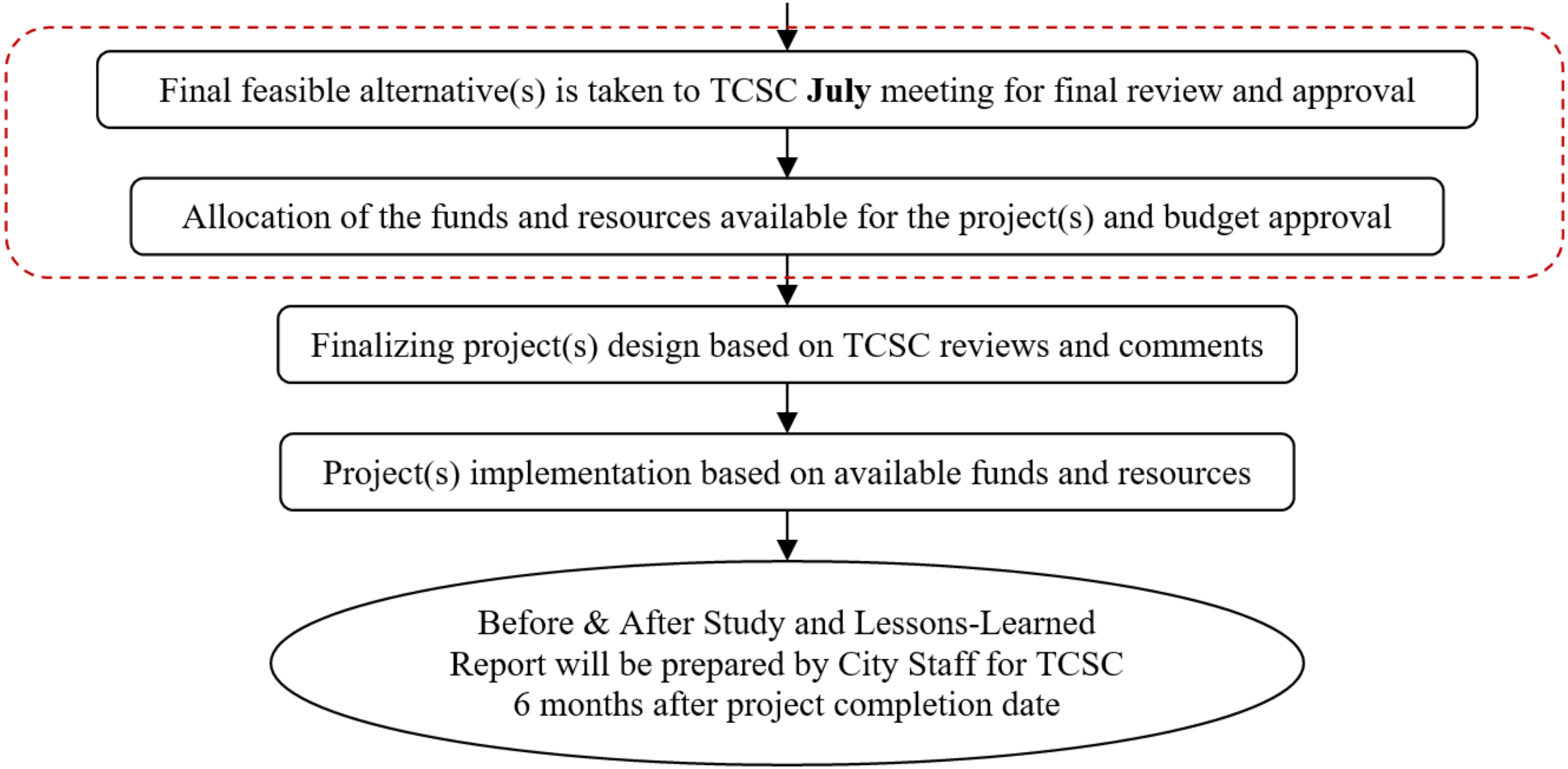
TCSC Meeting I



TCSC Meeting II



FY21/22 Budget: Top Priority Transportation Safety

IMPROVE

- City Traffic Engineer FY21/22 budget
- Local Roadway Safety Plan
- Signal Upgrades
- Traffic Management Center
- Comp. Active Transportation Strategy

ENFORCE & EDUCATE

- Two Traffic Safety Officers FY 21/22 budget
- Education campaigns
- Checkpoints
- Saturation Patrols
- Speed trailer deployment
- Targeted enforcement

MAINTAIN

- Electrician FY21/22 budget
- Respond to Signal Alerts
- Maintain detection cameras
- Replace failing equipment

Red Light Enforcement

- Red Light Photo Enforcement in use 2004-2013
  - Tickets were regularly challenged and “thrown out” in traffic court
  - Resulted in sudden breaking of vehicles at photo enforced locations
  - Annual red light collisions ranged from 100% decrease to 60% increase at photo enforced locations (-100%, -73%, +20%, +60%)
  - Program costs outweighed benefits (FY11/12 cost of $196,000)
- Proposed Approach
  - Red light indicators: allows officers to see signal turning red while in a position to enforce
  - Officer presence encourages safe driving at the intersection and beyond
- Currently Lack Capability for Photo Enforcement
  - Cameras are set up to detect only and do not store data or take photographs
  - Many intersections use loop detection and are not served by cameras
  - Signal communication lacks bandwidth to transmit photographs or video feeds

