COUNTY OF VENTURA

Local Roadway Safety Plan (LRSP)

PREPARED BY:

Kimley»Horn

Expect More. Experience Better.

Table of Contents

List of Figures

List of Tables

(Per section 148 of Title 23, United States Code [23 U.S.C. §148(h) (4)]: REPORTS DISCOVERY AND ADMISSION INTO EVIDENCE OF CERTAIN REPORTS, SURVEYS, AND INFORMATION—Notwithstanding any other provision of law, reports, surveys, schedules, lists, or data compiled or collected for any purpose relating to this section, shall not be subject to discovery or admitted into evidence in a Federal or State court proceeding or considered for other purposes in any action for damages arising from any occurrence at a location identified or addressed in the reports, surveys, schedules, lists, or other data.)

TO BE SIGNED BY _____ Signature line

By signing and stamping this Local Roadway Safety Plan, the engineer is attesting to this report's technical information and engineering data upon which local agency's recommendations, conclusions, and decisions are made.

Abbreviations

AASHTO: American Association of State Highway and Transportation Officials

ADT: Average Daily Traffic

ATP: Active Transportation Program

B/C Ratio: Benefit-Cost Ratio

CHP: California Highway Patrol

CMAQ: Congestion Mitigation and Air Quality Improvement

CMF: Crash Modification Factor

CRF: Crash Reduction Factor

CRM: Customer Relationship Management

CTC: California Transportation Commission

CVC: California Vehicle Code

EMS: Emergency Medical Services

EPDO: Equivalent Property Damage Only

FAST: Fixing America's Surface Transportation

FHWA: Federal Highway Administration

FTA: Federal Transit Administration

GIS: Geographic Information Systems

HAWK: High Intensity Activated Crosswalk

HFST: High Friction Surface Treatment

HSIP: Highway Safety Improvement Program

HSM: Highway Safety Manual

IIP: Interregional Improvement Program

ITIP: Interregional Transportation Improvement Program

KSI: Killed or Seriously Injured

Local CCR: Local Critical Crash Rate Differential

LPI: Leading Pedestrian Intervals

LRSM: Local Roadway Safety Manual

LRSP: Local Road Safety Plan

MUTCD: Manual on Uniform Traffic Control Devices for Streets and Highways

OTS: California Office of Traffic Safety

PCF: Primary Crash Factor

RIP: Regional Improvement Program

RRFB: Rectangular Rapid Flashing Beacon

RTIP: Regional Transportation Improvement Program

SB 1: California Senate Bill 1

SCAG: Southern California Association of Governments

SHSP: California Strategic Highway Safety Plan

STIP: State Transportation Improvement Program

SWITRS: Statewide Integrated Traffic Records System

TDM: Transportation Demand Management

TIMS: Transportation Injury Mapping System

TOD: Transit Oriented Development

USGS: United States Geological Survey

VCTC: Ventura County Transportation Commission

INTRODUCTION

The County of Ventura, the 11th most populous county in the State of California, is comprised of the following ten incorporated cities - Camarillo, Fillmore, Moorpark, Ojai, Oxnard, Port Hueneme, Santa Paula, Simi Valley, Thousand Oaks, and San Buenaventura. The County is bounded to the west by the County of Santa Barbara, to the north by County of Kern and to the east by the County of Los Angeles. The County has a diverse environment with 42 miles of coastline, 46% of landmass belonging to the Los Padres National Forest, and vast areas of agriculture land in the fertile valley southern half of the county. The county has economically developed to include industries in biotechnology, advanced technology, healthcare, higher education institutions, and the military. A location Project Area map is provided in **Figure 1**.

As part of the *County of Ventura 2040 General Plan*, the County Board of Supervisors adopted a Vision for the General Plan that [1]:

> "...reflects the County's ongoing commitment to collaborate with residents, counties, businesses, and non-profit organizations to meet our social and economic needs in a sustainable manner, to protect the environment and address climate change, and to encourage safe, healthy, vibrant, and diverse communities to thrive."

The Vision is supported by several Guiding Principles including one related to Circulation, Transportation, and Mobility which:

> "Support[s] the development of a balanced, efficient, and coordinated multimodal transportation network that meets the mobility and accessibility needs of all residents, businesses, and visitors."

The Circulation, Transportation, and Mobility Element of the General Plan "focuses on providing a balanced, multimodal transportation network that meets the needs of all users of streets, roads, and highways for safe and convenient travel in a manner that is suitable to the rural, suburban, or urban context." This element is consistent with the overarching theme of the General Plan that aims to make improvements and meet the demands of its people but also "reflects the rural nature of the county."

Local Road Safety Plans (LRSPs) are a Federal Highway Administration (FHWA) proven program that utilizes safety countermeasures that have been effective across the country as part of efforts to reduce fatal and severe injury crashes. They provide a locally developed and customized roadmap to directly address the most common safety challenges in the given jurisdiction.

Figure 2 shows the County's Road Network functional classifications with the incorporated cities not included in this LRSP shaded in grey. Major highways in the County include the U.S. Route 101 freeway, CA-23, CA-33, CA-118, and CA-126 freeways, expressway/conventional highways including the CA-1, CA-23, CA-33, CA-34, CA-118, CA-126 and CA-150. The County-Maintained Road System is divided into several functional classifications from arterials to local

[1] *County of Ventura 2040 General Plan*

roads. In general, the expressways/conventional highways experience the heaviest traffic demand and volume because they carry local and regional traffic to reach locations of employment and population centers as well as being thoroughfares between Southern California and Central Coast Cities. Roadways with the functional classifications of Major Collector, Minor Collector, and Local provide circulation between neighborhoods and generally are shorter trip lengths than the other classifications. The County of Ventura LRSP only analyzes collisions occurring on unincorporated roadways, totaling around 542 centerline miles of county-maintained roads. Aligning with the *County of Ventura 2040 General Plan*, this LRSP will analyze and help identify areas of improvement related to multi-modal transportation safety improvements on county-maintained roadways. Coordination with the federal, state, county, city, and private jurisdictions, is critical to achieve a comprehensive safety strategy for the entire county.

The Ventura County LRSP identifies countywide crash trends, high-crash locations, and emphasis areas to inform and guide further safety evaluation of the County's road network. Crash trends are systemic patterns that identify common collision types that can use the same or similar countermeasures, while high-crash locations identify the types of collisions in an isolated location and can use multiple countermeasures to improve the entire location.

An opportunity the LRSP provides is the ability to be more proactive rather than reactive. It helps to provide an overview of crash trends that allows the County to evaluate the road conditions of the entire network and implement systemic improvements, getting out in front of the collisions before they happen. Hot-spot improvements are focused on in the LRSP, but for these locations the focus is to fix a problem which has already created loss of life or severe injury. While these locations are significant, a goal of the LRSP is to provide guidance to prevent these hot-spot locations from being created in the first place.

The goal of these two analysis methods is to identify county-wide trends and patterns as holistically as possible. The analysis of crash history throughout the County's road network allows for opportunities to: 1) identify conditions and factors in the road network that contribute to elevated crash risk for roadway users in all transportation modes, 2) identify potential safety improvements at specific high-crash locations, and 3) develop safety measures using the California Strategic Highway Safety Plan's (SHSP) five E's of safety: Education, Emergency Response, Emerging Technologies, Enforcement, and Engineering to encourage safer driver behavior and improve roadway safety.

This report documents the process and analysis performed for the County's LRSP including the vision and goals for the LRSP development, crash history analysis, and emphasis areas. The information compiled in this report will provide a foundation for decision making and prioritization of safety countermeasures and projects that enhance safe mobility for all modes of transportation throughout the County. For future updates the LRSP could be refined to analyze the crash history and emphasis areas to identify site specific infrastructure and non-infrastructure recommendations for selected signalized and unsignalized intersections, mid-block crossings, and roadway segments within the Unincorporated County, and determining how broader systemic recommendations can be applied county-wide, as appropriate. Future updates could also include input for additional stakeholders and increased focus on non-engineering countermeasures.

The County of Ventura is committed to reducing the risk of fatal and serious injuries that result from traffic collisions on the County's roadways. The LRSP tells the story of transportation safety needs and strategies for Ventura County. Implementation of the LRSP will help improve transportation safety and comfortable mobility for

the residents and visitors of Ventura County. All phases of the LRSP were developed with input from partners including:

Ventura County, Public Works Agency, Roads & Transportation Department
Ventura County, Sheriff's Office
Ventura County, Resource Management Agency, Planning Division
Ventura County Transportation Commission
California Highway Patrol

Figure 1. Project Area - County of Ventura

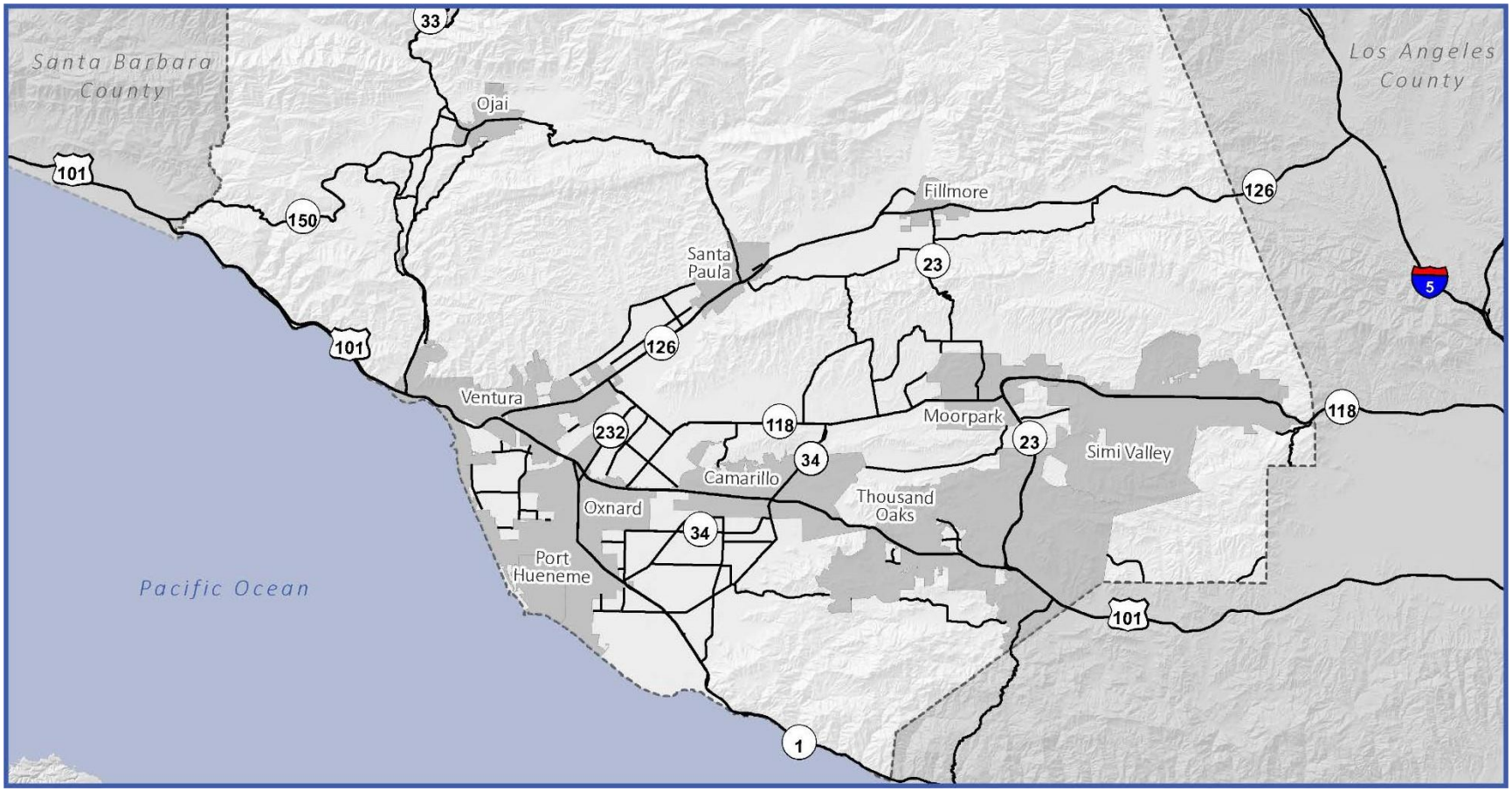


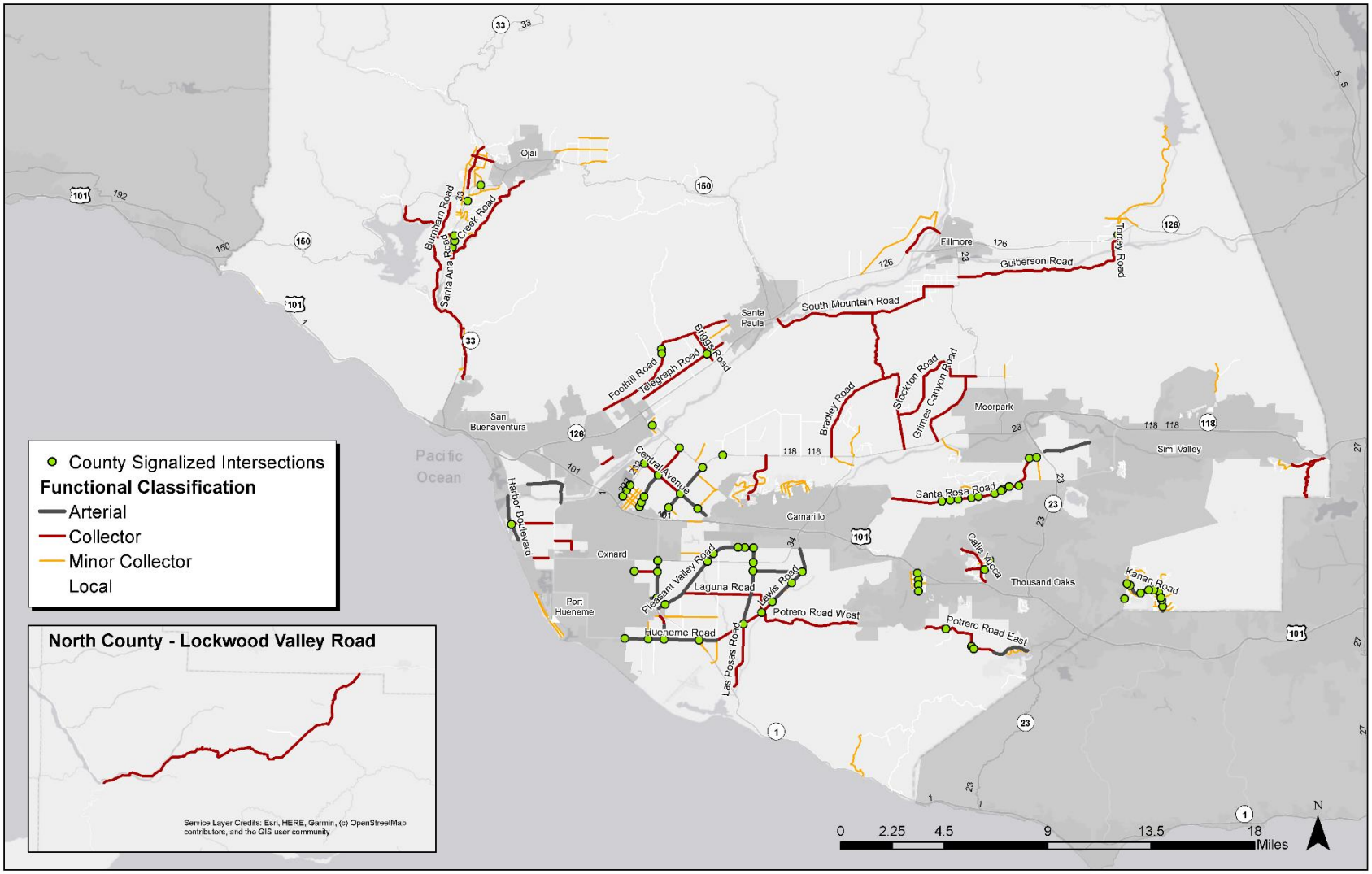
Figure 4-2:
Ventura County Regional Road Network

Regional Rodd Network
Cities
Ventura County Boundary

Map Date: September 19, 2013
Source: Ventura County, 2019; California Department of Transportation, 2003; USGS, 2013.

0 5 10 Miles

Figure 2. County of Ventura Roadway Classifications



VISION AND GOALS

Based on discussions with County staff, the County's safety partners, and a review of the County's existing plans, policies, and safety efforts, the following preliminary vision and goals have been drafted for the LRSP.

VISION THE COUNTY OF VENTURA'S LRSP WILL CONTINUE ITS COLLABORATIVE APPROACH ROOTED IN ITS CULTURAL AND DIVERSE NATURAL RESOURCES TO IMPLEMENT SUSTAINABLE IMPROVEMENTS.

Goal #1: Identify high frequency collision types and analyze systemic similarities of the locations of these collisions

Objectives:

A. Demonstrate the systemic process' ability to identify locations with higher risk for crashes based on present characteristics closely associated with fatal and serious injury crashes.
B. Demonstrate the gaps and data collection activities that can be improved upon.
C. Develop prioritization processes that help achieve the County's vision.

Goal #2: Identify areas with a high risk for crashes

Objectives:

A. Identify intersections and segments in the transportation network that would most benefit from traffic safety countermeasures and mitigation.
B. Identify areas of interest with respect to traffic safety concerns covering all Es of traffic safety.
C. Evaluate the crash history to identify priority corridors.

Goal #3: Plan future safety improvements that improve mobility choices

Objectives:

A. Identify safety countermeasures that are effective for specific locations.
B. Identify effective safety countermeasures that can be applied County-wide to address a certain behavior or condition.

Goal #4: Define safety projects for future HSIP and other program funding consideration

Objectives:

A. Create an outline for a prioritization process that can be used in forth-coming Highway Safety Improvement Program (HSIP) cycles to apply for funding.
B. Identify and apply for additional grants and funding opportunities for safety improvements.
C. Demonstrate the correlation between the proposed safety countermeasures with the Vision Zero Initiative and the California State Highway Safety Plan.

PROCESS

Providing safe, sustainable, and efficient mobility choices for constituents and visitors is a primary goal for the County and its safety partners. The County will continue collaborating with their safety partners to identify and discuss safety issues within the community as the LRSP is implemented and updated.

To begin the LRSP process, the County of Ventura held a kick-off meeting in the spring of 2020 to collectively discuss existing safety efforts, the County's vision for safety, critical issues, and strategies to achieve the County's safety goals in its Vision Zero initiative. To help inform this discussion, initial safety concerns and data were collected and organized to identify critical safety issues and preliminary emphasis areas.

This LRSP documents the results of data and information obtained, including the vision and goals for the LRSP, existing safety efforts, crash analysis, and developed emphasis areas. The development of the LRSP recommendations considers the five Es of traffic safety defined by the California Strategic Highway Safety Plan (SHSP): Education, Emergency Response, Emerging Technologies, Enforcement, and Engineering throughout its process.

ANALYSIS SUMMARY

The following section describes the analysis process undertaken to evaluate safety within the County of Ventura at a systemic level. Using a network screening process, locations that will most likely benefit from safety enhancements were identified within the County. Using historic crash data, crash risk factors for the entire network were derived. The analysis outcomes help identify and prioritize engineering and non-infrastructure countermeasures that address certain roadway characteristics and driver behaviors that contribute to motor vehicle crashes.

Guiding Manuals

Existing guidance for roadway design and safety are available at the national and state level. The following provides a brief summary for two of the more predominate manuals that guided the analysis process.

Local Roadway Safety Manual

The *Local Roadway Safety Manual: A Manual for California's Local Road Owners* (Version 1.5, April 2020) purpose is to encourage local agencies to pursue a proactive approach to identifying and analyzing safety issues, while preparing to compete for project funding opportunities. A proactive approach is defined as analyzing the safety of the entire roadway network through either a one-time, network wide analysis, or by routine analyses of the roadway network.[2]

According to the *Local Roadway Safety Manual* (LRSM), "The California Department of Transportation (Caltrans) – Division of Local Assistance is responsible for administering California's federal safety funding intended for local safety improvements."

To provide the most benefit and to be competitive for funding, the analysis leading to countermeasure selection should focus on both intersections and roadway segments and be considerate of roadway characteristics and traffic

2 Local Roadway Safety Manual (Version 1.3) 2016. Page 5.

volumes. The result should be a list of locations that are most likely to benefit from cost-effective countermeasures, preferably prioritized by benefit/cost ratio. The manual suggests using a mixture of quantitative and qualitative measures to identify and rank locations that considers both crash frequency and crash rates. These findings should then be screened for patterns such as crash types and severity to aid in the determination of issues causing higher numbers of crashes and the potential countermeasures that could be most effective. Qualitative analysis should include field visits and a review of existing roadway characteristics and devices. The specific roadway context can then be used to assess what conditions may increase safety risk at the site and systematic level.

Countermeasure selection should be supported using Crash Modification Factors (CMFs). These factors are the peer reviewed product of before and after research that quantifies the expected rate of crash reduction that can be expected from a given countermeasure. If more than one countermeasure is under consideration, the LRSM provides guidance on how to apply CMFs appropriately.

Highway Safety Manual

"The AASHTO *Highway Safety Manual* (HSM), published in 2010, presents a variety of methods for quantitively estimating crash frequency or severity at a variety of locations."[3] This four-part manual is divided into Parts: A) Introduction, Human Factors, and Fundamentals, B) Roadway Safety Management Process, C) Predictive Method, D) Crash Modification Factors."

Chapter 4 of Part B of the HSM discusses the Network Screening process. The Network Screening Process is a tool for an agency to analyze their entire network and identify/rank locations that (based on the implementation of a countermeasure) are most likely to least likely to realize a reduction in the frequency of crashes.

The HSM identifies five steps in this process:[4]

1. **Establish Focus:** Identify the purpose or intended outcome of the network screening analysis. This decision will influence data needs, the selection of performance measures and the screening method that can be applied.
2. **Identify Network and Establish Reference Populations:** Specify the types of sites or facilities being screened (i.e., segments, intersections, geometrics) and identify groupings of similar sites or facilities.
3. **Select Performance Measures:** There are a variety of performance measures available to evaluate the potential to reduce crash frequency at a site. In this step, the performance measure is selected as a function of the screening focus and the data and analytical tools available.
4. **Select Screening Method:** There are three principle screening methods described in this chapter (i.e., ranking, sliding window, peak searching). Each method has advantages and disadvantages; the most appropriate method for a given situation should be selected.

[3] AASHTO, Highway Safety Manual, 2010, Washington D.C., http://www.highwaysafetymanual.org/Pages/About.aspx

[4] AASHTO. *Highway Safety Manual.* 2010. Washington, DC. Page 4-2.

5. **Screen and Evaluate Results:** The final step in the process is to conduct the screening and analysis and evaluate the results.

The HSM provides several statistical methods for screening roadway networks to identify high risk locations based on overall crash histories. In addition to flat crash quantities, the methods used in this study are referred to as Critical Crash Rate (CCR) and Equivalent Property Damage Only (EPDO).

Critical Crash Rate

Reviewing the number of crashes at a location is a good way to understand the cost to society incurred at the local level but does not give a complete indication of the level of risk for those who use that intersection or roadway segment daily. The Highway Safety Manual describes the Critical Crash Rate method which provides a statistical review of locations to determine where risk is higher than that experienced by other similar locations. It is also the first step in analyzing for patterns that may suggest systemic issues that can be addressed at that location, and proactively at others to prevent new safety challenges from emerging.

The Critical Crash Rate compares the observed crash rate to the expected crash rate at a particular location based on facility type and volume using a locally calculated average crash rate for the specific type of intersection or roadway segment being analyzed. The Critical Crash Rate formula is shown in **Figure 3**. Based on traffic volumes and a weighted countywide crash rate for each facility type, a critical crash rate threshold is established at the 95% confidence level to determine locations with higher crash rates that are unlikely to be random. The threshold is calculated for each location individually based on its traffic volume and the crash profile of similar facilities.

Figure 3. Critical Crash Rate Formula

$$R_{c,i} = R_a + \left[P \times \sqrt{\frac{R_a}{MEV_i}} \right] + \left[\frac{1}{(2 \times (MEV_i))} \right]$$

Where,

$R_{c,i}$ = Critical crash rate for intersection i

R_a = Weighted average crash rate for reference population

P = P-value for corresponding confidence level

MEV_i = Million entering vehicles for intersection i

Equivalent Property Damage Only

The EPDO average crash frequency, as described in the HSM, identifies sites with potential for safety improvement for all reference populations. This method weights the frequency of crashes by severity to develop a score for each site. The formula for EPDO is shown in **Figure 4.** The weighting factors are calculated based on the crash cost by severity relative to the cost of a property damage only crash. The crash costs should include both direct (e.g., EMS, property damage, insurance, etc.) and indirect (e.g., pain and suffering, loss of life). This method provides a ranking of sites based on the severity of the crashes.

Figure 4. Equivalent Property Damage Only (EPDO) Formula

$$Fatality\ Weighting\ Factor = F_w = \frac{Average\ Fatal\ Crash\ Cost}{Average\ PDO\ Crash\ Cost}$$

$$Injury\ Weighting\ Factor = I_w = \frac{Average\ Injury\ Crash\ Cost}{Average\ PDO\ Crash\ Cost}$$

$$PDO\ Weighting\ Factor = P_w = 1.0$$

$$EDPO_i = K_{Fi}(F_w) + K_{Ii}(I_w) + K_{PDOi}(P_w)$$

Where:

KF,i = crash frequency of fatal crashes on segment i;

KI,i = crash frequency of injury crashes on segment i; and

KPDO,i = crash frequency of PDO crashes on segment i.

Probability of Specific Crash Types Exceeding Threshold Proportion

The Highway Safety Manual (HSM) describes the methodology for determining the probability that crash type is greater than an identified threshold proportion. This helps to identify locations where a crash type is likely to occur.

Data Needs

The probability of a specific crash type can be determined using crash records with location data, and classifications of the locations (intersections or segments) studied.

Strengths

- Can be used as a diagnostic tool
- Considers variance in data
- Not affected by selection bias

The HSM methodology first determines the frequency of a specific crash type at an individual location, then determines the observed proportion of that crash type relative to all crash types at that location. A threshold proportion is then determined for the specific crash type; HSM suggests utilizing the proportion of the crash type

observed in the entire reference population (e.g. throughout the entire County of Ventura). The crash type proportions at each intersection and segment are compared with the countywide averages to determine which have crash type distributions that are skewed to a particular crash type, suggesting the potential for conditions that are favorable for a given crash type. The calculation is shown below in **Figure 5**.

Figure 5. Probability of Specific Crashes Types Exceeding Threshold Proportion

$$P\left(p_i > \overline{p^*_i} \,/\, N_{observedj}, N_{observedj(TOTAL)}\right) = 1 - betadist\left(\overline{p^*_i}, a + N_{observedj}, \beta + N_{observedj(TOTAL)} - N_{observedj}\right)$$

Where:

$\overline{p^*_i}$ = Threshold proportion

p_i = Observed proportion

$N_{observed,i}$ = Observed target crashes for a site i

$N_{observed,i(TOTAL)}$ = Total number of crashes for a site i

Analysis Techniques

Crash Analysis

A component of the LRSP is to identify locations with elevated risk of crashes either through their crash histories, or their similarities to other locations that have more active crash patterns. The initial step in analyzing this information is to spatially reference crashes that occurred within the study area from January 1st. 2015 through December 31st, 2019. The charts and figures below display all crash activity for this period using Statewide Integrated Traffic Records System (SWITRS) data processed through Crossroads Crash Software. In addition, Crossroads has access to the latest police reports, allowing validation of the County's data with Transportation Injury Mapping System (TIMS), which provides access to California injury and fatal crash data from the SWITRS data. This helps to confirm that all relevant data is included.

Network Screening Analysis

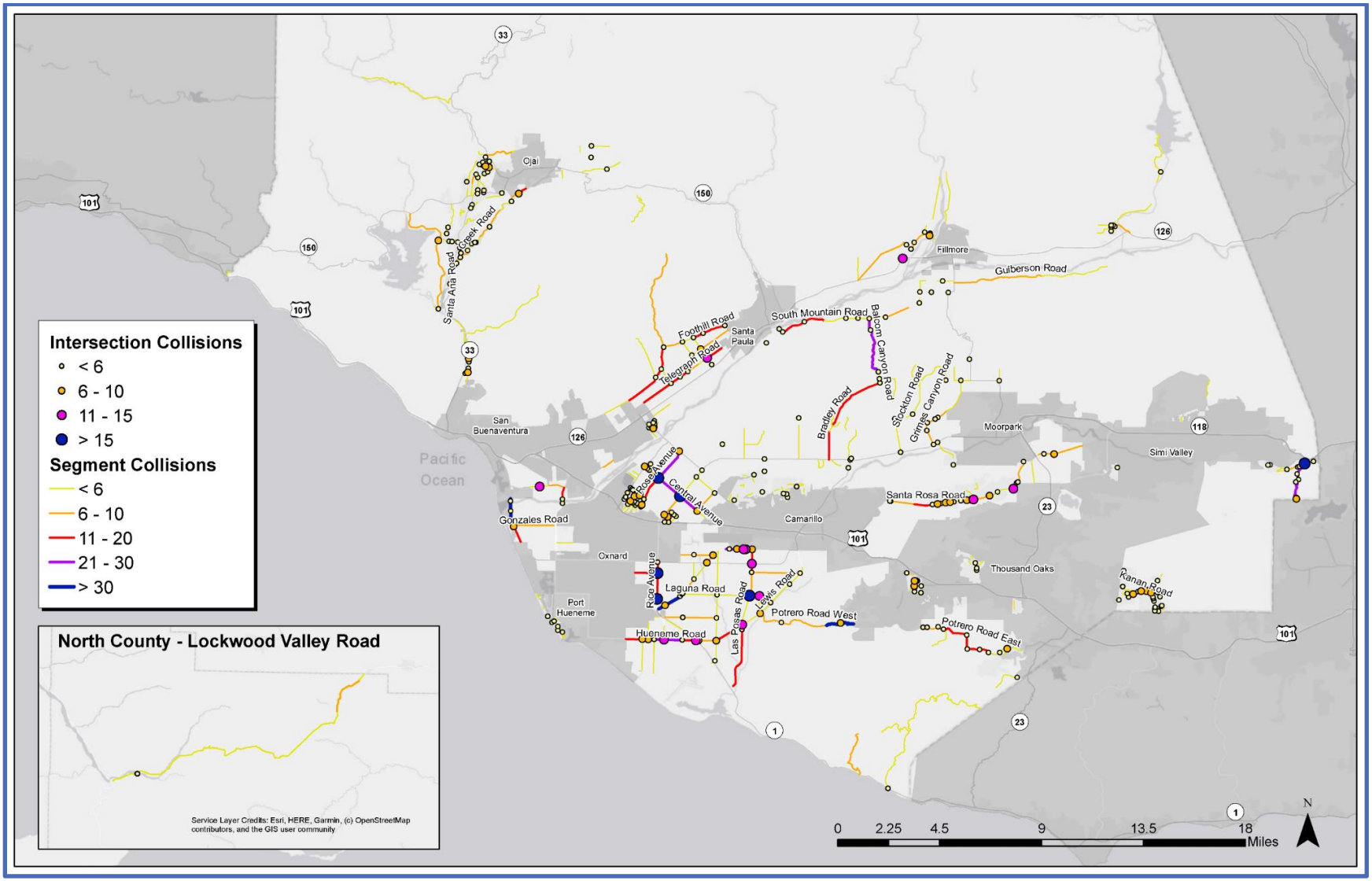
To help complete the initial crash history analysis, the network screening analysis was performed on the crash history data. The network screening analysis was completed using a Geographic Information System (GIS) tool that helps identify the following: 1) crash hot spots (intersection and segment locations with a high-number of crashes), 2) locations of fatal crashes, and 3) pedestrian-involved and bicycle-involved crash locations.

Key Findings

In this section, the crash findings are analyzed by the following groups: crash type, crash factor, crash impacts, fatal and serious injury crashes, pedestrian-involved crashes, and bicycle-involved crashes. Furthermore, Ventura crash patterns were compared to other counties with similar-sized populations using the Office of Traffic Safety (OTS) Crash Rankings. This helps to see what traffic safety problems should be prioritized for mitigation. The County of Ventura is compared to the other 58 counties in California. Each ranking for OTS crash categories is based on a scale; ranking 1 being the highest or "worst" county in the group for a given category. These comparative rankings can be seen in **Appendix A.** California Office of Traffic Safety Crash Rankings Results

A total of 3,241 crashes occurred within the public property of the County of Ventura between January 2015 and December 2019 (the crash history period). The locations of these crashes are shown in **Figure 6.** The crashes are spread throughout the County's roadway network with visible clustering along collector and arterial streets and intersections along Hueneme Road, Potrero Road, Central Avenue and Rose Avenue.

Figure 6. Crashes Within the County of Ventura



Crash Types

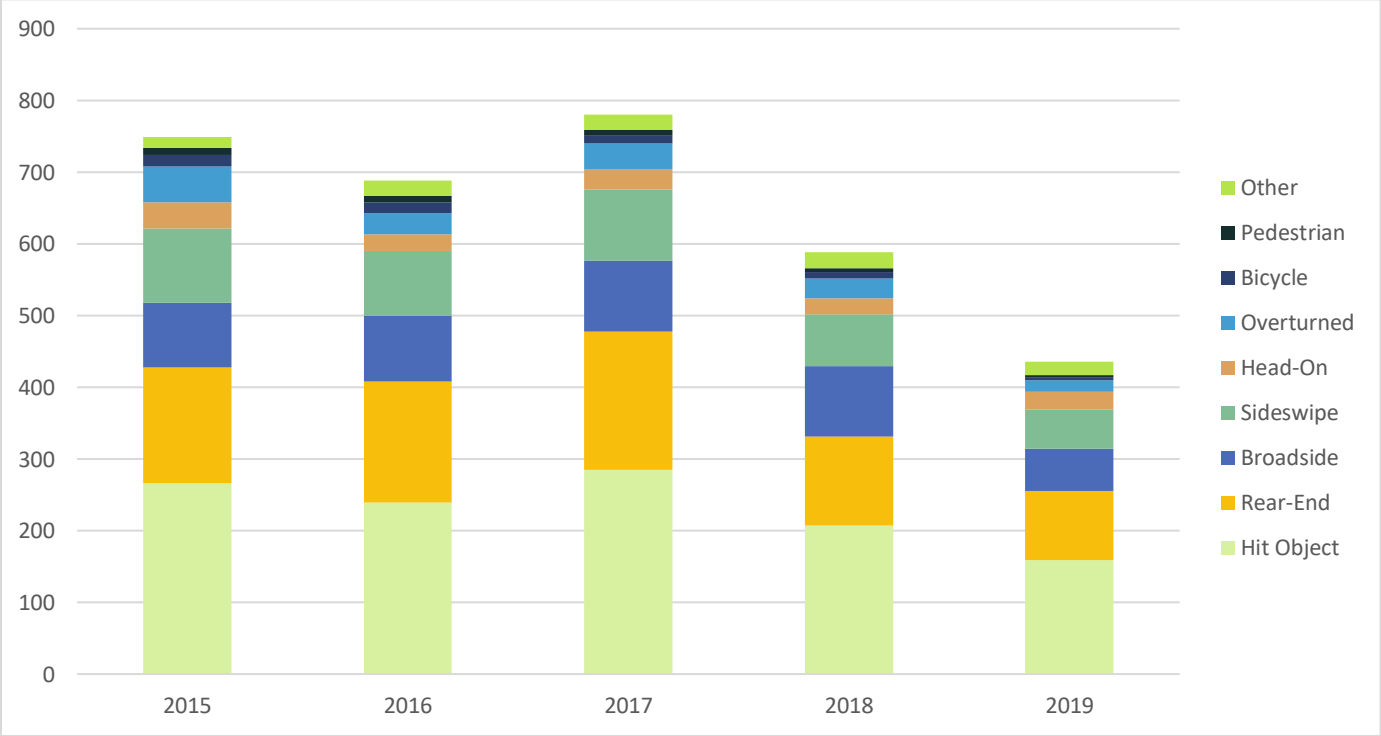
The crash types that occurred during the analysis period are shown in **Table 1. Figure 7** (which includes property damage crashes in the "Other" category) indicates that hit object (~35%) and rear end (~23%) crashes are consistently the most common crash types within the Study Area.

Table 1. Percentage of Total Crashes by Crash Types in the County of Ventura

Crash Type	Percent of Total Crashes
Hit Object	35.7%
Rear End	23.0%
Broadside	13.5%
Sideswipe	13.0%
Overturned	5.0%
Head-on	4.2%
Bicycle	3.0%
Other	1.7%
Pedestrian	1.1%

Data Source: Statewide Integrated Traffic Records System (SWITRS) 2015-2019

Figure 7. Number of Crashes by Crash Types for Each Crash History Year in the County of Ventura



Data Source: Statewide Integrated Traffic Records System (SWITRS) 2015-2019

Crash Factors

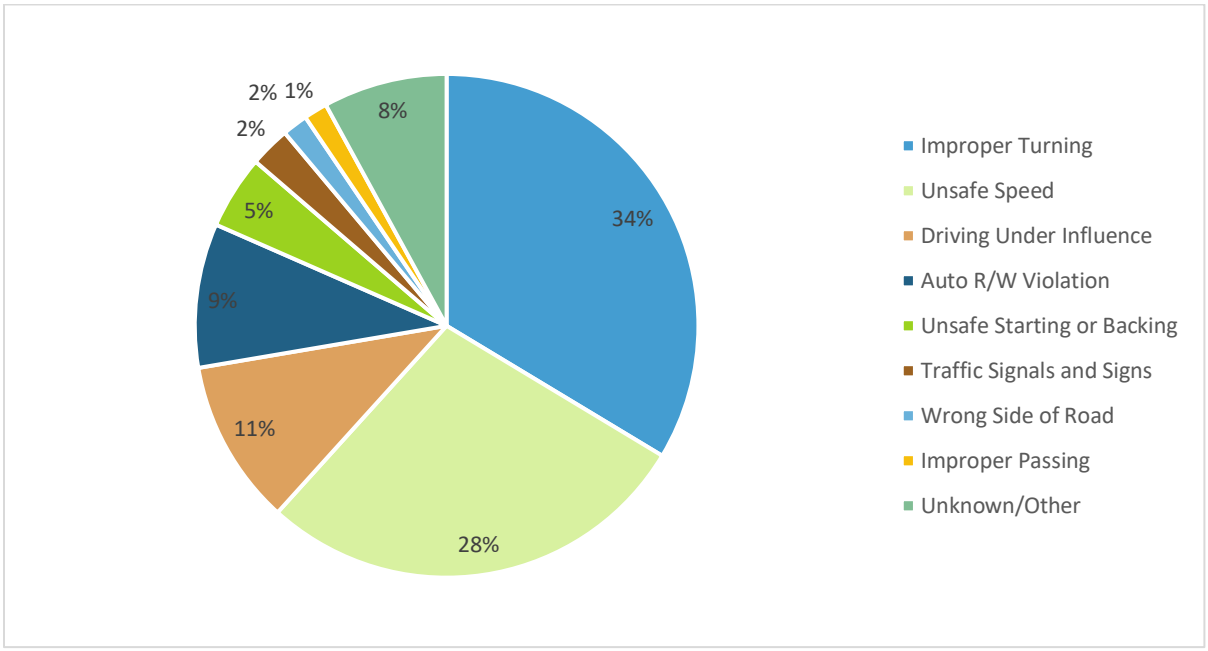
Knowing the reported causes of crashes can help identify common trends and driver behavior that most impact traffic safety in the area. **Table 2** and **Figure 8** shows the percent of total crashes by crash factor between 2015 and 2019. the most frequent contributing factor as identified by the responding officer for crashes is Improper Turning (~34%) followed by Unsafe Speed (~28%), Driving Under the Influence (~11%), and Auto Right-of-Way Violation (~9%). The remaining causes make up approximately 18% of all crashes within Ventura.

