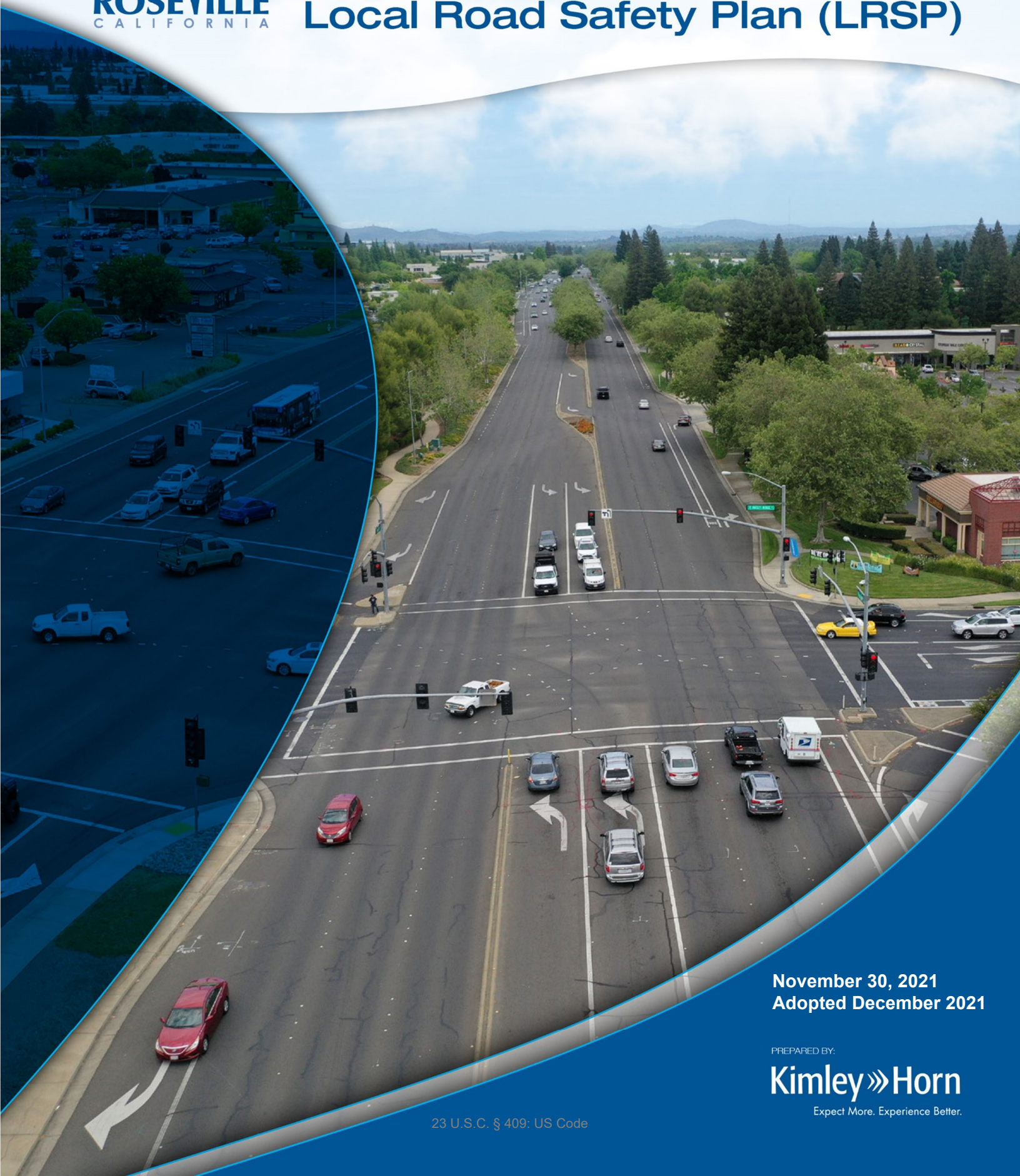
CITY OF ROSEVILLE CALIFORNIA

Local Road Safety Plan (LRSP)



November 30, 2021
Adopted December 2021

PREPARED BY:

Kimley»Horn
Expect More. Experience Better.

23 U.S.C. § 409: US Code

FINAL REPORT

FOR

CITY OF ROSEVILLE
LOCAL ROAD SAFETY PLAN

Prepared for:

City of Roseville
Public Works – Traffic Engineering
311 Vernon Street
Roseville, CA 95678
916-746-1300

Prepared by:

Kimley-Horn and Associates, Inc.
555 Capitol Mall
Suite 300
Sacramento, CA
916-858-5800

Acknowledgements

The City of Roseville employees and partners were instrumental in the development, review, and refinement of this Local Road Safety Plan (LRSP). The City of Roseville and Kimley-Horn would like to express their appreciation to the supporting staff and partners for their participation and contributions.

City of Roseville

Mayor Bernasconi (City Council)
Jana Cervantes (Project Manager)
Lt. Scott Blynn (Police Department)
Sgt. Mark Brazeal (Police Department)
Heather Chan (Public Works Traffic)
Jerry Dankbar (Streets Maintenance)
Mike Dour (Alternative Transportation Manager)
Helen Dyda (PIO)
Rebecca Espenshade (SRTS)
Joey McKinney (Electric)
David Rawe (Risk Management)
Jason Rizzi (Fire)

Consultant Team

Molly O'Brien (Project Manager)
Darryl DePencier
David Giacomin
Robert Paderna
Zachary Ramalingam
Matt Weir
Ollie Wiesner

Statutory Notice

23 U.S.C. § 409: US Code - Section 409: Discovery and admission as evidence of certain reports and surveys

Notwithstanding any other provision of law, reports, surveys, schedules, lists, or data compiled or collected for the purpose of identifying, evaluating, or planning the safety enhancement of potential accident sites, hazardous roadway conditions, or railway- highway crossings, pursuant to sections 130, 144, and 148 of this title or for the purpose of developing any highway safety construction improvement project which may be implemented utilizing Federal-aid highway funds 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 mentioned or addressed in such reports, surveys, schedules, lists, or data.

Table of Contents

LIST OF APPENDICES

List of Figures

List of Tables

List of Acronyms

A	Serious Injury Crash
AASHTO	American Association of State Highway and Transportation Officials
ARIDE	Advance Roadside Impaired Enforcement
ATP	Active Transportation Program
B	Non-incapacitating Injury Crash
BCR	Benefit/Cost Ratio
C	Possible Injury Crash
Caltrans	California Department of Transportation
CCR	Critical Crash Rate
City	City of Roseville
CMF	Crash Modification Factor
CRF	Crash Reduction Factor
CTC	California Transportation Comission
DEV	Daily Entering Volume
DRE	Drug Recognition Expert
EPDO	Equivalent Property Damage Only
FAST	Fixing America's Surface Transportation Act
FHWA	Federal Highway Administration
GIS	Geographic Information System
HFST	High Friction Surface Treatment
HSIP	Highway Safety Improvement Program
HSM	Highway Safety Manual
IIP	Interregional Improvement Program
ITIP	Interregional Transportation Improvement Program
K	Fatal Crash
K+SI	Fatal and Serious Injury Crashes
LPI	Leading Pedestrian Interval
LRSM	Local Roadway Safety: A Manual for California's Local Road Owners (Version 1.5, April 2020)
LRSP	Local Road Safety Plan
MAIT	Multi-disciplinary Accident Investigation Team
NHTSA	National Highway Traffic Safety Administration

O	No Injury Crash (Property Damage Only)
OTS	Office of Traffic Safety
PDO	Property Damage Only
RIP	Regional Improvement Program
RRFB	Rectangular Rapid Flashing Beacon
R/W	Right-of-Way
SACOG	Sacramento Area Council of Governments
SB1	California Senate Bill 1
SHSP	Strategic Highway Safety Plan
SRTS	Safe Routes to School
STIP	State Transportation Improvement Program
SWITRS	Statewide Integrated Traffic Records System
VMT	Vehicle Miles Traveled

1. INTRODUCTION

The City of Roseville is the largest city in Placer County with a population of approximately 143,900 residents over a total area of 44 square miles. Roseville is the hub of South Placer County, which is one of the fastest growing regions in the state. The City's transportation network includes 485 centerline miles of City-maintained roads and 186 traffic signals, the majority of which are located on key arterial and collector roadways.

This Local Roadway Safety Plan (LRSP) identifies emphasis areas to inform and guide further safety evaluation of the City's transportation network. The emphasis areas include type of crash, certain locations, and notable relationships between current efforts and crash history. The LRSP analyzes crash data on an aggregate basis as well as at specific locations to identify citywide trends, high-crash locations, high-risk locations, and locations with unusual crash patterns or high-crash severities. The analysis of crash history throughout the City's transportation network allows for opportunities to:

- Identify safety factors in the transportation network that may be challenging for all roadway users
- Improve safety at specific high-crash locations
- Develop safety measures aligning with the California Strategic Highway Safety Plan (SHSP) Five Es of safety: Engineering, Enforcement, Education, Emergency Services, and Emerging Technologies, to encourage safer driver behavior and reduce fatalities and serious injuries

The process and analysis performed in development of the City's LRSP, including establishing the initial vision and goals for the LRSP, performing crash history analysis, identification of emphasis areas and recommended engineering and non-engineering safety countermeasures are summarized in this LRSP. The information compiled will provide a foundation for decision making and prioritization for safety countermeasures and projects that enhance safety for all modes of travel within the City.

The City has taken steps to enhance multi-modal safety throughout the City and through this LRSP, is continuing to make safety a priority in its planning processes. The City builds upon the safety practices that have led to prioritizing traffic safety across its road network in this LRSP by identifying areas of emphasis and systemic recommendations that can be implemented to further enhance safety. This LRSP analyzes the most recent range of crash data that was available at the start of the project (January 1, 2015 – December 31, 2019) and roadway improvements to assess historic trends, patterns, and areas of increasing concern.

The intent of the LRSP is to:

- Create a greater awareness of road safety and risks
- Reduce the number of fatal and severe-injury crashes
- Develop lasting partnerships through collaboration among professionals in various disciplines
- Support for grant/funding applications
- Assist in prioritizing investments in traffic safety

1.1. Document Organization

The LRSP is organized into the following sections:

- **Section 1** provides an introduction to the LRSP.
- **Section 2** presents the vision, goal, and objectives for the LRSP.
- **Section 3** summarizes the LRSP development process including guidance documents and analysis techniques.
- **Section 4** presents the project stakeholders and stakeholder engagement.
- **Section 5** summarizes the review of City planning documents.
- **Section 6** contains the LRSP data sources.
- **Section 7** provides a summary of safety trends.
- **Section 8** includes recommended engineering and non-infrastructure countermeasures.
- **Section 9** summarizes the evaluation and implementation of the safety countermeasures.
- **Section 10** identifies next steps**.**
- **Appendices**

2. VISION, GOAL, AND OBJECTIVES

The Roseville LRSP evaluates the transportation network as well as non-infrastructure programs and policies within the City. Mitigation measures are evaluated using criteria to analyze the safety of road users (drivers and passengers, bicyclists, and pedestrians), the interaction of travel modes, and the potential benefits of safety countermeasures. This effort is intended to use historical data to identify trends and develop a toolbox of countermeasures applicable to conditions in the City that can be used for proactive identification and implementation of opportunities, without relying solely on a reaction and response to crashes as they occur.

The Federal Highway Administration (FHWA) maintains a list of Proven Safety Countermeasures. The list currently has 20 Proven Safety Countermeasures, and LRSPs are included on the list of 20 Proven Safety Countermeasures. Implementation of LRSPs has improved safety in local jurisdictions across the country by providing a guide for local jurisdictions to systemically address the conditions that lead to 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.

Following discussions with Roseville staff and a review of existing plans and policies for the area, the following Vision, Goal, and Objectives have been established for this LRSP.

Vision:	**Support the California vision of moving towards significantly reducing fatalities and serious injuries for all road users**
Goal:	Identify transportation safety initiatives (projects and programs) and partnerships to continue reducing fatalities and serious injuries in Roseville.
Objectives:	▪ Identify major contributing factors to crashes and define priority locations for safety improvements. ▪ Identify cost-effective countermeasures and safety investments that can be applied systemically (i.e., retroreflective backplates, leading pedestrian interval, etc.) ▪ Promote safe, equitable, and multimodal mobility opportunities ▪ Document Roseville's procedures for on-going crash data monitoring

3. PROCESS

The primary goal of the City of Roseville and its stakeholders is to provide safe, sustainable, and efficient mobility choices for their residents and visitors. The City will continue its collaboration with stakeholders to identify and discuss safety issues within the community through the development of the LRSP and its implementation.

Guidance on the LRSP process is provided at both the national (FHWA) and California Department of Transportation (Caltrans) level. Both agencies have developed a general framework of data and recommendations to be included in a LRSP.

The FHWA encourages:

- The establishment of a working group (Stakeholders) to participate in developing an LRSP
- Review crash, traffic, and roadway data to identify areas of concern
- Establish goals, priorities, and countermeasures to recommend improvements at spot locations, systemically, and comprehensively

Caltrans guidance follows a similar outline with the following steps:

- Establish leadership
- Analyze the safety data
- Determine emphasis areas
- Identify strategies
- Prioritize and incorporate strategies
- Evaluate and update the LRSP

This LRSP documents the results of data and information obtained, including the vision, goal, and objectives for the LRSP; existing safety efforts; collision analysis; emphasis areas; and project sheets for priority locations. Furthermore, the development of the LRSP recommendations considers the Five Es of traffic safety defined by the California SHSP: Engineering, Enforcement, Education, Emergency Response, and Emerging Technologies throughout its process.

3.1. Guiding Manuals

The following section describes the analysis process undertaken to evaluate safety within the City at a systemic level. Using a network screening process, locations within the City that will most likely benefit from safety enhancements were identified. Using historic crash data, crash risk factors for the entire network are derived. The outcomes inform the identification and prioritization of engineering and non-infrastructure safety countermeasures that address certain roadway characteristics and related behaviors that contribute to motor vehicle crashes as well as active transportation users.

This process uses the latest National and State best practices for statistical roadway analysis described in the following sections.

3.1.1. Local Roadway Safety: A Manual for California's Local Road Owners

The Local Roadway Safety: A Manual for California's Local Road Owners (Version 1.5, April 2020) (LRSM) 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.

According to the 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 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 (BCR). The LRSM 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 implementation of a given countermeasure. If more than one countermeasure is under consideration, the LRSM provides guidance on how to apply CMFs appropriately.

3.1.2. Highway Safety Manual

The American Association of State Highway and Transportation Officials (AASHTO) Highway Safety Manual (HSM), published in 2010, presents a variety of methods for quantitatively estimating crash frequency or severity at a variety of locations. 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 realize a reduction in the frequency of crashes.

The HSM identifies five steps in this process:

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 principal 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.
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 identifying the total number of crashes, this LRSP uses a method referred to as Critical Crash Rate (CCR) to analyze the data.

3.2. Analysis Techniques

3.2.1. Crash and Network Screening Analysis

Intersections and roadways were analyzed using four crash metrics:

- Number of Crashes
- CCR (HSM Ch. 4)
- Probability of Specific Crash Types Exceeding Threshold Proportion (HSM Ch. 4)
- Equivalent Property Damage Only (HSM Ch. 4)

The initial steps of the crash analysis established sub-populations of roadway segments and intersections that have similar characteristics. For this LRSP, intersections were grouped by their control type (Signalized and Unsignalized) and segments by their roadway category (Arterial, Collector, Minor Collector, and Local). Individual crash rates were calculated for each sub-population. The population level crash rates were then used to assess whether a specific location has more or fewer crashes than expected. These sub-populations were also used to determine typical crash patterns to help identify locations where unusual numbers of specific crash types are occurring.

The network screening process ranks intersections and roadway segments by the number of crashes that occurred at each one over the analysis period, and then identifies areas that had more of a given type of crash than would be expected for that type of location. These crash type factors were:

- Crash severity - fatal, serious injury, other visible injury, complaint of pain, and property damage only (PDO)
- Crash type - broadside, rear-end, sideswipe, head-on, hit object, overturned, bicycle, pedestrian, and other
- Environmental factors – lighting and wet roads
- Driver behavior - impaired, aggressive, and distracted driving

From the results of the network screening analyses, a short-list of locations was chosen based on crash activity, CCR, crash severity, crash patterns, location type, and area within the City to provide the greatest variety of locations covering the widest range of safety opportunities for toolbox development. **The intent is to populate the safety toolbox with mitigation measures that will be applicable to most of the crash activity in the City.**

3.2.2. Critical Crash Rate (CCR) Analysis

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 provide a complete indication of the level of risk for those who use that intersection or roadway segment on a daily basis. The HSM describes the CCR 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 CCR compares the observed crash rate to the expected crash rate at a particular location based on facility type and traffic volume using a locally calculated average crash rate for the specific type of intersection or roadway segment being analyzed. Based on traffic volumes and a weighted citywide 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.

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

Source: Highway Safety Manual

Data Needs

CCR is calculated using:

- Daily Entering Volume (DEV) for intersections, or Vehicle Miles Traveled (VMT) for roadway segments
- Intersection control types to separate them into like populations
- Roadway functional classification to separate them into like populations
- Crash records in Geographic Information Systems (GIS) or tabular form including coordinates or linear measures

Strengths

- Reduces low volume exaggeration
- Considers variance
- Establishes comparison threshold

3.2.3. Probability of Specific Crash Types Exceeding Threshold Proportion

When analyzing crash data systematically, it is important to identify areas where certain types of crashes are occurring with greater frequency. The HSM describes a method of identifying locations where probability of a specific crash type exceeds the threshold population. This method prioritizes locations based on the probability that the true proportion (long-term predicted proportion) of a type of crash or injury level will exceed the threshold proportion. The threshold proportion is based on the proportion of a specific crash type/severity to all crashes within the dataset (HSM, Chapter 4). This analysis identifies locations where certain crash types are over-represented to be isolated for further analysis.

3.2.4. Equivalent Property Damage Only (EPDO)

The EPDO method is described in the HSM. This method assigns weighting factors to crashes based on injury level (severe, injury, property damage only) to develop a property damage only score. In this analysis, the injury crash costs were calculated for each location (based on the latest Caltrans injury costs). This value is then divided by the injury cost for a property damage only crash. The resulting number is the equivalent number of property damage only crashes at each site. This value allows all locations to be compared based on injury crash costs (HSM, Chapter 4).

4. STAKEHOLDER ENGAGEMENT

As part of the LRSP, local stakeholders were included in the process to ensure local perspective was kept at the forefront of this planning effort. A stakeholder group comprised of City staff and external stakeholders was formed. This group consisted of elected officials, members of City staff, representatives from the Roseville Police Department and Roseville Fire Department.

The stakeholders were called together to offer insight on the safety concerns present in the City's transportation network. After the initial network screening and safety analysis, the stakeholder group met in the field to observe 10 "priority" locations and discuss potential countermeasures. The summary of the stakeholder meetings are outlined below.

4.1. Stakeholder Meetings

A project stakeholder workshop was conducted virtually on February 16, 2021. At the meeting, the LRSP stakeholder group was introduced to the project and provided an overview of the data used, data analysis approach, preliminary results and priority/emphasis areas.