Completed/Funded Improvements

Traffic Management Priority List

- 14 Projects
- 11 Crosswalk Upgrades
- 13 Intersection Countdown Timers
- 6 Audible Pedestrian Signals
- 2 Traffic Calming

Signal Priority List

- Valley/Date*
- El Norte/Fig*
- Ash/Sheridan
- Broadway/Lincoln
- Escondido/ Felicita signal mod (design)

Safety-Related Grants

- Missing Link*
- El Norte Pedestrian Signal*
- 7 Creek Trail Crossings*
- Juniper SR2S* (design)
- Tulip/Quince Ped Signals* (design)
- Traffic Signal Technology Upgrades* (design)

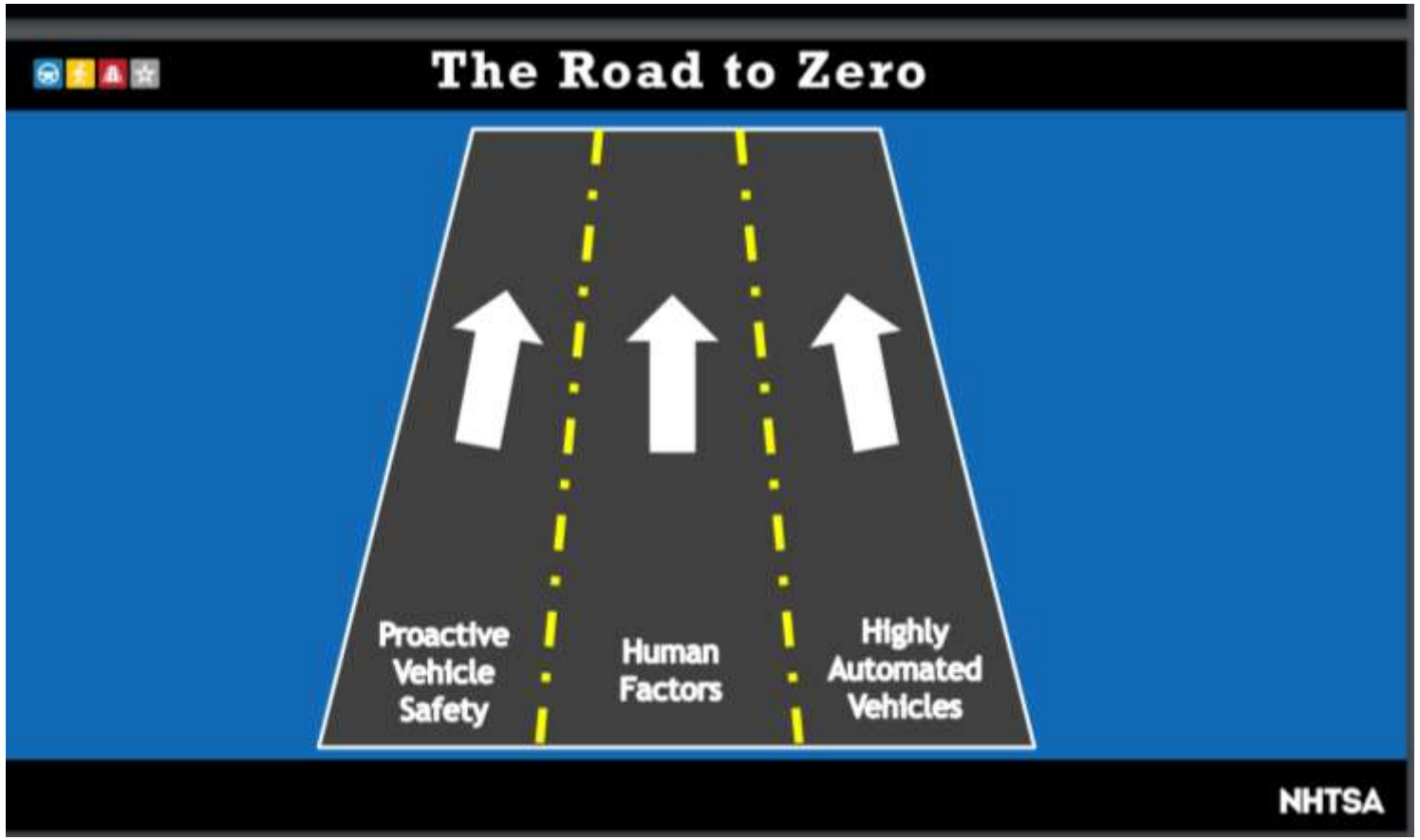
** Grant Funded Projects*

Road to Zero

Road to Zero Coalition

- Managed by the National Safety Council (NSC) and supported by the National Highway Traffic Safety Administration (NHTSA),
- Multiple strategies intended to end traffic-related fatalities in the US by 2050.
- Accelerate the achievement of that vision through concurrent efforts that focus on overall system design, addressing infrastructure design, vehicle technology, enforcement and driver behavior.
- “Three Lanes” that lead to Zero Roadway deaths

National Highway Traffic Safety Administration



Education & Enforcement

- FY 2021-22 OTS STEP Grant allocation provides funding for:
  - 1 Full-time DUI Traffic Enforcement Officer
  - 6 DUI Checkpoints
  - 19 Saturation Patrols
  - 6 Traffic Enforcement Details
  - 4 Distracted Driving Details
  - 1 Motorcycle Safety Detail
  - 3 Pedestrian and Bicycle Enforcement Details
  - Driver Safety Presentations
  - Know Your Limit Campaign
  - Traffic Safety Equipment