Table 2. Percent of Total Crashes by Crash Factor in the County of Ventura

Crash Factor	Percent of Total Crashes
Improper Turning	33.6%
Unsafe Speed	28.1%
Driving Under the Influence	10.6%
Auto Right-of-Way Violation	9.3%
Unsafe Starting or Backing	4.7%
Traffic Signals and Signs	2.6%
Wrong Side of the Road	1.6%
Improper Passing	1.5%
Unknown/Other	8.0%

Data Source: Statewide Integrated Traffic Records System (SWITRS) 2015-2019

Figure 8. Percent of Total Crashes by Crash Factor in the County of Ventura

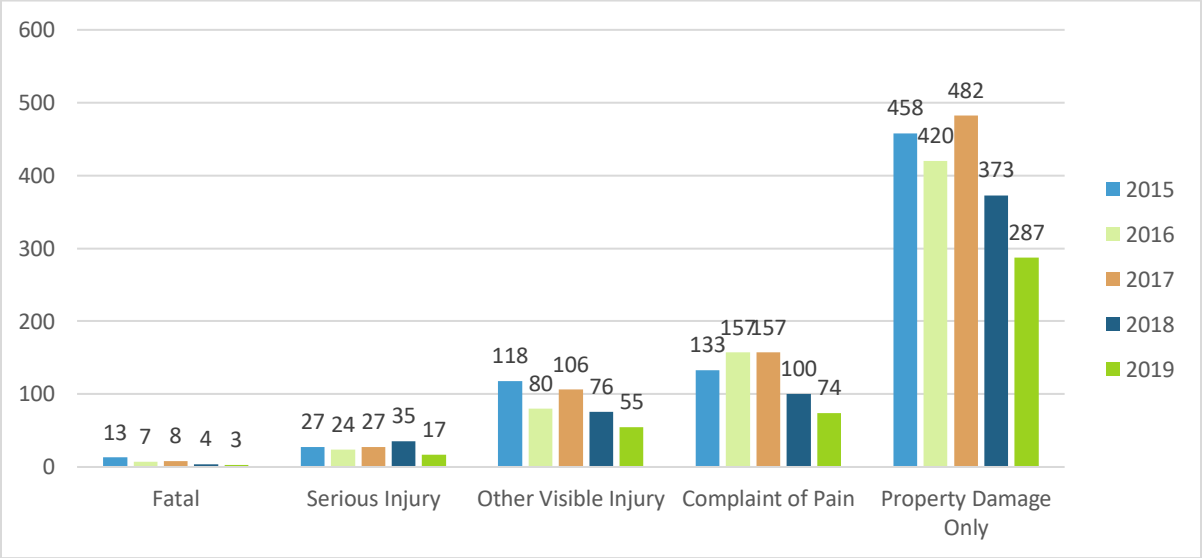


Data Source: Statewide Integrated Traffic Records System (SWITRS) 2015-2019

Crash Impacts

Knowing the crash impacts (the injuries or type of damage which occurred) is a key part of assessing the environment and safety factors around the site of a crash. **Figure 9** displays the count of each crash impact by year. While most crashes are property damage only (PDO) over the crash history, there were a total of 35 fatal crashes and 130 crashes resulting in serious injury within the five-year timeframe.

Figure 9. Number of Crashes by Crash Impact Type for Each Crash History Year



Data Source: Statewide Integrated Traffic Records System (SWITRS) 2015-2019

Fatal and Serious Injury Crash Impacts

Reviewing the crash type and crash factors specifically for fatal and serious injury crashes is a key step in detecting patterns in the County that are most associated with the worst crash outcomes. **Figure 10** summarizes the crash type for the County of Ventura's fatal and serious injury crashes. Each fatal and serious injury crashes are shown in **Figure 11**. **Table 3** and **Table 4** show the intersection and segment locations within the County of Ventura with fatal or serious injury crashes during the study period. The top leading crash types for fatal and serious injury crashes in the County of Ventura are hit object. Compared to the 58 other counties in California, Ventura is ranked 16th in 2017 regarding total number of fatal and injury crashes.

Figure 10. Number of Fatal and Serious Injury Crashes by Crash Impact Type

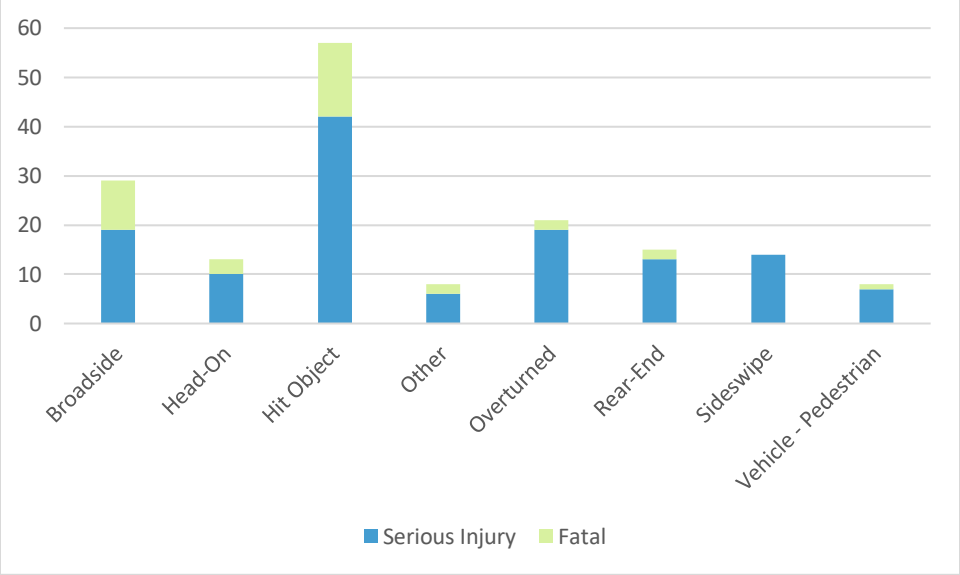


Figure 11. Fatal and Serious Injury Collisions

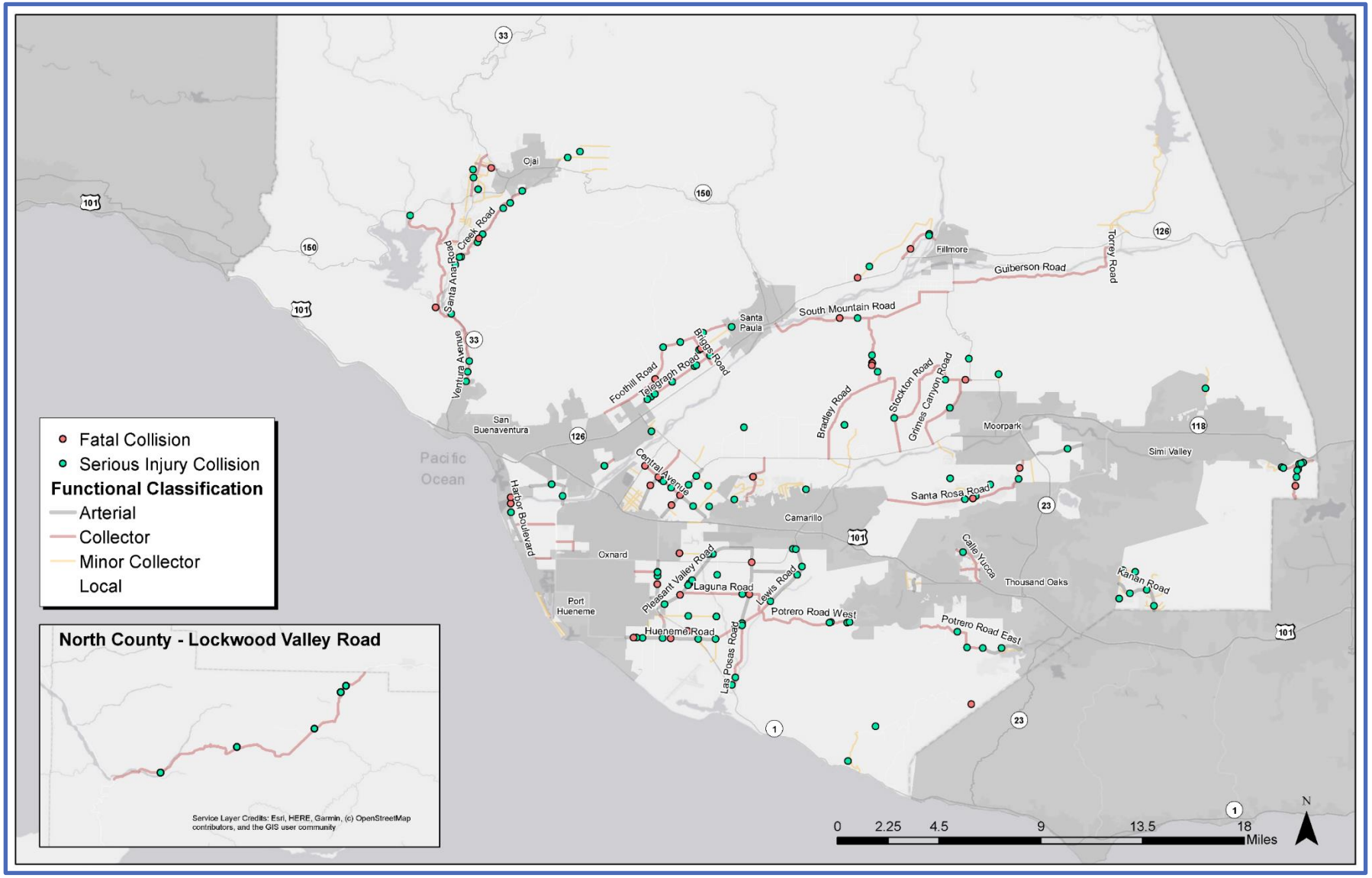


Table 3. Fatal & Serious Injury Crashes by Crash Type and Intersection Type within the County of Ventura

Probably of Crash Type Exceeding Threshold Proportion	
KSI (Fatal/Serious Injury Crashes)	All (level of significance)
> 1 KSI Crash	70-80%
= 1 KSI Crash	80-90%
	90-100%

This table shows selected values; the full table can be found in the appendix

Intersection	Crashes	Local CCR Differential[1]	EPDO[2]	*Fatal*	*Serious Injury*	*Other Visible Injury*	*Complaint of Pain*	*PDO*	Broadside	Sideswipe	Rear End	Head On	Hit Object	Overturned	Other	Pedestrian	Bicycle	Aggressive	Distracted	Impaired	Dark	Wet
Signalized Intersections	**148**			**9**	**9**	**14**	**41**	**75**	**51**	**13**	**51**	**5**	**24**	**0**	**2**	**1**	**1**	**66**	**3**	**13**	**41**	**10**
Santa Clara Avenue & Central Avenue	**24**	0.17	228	1	0	1	6	16	10	5	7	0	1	0	1	0	0	7	0	3	9	4
Rose Avenue & Central Avenue	**21**	0.07	577	3	0	3	7	8	10	1	5	2	3	0	0	0	0	7	0	2	5	2
Rice Avenue & Wooley Road East	**18**	-0.13	380	0	2	1	5	10	2	2	11	0	3	0	0	0	0	10	0	1	5	2
Las Posas Road & Cawelti Road	**15**	0.41	536	3	0	1	4	7	1	0	4	0	9	0	1	0	0	11	1	2	3	0
Las Posas Road East & Santa Rosa Road	**15**	-0.05	214	1	0	1	5	8	4	1	9	0	1	0	0	0	0	10	1	0	2	1
Las Posas Road & Hueneme Road	**13**	-0.10	226	0	1	3	4	5	7	2	0	3	0	0	0	0	1	1	0	0	2	1
Dodge Road & Pleasant Valley Road	**10**	0.12	203	0	1	2	2	5	4	1	4	0	1	0	0	0	0	7	0	1	5	0
Pleasant Valley Road & Sturgis Road	**9**	-0.18	351	0	2	1	1	5	5	0	2	0	2	0	0	0	0	2	0	0	4	0
Raytheon Road & Hueneme Road	**7**	0.06	181	0	1	0	2	4	1	1	4	0	1	0	0	0	0	4	1	1	2	0
Joan Way & Central Avenue	**7**	0.09	185	1	0	1	1	4	2	0	3	0	2	0	0	0	0	2	0	3	3	0
Kanan Road & Conifer Street	**5**	-0.30	184	0	1	0	3	1	2	0	2	0	0	0	0	1	0	3	0	0	1	0
University Drive & Lewis Road	**4**	-0.24	173	0	1	0	1	2	3	0	0	0	1	0	0	0	0	2	0	0	0	0

Table 3 (Continued). Fatal & Serious Injury Crashes by Crash Type and Intersection Type within the County of Ventura

Intersection	Crashes	Local CCR Differential[1]	EPDO[2]	*Fatal*	*Serious Injury*	*Other Visible Injury*	*Complaint of Pain*	*PDO*	Broadside	Sideswipe	Rear End	Head On	Hit Object	Overturned	Other	Pedestrian	Bicycle	Aggressive	Distracted	Impaired	Dark	Wet
Unsignalized Intersections	**112**			**3**	**12**	**19**	**17**	**61**	**48**	**11**	**21**	**2**	**21**	**4**	**2**	**1**	**2**	**36**	**2**	**12**	**25**	**6**
Las Posas Road & Laguna Road	**16**	0.31	234	1	0	4	3	8	14	0	1	0	0	0	0	0	1	3	0	0	1	1
Box Canyon Road & Santa Susana Pass Road	**16**	0.83	234	0	1	4	3	8	4	4	2	1	3	2	0	0	0	4	0	2	2	2
Wood Road & Hueneme Road	**10**	-0.05	174	0	1	0	0	9	3	3	4	0	0	0	0	0	0	4	0	0	1	0
Briggs Road & Santa Paula Street	**9**	0.97	217	1	0	4	1	3	8	0	1	0	0	0	0	0	0	4	0	1	2	0
Grand Avenue & Old Telegraph Road	**9**	0.44	193	0	1	1	2	5	1	1	6	0	1	0	0	0	0	5	0	1	3	1
Arnold Road & Hueneme Road	**8**	0.14	192	0	1	1	2	4	2	1	1	1	3	0	0	0	0	1	0	2	3	0
Ventura Avenue & Shell Road	**8**	0.07	177	0	1	0	1	6	4	0	1	0	1	0	1	0	1	2	0	0	1	1
Joan Way & Central Avenue	**7**	0.09	185	1	0	1	1	4	2	0	3	0	2	0	0	0	0	2	0	3	3	0
Old Balcom Canyon Rd & Stockton Road	**5**	0.14	178	0	1	1	0	3	4	0	0	0	1	0	0	0	0	1	0	1	1	1
Hidden Valley Road & Potrero Road East	**4**	0.49	168	0	1	0	0	3	0	0	0	0	4	0	0	0	0	2	0	1	1	0
Wood Road & Etting Road	**4**	0.60	188	0	1	1	2	0	3	0	0	0	1	0	0	0	0	1	0	1	1	0
Santa Clara Avenue & Wright Road	**4**	-0.22	182	0	1	1	1	1	1	1	1	0	1	0	0	0	0	2	1	0	2	0
Shekell Road & Stockton Road	**4**	0.54	177	0	1	1	0	2	0	0	0	0	3	1	0	0	0	2	0	0	1	0
Foothill Road & Wheeler Canyon Road	**4**	0.13	168	0	1	0	0	3	0	1	0	0	1	1	1	0	0	0	0	0	2	0

1. Local Critical Crash Rate Differential (pg 16)

2. Equivalent Property Damage Only Crashes (pg 17)

Table 4. Fatal & Serious Injury Crashes by Crash Type and Segment Type within the County of Ventura

Probably of Crash Type Exceeding Threshold Proportion	
Fatal/Serious Injury Crashes (KSI)	All
> 1 KSI Crash	70-80%
= 1 KSI Crash	80-90%
	90-100%

This table shows selected values; the full table can be found in the appendix.

Facility	Limits	Crashes	Local CCR Differential[1]	EPDO[2]	*Fatal*	*Serious Injury*	*Other Visible Injury*	*Complaint of Pain*	*PDO*	Broadside	Sideswipe	Rear End	Head On	Hit Object	Overturned	Other	Pedestrian	Bicycle	Aggressive	Distracted	Impaired	Dark	Wet
Arterial		**451**			**6**	**15**	**27**	**36**	**83**	**24**	**12**	**48**	**8**	**59**	**9**	**2**	**2**	**3**	**53**	**3**	**17**	**60**	**9**
Harbor Boulevard	Gonzales Rd - 2898s Olivas Pk	**32**	0.08	485	1	1	4	17	9	3	1	16	2	7	0	1	0	2	16	1	3	7	3
Hueneme Road	Olds Rd - Navalair Rd	**26**	0.19	403	1	1	3	4	17	6	5	6	1	6	2	0	0	0	8	0	1	12	1
Rice Avenue	Channel Islands Bl - Wooley Rd	**20**	-0.23	372	1	1	1	3	14	3	1	9	0	7	0	0	0	0	8	1	3	10	0
Victoria Avenue	247s riverbridg-119s Olivas Pk	**18**	-0.20	241	0	1	4	4	9	1	3	7	1	3	3	0	0	0	10	0	1	6	2
Rose Avenue	Simon Wy - Central Av	**14**	-0.04	197	1	0	2	0	11	0	1	1	0	11	0	0	1	0	2	0	1	8	0
Hueneme Road	37e Edison Dr - Olds Rd	**12**	-0.09	398	1	1	5	2	3	4	0	2	1	4	1	0	0	0	3	0	0	3	1
Pleasant Valley Road	120e SR1 NB offramp - E Fifth	**8**	-0.32	499	0	3	0	0	5	0	1	1	1	5	0	0	0	0	1	0	1	2	1
Santa Clara Avenue	905s Eucalyptus - Central Av	**8**	-0.28	201	1	0	2	2	3	1	0	0	0	6	0	0	1	0	0	0	4	4	0
Tierra Rejada Road	760e SR 23 - 253w Llevarancho	**8**	-0.43	211	0	1	3	2	2	2	0	1	1	3	1	0	0	0	0	0	1	3	0
Olivas Park Drive	15e Palma Dr - 205w Victoria	**6**	-0.31	180	0	1	0	2	3	3	0	1	0	1	1	0	0	0	1	0	1	1	0
Santa Clara Avenue	2585n Central Av - SR 118	**4**	-0.47	177	0	1	1	0	2	0	0	1	1	2	0	0	0	0	1	0	0	1	1
Kanan Road	Deerhill Rd - Oak Hills Dr	**4**	-0.21	177	0	1	1	0	2	0	0	2	0	1	0	0	0	1	2	1	1	1	0
Potrero Road East	587w Trentwd -55e Lk Sherwd Dr	**3**	-0.38	176	0	1	1	0	1	1	0	0	0	1	0	1	0	0	0	0	0	0	0

Table 4 (Continued). Fatal & Serious Injury Crashes by Crash Type and Segment Type within the County of Ventura

Facility	Limits	Crashes	Local CCR Differential[1]	EPDO[2]	*Fatal*	*Serious Injury*	*Other Visible Injury*	*Complaint of Pain*	*PDO*	Broadside	Sideswipe	Rear End	Head On	Hit Object	Overturned	Other	Pedestrian	Bicycle	Aggressive	Distracted	Impaired	Dark	Wet
Lewis Road	Camarillo St - MP 2.83	**2**	-0.59	166	0	1	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	1	0
Kanan Road	Oak Hills Dr - 80e Lindero Cyn	**2**	-0.59	166	0	1	0	0	1	0	0	1	0	1	0	0	0	0	1	0	0	1	0
Potrero Road West	MP 3.5 - 727w Via Acosta	**35**	1.34	1149	0	6	12	3	14	1	5	0	0	16	12	0	0	1	10	0	2	7	2
Balcom Canyon Road	Summit - South Mountain Rd	**25**	0.85	546	2	1	2	2	18	0	3	0	0	20	2	0	0	0	8	0	1	10	5
Hueneme Road	Wood Rd - Laguna Rd	**17**	-0.16	230	0	1	4	2	10	0	1	8	2	5	1	0	0	0	9	0	1	10	3
Potrero Road East	Hidden Vly Rd - 587w Trentwood	**14**	-0.10	395	0	2	5	1	6	0	0	0	1	12	0	0	0	1	4	0	4	6	3
Las Posas Road	122e SR 1 Offramp - Hueneme Rd	**13**	-0.42	389	0	2	4	2	5	4	2	1	1	3	2	0	0	0	2	0	1	2	0
Foothill Road	Briggs Rd - 30w Peck Rd	**13**	0.85	216	0	1	2	4	6	0	0	0	1	10	2	0	0	0	1	0	5	7	1
Telegraph Road	W R/W Franklin Bar - Olive Rd	**13**	-0.21	524	0	3	0	4	6	1	1	3	2	4	1	1	0	0	3	1	2	10	0
Telegraph Road	Briggs - 291w Country View Ct	**12**	0.13	196	0	1	1	2	8	2	2	0	0	8	0	0	0	0	1	0	1	6	2
Creek Road	Country Club Dr - 2070 east	**12**	1.31	205	0	1	2	2	7	0	0	0	0	9	3	0	0	0	5	0	0	3	0
Foothill Road	Wells Rd - Aliso Cyn Rd	**11**	0.30	204	1	0	2	2	6	1	0	0	0	7	1	0	0	2	0	0	2	6	1
Telegraph Road	Olive Rd - Briggs Rd	**11**	-0.08	373	0	2	1	5	3	0	0	3	0	7	0	0	0	1	3	0	2	4	0
Santa Susana Pass Road	20e Clear Spring -68e Lilac Ln	**9**	0.14	515	0	3	0	3	3	0	0	0	1	5	3	0	0	0	4	1	1	5	2
Santa Ana Road	Burnham Rd - SR 150	**8**	-0.15	192	0	1	0	4	3	0	0	1	0	5	1	1	0	0	3	1	2	3	0
Lockwood Valley Road	MP 22.1 - MP 25.6	**8**	0.24	201	0	1	2	2	3	0	3	0	1	2	2	0	0	0	2	0	0	2	0
Bristol Road	W R/W UPRR - 170w Montgomery	**7**	-0.35	195	0	1	2	1	3	0	1	1	0	3	2	0	0	0	1	0	2	2	0
Foothill Road	Wheeler Cyn Rd - Briggs Rd	**7**	0.79	191	0	1	1	2	3	0	0	0	0	4	2	0	0	1	0	0	1	5	1
La Luna Avenue	SR 150 - Lomita Av	**7**	0.65	180	0	1	1	0	5	0	1	1	0	4	0	0	0	1	3	0	1	1	0
Etting Road	Naumann Rd - Wood Rd	**6**	-0.12	190	0	1	0	4	1	2	1	0	1	2	0	0	0	0	0	0	0	3	0
Potrero Road West	Old Hueneme Rd - 1.8mi east	**6**	-0.52	40	0	0	3	1	2	0	0	0	2	2	2	0	0	0	1	0	1	0	1

Table 4 (Continued). Fatal & Serious Injury Crashes by Crash Type and Segment Type within the County of Ventura

Facility	Limits	Crashes	Local CCR Differential[1]	EPDO[2]	*Fatal*	*Serious Injury*	*Other Visible Injury*	*Complaint of Pain*	*PDO*	Broadside	Sideswipe	Rear End	Head On	Hit Object	Overturned	Other	Pedestrian	Bicycle	Aggressive	Distracted	Impaired	Dark	Wet
Telegraph Road	Olive Rd - Briggs Rd	**6**	-0.31	333	0	2	0	0	4	0	0	2	0	3	0	1	0	0	1	0	0	2	0
Moorpark Road	Read Rd -108s Tierra Rejada Rd	**6**	-0.62	343	1	1	1	0	3	0	2	1	0	2	0	0	0	1	1	2	1	0	0
Creek Road	SR 33 - MP 1.21	**6**	-0.13	190	0	1	1	2	2	0	3	1	0	2	0	0	0	0	2	0	1	3	0
Creek Road	MP 3.53 - Country Club Dr	**5**	-0.19	337	0	2	0	1	2	0	1	0	0	4	0	0	0	0	2	0	1	2	1
Santa Rosa Road	Glenside Ln - E Las Posas Rd	**5**	-0.41	174	0	1	0	1	3	0	0	4	0	0	0	0	0	1	5	0	0	1	0
South Mountain Road	2.06mi w - Balcom Cyn Rd	**5**	-0.58	178	1	0	1	0	3	1	1	0	0	2	1	0	0	0	0	0	0	1	0
Ventura Avenue	265n Dakota Dr - Shell Rd	**4**	-0.42	177	0	1	1	0	2	0	0	0	0	4	0	0	0	0	0	0	2	2	1
Lockwood Valley Road	SR 33 - MP 4.0	**3**	-0.71	167	0	1	0	0	2	0	0	0	0	3	0	0	0	0	0	0	0	1	0
Laguna Road	Wood Rd - Las Posas Rd	**3**	-0.62	167	0	1	0	0	2	1	1	1	0	0	0	0	0	0	1	0	0	0	0
Creek Road	MP 1.21 - MP 3.53	**3**	-0.33	330	1	1	0	0	1	1	0	0	1	0	0	0	1	0	1	0	1	0	0
Rice Road	Camille Dr - Fairview Rd	**2**	-0.54	166	0	1	0	0	1	0	0	0	0	2	0	0	0	0	0	0	0	1	0
Lockwood Valley Road	MP 8.0 - MP 12.0	**2**	-0.03	166	0	1	0	0	1	0	0	0	1	0	1	0	0	0	2	0	0	1	0
Minor Collector		**52**			**0**	**5**	**5**	**13**	**29**	**7**	**8**	**21**	**2**	**13**	**1**	**0**	**0**	**0**	**18**	**0**	**2**	**12**	**3**
Central Avenue	Santa Clara Av - Beardsley Rd	**24**	0.16	243	0	1	2	7	14	7	5	8	1	3	0	0	0	0	5	0	0	5	2
Central Avenue	Rose Av - Santa Clara Av	**23**	0.27	564	0	3	2	6	12	0	2	13	1	7	0	0	0	0	13	0	1	4	1
Tapo Canyon Road	4103s Bennett Rd - Bennett Rd	**5**	0.97	178	0	1	1	0	3	0	1	0	0	3	1	0	0	0	0	0	1	3	0

Table 4 (Continued). Fatal & Serious Injury Crashes by Crash Type and Segment Type within the County of Ventura

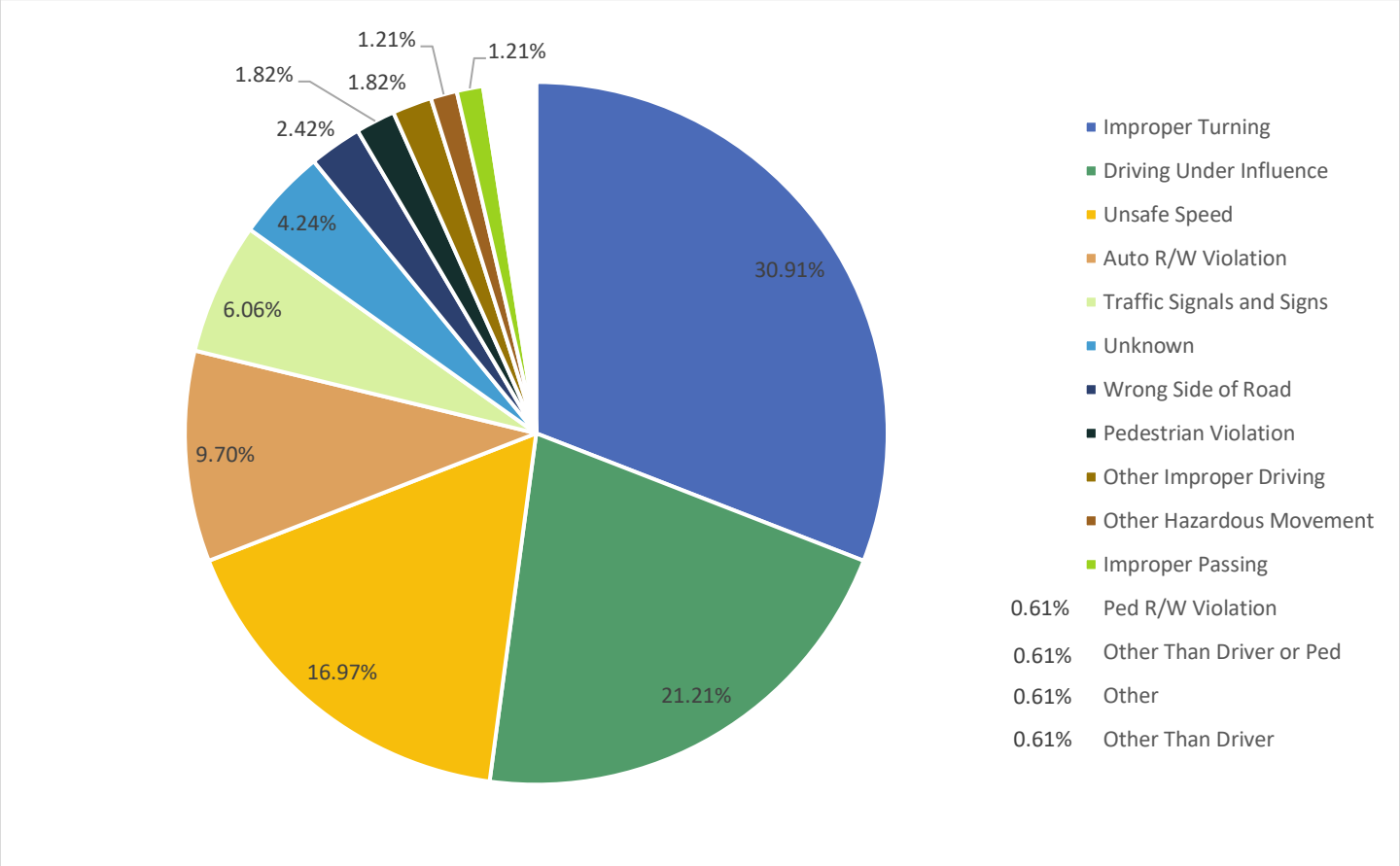
Facility	Limits	Crashes	Local CCR Differential[1]	EPDO[2]	*Fatal*	*Serious Injury*	*Other Visible Injury*	*Complaint of Pain*	*PDO*	Broadside	Sideswipe	Rear End	Head On	Hit Object	Overturned	Other	Pedestrian	Bicycle	Aggressive	Distracted	Impaired	Dark	Wet
Local		**65**			**4**	**8**	**13**	**13**	**27**	**1**	**9**	**2**	**7**	**33**	**10**	**1**	**0**	**2**	**13**	**1**	**10**	**21**	**9**
Box Canyon Road	LA Co Line - Santa Sus Pass Rd	**25**	0.49	599	1	2	7	3	12	0	5	1	3	13	3	0	0	0	4	0	4	7	6
Sturgis Road	778e Del Norte - Plsnt Vly Rd	**8**	-0.29	202	0	1	1	4	2	0	1	0	1	3	1	0	0	2	1	1	2	2	1
Deer Creek Road	SR 1 - Pacific View Rd	**7**	-0.11	210	0	1	3	2	1	1	0	0	1	3	2	0	0	0	3	0	2	1	0
Sycamore Road	Telegraph Rd SR 126-Seventh St	**7**	-0.39	181	0	1	0	2	4	0	0	0	0	7	0	0	0	0	0	0	0	5	0
Yerba Buena Road	Cotharin Rd - LA Co Line	**5**	-0.14	193	1	0	2	1	1	0	0	0	0	2	3	0	0	0	3	0	0	1	0
Wood Road	Laguna Rd - E Fifth St SR 34	**4**	0.33	173	0	1	0	1	2	0	3	1	0	0	0	0	0	0	1	0	0	3	0
Dufau Road	Naumann Rd - Raytheon Rd	**3**	0.65	167	1	0	0	0	2	0	0	0	1	2	0	0	0	0	1	0	0	1	1
Happy Camp Road	SR 23 - Roseland Av	**2**	-0.73	166	0	1	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0
Wright Road	Santa Clara Av - Beardsley Rd	**2**	-0.82	166	0	1	0	0	1	0	0	0	0	1	1	0	0	0	0	0	1	0	1
Casitas Vista Road	Santa Ana Rd - 5990 north	**2**	-0.08	166	1	0	0	0	1	0	0	0	0	1	0	1	0	0	0	0	1	1	0

1. Local Critical Crash Rate Differential

2. Equivalent Property Damage Only Crashes

Figure 12 displays the percentage of fatal and serious injury crashes by their Primary Crash Factor (PCF). As shown in the figure, approximately half of the fatal and serious injury collisions are attributed to Driving Under the Influence and Improper Turning.

Figure 12. Percentage of Fatal and Serious Injury Crashes by Primary Crash Factor



The bottom four primary crash factors are shaded in white with their percentage values next to the respective legend value.

Data Source: Statewide Integrated Traffic Records System (SWITRS) 2015-2019

Crash by Mode and Behavior Characteristics

Crashes occur for a variety of reasons: combinations of driver behavior, inclement weather, vehicle defects, and a myriad of other causes. The following sections discuss the crashes from 2015-2019 within the County of Ventura based on the types of vehicle/mode involved. This includes:

- Pedestrians
- Bicycles
- Cars and trucks
    - Impaired Driving
    - Aggressive Driving
    - Distracted Driving

Pedestrian and Bicycle Crashes

Table 5 shows the number of crashes within the County that involved a pedestrian or bicyclist. Between 2015-2019, there were a total of 36 crashes that involved a pedestrian and 54 crashes that involved bicyclist which is approximately 3% of all crashes in the County. The number of pedestrian- and bicyclist-involved crashes highlight a need to enhance safety to protect these vulnerable users. Out of the 58 California counties, the County of Ventura is ranked 38th in pedestrian crashes, 13th in crashes involving a pedestrian under the age of 15, and 20th in crashes involving a pedestrian over the age of 81. The County is ranked 23rd in bicyclists crashes and 24th in crashes with bicyclists under the age of 15. This data shows that for both pedestrian and bicyclists crashes, the County ranks worse for crashes involving children.

Table 5. Number of Total Crashes Within the County of Ventura Involving a Pedestrian or Bicyclist

Crashes Involving a Pedestrian or Bicyclist	Number of Total Crashes
Number of Crashes Involving a Pedestrian	36
Number of Crashes Involving a Bicyclist	54
Number of Total Crashes Involving a Pedestrian or Bicyclist	**90**

Data Source: Statewide Integrated Traffic Records System (SWITRS) 2015-2019

Figure 13 displays the locations of pedestrian-involved crashes while **Figure 14** displays the locations of bicycle-involved crashes.