In addition to the LRSP overview, stakeholders were asked to provide local insight and knowledge at 20 "priority" locations that were identified after the initial network screening and crash analysis process.

The stakeholder group met in the field on March 25, 2021, at 10 "priority" locations selected based on the crash analysis and stakeholder input. This meeting provided an opportunity to perform a field assessment and offer another opportunity to solicit feedback from members of the multidisciplinary stakeholder group. Potential safety countermeasures for each location were recommended and discussed at the field review meeting.

5. REVIEW OF CITY PLANNING DOCUMENTS

Existing plans, policies, and projects that were recently completed, planned, or are on-going within the City were compiled at the start of the LRSP process to gain perspective on the existing efforts for transportation-related improvements within the City. High-level key points regarding transportation improvements and safety-related topics were identified to inform decision making in this LRSP.

The following planning documents were reviewed to obtain planned and programmed projects:

- Bicycle Master Plan, 2008
- Pedestrian Master Plan, 2011
- General Plan – Circulation Element, 2020
- Creekview Specific Plan, 2012
- Amorouso Ranch Specific Plan, 2016
- Sierra Vista Specific Plan, 2012
- Annual Budget 2020-21: Capital Improvement Projects, 2020/2021
- Blueprint Transportation/Land Use Study, 2005
- Oak Ridge Drive Bridge Replacement Project, 2021
- Roseville Parkway Extension Project, Current
- Washington/Andora Widening Project, Current
- Roseville Downtown Bridges, 2019
- Resurfacing Plan, 2020-2023 (bi-yearly)
- Metropolitan Transportation Plan/Sustainable Communities Strategy, 2020
- Sacramento Region Blueprint, 2004
- Regional Bicycle, Pedestrian, and Trails Master Plan, 2015
- 2040 Regional Transportation Plan, 2019
- Roseville Transit Short-Range Transit Plan, 2018-2025
- Placer County Short-Range Transit Plan
- Regional Bikeway Plan, 2018
- ITS Master Plan Update, 2020
- Pleasant Grove Widening (Washington to Woodcreek), Current
- Roseville Parkway Widening (Pleasant Grove to I-80), Current
- Vernon Street/Atlantic RAB (Future)
- Planned/Future FYA Deployments

A matrix identifying plans and improvements is included in **Appendix A**. The intent of this matrix is to provide an idea of the types of strategies in place or encouraged by the City and to reveal projects that may impact the safety analysis process.

In addition to reviewing planning documents, the City also provided their current policies related to various safety countermeasures. These policies are included in **Appendix B**.

6. DATA SOURCES

The following data was obtained from the City for use in crash data analysis.

6.1. Roadway Network

The collision analysis, which is described in detail in **Section 3**, requires each corridor within the City to be classified. The City's roadway network was categorized using the City's roadway classification system. The roadway network classification was assigned to each corridor roadway segment as either a major arterial, minor arterial, collector, and residential road to compare the functional design and capacity to better stratify analysis results, only comparing roadway segment safety performance with similar peer roadways (i.e., only major arterials are compared to major arterials).

6.2. Intersections

The crash analysis also required each intersection within the City to be classified by control type. Intersections throughout the City were classified by control type as either signalized or unsignalized. The safety analysis also only compared intersection safety performance with similar control types (i.e., signalized intersections are only compared to signalized intersections) within the City.

6.3. Crashes

Crash data for the most recent five-year period (January 1, 2015 through December 31, 2019) was used for the crash analysis. Using data for the past five-year period is sufficient to identify potential trends in crashes by location and types, while not being so long as to have data that would include long-term technology and cultural changes. The crash data was obtained from Crossroads Software, which processes crash records from the Statewide Integrated Traffic Records System (SWITRS). Crossroads provides the most up-to-date law enforcement records and geocodes them into a GIS format that can be used in the network screening process. Crash records were allocated to intersections and the roadway network segments.

7. SAFETY TRENDS

The following sections contain the results of the analysis process which included evaluation of Roseville fatal and serious injury (K+SI) crashes to statewide K+SI crashes, among other evaluations including crash by severity level, cause, pedestrian, and bicycle crashes. Summary tables presenting the crash data analysis and network screening results for all intersections and roadway segments are provided in Appendix C and Appendix D, respectively.

7.1. Roseville K+SI Crashes Compared to Statewide K+SI Crashes

The California SHSP focuses on 16 challenge areas identified by the SHSP Executive Leadership and Steering Committees after an in-depth analysis of California K+SI crash data as well as an extensive statewide outreach process that involved hundreds of diverse traffic stakeholders around the state. Crashes can be attributed to 13 of the 16 challenge areas. **Table 1** contains a comparison of City K+SI crashes to the statewide K+SI crashes. Challenge areas where the City percentages were higher than the statewide percentages are noted in **Table 1**.

Table 1 – City K+SI Crashes Compared to Statewide K+SI Crashes

California SHSP Challenge Area	Roseville Comparison to Statewide Percentages	Roseville	California SHSP
Aggressive Driving	Higher	39.5%	33.1%
Aging Drivers (≥65)	Higher	19.5%	12.4%
Bicyclists	Lower	4.5%	8.3%
Commercial Vehicles	Lower	2.5%	6.4%
Distracted Driving	Higher	6.5%	5.0%
Impaired Driving	Higher	30.0%	25.1%
Intersections	Higher	25.5%	23.6%
Lane Departure	Lower	38.5%	43.3%
Motorcyclists	Lower	20.0%	21.0%
Occupant Protection (Seat Belts, Helmets, Child Seats)	Higher	15.5%	14.2%
Pedestrians	Lower	13.5%	19.2%
Work Zones	Higher	3.0%	1.4%
Young Drivers (15-20)	Higher	15.5%	13.1%

Source: Statewide Integrated Traffic Records System (2015 – 2019).
Notes:

1. *Percentages will not add up to 100%, as a fatality or serious injury could have involved multiple Challenge Areas (i.e., a young driver that was impaired and unrestrained)*
2. *California SHSP does not have reported crash data for the following three challenge areas: Driver Licensing, Emergency Response, and Emerging Technology*

7.2. Severity Level

Knowing the impacts of the crash (the injuries or type of damage which occurred) is a key part of assessing the environment and safety factors around the site of the crash. Over the observed time period, there was a total of 14 fatal crashes and 112 crashes resulting in serious injuries, as shown in **Figure 1**. **Figure 2** presents crashes by severity resulting in non-incapacitating injuries, possible injuries, and no injury (PDO). **Table 2** below summarizes the crashes by severity for signalized intersections, unsignalized intersections, and segments.

The National Safety Council developed the "KABCO" injury scale, which is frequently used by law enforcement for classifying injuries:

- K – Fatal crash
- A – Serious injury crash
- B – Non-incapacitating injury crash
- C – Possible injury crash
- O – No injury (property damage only) crash

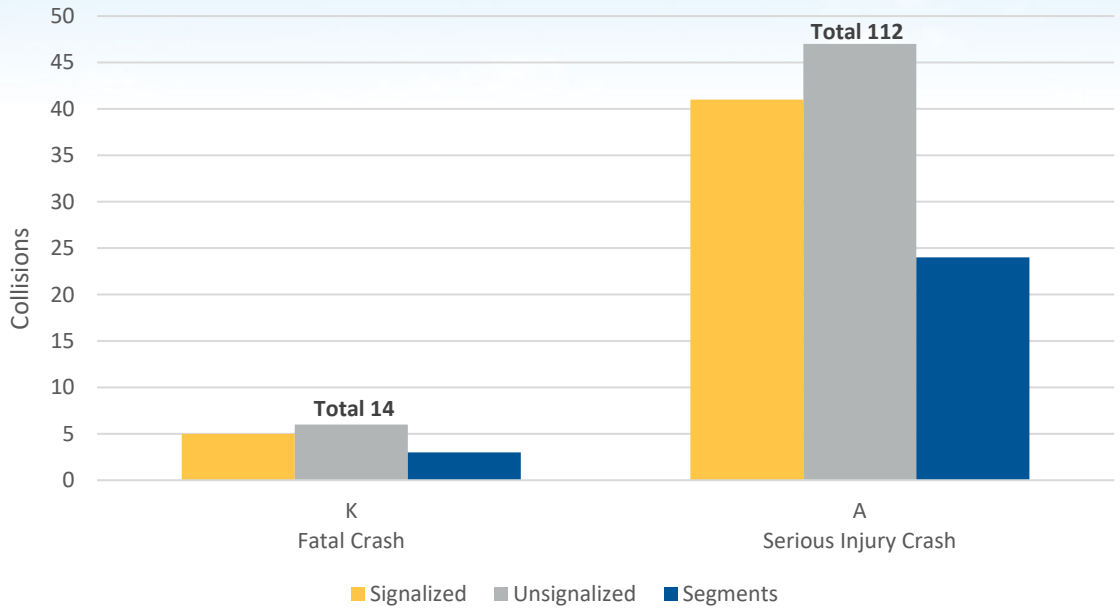
Table 2 – Crashes by Severity

Severity	Signalized Intersections		Unsignalized Intersections		Segments		Total	
	Collisions	%	Collisions	%	Collisions	%	Collisions	%
K	5	<1%	6	<1%	3	<1%	14	<1%
A	41	<1%	47	<1%	24	<1%	112	2%
B	348	6%	242	4%	187	3%	777	13%
C	1,004	17%	448	7%	397	7%	1,849	30%
O	1,671	28%	1,062	17%	610	10%	3,343	55%
Total	**3,069**	**50%**	**1,805**	**30%**	**1,221**	**20%**	**6,095**	**100%**

Source: Statewide Integrated Traffic Records System (2015 – 2019); processed by Crossroads.

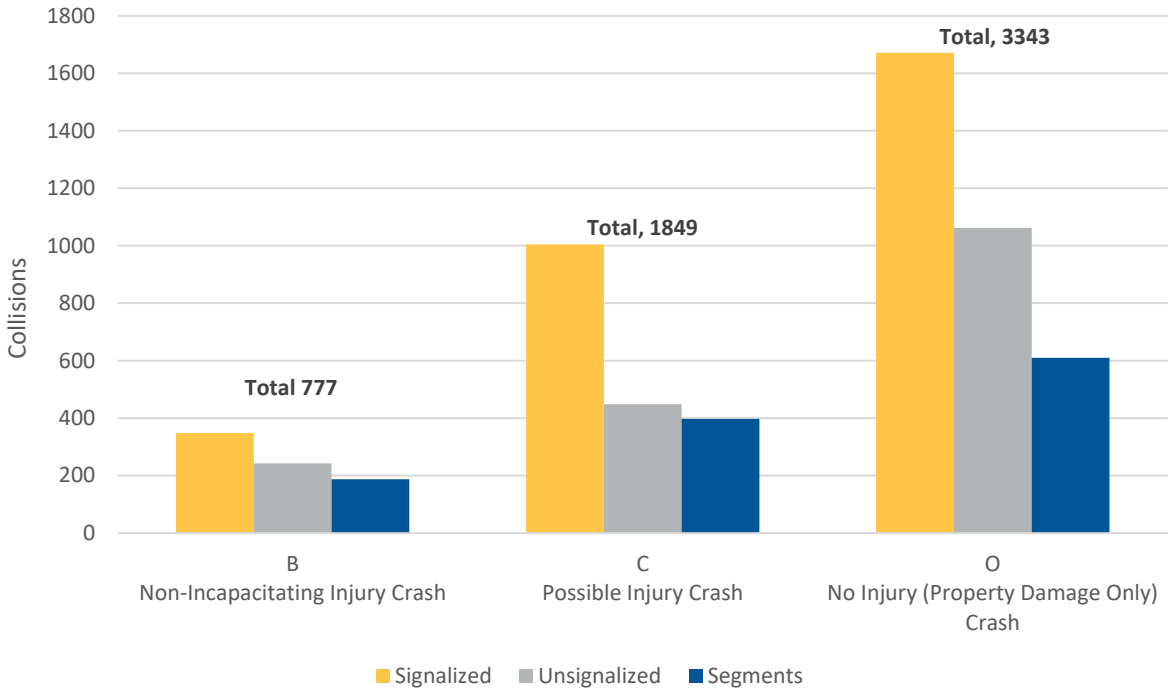
As summarized in **Table 2**, a high proportion (80%) of crashes in the City over the five year period occurred at intersections. **Figure 3** illustrates the intersection K+SI crashes throughout the City.

Figure 1 – Crashes by Severity: KA



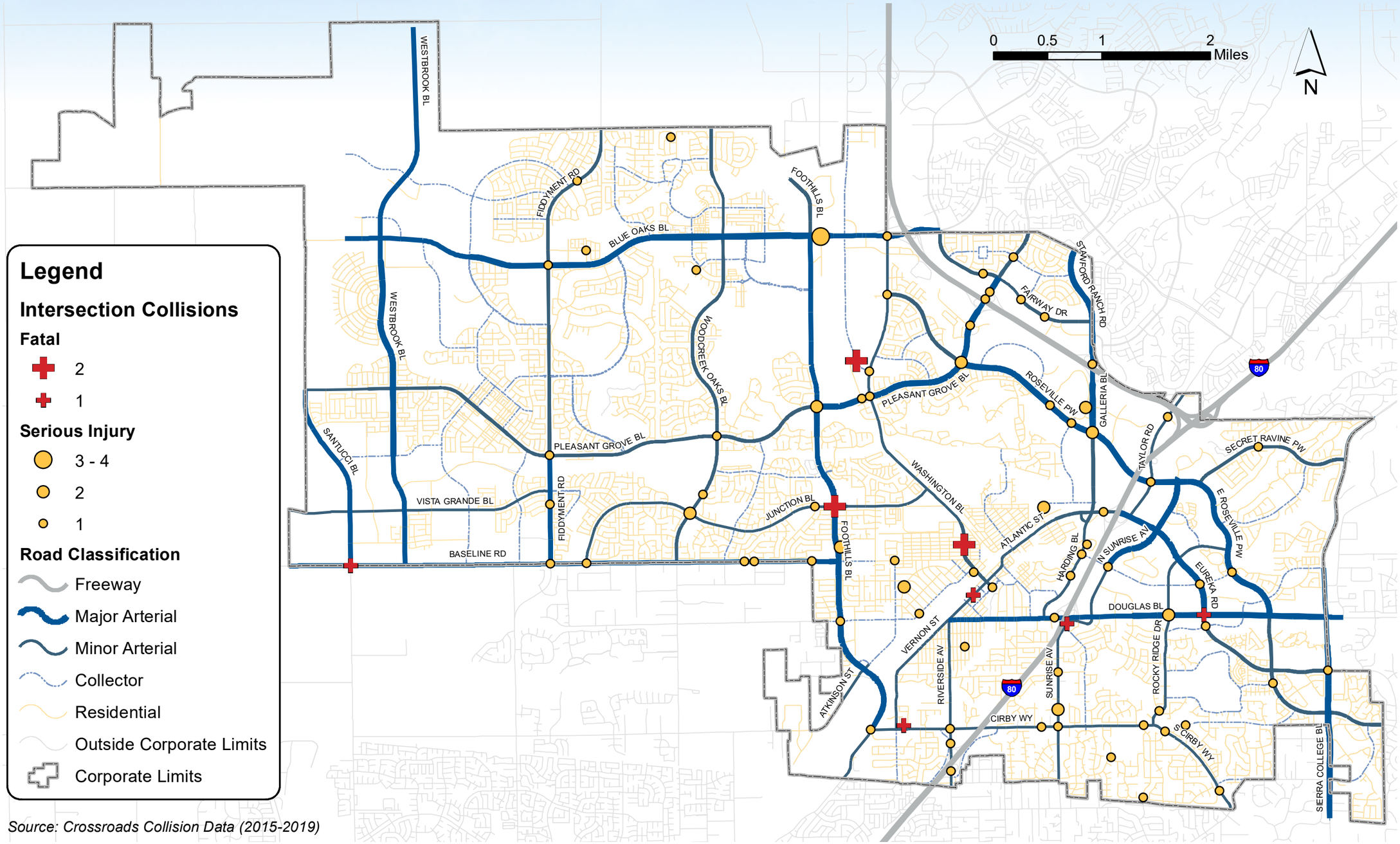
Source: Statewide Integrated Traffic Records System (2015 – 2019); processed by Crossroads.

Figure 2 – Crashes by Severity: BCO



Source: Statewide Integrated Traffic Records System (2015 – 2019); processed by Crossroads.

Figure 3 – Intersection K+SI Crashes Map

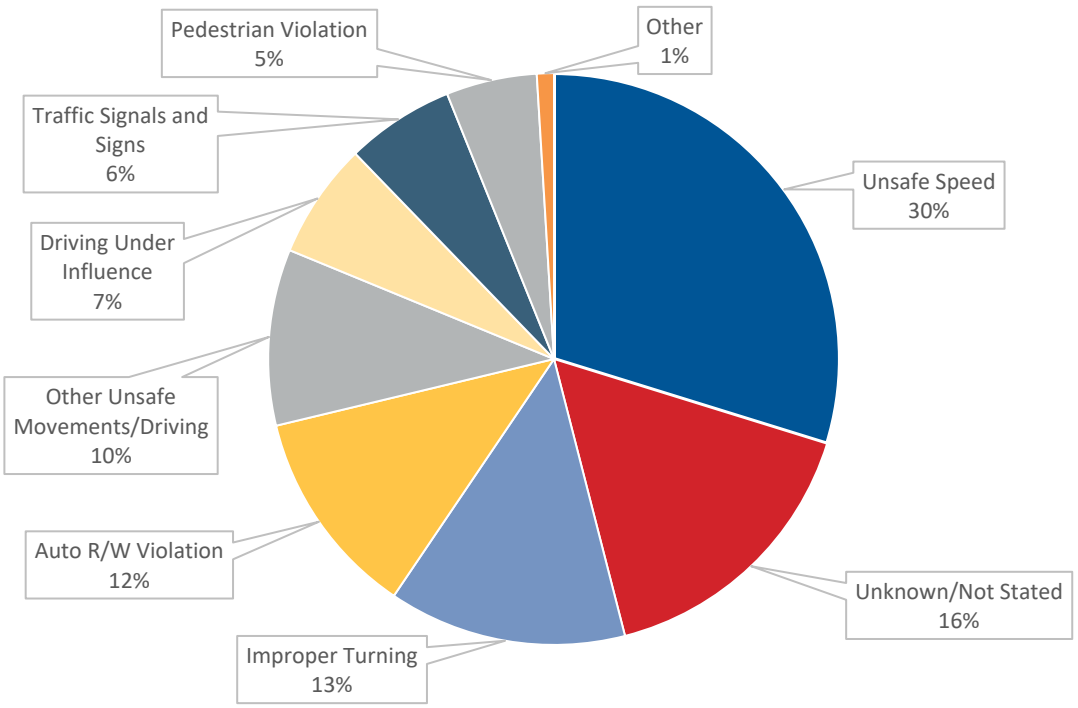


Source: Crossroads Collision Data (2015-2019)

7.3. Cause of Crash

As shown in **Figure 4**, the most frequent contributing factor as identified by the responding officer for collisions was unsafe speed (30%), followed by improper turning (13%), auto right-of-way (R/W) violation (12%), and other unsafe driving movements and maneuvers (10%). Sixteen percent of the collisions either did not have a contributing factor stated or were unknown. The remaining causes make up approximately 19% of all collisions. The remaining causes included driving under the influence (7%), traffic signals and signs (6%), pedestrian violations (5%), and other (1%).