Figure 13. Pedestrian-Involved Crashes

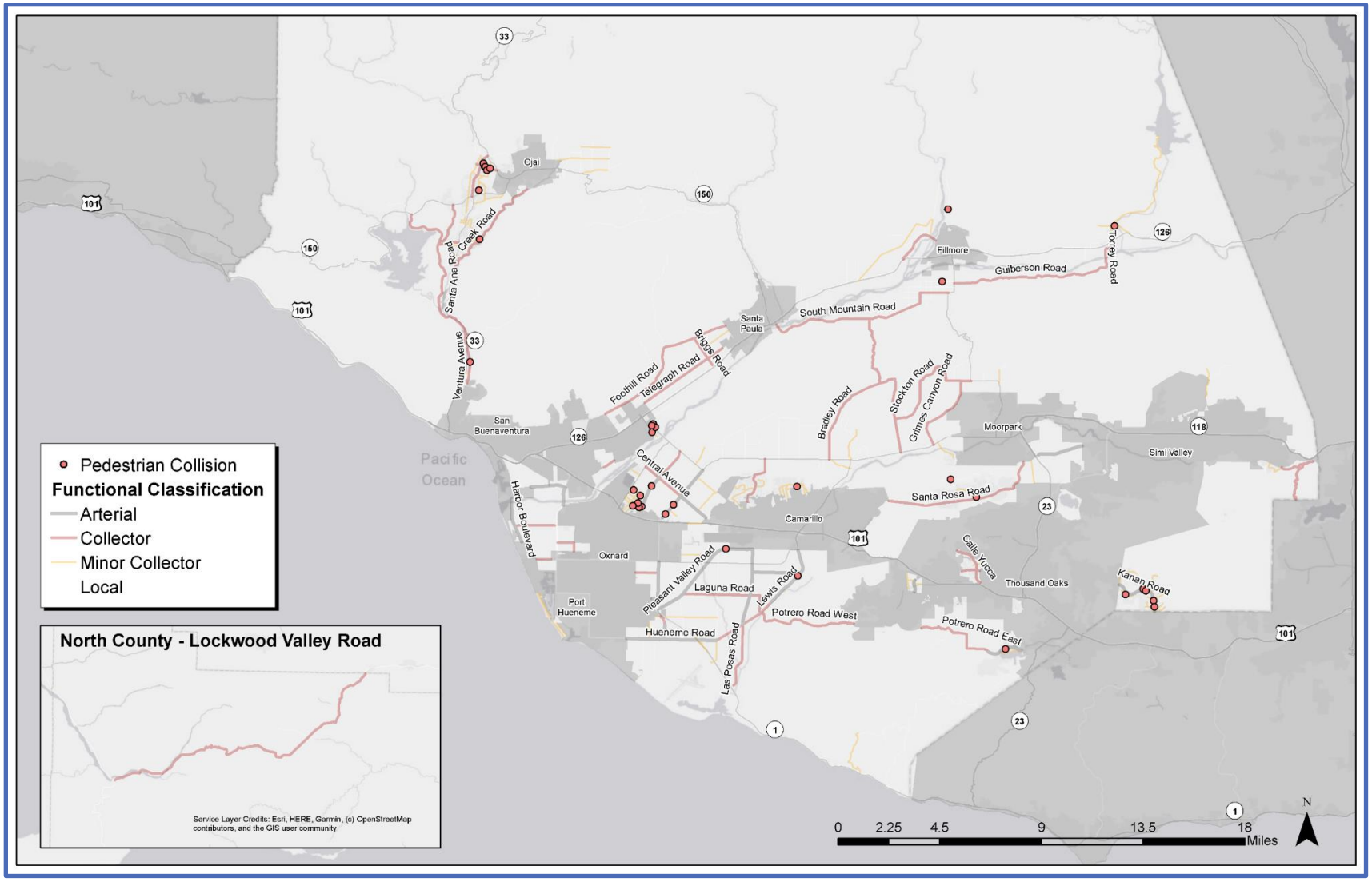
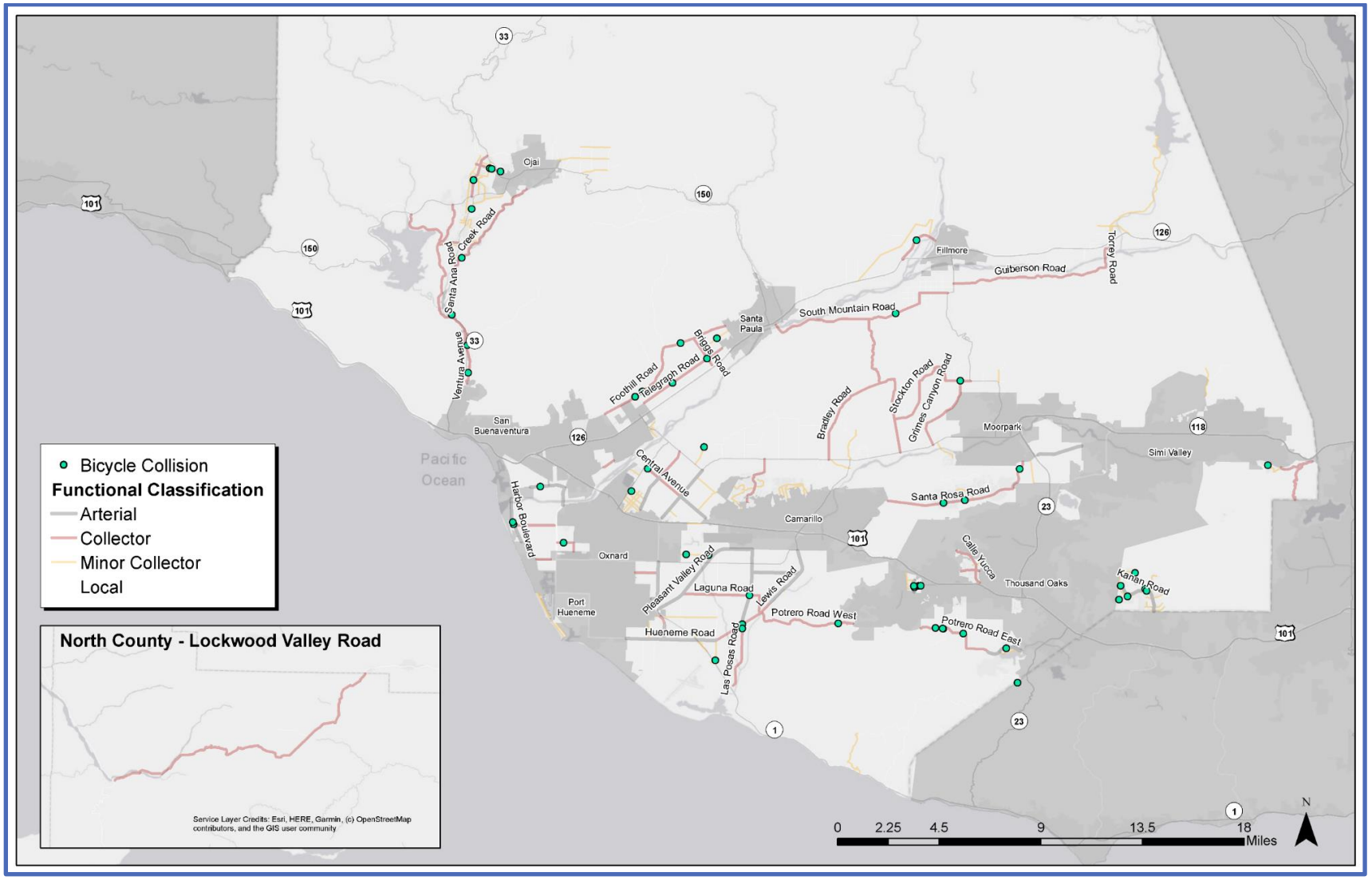


Figure 14. Bicycle-Involved Crashes



Impaired, Aggressive, and Distracted Driving

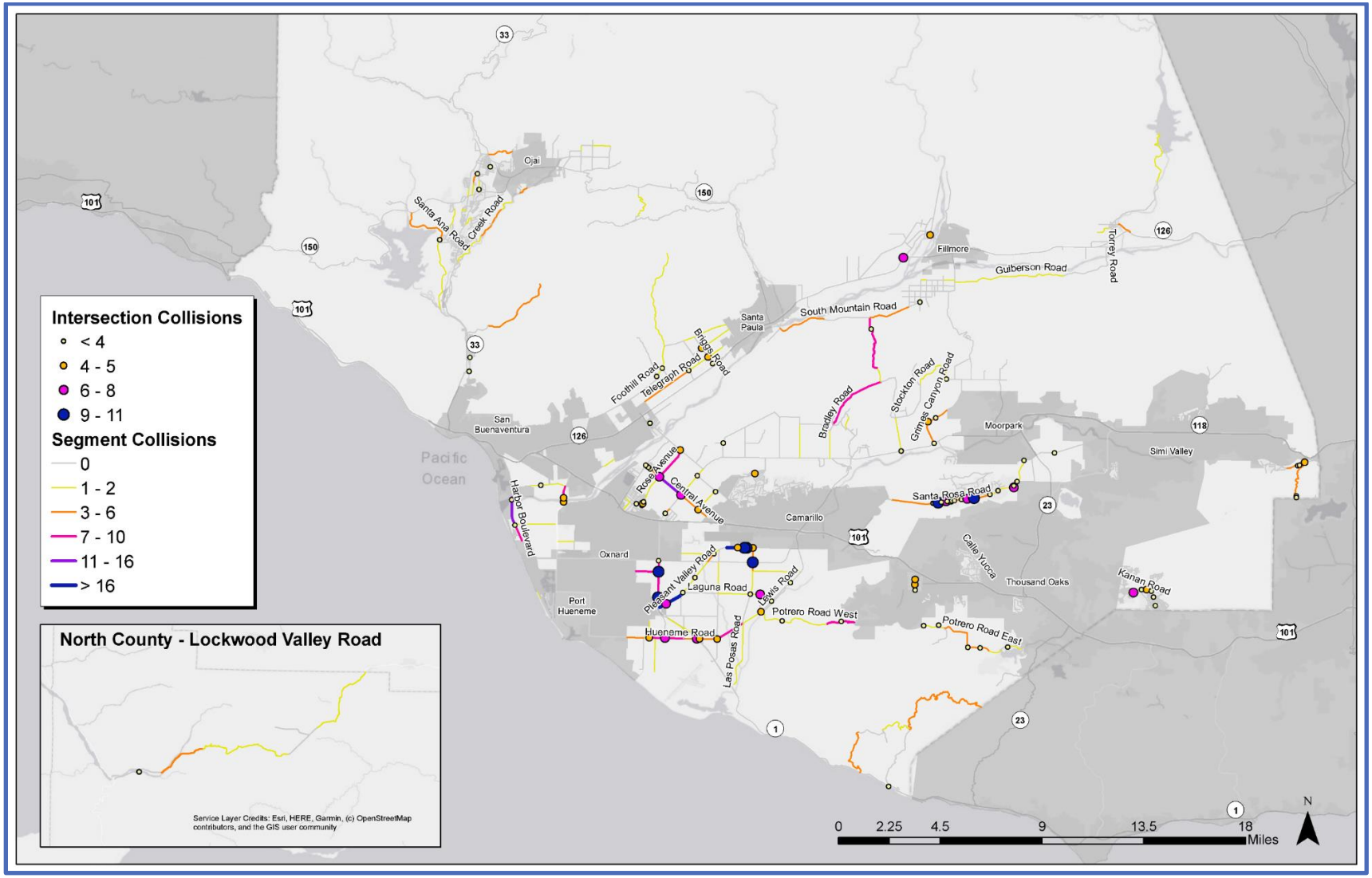
While impaired, aggressive, and distracted driving are dangerous anywhere, some roadway segments or intersections might need more driver attention than others.

Crashes involving drugs or alcohol include all crashes where there was any evidence of drug or alcohol use by the driver. This is different from impaired driving statistics in that drivers do not need to exceed the legally defined threshold of intoxication to be counted. Caltrans considers any level of alcohol consumption to have the potential to impact driver responsiveness and decision making. Approximately 10% of crashes within Ventura were associated with alcohol or drugs. The 2018 OTS rankings show the County of Ventura ranked, 39nd for alcohol involved crashes, 34th for crashes where the driver between the ages of 21 and 34 had been drinking, and 48th where the driver under the age of 21 had been drinking as compared to the 58 California counties.

Caltrans defined aggressive driving as driving behaviors that include speeding, tailgating, and other reckless maneuvers (as identified by the on-scene officer). Of the 1,000 aggressive driving crashes, 38 crashes resulted in a fatality or serious injury. These crashes are represented in **Figure 15**. Aggressive driving crash locations are highly concentrated at intersections along Santa Rosa Road and Pleasant Valley Road which are both 2 lane roadways through agricultural land. The County of Ventura is ranked 23rd out of 58 counties for speed related crashes.

Distracted driving is another SHSP challenge area that identifies crashes where the driver responsible for the crash was engaging in another activity that took their attention away from driving, thus increasing the chance of a crash. The SWITRS database includes an attribute for inattention as a factor in crashes. It also has a field for cell phone use. Both crashes with inattention and handheld cell phone use have been trending toward more occurrences in recent years. Of the 78 distracted driving crashes, four resulted in serious injury. Distracted driving is difficult to assess for responding officers and is assumed to be under-reported.

Figure 15. Crashes Involving an Aggressive Driver



Highest Crash Locations

Table 6 and **Table 7** list the intersections and segments where most crashes occurred. Most of the crashes during the analysis period occurred at intersections along Central Avenue and Rice Avenue.

Table 8 outlines the summary of crashes at the case study locations. The listings include a breakdown of crash type as well as severity of crash and causes of driver negligence.

Table 6. Highest 10 Intersections for Crashes in the County of Ventura

Signalized Intersections						
	Intersection	Total # of Collisions	# of Fatal Crashes	Leading Collision Type	# of Bicycle Crashes	# of Pedestrian Crashes
1	Santa Clara Avenue & Central Avenue	24	1	Broadside	0	0
2	Rice Avenue & Channel Islands Blvd	21	0	rear end	0	0
3	Rose Avenue & Central Avenue	21	3	Broadside	0	0
4	Rice Avenue & Wooley Road East	18	0	rear end	0	0
5	Las Posas Road & State Highway 34	15	3	hit object	0	0
Unsignalized Intersections						
	Intersection	Total # of Collisions	# of Fatal Crashes	Leading Collision Type	# of Bicycle Crashes	# of Pedestrian Crashes
1	Las Posas Road & Laguna Road	16	1	Broadside	1	0
2	Box Canyon Road & Santa Susana Pass Road	16	0	Broadside / Sideswipe	0	0
3	Old Telegraph Road & Sycamore Road	13	0	Hit Object	0	0
4	Laguna Road & Laguna Road	11	0	Hit Object	0	0
5	Wood Road & Hueneme Road	10	0	Rear End	0	0

Table 7. Top 5 Highest Crash Segments by Roadway Classification in the County of Ventura

Principal Arterial Segments						
	Corridor	End Segment Streets	Total # of Collisions	# of Fatal Collisions	# of Bicycle Collisions	# of Pedestrian Collisions
1	Pleasant Valley Road	120e SR1 NB offramp - E Fifth	40	0	0	0
2	Harbor Boulevard	Gonzales Rd - 2898s Olivas Pk	32	1	2	0
3	Hueneme Road	Olds Rd - Navalair Rd	26	1	0	0
4	Pleasant Valley Road	1885e Wood - 1900w Las Posas	24	0	0	0
5	Rice Avenue	Channel Islands Bl – Wooley Rd	20	1	0	0
Major Collector Segments						
	Corridor	End Segment Streets	Total # of Collisions	# of Fatal Collisions	# of Bicycle Collisions	# of Pedestrian Collisions
1	Potrero Road West	MP 3.5 - 727w Via Acosta	35	0	1	0
2	Balcom Canyon Road	Summit – South Mountain Rd	25	2	0	0
3	Hueneme Rd	Wood Rd – Laguna Rd	17	0	0	0
4	Foothill Rd	Aliso Cyn Rd – Wheeler Cyn Rd	14	0	0	0
5	Potrero Road East	Hidden Vly Rd – 587w Trentwood	14	0	1	0
Minor Collector Segments						
	Corridor	End Segment Streets	Total # of Collisions	# of Fatal Collisions	# of Bicycle Collisions	# of Pedestrian Collisions
1	Rose Avenue	1270n Central Av – SR 118	27	0	0	0
2	Central Ave	Santa Clara Av – Beardsley Rd	24	0	0	0
3	Central Avenue	Rose Av – Santa Clara Av	23	0	0	0
4	Tapo Canyon Rd	4103s Bennett Rd – Bennett Rd	5	0	0	0
5	Piru Canyon Road	970n Orchard St – MP 2.20	2	0	0	0
Local Segments						

	Corridor	End Segment Streets	Total # of Collisions	# of Fatalities	# of Bicycle	# of Pedestrian
1	Box Canyon Road	LA Co Line – Santa Sus Pass Rd	25	1	0	0
2	Wheeler Canyon Road	Foothill Rd - End	10	0	0	0
3	Orange Drive	40n Ventura Bl - Friedrich Rd	9	0	0	0
4	Fairview Road	SR 33 - 408w Fairview Crt	8	0	0	0
5	Yerba Buena Road	Cotharin Rd - LA Co Line	5	1	0	0

Table 8. Summary Crashes at Case Study Locations

Probability of Crash Type Exceeding Threshold Proportion	
Fatal/Serious Injury Crashes	All
> 1 KSI Crash	70-80%
= 1 KSI Crash	80-90%
	90-100%

Intersection	Crashes	Local CCR Differential	EPDO[2]	Fatal	Serious Injury	Other Visible Injury	Complaint of Pain	PDO	Broadside	Sideswipe	Rear End	Head On	Hit Object	Overturned	Other	Pedestrian	Bicycle	Aggressive	Distracted	Impaired	Dark	Wet
Signalized Intersections																						
Santa Clara Avenue & Central Avenue	**24**	0.17	228	1	0	1	6	16	10	5	7	0	1	0	1	0	0	7	0	3	9	4
Rice Avenue & Channel Islands Blvd	**21**	0.28	85	0	0	4	5	12	5	3	9	0	4	0	0	0	0	9	0	2	11	2
Las Posas Road East & Santa Rosa Road	**15**	-0.05	214	1	0	1	5	8	4	1	9	0	1	0	0	0	0	10	1	0	2	1
Briggs Road & Telegraph Road	**15**	0.24	56	0	0	0	8	7	6	3	1	3	1	0	0	0	1	4	0	0	0	1
Rose Avenue & Walnut Drive	**7**	-0.26	32	0	0	0	5	2	4	1	1	1	0	0	0	0	0	4	0	1	2	0
Unsignalized Intersections																						
Las Posas Road & Laguna Road	**16**	0.31	234	1	0	4	3	8	14	0	1	0	0	0	0	0	1	3	0	0	1	1
Laguna Road (Corner Turn)	**11**	1.15	26	0	0	1	1	9	0	0	0	0	7	4	0	0	0	7	0	1	4	0
Alvarado Street & Collins Street	**5**	0.21	10	0	0	0	1	4	4	1	0	0	0	0	0	0	0	2	0	0	1	0
Arterial																						
Hueneme Road (Edison Drive to Naval Air Road)	**96**	-	-	1	1	8	20	66	16	15	30	2	28	5	0	0	0	37	1	6	33	3
Collector																						
Potrero Road West (Milepost 3.5 - Via Acosta)	**42**		1175	0	6	13	5	18	1	5	0	1	21	13	0	0	1	13	0	2	10	3
Foothill Road (Wells Road - Aliso Canyon Road)	**17**		220	1	0	3	2	11	1	0	1	1	11	1	0	0	2	3	0	2	6	2

Key Findings Summary

The highest occurring crash type in the County involved hit object (~35%) and rear end (~23%) crashes. Aggressive driving crashes (i.e. unsafe speed, following too closely, and disobeying traffic signals and signs) make up around 30% of all crashes within the county and result in many rear end (536 crashes) and hit object crashes (232 crashes).

From the key findings in the crash history analysis and discussions with County staff, the following four key emphasis areas have been identified:

1. *Reduce Aggressive Driving Behavior*
2. *Improve Active Transportation Facilities*
3. *Nighttime Visibility*
4. *Signage*

The four developed emphasis areas are described in the next section. Each emphasis area includes preliminary supporting data findings, goals, and strategies.

EMPHASIS AREAS

Emphasis Area 1: Reduce Aggressive Driving Behavior and its Impacts on Safety

Description:

The Strategic Highway Safety Plan (SHSP) describes aggressive driving as speeding or driving too fast for roadway conditions, tailgating, and other forms of reckless driving maneuvers such as weaving through traffic. Aggressive driving often includes instances where drivers disobey or run traffic signals and signs. Under the SHSP, a crash may be deemed as an aggressive driving crash if any of the criteria are documented but not necessarily the primary crash factor. In the past five years, there have been 1,000 crashes attributed to aggressive driving with 9 crashes resulting in a fatality and 29 resulting in serious injuries. Over the past five years, the number of aggressive driving crashes has reduced from 223 crashes in 2015 and a peak of 235 in 2017 down to 127 aggressive driving crashes reported in 2019. Of the past five years of aggressive driving crashes, 910 were a result of unsafe speed, 84 were related to traffic signal and sign violation, and 6 were related to following too closely. Over half of the aggressive driving crashes (563 in total) were rear-end crashes with the second highest crash type being hit object crashes at a total of 232.

DATA FINDING	*The County and its safety partners identified aggressive driving as a safety concern. Over 30% of all crashes in the County of Ventura are related to aggressive driving.*

Goals:

- Reduce annual aggressive driving crashes
- Reduce the safety impact of aggressive driving

Strategies:

- Implement Advanced Dilemma Zone Detection and Advance Warning Signage
- Update signal timing to provide green clearance for vehicles moving at the desired speed
- Install speed warning signs at "high risk" intersections and/or speed feedback signs along segments
- Install "No Passing" signage or change broken yellow lane markings to double yellow lines
- Consider the use of geometric roadway changes to reduce speeding such as roundabouts, narrowing lanes, roadway pinch points, and chicanes
- Install rumble strips along roadway specifically on major curves and centerline
- Install reflective edge markers
- Conduct routine speed surveys to keep speed limits current and enforceable
- Develop a public outreach campaign that coincides with other jurisdictions' efforts to raise awareness about speeding and aggressive driving
- Enforce legislation that specifically penalizes aggressive driving
- Target key intersections and road segments and review striping and signage through roadway safety assessments
- Organize targeted education campaign on safety problems at "high risk" intersections
- Additional enforcement presence

Emphasis Area 2: Improve Safety of Active Transportation Facilities

Description:

The scenic roadways, temperate climate, and community culture make the County of Ventura attractive for active transportation modes especially bicycling and walking. The County maintains 58.2 miles of bicycle lanes with all but 1.56 miles of bicycle lanes considered shared right-of-way systems – Class II or Class III. Throughout the *Ventura County 2040 General Plan*, pedestrian and bicycle safety are key elements focused on providing adequate facilities for intercommunity connectivity, identifying and eliminating gaps, as well as prioritizing facilities when installing or improving these active transportation facilities. With these multimodal goals set, identifying data trends can support where and what type of improvements should be made. It is critical that pedestrians and bicyclists throughout the County have appropriate infrastructure to safely use the roadway system.

With 90 crashes in which at least one pedestrian or bicyclist was involved, 3 resulted in a fatality (1 pedestrian crash and 2 bicycle crashes) and 17 resulted in serious injuries (7 pedestrian crashes and 10 bicycle crashes). Of the 8 fatal and serious injury pedestrian collisions, 5 had a primary crash factor related to the driver – improper turning, other improper driving, unsafe speed, and pedestrian right-of-way violation meaning that the driver failed to yield to a

pedestrian at a legal crosswalk. For the bicycle crashes, 10 had a primary crash factor related to the driver – improper turning, other hazardous movement, traffic signal and signs, unsafe speed, and automobile right-of-way meaning the driver failed to yield right-of-way to other roadway users. As active transportation improvements are made, it is also important that drivers are taught how to share the road and abide by new technologies and infrastructure.

DATA FINDING	*There were a total of 16 pedestrian and bicycle crashes that did not occur in the daylight. This includes dark (with or without streetlights functioning) and dusk/dawn.*

Goals:

- Improve active transportation infrastructure that promotes safe multi-modal use

Strategies:

- Provide outreach, education, and enforcement to encourage more separation between vehicular and pedestrian traffic.
- Incorporate safer crossings by:
    - High visibility marked crosswalks
    - Pedestrian countdown signals
    - Advanced stop bars/stop sign setbacks
    - Leading Pedestrian Intervals (LPI)
    - Pedestrian countdown signals with lead pedestrian intervals at signalized intersections
    - Median refuge islands
    - Curb extensions and/or curb bulb-outs where feasible
    - Installing midblock crossings at pedestrian dense locations: schools and shopping centers
- Improve roadway visibility:
    - Enhance bicycle and pedestrian signage to help drivers expect to slow down for pedestrians and bicyclists
    - Retroreflective signs
    - Improve sight distance through vegetation maintenance or extent of on-street parking surrounding intersections, driveways, and curves
- Provide advance signing and wayfinding
- Provide dedicated pedestrian and bicycle infrastructure to and from transit stops
- Widen street shoulders
- Install multi-use path and/or trail facilities where feasible (i.e. along Hueneme Road Corridor)

- Install high visibility bicycle infrastructure i.e. green paint bicycle lanes or grade separated bicycle lanes
- Install bicycle storage facilities in public areas, such as the beach, schools, parks and in other public facilities to encourage bicycle use
- Require the provision of bicycle storage facilities as a condition of approval on new development applications for proposed commercial, hotel or major residential projects and/or provided at public transit and bus system facilities, or designated public transit stops
- Support bicycle facilities providing a dedicated right-of-way for the sole use of bicyclists

Emphasis Area 3: Nighttime Visibility

Description:

Visibility is an important factor in roadway safety that benefits drivers and active transportation users. Improving roadway visibility includes installing and/or maintaining street lighting, retroreflective backplates on signals and signs, and roadway striping. Between 2015-2019 a total of 1,023 crashes occurred at night - 685 crashes occurred while it was dark with no streetlights, 334 while it was dark with streetlights, and 4 crashes took place at dark with streetlights not functioning. Of these dark condition collisions, 137 crashes were hit-object crashes resultant of vehicular lane departure. The leading primary crash factor for these crashes is improper turning (420 crashes), driving under the influence (221 crashes), and unsafe speed (208 crashes).

The County of Ventura values the natural, unobstructed environment of the community and consistent with the General Plan, has ensured that night lighting be shielded, directed towards the ground, and transient lighting not exceed one foot-candle at 100 feet from the light pole as to minimize light pollution. It is important to implement nighttime visibility that both improves roadway safety but also aligns with the county's environmental values. The following nighttime visibility strategies include improvements that meet both goals.

DATA FINDING	*From 2015-2019, over 40% of night crashes occur from October to December when day light saving time is in effect. To improve nighttime visibility, the County can implement seasonal improvements.*

Goal:

- Improve nighttime visibility throughout the County.

Strategies:

- Retroreflective backplates on signals and signs
- Retroreflective poles
- Retroreflective warning signs on curved roadways: guardrail and chevron signs
    - Illuminated curve signs (solar powered)

- Centerline reflectors
- High visibility marked crosswalks
- Repaint roadway striping
- Pedestrian crossing warning signs at pedestrian dense locations
- Improve sight distance through vegetation maintenance or extent of on-street parking surrounding intersections, driveways, and curves
- Advanced stop bars
- Curb extensions and/or curb bulb-outs where feasible

Emphasis Area 4: Signage

Description:

Traffic signs are intended to inform and guide roadway users. The use of signs can provide several safety benefits since it prepares drivers and other multi-modal users of what lies ahead and minimize human error related to reaction time and faulty perception of the roadway. Improving and installing addition signage provides traffic safety benefits related to the earlier emphasis areas especially aggressive driving, active transportation, and visibility during the day and night. Speed feedback signs can discourage speeding, signal ahead signs can prepare users to slow down and prepare to stop, bicycle signs allow for drivers to actively look for and share the road with other roadway users, and retroreflective signs and poles make roadway guidance more apparent at night.

Goal:

- Improve and install signage throughout the County

Strategies:

- Retroreflective backplates and retroreflective poles on signals and signs
- Retroreflective warning signs on curved roadways: guardrail and chevron signs
    - Illuminated curve signs (solar powered)
- Guardrails and retroreflective or solar illuminated chevron signs along curves
- Solar illuminated stop signs
- Advance warning signs
- “No Passing” warning signs
- Speed feedback signs
- Pedestrian crossing warning signs
- Bicycle warning signs

INFRASTRUCTURE TOOLBOX

The following sections provide more information on potential safety measures that might address conditions that were observed to contribute to crash activity in the County. This includes information on Crash Modification Factors, improvements and countermeasures identified for Ventura, as well as for specific projects and locations identified as part of this analysis.

Countermeasure Selection Process

Crash Modification Factors

Part D of the HSM (Highway Safety Manual) provides information on Crash Modification Factors (CMF) for roadway segments, intersections, interchanges, special facilities, and road networks.

CMF's are used to estimate the safety effects of highway improvements and apply CMFs to compare and select highway safety improvements. A CMF less than 1.0 indicates that a treatment has the potential to reduce crashes. A CMF greater than 1.0 indicates that a treatment has the potential to increase crashes. The application of an appropriate CMF can influence the decision to implement a particular project, while the misapplication of CMFs can lead to poor decisions. Key factors to consider when applying CMFs include:

1. Selection of an appropriate CMF,
2. Estimation of crashes without treatment,
3. Application of CMFs by type and severity, and
4. Estimation of the combined effect for multiple treatments

Examples of Safety Countermeasure can be found through several sources. This Report utilizes the countermeasures found in the California LRSM (**http://www.dot.ca.gov/hq/LocalPrograms/HSIP/2018/CA-LRSM.pdf**) and the CMF Clearinghouse website (**http://www.cmfclearinghouse.org/**).

Traffic Safety Toolbox

The systemic improvements identified as most likely effective for the County of Ventura are listed in **Table 9** below, and include low-cost and higher-cost items that can be implemented in phases where appropriate. The Crash Reduction Factor (CRF) indicates how effective the countermeasure is at reducing crashes. A value of 1.0 would indicate that it would prevent all future crashes, while a value of 0.0 would indicate that it has no effect on crashes:

Table 9. Traffic Safety Toolbox

Countermeasure	Crash Reduction Factor	LRSM ID Number
Vehicle		
Improve pavement friction (High Friction Surface Treatment)	0.55	S11
Lane indicators	0.50	CMF ClearingHouse

Install all-way STOP control	0.50	NS02
Advanced dilemma zone detection	0.40	S04
Install segment lighting	0.35	R01
Install dynamic/variable speed warning signs	0.30	R26
Convert signal from pedestal-mounted to mast arm	0.30	S08
Road diet	0.30	R14
Protected left turn phase	0.30	S07
Install curves warning signs	0.25	R24
Install guardrail roadside barrier	0.25	R04
Upgrade pavement markings	0.25	NS07
Install right-turn lane	0.20	NS17
Install transverse rumble strips on horizontal curves	0.20	NS10
Signal ahead warning signs	0.15	S10
Fluorescent sheeting on regulatory and warning signs	0.15	R22
Improve signal timing (coordination)	0.15	S03
Retroreflective heads	0.15	S02
Intersection warning signs	0.15	NS06
Install raised pavement markers and striping	0.10	S09
Pedestrian		
Leading pedestrian interval	0.60	S21PB
Pedestrian HAWK[1]	0.55	NS23PB
Pedestrian refuge island	0.45	NS19PB
Crosswalk lighting	0.40	NS01
High Visibility/Continental crosswalk	0.40	CMF ClearingHouse
In-ground flashers	0.40	CMF ClearingHouse
Pedestrian scramble	0.40	S19PB
Colored bicycle lanes	0.39	CMF ClearingHouse
Curb extensions	0.37	CMF ClearingHouse
RRFB[2]	0.35	NS22PB
Crosswalks	0.35	NS21PB
Pedestrian countdown signal	0.25	S17PB
Crossing guard	Qualitative	Qualitative
Bicycle		

Separated bike lanes	0.45	R33PB
Bike lanes	0.35	R32PB
Bicycle box	0.15	S20PB

1. High Intensity Activated Crosswalk (HAWK)
2. Rectangular Rapid Flashing Beacon (RRFB)
3. CMF ClearingHouse: a research database of CMFs

Benefit to Cost Ratio Process

Benefit to Cost Ratio (B/C Ratio) is a way to compare the overall benefits against the overall cost of a project over a specified time period. The process of calculating the B/C Ratio begins with the identification of a horizon year (typically a 20-year project life span). The Benefit (B) of a project is the monetized value of crashes that would be prevented by the improvement over the project lifespan. No build crashes are computed assuming a consistent crash rate as traffic grows in the future. The crash modification factor is then used to reduce future year crashes over the 20-year period. The Cost (C) is the initial construction cost of the project and the cost per year to maintain the project over the same 20-year span.

The B/C Ratio calculations will illustrate the expected benefits of the Crash Modification Factors (CMFs) using four steps from the Local Roadway Safety Manual:

1. Estimation of the number of expected crashes without treatment
2. Application of CMFs by type and severity
3. Application of multiple CMFs at same location/facility
4. Application of benefit of value by crash severity

For step 4, the benefit discussed is evaluated in dollars. Caltrans maintains an evaluation for the cost of crashes (injury, incapacitating, and fatal). This number is applied to the amount of crashes “avoided” and is considered the benefit value. The final step of the evaluation is to determine if the benefit equals or exceeds the costs.

Cost/benefit ratios are the most typical prioritization metric used by grant programs to determine funding awards. The overall list of projects should then be listed by their cost/benefit ratio and bundled into funding groups. This will assist the County in prioritizing the implementation of projects that will have the highest benefit first, while still planning for other recommended projects. Cost/benefit calculations will ensure that the highest ranked projects are most competitive for external funding and will lead to the greatest amount of safety improvement for the lowest possible investment.

Priority Facilities

Through the network screening process, the LRSP development team identified Foothill Road (from Wells Road to Aliso Canyon Road), Hueneme Road (from Edison Road to Olds Road) and Potrero Road (from milepost 3.5 to W Via Acosta) as priority corridors for the LRSP based on their collision histories and their similarity to other County roadways likely to benefit from the studies). As for priority intersections, the team has identified Briggs Rd &

Telegraph Rd, Santa Clara Ave & Central Ave, Rose Ave & Walnut Dr, Alvarado St & Collins St, Rice Ave & Channel Islands Blvd, Las Posas Rd & Laguna Rd and Santa Rosa Rd & Las Posas Rd (see **Figure 16).** Findings for these priority corridors can be found in the Case Study Locations: Project Development section.

Figure 16. County of Ventura Roadway Network and Identified Priority Intersections and Corridors

Case Study Locations – Project Development

The case study locations were identified from the network screening results based on multiple factors, including a high number of collisions, irregularly high CCRs, irregularly high EPDOs due to the presence of fatal or serious injury collisions, or the high probability of a specific crash type exceeding its threshold proportion for the specific facility and daily volume type. Locations were also determined based on local knowledge from County officials and stakeholders. The case study locations represent areas with a variety of typical crash types, facility types and geographies (i.e. rural, urban, canyon) seen throughout the County.

The case study locations also informed the development of the overall countermeasure toolbox. Additional countermeasures were identified for the high-level issues on a county-wide level. The following ten case study locations were prioritized for further project development:

1. Briggs Road @ Telegraph Road
2. Santa Clara Avenue @ Central Avenue
3. Rose Avenue @ Walnut Drive
4. Alvarado Street @ Collins Street
5. Rice Avenue @ Channel Islands Boulevard
6. Las Posas Road @ Laguna Road
7. Santa Rosa Road @ Las Posas Road
8. Foothill Road Corridor (from Wells Road to Aliso Canyon Road)
9. Hueneme Road Corridor
10. Potrero Road Corridor

The case studies included a detailed review of local crash histories, a field review, and a stakeholder brainstorming session to identify the specific types of improvements from the infrastructure toolbox that would most directly address the observed conditions along with their planning level cost estimates and benefits. The benefit-cost results can be used to prioritize the lower-cost, higher-impact projects for near-term implementation. Larger investments can then be implemented as funding is available. For case studies with multiple solutions that would conflict with each other or be redundant, the County can select alternatives using the benefit/cost results along with a public outreach process. Analysis of additional factors such as traffic operations, environmental impacts, and investment equity should also be conducted before advancing implementation of projects that require larger levels of investment. The benefits of these projects were analyzed utilizing the CMFs identified in the HSIP Analyzer and CMF Clearinghouse. Countermeasures that either do not have a reported CMF or have a variety of different considerations in terms of cost do not have benefit/cost results and will require further evaluation.

Countywide Countermeasure Opportunities

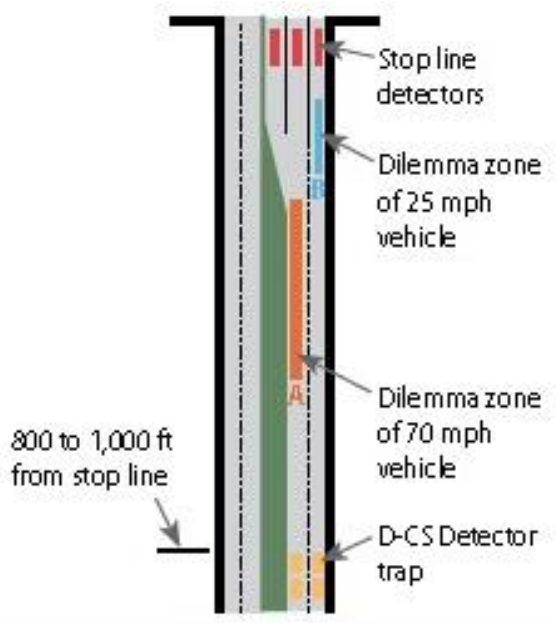
The following combination of infrastructure and non-infrastructure countermeasures were identified as county-wide improvements that help address the key emphasis areas at a systemic level:

- Infrastructure:
  - Advanced Dilemma Zone Detection
  - Retroreflective Borders on Existing Traffic Signal Backplates
  - High Friction Surface Treatment
  - Adjusting Traffic Signal Clearance Interval Times (Yellow-Change and All-Red)
- Non-Infrastructure:
  - Sign Safety Audit
  - Engineering and Traffic Survey
  - Lighting Study

Advanced Dilemma Zone Detection

The dilemma zone is the space where drivers approaching an intersection at the onset of a yellow phase are required to choose whether to stop or proceed. The Advanced Dilemma Zone Detection system modifies traffic signal timing to reduce the number of drivers that may have difficulty deciding whether to stop or proceed during a yellow phase. This enhances safety by potentially reducing rear-end crashes associated with unsafe stopping and angle crashes associated with drivers illegally continuing into the intersection during the red phase. Dilemma Zone Detection systems minimizes the number of vehicles exposed to a dilemma zone by adjusting the start time of the yellow phase to earlier or later depending on the vehicle locations and speeds. **Figure 17** shows the dilemma zone locations for vehicles traveling at higher and lower speeds, as well as the location of the Dilemma Zone Detector trap (800 – 1,000 feet from intersection stop bar). According to Section 4.2 of the LRSM, Advanced Dilemma Zone Detection has a CMF of 0.60 (i.e. can reduce crashes by 40%) and is a high systemic approach opportunity.

Figure 17. Advanced Dilemma Zone Detection Design



Source: FHWA

Retroreflective Borders on Existing Traffic Signal Backplates

Retroreflective borders along the backplates of signal heads, shown in **Figure 18**, improve the visibility of the illuminated face of the signal and are more conspicuous in both daytime and nighttime conditions. Adding a retroreflective border to existing signal backplates is a very low-cost safety treatment. According to Section 4.2 of the LRSM, retroreflective borders on signal head backplates have a CMF of 0.85 (i.e. can reduce crashes by 15%) and is a very high systemic approach opportunity.

Figure 18. Example of Signal Head with Retroreflective Borders along Backplate

Source: FHWA

High Friction Surface Treatments (HFST)

HFST involves the application of a high-quality surface treatment to the pavement to increase the friction of the road, which helps vehicles slow down faster. This surface treatment also helps improve motorist control in both dry and wet driving conditions. This improvement would be applied to all approaches on county-maintained signalized intersections. According to Section 4.2 of the LRSM, HSFT has a CMF of 0.45 (i.e. can reduce crashes by 55%) and is a medium systemic approach opportunity.

Adjust Traffic Signal Clearance Interval Times (Yellow-Change and All-Red)

Red-lighting running is a leading cause of injury collisions at signalized intersections. Due to this, it is imperative that the yellow-change and all-red intervals be appropriately timed. The yellow signal indication tells roadway users that the green signal phase has ended, and the red will soon follow. The all-red clearance interval is the brief time period following the yellow signal indication during which a red signal indication is displayed to all conflicting movements

at a signalized intersection. This improvement includes optimally adjusting the interval time length of both the yellow-change and all-red clearance intervals to make passage through the intersection as safe as possible. According to Section 4.2 of the LRSM, improve signal timing for the yellow-change and all-red clearance intervals has a CMF of 0.85 (i.e. can reduce crashes by 15%) and is a very high systemic approach opportunity.

Sign Safety and Lighting Audits

A Sign Safety Audit and Lighting Audit are both formal safety performance examinations of the existing signage and lighting infrastructure along an existing roadway or intersection by an independent team. The audit includes an inventory of existing signage/lighting infrastructure, as well as a qualitative estimate of various characteristics such as placement, condition, and effectiveness. The audit also includes opportunities for improvements based on the existing conditions and constraints related to the roadway, surrounding environment, and roadway users.

Engineering and Traffic Survey

An Engineering and Traffic (E&T) Survey is intended to be the basis for the establishment, revision, and enforcement of speed limits for selected roadways throughout the County. According to California Vehicle Code (CVC) Section 627, an Engineering and Traffic Survey is "a survey of highway and traffic conditions in accordance with methods determined by the Department of Transportation for use by state and local authorities." An E&T Survey is an engineering study of the prevailing speeds and a review of the traffic conditions of the roadway which is completed every five years for streets greater than 40' in width, regardless of the street's classification.

1. Briggs Road at Telegraph Road

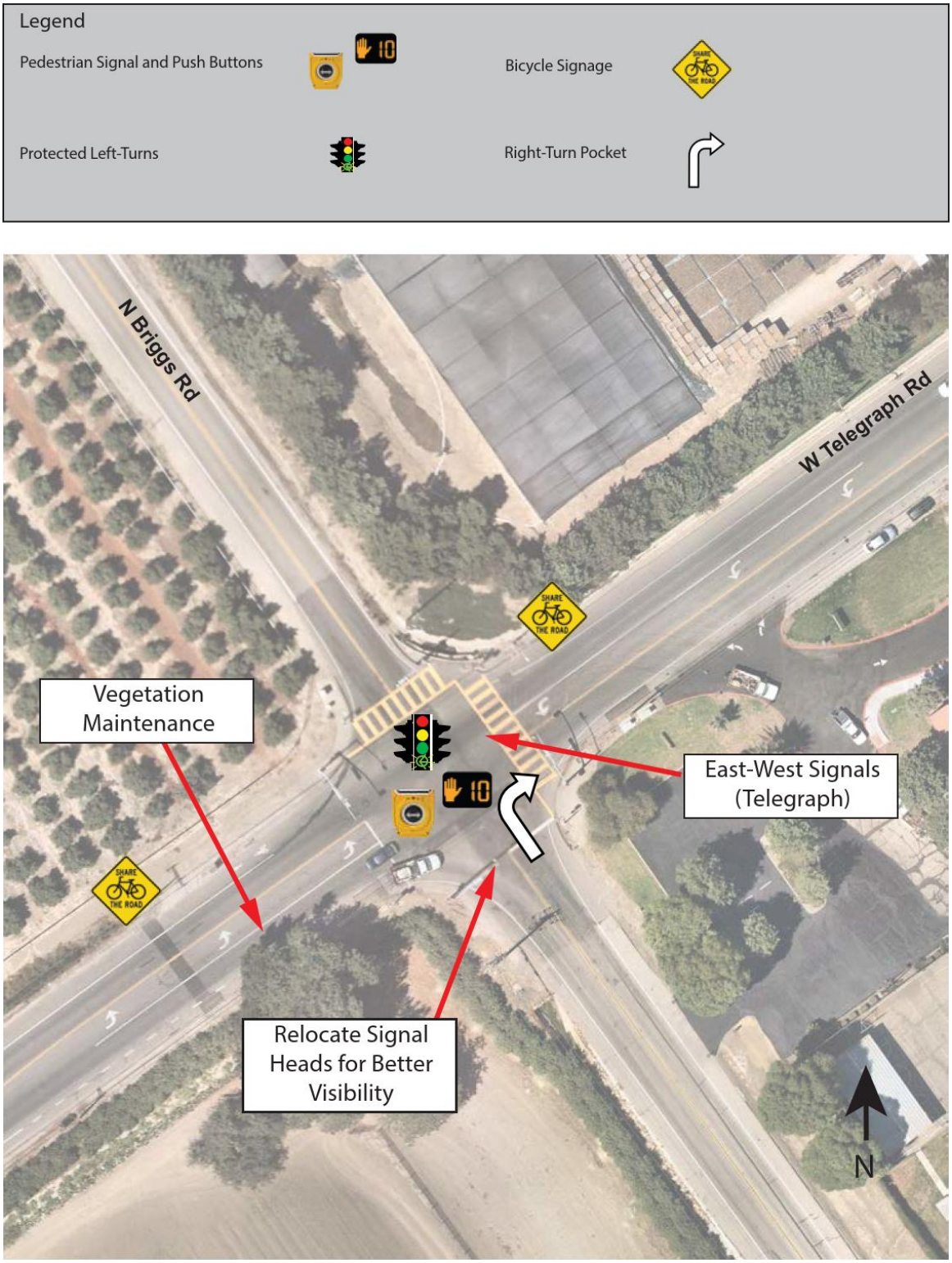
Briggs Road at Telegraph Road is a signalized intersection located southwest of Santa Paula, CA with permissive left-turns at all approaches. The intersection is adjacent to Briggs Elementary School and has crosswalks with pedestrian push buttons and signal heads along the north and east legs; however, only some of the push buttons have haptic feedback. In the morning, the sunlight glare can heavily impact visibility for southbound-moving roadway users. There is also line of sight issues due to overgrown trees and vegetation. There are low-hanging communication lines running east-west across the south leg that may impact the visibility of the traffic signals. The existing bike signage along Telegraph Road near this intersection is also not up to standard.

This intersection has a history of angled, sideswipe, and head-on crashes, as well as crashes involving bicyclists. Countermeasures at this location are focused on improving operations by reducing the likelihood of angled collisions, improving signage and striping, and enhancing visibility. All countywide countermeasure opportunities apply at this location, as well as those shown in **Figure 19**. These include installing protected left-turns for the eastbound/westbound left-turns (for Telegraph Road), enhancing bicycle signage, improving vegetation maintenance, relocating the southbound signal heads (for Briggs Road), and adding a northbound right-turn pocket (for Briggs Road). **Table 10** shows the benefits and costs for one of the site-specific countermeasures, others require further evaluation.

Table 10. Briggs Road at Telegraph Road Countermeasure Benefit-Cost

Countermeasure	CMF	Expected Life (Years)	Crashes Prevented	Benefit	Estimated Cost	B/C
Install Protected EB/WB Left-Turns (Telegraph Rd)	0.70	20	18.00	$888,360	$398,998	2.2
Enhance Bicycle Signage	0.85	10	Varies; Requires further evaluation			
Vegetation Maintenance	Varies; Requires further evaluation					
Relocate Southbound Signal Heads	Varies; Requires further evaluation					
NB Right-Turn Pocket	Varies; Requires further evaluation					

Figure 19. Briggs Road at Telegraph Road Countermeasure Opportunities



2. Santa Clara Avenue at Central Avenue

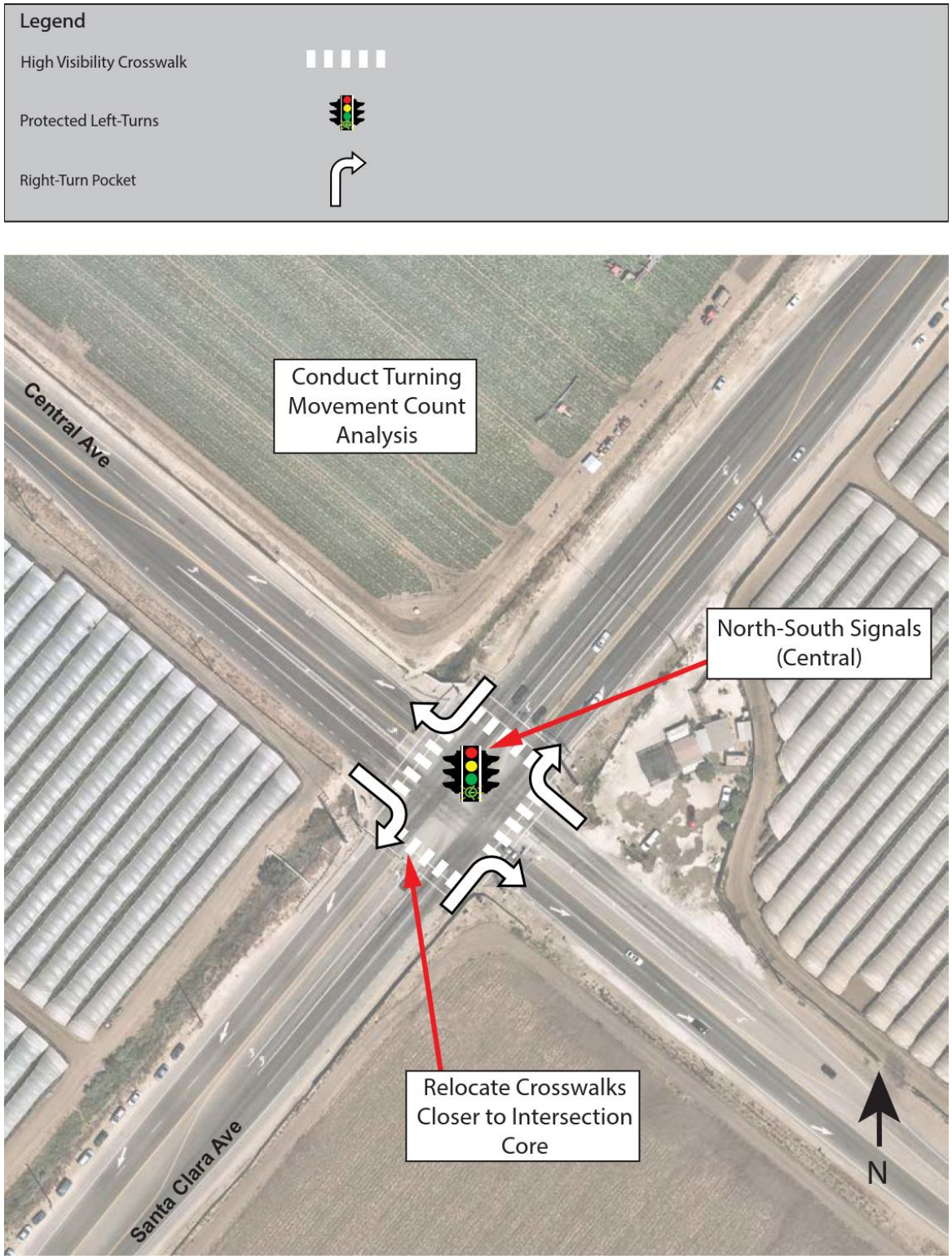
Santa Clara Avenue at Central Avenue is a rural, high-volume signalized intersection located a little over a mile southeast of Rio Mesa High School, between Oxnard and Camarillo, CA. Both roads have a defaulted speed limit of 55 miles per hour (mph) set by the California Vehicle Code. The northbound/southbound movements on Central Avenue have a doghouse signal head that controls both the through and the protected/permissive left-turn phases. The eastbound/westbound movements on Santa Clara Avenue have separate signal heads for the dual protected left-turn phase and through phase. There is a large gap between the stop lines and the intersecting street lines, due to the placement of the crosswalk, creating some sight distance issues. The intersection has pedestrian countdown signal heads and Class II bike lanes on all four approaches.

This intersection has a history of angled crashes, sideswipes, and rear-ends. Countermeasures at this intersection are focused on reducing speeds, reducing the likelihood of angled collisions, and improving visibility. All countywide countermeasure opportunities apply to this intersection, as well as those shown in **Figure 20**. These include installing separate protected northbound/southbound left-turn signal heads/phases on Central Avenue, installing high visibility crosswalks, relocating the crosswalks and stop lines closer to the intersection core, conducting a turning movement count analysis, and converting all right-lanes to right-turn only lanes. **Table 11** shows the benefits and costs for one of the site-specific countermeasures, others require further evaluation.

Table 11. Santa Clara Avenue at Central Avenue Countermeasure Benefit-Cost

Countermeasure	CMF	Expected Life (Years)	Crashes Prevented	Benefit	Estimated Cost	B/C
Install Protected NB/SB Left-Turns (Central Ave)	0.70	20	28.80	$3,636,601	$398,998	9.1
Install High Visibility Crosswalk	0.60	10	Varies; Requires further evaluation			
Relocate Crosswalks Closer to Intersection Core	Varies; Requires further evaluation					
Turning Movement Count Analysis	Varies; Requires further evaluation					
Convert All Right Lanes to Right-Turn Only	Varies; Requires further evaluation					

Figure 20. Santa Clara Avenue at Central Avenue Countermeasure Opportunities



3. Rose Avenue at Walnut Drive

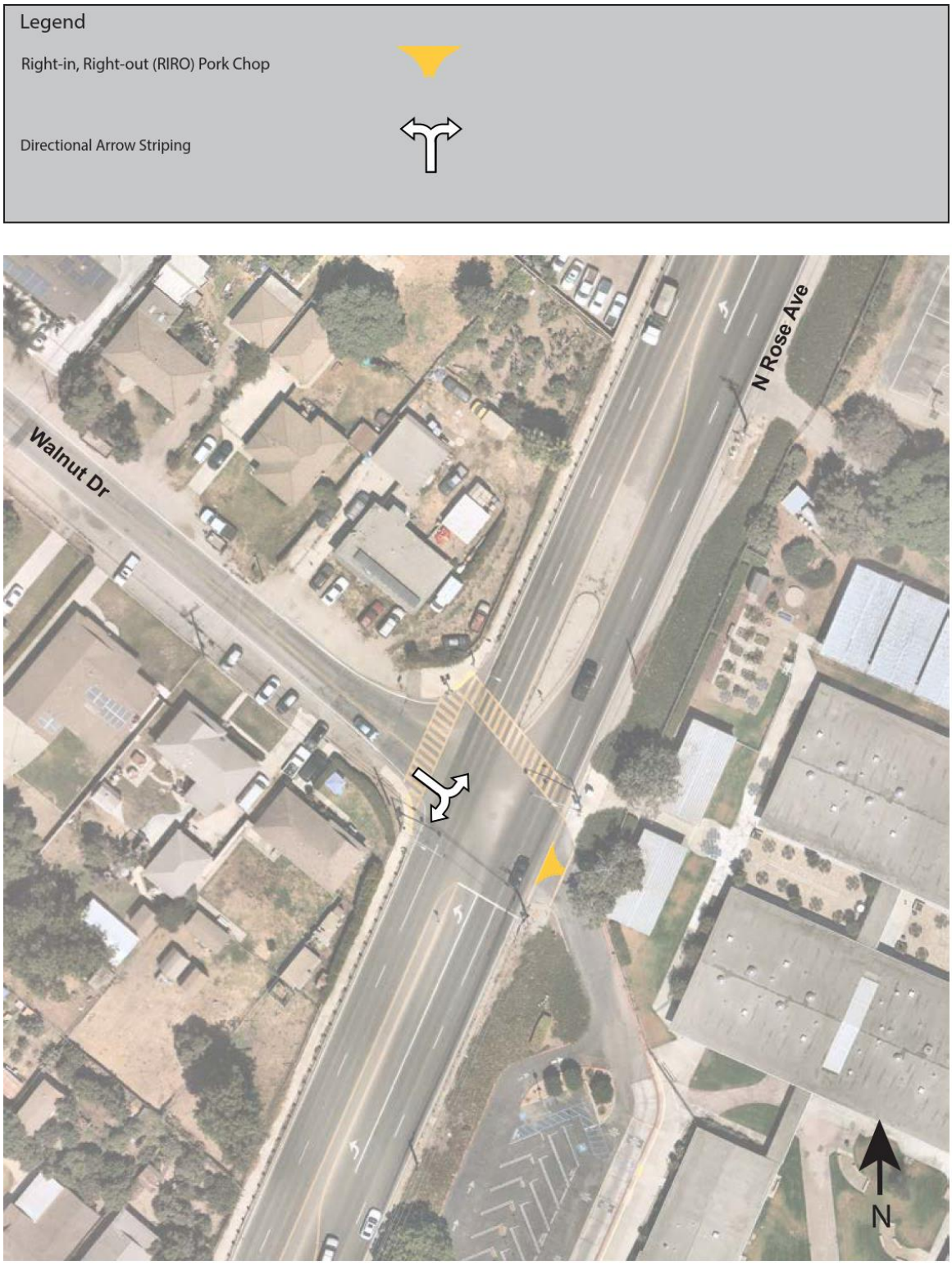
Rose Avenue at Walnut Drive is a signalized intersection located in the El Rio neighborhood. The south leg of the intersection is a one-way driveway allowing vehicles out of the Rio Del Valle Junior High School parking lot. The west leg of the intersection does not permit pedestrians to cross; however, the north and east legs have high-visibility crosswalks, and the south leg intersection has a normal crosswalk. All left-turn phases at this signalized intersection are permissive.

Broadsides crashes are the predominant crash type at this intersection. Countermeasures at this location are focused on making the path of travel clearer for roadway users, particularly in the north and southbound directions (i.e. Walnut Drive and the school driveway). Since the collision history does not suggest speeding as a major issue at this intersection, retroreflective backplates, a yellow-change and all-red clearance interval update, and a sign safety audit would be the most applicable of the countywide countermeasure opportunities. The additional site-specific countermeasures are shown in **Figure 21**. These include installing a median (pork chop) on the northbound approach (school driveway) and painting directional arrows on the southbound approach. These improvements would help roadway users better navigate the intersection, thus helping reduce the likelihood of conflict. **Table 12** shows the crash modification factor and expected life for each of these site-specific countermeasures; benefits and costs require further evaluation.

Table 12. Rose Avenue at Walnut Drive Countermeasure Benefit-Cost

Countermeasure	CMF	Expected Life (Years)	Crashes Prevented	Benefit	Estimated Cost	B/C
Install Median (Pork Chop) on NB Approach (School Driveway)	0.75	20	Varies; Requires further evaluation			
Paint Directional Arrows on SB Approach	0.90	10	Varies; Requires further evaluation			

Figure 21. Rose Avenue at Walnut Drive Countermeasure Opportunities



4. Alvarado Street at Collins Street

Alvarado Street at Collins Street is a two-way stop-controlled intersection located a quarter mile away from Rose Avenue at Walnut Drive in the El Rio neighborhood. This intersection is being used as an example to highlight the overall mobility, infrastructure, and sight distance challenges in the El Rio neighborhood. There are visibility issues due to sight obstruction from overgrown vegetation and parked vehicles around the intersection. There are also visibility issues from stop bars on Collins Street being placed too far back and not in line with the stop sign. Currently, there is only paved sidewalk on the east side of the south leg (Collins Street) and the south side of the west leg (Alvarado Street). In general, the neighborhood has inconsistent sidewalk pavement throughout. The intersection also has a high-visibility crosswalk on the south leg, and there are two bus stops on both sides of the west leg (Alvarado Street). There is also an inconsistent pattern of crosswalk paintings and stop-sign placements in the neighborhood. For example, the study intersection has the stop sign on Collins Street; however, on all the adjacent and nearby intersections along Alvarado Street, the stop signs are on Alvarado Street.

Broadside crashes are the predominant crash type at this intersection. Countermeasures at this location are focused on creating a consistent travel network, improving general mobility and comfort for all roadway users, and enhancing visibility. The countywide countermeasure opportunities that apply at this location are the sign safety audit and lighting audit. The additional neighborhood-wide countermeasures are shown in **Figure 22**. These include conducting a stop sign study, implementing a neighborhood parking ordinance, and conducting a neighborhood traffic calming study. **Table 13** shows each of the site-specific countermeasures; further evaluation is required to assess benefits and costs.

Table 13. Alvarado Street at Collins Street Countermeasure Benefit-Cost

Countermeasure	CMF	Expected Life (Years)	Crashes Prevented	Benefit	Estimated Cost	B/C
Stop Sign Study	Varies; Requires further evaluation					
Parking Ordinance	Varies; Requires further evaluation					
Neighborhood Traffic Calming	Varies; Requires further evaluation					

Figure 22. Alvarado Street at Collins Street Countermeasure Opportunities

5. Rice Avenue at Channel Islands Boulevard

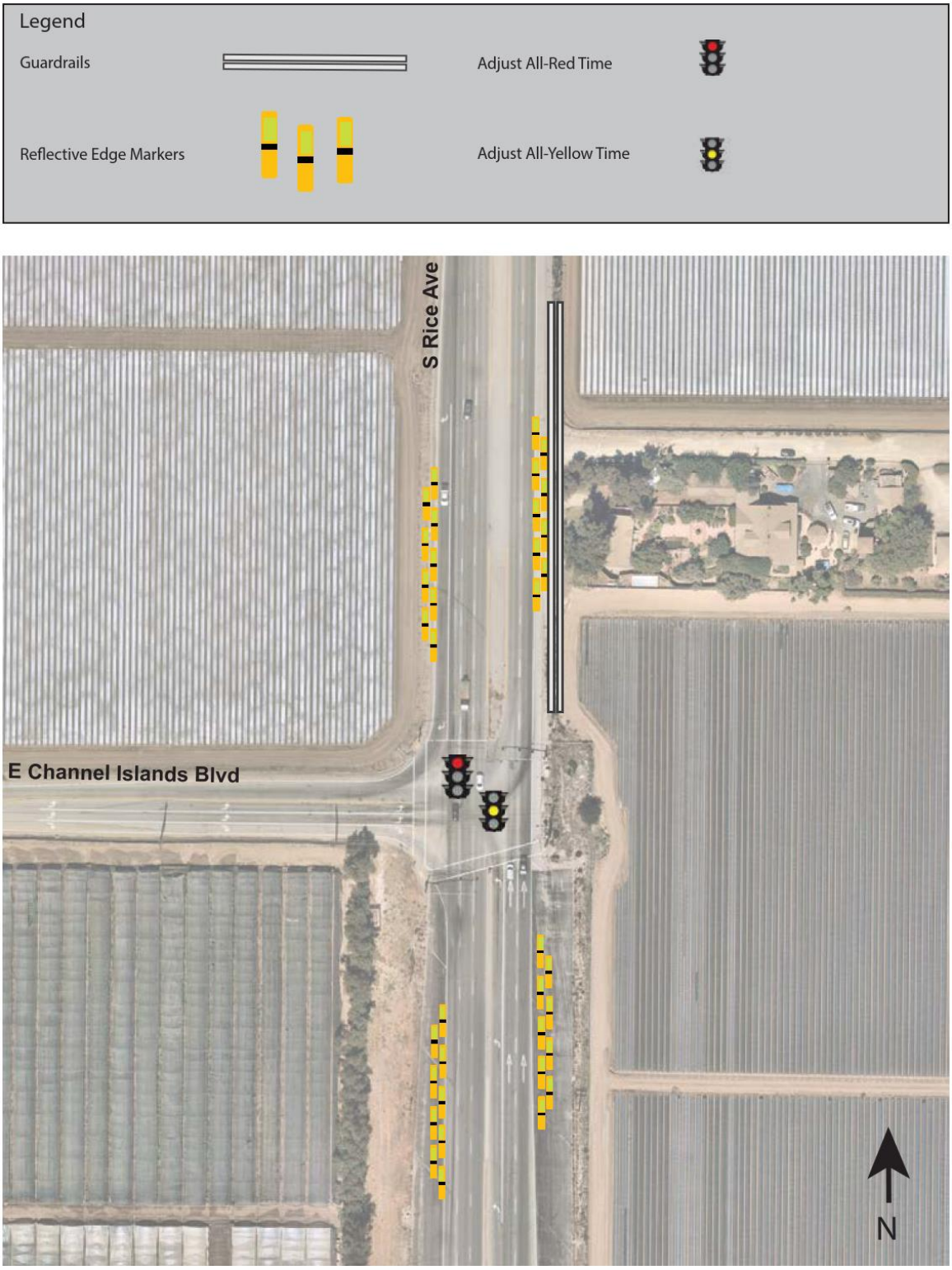
Rice Avenue at Channel Islands Boulevard is a three-legged, high-volume signalized intersection located just outside the southeastern limits of Oxnard, CA. Rice Avenue is an arterial road with a posted speed limit of 55 mph, and until 2016, Rice Avenue was California State Route 1. Channel Islands Boulevard is an arterial road with a prima facie speed of 55 mph. The intersection experiences high entering volumes and speeds as both legs have high traffic speeds. The intersection has crosswalks and pedestrian countdown signal heads on the south and west legs.

This intersection has a history of crashes involving rear-ends, broadsides, sideswipes, and hit objects, as well as crashes occurring during dark conditions. Countermeasures at this location are focused on improving signal timing, addressing lane departure crashes, and enhancing visibility. All countywide countermeasure opportunities apply at this location, as well as a few more shown in **Figure 23**. The additional countermeasures include installing guardrail and install reflective edge markers. **Table 14** shows the benefits and costs for one of the site-specific countermeasures, others require further evaluation.

Table 14. Rice Avenue at Channel Islands Boulevard Countermeasure Benefit-Cost

Countermeasure	CMF	Expected Life (Years)	Crashes Prevented	Benefit	Estimated Cost	B/C
Adjust All-Yellow and All-Red Times	0.85	10	12.60	$679,982	$16,064	42.3
Install Guardrails	0.85	10	Varies; Requires further evaluation			
Install Reflective Edge Markers	0.75	20	Varies; Requires further evaluation			

Figure 23. Rice Avenue at Channel Islands Boulevard Countermeasure Opportunities



6. Las Posas Road at Laguna Road

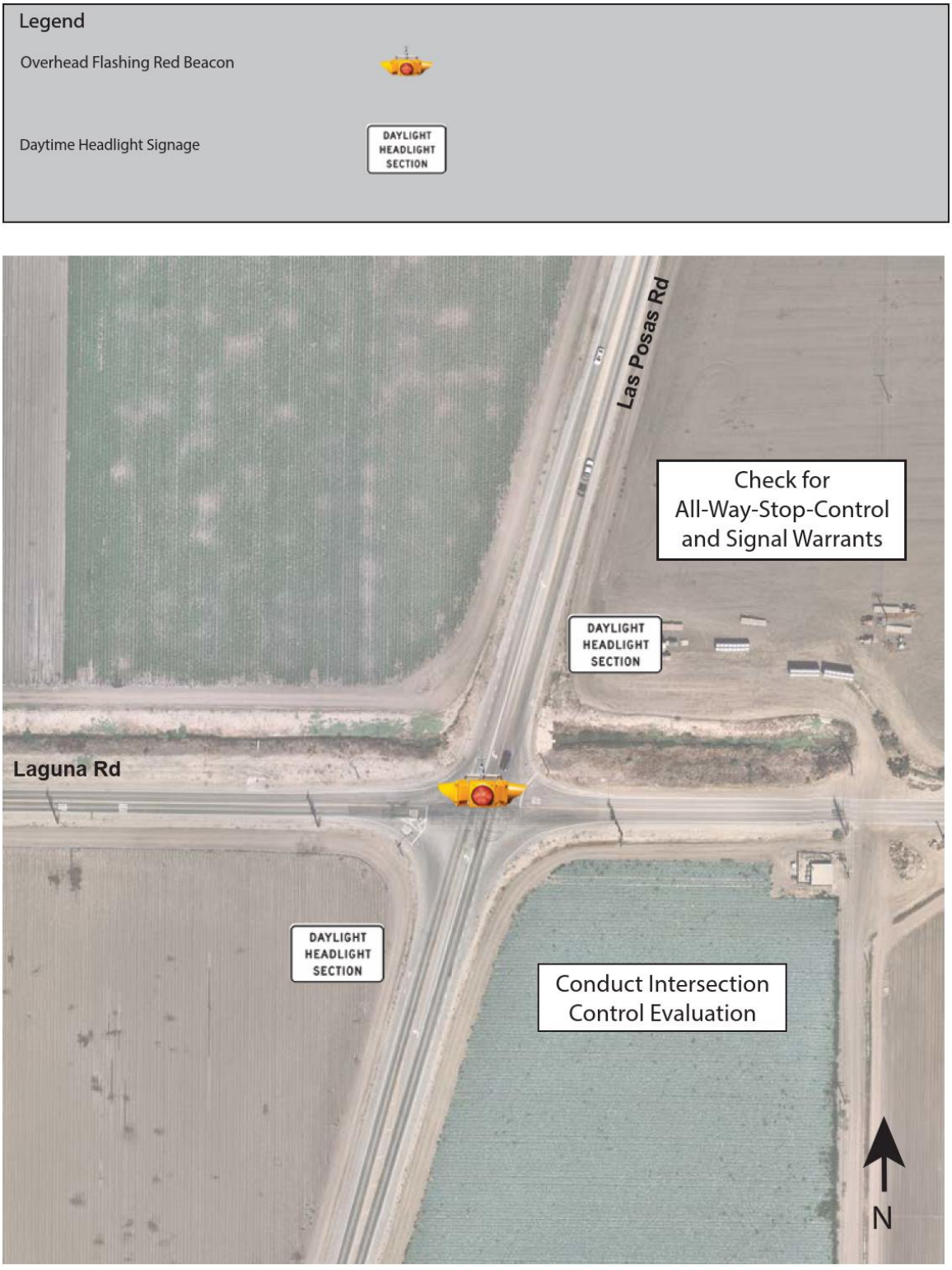
Las Posas Road at Laguna Road is a rural two-way stop-controlled intersection with high-entering speeds. Las Posas Road has a prima facie speed of 55 mph and has Class II bike lanes on both sides of the intersection. There are not many vertical sight obstructions for the side-street roadway users; however, it may be difficult for some to judge the correct gap for which they can safely make their maneuver.

The intersection has a history of mainly angled crashes, one of which was fatal. Countermeasures at this location are focused on reducing vehicle speeds, reducing potential for conflict points, and enhancing visibility. The countywide countermeasure opportunities that apply at this location are the sign safety audit, E&T survey, and lighting audit. The additional countermeasures are shown in **Figure 24**. These include installing an overhead flashing red beacon, conducting an intersection control evaluation, conducting an intersection warrant analysis, and making both roadways daytime headlight sections. **Table 15** shows the benefits and costs for one of the site-specific countermeasures, others require further evaluation.

Table 15. Laguna Road at Las Posas Road Countermeasure Benefit-Cost

Countermeasure	CMF	Expected Life (Years)	Crashes Prevented	Benefit	Estimated Cost	B/C
Install EB/WB Overhead Flashing Red Beacon	0.85	10	9.60	$1,864,982	$63,840	29.2
Intersection Control Evaluation	Varies; Requires further evaluation					
Warrant Analysis	Varies; Requires further evaluation					
Daytime Headlight Section (Las Posas Rd)	Varies; Requires further evaluation					

Figure 24. Laguna Road at Las Posas Road Countermeasure Opportunities



7. Laguna Road (Corner Turn)

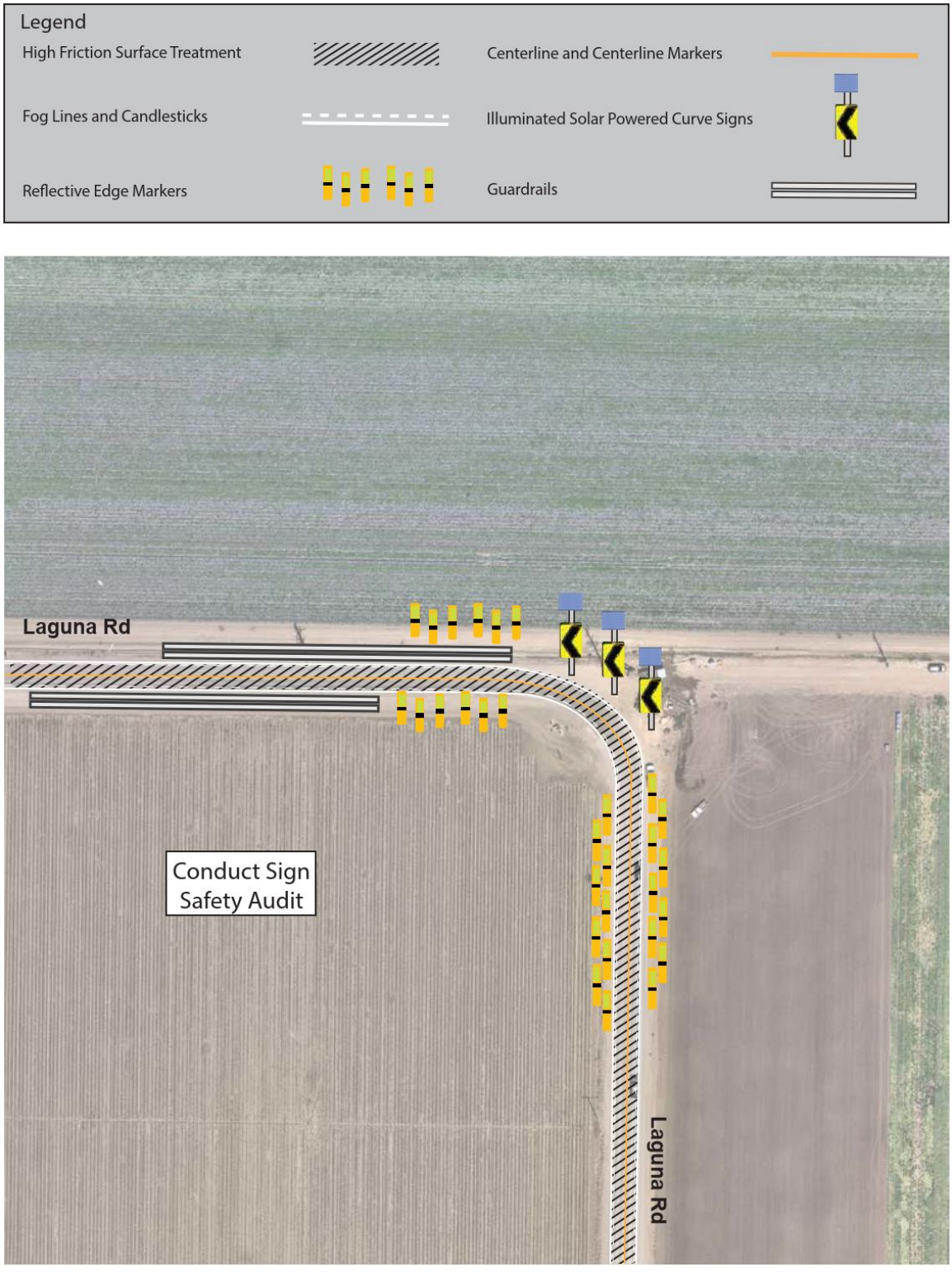
On Laguna Road, less than half a mile east from this intersection, is a sharp corner turn with a history of hit object, overturned, and aggressive-driving crashes. This turn has extremely faded centerlines and is missing centerline reflectors. In addition, there are no fog lines or reflective edge markers. The turn has the following signage: chevrons, turn ahead, and advisory speed ahead. Farmers also regularly travel across this corner to get from one field to the other.

The countywide countermeasure opportunities that apply at this location are the sign safety audit, speed survey, lighting study, and high-friction surface treatment. The additional countermeasures are shown in **Figure 25**. These include restriping the centerline, restriping the fog lines, installing reflective edge markers, installing illuminated solar-powered curve signs, and installing guardrails. **Table 16** shows the benefits and costs for some of these site-specific countermeasures, others require further evaluation.

Table 16. Laguna Road (Corner Turn) Countermeasure Benefit-Cost

Countermeasure	CMF	Expected Life (Years)	Crashes Prevented	Benefit	Estimated Cost	B/C
Restripe Centerline	0.55	10	19.80	$617,222	$65,083	9.5
Restripe Fog Line	0.55	10	19.80	$617,222	$51,403	12.0
Install Reflective Edge Markers	0.85	10	6.60	$205,741	$12,644	16.3
Install Illuminated Solar-Powered Curve Sign	0.65	20	Varies; Requires further evaluation			
Install Guardrails	0.75	20	Varies; Requires further evaluation			
Install High Friction Surface Treatment	0.45	10	Varies; Requires further evaluation			
Sign Safety Audit	Varies; Requires further evaluation					

Figure 25. Laguna Road (Corner Turn) Countermeasure Opportunities



8. Santa Rosa Road at Las Posas Road East

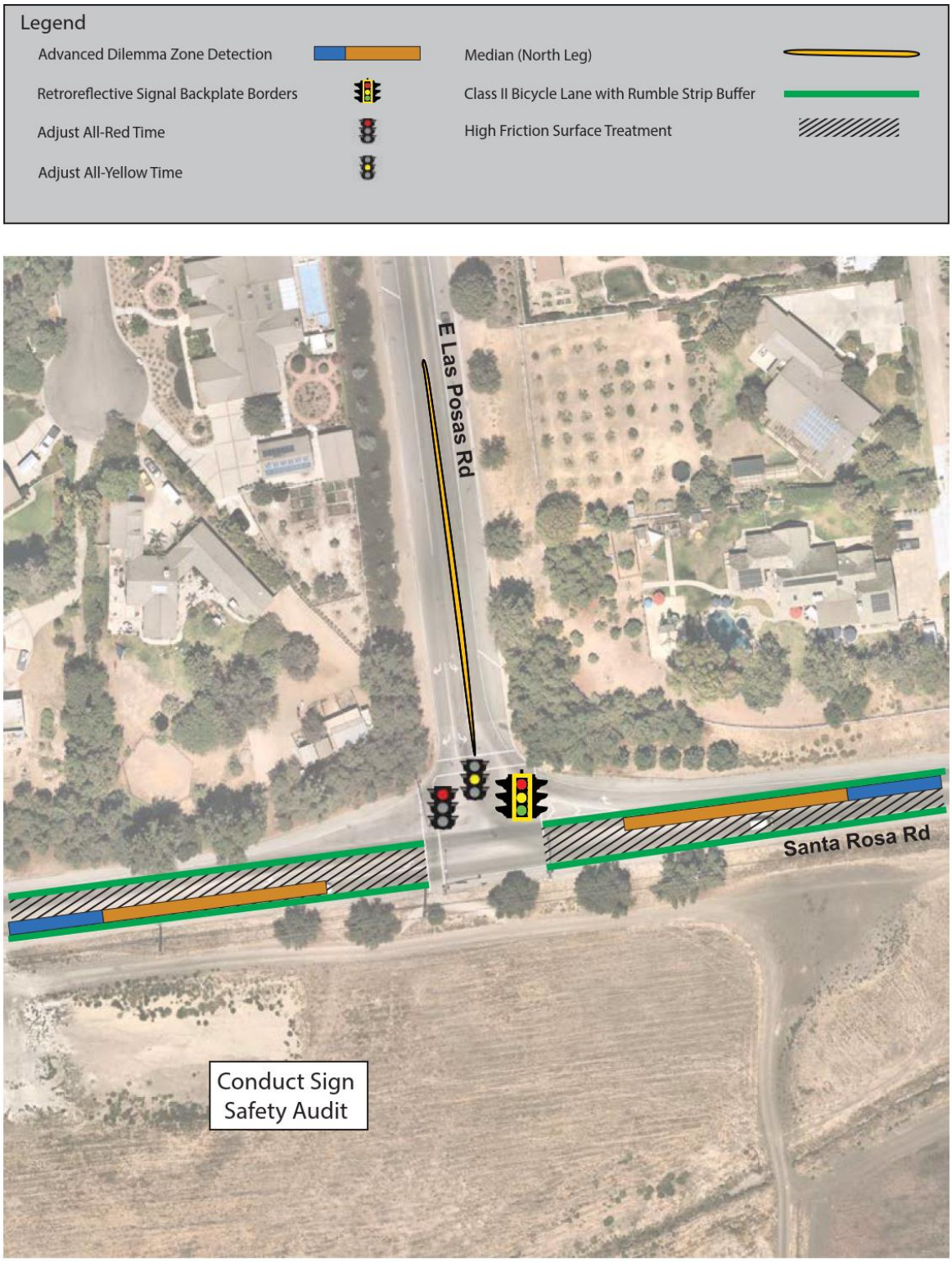
Santa Rosa Road at Las Posas Road East is a three-legged, high-volume signalized intersection located just east of Camarillo, CA. Santa Rosa Road is the highest traveled two-lane road in the Unincorporated County. There is a painted channelized right turn for the westbound right movement. Santa Rosa Road also has many large, wide trees along it that may cause some sight challenges, especially at horizontal curves. The intersection has crosswalks on the north and west legs.

This intersection has a history of crashes involving rear-ends, broadsides, and aggressive driving behaviors. Countermeasures at this location are focused on reducing vehicle speeds, improving signal timing, and enhancing visibility. All countywide countermeasure opportunities apply at this location, as well as a few more shown in **Figure 26**. The additional countermeasures include installing a median north of the intersection and installing the proposed Class II bicycle lane with rumble strips as a buffer. **Table 17** shows the benefits and costs for some of these site-specific countermeasures, others require further evaluation.

Table 17. Santa Rosa Road at Las Posas Road East Countermeasure Benefit-Cost

Countermeasure	CMF	Expected Life (Years)	Crashes Prevented	Benefit	Estimated Cost	B/C
Install Advanced Dilemma Zone Detection	0.60	10	24.00	$4,549,122	$74,480	61.1
Install Retroreflective Signal Backplates	0.85	10	9.00	$1,705,921	$21,280	80.2
Adjust All-Yellow and All-Red Times	0.85	10	9.00	$1,705,921	$16,064	106.2
Install High Friction Surface Treatment	0.45	10	Varies; Requires further evaluation			
Install Median on SB Approach (Las Posas Rd)	0.61	10	Varies; Requires further evaluation			
Install Proposed Class II Bicycle Lane	Varies; Requires further evaluation					
Sign Safety Audit	Varies; Requires further evaluation					

Figure 26. Santa Rosa Road at Las Posas Road East Countermeasure Opportunities



9. Foothill Road Corridor (Wells Road to Aliso Canyon Road)

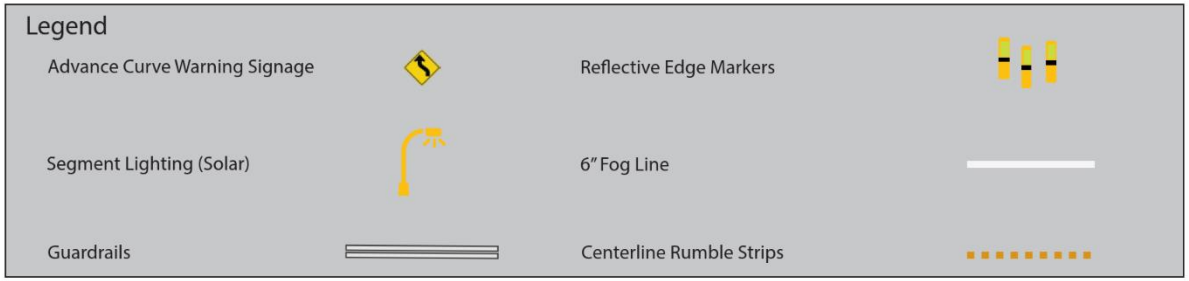
Foothill Road from Wells Road to Aliso Canyon Road is a collector road running east-west with a prima facie speed of 55 mph. The roadway is narrow and missing guardrails and reflective lane edge markers. In addition, both sides of the road either lack or have limited shoulders and have ditches with no physical clear zones. Moreover, the roadway has no overhead lighting fixtures.

This corridor has a history of crashes involving bicyclists, hit objects, and overturned vehicles, as well as crashes occurring during dark conditions. Countermeasures at this location are focused on addressing lane departure crashes, improving signage, and enhancing visibility. The countywide countermeasure opportunities that apply at this location are the sign safety audit, E&T survey, and lighting audit. The additional countermeasures are shown in **Figure 27**. These include installing advance warning signage, adding lighting, installing reflective edge markers, installing guardrails, installing centerline rumble strips, and widening the existing fog line from 4 inches to 6 inches. **Table 18** shows the crash modification factor and expected life for some of these site-specific countermeasures; benefits and costs require further evaluation.