Figure 4 – Crashes by Cause

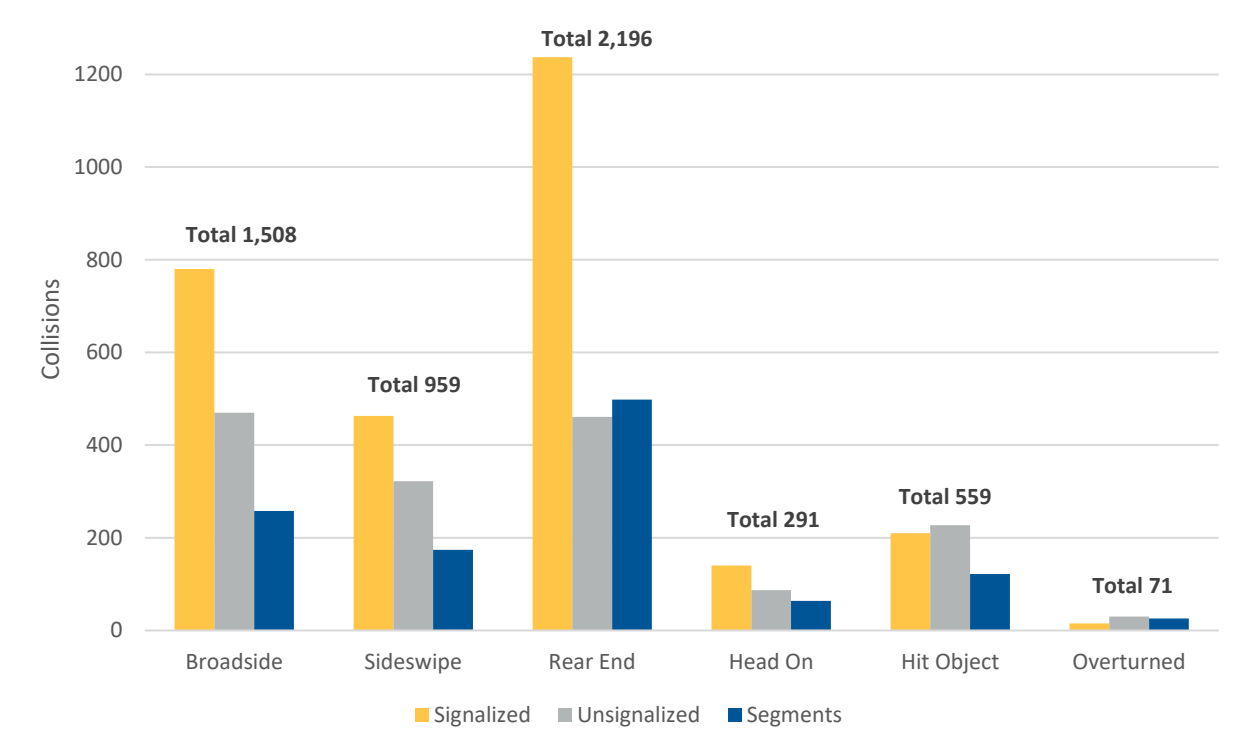


Source: Statewide Integrated Traffic Records System (2015 – 2019); processed by Crossroads.

7.4. Highest Occurring Crash Types

According to reported data, approximately 6,095 collisions occurred within the City of Roseville during the five-year study period. **Figure 5** indicates that rear end collisions are consistently the most common collision type within the City, making up 36% of all collisions. The second most common are broadside collisions, which make up 24% of all collisions. Within the City of Roseville, 15% of all reported collisions involved lane departures.

Figure 5 – Crashes by Type



Source: Statewide Integrated Traffic Records System (2015 – 2019); processed by Crossroads.

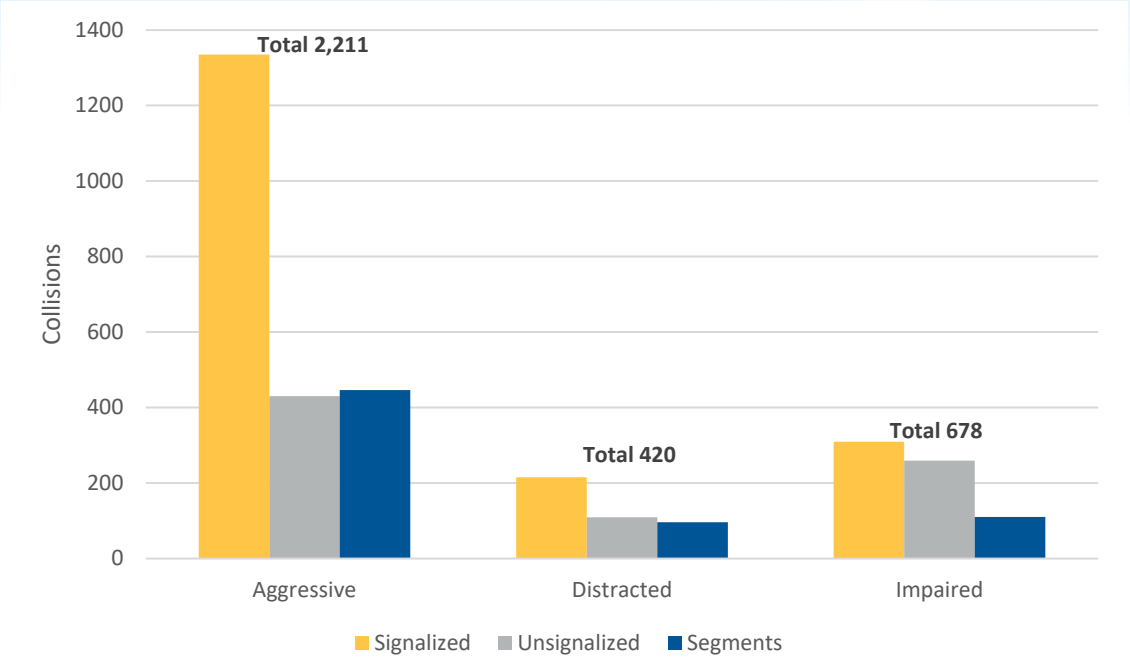
7.5. Lane Departure

Caltrans defines crashes involving lane departure as those with crash types listed as 'Head-On', 'Hit Object', or 'Overturned'. This also includes instances where a vehicle runs off the road or crosses into the opposing lane prior to the crash. There were 921 lane departure collisions over the study period, making up approximately 15% of all collisions in the City. Of the 921 lane departure collisions, 10 were fatal, 30 were reported with serious injury, 138 with visible injuries, and 190 with complaints of pain. Six of these collisions were not geolocated along a segment or intersection.

7.6. Aggressive, Impaired, and Distracted Crashes

Figure 6 contains a summary of aggressive, distracted, and impaired crashes by intersections and segments. Additional information is included in the following sections.

Figure 6 – Aggressive, Impaired, and Distracted Driving Crashes



Source: Statewide Integrated Traffic Records System (2015 – 2019); processed by Crossroads.

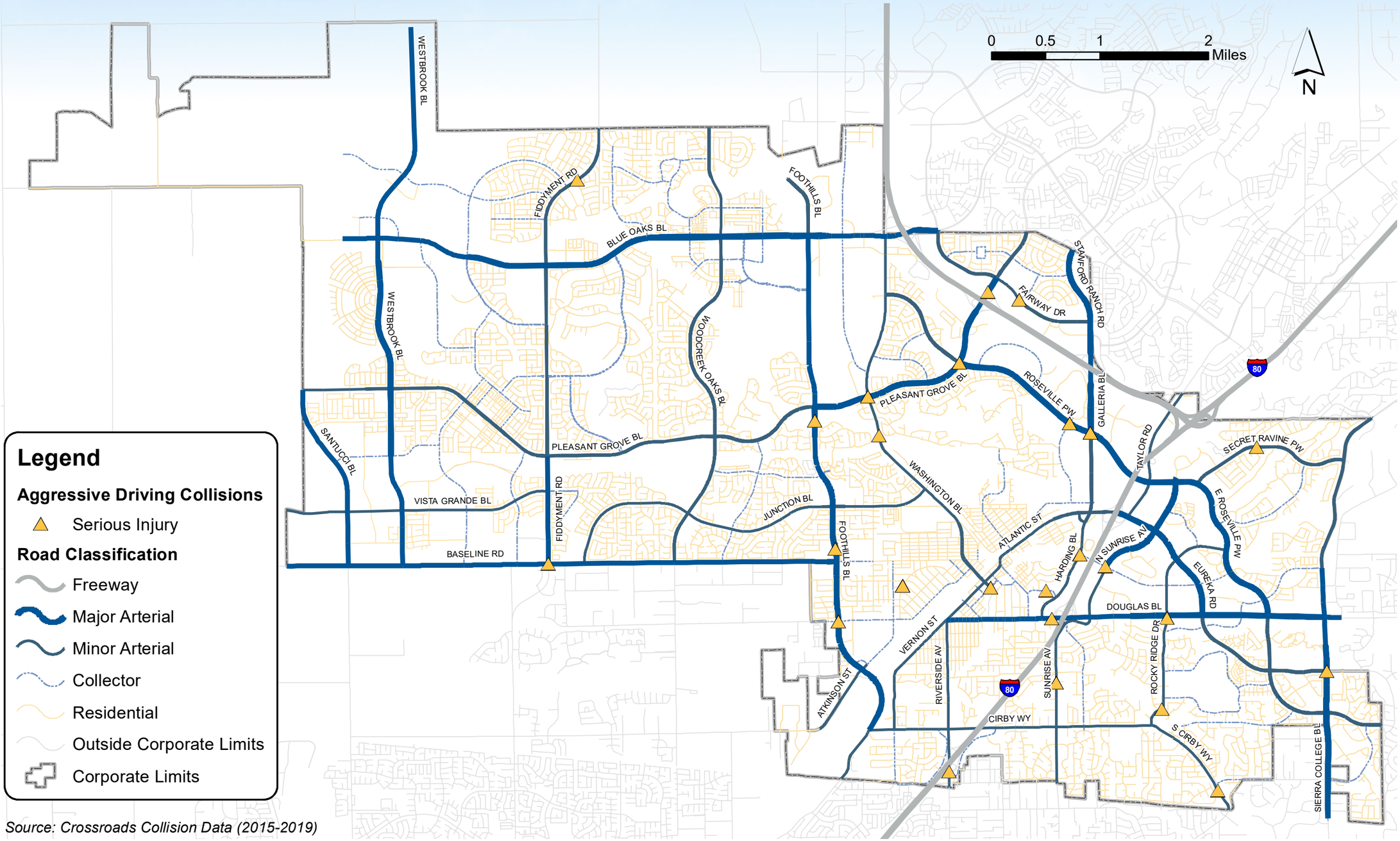
7.6.1. Aggressive Driving

The California SHSP data definition for aggressive driving is a collision where primary collision factor violation category is unsafe speed, following too closely, or traffic signals and signs or the other associated factor violation category is failure to heed stop signal, failure to heed stop sign, unsafe speed, reckless driving, or following too closely. There were 2,211 aggressive driving collisions between 2015-2019, accounting for 36% of collisions within the City of Roseville. **Figure 7** contains a figure of aggressive driving K+SI collisions within the City.

7.6.2. Impaired Driving

Collisions involving drugs or alcohol include all collisions 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 11% of collisions within City of Roseville were associated with alcohol or drugs. Ten of the collisions resulted in fatalities and 30 resulted in serious injuries. Furthermore, 10 of the 14 fatal collisions within Roseville during the study period involved impaired drivers. In the City of Roseville, collisions related to impaired driving represent approximately 30% of all fatal and serious injury collisions, which is more than the state average of 25%.

Figure 7 – Aggressive Driving K+SI Crashes Map



Source: Crossroads Collision Data (2015-2019)

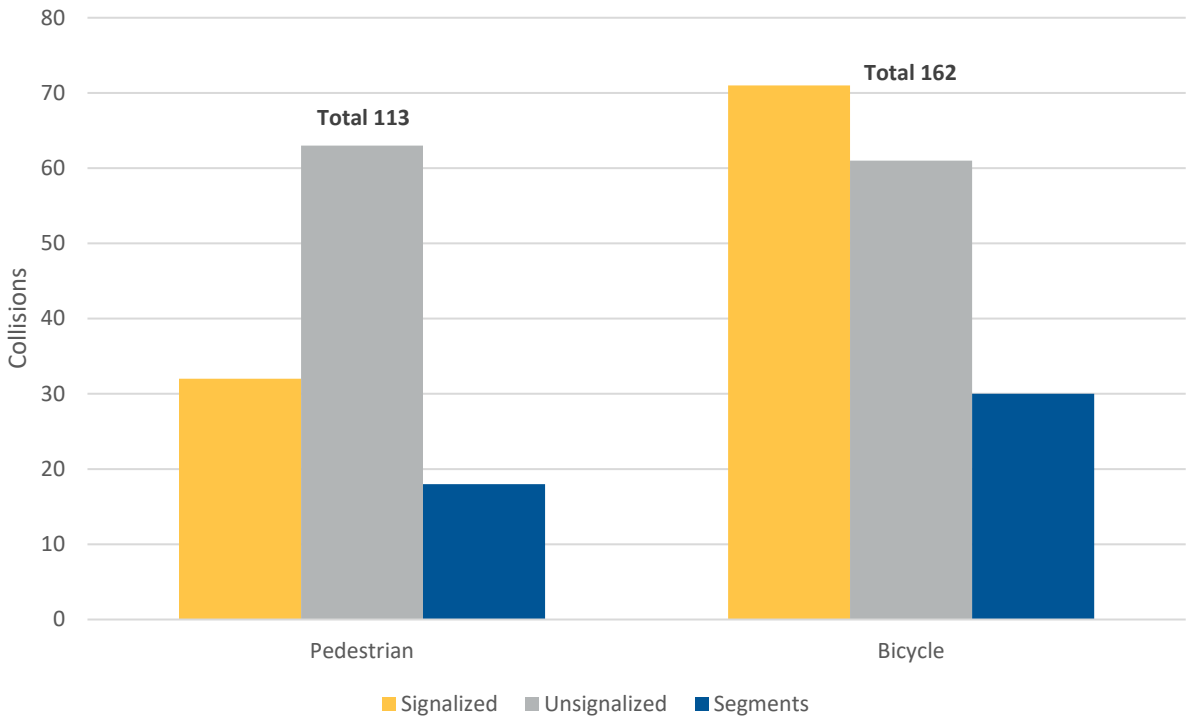
7.6.3. Distracted Driving

Distracted driving is another newer challenge area within the SHSP that identifies collisions where the driver of a motor vehicle was not paying attention or using an electronic device. The SWITRS database includes an attribute for inattention as a factor in collisions. It also has a field for cell phone use. Both collisions with inattention and handheld cell phone use have been trending toward more occurrences in recent years. There were 420 distracted driving collisions between 2015-2019 accounting for 7% of collisions within the City of Roseville.

7.7. Bicycle and Pedestrian Crashes

As shown in **Figure 8**, the majority of bicycle and pedestrian crashes are occurring at intersections as opposed to roadway segments. Pedestrian crashes are more prevalent at unsignalized intersections and bicycle crashes are more prevalent at signalized intersections. **Figure 9** illustrates the locations of pedestrian and bicycle crashes within the City. Additional information on pedestrian and bicycle crashes is provided in the following sections.

Figure 8 – Bicycle and Pedestrian Crashes



Source: Statewide Integrated Traffic Records System (2015 – 2019); processed by Crossroads.

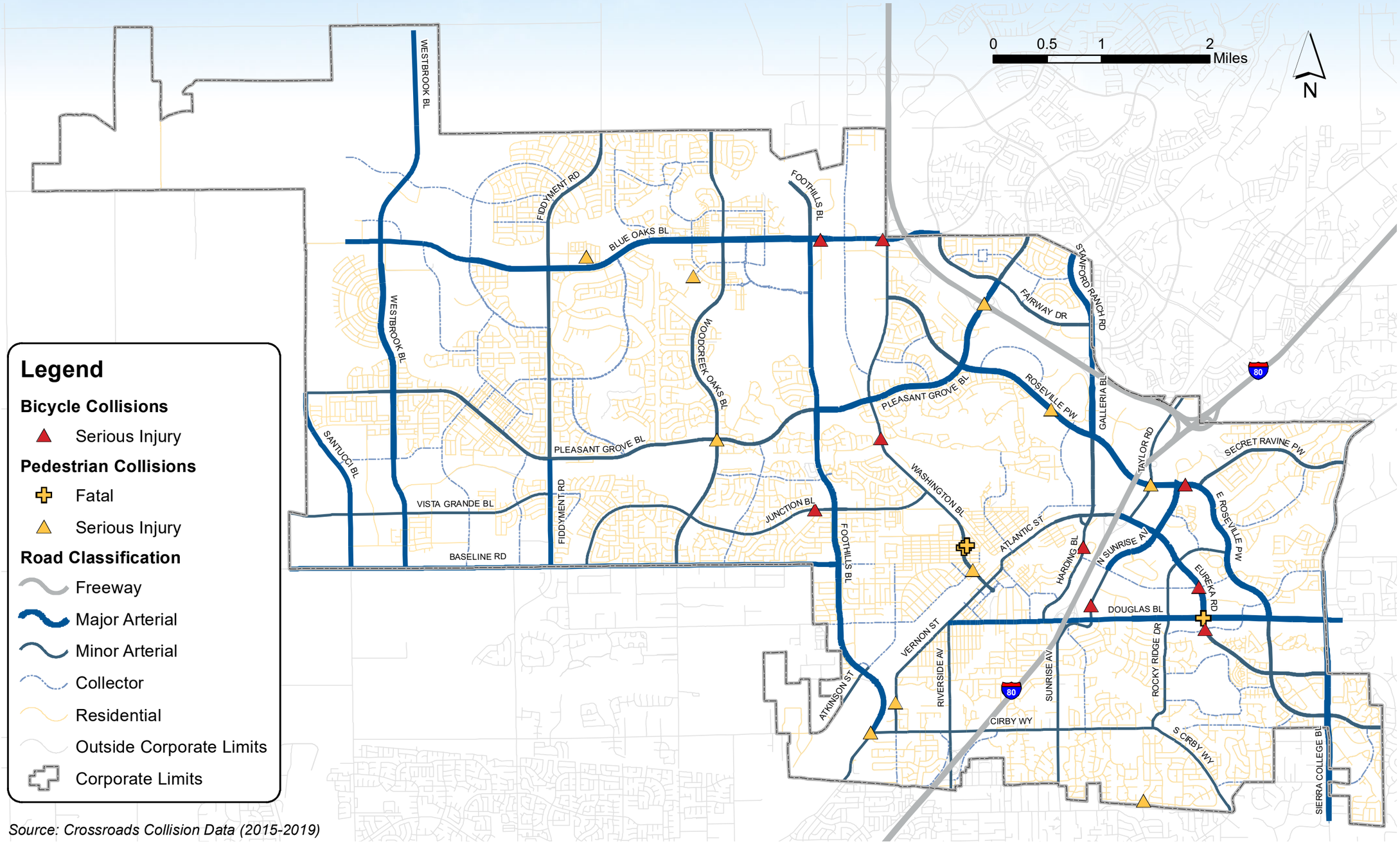
7.7.1. Bicycle Crashes

There were 162 bicycle-involved collisions over the study period, making up 2.7% of all collisions in the City. Of the 162 bicycle-involved collisions, none were fatal, nine were reported with serious injury, 81 with visible injuries, and 46 with complaints of pain.

7.7.2. Pedestrian Crashes

Over the span of 2015-2019, a total of 113 pedestrian-involved collisions occurred, making up just over 1% of all collisions within the City. Of the 102 pedestrian-involved injury collisions, three were fatal, 10 were reported with serious injury, 50 with visible injuries, and 39 with complaints of pain.

Figure 9 – Non-Motorized Crashes Map



Source: Crossroads Collision Data (2015-2019)

8. RECOMMENDATIONS

The following sections provide more information on potential engineering and non-infrastructure safety countermeasures that are likely to address conditions that were observed to contribute to crash activity in the City.

8.1. Engineering Countermeasures

While there are many safety countermeasures that could be used to systemically improve roadway safety, the following sections provide countermeasures for consideration by the City of Roseville. The following sections contain a description of Crash Modification Factors (CMFs) and Crash Reduction Factors (CRFs) associated with the engineering countermeasures toolbox.

8.1.1. Crash Modification Factors (CMFs)

When identifying potential systemic safety improvements, it is important to look at CMFs for the proposed improvements. The CMF Method is found in Part D of the HSM. CMFs are defined as the ratio of effectiveness of one condition in comparison to another condition and represent the relative change in crash frequency due to a change in one specific condition. In other words, a CMF is a multiplicative factor used to compute the expected number of crashes after implementing a given countermeasure at a specific site. Countermeasures with CMFs less than one are expected to reduce crashes if applied, while those countermeasures with CMFs greater than one are expected to increase crashes. **Figure 10** illustrates the definition of CMFs.

Figure 10 – CMF Calculation

$$CMF = \frac{\text{EXPECTED CRASHES WITH TREATMENT}}{\text{EXPECTED CRASHES WITHOUT TREATMENT}}$$

CMF = 1.0	Expected to have no impact on safety
CMF < 1.0	Expected to reduce crashes
CMF > 1.0	Expected to increase crashes

The CMF Method is used to calculate the expected number of crashes by taking the observed number of crashes and multiplying those crashes by the applicable CMF for the proposed countermeasure. It is recommended that CMFs be applied to a minimum of three years of crash data for urban and suburban sites and five years of crash data for a rural site. **Figure 11** is a sample calculation of the CMF method with one CMF being applied to a particular site for a single year.

Figure 11 – CMF Method Sample Calculation

10.1 crashes / year x 0.91 (CMF) =	9.2 crashes / year: a reduction of 0.9 total crashes per year and a CRF of 9%

A CRF is similar to a CMF but stated in different terms. A CRF is defined as a percentage of crash reduction that might be expected after the implementation of a given countermeasure at a specific site. **Figure 12** presents how a CRF is calculated in relationship to a CMF.

Figure 12 – CRF Calculation

$$CRF = (1 - CMF) \times 100$$

Caution should be used in the selection of appropriate CMFs. The following guidance should be considered when selecting CMFs for predictive crash analysis:

- CMFs should be selected from the HSM Part D, the LRSM, or from the FHWA CMF Clearinghouse website (http://www.cmfclearinghouse.org).
- Read the countermeasure abstract to determine if the CMF is applicable to the proposed improvement.
- Only CMFs with a four-star rating or higher should be considered for use in analysis.
- Be sure the selected CMF is applicable to the set of crash data being used for analysis. Some CMFs may only be applicable to a subset of the crash data.
- The application of multiple CMFs can overestimate the expected crash reduction. Unless each CMF addresses independent crash types, multiple CMFs should not be used. It is suggested that no more than three independent CMFs be applied to a particular site.

The countermeasures proposed in this document were chosen because of their effectiveness in reducing crashes.

8.1.2. Engineering Countermeasures Toolbox

The systemic improvements identified as most likely effective for the City are listed in **Table 3,** and include low-cost and higher-cost items that can be implemented in phases where appropriate. The CMF indicates how effective the countermeasure is at reducing crashes. CMFs and CRFs have been provided for reference to aid the City in understanding potential reductions from crashes by different countermeasures.

Table 3 – Roseville Engineering Countermeasures Toolbox

Countermeasure	Also Addresses		Crash Modification Factor (CMF)	Crash Reduction Factor (CRF)	CRF Applies to			Caltrans Funding
	Pedestrian	Bicycle			All	Nighttime	Pedestrian and Bicycle	
Signalized Intersections								
Install intersection lighting			0.6	40%		X		100%
Retroreflective backplates			0.85	15%	X			100%
Improve signal timing (coordination)			0.85	15%	X			50%
Advanced dilemma zone detection			0.6	40%	X			100%
Install Left Turn Lane, Add Left Turn Phase			0.45	55%	X			100%
Protected left turn phase			0.7	30%	X			100%
Convert signal from pedestal-mounted to mast arm			0.7	30%	X			100%
Install raised pavement markers and striping			0.9	10%	X			100%
Install signs with LED borders as advanced warning			0.7	30%	X			100% (if beacons are utilized)
Install High Friction Surface Treatment (HFST)			0.45	55%	X			100%
Install raised median on approaches			0.75	25%	X			100%
Install pedestrian median fencing on approaches	X		0.65	35%			X	90%
Pedestrian countdown signal heads	X		0.75	25%			X	100%
Pedestrian scramble	X		0.6	40%			X	100%
Advanced stop bar before crosswalk and bicycle box	X	X	0.85	15%			X	100%
Modify signal to provide a Leading Pedestrian Interval (LPI)	X		0.4	60%			X	100%
Flashing yellow arrow			0.94	6%	X			N/A
Unsignalized Intersection								
Add intersection lighting			0.6	40%		X		100%
Install all-way STOP control			0.5	50%	X			100%
Convert intersection to roundabout			Varies	Varies	X			100%
Install/upgrade intersection warning/regulatory signs			0.85	15%	X			100%
Upgrade pavement markings			0.75	25%	X			100%
Install flashing beacons at stop-controlled intersections			0.85	15%	X			100%
Install signs with LED borders as advanced warning			0.7	30%	X			100% (if beacons are utilized)
Clear sight triangles			0.8	20%	X			90%

Countermeasure	Also Addresses		Crash Modification Factor (CMF)	Crash Reduction Factor (CRF)	CRF Applies to			Caltrans Funding
	Pedestrian	Bicycle			All	Nighttime	Pedestrian and Bicycle	
Install HFST			0.55	55%	X			100%
Install splitter-islands on minor road approaches			0.6	40%	X			100%
Install raised median on approaches			0.75	25%	X			90%
Directional median openings to restrict turning movements			0.5	50%	X			90%
Reduced Left-Turn Conflict (R-CUT) intersections			0.5	50%	X			90%
Install right-turn lane			0.8	20%	X			90%
Install left-turn lane			0.65	35%	X			90%
Pedestrian refuge island	X		0.55	45%			X	90%
Install/upgrade pedestrian crossing with enhanced safety features	X		0.65	35%			X	100%
Rectangular Rapid Flashing Beacon (RRFB)	X		0.65	35%			X	100%
Pedestrian Signal or Pedestrian High Intensity Activated Crosswalk (HAWK)	X		0.45	55%			X	100%
Retroreflective strips on sign posts			Not Available	Not Available	X			
Crosswalk lighting	X		0.6	40%			X	100%
Colored bicycle lanes		X	0.61	39%			X	
Curb extensions	X		0.63	37%			X	

8.1.3. Project Sheets for Priority Locations

From the citywide analysis, six project case study locations and one systemic signalized intersections project were selected for further analysis and development of safety improvement recommendations. For each of these priority locations, project sheets were developed to provide a case study to organize projects when applying for funding. These locations were identified through the analysis process based on their crash histories, the observed crash patterns, and their differing characteristics to provide the most insight into potential systemic safety countermeasures that the City can employ to achieve the most cost-effective safety benefits.

Each project sheet includes location maps with an aerial, crash data summary, and list of recommended safety countermeasures with corresponding CMFs, number of crashes anticipated to be reduced, 10-year crash reduction estimate and benefit, and planning level construction cost estimates. The potential safety countermeasures identified reflect safety improvements that can be applied to reduce the likelihood of future crashes. Countermeasures were subjected to a benefit/cost assessment to determine their potential return on investment. These case studies can be used to select the most appropriate countermeasure(s), and to potentially phase improvements over the longer-term. The potential benefit of these countermeasures at locations with similar design characteristics can then be extrapolated regardless of crash history. These project sheets can also be used to position the City for future grant funding opportunities.

Table 4 presents a summary of the potential safety countermeasures identified for each of the priority locations listed below and corresponding benefit/cost. A project sheet was developed for each of the priority locations containing additional information and are included in **Appendix E.**

- Signalized intersection safety improvements/upgrades (42 intersections)
- Sunrise Avenue and Cirby Way
- Pleasant Grove Boulevard and Highland Pointe Drive
- Cirby Way and Riverside Avenue
- Cirby Way and Melody Lane
- Blue Oaks Boulevard and Washington Boulevard
- Atlantic Street/Vernon Street, including S-curve between Jefferson Street and Branstetter Street (Segment)

A map presenting the 42 intersections included in the systemic signalized intersection safety improvements/upgrades project is provided in **Figure 13**. Additionally, a list of potential safety countermeasures identified for the 42 signalized intersections is provided in **Appendix F**.

Figure 13 – Systemic Signalized Intersections Location Map

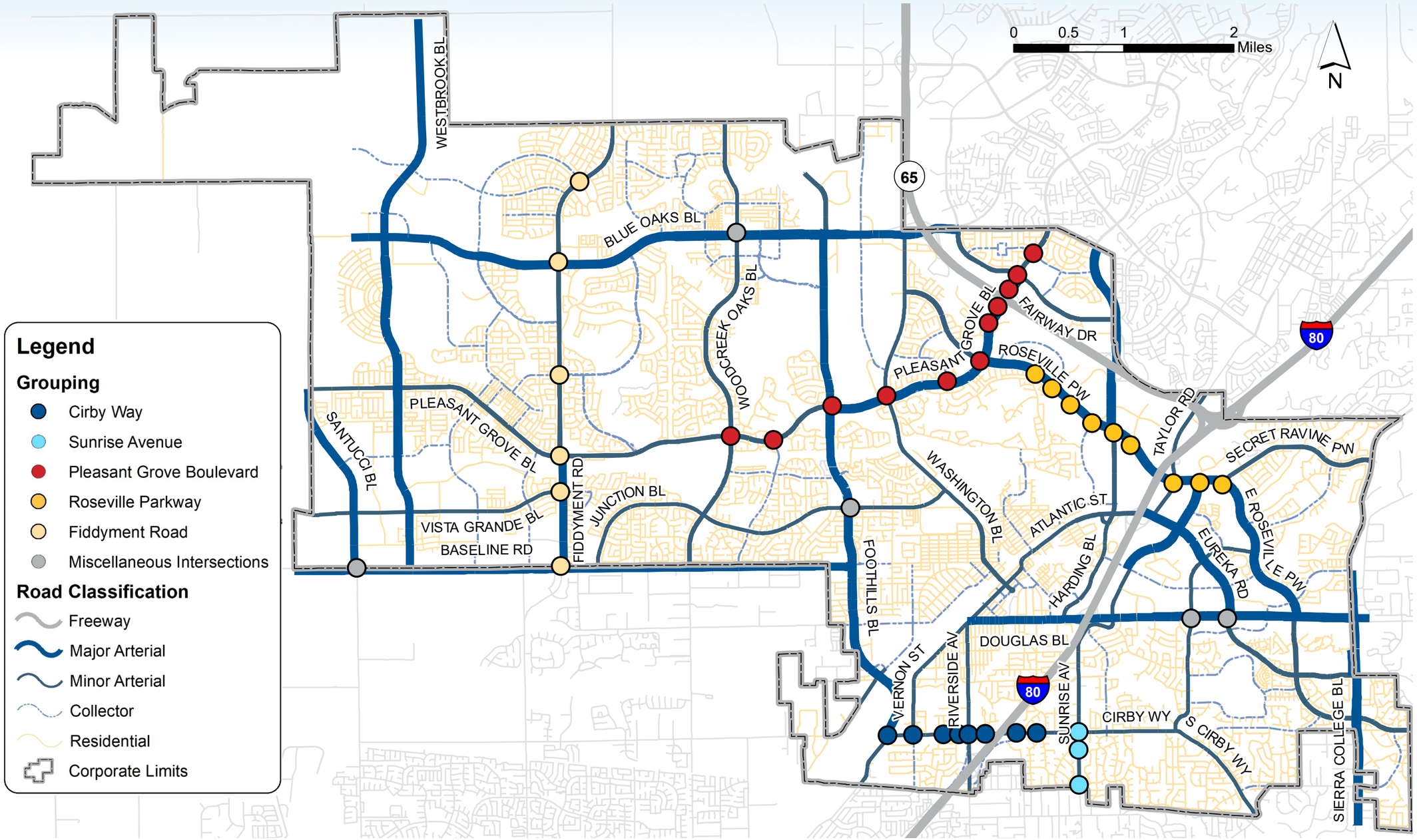


Table 4 – Priority Location Summary

Location	Potential Countermeasures	B/C
Intersections		
Sunrise Avenue and Cirby Way	Install Retroreflective Backplates	97.2
	Implement Leading Pedestrian Interval (LPI)	113.5
	Install advance stop bar	105.1
	Install raised median to restrict driveway access	694.0
	Install "Stop Here on Red" sign	3,643.4
Pleasant Grove Boulevard and Highland Pointe Drive	Install Retroreflective Backplates	93.4
	Install green bike lane markings at conflict zones	2.6
	Install additional/enhanced pavement markings for downstream freeway access	342.5
	Signal Timing (Coordination)	308.3
Cirby Way and Riverside Avenue	Install Retroreflective Backplates	83.9
	Install additional signal heads (eastbound)	209.7
	Install additional street lighting	78.6
	Install additional/enhanced pavement markings for downstream freeway access	1,572.6
Cirby Way and Melody Lane	Install advanced warning flashing beacon system	78.3
	Install additional/enhanced pavement markings for downstream freeway access	507.6
	Install additional signage for downstream freeway access	1,713.2
	Install speed limit pavement markings	1,015.2
Blue Oaks Boulevard and Washington Boulevard	Install green bike lane striping and raised delineators (eastbound Blue Oaks Blvd)	94.7
	Install signalized bicycle crossing across SR-65 SB on-ramp	16.4
Segment		
Atlantic Street/Vernon Street, between Jefferson Street and Branstetter Street	Install roundabout	1.1
	Install additional street lighting	1.3
	Install enhanced pedestrian crossing with flashing beacons	6.6
	Install additional curve warning signage	761.3

Collision diagrams were also developed for the five site-specific locations and are included in **Appendix G**.

8.2. Non-Infrastructure Countermeasures

The National Highway Traffic Safety Administration (NHTSA) *Countermeasures that Work, Ninth Edition,* is a reference to assist safety stakeholders in selecting effective, science-based non-infrastructure traffic safety countermeasures for major highway safety problem areas. While many of the countermeasures are more appropriate to apply at the state-level or require legislative modifications to implement, **Table 5** contains countermeasures that have demonstrated effectiveness and could be applied at the City level. Access to Drug Recognition Experts (DREs) and Advanced Roadside Impaired Driving Enforcement (ARIDE) training for law enforcement is not included in the document but is something that could also be considered for the City.

Table 5 – Roseville Non-Infrastructure Countermeasures Toolbox

Countermeasure	Effectiveness	Cost to Implement	Use	Time to Implement
Impaired Driving				
Publicized Sobriety Checkpoints	*****	$$$	Medium	Short
High-Visibility Saturation Patrols	****	$$	High	Short
Occupant Protection (Seat Belts, Helmets, Child Seats)				
Short-term high visibility enforcement	*****	$$$	Medium	Medium
Integrated nighttime seat belt enforcement	****	$$$	Unknown	Medium
Distracted Driving				
High visibility cellphone/text messaging enforcement	****	$$$	Low	Medium

Effectiveness:
****** Demonstrated to be effective by several high quality evaluations with consistent results*
***** Demonstrated to be effective in certain situations*
Cost to Implement:
$$$ Requires extensive new facilities, staff, equipment, or publicity, or makes heavy demands on current resources
$$ Requires some additional staff time, equipment, facilities, and/or publicity
$ Can be implemented with current staff, perhaps with training; limited costs for equipment, facilities, and publicity
†Can be covered by income from citations
Use:
High: More than two-thirds of states, or a substantial majority of communities
Medium: Between one-third and two-thirds of states or communities
Low: Less than one-third of states or communities
Unknown: Data not available
Time to Implement:
Long: More than 1 year
Medium: More than 3 months but less than 1 year
Short: 3 months or less

9. EVALUATION AND IMPLEMENTATION

9.1. Evaluation

The success of the LRSP will be evaluated using the preliminary process outlined below. This process will be useful to ensure proper implementation of goals and to determine when updates are needed.

- Quarterly progress meetings are recommended to be conducted to track the implementation of the plan. In addition, the success of the plan will be evaluated on a reoccurring (quarterly) basis.
- An update to the plan should be considered after no more than five to seven 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, based on historical crash data.

9.2. Implementation

Implementation of the LRSP can be accomplished through several avenues including development of projects, the establishment of new policies and programs, and development/strengthening of relationships with stakeholders.

With regard to projects, the following identifies potential focus areas for the City in the near-to-mid-term.

9.2.1. Near- and Mid-Term Focus Areas

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

- Aggressive Driving
- Lane Departures
- Impaired Driving
- Intersections
- Aging Drivers

Analysis conducted at the citywide level indicated that these factors were some of the most frequent influences contributing to K+SI crashes within the City. The countermeasure opportunities previously discussed in this LRSP 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 citywide 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.

9.3. Routine Monitoring of Safety on City Roads

Routine monitoring of safety on City roads is important to understand if there are changes in crashes and if modifications are needed to address safety on the roads.