Table 18. Foothill Road Corridor Countermeasure Benefit-Cost

Countermeasure	CMF	Expected Life (Years)	Crashes Prevented	Benefit	Estimated Cost	B/C
Install Advance Warning Signage	0.85	10	Varies; Requires further evaluation			
Add Segment Lighting	0.65	20	Varies; Requires further evaluation			
Install Reflective Edge Markers	0.85	10	Varies; Requires further evaluation			
Install Guardrails	0.75	20	Varies; Requires further evaluation			
Install Centerline Rumble Strips	0.80	10	Varies; Requires further evaluation			
Widen Fog Line from 4" to 6"	Varies; Requires further evaluation					

Figure 27. Foothill Road Corridor Countermeasure Opportunities



10. Hueneme Road Corridor (Edison Drive to Naval Air Road)

Hueneme Road is an 8-mile long rural corridor running mostly east-west throughout the County. The 5.5-mile portion from Oxnard, CA to the intersection of Wood Road is classified as an arterial roadway, while the remaining 3.5-mile segment from Wood Road to Potrero Road is classified as a collector. The portion of Hueneme Road examined as a case study location is the arterial segment running east-west from Edison Drive to Naval Air Road. Hueneme Road is mostly a two-lane corridor, with the exception being near major intersections (e.g. Rice Avenue and Naval Air Road), with broken yellow centerlines which allow vehicle passing. Hueneme Road also has wide shoulders that accommodate a high number of parked vehicles typically associated with the surrounding agricultural services.

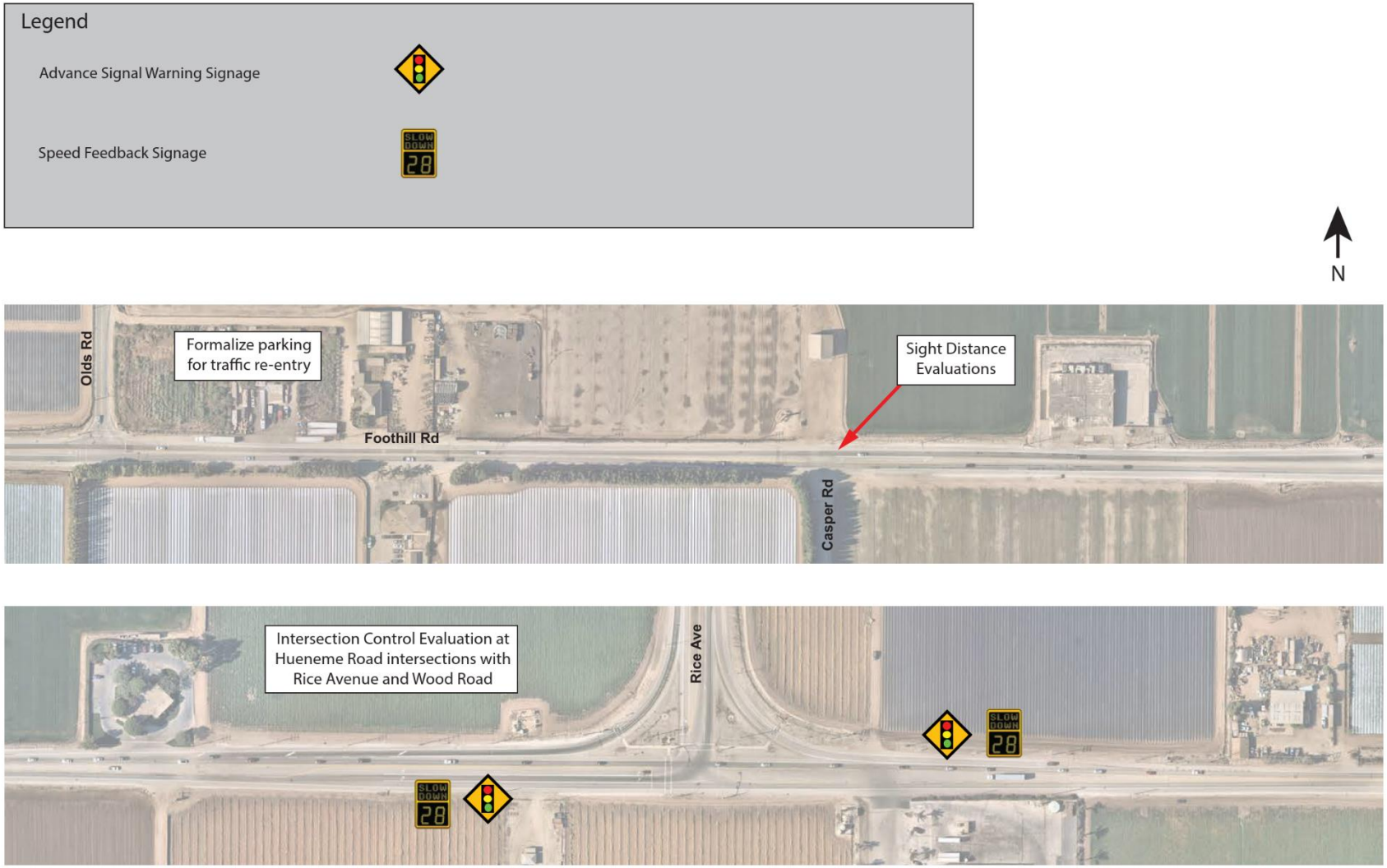
During the field visit and workshop, two intersections along the corridor stood out: Casper Road at Hueneme Road and Rice Avenue at Hueneme Road. The Casper Road intersection was noted to have potential to add more advanced warning signage along Hueneme Road; secondly, the stop bar at this intersection is set far back, potentially creating sight distance issues. The Rice Avenue intersection was sighted as a potential candidate for an intersection evaluation to examine its design, specifically for the large, sharp turns onto and off Rice Avenue.

The collision history of this corridor has a variety of different crash types, including broadsides, rear-ends, sideswipes, overturns, and hit objects, as well as crashes involving aggressive driving behaviors and occurring during dark conditions. Countermeasures along this corridor are focused on reducing vehicle speeds, improving signage, addressing lane departure crashes, and enhancing visibility. All countywide countermeasure opportunities apply at certain locations along this corridor, as well as a few more shown in **Figure 28**. The additional countermeasures include installing advance warning signage, installing speed feedback signs, performing sight distance evaluations, conducting intersection control evaluations, and formalized parking for traffic re-entry. **Table 19** shows the crash modification factor and expected life for some of these site-specific countermeasures; benefits and costs require further evaluation.

Table 19. Hueneme Road Corridor Countermeasure Benefit-Cost

Countermeasure	CMF	Expected Life (Years)	Crashes Prevented	Benefit	Estimated Cost	B/C
Install Advance Warning Signage	0.85	10	Varies; Requires further evaluation			
Install Speed Feedback Signs	0.70	10	Varies; Requires further evaluation			
Sight Distance Evaluation	Varies; Requires further evaluation					
Intersection Control Evaluation (Rice Ave & Wood Rd)	Varies; Requires further evaluation					
Formalize Parking for Traffic Re-entry	Varies; Requires further evaluation					

Figure 28. Hueneme Road Corridor Countermeasure Opportunities



11. Potrero Road West Corridor (Milepost 3.5 to 727' west of Via Acosta)

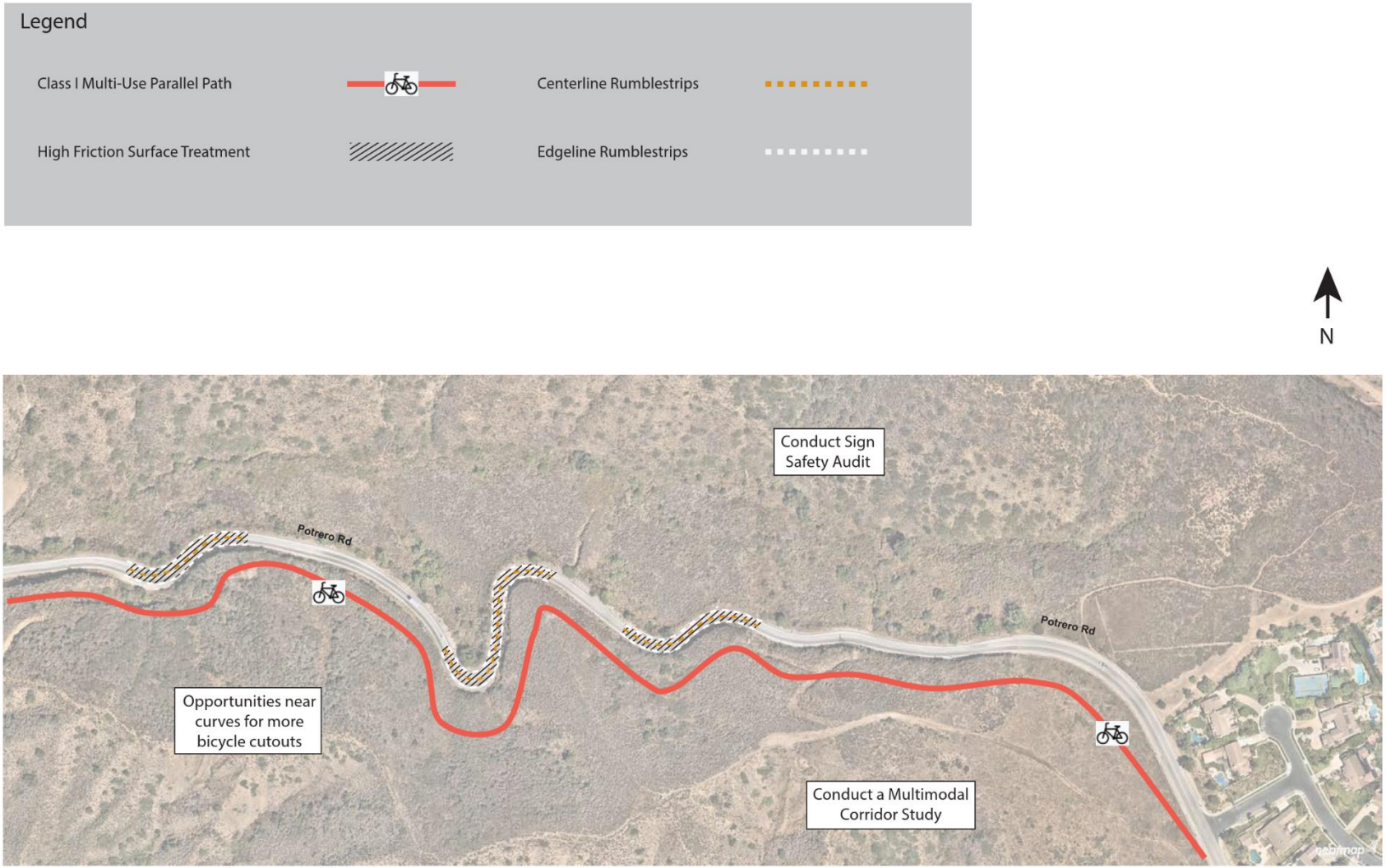
Potrero Road is a 5-mile long, two-lane collector corridor running east-west throughout the County. The western-most portion connects to Hueneme Road and abuts the southern border of California State University Channel Islands. Potrero Road's physical characteristics are typical of other winding roads throughout the canyon as they have narrow roadways with very little shoulder width and various vertical grades and horizontal curves. This topography makes Potrero Road a popular route for bicyclists. The portion of Potrero Road examined as a case study location is the 1.32 mile eastern-most segment starting from the west at milepost 3.5 to 727' west of Via Acosta to the east. The steepest portions of this segment have guardrails along the northside of the roadway and very little shoulder room on either side. During the field visit, it was noted that existing signage required updating due to vegetation obstructions, faded retroreflectivity, and incorrect orientations.

This corridor has a history of crashes involving bicycles, hit objects, overturns, sideswipes, and head-ons, as well as crashes involving aggressive driving behaviors and occurring during dark conditions. Countermeasures at this location are focused on reducing vehicle speeds, improving signage, addressing lane departure crashes, and enhancing visibility. The countywide countermeasure opportunities that apply at this location are the high friction surface treatment, sign safety audit, E&T survey, and lighting audit. The additional countermeasures are shown in **Figure 29**. These include installing rumble strips, conducting a multimodal corridor study, installing a Class I parallel bicycle path, and installing bicycle cut-outs at major curves. **Table 20** shows the crash modification factor and expected life for some of these site-specific countermeasures; benefits and costs require further evaluation.

Table 20. Potrero Road West Corridor Countermeasure Benefit-Cost

Countermeasure	CMF	Expected Life (Years)	Crashes Prevented	Benefit	Estimated Cost	B/C
Install High Friction Surface Treatment at Major Curves	0.45	10	Varies; Requires further evaluation			
Install Rumble Strips	0.80	10	Varies; Requires further evaluation			
Sign Safety Audit	Varies; Requires further evaluation					
Multimodal Corridor Study	Varies; Requires further evaluation					
Install Class I/Parallel Path	Varies; Requires further evaluation					
Bicycle Cut-Outs at Major Curves	Varies; Requires further evaluation					

Figure 29. Potrero Road West Corridor Countermeasure Opportunities



Best Practices & Non-Infrastructure Opportunities

Non-Infrastructure opportunities have also been proven to impact safety conditions of the transportation network. These education and enforcement measure opportunities are developed to target specific behavior types and populations.

Table 21. Summary of Programs, Policies, and Practices for Ventura County

Topic	Initiatives	
	Developed	Opportunity
Active Transportation & Safety Coordinator	Have not currently developed this position	Assign a staff person to oversee coordination of active transportation and traffic safety matters for the County
Safety or Active Advisory Committee	County does not have a formal advisory committee for transportation planning or safety	Develop a Safety Advisory Committee
Active Transportation Safety Education Program	The County does not currently offer an active transportation safety education program.	Work with schools and emergency responders to develop educational resources related to active transportation safety such as driver's ed, bicycle and pedestrian safety at local schools, and other traffic safety education programs.
Pedestrian and Bicycle Ordinances	Law Enforcement Agencies including the CHP enforce vehicle code violations related to bicycle helmet use, riding bicycles on sidewalks, and jaywalking	-
Safe Routes to School	The County applies for and receives Safe Routes to School Funding.	-
Inventory/Mapping of Active Transportation Routes	County maintains an inventory of bicycle lanes and sidewalks.	Continue updating inventory; add parking and other facilities to inventory as well
Traffic Calming Policies	The County currently does not have Traffic Calming Policies	Initiate traffic calming policies applicable throughout the county.
Bicycle Lane Roadway Surface Maintenance	County is contracting with Street Sweeping company to sweep bike lanes	-
Speed Surveys	County conducts regular speed surveys. About half a dozen survey locations have expired but the majority are current	Establish a program for speed survey updates
Citizen Feedback	Citizen can submit feedback and concerns regarding traffic and active transportation safety via the County's Customer Relationship Management (CRM) software, Accela.	-

Topic	Initiatives	
	Developed	**Opportunity**
Institutional Coordination	The County coordinates with municipal and adjacent jurisdictions except local health agencies	Continue to create institutional coordination with other agencies and organizations especially local health agencies.
Inventory of Regulatory and Safety Signs and Signals	County currently maintains an inventory of regulatory or safety signage.	Continue developing inventory and monitoring for condition and appropriateness as infrastructure and travel patterns change.
School Engagement	County currently has no concrete relationship with schools	Integrate School Engagement in traffic safety especially related to education programs on active transportation safety.
Law Enforcement/Emergency Service Engagement	The County typically consults with emergency response	Continue coordination with Law Enforcement/Emergency Services
Active Transportation Volume Counting	County currently collects ADT volumes annually at 115 locations	-
Traffic Crash Monitoring	The County using the Crossroads collision database/analytic software to monitor traffic crash data; Crossroads database is updated monthly.	-
Warrants for Stop Signs and Signals	County does not have local warrants for traffic control devices (use MUTCD warrants); however, the County does have local warrants for speed hump installation	Develop locally context sensitive warrants for traffic control devices
Complete Streets	County has a Complete Streets Policy in the 2040 General Plan (Policy CTM-2.1 of Chapter 4. Circulation, Transportation and Mobility Elements)	-
Crosswalks	-	Examine where new or improved crosswalks could improve pedestrian experience and should have appropriate traffic control device based on the crossing environment
Active Transportation Master Plan	The County does not have a current Active Transportation Master Plan but is working to develop one by 2023.	Continue work to develop an Active Transportation Master Plan.
Traffic Impact Fees	County assesses traffic impact fees	-
Transportation Demand Management (TDM)	The County has multiple TDM policies in Chapter 4. Circulation,	-

Topic	Initiatives	
	Developed	Opportunity
	Transportation and Mobility Elements of the General Plan	

ACTION PLAN

The action plan for implementation of the LRSP will serve as a system for the County to use on an on-going basis to update their queue of planned projects. The County may adopt a systemic approach for including safety improvements into other maintenance and construction activities that may impact roadways identified with characteristics that contribute to safety challenges. Steps for the inclusion of this process in regular activities include:

- Reference this plan in any future grant applications
- Use analyses in this plan to inform future construction and maintenance activities
- Utilize the Countermeasure Toolbox for future safety projects to address systemic issues
- Identifying similar intersection/roadway segments to those outlined in the Safety Project Sheet templates

This process will help create an avenue for the County to check that safety issues identified in existing locations are not recreated in new locations as developers and capacity enhancements are constructed.

Implementation Strategies

The following sections identify potential focus areas for the County in the near-to-mid-term, outlines the prioritization process for identifying improvements with the most impact, and provides steps for future analysis. Finally, it identifies funding sources for the development and implementation of safety projects in the County.

Near- & Mid-Term Focus Areas

The opportunities identified in this report provide more of the systemic countermeasures that can be applied within the County. Over the next three to five years, it is recommended that the County concentrate its efforts on the emphasis areas:

1. Improving Visibility and Lighting
2. Reducing Aggressive Driving Behaviors
3. Improving Traffic Safety for Vulnerable Roadway Users (pedestrians and bicyclists)

Analysis conducted at the countywide level indicated that these factors were some of the most frequent influences contributing to crashes within the County. The countermeasure opportunities previously discussed in this report for both systemic and project-specific improvements can be used as a basis for developing projects at locations where addressing these focus areas would be of the most benefit. Projects that address these focused areas can be developed with a high benefit-to-cost ratio (by applying County-wide crash rates), allowing competitive projects to be developed even at sites with little to no direct crash history, but with conditions that might contribute to future crashes.

Prioritization Process

As the underlying goal of this LRSP – to approach zero (0) traffic deaths – the focus of analysis is on identifying improvements that can have the most substantial impact on reducing crashes. Locations of pedestrian and bicycle crashes were prioritized for this study based on a combination of severity and quantity. Using statistics to analyze the network for the most challenging locations in the County from a safety perspective, locations that may not yet see these challenges (but are composed of similar characteristics to those locations) should be identified as part of the ongoing safety program in the County.

The following summarized the process that was undertaken for this initial prioritization process and will subsequently need to be updated throughout its life. The first step in the prioritization process is to rank location by CCR (referenced in Section 5: Select Screening Method of the *Highway Safety Manual*). After all intersections and segments have been ranked, the process requires identification of:

- Location with particularly high severity of crashes (fatality, serious injury)
- Locations with particularly high crash activity overall
- Locations with particularly high number of vulnerable user crashes (pedestrians and bicyclists)

Patterns in this data (location, type, severity, etc.) were analyzed and used to identify emphasis areas.

Stakeholder Engagement

For the LRSP to be systemic and proactive, factors beyond crash history need to be incorporated into the ranking process. Stakeholder engagement and local knowledge helped refined the priorities of the LRSP. The California Highway Patrol, Camarillo Traffic, Ventura County Transportation Commission staff, and Ventura County staff identified known recent issues or challenges at the locations highlighted during the prior steps of the prioritization process. Their intimate knowledge of these locations and typical observed human behaviors provided another data point to be factored into the analysis of safety challenges. This coincides with the Local Roadway Safety Manual's recommendations to use a mixture of quantitative and qualitative measures to identify and rank locations.

Benefit/Cost

Finally, once countermeasures are established, cost/benefit ratios based on these countermeasures are calculated. Cost/benefit ratios are the most typical prioritization metric used by grant programs to determine funding awards. The overall list of projects should then be listed by their cost/benefit ratio and bundled into funding groups. This will assist the County in prioritizing the implementation of projects that will have the highest benefit first, while still planning for other project improvements. Cost/benefit calculations will ensure that the highest ranked projects are most competitive for external funding and will lead to the greatest amount of safety improvement for the lowest possible investment.

Evaluation

For the LRSP to be successful, it must be implemented and monitored. The success of the LRSP will be evaluated using the preliminary process outlined below. This process will be useful to ensure proper implementation of objectives and to determine when updates are needed.

- Quarterly progress meetings will be conducted to track the implementation of the plan. In addition, the success of the plan will be evaluated on an annual basis.
- An update to the plan should be considered after no more than five years.
- Continued monitoring and recording of traffic incidents on local roadways by law enforcement.
- Maintain a list of focus areas where there are transportation safety concerns.

Applying improvements that can have the most substantial impact on reducing crashes is the most effective way to show commitment to traffic safety. Using statistics to analyze the network for the most challenging locations in the County from a safety perspective, locations that may not yet see these challenges but are composed of similar characteristics to those locations should be identified and included for investments as part of the ongoing safety program.

The strategies discussed in the emphasis area section of this report include some of the systemic countermeasures that can be applied. The emphasis areas highlighted some of the most frequent influences contributing to crashes and/or issues expressed by the community. The recommended countermeasures for both systemic and project-specific improvements can be used as a basis for developing projects at locations where addressing these focus areas would be of the most benefit. Projects that address these emphasis areas can be developed with a high benefit-to-cost ratio allowing competitive projects to be developed even at sites with little to no direct crash history, but with conditions that might contribute to future crashes.

Funding Opportunities

Competitive funding resources are available to assist in the development and implementation of safety projects in Ventura County. The County should continue to seek available funding and grant opportunities from local, state, and federal resources to accelerate their ability to implement safety improvements throughout Ventura County. The following is a high-level introduction into some of the main funding programs and grants for which the County can apply.

Highway Safety Improvement Program

The Highway Safety Improvement Program (HSIP) is a Federal program housed under Fixing America's Surface Transportation (FAST) Act. This program apportions funding as a lump sum for each state, which is then divided among apportioned programs. These flexible funds can be used for projects to preserve or improve safety conditions and performance on any Federal-aid highway, bridge projects on any public road, facilities for non-motorized transportation, and other project types. Safety improvement projects eligible for this funding include:

- New or upgraded traffic signals

- Upgraded guard rails
- Pedestrian warning flashing beacons
- Marked crosswalks

California's local HSIP focuses on infrastructure projects with national recognized crash reduction factors. Normally HSIP call-for-projects is made at an interval of one to two years. The applicant must be a city, a county, or a tribal government federally recognized within the State of California.

Additional information regarding this program at the Federal level can be found online at: **https://safety.fhwa.dot.gov/hsip/**. California specific HSIP information – including dates for upcoming call for projects - can be found at: **http://www.dot.ca.gov/hq/LocalPrograms/hsip.html**.

Caltrans Active Transportation Program

Caltrans Active Transportation Program (ATP) is a statewide funding program, created in 2013, consolidating several federal and state programs. The ATP funds projects that encourage increased mode share for walking and bicycling, improve mobility and safety for non-motorized users, enhance public health, and decrease greenhouse gas emissions. Projects eligible for this funding include:

- Bicycle and pedestrian infrastructure projects
- Bicycle and pedestrian planning projects (e.g. safe routes to school)
- Non-infrastructure programs (education and enforcement)

This program funding is provided bi-annually. The ATP call for projects typically comes out in the Spring. Information on this program and cycles can be found online at: **http://www.dot.ca.gov/hq/LocalPrograms/atp/**

State Transportation Improvement Program

The State Transportation Improvement Program (STIP) provides state and federal gas tax money for improvements on the state highway system. The STIP is a multi-year capital improvement program of transportation projects on and off the State Highway System, funded primarily from state and federal gas taxes. STIP programming occurs every two years. The programming cycle begins with the release of a proposed fund estimate, followed by California Transportation Commission (CTC) adoption of the fund estimate. The fund estimate serves to identify the amount of new funds available for the programming of transportation projects. Once the fund estimate is adopted, Caltrans and the regional planning agencies prepare transportation improvement plans for submittal. Caltrans prepares the Interregional Transportation Improvement Program (ITIP) using Interregional Improvement Program (IIP) funds, and regional agencies prepare Regional Transportation Improvement Programs (RTIPs) using Regional Improvement Program (RIP) funds. The STIP is then adopted by the CTC.

Southern California Association of Governments (SCAG) Sustainability Planning Grant

The Southern California Association of Government's Sustainability Planning Grant was started in 2005 to provide funding for sustainable planning and policy efforts. SCAG member jurisdictions can apply for grants for any of the following nine project types within the three project areas – Integrated Land Use, Active Transportation, and Green Region.

Integrated Land Use Project Types

- SB 743 Implementation Assistance
- Parking Pricing, Reduction, and Management Strategies
- Livable Corridor & Transit Oriented Development (TOD) Planning

Active Transportation Project Types

- Community-Wide & Area Plans
- Regional Corridor Plans
- Infrastructure Demonstration Projects (Quick-Build)
- Strategic Safety Plan

Green Region Initiative Project Types

- Heat Island Reduction with Urban Greening and Cool Streets
- Electric Vehicle Charging Infrastructure Planning

The call for proposals is annual and usually opens in the Fall. Information on this program and cycles can be found online at: http://sustain.scag.ca.gov/Pages/DemoProjApplication.aspx

California Senate Bill 1 (SB 1)

SB 1 is a landmark transportation investment to rebuild California by fixing neighborhood streets, freeways and bridges in communities across California and targeting funds toward transit and congested trade and commute corridor improvements.

California's state-maintained transportation infrastructure will receive roughly half of SB 1 revenue: **$26 billion.** The other half will go to local roads, transit agencies and an expansion of the state's growing network of pedestrian and cycle routes. Each year, this new funding will be used to tackle deferred maintenance needs both on the state highway system and the local road system, including:

- Bike and Pedestrian Projects: $100 million
    - This will go to cities, cities and regional transportation agencies to build or convert more bike paths, crosswalks and sidewalks. It is a significant increase in funding for these projects through the Active Transportation Program (ATP).
- Local Planning Grants: $25 million
    - Addresses community needs by providing support for planning that may have previously lacked funding, good planning will increase the value of transportation investments.

Ventura County Transportation Commission

The Ventura County Transportation Commission (VCTC) is the region's transportation planning agency responsible for overseeing highway, bus, aviation, rail and bicycle activity throughout the county. VCTC also controls the use of government funds for transportation projects. VCTC is responsible for the adoption and submittal of a five-year Regional Transportation Improvement Program (RTIP), the regional component of the STIP, which is comprised of a list of five-year capital improvement projects to be funded by VCTC's share of Regional Improvement Program (RIP).

These funds include, but are not limited to, Federal Transit Administration (FTA), Federal Surface Transportation Program (STP), Federal Congestion Mitigation and Air Quality (CMAQ), ATP, STIP, and State Proposition 1B funds.

CONCLUSION

The County of Ventura has completed this LRSP to guide the process of future transportation safety improvements for years to come. The data-driven analysis process identified crash types, related primary crash factors, and locations of many crashes. Based on this process, four Emphasis Areas were developed: Reduce Aggressive Driving Behavior, Improve Active Transportation Facilities, Nighttime Visibility, and Signage. These Emphasis Areas will guide corridor improvements, education programs, and capital improvements for the County. The County will actively seek funding opportunities, collaborate with established safety partners, and iteratively evaluate existing and proposed transportation safety programs and capital improvements to design a safer transportation network in the County of Ventura.

Appendices

Appendix A. California Office of Traffic Safety Crash Rankings Results

OTS Crash Rankings Results

OTS CRASH RANKINGS

Click here to see how it's done now.

Select a Year and City/County from the drop-down lists and click on the Submit Button.

2018 DUI Arrest Ranking Data will be posted once available.

Year:

2018

City and County:

Ventura County

Submit

What are the OTS Rankings?

How are the OTS Rankings determined?

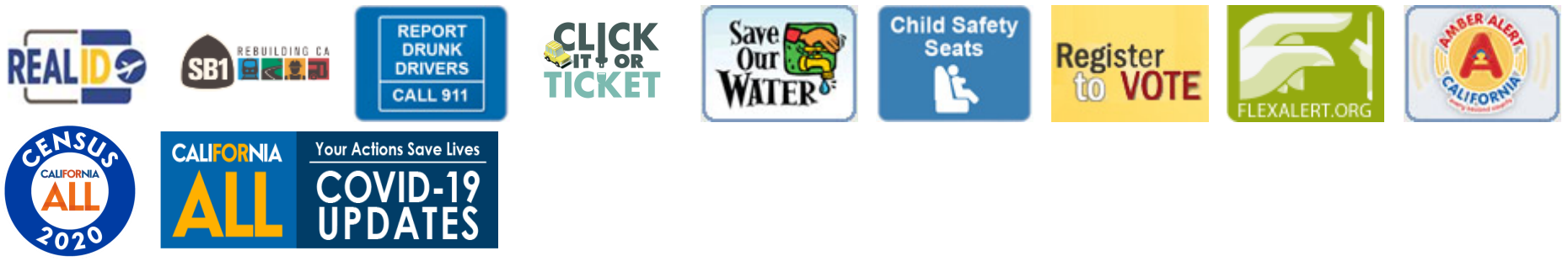
How to Read and Understand the OTS Rankings

Agency	Year	County	Group	Population (Avg)	DVMT
Ventura County	2018	VENTURA COUNTY		846050	18377161

TYPE OF CRASH	VICTIMS KILLED & INJURED	OTS RANKING
Total Fatal and Injury	5653	17/58
Alcohol Involved	565	39/58
Had Been Drinking Driver < 21	22	48/58
Had Been Drinking Driver 21 – 34	205	34/58
Motorcycles	242	34/58
Pedestrians	231	46/58
Pedestrians < 15	39	15/58
Pedestrians 65+	28	51/58
Bicyclists	242	14/58
Bicyclists < 15	25	28/58
Composite		NA

TYPE OF CRASH	FATAL & INJURY CRASHES	OTS RANKING
Speed Related	1209	26/58
Nighttime (9:00pm – 2:59am)	464	45/58

Hit and Run	324	42/58



Appendix B. Intersection Crash Ranking Table

Intersection	Crashes	Local CCR Differential[1]	EPDO[2]	*Fatal*	*Serious Injury*	*Other Visible Injury*	*Complaint of Pain*	*PDO*	Broadside	Sideswipe	Rear End	Head On	Hit Object	Overturned	Other	Pedestrian	Bicycle	Aggressive	Distracted	Impaired	Dark	Wet
Signalized Intersections	**421**			**9**	**9**	**40**	**117**	**246**	**95**	**44**	**179**	**17**	**67**	**6**	**5**	**3**	**5**	**208**	**12**	**31**	**105**	**23**
Santa Clara Avenue & Central Avenue	**24**	0.17	228	1	0	1	6	16	10	5	7	0	1	0	1	0	0	7	0	3	9	4
Rice Avenue & Channel Islands Blvd	**21**	0.28	85	0	0	4	5	12	5	3	9	0	4	0	0	0	0	9	0	2	11	2
Rose Avenue & Central Avenue	**21**	0.07	577	3	0	3	7	8	10	1	5	2	3	0	0	0	0	7	0	2	5	2
Rice Avenue & Wooley Road East	**18**	-0.13	380	0	2	1	5	10	2	2	11	0	3	0	0	0	0	10	0	1	5	2
Las Posas Road & Cawelti Road	**15**	0.41	536	3	0	1	4	7	1	0	4	0	9	0	1	0	0	11	1	2	3	0
Moorpark Road & Santa Rosa Road	**15**	-0.07	39	0	0	2	1	12	1	3	7	0	2	1	1	0	0	6	1	0	4	3
Las Posas Road East & Santa Rosa Road	**15**	-0.05	214	1	0	1	5	8	4	1	9	0	1	0	0	0	0	10	1	0	2	1
Briggs Road & Telegraph Road	**15**	0.24	56	0	0	0	8	7	6	3	1	3	1	0	0	0	1	4	0	0	0	1
Rice Avenue & Hueneme Road	**14**	0.67	54	0	0	2	4	8	1	3	3	1	3	3	0	0	0	6	0	2	4	0
Las Posas Road & Hueneme Road	**13**	-0.10	226	0	1	3	4	5	7	2	0	3	0	0	0	0	1	1	0	0	2	1
Navalair Road & Hueneme Road	**12**	0.69	37	0	0	1	3	8	2	2	6	0	2	0	0	0	0	7	0	0	4	0
Las Posas Road & Pleasant Valley Road	**12**	0.08	27	0	0	0	3	9	0	0	12	0	0	0	0	0	0	11	1	1	3	1
Airport Way & Pleasant Valley Road	**12**	-0.04	32	0	0	1	2	9	1	1	9	0	1	0	0	0	0	9	0	1	1	0
Victoria Avenue & Olivas Park Drive	**11**	0.37	51	0	0	2	4	5	3	2	1	2	1	1	0	0	1	2	0	1	2	0
Laguna Road & Lewis Road	**10**	-0.05	25	0	0	0	3	7	5	1	2	0	1	1	0	0	0	4	0	0	3	0
Dodge Road & Pleasant Valley Road	**10**	0.12	203	0	1	2	2	5	4	1	4	0	1	0	0	0	0	7	0	1	5	0
Doubletree Road & Kanan Road	**10**	-0.08	50	0	0	2	4	4	2	1	3	0	2	0	0	2	0	5	1	0	0	0

Intersection	Crashes	Local CCR Differential[1]	EPDO[2]	*Fatal*	*Serious Injury*	*Other Visible Injury*	*Complaint of Pain*	*PDO*	Broadside	Sideswipe	Rear End	Head On	Hit Object	Overturned	Other	Pedestrian	Bicycle	Aggressive	Distracted	Impaired	Dark	Wet
Churchwood Drive & Kanan Road	**10**	-0.12	30	0	0	1	2	7	1	3	3	2	1	0	0	0	0	6	1	0	1	0
Las Posas Road & Pleasant Valley Road	**10**	-0.15	40	0	0	2	2	6	2	2	4	1	1	0	0	0	0	4	0	1	2	0
Yucca Drive & Santa Rosa Road	**10**	-0.11	40	0	0	1	4	5	0	0	9	0	1	0	0	0	0	9	1	0	2	0
Harbor Boulevard & Gonzales Road	**9**	-0.23	54	0	0	2	5	2	0	0	5	0	4	0	0	0	0	3	0	2	3	0
Pleasant Valley Road & Sturgis Road	**9**	-0.18	351	0	2	1	1	5	5	0	2	0	2	0	0	0	0	2	0	0	4	0
Deerhill Road & Kanan Road	**8**	-0.25	18	0	0	0	2	6	2	0	4	0	2	0	0	0	0	2	0	1	1	0
Blanchard Road & Santa Rosa Road	**8**	0.02	33	0	0	1	3	4	0	0	7	0	1	0	0	0	0	7	0	1	3	1
Raytheon Road & Hueneme Road	**7**	0.06	181	0	1	0	2	4	1	1	4	0	1	0	0	0	0	4	1	1	2	0
Olds Road & Hueneme Road	**7**	-0.07	12	0	0	0	1	6	2	1	2	0	2	0	0	0	0	5	0	1	2	0
Rose Avenue & Walnut Drive	**7**	-0.26	32	0	0	0	5	2	4	1	1	1	0	0	0	0	0	4	0	1	2	0
Joan Way & Central Avenue	**7**	0.09	185	1	0	1	1	4	2	0	3	0	2	0	0	0	0	2	0	3	3	0
Oak Hills Drive & Kanan Road	**6**	-0.29	16	0	0	0	2	4	1	1	3	0	1	0	0	0	0	3	0	0	1	0
Wendy Drive & Gerald Drive	**6**	-0.27	21	0	0	1	1	4	1	0	4	0	0	0	0	0	1	4	0	0	0	0
Ruby Drive & Wendy Drive	**6**	-0.26	6	0	0	0	0	6	1	1	3	0	0	0	1	0	0	4	0	0	4	1
Penelope Place & Santa Rosa Road	**6**	-0.27	36	0	0	1	4	1	0	0	6	0	0	0	0	0	0	6	2	0	0	2
Beardsley Road & Central Avenue	**6**	-0.17	11	0	0	0	1	5	1	0	4	0	1	0	0	0	0	4	1	0	0	1
Eubanks Street & Pleasant Valley Road	**6**	-0.26	11	0	0	0	1	5	0	0	6	0	0	0	0	0	0	5	1	1	2	0
Vista Arroyo Drive & Santa Rosa Road	**6**	-0.30	16	0	0	0	2	4	0	0	4	0	2	0	0	0	0	3	0	0	0	0
Rose Avenue & Riverbank Drive	**6**	0.06	11	0	0	0	1	5	0	0	5	0	1	0	0	0	0	4	0	0	1	1
Kanan Road & Conifer Street	**5**	-0.30	184	0	1	0	3	1	2	0	2	0	0	0	0	1	0	3	0	0	1	0
Golden Eagle Drive & Kanan Road	**5**	-0.29	24	0	0	2	0	3	1	0	0	2	1	0	0	0	1	1	0	1	2	0
Vista Grande & Santa Rosa Road	**5**	-0.32	20	0	0	1	1	3	0	0	3	0	2	0	0	0	0	3	0	1	1	0
Santa Clara Avenue & Wright Road	**5**	-0.24	15	0	0	0	2	3	1	1	1	0	2	0	0	0	0	1	0	0	3	0

Intersection	Crashes	Local CCR Differential[1]	EPDO[2]	*Fatal*	*Serious Injury*	*Other Visible Injury*	*Complaint of Pain*	*PDO*	Broadside	Sideswipe	Rear End	Head On	Hit Object	Overturned	Other	Pedestrian	Bicycle	Aggressive	Distracted	Impaired	Dark	Wet
Apricot Street & Santa Ana Boulevard	**5**	-0.33	5	0	0	0	0	5	0	1	0	0	3	0	1	0	0	0	0	0	0	0
Rose Avenue & Simon Way	**4**	0.65	4	0	0	0	0	4	1	1	1	0	1	0	0	0	0	1	0	1	2	0
University Drive & Lewis Road	**4**	-0.24	173	0	1	0	1	2	3	0	0	0	1	0	0	0	0	2	0	0	0	0