- Traffic Engineering meets twice a year with the Police Department, Signal Maintenance, Street Maintenance, and Risk to go over top ten crash locations, safety concerns, logistics, etc.
    1) Meeting No. 1 – Identify top ten crash locations and discuss safety concerns at each location
    2) Meeting No. 2 – Review recommended safety countermeasures from engineering and non-engineering countermeasures toolbox (Table 3 and Table 5) and identify applicable countermeasures for implementation
- The City Traffic Engineering Manager reads all the crash reports (forwarded by PD). If there is a potential crash pattern or a potential engineering solution is identified, a traffic study is opened for further review and implementation.
- The City Traffic Engineering Manager is part of the Multi-disciplinary Accident Investigation Team (MAIT). After MAIT call outs (serious or fatal injury crash, City Traffic Engineering staff will review crash history and all existing signage and striping).
- Traffic Engineering, the Police Department, and the Safe Routes to School (SRTS) Coordinator meet with all new schools and existing schools on a rotating basis to develop/update a SRTS map and review traffic control around school sites.
- Traffic Engineering completes safety data review checklist annually (included as **Appendix H**)

9.4. Updates to the LRSP

The following steps outline the process for updating the City's LRSP every 5 to 7 years.

1) Access necessary data
    - Roadway and intersection classification/configurations
    - Average Daily Traffic Volumes (Collected from counts where available)
    - Collision history
2) Network screening
    - Calculate the CCR for each roadway functional classification and intersection control type
    - Rank for each facility type
        i) Roadway Segment
            (1) Primary
            (2) Secondary
            (3) Local
        ii) Intersection
            (1) Signalized
            (2) Unsignalized
3) Select locations
    - Identify the location with a higher CCR than what is typical of comparable facility types within City
    - Analyze the collision history and work with local officials to understand any significant exterior influences on the location

4) Countermeasures
   - Using the Engineering Countermeasures Toolbox (**Table 3**) and Non-Infrastructure Toolbox (**Table 5**), identify potential countermeasures that can be applied to the local to enhance safety features
5) Develop a Project Sheet that can serve as a template for analyzing future locations
6) Calculate the benefit and the cost of each applicable countermeasure using Highway Safety Improvement Program (HSIP) tool and LRSM countermeasures. If those are not available, refer to other resources such as the CMF Clearinghouse and follow a similar calculation (using 20-year cost and benefit numbers). See more information in the section **HSIP Analyzer** below.

The LRSP has completed steps 1 through 6. In subsequent years, the City can begin at step 1 to continue the LRSP process. Additional items the City can do to keep the LRSP current are:

1) When new or reconstruction projects arise, use the data processed to identify locations with similar characteristics and apply countermeasures which proved effective
2) Proactively update its roadway and traffic standards to address systemic safety issues identified in the LRSP

9.4.1. HSIP Analyzer

As of 2021, the preferred way to calculate the BCR for the HSIP program uses Caltrans HSIP Analyzer tool in the form of an active PDF. The PDF tool contains 4 sections which are used to calculate the Benefit Cost Ratio for the Highway Safety Improvement Program.

This tool can be accessed on the Caltrans at:

https://dot.ca.gov/programs/local-assistance/fed-and-state-programs/highway-safety-improvement-program/apply-now

Projects appropriate for other state grant programs can be analyzed using the Life-Cycle Benefit Cost Analysis Model (CalB/C) which has a much more comprehensive benefit assessment tool set.

9.4.2. HSIP Eligibility

Per Chapter 9 of the Highway Safety Improvement Program, funds are eligible for projects that improve the safety of its users on any public road or publicly owned bicycle or pedestrian pathway or trail, or on tribal lands for general use of tribal members.

HSIP looks for safety projects that can be designed and constructed expeditiously and do not require significant acquisition of rights-of-way. Proposed projects should not require extensive environmental review and mitigation. Additional information on the HSIP project selection criteria can be accessed online at:

- Benefit Cost Ratio Applications
  https://dot.ca.gov/-/media/dot-media/programs/local-assistance/documents/hsip/2020/hsipanalyzerinstructions2020bcr.pdf

- Funding Set-asides (Non-Benefit Cost Ratio Applications)
  https://dot.ca.gov/-/media/dot-media/programs/local-assistance/documents/hsip/2020/hsipanalyzerinstructions2020sa.pdf

HSIP project eligibility is subject to the California SHSP. The SHSP identifies statewide challenge areas that correspond to safety concerns at the statewide level and potential countermeasure to address them and determine HSIP project eligibility. SHSP's are developed in compliance with FHWA requirements. A list of eligible project types can be seen in the current HSIP Analyzer. More information can be accessed online at the Caltrans HSIP grant website:

https://dot.ca.gov/programs/local-assistance/fed-and-state-programs/highway-safety-improvement-program/apply-now

9.5. Funding

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

9.5.1. Highway Safety Improvement Program (HSIP)

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
- 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 is available at: https://safety.fhwa.dot.gov/hsip/. California specific HSIP information – including dates for upcoming call for projects – is available at: http://www.dot.ca.gov/hq/LocalPrograms/hsip.html.

9.5.2. Caltrans Active Transportation Program (ATP)

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 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/

9.5.3. State Transportation Improvement Program (STIP)

The State Transportation Improvement Program (STIP) provides state and federal gas tax money for improvements both on and off the state highway system. 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.

9.5.4. 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, counties 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

9.5.5. California Office of Traffic Safety (OTS) Grants

This program has funding for projects related to traffic safety, including transportation safety education and encouragement activities. Grants applications must be supported by local crash data (such as the data analyzed in this LRSP) and must relate to the following priority program areas:

- Alcohol Impaired Driving
- Distracted Driving
- Drug-Impaired Emergency Medical Services

- Motorcycle Safety
- Occupant Protection
- Pedestrian and Bicycle Safety
- Police Traffic Services
- Public Relations, Advertising, and Marketing Program
- Roadway Safety and Traffic Records

9.5.6. SACOG Regional Funding Programs

The Sacramento Area Council of Governments (SACOG) provides funding allocation for various multi-modal transportation projects in the Sacramento region. Projects that are considered for this regional funding program must be eligible for CMAQ, RSTP, or STIP funds.

Performance outcomes which are considered for selection include those which:

- Reduce regional VMT per capita
- Reduce regional congest VMT per capita
- Increase multi-modal or alternative travel choices
- Provide long term benefits, sustaining both rural and urban economies
- Improve movement of goods, in and through the region
- Improve safety and security
- Maintain and improve upon the existing transportation system

10. NEXT STEPS

The City of Roseville 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, emphasis areas were identified. These emphasis areas will guide traffic safety improvements, education programs, and capital improvements for the City.

Using the analyzed data and outputs from this LRSP, the City will:

- Apply for HSIP grant funding for safety improvements throughout the City that address the various emphasis areas identified, including intersections and vulnerable users (pedestrians and bicyclists)
- Actively seek other funding opportunities to improve safety for all modal users
- Collaborate with established stakeholders and neighboring municipalities (i.e. Rocklin) as improvements are made to create a cohesive transportation network
- Iteratively evaluate existing and proposed transportation safety programs and capital improvements to design and operate a safer transportation network in Roseville
- Complete annual review of safety data

The City also plans to have the City Council formally approve and adopt this LRSP. Based on current Caltrans guidelines, the City will plan to update the LRSP in five years in 2026.

APPENDIX A

MATRIX REVIEW OF PLANNING DOCUMENTS

Document Name	Year	Agency	Document Description	Transportation Improvements / Policies	Safety	Funding
Bicycle Master Plan	2008	Roseville	Guidance for bikeway policies, programs, and development standards in the City	See attached recommended bike network. High Priority Routes: - Class I - Dry Creek Regional Path, Hewlett Packard Bike Path, Miners Ravine Bike Path, Northwest Roseville Neighborhoods - Class II - Washington Blvd, Church St, Cirby Way - Class III - Washington Blvd, Vernon St, Diamond Oaks / Sierra Vista neighborhood, Riverside Ave	- establish an on-line system for reporting, evaluating, tracking and responding to maintenance and safety concerns on bikeways - updating construction standards to include provisions for closing bike lanes during construction - assist PD in officer training efforts related to bicycle issues and laws - implement education programs targeted to adults and school-age children for safe bike riding techniques	SAFETEA-LU, Bicycle Transportation Account, Local Transportation Fund, Environmental Enhancement and Mitigation Program, Safe Routes to School Bill, Developer Impact Fees, Assessment Districts
Pedestrian Master Plan	2011	Roseville	Policies, projects, and programs that improve the pedestrian system in the City	See attached ranked sidewalk projects - Annual Sidewalk Repair Program - $80k per year - ADA Transition Plan - 140 segments with incomplete or missing sidewalks to be constructed - Crossing Safety - City developing Traffic Accident Analysis System to provide guidelines for engineering staff to evaluate top pedestrian collision locations and provide mitigation measures		Transportation and Community and System Preservation Program, CA Safe Routes to School grants, CA Transportation Development Act, Tax increment financing, Transportation Development Act, STIP
General Plan - Circulation Element	2020	Roseville	Identifies Roseville's goals for circulation, level of service standards, design requirements, and policies for circulation	- Pedestrian districts - areas with greater emphasis on non-vehicular travel, where LOS requirements do not apply; special design considerations such as wide sidewalks, planter strips, curb radii, crossing enhancements. See attached enhancements that are encouraged for Pedestrian Districts. - Class IA bike paths - widened sidewalks along major roadways, separated from the road with landscaped strips	- SRTS program - encourages greater enforcement of traffic laws, educates the public, and explores other context-specific ways to create safer streets - Policy - In reviewing proposed development projects and implementing public projects, the City will incorporate standards designed to...minimize the potential for collisions involving pedestrians.	Traffic impact fees, 1/2 cent gas tax, assessment districts
Creekview Specific Plan	2012	Roseville	Comprehensive land use framework to guide 501.3-acre site development	Blue Oaks Boulevard extension project - 6 lanes with Class II bike lanes Westbrook Boulevard - extended north - 6 lanes with Class II bike lanes Holt Parkway - extended west - 4 lanes with Class II bike lanes		Developer financing, City impact fees, community facilities district, school impact fees
Amorouso Ranch Specific Plan	2016	Roseville	Comprehensive land use framework to guide 694-acre site development	Future Placer Parkway - planned 15-mile long high-speed limited-access facility between SR-65 and SR-99 - will travel through the ARSP area Westbrook Boulevard - extended north - 6 lanes with Class II bike lanes		Developer financing, City traffic mitigation fees, annual tax burden, backbone infrastructure burden
Sierra Vista Specific Plan	2012	Roseville	Comprehensive land use framework to guide 2,064-acre site development	Baseline Road - extended west - 6 lanes with Class II bike lanes Pleasant Grove Blvd - extended west Fiddyment Road - add bike lanes		Developer financing, City impact fees, community facilities district, school impact fees
Annual Budget 2020-21: Capital Improvement Projects	2020/2021	Roseville	Operating budget for FY 2020-2021	New projects: - Blue Oaks Blvd - construction of Blue Oaks Blvd for development - Westpark Drive Extension - Pleasant Grove Blvd Widening - from 2 lanes to 3 lanes in each direction - Roseville Pkwy & Pleasant Grove Blvd - widen Roseville Pkwy and provide triple southbound left turns at intersection Carried over from previous budgets: - Washington and Andora Widening - Roseville Parkway Extension	New projects: - LED Streetlights Upgrade - 13,000 streetlight replacements - Streetlight relocation - where blocking sidewalks - Vernon St & Atlantic Street Roundabout Carried over from previous budgets: - Downtown Pedestrian Safety Connected Vehicle Project - ped-actuated flashing signs at uncontrolled crosswalks in downtown with CV technology to warn CV-equipped vehicles of the presence of a pedestrian - Washington Blvd All American Roundabout - Junction Park Regency Traffic Signal	Developer financing, City traffic mitigation fees, North Central CFD, Highway Users Tax,
Blueprint Transportation / Land Use Study	2005	Roseville	Provides a menu of options to support SACAG's Blueprint Growth Principles in the City.	9 growth principles - the following apply to transportation directly: - Transportation Choices - pedestrian friendly development, transit - Compact Development - encourages walking, biking, and transit - Quality Design - contribute to desire of residents to get out and walk or bike - Education and Outreach - benefits of compact mixed use development	- Bicycle Safety Checklist - for reviewing development projects - Develop a pedestrian oriented policy to provide guidance for safe routes to transit - Vernon St / Historic Old Town ped bridge project - Washington Boulevard pedestrian under-crossing improvements - Consider traffic calming techniques in existing and new residential neighborhoods (bulb-outs, street tables at intersections)	
Oak Ridge Drive Bridge Replacement Project	Current	Roseville	Project Description	- provide a new bridge over Linda Creek north of Cirby Way and south of Coloma Way - wider lanes and shoulder widths - improved storm water passage under bridge	- wider sidewalks - raised roadway profile for better ADA access - Flashing pedestrian crossing	Fully funded by the Federal Highway Bridge Program and Toll Credit funds
Roseville Parkway Extension Project	Current	Roseville	Project Description	- provide new 4-lane roadway between Washington and Foothills Boulevard with sidewalk and class II bike lanes	- Multi-use path over bridge	Fully funded by developer-paid Traffic Mitigation Fees
Washington / Andora Widening Project	Current	Roseville	Project Description	- Install new traffic signals at Washington Blvd & Kaseberg Drive, and modify signals at Diamond Oaks Rd, Sawtell and Junction - Construct new multi-use trail along east side of Washington Boulevard from Pleasant Grove Blvd to All America City Blvd - Widen Washington Blvd from 2 to 4 lanes - Replace existing Union Pacific RR Andora bridge	- Enhance current bike and pedestrian facility railroad under-crossing	CTC Active Transportation Grant, Congestion Mitigation and Air Quality (CMAQ) program, local funding
Roseville Downtown Bridges	2019	Roseville	Project Description		- Provide pedestrian bridges to connect Civic Center and Royer Park for walking and biking to downtown destinations	SB1

Document Name	Year	Agency	Document Description	Transportation Improvements / Policies	Safety	Funding
Arterial Resurfacing Project	2020-2023	Roseville	Street maintenance resurfacing plan	See attached resurfacing plan		Road Maintenance and Rehabilitation Fund
ITS Master Plan Update	2020	Roseville	Provide a safe, efficient, and reliable customer centered transportation network through the use of technology	Near Term ITS technologies / strategies: - Big data - play a large role in affecting the evolution of the Sacramento Transportation Area Network (STARNET) - Connected Vehicle (CV) readiness - infrastructure and institutions - Autonomous Vehicle (AV) readiness - institutions and policies See attached for map of proposed signal, CCTV, and CMS deployment	- Crash Detection Systems - for automated vehicle accident detection will help with rapid response of traffic incidents; City will monitor the continued development of this technology and look for opportunities for pilot tests at critical intersections where safety is an issue - Automated Pedestrian Detection - connected to traffic signal controller and can extend the pedestrian phase for a pedestrian to fully cross a street; City will consider deployment of this detection technology at intersections with high pedestrian activity, or areas that may have a need for periodic extension of the pedestrian phase (i.e. schools or senior centers)	Local - CIP State - HSIP, SB 1, California Transportation Commission ATP Federal - Surface Transportation Block Grant Program (STBG), Transportation Infrastructure Finance and Innovation Act (TIFIA), Better Utilizing Investments to Leverage Development (BUILD) Grants, Nationally Significant Freight and Highway Projects Program, Advanced Transportation and Congestion Management Technologies Deployment (ATCMTD)
N/A		Roseville	Mentioned in 10/08/2020 monthly meeting	Pleasant Grove Widening (Washington to Woodcreek)		
N/A	2021-2023	Roseville	Mentioned in 10/08/2020 monthly meeting	Roseville Parkway Widening (Pleasant Grove to I-80)		
N/A		Roseville	Mentioned in 10/08/2020 monthly meeting	Vernon Street/Atlantic Roundabout		
N/A	4/year starting in 2021	Roseville	Mentioned in 10/08/2020 monthly meeting	Planned/Future FYA deployments		
Metropolitan Transportation Plan / Sustainable Communities Strategy	2020	SACOG	Document links land use, air quality, and transportation needs for the Sacramento Region	- Widening - Baseline Road, Blue Oaks Blvd, Pleasant Grove Rd, Roseville Parkway, Roseville Road, - Roadway Extensions - Pleasant Grove Blvd, Blue Oaks Blvd, Santucci Blvd, Westbrook Blvd - Class I Bike Trails - Dry Creek Greenway, Mahany Park, - New Arterial - Vista Grande	- Roundabouts - Atlantic Street and Vernon Street, Washington Blvd / All America City Blvd	Federal: Congestion Mitigation & Air Quality (CMAQ), Regional Surface Transportation Program (RSTP), Highway Bridge Program, FTA Funds State: State Highway Operations and Protection Program (SHOPP), STIP, State Cap and Trade Program Local: Local Transportation Fund, Measure A, New Measure A, Placer 1/2 cent sales tax, Gas Tax Subventions, Developer Contributions, Transit Fare revenues, Roadway User Fees
Sacramento Region Blueprint	2004	SACOG	Smart growth vision to integrate land use and transportation planning to curb sprawl	- Blueprint growth principle: Transportation Choice - developments should encourage people to walk, bike, use public transit or carpool to their destinations		
Regional Bicycle, Pedestrian, and Trails Master Plan	2015	SACOG	Coordinate efforts across the region for providing high-quality bicycling and walking facilities	See attached proposed regional pedestrian and bike map inset for Roseville: North Central, Northwest, and South		See Bicycle Master Plan and Pedestrian Master Plan
2040 Regional Transportation Plan	2019	PCTPA	Document policy direction, actions, and funding recommendations for meeting the short- and long-range needs of the County's transportation system	See SACOG 2040 regional plan.	See SACOG 2040 regional plan.	See SACOG 2040 regional plan.
Roseville Transit Short-Range Transit Plan	2018-2025	PCTPA	7-year business plan to guide improvements for the City's transit program	- Revise Route C/G/F/E or replace with TNC service - Shift Route A onto Orlando Way between Cirby/Orlando and the Louis/Orlando Transit Center - Investigate service to the Richards Blvd Area north of downtown		Local fixed route operating costs would be reduced overall by $31,700 per year by implementing the plan
Placer County Short-Range Transit Plan	2018	PCTPA	7-year business plan to guide a transit agencies	- Extend Route S into Roseville		
Regional Bikeway Plan	2018	PCTPA	Guide regional staff in developing a bikeway network in unincorporated Placer County	See attached planned bikeway facilities map.		Federal: Congestion Mitigation & Air Quality (CMAQ), Highway Safety Improvement Program (HSIP), Transportation Investment Generating Economic Recovery (TIGER), State: Caltrans Sustainable Transportation Planning Grants, Affordable Housing and Sustainable Communities (AHSC), CA Office of Traffic Safety (OTS) grants Regional: Regional Active Transportation Program (ATP),