Intersection	Crashes	Local CCR Differential[1]	EPDO[2]	*Fatal*	*Serious Injury*	*Other Visible Injury*	*Complaint of Pain*	*PDO*	Broadside	Sideswipe	Rear End	Head On	Hit Object	Overturned	Other	Pedestrian	Bicycle	Aggressive	Distracted	Impaired	Dark	Wet
Unsignalized Intersections	**466**			**3**	**12**	**54**	**78**	**319**	**106**	**61**	**97**	**23**	**132**	**18**	**12**	**7**	**10**	**154**	**8**	**41**	**130**	**35**
Las Posas Road & Laguna Road	**16**	0.31	234	1	0	4	3	8	14	0	1	0	0	0	0	0	1	3	0	0	1	1
Box Canyon Road & Santa Susana Pass Road	**16**	0.83	234	0	1	4	3	8	4	4	2	1	3	2	0	0	0	4	0	2	2	2
Old Telegraph Road & Sycamore Road	**13**	-0.09	23	0	0	1	0	12	0	0	5	0	8	0	0	0	0	8	0	1	6	4
Laguna Road & Laguna Road	**11**	1.15	26	0	0	1	1	9	0	0	0	0	7	4	0	0	0	7	0	1	4	0
Wood Road & Hueneme Road	**10**	-0.05	174	0	1	0	0	9	3	3	4	0	0	0	0	0	0	4	0	0	1	0
Briggs Road & Santa Paula Street	**9**	0.97	217	1	0	4	1	3	8	0	1	0	0	0	0	0	0	4	0	1	2	0
Grand Avenue & Old Telegraph Road	**9**	0.44	193	0	1	1	2	5	1	1	6	0	1	0	0	0	0	5	0	1	3	1
Arnold Road & Hueneme Road	**8**	0.14	192	0	1	1	2	4	2	1	1	1	3	0	0	0	0	1	0	2	3	0
Santa Clara Avenue & Eucalyptus Drive	**8**	-0.07	23	0	0	0	3	5	2	3	1	0	1	0	0	1	0	2	0	0	1	0
Rene Street & Simon Way	**8**	0.38	8	0	0	0	0	8	0	2	1	2	2	0	0	1	0	1	0	1	4	0
Box Canyon Road & Line Road	**8**	0.78	23	0	0	1	1	6	0	3	0	3	2	0	0	0	0	3	0	1	4	0
Ventura Avenue & Shell Road	**8**	0.07	177	0	1	0	1	6	4	0	1	0	1	0	1	0	1	2	0	0	1	1
Alvarado Avenue & El Roblar Drive	**8**	0.08	13	0	0	0	1	7	0	2	2	1	2	0	1	0	0	1	0	1	3	1
Cortez Street & Collins Street	**7**	0.27	12	0	0	0	1	6	3	1	2	1	0	0	0	0	0	1	0	1	0	0
Santa Ana Road & Burnham Road	**7**	0.53	17	0	0	0	2	5	2	1	1	1	0	2	0	0	0	2	0	0	2	0
Joan Way & Central Avenue	**7**	0.09	185	1	0	1	1	4	2	0	3	0	2	0	0	0	0	2	0	3	3	0
Pixton Street & Potrero Road East	**6**	0.37	26	0	0	1	2	3	0	0	1	0	4	0	0	0	1	3	0	0	0	3
Lewis Road & Potrero Road West	**6**	0.99	21	0	0	1	1	4	0	0	0	0	5	1	0	0	0	3	0	0	3	1
Pleasant Valley Road & Sturgis Road	**6**	0.00	16	0	0	0	2	4	0	3	1	1	1	0	0	0	0	0	0	1	2	1
Penelope Place & Santa Rosa Road	**6**	0.01	26	0	0	0	4	2	0	0	5	0	1	0	0	0	0	5	0	0	1	0
Jennifer Place & Santa Rosa Road	**6**	-0.01	26	0	0	1	2	3	0	0	4	0	1	0	1	0	0	4	0	1	1	0
Nyeland Avenue & Eucalyptus Drive	**6**	0.49	6	0	0	0	0	6	0	2	2	0	1	0	1	0	0	0	0	0	2	1

Intersection	Crashes	Local CCR Differential[1]	EPDO[2]	*Fatal*	*Serious Injury*	*Other Visible Injury*	*Complaint of Pain*	*PDO*	Broadside	Sideswipe	Rear End	Head On	Hit Object	Overturned	Other	Pedestrian	Bicycle	Aggressive	Distracted	Impaired	Dark	Wet
Cortez Street & Corsicana Drive	**6**	0.37	11	0	0	0	1	5	2	2	0	0	1	0	1	0	0	0	0	0	3	1
Sunset Valley Road & Tierra Rejada Road	**6**	-0.11	21	0	0	1	1	4	1	0	0	1	3	0	1	0	0	2	0	0	1	0
Nardo Street & Los Angeles Avenue	**6**	0.37	16	0	0	1	0	5	1	2	1	0	2	0	0	0	0	0	0	1	1	2
Ventura Avenue & McKee Street	**6**	0.08	16	0	0	0	2	4	0	1	3	0	1	0	1	0	0	3	0	1	2	0
Creek Road & Creek Road	**6**	0.34	25	0	0	2	0	4	1	0	0	1	4	0	0	0	0	1	1	1	4	0
Pueblo Avenue & El Roblar Drive	**6**	-0.11	21	0	0	1	1	4	2	1	1	0	0	0	0	1	1	2	0	0	2	0
Pixton Street & Potrero Road East	**5**	0.80	29	0	0	2	1	2	0	0	0	1	4	0	0	0	0	2	0	1	0	0
Hidden Valley Road & Potrero Road East	**5**	0.09	34	0	0	3	0	2	0	0	0	0	3	0	0	0	2	0	0	0	1	0
Hidden Valley Road & Potrero Road East	**5**	0.14	15	0	0	1	0	4	0	0	0	0	5	0	0	0	0	1	0	0	1	0
Pleasant Valley Road & Laguna Road	**5**	-0.19	35	0	0	2	2	1	3	0	0	0	2	0	0	0	0	2	0	0	2	0
Wolff Road & Laguna Road	**5**	-0.18	20	0	0	0	3	2	1	0	2	1	1	0	0	0	0	2	0	0	0	0
Doubletree Road & Hollytree Drive	**5**	0.65	20	0	0	1	1	3	2	0	2	0	0	0	0	0	1	1	0	0	3	1
Las Posas Road & Pleasant Valley Road	**5**	-0.07	5	0	0	0	0	5	0	2	3	0	0	0	0	0	0	2	0	0	1	0
Victoria Avenue & Olivas Park Drive	**5**	-0.20	20	0	0	1	1	3	0	1	0	0	4	0	0	0	0	5	0	0	1	5
Harbor Boulevard & Olivas Park Drive	**5**	-0.14	25	0	0	1	2	2	0	1	2	0	1	0	1	0	0	2	0	1	1	1
Alvarado Street & Collins Street	**5**	0.21	10	0	0	0	1	4	4	1	0	0	0	0	0	0	0	2	0	0	1	0
Rose Avenue & Orange Drive	**5**	-0.19	10	0	0	0	1	4	2	0	1	0	1	0	0	1	0	3	0	0	3	0
Rose Avenue & Corsicana Drive	**5**	-0.12	5	0	0	0	0	5	1	0	3	0	1	0	0	0	0	3	0	1	2	0
Victoria Avenue & Olivas Park Drive	**5**	-0.20	10	0	0	0	1	4	1	0	2	0	2	0	0	0	0	4	0	0	0	0
Cortez Street & Salem Avenue	**5**	0.05	5	0	0	0	0	5	1	2	1	0	0	0	1	0	0	0	0	1	4	0
Box Canyon Road & Line Road	**5**	0.49	5	0	0	0	0	5	0	1	1	0	3	0	0	0	0	3	0	1	3	1

Intersection	Crashes	Local CCR Differential[1]	EPDO[2]	*Fatal*	*Serious Injury*	*Other Visible Injury*	*Complaint of Pain*	*PDO*	Broadside	Sideswipe	Rear End	Head On	Hit Object	Overturned	Other	Pedestrian	Bicycle	Aggressive	Distracted	Impaired	Dark	Wet
Box Canyon Road & Line Road	**5**	0.49	5	0	0	0	0	5	0	1	1	0	3	0	0	0	0	3	0	1	3	1
Moorpark Road & Read Road	**5**	-0.20	25	0	0	1	2	2	2	0	0	0	1	2	0	0	0	1	0	0	1	0
Grimes Canyon Road & Stockton Road	**5**	0.80	15	0	0	1	0	4	0	0	0	0	5	0	0	0	0	4	0	0	2	1
Violeta Street & Los Angeles Avenue	**5**	0.02	15	0	0	1	0	4	1	0	1	2	0	0	0	1	0	1	0	0	1	0
Old Balcom Canyon Rd & Stockton Road	**5**	0.14	178	0	1	1	0	3	4	0	0	0	1	0	0	0	0	1	0	1	1	1
Balcom Canyon Road & South Mountain Road	**5**	1.00	29	0	0	2	1	2	0	0	0	1	4	0	0	0	0	3	1	1	1	0
Sespe Street & Bardsdale Avenue	**5**	0.19	15	0	0	0	2	3	3	0	1	1	0	0	0	0	0	1	0	0	0	1
Casper Road & Hueneme Road	**4**	-0.10	4	0	0	0	0	4	2	0	1	0	0	1	0	0	0	1	0	0	2	0
Hidden Valley Road & Potrero Road East	**4**	0.49	168	0	1	0	0	3	0	0	0	0	4	0	0	0	0	2	0	1	1	0
Old Lewis Road & Potrero Road West	**4**	0.26	9	0	0	0	1	3	0	0	2	0	1	1	0	0	0	2	0	0	0	0
Wood Road & Etting Road	**4**	0.60	188	0	1	1	2	0	3	0	0	0	1	0	0	0	0	1	0	1	1	0
Naumann Road & Etting Road	**4**	0.04	14	0	0	1	0	3	2	2	0	0	0	0	0	0	0	0	0	0	0	0
Doubletree Road & Hollytree Drive	**4**	0.37	19	0	0	1	1	2	1	3	0	0	0	0	0	0	0	1	0	0	1	0
Nyeland Avenue & Eucalyptus Drive	**4**	-0.21	4	0	0	0	0	4	0	0	3	0	1	0	0	0	0	0	0	1	4	0
Balboa Street & Orange Drive	**4**	0.06	4	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0
Minna Street & Simon Way	**4**	0.85	4	0	0	0	0	4	1	0	2	0	0	0	1	0	0	0	0	1	2	0
Jourdan Street & Collins Street	**4**	0.13	9	0	0	0	1	3	1	2	0	1	0	0	0	0	0	1	0	1	1	0
Minna Street & Simon Way	**4**	0.06	9	0	0	0	1	3	0	2	0	0	1	0	0	1	0	0	0	1	1	0
Santa Clara Avenue & Wright Road	**4**	-0.22	182	0	1	1	1	1	1	1	1	0	1	0	0	0	0	2	1	0	2	0
Moorpark Road & Santa Rosa Road	**4**	-0.18	14	0	0	0	2	2	0	0	2	0	1	0	1	0	0	2	1	0	1	1
Fairway Drive & Fairway Drive	**4**	-0.09	4	0	0	0	0	4	0	0	0	0	4	0	0	0	0	4	1	0	0	0
Strickland Drive & Central Avenue	**4**	-0.19	14	0	0	0	2	2	0	0	3	0	1	0	0	0	0	3	0	1	2	0

Intersection	Crashes	Local CCR Differential[1]	EPDO[2]	*Fatal*	*Serious Injury*	*Other Visible Injury*	*Complaint of Pain*	*PDO*	Broadside	Sideswipe	Rear End	Head On	Hit Object	Overturned	Other	Pedestrian	Bicycle	Aggressive	Distracted	Impaired	Dark	Wet
Joan Way & Central Avenue	**4**	-0.19	23	0	0	2	0	2	1	0	2	0	0	0	0	0	1	2	0	0	0	0
Box Canyon Road & Santa Susana Pass Road	**4**	0.29	4	0	0	0	0	4	0	0	0	0	3	1	0	0	0	1	0	0	1	1
Hitch Boulevard & Hitch Boulevard	**4**	0.80	14	0	0	1	0	3	1	1	0	0	2	0	0	0	0	0	0	0	3	0
Aster Street & Aster Street	**4**	0.37	9	0	0	0	1	3	0	1	3	0	0	0	0	0	0	2	0	0	0	0
Todd Road & Telegraph Road	**4**	-0.15	14	0	0	0	2	2	0	0	2	0	2	0	0	0	0	2	0	0	2	0
Olive Road & Telegraph Road	**4**	-0.15	9	0	0	0	1	3	0	2	1	0	1	0	0	0	0	0	0	1	1	0
Shekell Road & Stockton Road	**4**	0.54	177	0	1	1	0	2	0	0	0	0	3	1	0	0	0	2	0	0	1	0
Grimes Canyon Road & Broadway	**4**	0.96	14	0	0	1	0	3	1	0	0	0	2	0	0	0	1	0	0	0	2	0
Foothill Road & Foothill Road	**4**	0.13	168	0	1	0	0	3	0	1	0	0	1	1	1	0	0	0	0	0	2	0
Cummings Road & Santa Paula Street	**4**	0.22	19	0	0	1	1	2	2	0	1	0	1	0	0	0	0	1	0	1	1	0
Crooked Palm Road & Bounds Road	**4**	-0.12	24	0	0	1	2	1	3	0	0	0	0	0	0	0	1	0	0	0	0	0
Briggs Road & Foothill Road	**4**	0.90	9	0	0	0	1	3	1	0	0	0	3	0	0	0	0	1	0	1	1	0
South Mountain Road & South Mountain Road	**4**	0.42	4	0	0	0	0	4	0	0	1	1	2	0	0	0	0	0	1	2	1	1
Sespe Street & South Mountain Road	**4**	0.06	9	0	0	0	1	3	0	0	0	0	2	2	0	0	0	3	0	0	1	1
Main Street & Citrus View Drive	**4**	0.42	4	0	0	0	0	4	0	1	2	1	0	0	0	0	0	1	1	2	2	1
Mirror Lake Avenue & Martin Street	**4**	-0.23	9	0	0	0	1	3	1	1	1	1	0	0	0	0	0	0	0	0	0	0
Cruzero Street & Cruzero Street	**4**	0.06	173	0	1	0	1	2	2	0	1	0	0	0	0	1	0	3	1	0	1	0
Hermosa Road & Villanova Road	**4**	0.80	4	0	0	0	0	4	2	1	0	0	1	0	0	0	0	0	0	0	1	0
Pueblo Avenue & El Rio Avenue	**4**	0.32	4	0	0	0	0	4	0	3	1	0	0	0	0	0	0	1	0	0	1	0

1. Local Critical Crash Rate Differential

2. Equivalent Property Damage Only Crashes

Appendix C. Segment Crash Ranking Table

Facility	Limits	Crashes	Local CCR Differential[1]	EPDO[2]	*Fatal*	*Serious Injury*	*Other Visible Injury*	*Complaint of Pain*	*PDO*	Broadside	Sideswipe	Rear End	Head On	Hit Object	Overturned	Other	Pedestrian	Bicycle	Aggressive	Distracted	Impaired	Dark	Wet
Arterial		**401**			6	15	53	105	222	57	31	161	11	118	15	3	2	3	162	9	37	125	20
Pleasant Valley Road	120e SR1 NB offramp - E Fifth	**40**	0.63	125	0	0	3	11	26	9	0	21	0	9	1	0	0	0	21	0	6	9	3
Harbor Boulevard	Gonzales Rd - 2898s Olivas Pk	**32**	0.08	485	1	1	4	17	9	3	1	16	2	7	0	1	0	2	16	1	3	7	3
Hueneme Road	Olds Rd - Navalair Rd	**26**	0.19	403	1	1	3	4	17	6	5	6	1	6	2	0	0	0	8	0	1	12	1
Pleasant Valley Road	1885e Wood - 1900w Las Posas	**24**	0.42	75	0	0	0	10	14	2	0	20	0	2	0	0	0	0	20	2	0	3	0
Rice Avenue	Channel Islands Bl - Wooley Rd	**20**	-0.23	372	1	1	1	3	14	3	1	9	0	7	0	0	0	0	8	1	3	10	0
Wooley Road East	25e Rose Av - Rice Av	**19**	0.13	74	0	0	3	5	11	5	2	8	0	4	0	0	0	0	8	0	1	7	2
Victoria Avenue	247s riverbridg-119s Olivas Pk	**18**	-0.20	241	0	1	4	4	9	1	3	7	1	3	3	0	0	0	10	0	1	6	2
Rice Avenue	Wooley Rd - E Fifth St SR 34	**15**	-0.07	70	0	0	3	5	7	2	2	8	1	2	0	0	0	0	7	1	3	6	0
Harbor Boulevard	754n Edison Canal - Gonzales	**15**	-0.07	64	0	0	3	4	8	1	2	8	0	3	1	0	0	0	9	0	1	3	0
Rose Avenue	Simon Wy - Central Av	**14**	-0.04	197	1	0	2	0	11	0	1	1	0	11	0	0	1	0	2	0	1	8	0
Hueneme Road	37e Edison Dr - Olds Rd	**12**	-0.09	398	1	1	5	2	3	4	0	2	1	4	1	0	0	0	3	0	0	3	1
Hueneme Road	Olds Rd - Navalair Rd	**12**	0.28	42	0	0	2	2	8	1	0	6	0	5	0	0	0	0	6	0	0	3	1
Las Posas Road	Hueneme Rd -Pleasant Valley Rd	**11**	-0.06	31	0	0	1	2	8	0	1	6	0	4	0	0	0	0	6	0	0	5	1
Santa Clara Avenue	905s Eucalyptus - Central Av	**9**	0.31	33	0	0	2	1	6	3	0	4	1	1	0	0	0	0	3	0	0	2	0
Pleasant Valley Road	120e SR1 NB offramp - E Fifth	**8**	-0.32	499	0	3	0	0	5	0	1	1	1	5	0	0	0	0	1	0	1	2	1
Santa Clara Avenue	905s Eucalyptus - Central Av	**8**	-0.28	201	1	0	2	2	3	1	0	0	0	6	0	0	1	0	0	0	4	4	0
Tierra Rejada Road	760e SR 23 - 253w Llevarancho	**8**	-0.43	211	0	1	3	2	2	2	0	1	1	3	1	0	0	0	0	0	1	3	0
Hueneme Road	Navalair Rd - Wood Rd	**7**	-0.26	17	0	0	0	2	5	0	3	3	0	1	0	0	0	0	3	1	0	2	0
Cawelti Road	Las Posas Rd - Lewis Rd	**6**	-0.08	11	0	0	0	1	5	0	2	1	0	3	0	0	0	0	1	0	1	2	1
Las Posas Road	Hueneme Rd -Pleasant Valley Rd	**6**	-0.36	31	0	0	1	3	2	1	0	1	0	3	1	0	0	0	1	0	0	2	1
Pleasant Valley Road	E Fifth St SR 34 - Wood Rd	**6**	-0.25	21	0	0	0	3	3	0	0	6	0	0	0	0	0	0	6	1	0	1	0
Pleasant Valley Road	1900w - Las Posas Rd	**6**	-0.17	21	0	0	0	3	3	0	0	5	0	1	0	0	0	0	4	0	0	1	0

Facility	Limits	Crashes	Local CCR Differential[1]	EPDO[2]	*Fatal*	*Serious Injury*	*Other Visible Injury*	*Complaint of Pain*	*PDO*	Broadside	Sideswipe	Rear End	Head On	Hit Object	Overturned	Other	Pedestrian	Bicycle	Aggressive	Distracted	Impaired	Dark	Wet
Olivas Park Drive	15e Palma Dr - 205w Victoria	**6**	-0.31	180	0	1	0	2	3	3	0	1	0	1	1	0	0	0	1	0	1	1	0
Central Avenue	Beardsley - 2374e Beardsley Rd	**5**	-0.37	15	0	0	0	2	3	0	0	4	0	1	0	0	0	0	3	0	0	1	0
Potrero Road East	587w Trentwd -55e Lk Sherwd Dr	**5**	0.26	25	0	0	1	2	2	0	0	0	1	2	1	1	0	0	1	0	0	1	0
Santa Clara Avenue	2585n Central Av - SR 118	**4**	-0.47	177	0	1	1	0	2	0	0	1	1	2	0	0	0	0	1	0	0	1	1
Kanan Road	Deerhill Rd - Oak Hills Dr	**4**	-0.21	177	0	1	1	0	2	0	0	2	0	1	0	0	0	1	2	1	1	1	0
Kanan Road	Oak Hills Dr - 80e Lindero Cyn	**4**	-0.37	23	0	0	2	0	2	0	0	0	0	4	0	0	0	0	0	0	2	3	1
Wendy Drive	55n Borchard Rd - 120s Lois Av	**4**	-0.11	19	0	0	1	1	2	1	1	2	0	0	0	0	0	0	0	1	0	1	0
Potrero Road East	587w Trentwd -55e Lk Sherwd Dr	**4**	-0.40	28	0	0	2	1	1	0	1	0	0	3	0	0	0	0	1	0	1	4	0
Channel Islands Blvd	1345w Rice Av - Rice Av	**3**	-0.38	8	0	0	0	1	2	0	1	1	0	1	0	0	0	0	1	0	1	2	0
Hueneme Road	37e Edison Dr - Olds Rd	**3**	-0.45	18	0	0	0	3	0	1	0	2	0	0	0	0	0	0	1	0	1	1	0
Pleasant Valley Road	120e SR1 NB offramp - E Fifth	**3**	-0.51	8	0	0	0	1	2	0	0	1	0	1	1	0	0	0	1	0	0	1	0
Santa Clara Avenue	Central Av - 2585n Central Av	**3**	-0.51	18	0	0	0	3	0	1	1	1	0	0	0	0	0	0	1	0	0	1	0
Olivas Park Drive	2330w Telephone - 385w Palma	**3**	-0.51	13	0	0	1	0	2	0	0	1	0	2	0	0	0	0	2	0	0	0	0
Kanan Road	Sunnycrest Dr - Deerhill Rd	**3**	-0.43	8	0	0	0	1	2	0	0	0	0	3	0	0	0	0	0	0	0	1	0
Victoria Avenue	247s riverbridg-119s Olivas Pk	**3**	-0.51	8	0	0	0	1	2	0	2	0	0	1	0	0	0	0	0	0	1	0	0
Lewis Road	University Dr - Camarillo St	**3**	-0.42	8	0	0	0	1	2	2	0	0	0	1	0	0	0	0	0	0	1	0	0
Potrero Road East	587w Trentwd -55e Lk Sherwd Dr	**3**	-0.38	176	0	1	1	0	1	1	0	0	0	1	0	1	0	0	0	0	0	0	0
Hueneme Road	Navalair Rd - Wood Rd	**2**	-0.52	2	0	0	0	0	2	0	0	1	0	1	0	0	0	0	1	0	0	0	0
Lewis Road	Camarillo St - MP 2.83	**2**	-0.58	2	0	0	0	0	2	1	0	0	0	1	0	0	0	0	0	0	0	0	1
Lewis Road	Camarillo St - MP 2.83	**2**	-0.59	166	0	1	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	1	0
Santa Clara Avenue	905s Eucalyptus - Central Av	**2**	-0.57	2	0	0	0	0	2	1	0	1	0	0	0	0	0	0	0	0	0	1	0
Santa Clara Avenue	2585n Central Av - SR 118	**2**	-0.58	2	0	0	0	0	2	0	0	2	0	0	0	0	0	0	2	0	0	0	0
Kanan Road	Oak Hills Dr - 80e Lindero Cyn	**2**	-0.59	166	0	1	0	0	1	0	0	1	0	1	0	0	0	0	1	0	0	1	0

Facility	Limits	Crashes	Local CCR Differential[1]	EPDO[2]	*Fatal*	*Serious Injury*	*Other Visible Injury*	*Complaint of Pain*	*PDO*	Broadside	Sideswipe	Rear End	Head On	Hit Object	Overturned	Other	Pedestrian	Bicycle	Aggressive	Distracted	Impaired	Dark	Wet
Rice Avenue	Hueneme Rd - 0.60mi north	**2**	-0.58	2	0	0	0	0	2	1	0	0	0	0	1	0	0	0	0	0	1	1	0
Wendy Drive	55n Borchard Rd - 120s Lois Av	**2**	-0.56	12	0	0	1	0	1	1	1	0	0	0	0	0	0	0	0	0	0	1	0
Collector		**568**			**6**	**42**	**101**	**127**	**292**	**34**	**55**	**85**	**21**	**277**	**65**	**16**	**2**	**13**	**164**	**14**	**66**	**196**	**47**
Potrero Road West	MP 3.5 - 727w Via Acosta	**35**	1.34	1149	0	6	12	3	14	1	5	0	0	16	12	0	0	1	10	0	2	7	2
Balcom Canyon Road	Summit - South Mountain Rd	**25**	0.85	546	2	1	2	2	18	0	3	0	0	20	2	0	0	0	8	0	1	10	5
Hueneme Road	Wood Rd - Laguna Rd	**17**	-0.16	230	0	1	4	2	10	0	1	8	2	5	1	0	0	0	9	0	1	10	3
Foothill Road	Aliso Cyn Rd - Wheeler Cyn Rd	**14**	0.82	68	0	0	4	3	7	1	0	1	0	9	2	1	0	0	1	0	2	4	1
Potrero Road East	Hidden Vly Rd - 587w Trentwood	**14**	-0.10	395	0	2	5	1	6	0	0	0	1	12	0	0	0	1	4	0	4	6	3
Las Posas Road	122e SR 1 Offramp - Hueneme Rd	**13**	-0.42	389	0	2	4	2	5	4	2	1	1	3	2	0	0	0	2	0	1	2	0
Foothill Road	Briggs Rd - 30w Peck Rd	**13**	0.85	216	0	1	2	4	6	0	0	0	1	10	2	0	0	0	1	0	5	7	1
Telegraph Road	W R/W Franklin Bar - Olive Rd	**13**	-0.21	524	0	3	0	4	6	1	1	3	2	4	1	1	0	0	3	1	2	10	0
Bradley Road	Berylwood Rd - Balcom Cyn Rd	**13**	-0.13	28	0	0	1	1	11	0	0	1	0	10	2	0	0	0	8	0	2	6	3
South Mountain Road	South Mtn Rd - 2.06mi w Balcom	**13**	-0.06	68	0	0	3	5	5	0	1	1	0	9	1	1	0	0	4	0	0	5	1
Telegraph Road	Briggs - 291w Country View Ct	**12**	0.13	196	0	1	1	2	8	2	2	0	0	8	0	0	0	0	1	0	1	6	2
Creek Road	Country Club Dr - 2070 east	**12**	1.31	205	0	1	2	2	7	0	0	0	0	9	3	0	0	0	5	0	0	3	0
Foothill Road	Wells Rd - Aliso Cyn Rd	**11**	0.30	204	1	0	2	2	6	1	0	0	0	7	1	0	0	2	0	0	2	6	1
Telegraph Road	Olive Rd - Briggs Rd	**11**	-0.08	373	0	2	1	5	3	0	0	3	0	7	0	0	0	1	3	0	2	4	0
Santa Rosa Road	Gerry Rd - Yucca Dr	**11**	-0.42	36	0	0	0	5	6	1	1	5	1	1	1	1	0	0	6	1	1	6	1
Bradley Road	SR 118 - Berylwood Rd	**11**	0.48	56	0	0	2	5	4	2	2	2	0	5	0	0	0	0	2	0	1	5	1
Santa Ana Road	Culv .90 mi - Santa Ana Blvd	**10**	0.10	50	0	0	2	4	4	0	3	0	2	4	1	0	0	0	2	0	0	4	1
Santa Susana Pass Road	20e Clear Spring -68e Lilac Ln	**9**	0.14	515	0	3	0	3	3	0	0	0	1	5	3	0	0	0	4	1	1	5	2
Santa Ana Road	Burnham Rd - SR 150	**8**	-0.15	192	0	1	0	4	3	0	0	1	0	5	1	1	0	0	3	1	2	3	0
Santa Rosa Road	E Las Posas Rd - 50e Marvella	**8**	-0.54	28	0	0	0	4	4	0	2	5	0	1	0	0	0	0	4	1	0	3	1

Facility	Limits	Crashes	Local CCR Differential[1]	EPDO[2]	*Fatal*	*Serious Injury*	*Other Visible Injury*	*Complaint of Pain*	*PDO*	Broadside	Sideswipe	Rear End	Head On	Hit Object	Overturned	Other	Pedestrian	Bicycle	Aggressive	Distracted	Impaired	Dark	Wet
Grimes Canyon Road	LA Av SR 118 - 2.05mi north	**8**	-0.34	43	0	0	2	3	3	0	0	3	0	4	0	1	0	0	5	0	0	2	1
South Mountain Road	Balcom Cyn Rd - Sespe St	**8**	0.03	33	0	0	1	3	4	1	0	0	0	5	0	1	0	1	4	0	0	3	2
Lockwood Valley Road	MP 22.1 - MP 25.6	**8**	0.24	201	0	1	2	2	3	0	3	0	1	2	2	0	0	0	2	0	0	2	0
Central Avenue	Vineyard Av SR 232 - Rose Av	**7**	-0.32	22	0	0	1	1	5	1	0	5	0	1	0	0	0	0	5	0	0	0	1
Gonzales Road	Harbor Blvd - 465w Victoria Av	**7**	-0.41	22	0	0	0	3	4	0	0	2	2	3	0	0	0	0	1	0	3	4	1
Bristol Road	W R/W UPRR - 170w Montgomery	**7**	-0.35	195	0	1	2	1	3	0	1	1	0	3	2	0	0	0	1	0	2	2	0
Foothill Road	Wheeler Cyn Rd - Briggs Rd	**7**	0.79	191	0	1	1	2	3	0	0	0	0	4	2	0	0	1	0	0	1	5	1
Creek Road	MP 3.53 - Country Club Dr	**7**	0.77	12	0	0	0	1	6	0	0	0	0	4	1	2	0	0	0	0	0	1	1
La Luna Avenue	SR 150 - Lomita Av	**7**	0.65	180	0	1	1	0	5	0	1	1	0	4	0	0	0	1	3	0	1	1	0
Santa Rosa Road	Hilltop Ln - Gerry Rd	**7**	-0.57	32	0	0	0	5	2	1	0	6	0	0	0	0	0	0	6	1	0	2	0
Old Telegraph Road	SR 126 - 431w C St/Goodenough	**7**	-0.09	46	0	0	3	2	2	1	0	1	0	5	0	0	0	0	0	0	3	4	1
Beardsley Road	Central Av - 413n Wright Rd	**6**	-0.05	36	0	0	2	2	2	1	0	2	0	1	2	0	0	0	2	1	1	3	1
Etting Road	180w Dodge Rd - Naumann Rd	**6**	0.51	11	0	0	0	1	5	1	1	1	0	3	0	0	0	0	0	0	0	1	0
Etting Road	Naumann Rd - Wood Rd	**6**	-0.12	190	0	1	0	4	1	2	1	0	1	2	0	0	0	0	0	0	0	3	0
Potrero Road West	Old Hueneme Rd - 1.8mi east	**6**	-0.52	40	0	0	3	1	2	0	0	0	2	2	2	0	0	0	1	0	1	0	1
Potrero Road West	1.8mi e Old Hueneme Rd -MP 3.5	**6**	-0.43	21	0	0	1	1	4	0	0	0	0	4	2	0	0	0	1	0	0	3	0
Telegraph Road	Olive Rd - Briggs Rd	**6**	-0.31	333	0	2	0	0	4	0	0	2	0	3	0	1	0	0	1	0	0	2	0
Santa Ana Road	Casitas Vista Rd - Culv .90 mi	**6**	0.36	21	0	0	0	3	3	0	2	1	0	3	0	0	0	0	1	0	2	1	0
Creek Road	MP 1.21 - MP 3.53	**6**	-0.37	45	0	0	3	2	1	0	0	0	0	4	2	0	0	0	3	1	1	1	1
Guiberson Road	SR 23 - MP 4.00	**6**	-0.27	11	0	0	0	1	5	0	0	1	0	2	2	1	0	0	1	0	0	2	0
Moorpark Road	Read Rd -108s Tierra Rejada Rd	**6**	-0.62	343	1	1	1	0	3	0	2	1	0	2	0	0	0	1	1	2	1	0	0
Creek Road	SR 33 - MP 1.21	**6**	-0.13	190	0	1	1	2	2	0	3	1	0	2	0	0	0	0	2	0	1	3	0
Potrero Road East	3605e Wendy Dr - Hidden Vly Rd	**6**	0.02	26	0	0	1	2	3	0	0	0	0	4	1	0	0	1	1	0	1	2	1

Facility	Limits	Crashes	Local CCR Differential[1]	EPDO[2]	*Fatal*	*Serious Injury*	*Other Visible Injury*	*Complaint of Pain*	*PDO*	Broadside	Sideswipe	Rear End	Head On	Hit Object	Overturned	Other	Pedestrian	Bicycle	Aggressive	Distracted	Impaired	Dark	Wet
Creek Road	MP 3.53 - Country Club Dr	**5**	-0.19	337	0	2	0	1	2	0	1	0	0	4	0	0	0	0	2	0	1	2	1
Santa Rosa Road	Glenside Ln - E Las Posas Rd	**5**	-0.41	174	0	1	0	1	3	0	0	4	0	0	0	0	0	1	5	0	0	1	0
Santa Rosa Road	E Las Posas Rd - 50e Marvella	**5**	-0.64	20	0	0	1	1	3	0	2	2	0	0	0	1	0	0	2	0	0	0	0
South Mountain Road	2.06mi w - Balcom Cyn Rd	**5**	-0.58	178	1	0	1	0	3	1	1	0	0	2	1	0	0	0	0	0	0	1	0
Tico Road	SR 150 - Lomita Av	**4**	0.18	24	0	0	1	2	1	0	2	2	0	0	0	0	0	0	1	0	0	1	0
Lockwood Valley Road	MP 12.0 - Mutau Rd	**4**	-0.63	23	0	0	2	0	2	0	0	0	0	2	2	0	0	0	1	1	0	0	0
Laguna Road	Pleasant Valley Rd - Wood Rd	**4**	-0.45	9	0	0	0	1	3	2	1	0	0	1	0	0	0	0	0	0	0	0	0
Telegraph Road	Olive Rd - Briggs Rd	**4**	-0.52	9	0	0	0	1	3	0	0	1	0	3	0	0	0	0	1	0	0	1	0
Ventura Avenue	265n Dakota Dr - Shell Rd	**4**	-0.42	177	0	1	1	0	2	0	0	0	0	4	0	0	0	0	0	0	2	2	1
Creek Road	MP 1.21 - MP 3.53	**4**	0.00	9	0	0	0	1	3	0	0	0	0	3	0	1	0	0	1	0	0	2	2
Santa Rosa Road	Yucca Dr - Glenside Ln	**4**	-0.67	23	0	0	2	0	2	0	0	3	0	0	0	0	0	1	4	0	0	0	0
Balcom Canyon Road	4277n Stockton Rd - Bradley Rd	**4**	-0.60	23	0	0	2	0	2	0	0	0	0	4	0	0	0	0	0	0	2	1	0
Stockton Road	Waters Rd - Broadway	**4**	-0.31	23	0	0	2	0	2	0	0	1	0	1	1	1	0	0	1	0	2	2	0
Rice Road	SR 150 - Camille Dr	**3**	0.21	8	0	0	0	1	2	1	0	1	0	1	0	0	0	0	2	0	0	0	0
Loma Drive	SR 33 - Tico Rd	**3**	-0.37	13	0	0	1	0	2	0	1	0	0	1	1	0	0	0	0	0	1	2	0
Simon Way	Vineyard Av SR 232 - Rose Av	**3**	0.55	3	0	0	0	0	3	0	2	1	0	0	0	0	0	0	0	0	1	2	0
Lockwood Valley Road	SR 33 - MP 4.0	**3**	-0.71	167	0	1	0	0	2	0	0	0	0	3	0	0	0	0	0	0	0	1	0
Lockwood Valley Road	MP 4.0 - MP 8.0	**3**	-0.71	32	0	0	3	0	0	0	0	0	0	1	2	0	0	0	3	0	0	0	0
Hueneme Road	Wood Rd - Laguna Rd	**3**	-0.72	8	0	0	0	1	2	1	0	1	0	1	0	0	0	0	1	0	0	1	0
Laguna Road	Wood Rd - Las Posas Rd	**3**	-0.62	167	0	1	0	0	2	1	1	1	0	0	0	0	0	0	1	0	0	0	0
Laguna Road	Hueneme Rd - 4183 north	**3**	-0.50	8	0	0	0	1	2	1	0	0	0	2	0	0	0	0	0	0	0	1	0
Doris Avenue	100e Victoria -77w Patterson	**3**	-0.65	13	0	0	0	2	1	0	0	1	0	1	0	0	0	1	1	0	1	1	0
Ventura Avenue	SR 33 - Canada Larga Rd	**3**	-0.62	8	0	0	0	1	2	2	0	0	0	1	0	0	0	0	0	0	1	0	0

Facility	Limits	Crashes	Local CCR Differential[1]	EPDO[2]	*Fatal*	*Serious Injury*	*Other Visible Injury*	*Complaint of Pain*	*PDO*	Broadside	Sideswipe	Rear End	Head On	Hit Object	Overturned	Other	Pedestrian	Bicycle	Aggressive	Distracted	Impaired	Dark	Wet
Burnham Road	Santa Ana Rd - SR 150	**3**	0.28	13	0	0	1	0	2	0	1	0	0	2	0	0	0	0	0	2	0	2	0
Creek Road	MP 1.21 - MP 3.53	**3**	-0.33	330	1	1	0	0	1	1	0	0	1	0	0	0	1	0	1	0	1	0	0
La Luna Avenue	SR 150 - Lomita Av	**3**	-0.58	13	0	0	1	0	2	1	1	0	0	1	0	0	0	0	1	0	0	0	0
Santa Rosa Road	Glenside Ln - E Las Posas Rd	**3**	-0.69	18	0	0	1	1	1	0	0	3	0	0	0	0	0	0	3	0	0	0	0
Balcom Canyon Road	SR 118 - Stockton Rd	**3**	-0.69	23	0	0	1	2	0	1	0	1	0	1	0	0	0	0	1	0	0	1	0
Balcom Canyon Road	Bradley Rd - Summit	**3**	-0.54	27	0	0	2	1	0	0	0	0	0	2	1	0	0	0	1	0	0	0	1
Broadway	Stockton Rd - SR 23	**3**	-0.47	13	0	0	1	0	2	0	0	0	1	2	0	0	0	0	0	0	1	1	0
Katherine Road	N R/W UPRR - SSusana Pass Rd	**2**	0.77	12	0	0	1	0	1	0	0	0	0	2	0	0	0	0	0	0	1	1	0
Rice Road	Camille Dr - Fairview Rd	**2**	-0.54	166	0	1	0	0	1	0	0	0	0	2	0	0	0	0	0	0	0	1	0
Ocean Drive	Sawtelle Av - San Nicolas Av	**2**	2.45	2	0	0	0	0	2	0	1	0	0	0	0	1	0	0	0	0	1	0	0
Wood Road	Navalair Rd - Hueneme Rd	**2**	-0.77	2	0	0	0	0	2	0	1	0	0	1	0	0	0	0	0	0	0	0	0
Olds Road	Hueneme Rd - 939s Etting Rd	**2**	-0.76	12	0	0	1	0	1	0	0	1	0	1	0	0	0	0	2	0	0	1	0
Lake Sherwood Drive	Potrero E - 1950W Potrero Rd E	**2**	-0.75	12	0	0	1	0	1	0	1	0	0	0	0	0	1	0	0	0	0	0	0
Lockwood Valley Road	MP 8.0 - MP 12.0	**2**	-0.03	166	0	1	0	0	1	0	0	0	1	0	1	0	0	0	2	0	0	1	0
Lockwood Valley Road	Mutau Rd - MP 22.1	**2**	-0.80	12	0	0	1	0	1	0	0	0	0	1	1	0	0	0	0	0	0	1	0
Lockwood Valley Road	Mutau Rd - MP 22.1	**2**	-0.81	12	0	0	0	2	0	0	0	0	0	2	0	0	0	0	1	0	0	0	0
Foothill Road	1166e Petit Av - Wells Rd	**2**	-0.81	12	0	0	1	0	1	0	0	0	0	2	0	0	0	0	0	0	1	1	0
Foothill Road	Wheeler Cyn Rd - Briggs Rd	**2**	-0.67	2	0	0	0	0	2	1	0	0	0	1	0	0	0	0	1	0	1	1	1
Briggs Road	Telegraph Rd - Foothill Rd	**2**	-0.59	2	0	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	1	0
Ventura Avenue	Canada Larga - 82s Cas Vista	**2**	-0.50	7	0	0	0	1	1	0	1	0	0	0	1	0	0	0	0	0	1	1	0
Santa Rosa Road	Yucca Dr - Glenside Ln	**2**	-0.81	2	0	0	0	0	2	0	0	1	0	1	0	0	0	0	1	0	0	1	0
Santa Rosa Road	E Las Posas Rd - 50e Marvella	**2**	-0.78	2	0	0	0	0	2	0	0	2	0	0	0	0	0	0	2	1	0	0	0
Lockwood Valley Road	MP 25.6 - Kern County Line	**2**	-0.34	7	0	0	0	1	1	0	0	0	0	2	0	0	0	0	1	0	0	0	1