CITY OF ROSEVILLE CALIFORNIA

2020 - 2023 Resurfacing Plan

Public Works Street Maintenance

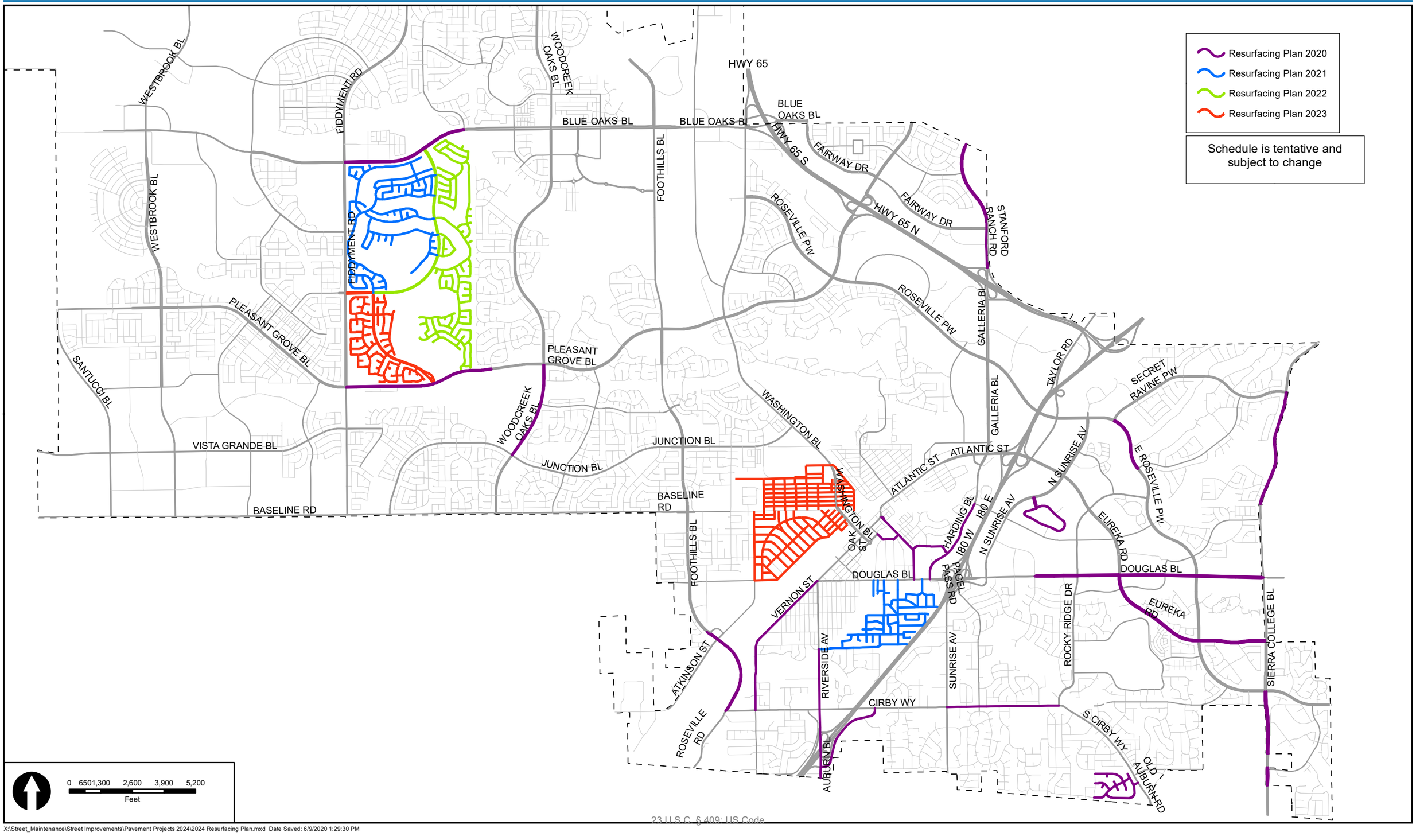
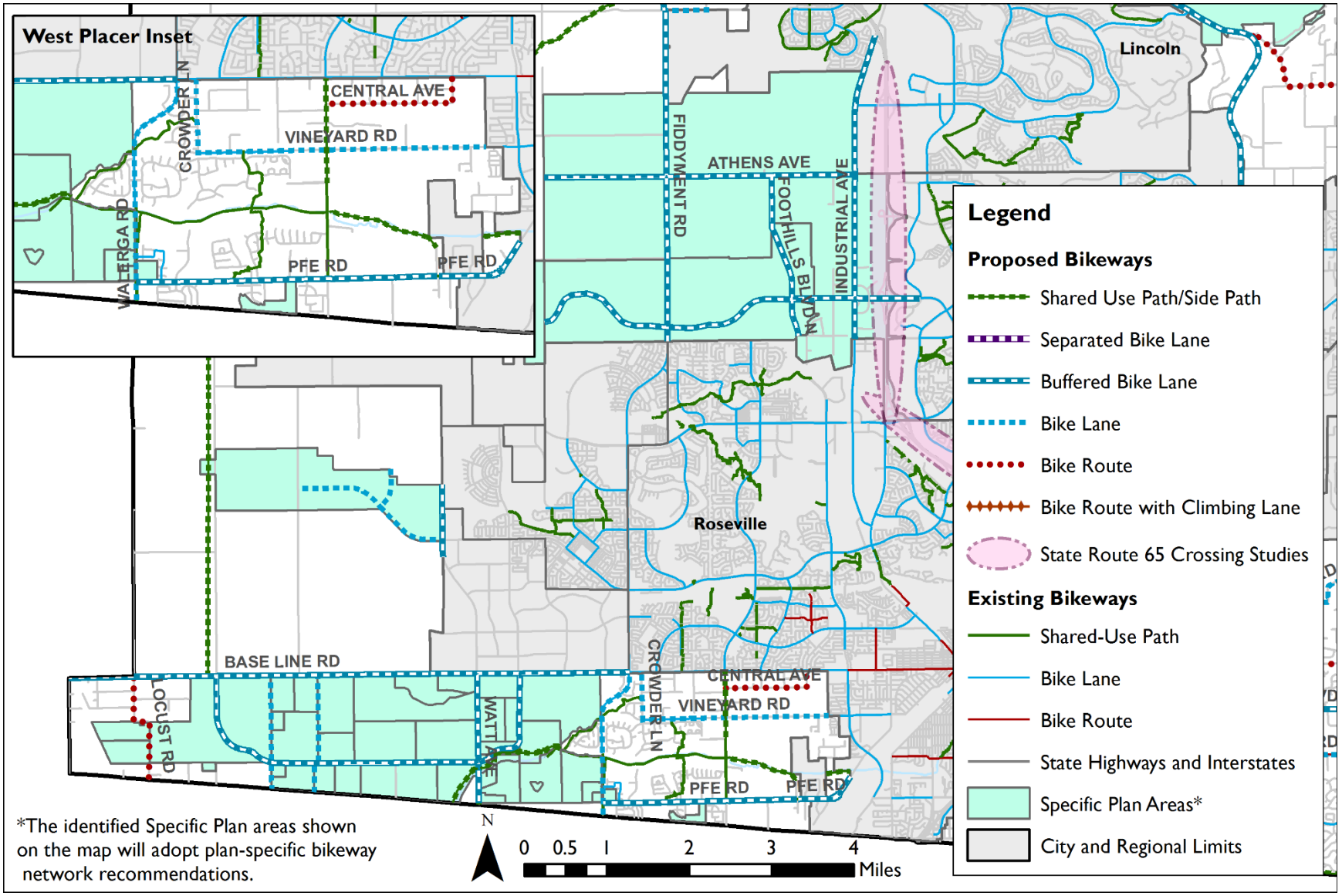


Figure 27: Planned Bikeway Facilities – Dry Creek / Sunset



Source: PCTPA, Placer County, and Kittelson & Associates, Inc., 2018.

Recommended Bicycle Network

Figure 5 – Proposed Bicycle Facilities

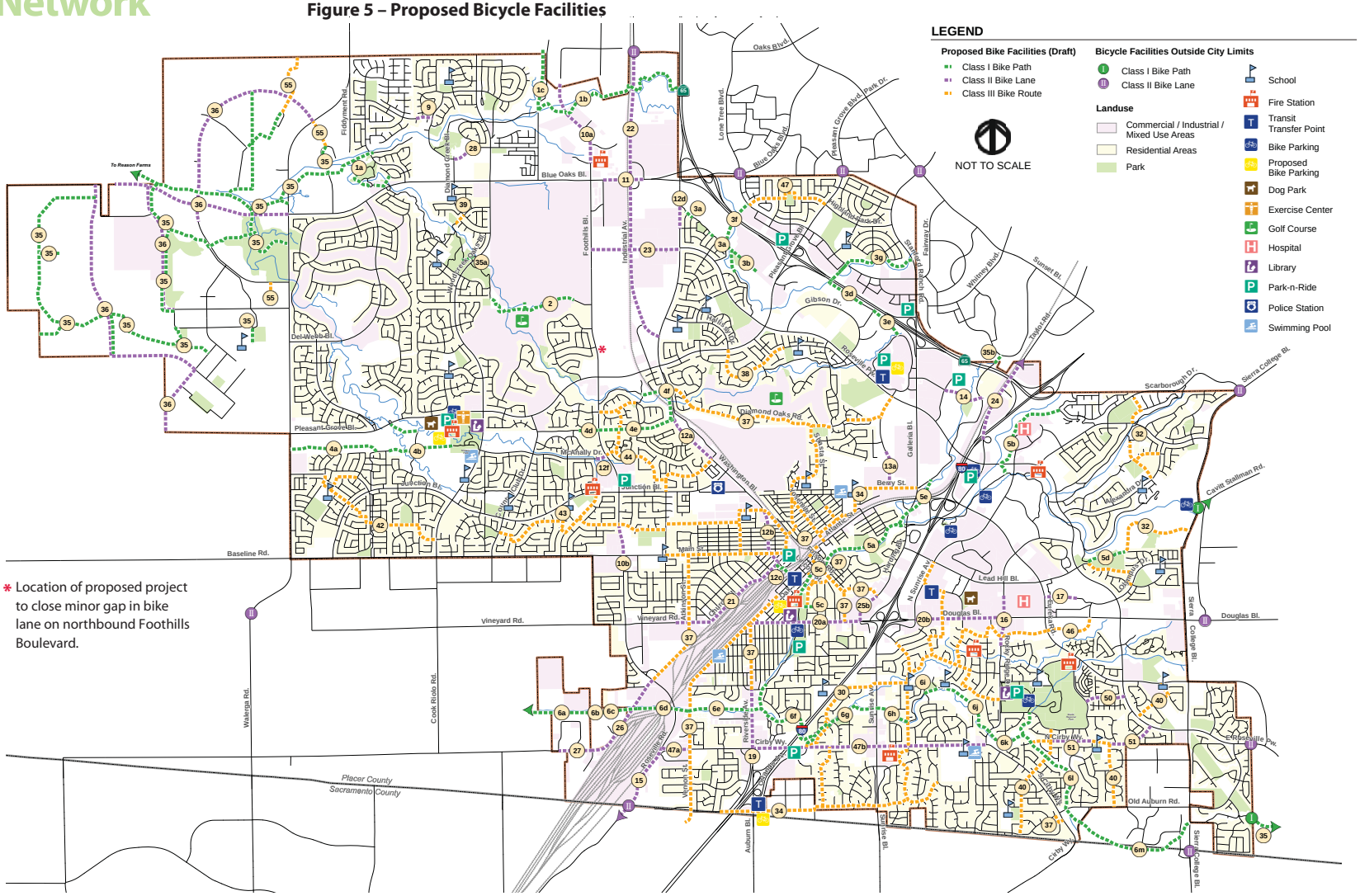


Figure 8: Ranked Sidewalk Projects

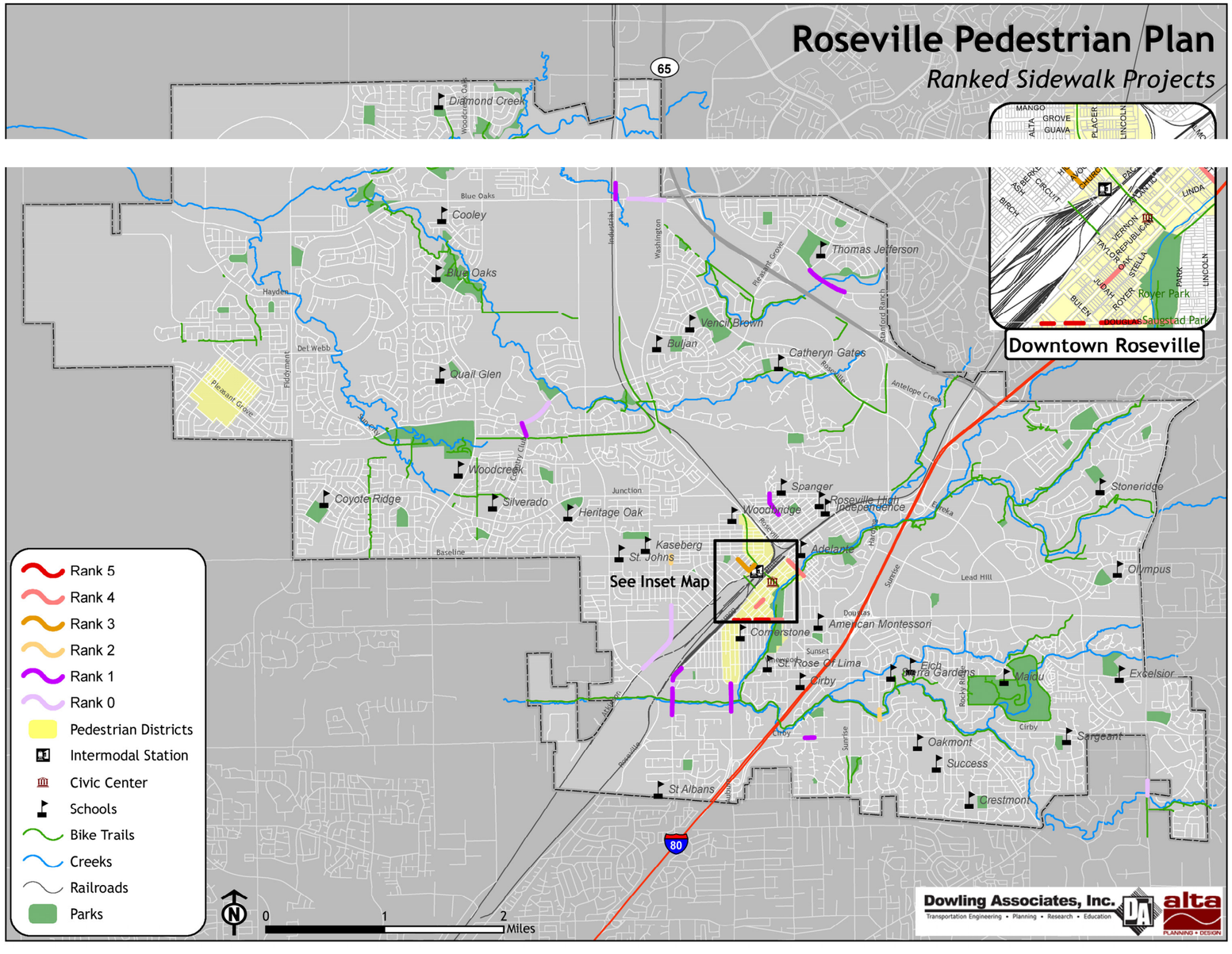


Table 17 lists the sidewalk gap projects by ranking from highest to lowest, indicates the extent of the roadway segment, and which side of the street the sidewalk is present as a percentage.

Table 17: Priority Sidewalk Projects by Ranking

Street Name	Extent From	To	Project Rank	Sidewalk Present (%) N-E	Sidewalk Present (%) S-W
Douglas Blvd	Willow Ave	Judah St	5	0%	100%
Douglas Blvd	Gopher Gulch Al	Willow Ave	5	0%	0%
Douglas Blvd	Irene Ave	Bing Al	5	0%	100%
Douglas Blvd	Earl Ave	Stella Al	5	0%	100%
Douglas Blvd	Oak St	Earl Ave	5	0%	0%
Douglas Blvd	Rainier Al	Clinton Ave	5	0%	100%
Douglas Blvd	Bing Al	Gopher Gulch Al	5	0%	0%
Douglas Blvd	Judah St	Buljan Dr	4	25%	100%
Folsom Rd	Vernon St	Linda Dr	4	25%	0%
Folsom Rd	Linda Dr	Maciel Ave	4	75%	0%
Oak St	Taylor St	Judah St	4	50%	100%
Church St	Pacific St	N Grant St	3	100%	0%
N Grant St	Avocado Al	High St	3	0%	100%
N Grant St	Coconut Al	Berkeley Ave	3	0%	100%
N Grant St	High St	Coconut Al	3	0%	100%
N Grant St	Church St	Avocado Al	3	50%	25%
Atkinson St	Alley (S)	Main St	2	0%	100%
Atkinson St	Herbert St	Alley (N)	2	0%	100%
Oak Ridge Dr	Vinmar Ct	Rampart Dr	2	100%	25%
Cirby Wy	San Simeon Dr	Coral Dr	1	25%	0%
Country Club Dr	Danielle Dr	Pleasant Grove Blvd	1	0%	100%
Industrial Ave [1]	Blue Oaks Blvd	Alantown Dr	1	75%	0%
Industrial Ave [1]	Alantown Dr	Finisteria Dr	1	75%	0%
Fairway Dr	Central Park Dr	Home Depot Dwy	1	100%	75%
Riverside Ave	Darling Wy	Kenroy Ln	1	0%	0%

Street Name	Extent From	To	Project Rank	Sidewalk Present (%) N-E	S-W
Shasta St	Alta Vista Ave	Alley (N)	1	0%	100%
Shasta St	Alley (S)	Alta Vista Ave	1	0%	0%
Shasta St	Alta Vista Ave (N)	Alta Vista Ave (S)	1	0%	0%
Shasta St	Alley (N)	Yosemite St	1	0%	100%
Vernon St [1]	Fifth St	Sixth St	1	0%	0%
Vernon St	Dudley Dr	Inglis Wy	1	50%	50%
Yosemite St	Alley (S)	Shasta St	1	0%	100%
Yosemite St	Alley (N)	El Dorado Ave	1	100%	0%
Yosemite St	Manzanita Ave	Alley (N)	1	0%	100%
Atkinson St	Vineyard Rd	Ivy St	0	0%	75%
Atkinson St	Denio Lp	Vineyard Rd	0	0%	0%
Blue Oaks Blvd	Exit 309 S	Washington Blvd	0	0%	100%
Blue Oaks Blvd	Exit 309 N	Alantown Dr	0	0%	0%
Blue Oaks Blvd	Washington Blvd	Exit 309 N	0	0%	0%
Pleasant Grove Blvd	Hemingway Dr	Country Club Dr	0	0%	50%
~~Sierra College Blvd~~ [2]	~~Haskell Wy~~	~~Old Auburn Rd~~	~~0~~	~~25%~~	~~25%~~
Vernon St [1]	Sixth St	Dudley Dr	0	0%	0%

N-E = North or East side of street; **S-W** = South or West side of street

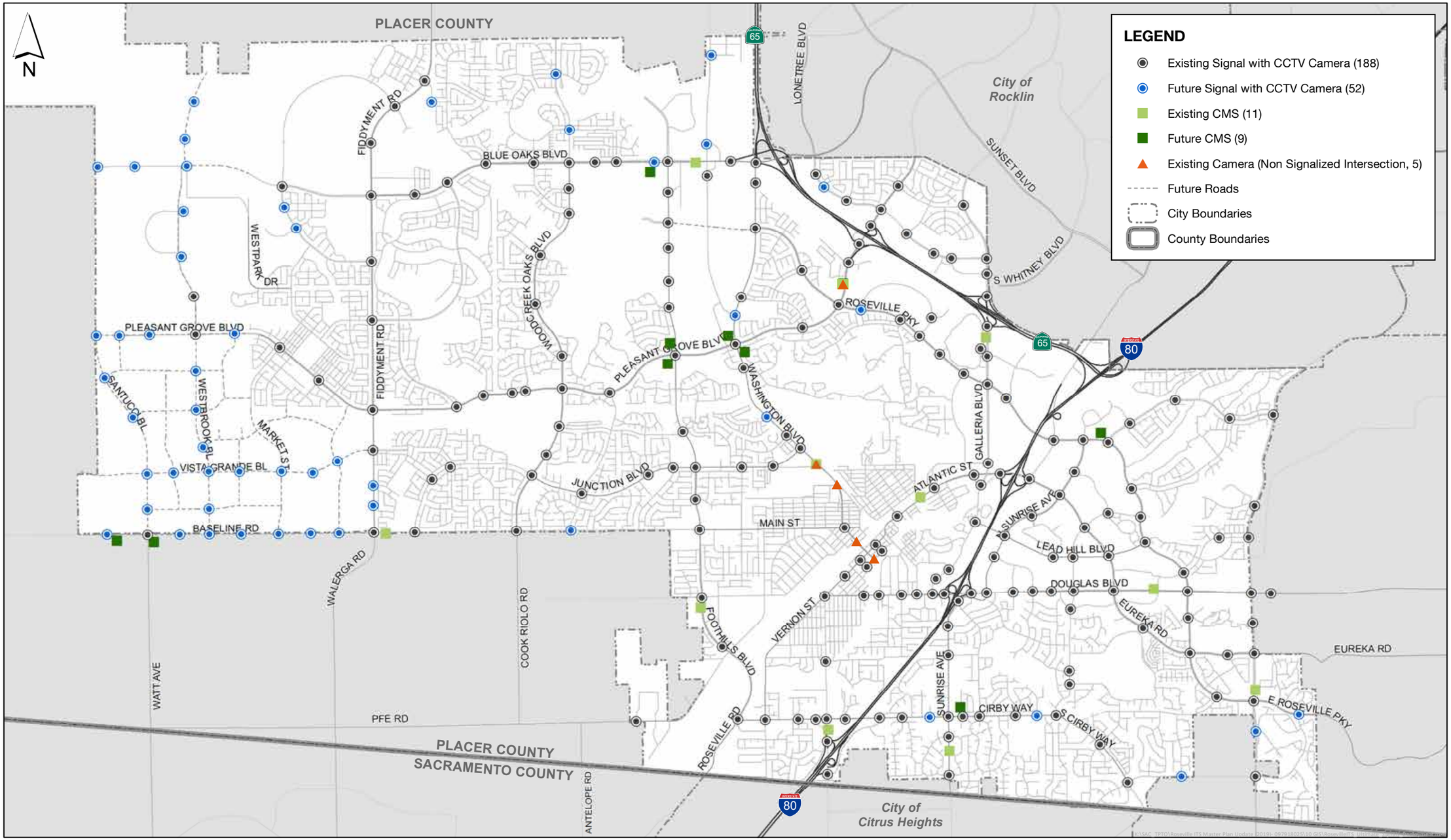
[1] Railroad property on west side, sidewalk will not be installed

[2] On Sierra College Blvd., sidewalk in Roseville is complete; remainder to be built is in Placer County.

September 2010 Dowling Associates, Inc

Although the Country Club Drive and Pleasant Grove Boulevard segments rank low, they are identified as priority projects in the ADA Transition Plan because of their proximity to a senior community. Additionally, it's important to note that segment ranking does not indicate the order in which projects will be completed. Funding types and availability heavily influence the project's completion dates. For example, the sidewalk on Industrial Avenue between Alantown and Finisteria Drives will be completed in the near future, even though its ranking is one, because the City received a grant to retrofit the bridge.

Figure 7 – Ultimate Signal, CCTV, and CMS Deployment

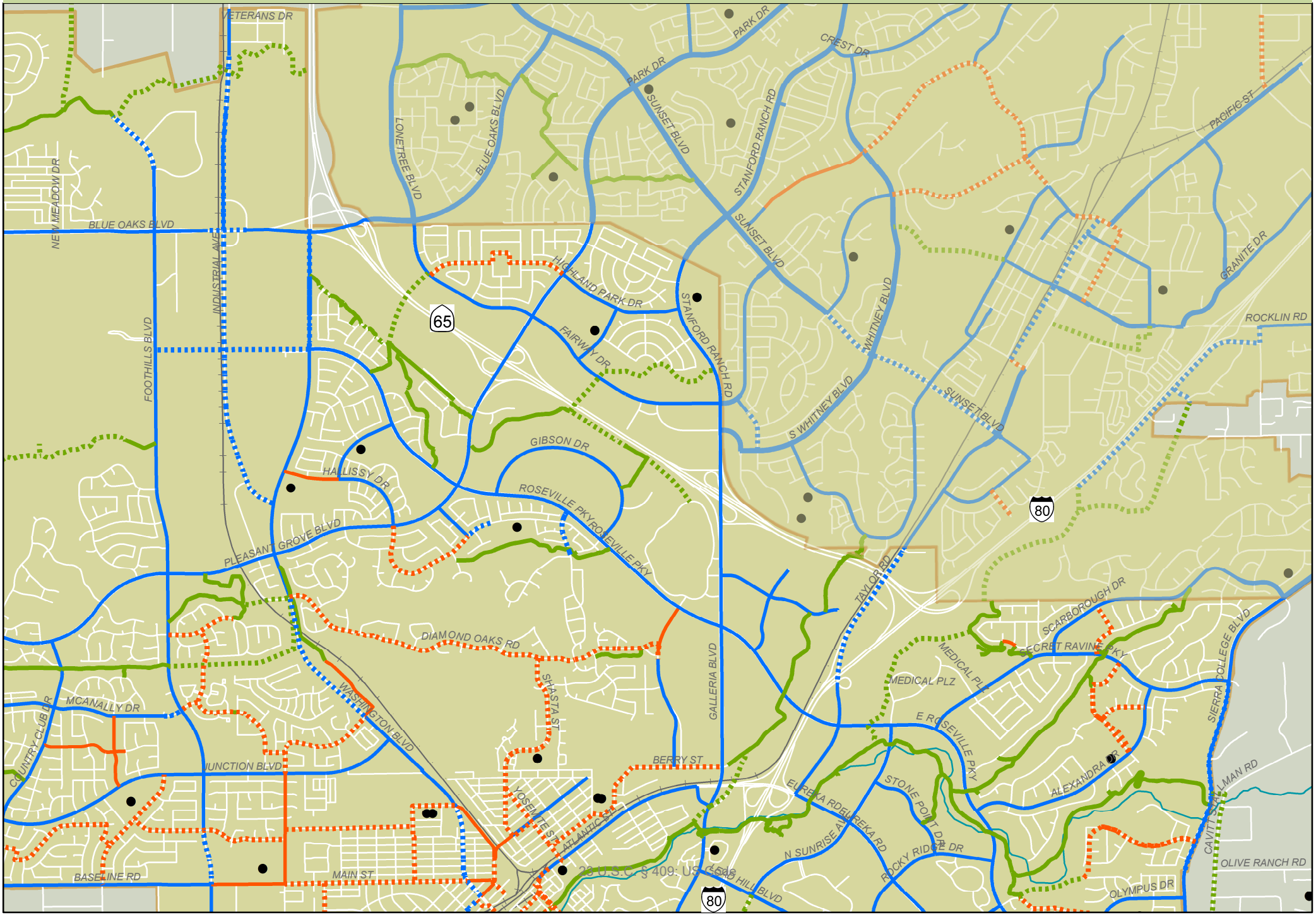


Regional Project List and Maps of Bicycle Network

ID	COUNTY	JURISDICTION	PROJECT TYPE	PROJECT LOCATION	SEGMENT / DESCRIPTION	DISTANCE	EXISTING PLAN	EST. COST
20156	Placer	City of Roseville	Bike Route (Class III) / Shoulder	Trehowell	Pioneer Rd. to Treecrest Ct.	0.60 miles	City of Roseville Bicycle Master Plan	TBD
20158	Placer	City of Roseville	Bike Route (Class III) / Shoulder	Cirby Ranch/Maidu Area	various	2.26 miles	City of Roseville Bicycle Master Plan	$3,390
20159	Placer	City of Roseville	Bike Route (Class III) / Shoulder	Coyote Ridge	various	1.53 miles	City of Roseville Bicycle Master Plan	$2,289
20160	Placer	City of Roseville	Bike Route (Class III) / Shoulder	Kaseburg - Kingswood	various	1.84 miles	City of Roseville Bicycle Master Plan	$2,760
20161	Placer	City of Roseville	Bike Route (Class III) / Shoulder	Foothills Junction	various	1.51 miles	City of Roseville Bicycle Master Plan	$2,264
20165	Placer	City of Roseville	Pedestrian Upgrade	Douglas Blvd..	Willow Ave. to Judah Street	190 feet	City of Roseville Pedestrian Master Plan	$22,864
20166	Placer	City of Roseville	Pedestrian Upgrade	Douglas Blvd..	Gopher Gulch Al. to Willow Ave.	113 feet	City of Roseville Pedestrian Master Plan	$27,181
20167	Placer	City of Roseville	Pedestrian Upgrade	Douglas Blvd..	Irene Ave to Bing Al.	191 feet	City of Roseville Pedestrian Master Plan	$22,971
20168	Placer	City of Roseville	Pedestrian Upgrade	Douglas Blvd..	Earl Ave. to Stella Al.	91 feet	City of Roseville Pedestrian Master Plan	$10,961
20169	Placer	City of Roseville	Pedestrian Upgrade	Douglas Blvd..	Oak Street to Earl Ave	190 feet	City of Roseville Pedestrian Master Plan	$45,809
20170	Placer	City of Roseville	Pedestrian Upgrade	Douglas Blvd..	Ranier Al. to Clinton Ave.	193 feet	City of Roseville Pedestrian Master Plan	$23,251
20171	Placer	City of Roseville	Pedestrian Upgrade	Douglas Blvd..	Bing L to Gopher Gulch Al.	79 feet	City of Roseville Pedestrian Master Plan	$18,981
20172	Placer	City of Roseville	Pedestrian Upgrade	Douglas Blvd..	Judah Street to Buljan Dr.	588 feet	City of Roseville Pedestrian Master Plan	$52,930
20173	Placer	City of Roseville	Pedestrian Upgrade	Folsom Road	Vernon Street to Linda Dr.	494 feet	City of Roseville Pedestrian Master Plan	$103,881
20174	Placer	City of Roseville	Pedestrian Upgrade	Folsom Road	Linda Dr. to Maciel Ave.	492 feet	City of Roseville Pedestrian Master Plan	$73,827
20175	Placer	City of Roseville	Pedestrian Upgrade	Oak Street	Taylor Street to Judah Street	469 feet	City of Roseville Pedestrian Master Plan	$28,156
20331	Placer	City of Roseville	Multi-use Path/Pedestrian Upgrade	Junction Boulevard	Signalized Pedestrian Crossing from Park Regency to Grouse Run	120 feet	City of Roseville Capital Improvement Program	$300,000
20332	Placer	City of Roseville	Pedestrian Upgrade	Downtown Roseville	Pedestrian Bridge from Oak Street to Park Drive	300 feet	City of Roseville Downtown Specific Plan	$2,809,000

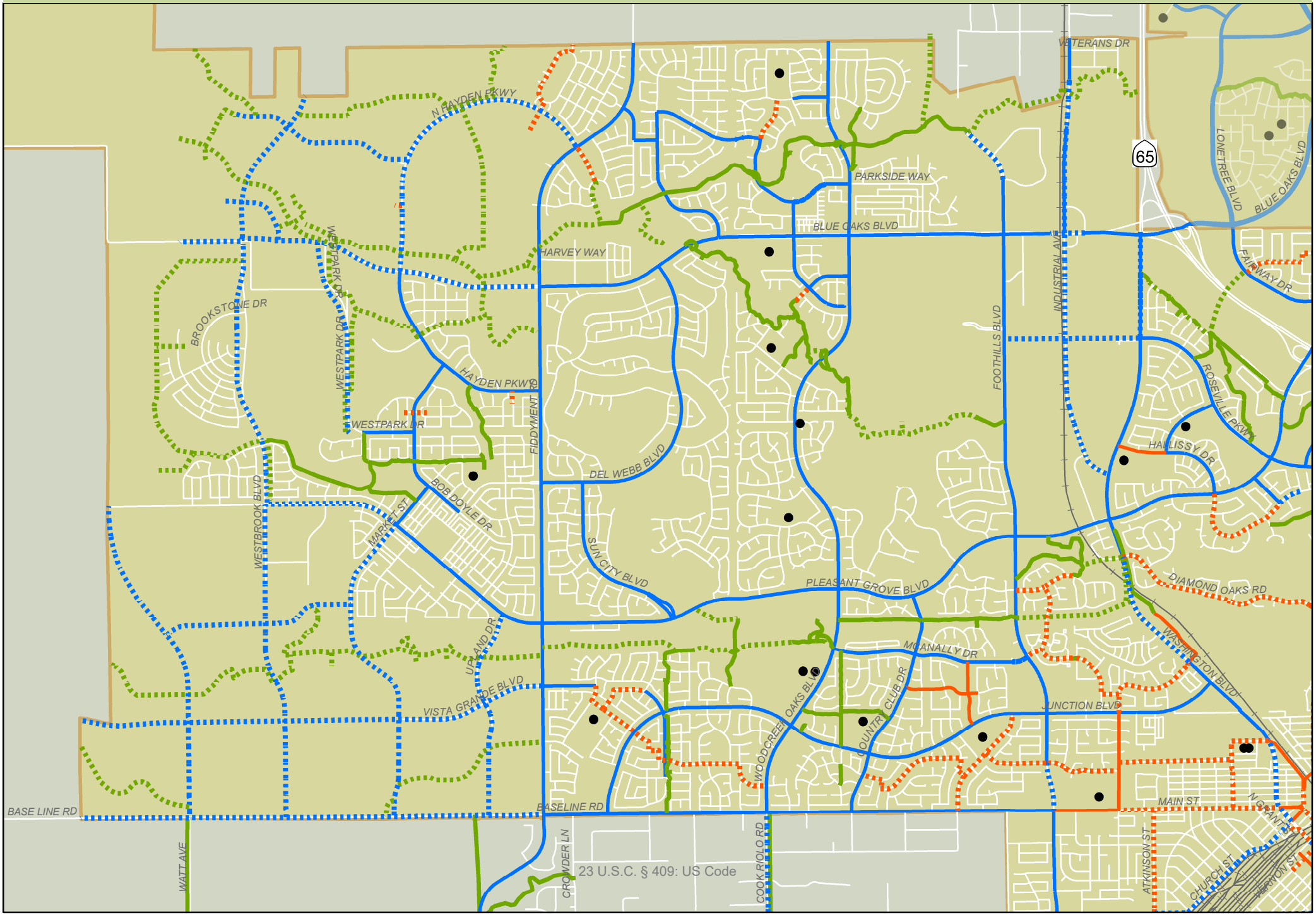
Roseville: North Central

- Schools
- Cities
- Existing Multi-Use Path (Class I)
- Existing Bike Lane (Class II)
- Existing Bike Route (Class III)
- Existing Protected Bike Lane
- Proposed Multi-Use Path
- Proposed Bike Lane
- Proposed Bike Route
- Proposed Protected Bike Lane



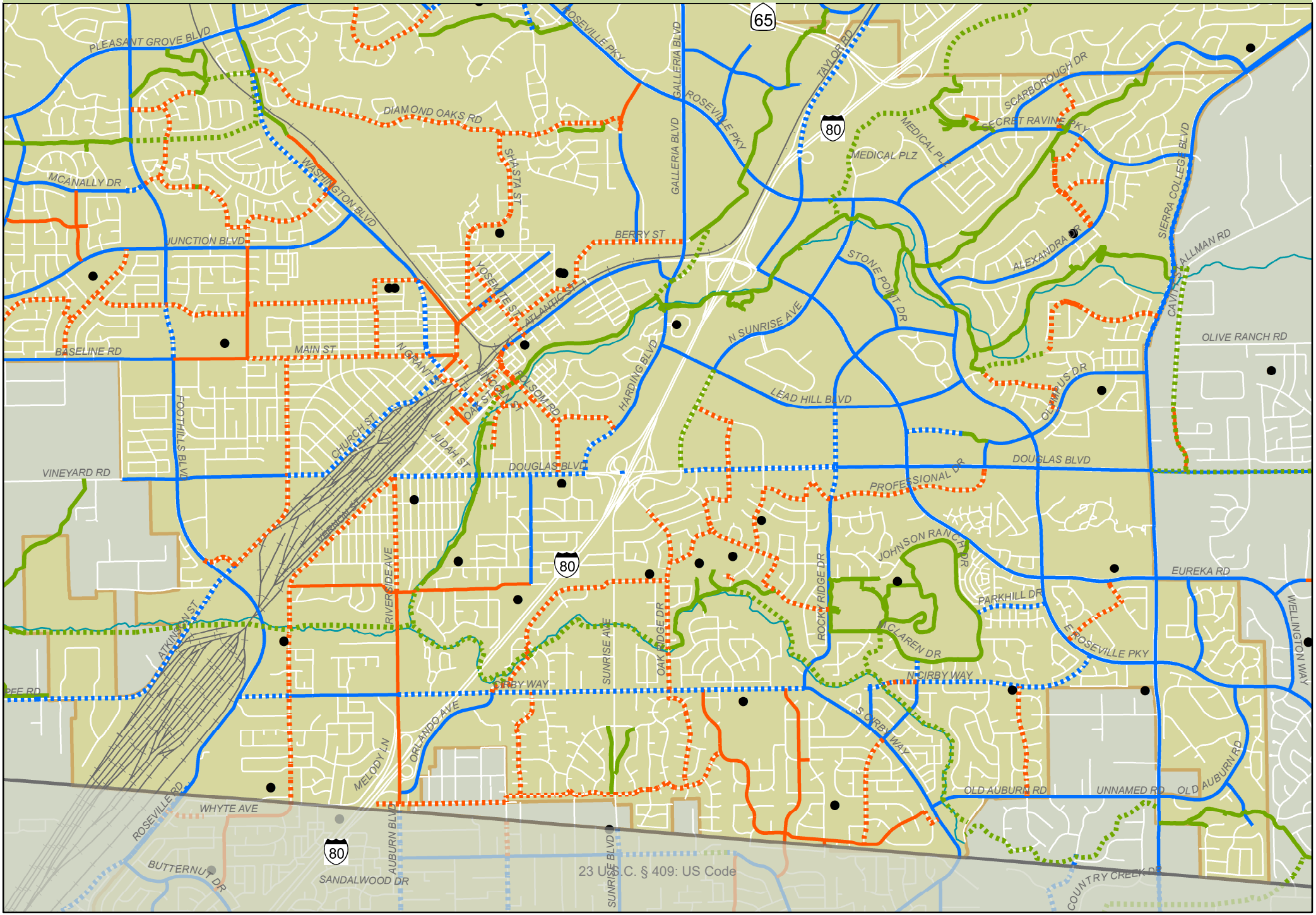
Roseville: Northwest

- Schools
- Cities
- Existing Multi-Use Path (Class I)
- Existing Bike Lane (Class II)
- Existing Bike Route (Class III)
- Existing Protected Bike Lane
- Proposed Multi-Use Path
- Proposed Bike Lane
- Proposed Bike Route
- Proposed Protected Bike Lane



Roseville: South

- Schools
- Cities
- Existing Multi-Use Path (Class I)
- Existing Bike Lane (Class II)
- Existing Bike Route (Class III)
- Existing Protected Bike Lane
- Proposed Multi-Use Path
- Proposed Bike Lane
- Proposed Bike Route
- Proposed Protected Bike Lane



APPENDIX B

CITY POLICIES WITH RESPECT TO SAFETY COUNTERMEASURES

CITY OF ROSEVILLE CALIFORNIA

Memorandum

Public Works – Engineering

To: Implementation Guidelines

From: Jana Cervantes, Senior Engineer, PW/Traffic Engineering

Date: 7/30/2019

Subject: Buffered Bicycle Lane Policy

When staff determines a collector roadway meets all of the following criteria, buffered bicycle lanes *may* be installed.