Facility	Limits	Crashes	Local CCR Differential[1]	EPDO[2]	*Fatal*	*Serious Injury*	*Other Visible Injury*	*Complaint of Pain*	*PDO*	Broadside	Sideswipe	Rear End	Head On	Hit Object	Overturned	Other	Pedestrian	Bicycle	Aggressive	Distracted	Impaired	Dark	Wet
Moorpark Road	Santa Rosa Rd - Read Rd	**2**	-0.79	12	0	0	1	0	1	0	1	0	1	0	0	0	0	0	0	0	0	1	0
Lewis Road	Laguna Rd - University Dr	**2**	-0.79	2	0	0	0	0	2	0	0	0	0	0	1	1	0	0	0	0	0	1	0
Minor Collector		**81**			**0**	**5**	**12**	**17**	**47**	**7**	**9**	**24**	**2**	**37**	**1**	**1**	**0**	**0**	**26**	**0**	**10**	**32**	**6**
Rose Avenue	1270n Central Av - SR 118	**27**	0.41	106	0	0	6	4	17	0	1	3	0	23	0	0	0	0	8	0	7	18	3
Central Avenue	Santa Clara Av - Beardsley Rd	**24**	0.16	243	0	1	2	7	14	7	5	8	1	3	0	0	0	0	5	0	0	5	2
Central Avenue	Rose Av - Santa Clara Av	**23**	0.27	564	0	3	2	6	12	0	2	13	1	7	0	0	0	0	13	0	1	4	1
Tapo Canyon Road	4103s Bennett Rd - Bennett Rd	**5**	0.97	178	0	1	1	0	3	0	1	0	0	3	1	0	0	0	0	0	1	3	0
Piru Canyon Road	970n Orchard St - MP 2.20	**2**	-0.67	12	0	0	1	0	1	0	0	0	0	1	0	1	0	0	0	0	1	2	0
Local		**204**			**4**	**8**	**31**	**34**	**127**	**14**	**39**	**11**	**13**	**95**	**15**	**12**	**2**	**3**	**33**	**7**	**27**	**82**	**12**
Box Canyon Road	LA Co Line - Santa Sus Pass Rd	**25**	0.49	599	1	2	7	3	12	0	5	1	3	13	3	0	0	0	4	0	4	7	6
Wheeler Canyon Road	Foothill Rd - End	**10**	0.35	45	0	0	2	3	5	0	0	0	0	10	0	0	0	0	2	0	0	7	0
Sturgis Road	778e Del Norte - Plsnt Vly Rd	**8**	-0.29	202	0	1	1	4	2	0	1	0	1	3	1	0	0	2	1	1	2	2	1
Deer Creek Road	SR 1 - Pacific View Rd	**7**	-0.11	210	0	1	3	2	1	1	0	0	1	3	2	0	0	0	3	0	2	1	0
Sycamore Road	Telegraph Rd SR 126-Seventh St	**7**	-0.39	181	0	1	0	2	4	0	0	0	0	7	0	0	0	0	0	0	0	5	0
Orange Drive	40n Ventura Bl - Friedrich Rd	**9**	1.87	19	0	0	1	0	8	0	4	2	0	1	0	2	0	0	0	0	2	4	0
Fairview Road	SR 33 - 408w Fairview Crt	**8**	0.51	13	0	0	0	1	7	1	0	0	0	7	0	0	0	0	3	0	2	4	1
Center Street	East end Piru Bridge - SR 126	**6**	0.91	26	0	0	1	2	3	2	0	1	0	3	0	0	0	0	3	0	0	1	0
Santa Paula Street	Briggs Rd - 30w Peck Rd	**6**	-0.22	16	0	0	0	2	4	0	0	1	0	3	0	1	0	1	2	0	0	3	0
Collins Street	51e Vineyard SR 232 - Rose Av	**5**	0.68	30	0	0	1	3	1	2	1	1	0	0	0	0	1	0	0	1	0	1	0
Yerba Buena Road	Cotharin Rd - LA Co Line	**5**	-0.14	193	1	0	2	1	1	0	0	0	0	2	3	0	0	0	3	0	0	1	0
Donlon Road	La Cumbre Rd - 1400n McBean Rd	**4**	-0.29	14	0	0	1	0	3	1	0	0	1	1	1	0	0	0	0	0	0	1	0
Arnold Road	7230s Hueneme Rd - Hueneme Rd	**4**	0.35	14	0	0	1	0	3	0	1	0	0	2	1	0	0	0	0	0	1	1	0
Wood Road	Laguna Rd - E Fifth St SR 34	**4**	0.33	173	0	1	0	1	2	0	3	1	0	0	0	0	0	0	1	0	0	3	0
Almond Drive	330n Ventura Blvd-Friedrich Rd	**4**	0.90	4	0	0	0	0	4	0	2	0	1	0	0	1	0	0	0	0	0	2	0

Facility	Limits	Crashes	Local CCR Differential[1]	EPDO[2]	*Fatal*	*Serious Injury*	*Other Visible Injury*	*Complaint of Pain*	*PDO*	Broadside	Sideswipe	Rear End	Head On	Hit Object	Overturned	Other	Pedestrian	Bicycle	Aggressive	Distracted	Impaired	Dark	Wet
Nyeland Avenue	30n Ventura Bl - Friedrich Rd	**4**	0.93	4	0	0	0	0	4	0	3	1	0	0	0	0	0	0	0	0	2	3	0
Cruzero Street	SR 150 - Loma Dr	**4**	0.08	14	0	0	1	0	3	0	1	1	1	1	0	0	0	0	0	1	0	3	0
Center Street	End - West end Piru Bridge	**3**	4.29	8	0	0	0	1	2	1	1	0	0	0	0	0	1	0	1	0	0	2	0
Dufau Road	Naumann Rd - Raytheon Rd	**3**	0.65	167	1	0	0	0	2	0	0	0	1	2	0	0	0	0	1	0	0	1	1
Wolff Road	Pleasant Vly -E Fifth St SR 34	**3**	0.59	13	0	0	0	2	1	1	1	0	0	1	0	0	0	0	0	0	0	0	0
Lemar Avenue	Citrus St - Cortez St	**3**	0.39	3	0	0	0	0	3	0	1	0	2	0	0	0	0	0	0	0	1	1	0
Will Avenue	Citrus St - Cortez St	**3**	0.42	3	0	0	0	0	3	1	1	0	0	0	0	1	0	0	0	0	0	0	0
Aster Street	SR 118 - End	**3**	1.62	13	0	0	1	0	2	0	0	0	0	3	0	0	0	0	1	0	1	2	0
Canada Larga Road	MP 1.2 - CDS	**3**	-0.40	3	0	0	0	0	3	0	0	0	0	3	0	0	0	0	3	0	0	2	0
Grand Avenue	Cliff Av - CDS	**3**	-0.22	13	0	0	1	0	2	0	0	0	0	1	1	1	0	0	0	0	1	1	0
Happy Camp Road	SR 23 - Roseland Av	**2**	-0.73	166	0	1	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0
Center Street	End - West end Piru Bridge	**2**	-0.06	12	0	0	1	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0
Center Street	End - West end Piru Bridge	**2**	0.31	2	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	1	0
Hitch Boulevard	SR 118 - Citrus Dr	**2**	-0.79	2	0	0	0	0	2	0	1	0	0	1	0	0	0	0	0	0	1	1	0
Hitch Boulevard	SR 118 - Citrus Dr	**2**	-0.65	7	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	1	1	0
Donlon Road	La Cumbre Rd - 1400n McBean Rd	**2**	-0.47	7	0	0	0	1	1	0	0	0	0	2	0	0	0	0	0	0	2	2	0
Encino Drive	276s Del Valle St - SR 33	**2**	-0.74	12	0	0	1	0	1	0	0	0	0	2	0	0	0	0	1	0	0	2	0
Island View Avenue	Sawtelle Av - Malibu Av	**2**	2.45	2	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	1	0	2	0
Wright Road	Santa Clara Av - Beardsley Rd	**2**	-0.82	166	0	1	0	0	1	0	0	0	0	1	1	0	0	0	0	0	1	0	1
Balboa Street	375n Ventura Blvd - Stroube St	**2**	-0.54	7	0	0	0	1	1	0	0	0	0	0	0	2	0	0	0	1	0	0	0
Cotharin Road	Pacific View - Yerba Buena Rd	**2**	-0.53	12	0	0	1	0	1	0	0	0	1	1	0	0	0	0	1	0	1	0	0
Yerba Buena Road	SR 1 - Cotharin Rd	**2**	-0.51	12	0	0	1	0	1	0	0	0	0	2	0	0	0	0	0	0	0	0	0
Casper Road	End - Hueneme Rd	**2**	-0.47	2	0	0	0	0	2	0	0	0	0	2	0	0	0	0	1	0	0	0	1

Facility	Limits	Crashes	Local CCR Differential[1]	EPDO[2]	*Fatal*	*Serious Injury*	*Other Visible Injury*	*Complaint of Pain*	*PDO*	Broadside	Sideswipe	Rear End	Head On	Hit Object	Overturned	Other	Pedestrian	Bicycle	Aggressive	Distracted	Impaired	Dark	Wet
Wood Road	Hueneme Rd - Laguna Rd	**2**	-0.33	12	0	0	1	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0
Helsam Avenue	Minna St - Cortez St	**2**	-0.19	7	0	0	0	1	1	0	0	1	0	0	0	1	0	0	0	0	0	1	0
Orange Drive	CDS - Rose Av	**2**	-0.23	2	0	0	0	0	2	0	0	1	0	0	0	1	0	0	0	0	0	2	0
Nyeland Avenue	30n Ventura Bl - Friedrich Rd	**2**	-0.30	2	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	1	1	0
San Miguel Drive	End - Mission Dr	**2**	-0.11	2	0	0	0	0	2	0	0	0	0	1	0	1	0	0	0	0	0	0	0
Nardo Street	Wells Rd SR 118 - End	**2**	0.11	2	0	0	0	0	2	1	1	0	0	0	0	0	0	0	0	0	0	2	0
Aliso Canyon Road	Foothill Rd - Cattle Guard	**2**	-0.52	21	0	0	2	0	0	0	0	0	0	1	1	0	0	0	0	0	1	2	0
Cummings Road	Santa Paula St - Foothill Rd	**2**	-0.16	12	0	0	0	2	0	0	0	0	0	2	0	0	0	0	0	1	0	0	0
Olive Road	Telegraph Rd - Foothill Rd	**2**	-0.19	7	0	0	0	1	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0
Holt Street	Ventura Av - Encino Ln	**2**	-0.23	2	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	2	1
Casitas Vista Road	Santa Ana Rd - 5990 north	**2**	-0.08	166	1	0	0	0	1	0	0	0	0	1	0	1	0	0	0	0	1	1	0
Feliz Drive	Encino Dr - Brandt Av	**2**	-0.20	2	0	0	0	0	2	0	0	0	0	2	0	0	0	0	0	1	0	1	0
Matilija Road North	Trout Rd - SR 33	**2**	-0.46	2	0	0	0	0	2	0	1	0	0	1	0	0	0	0	0	0	0	1	0
Padre Juan Avenue	Lomita Av - El Conejo Rd	**2**	0.29	12	0	0	1	0	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0
Carne Road	Grand Av - Thacher Rd	**2**	-0.28	2	0	0	0	0	2	0	0	0	0	2	0	0	0	0	1	0	0	0	0
Camulos Street	West end - Church St	**2**	-0.09	2	0	0	0	0	2	0	0	0	0	2	0	0	0	0	1	0	0	2	0
Orchard Street	Market St - Main St	**2**	-0.04	2	0	0	0	0	2	0	1	0	0	1	0	0	0	0	0	0	0	0	0

1. Local Critical Crash Rate Differential

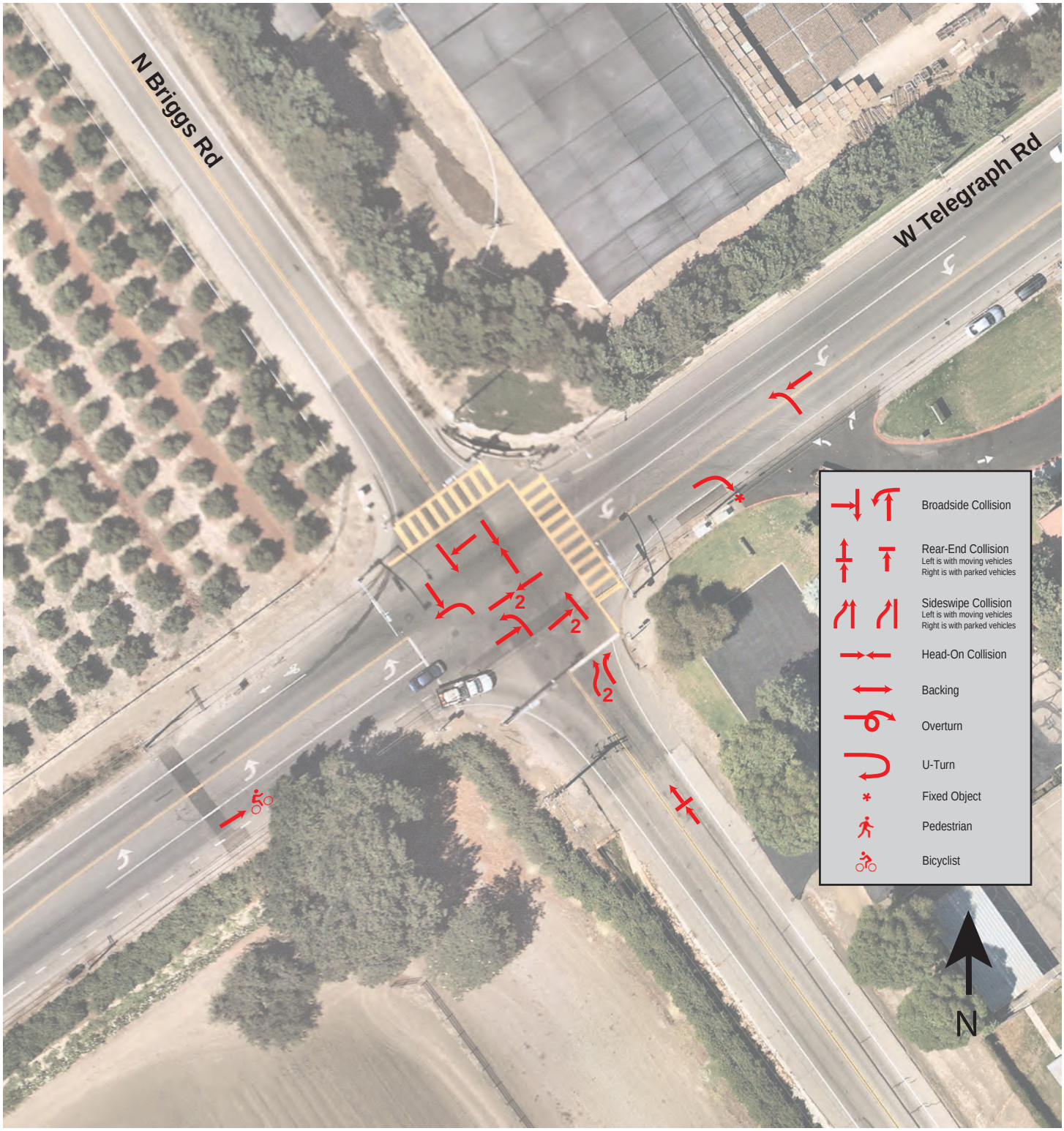
2. Equivalent Property Damage Only Crashes

Kimley»Horn

Appendix D. Crash Diagrams

Intersection	Crashes	Local CCR Differential	EPDO[2]	Fatal	Serious Injury	Other Visible Injury	Complaint of Pain	PDO	Broadside	Sideswipe	Rear End	Head On	Hit Object	Overturned	Other	Pedestrian	Bicyde	Aggressive	Distracted	Impaired	Dark	Wet
Briggs Road & Telegraph Road	**15**	0.24	56	0	0	0	8	7	6	3	1	3	1	0	0	0	1	4	0	0	0	1

5 Years of Collision Data (2015 - 2019); One collision is not mapped below due to insufficient information.

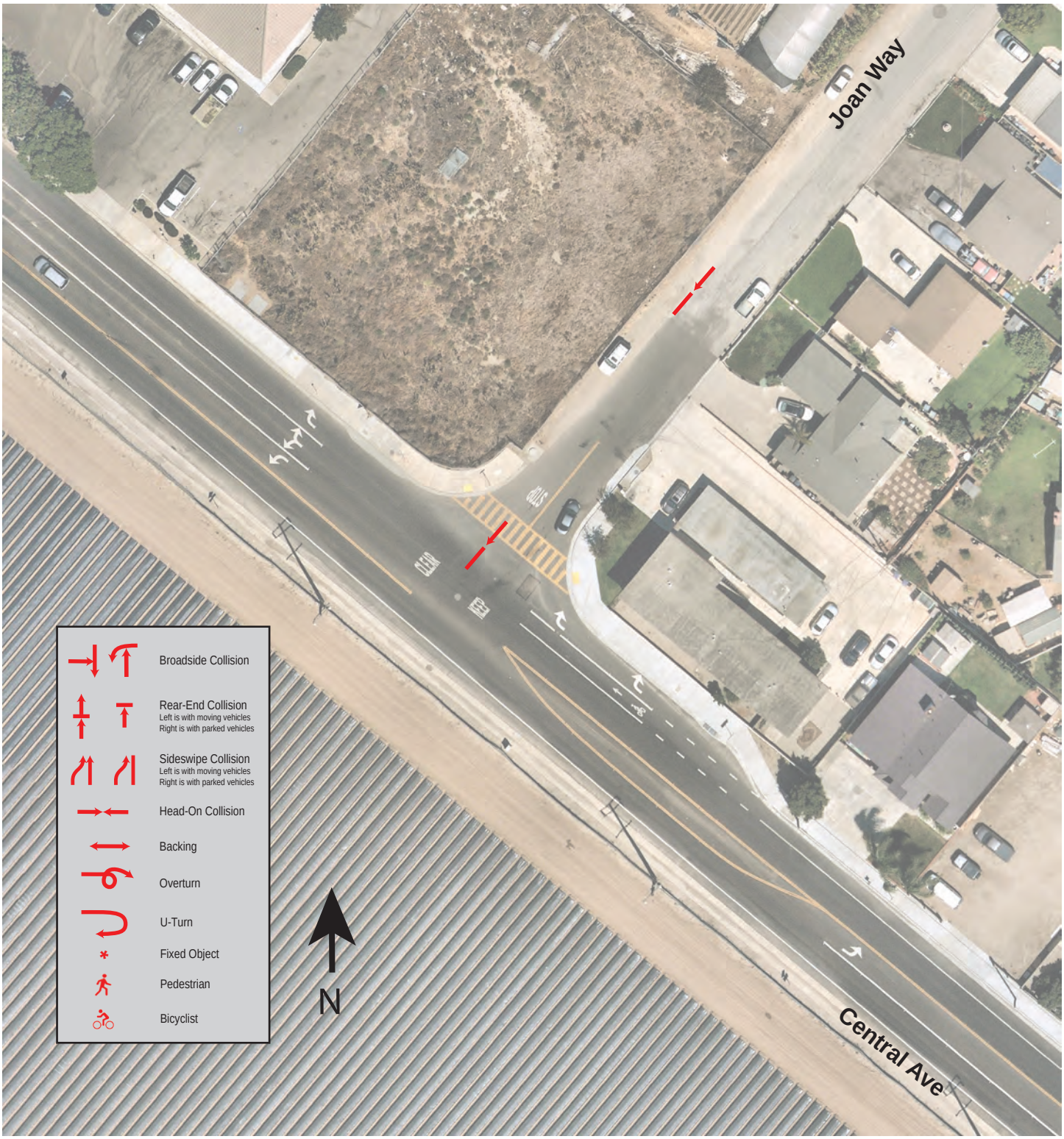


Intersection	Crashes	Local CCR Differential	EPDO [2]	Fatal	Serious Injury	Other Visible Injury	Complaint of Pain	PDO	Broadside	Sideswipe	Rear End	Head On	Hit Object	Overturned	Other	Pedestrian	Bicyde	Aggressive	Distracted	Impaired	Dark	Wet
Violeta Street & Los Angeles Avenue	5	0.02	15	0	0	1	0	4	1	0	1	2	0	0	0	1	0	1	0	0	1	0

5 Years of Collision Data (2015 - 2019); Two collisions are not mapped below due to insufficient information.

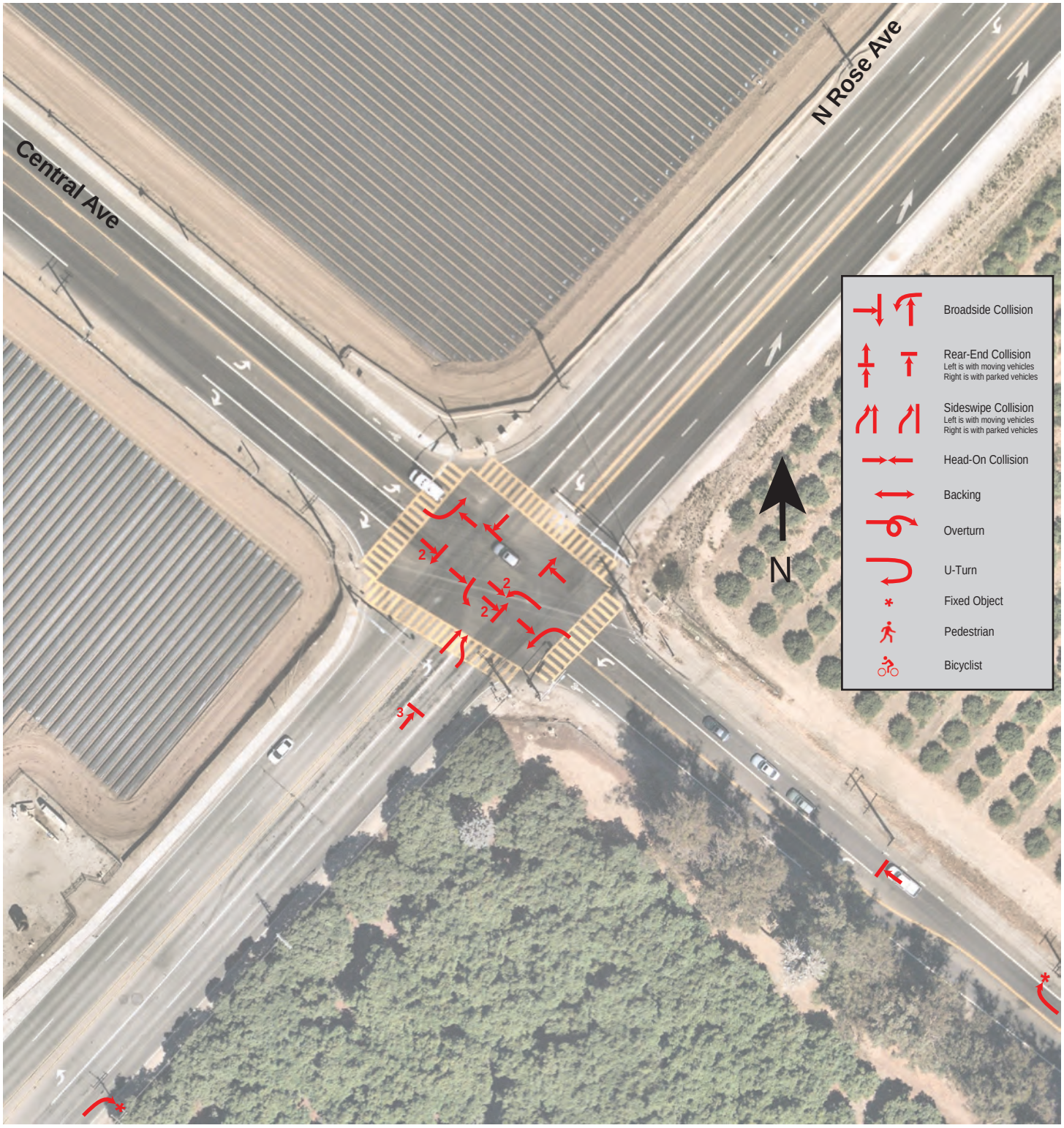
Intersection	Crashes	Local CCR Differential	EPDO[2]	Fatal	Serious Injury	Other Visible Injury	Complaint of Pain	PDO	Broadside	Sideswipe	Rear End	Head On	Hit Object	Overturned	Other	Pedestrian	Bicyde	Aggressive	Distracted	Impaired	Dark	Wet
Joan Way & Central Avenue	**3**	-0.24	13	0	0	0	2	1	1	0	2	0	0	0	0	0	0	2	0	0	0	0

5 Years of Collision Data (2015 - 2019); One collision is not mapped below due to insufficient information.



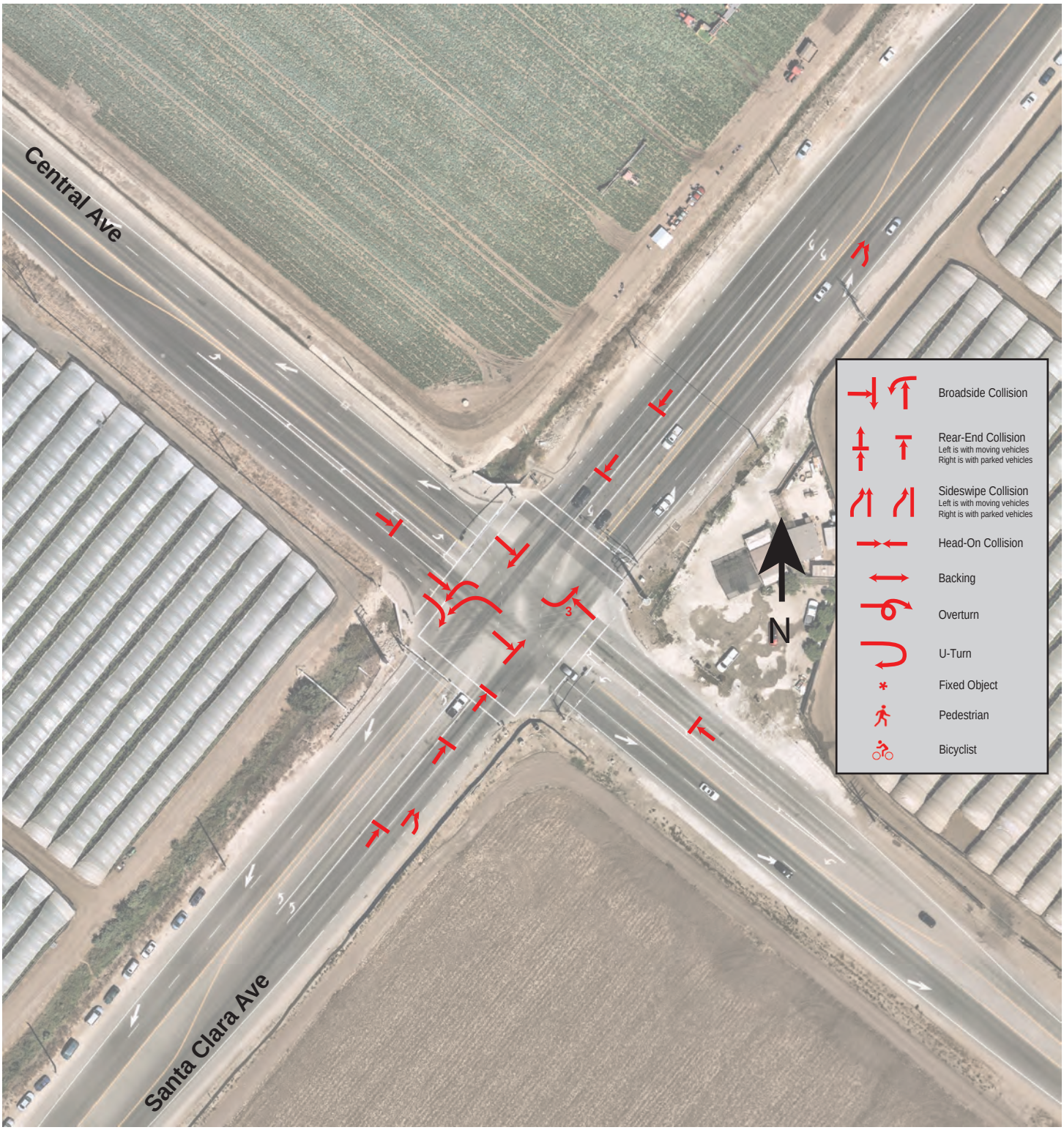
Intersection	Crashes	Local CCR Differential	EPDO[2]	Fatal	Serious Injury	Other Visible Injury	Complaint of Pain	PDO	Broadside	Sideswipe	Rear End	Head On	Hit Object	Overturned	Other	Pedestrian	Bicycle	Aggressive	Distracted	Impaired	Dark	Wet
Rose Avenue & Central Avenue	**21**	0.07	577	3	0	3	7	8	10	1	5	2	3	0	0	0	0	7	0	2	5	2

5 Years of Collision Data (2015 - 2019); Three collisions are not mapped below due to insufficient information.



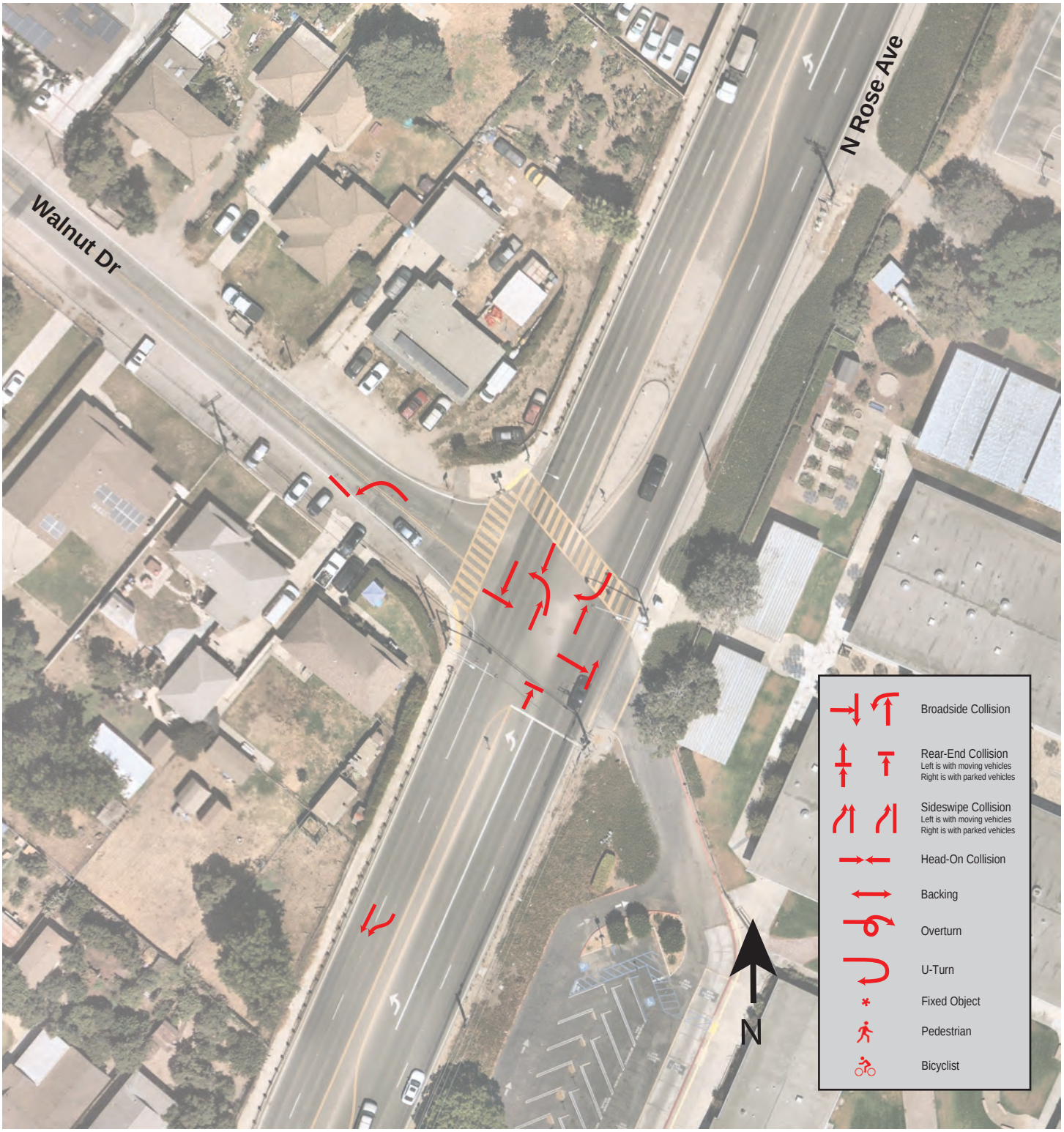
Intersection	Crashes	Local CCR Differential	EPDO[2]	Fatal	Serious Injury	Other Visible Injury	Complaint of Pain	PDO	Broadside	Sideswipe	Rear End	Head On	Hit Object	Overturned	Other	Pedestrian	Bicyde	Aggressive	Distracted	Impaired	Dark	Wet
Santa Clara Avenue & Central Avenue	**24**	0.17	228	1	0	1	6	16	10	5	7	0	1	0	1	0	0	7	0	3	9	4

5 Years of Collision Data (2015 - 2019); Seven collisions are not mapped below due to insufficient information.



Intersection	Crashes	Local CCR Differential	EPDO [2]	Fatal	Serious Injury	Other Visible Injury	Complaint of Pain	PDO	Broadside	Sideswipe	Rear End	Head On	Hit Object	Overturned	Other	Pedestrian	Bicycle	Aggressive	Distracted	Impaired	Dark	Wet
Rose Avenue & Walnut Drive	**7**	-0.26	32	0	0	0	5	2	4	1	1	1	0	0	0	0	0	4	0	1	2	0

5 Years of Collision Data (2015 - 2019);

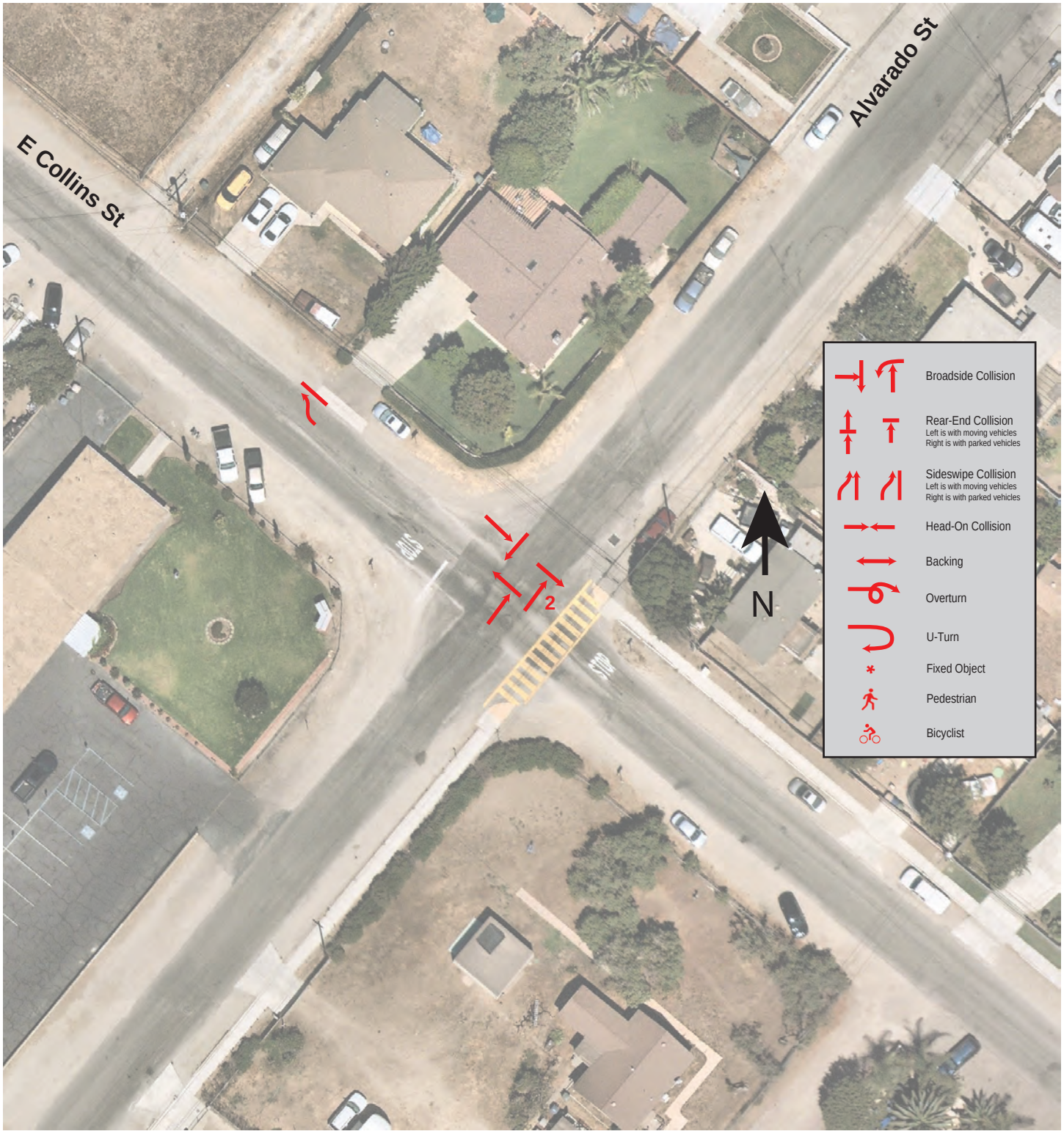


Intersection	Crashes	Local CCR Differential	EPDO[2]	Fatal	Serious Injury	Other Visible Injury	Complaint of Pain	PDO	Broadside	Sideswipe	Rear End	Head On	Hit Object	Overturned	Other	Pedestrian	Bicycle	Aggressive	Distracted	Impaired	Dark	Wet
Cortez Street & Orange Drive	1	-0.41	1	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0

5 Years of Collision Data (2015 - 2019);

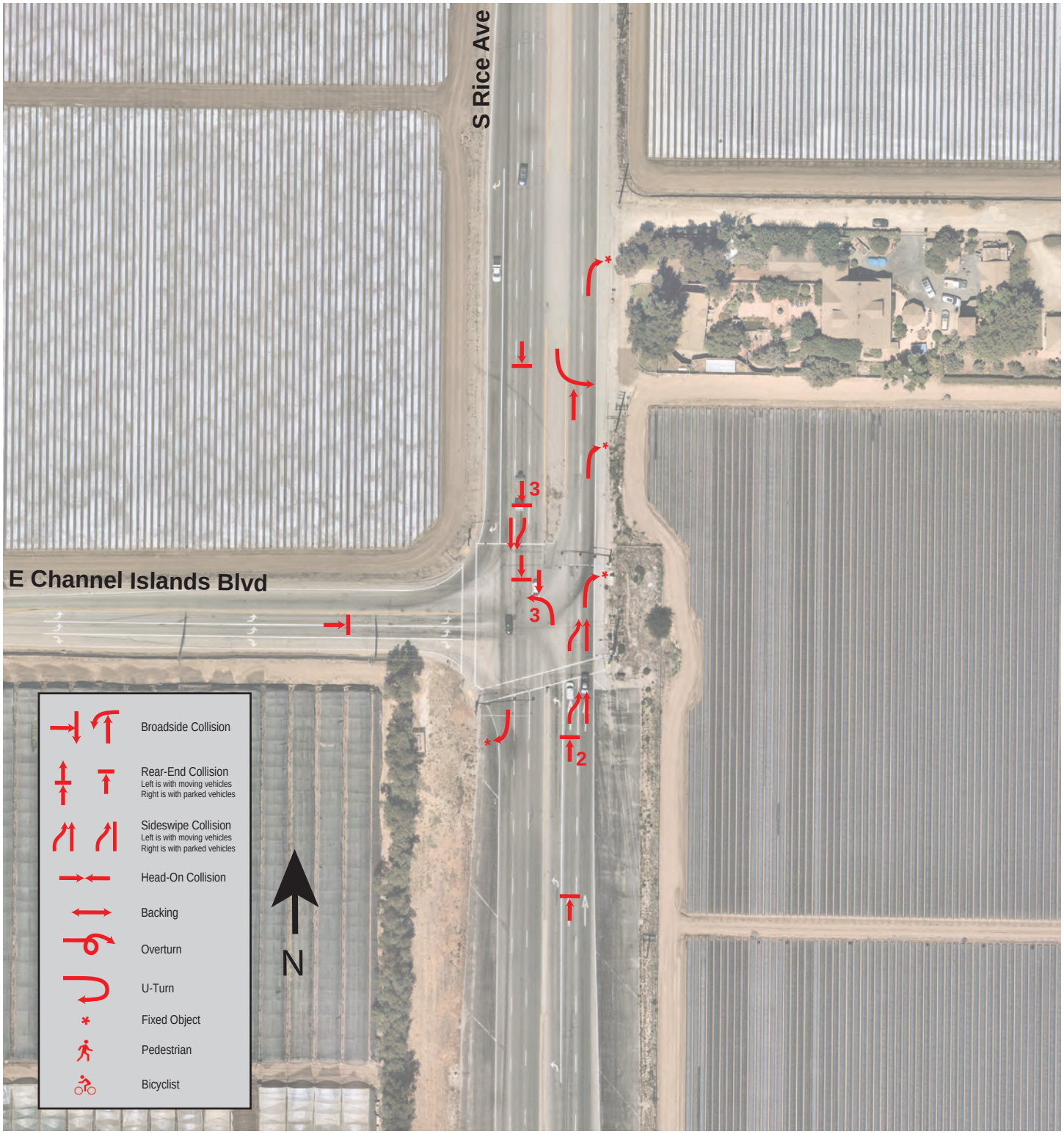
Intersection	Crashes	Local CCR Differential	EPDO[2]	Fatal	Serious Injury	Other Visible Injury	Complaint of Pain	PDO	Broadside	Sideswipe	Rear End	Head On	Hit Object	Overturned	Other	Pedestrian	Bicycle	Aggressive	Distracted	Impaired	Dark	Wet
Alvarado Street & Collins Street	**5**	0.21	10	0	0	0	1	4	4	1	0	0	0	0	0	0	0	2	0	0	1	0

5 Years of Collision Data (2015 - 2019);



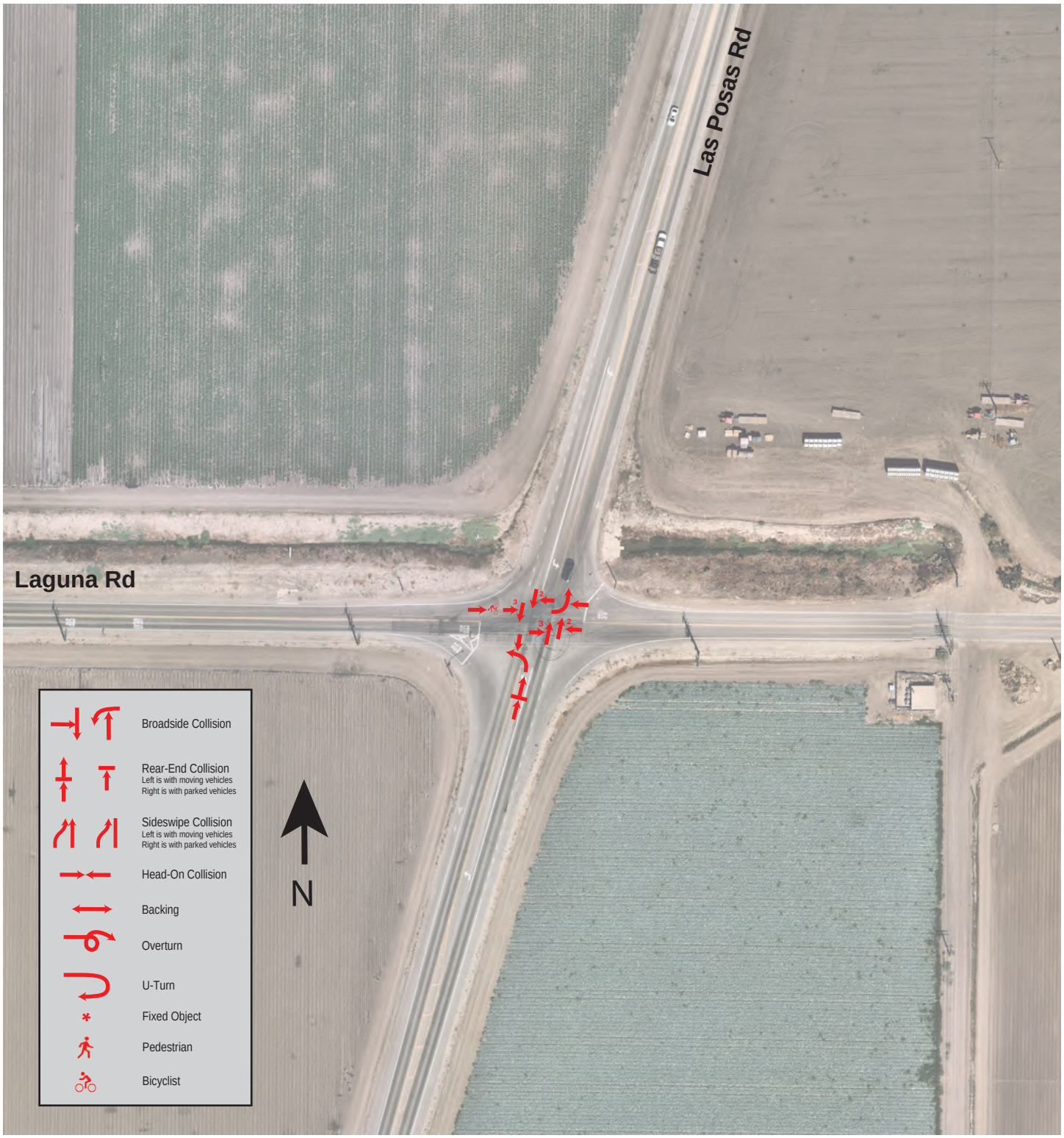
Intersection	Crashes	Local CCR Differential	EPDO[2]	Fatal	Serious Injury	Other Visible Injury	Complaint of Pain	PDO	Broadside	Sideswipe	Rear End	Head On	Hit Object	Overturned	Other	Pedestrian	Bicyde	Aggressive	Distracted	Impaired	Dark	Wet
Rice Avenue & Channel Islands Blvd	21	0.28	85	0	0	4	5	12	5	3	9	0	4	0	0	0	0	9	0	2	11	2

5 Years of Collision Data (2015 - 2019); One collision is not mapped below due to insufficient information.



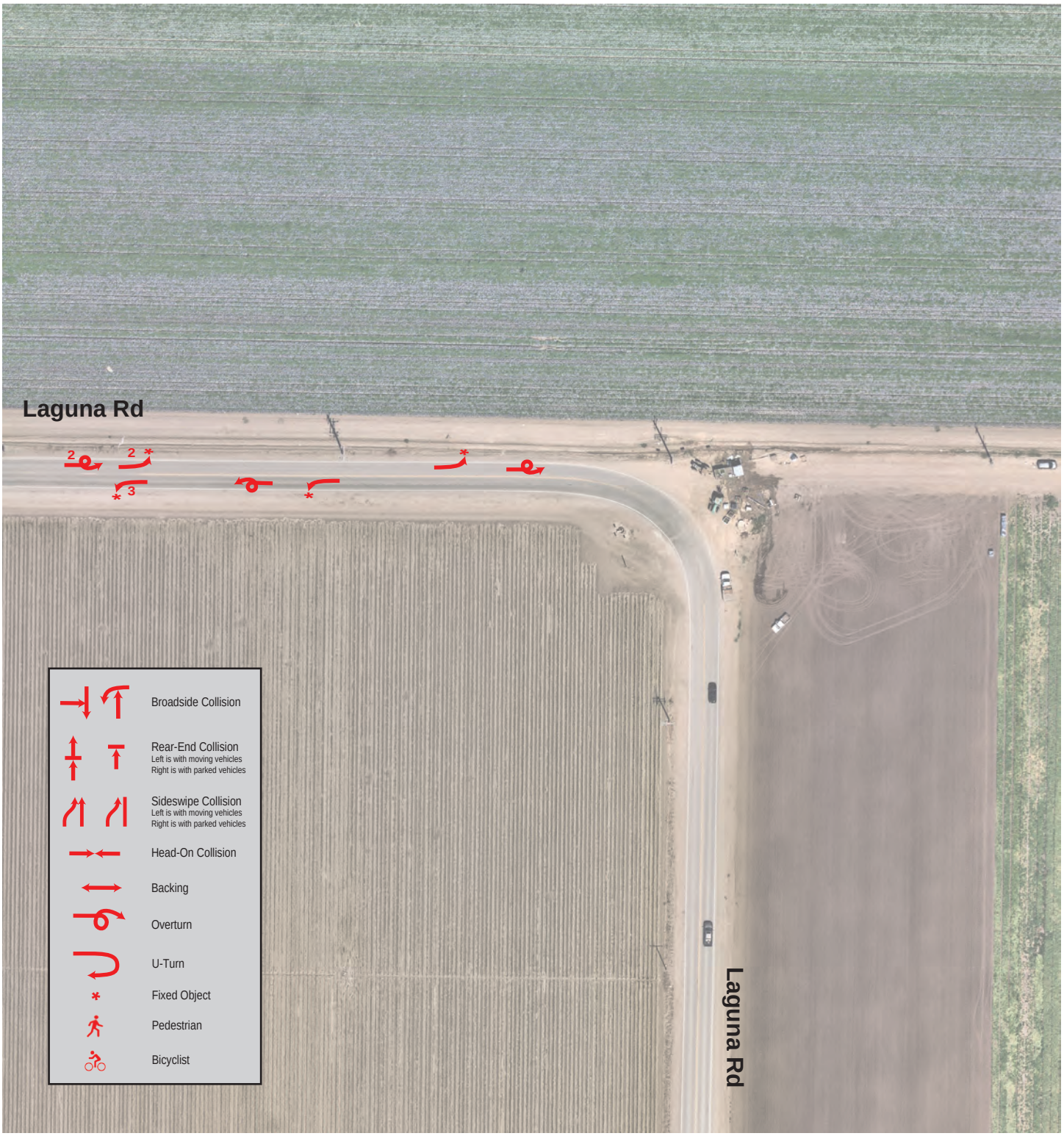
Intersection	Crashes	Local CCR Differential	EPDO[2]	*Fatal*	*Serious Injury*	*Other Visible Injury*	*Complaint of Pain*	*PDO*	Broadside	Sideswipe	Rear End	Head On	Hit Object	Overturned	Other	Pedestrian	Bicyde	Aggressive	Distracted	Impaired	Dark	Wet
Las Posas Road & Laguna Road	**16**	0.31	234	1	0	4	3	8	14	0	1	0	0	0	0	0	1	3	0	0	1	1

5 Years of Collision Data (2015 - 2019); Two collisions are not mapped below due to insufficient information.



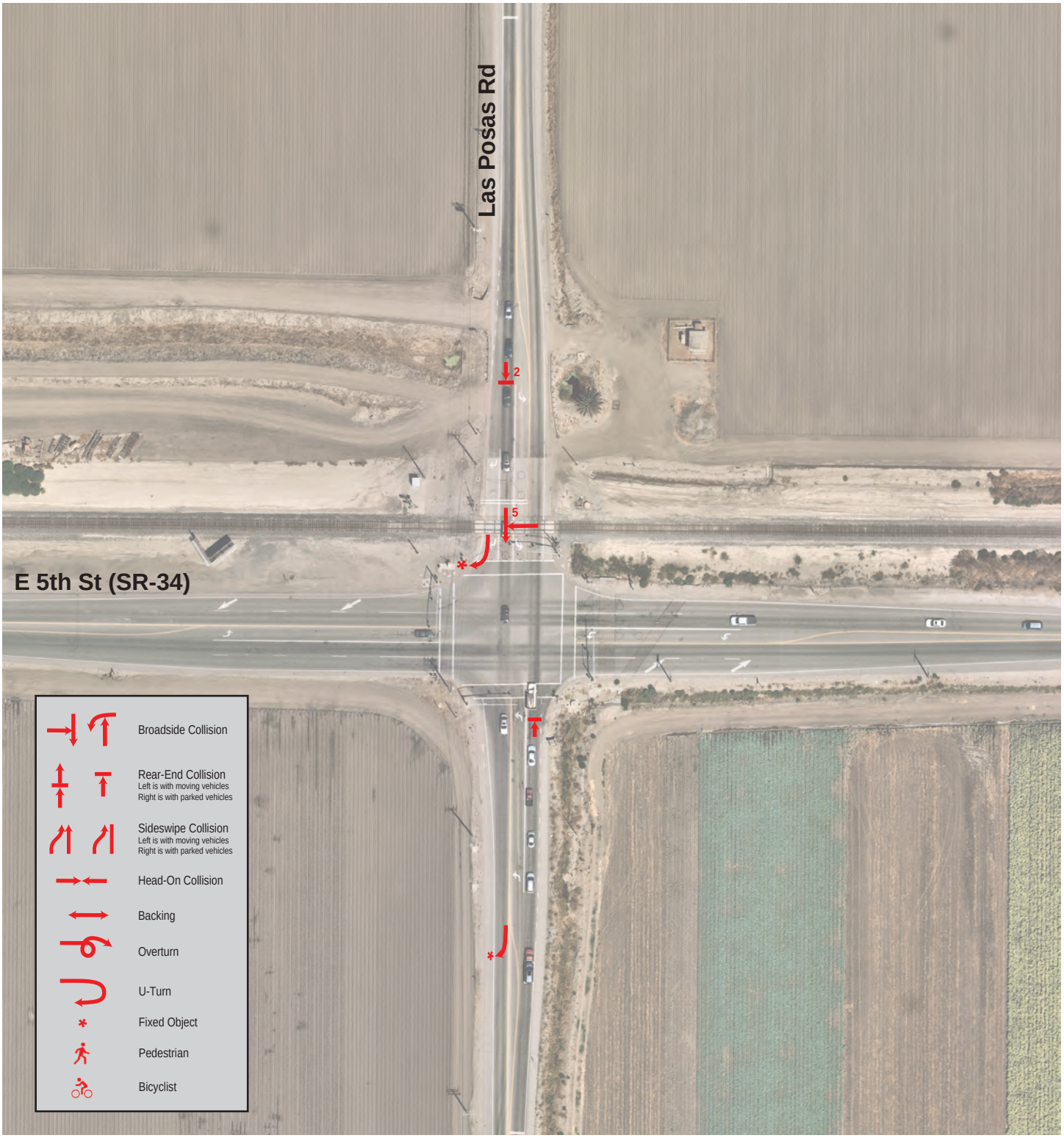
Intersection	Crashes	Local CCR Differential	EPDO[2]	Fatal	Serious Injury	Other Visible Injury	Complaint of Pain	PDO	Broadside	Sideswipe	Rear End	Head On	Hit Object	Overturned	Other	Pedestrian	Bicycle	Aggressive	Distracted	Impaired	Dark	Wet
Laguna Road & Laguna Road	**11**	1.15	26	0	0	1	1	9	0	0	0	0	7	4	0	0	0	7	0	1	4	0

5 Years of Collision Data (2015 - 2019);



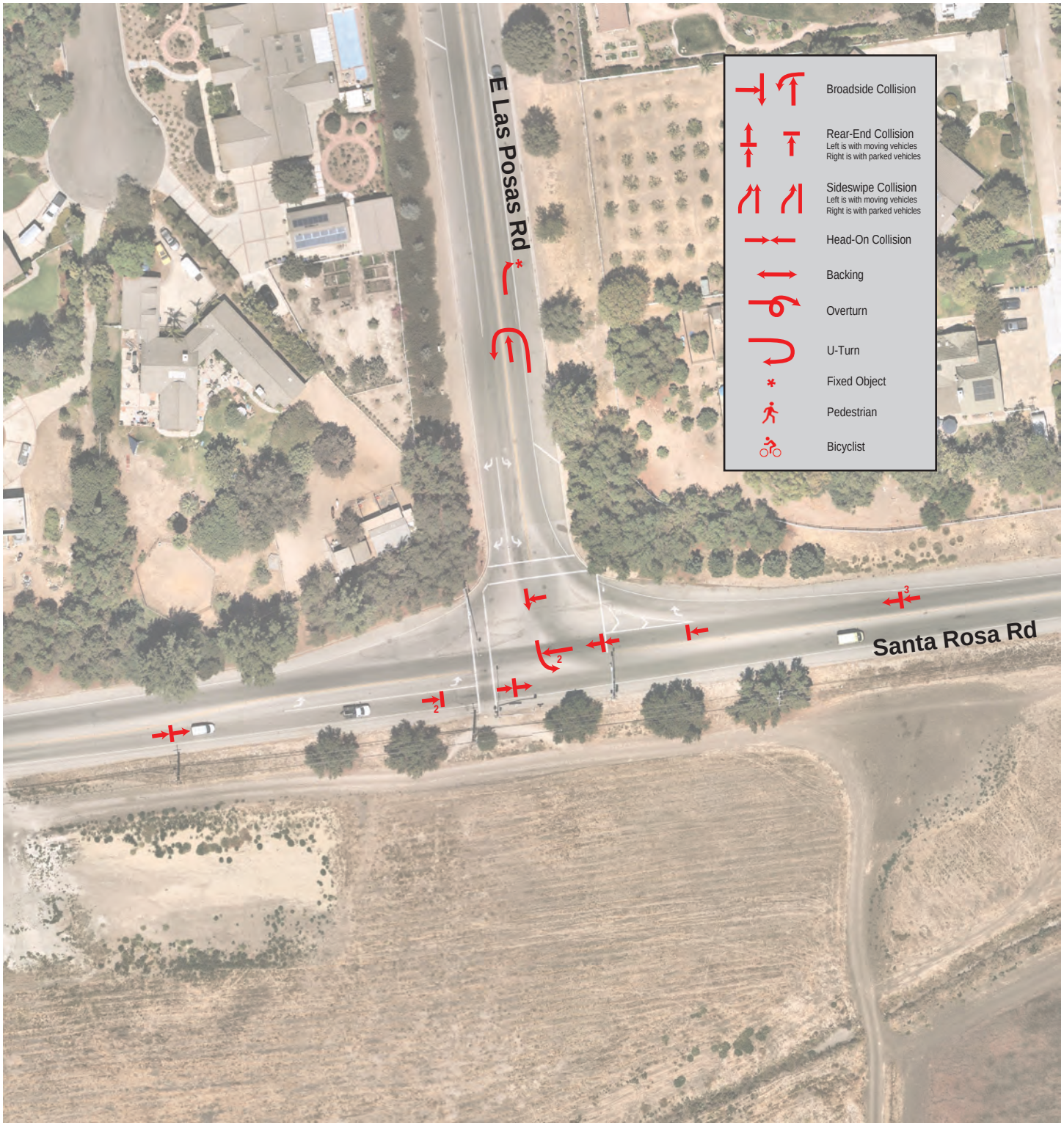
Intersection	Crashes	Local CCR Differential	EPDO[2]	Fatal	Serious Injury	Other Visible Injury	Complaint of Pain	PDO	Broadside	Sideswipe	Rear End	Head On	Hit Object	Overturned	Other	Pedestrian	Bicyde	Aggressive	Distracted	Impaired	Dark	Wet
Las Posas Road East & East 5th Stree	**15**	0.41	536	3	0	1	4	7	1	0	4	0	9	0	1	0	0	11	1	2	3	0

5 Years of Collision Data (2015 - 2019); 5 collisions are not mapped below due to insufficient information.



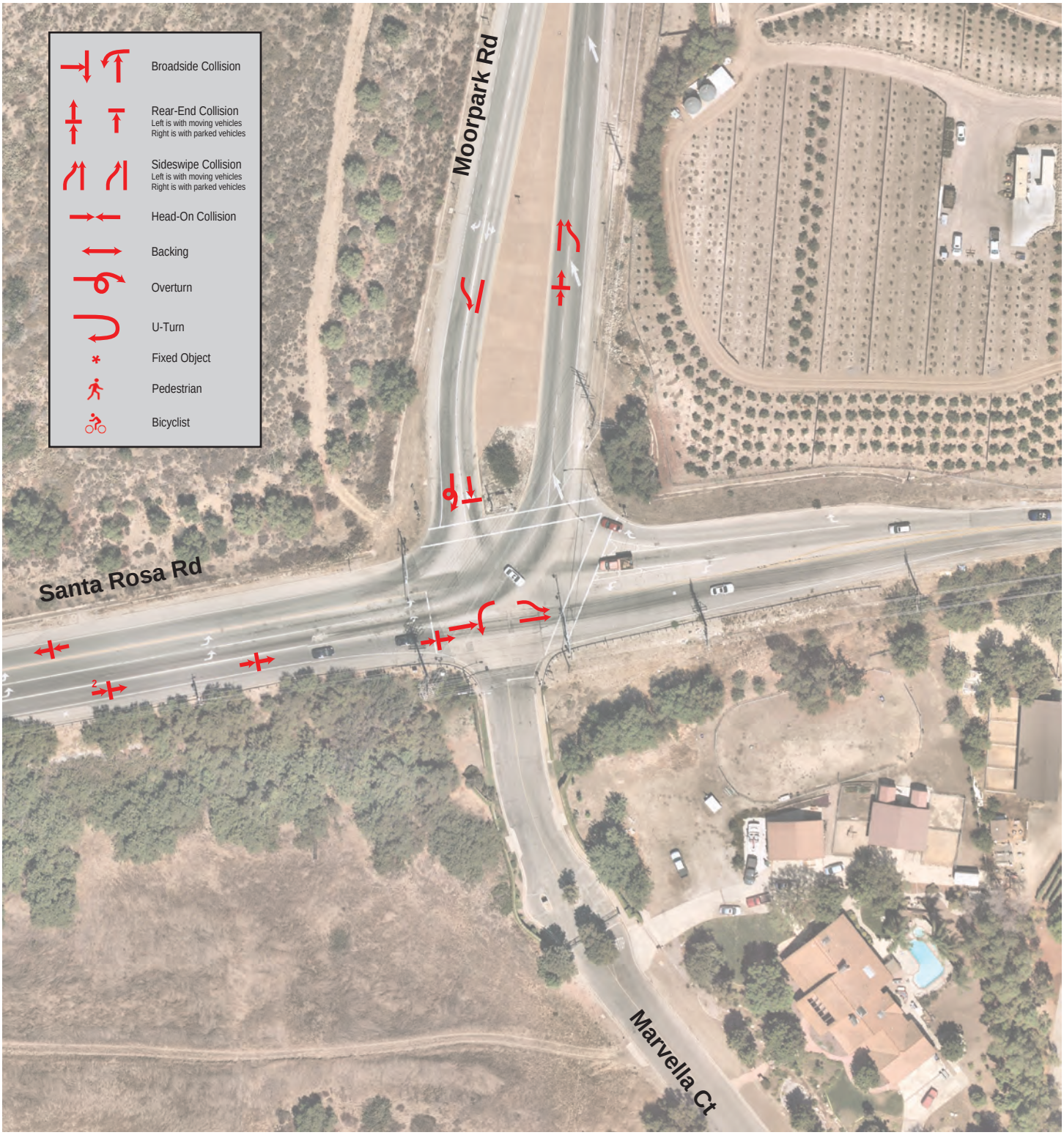
Intersection	Crashes	Local CCR Differential	EPDO[2]	Fatal	Serious Injury	Other Visible Injury	Complaint of Pain	PDO	Broadside	Sideswipe	Rear End	Head On	Hit Object	Overturned	Other	Pedestrian	Bicyde	Aggressive	Distracted	Impaired	Dark	Wet
Las Posas Road East & Santa Rosa Ro	**15**	-0.05	214	1	0	1	5	8	4	1	9	0	1	0	0	0	0	10	1	0	2	1

5 Years of Collision Data (2015 - 2019); One collision is not mapped below due to insufficient information.



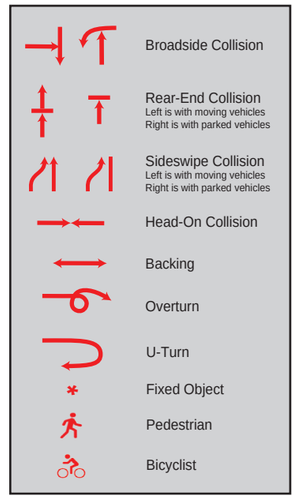
Intersection	Crashes	Local CCR Differential	EPDO[2]	Fatal	Serious Injury	Other Visible Injury	Complaint of Pain	PDO	Broadside	Sideswipe	Rear End	Head On	Hit Object	Overturned	Other	Pedestrian	Bicycle	Aggressive	Distracted	Impaired	Dark	Wet
Moorpark Road & Santa Rosa Road	**15**	-0.07	39	0	0	2	1	12	1	3	7	0	2	1	1	0	0	6	1	0	4	3

5 Years of Collision Data (2015 - 2019); Three collisions are not mapped below due to insufficient information.



Intersection	Crashes	EPDO[2]	*Fatal*	*Serious Injury*	*Other Visible Injury*	*Complaint of Pain*	*PDO*	Broadside	Sideswipe	Rear End	Head On	Hit Object	Overturned	Other	Pedestrian	Bicycle	Aggressive	Distracted	Impaired	Dark	Wet
Foothill Road (Wells Road - Aliso Canyon Road)	**17**	220	1	0	3	2	11	1	0	1	1	11	1	0	0	2	3	0	2	6	2

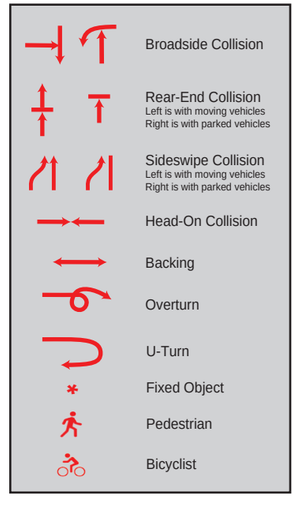
5 Years of Collision Data (2015 - 2019);




Foothill Rd
Pepper Tree Canyon Rd
N


Foothill Rd
N


Foothill Rd
Aliso Canyon Rd
3
N


Broadside Collision
Rear-End Collision
Left is with moving vehicles
Right is with parked vehicles
Sideswipe Collision
Left is with moving vehicles
Right is with parked vehicles
Head-On Collision
Backing
Overturn
U-Turn
Fixed Object
Pedestrian
Bicyclist

Intersection	Crashes	EPDO[2]	*Fatal*	*Serious Injury*	*Other Visible Injury*	*Complaint of Pain*	*PDO*	Broadside	Sideswipe	Rear End	Head On	Hit Object	Overturned	Other	Pedestrian	Bicycle	Aggressive	Distracted	Impaired	Dark	Wet
Violeta Street (Entire Stretch)	**11**	31	0	0	1	2	8	2	1	2	3	0	0	1	2	0	1	0	0	4	1

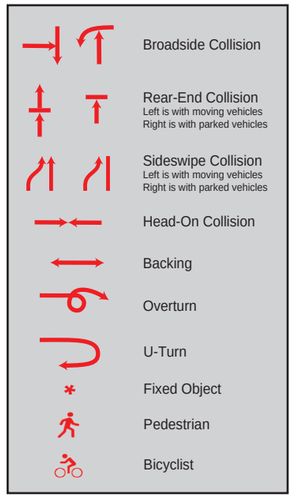
5 Years of Collision Data (2015 - 2019); Two collisions not shown due to insufficient information.

Intersection	Crashes	EPDO[2]	*Fatal*	*Serious Injury*	*Other Visible Injury*	*Complaint of Pain*	*PDO*	Broadside	Sideswipe	Rear End	Head On	Hit Object	Overturned	Other	Pedestrian	Bicycle	Aggressive	Distracted	Impaired	Dark	Wet
Rose Avenue (Simon Way-Central Avenue)	**18**	201	1	0	2	0	15	1	1	2	0	13	0	0	1	0	3	0	1	9	0

5 Years of Collision Data (2015 - 2019); One collision not shown due to insufficient information.

Intersection	Crashes	EPDO[2]	Fatal	Serious Injury	Other Visible Injury	Complaint of Pain	PDO	Broadside	Sideswipe	Rear End	Head On	Hit Object	Overturned	Other	Pedestrian	Bicycle	Aggressive	Distracted	Impaired	Dark	Wet
Nyeland Avenue (Entire Stretch)	**14**	14	0	0	0	0	14	0	7	3	0	3	0	1	0	0	0	0	3	7	1

5 Years of Collision Data (2015 - 2019); One collision not shown due to insufficient information.



Intersection	Crashes	EPDO[2]	Fatal	Serious Injury	Other Visible Injury	Complaint of Pain	PDO	Broadside	Sideswipe	Rear End	Head On	Hit Object	Overturned	Other	Pedestrian	Bicycle	Aggressive	Distracted	Impaired	Dark	Wet
Pleasant Valley Road (120 e SR-1 NB Off Ramp - Hailes Road)	**52**	494	1	1	5	13	32	14	1	25	0	11	1	0	0	0	28	0	7	14	3

5 Years of Collision Data (2015 - 2019); Four collisions not shown due to insufficient information.

Broadside Collision

Rear-End Collision
Left is with moving vehicles
Right is with parked vehicles

Sideswipe Collision
Left is with moving vehicles
Right is with parked vehicles

Head-On Collision

Backing

Overturn

U-Turn

Fixed Object

Pedestrian

Bicyclist

Intersection	Crashes	EPDO[2]	Fatal	Serious Injury	Other Visible Injury	Complaint of Pain	PDO	Broadside	Sideswipe	Rear End	Head On	Hit Object	Overturned	Other	Pedestrian	Bicycle	Aggressive	Distracted	Impaired	Dark	Wet
Hueneme Road (37e Edison Drive - Olds Road)	**30**	620	1	2	6	8	13	9	2	7	2	9	1	0	0	0	10	0	4	9	1

5 Years of Collision Data (2015 - 2019);

N

Broadside Collision

Rear-End Collision
Left is with moving vehicles
Right is with parked vehicles

Sideswipe Collision
Left is with moving vehicles
Right is with parked vehicles

Head-On Collision

Backing

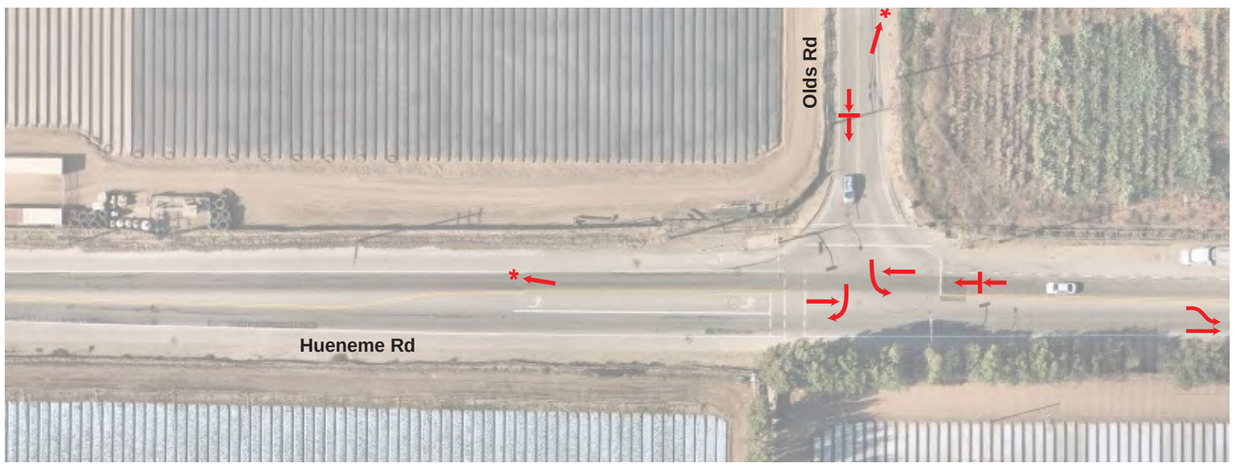
Overturn

U-Turn

Fixed Object

Pedestrian

Bicyclist

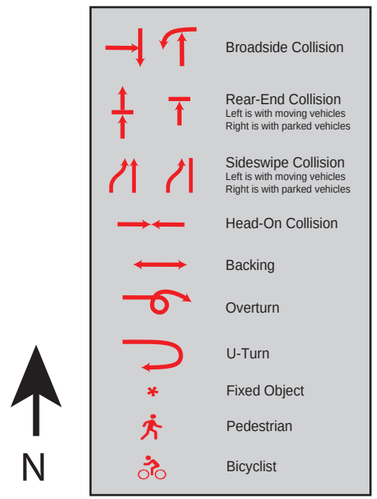


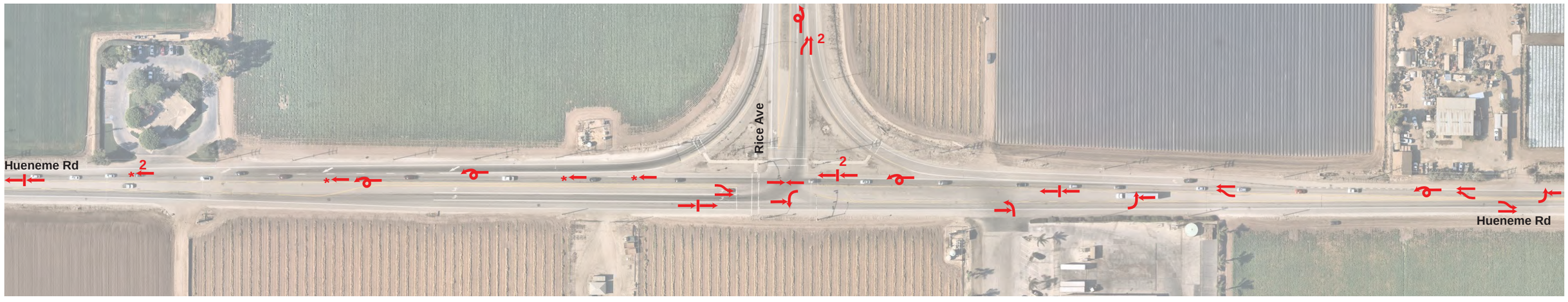
N

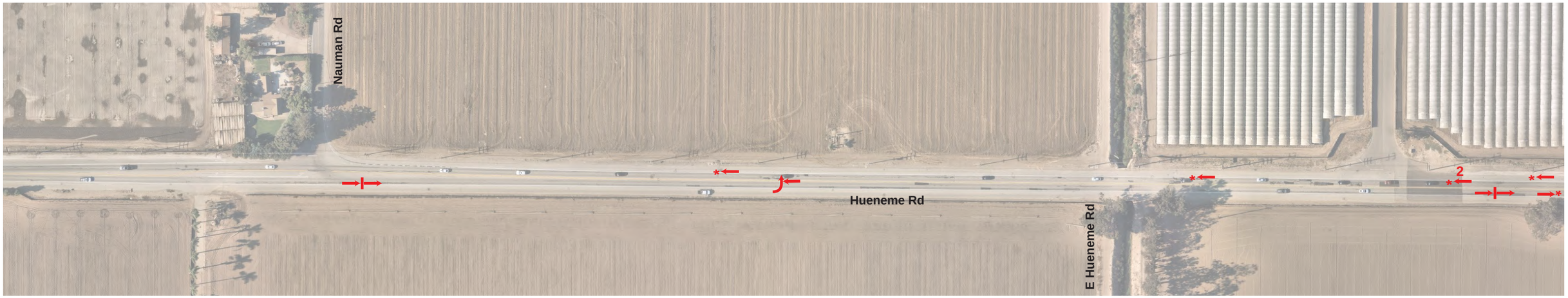
- Broadside Collision
- Rear-End Collision
  Left is with moving vehicles
  Right is with parked vehicles
- Sideswipe Collision
  Left is with moving vehicles
  Right is with parked vehicles
- Head-On Collision
- Backing
- Overturn
- U-Turn
- Fixed Object
- Pedestrian
- Bicyclist

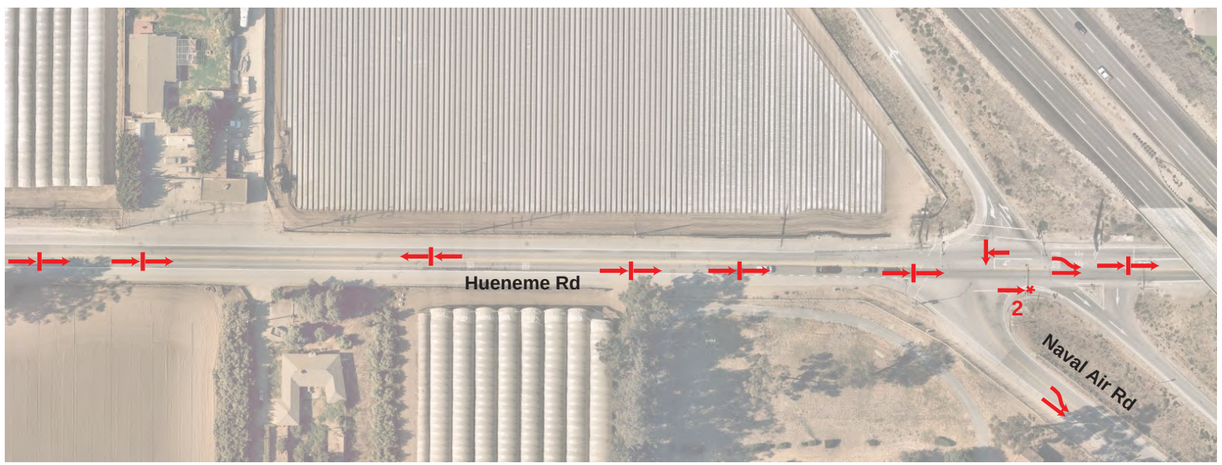
Intersection	Crashes	EPDO[2]	Fatal	Serious Injury	Other Visible Injury	Complaint of Pain	PDO	Broadside	Sideswipe	Rear End	Head On	Hit Object	Overturned	Other	Pedestrian	Bicycle	Aggressive	Distracted	Impaired	Dark	Wet
Hueneme Road (Olds Road - Naval Air Road)	**66**	512	1	1	7	10	47	11	10	19	2	18	6	0	0	0	24	0	3	27	2

5 Years of Collision Data (2015 - 2019); Three collisions not shown due to insufficient information.









N

Broadside Collision

Rear-End Collision
Left is with moving vehicles
Right is with parked vehicles

Sideswipe Collision
Left is with moving vehicles
Right is with parked vehicles

Head-On Collision

Backing

Overturn

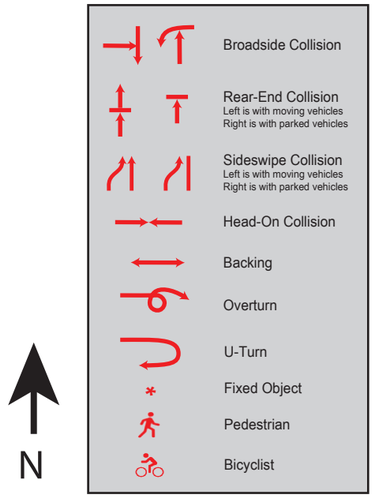
U-Turn

Fixed Object

Pedestrian

Bicyclist

Intersection	Crashes	EPDO[2]	*Fatal*	*Serious Injury*	*Other Visible Injury*	*Complaint of Pain*	*PDO*	Broadside	Sideswipe	Rear End	Head On	Hit Object	Overturned	Other	Pedestrian	Bicycle	Aggressive	Distracted	Impaired	Dark	Wet
Potrero Road West (MP 3.5 - 727w Via Acosta)	**42**	1175	0	6	13	5	18	1	5	0	1	21	13	0	0	1	13	0	2	10	3




Potrero Rd
Potrero Rd
Potrero Rd
Potrero Rd
Via Acosta
2
2
2
4
2
Broadside Collision
Rear-End Collision
Left is with moving vehicles
Right is with parked vehicles
Sideswipe Collision
Left is with moving vehicles
Right is with parked vehicles
Head-On Collision
U-Turn
Fixed Object
Pedestrian
Bicyclist
N