1. Bike lanes are consistent with the Bikeway Masterplan.
2. There is sufficient pavement width to allow 2' minimum buffer with minimum (11') travel lanes.

- Buffer lanes should have two foot width minimum.
- Buffer lane striping to be Detail 39.
- Buffer lanes three feet or more in width shall have hash marks at 30° angle (approximately every 10-40 feet).

CITY OF ROSEVILLE CALIFORNIA

Memorandum

Public Works – Engineering

To: Implementation Guidelines

From: Jana Cervantes, Senior Engineer, PW/Traffic Engineering

Date: May 05, 2016

Subject: Flashing Pedestrian Warning Pilot Installation Program

When staff determines that if an uncontrolled marked pedestrian crossing is in a Pedestrian Overlay District or meets all of the following criteria, a flashing pedestrian (W11-2) sign may be installed.

1. A volume of at least 100 pedestrians per hour during the peak hour;
2. This volume of pedestrians occurs on a regular everyday basis;
3. A majority of the pedestrian traffic occurs in the evening (dark) for a portion of the year;

*Before consideration of this Traffic Control Device, other factors/options should be considered.

CITY OF ROSEVILLE CALIFORNIA

Memorandum

Public Works – Engineering

To: Implementation Guidelines

From: Jana Cervantes, Senior Engineer, PW/Traffic Engineering

Date: 7/11/2018

Subject: Residential Flashing Speed Limit Signs

When staff determines a residential street meets all of the following criteria, a flashing Speed Limit (R2-1) sign may be installed.

1. Roadway meets California Vehicle Code (CVC) definition for a residential roadway.
2. 85th percentile speed is 38 mph or higher on consistent speed studies.
3. Speed Limit signs and Legends existed at the time speed studies were conducted.
4. Average daily Traffic (ADT) exceeds 2500 vehicles per day for the street.
5. Police, speed trailers, and other education and enforcement tools have been tried.

*Before consideration of this Traffic Control Device, other options should be considered.

CITY OF ROSEVILLE CALIFORNIA

Memorandum

Public Works – Engineering

To: Implementation Guidelines

From: Jana Cervantes, Senior Engineer, PW/Traffic Engineering

Date: 2/04/2020

Subject: Flashing Stop Signs

When staff determines that an all-way STOP meets all of the following criteria, a flashing Stop Sign (R1-1) sign may be installed.

1. A STOP study has determined that a STOP sign is a warranted traffic control device;
2. The roadway(s) is a designated arterial or collector;
3. The 85th percentile speed is 45 mph or higher on consistent speed studies;
4. Average daily Traffic (ADT) exceeds 8000 vehicles per day for at least one of the intersection roadways;
5. One or more of the intersecting roadways has two or more lanes (including right, thru, and lefts) of traffic in each direction;
6. Police, speed trailers, and other education and enforcement tools have been tried for stop sign compliance.

*Before consideration of this Traffic Control Device, other options should be considered.

CITY OF ROSEVILLE CALIFORNIA

Memorandum

Public Works – Engineering

To: Implementation Guidelines

From: Jana Cervantes, Senior Engineer, PW/Traffic Engineering

Date: January 08, 2019

Subject: "KEEP CLEAR" Pavement Legends

Specifications for the installation of a "KEEP CLEAR" pavement legend are as follows:

1. Only allowed on four-lane roads.
2. It must be the only public entrance and exist to the subdivision.
3. It is only allowed for public roadway intersections – not driveways.
4. "Do not block intersection" signage must be tried first with inadequate results.

CITY OF ROSEVILLE CALIFORNIA

Memorandum

Public Works – Engineering

To: Implementation Guidelines

From: Jana Cervantes, Senior Engineer, PW/ Traffic Engineering

Date: March 04, 2016

Subject: "Signal Ahead" Legends

When staff determines that the visibility of traffic signal heads may be impeded by roadway alignment, landscape, or other roadway features, "Signal Ahead" legends may be installed on the approach to a signal to supplement W3-3 signs.

Per the City of Roseville Design Standards, W3-3 signs shall be installed on all approaches to a signalized intersection.

The table below lists the minimum distances for which at least two signal faces should be continuously visible to approaching drivers. If the minimum sight distances are not met, "Signal Ahead" legends may be utilized.

85th-Percentile Speed	Minimum Sight Distance
20 mph	175 feet
25 mph	215 feet
30 mph	270 feet
35 mph	325 feet
40 mph	390 feet
45 mph	460 feet
50 mph	540 feet
55 mph	625 feet
60 mph	715 feet

Table 4D-2
(Source: 2014 CaMUTCD)

CITY OF ROSEVILLE
CALIFORNIA

January 1, 2007

WHY SPEED HUMPS ARE NO LONGER INSTALLED IN ROSEVILLE

In the late 1980's, the Roseville City Council voted to allow speed humps on residential streets on a trial basis to see how successful the program would be. In 1992 the City Council discontinued the program and imposed a moratorium on the installation of speed humps. This moratorium was placed due to resident complaints, and problems associated with the humps.

The following problems have been observed with speed humps:

- Response time for emergency vehicles increased 10 to 12 seconds per speed hump.
- Some motorists swerve around the speed humps, necessitating the installation of metal posts (Bollards) on both sides of the speed humps.
- Some motorists increase their speed between the speed humps to make up for lost time.
- Numerous speed humps are necessary on a long stretch of road. This can frustrate motorists and cause them to drive over the speed humps at 30 to 35 mph because at this speed, many vehicles can absorb the impact of the speed humps with little discomfort to the driver.
- There is increased noise at speed hump locations due to vehicles slowing, accelerating, or driving over the hump at high speed.
- Speed humps cause traffic to divert to parallel streets.

On average, the prevailing speed of vehicles dropped from 33 mph to 27 mph by installing speed humps. However, due to the problems associated with speed humps, the City Council felt that the disadvantages outweighed the benefits. We now have a Council approved speed hump removal program whereby residents can request removal of the speed humps if they so desire.

If you have any questions regarding this issue, please contact the City's Traffic Studies Section at 746-1300.

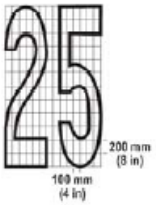
MEMORANDUM

TO: **Jason Shykowski, Associate Engineer**

FROM: **Jana Cervantes, Assistant Engineer II**

SUBJECT: ***Speed Limit Pavement Markings Guidelines/Policy***

DATE: **August 19, 2004**



- **25 MPH Pavement Markings** will only be used on residential streets where the measured 85th percentile speed is greater than 34 mph. It will be placed at the entrance to a subdivision off a main road (arterial/collector) near a speed limit sign. If the primary residential is longer than 1 mile, an additional 25 mph pavement marking may be considered midway along the length of the roadway if warranted.
- **25 MPH Pavement Markings** may be used in business districts that have high pedestrian usage.
- **25 MPH Pavement Markings** may be used at locations where a collector roadway turns into a residential street (i.e. Northpark, N. Cirby).
- **25 MPH Pavement Markings** may be used on the approaches to parks and schools located on residential streets where the 85th percentile speed is greater than 34 mph. It will be placed near a speed limit sign (legend may be yellow for school locations).

TRAFFIC CONTROL DEVICE POLICIES

"DO NOT BLOCK" INTERSECTION SIGN

- Only allowed on two or four lane roads.
- For a subdivision: It must be the only public entrance and exit to the subdivision.
- It is only allowed for public intersections – not driveways unless the driveway causes a safety hazard in the public roadway. i.e. signage won't be installed for the sole purpose of providing access to the driveway.
- Other signage must be tried first with inadequate results.

"YIELD TO PED" (R1-6) IN STREET CROSSWALK SIGN

- May be used at a crosswalk that has been installed on a temporary basis (lane width and turning movements permitting).
- May be used on a temporary basis (90 days max) on newly installed crosswalks at unsignalized collector and arterial intersections (lane width and turning movements permitting).
- May be used permanently at uncontrolled crosswalks on collectors and arterials with lane widths greater than 12' and where turning movements would not conflict with the signage.
- May be used adjacent to schools at uncontrolled crossings on a portable system during school hours.

"25" PAVEMENT MARKINGS

- **25 mph Pavement markings** shall only by used on residential streets where the measured 85th percentile speed is greater than 34 mph. It will be placed at the entrance to a subdivision off a main road (arterial/collector) near a speed limit sign. If the primary residential is longer than 1 mile, an additional 25 mph pavement marking may be considered midway along the length of the roadway if warranted.
- **25 mph Pavement markings** may be used in business districts that have high pedestrian usage.
- **25 mph Pavement markings** may be used at locations where a collector roadway turns into a residential street (i.e. Northpark, N. Cirby).
- **25 mph Pavement markings** may be used on the approaches to parks and schools located on residential streets where the 85th percentile speed is greater 34 mph. It will be placed near a speed limit sign.

CURVE WARNING SIGNS

For Roadway Curves

- 20 mph or less as determined from ball bank or SD analysis, place a W3 and W6 sign.
- 15 mph or less, place both the sign and detail 23 pavement striping. Detail 23 shall only be used if the roadway pavement width is 32' or greater. If the pavement width is less than 32', no further action other than the sign is required.

For Knuckles

- For residential streets, no action will be required.*
- For roadways with 32’ or greater pavement width, Detail 23 may be placed with no signage.

*If centerline striping were used on roadways less than 32’ wide (pavement width), the travel lane width would be less than 10’ if vehicles were parked at the curb.

CITY OF ROSEVILLE CALIFORNIA

Memorandum

Public Works – Engineering

To: Implementation Guidelines

From: Jana Cervantes, Senior Engineer, PW/ Traffic Engineering

Date: September 28, 2015

Subject: Visually Impaired Requests for Free Right Turns at "Pork Chop" Islands

When requested for the benefit of the visually impaired to assist in the crossing of uncontrolled free right turns at signalized intersections with "pork chops", staff will evaluate for the installation of enhanced crosswalks and signage such as:

- hatched crosswalk markings, and;
- advance regulatory signage, and;
- high visibility signage at the crossing (as shown below)

CITY OF ROSEVILLE CALIFORNIA

Memorandum

Public Works – Engineering

To: POLICY MEMORANDUM

From: Jana Cervantes, Senior Engineer, PW/Engineering

Date: September 24, 2014

Subject: Yellow 3M Tape for Signal Heads

3M Yellow tape may be applied to the outside perimeter of signal head backplates on the overhead signal heads of an intersection meeting the following criteria:

- The signal is located within 800' of the next signal, and;
- The documented accident rate exceeds the Caltrans expected rate.

In addition, the tape may be used for pre-signals located at railroad crossings.

APPENDIX C

INTERSECTION NETWORK SCREENING RESULTS

Intersection Network Screening Results

Intersection	Cross Street 1	Cross Street 2	FID	Crashes	Local CCR Differential[1]	Equivalent Property Damage Only	*Fatal*	*Serious Injury*	*Other Visible Injury*	*Complaint of Pain*	*PDO*	Broadside	Sideswipe	Rear End	Head On	Hit Object	Overturned	Pedestrian	Bicycle	Aggressive	Distracted	Impaired	Dark	Wet
Signalized Intersections																								
RIVERSIDE AV & CIRBY WY	RIVERSIDE AV	CIRBY WY	2421	**94**	0.39	473	0	1	7	29	57	28	22	26	2	7	0	0	5	34	3	10	23	13
SUNRISE AV & DOUGLAS BL	SUNRISE AV	DOUGLAS BL	3098	**94**	0.42	329	0	0	9	29	56	22	16	39	5	4	2	0	1	32	5	10	21	8
SUNRISE AV & CIRBY WY	SUNRISE AV	CIRBY WY	2992	**80**	0.30	432	0	1	10	18	51	25	13	32	1	2	0	3	3	29	2	8	20	8
GALLERIA BL & ROSEVILLE PW	GALLERIA BL	ROSEVILLE PW	3110	**80**	0.30	637	0	2	8	30	40	17	15	32	4	2	0	0	2	33	4	11	25	17
MELODY LN & CIRBY WY	MELODY LN	CIRBY WY	2373	**70**	0.41	343	0	0	13	29	28	36	6	16	8	0	0	0	1	33	7	6	16	6
PLEASANT GROVE BLVD & HIGHLAND POINTE DR	PLEASANT GROVE BLVD	HIGHLAND POINTE DR	3849	**70**	0.65	462	0	1	11	24	34	28	10	23	5	1	0	0	1	37	5	4	18	6
FOOTHILLS BL & PLEASANT GROVE BL	FOOTHILLS BL	PLEASANT GROVE BL	1843	**68**	0.98	600	0	2	8	25	33	14	15	32	6	0	0	0	0	35	3	5	20	10
TAYLOR RD & E ROSEVILLE PW	TAYLOR RD	E ROSEVILLE PW	3232	**67**	0.77	386	0	1	5	21	40	16	13	27	4	3	0	2	0	30	8	4	17	11
WASHINGTON BL & PLEASANT GROVE BL	WASHINGTON BL	PLEASANT GROVE BL	1990	**66**	0.17	399	0	1	7	20	38	19	13	24	2	4	0	0	0	27	8	8	23	11
PLEASANT GROVE BL & ROSEVILLE PW	PLEASANT GROVE BL	ROSEVILLE PW	2477	**58**	0.04	520	0	2	6	15	35	12	9	26	1	6	2	0	0	31	4	6	11	12
SR 65 SB RAMPS & BLUE OAKS BLVD	SR 65 SB RAMPS	BLUE OAKS BLVD	2048	**54**	0.71	396	0	1	9	18	26	21	8	16	2	2	0	0	3	24	5	3	11	4
ROCKY RIDGE DR & DOUGLAS BL	ROCKY RIDGE DR	DOUGLAS BL	3274	**53**	0.04	51	0	2	3	18	30	15	9	21	1	1	0	0	1	21	5	4	17	4
TAYLOR RD & EUREKA RD	TAYLOR RD	EUREKA RD	3862	**52**	0.20	211	0	0	7	18	27	13	10	26	0	1	0	0	0	22	1	4	19	5
PLEASANT GROVE BL & FAIRWAY DR	PLEASANT GROVE BL	FAIRWAY DR	2670	**51**	0.31	156	0	0	4	13	34	5	9	26	5	2	0	1	0	20	2	2	12	10
FIDDYMENT RD & BASELINE RD	FIDDYMENT RD	BASELINE RD	713	**50**	0.43	318	0	1	5	11	33	7	7	22	2	5	2	0	0	23	1	7	21	5
FOOTHILLS BL & BASELINE RD	FOOTHILLS BL	BASELINE RD	1889	**47**	0.19	211	0	0	8	17	22	14	5	13	5	5	0	0	4	21	0	5	14	6
FOOTHILLS BL & CIRBY WY	FOOTHILLS BL	CIRBY WY	1992	**45**	-0.03	323	0	1	5	13	26	5	12	12	2	8	2	1	0	17	4	9	13	9
N SUNRISE AV & EUREKA RD	N SUNRISE AV	EUREKA RD	3249	**43**	-0.02	152	0	0	5	12	26	16	7	18	1	0	0	0	1	28	1	3	9	1
HARDING BL & DOUGLAS BL	HARDING BL	DOUGLAS BL	2945	**42**	0.06	132	0	0	4	10	28	6	8	23	0	4	0	0	1	15	2	6	7	2
VERNON ST & CIRBY WY	VERNON ST	CIRBY WY	2103	**38**	0.02	124	0	0	0	17	21	11	6	15	4	0	0	0	1	14	4	3	9	6
N SUNRISE AV & E ROSEVILLE PW	N SUNRISE AV	E ROSEVILLE PW	3297	**37**	-0.05	176	0	0	7	14	16	5	4	20	2	3	0	0	0	15	5	4	11	7
FIDDYMENT RD & PLEASANT GROVE BL	FIDDYMENT RD	PLEASANT GROVE BL	706	**36**	0.27	285	0	1	3	11	21	10	7	15	2	0	0	0	1	17	4	3	11	6
N SUNRISE AV & LEAD HILL BL	N SUNRISE AV	LEAD HILL BL	3149	**35**	0.09	293	0	1	5	9	20	11	7	14	0	0	0	0	2	17	1	2	8	2
E ROSEVILLE PW & DOUGLAS BL	E ROSEVILLE PW	DOUGLAS BL	3597	**35**	-0.10	115	0	0	3	10	22	12	4	14	4	1	0	0	0	15	3	1	4	3
WEST DR & ROSEVILLE PW	WEST DR	ROSEVILLE PW	2964	**34**	0.01	293	0	1	2	15	16	9	2	14	5	1	0	1	0	18	2	4	12	4
EUREKA RD & DOUGLAS BL	EUREKA RD	DOUGLAS BL	3374	**34**	-0.08	302	1	0	5	11	17	12	4	12	1	3	0	1	0	17	7	4	10	5
SUNRISE AV & KENSINGTON DR	SUNRISE AV	KENSINGTON DR	2993	**32**	0.06	116	0	0	5	7	20	3	1	16	2	1	0	2	5	16	3	5	2	3
STANFORD RANCH RD & FIVE STAR BL	STANFORD RANCH RD	FIVE STAR BL	3102	**31**	0.01	141	0	0	3	16	12	6	6	15	1	1	1	0	0	17	1	2	4	5
SIERRA COLLEGE BL & E ROSEVILLE PW	SIERRA COLLEGE BL	E ROSEVILLE PW	3757	**31**	-0.02	125	0	0	6	7	18	11	4	10	1	1	0	1	2	6	1	2	7	5
SANTA CLARA DR & DOUGLAS BL	SANTA CLARA DR	DOUGLAS BL	3163	**29**	-0.09	98	0	0	4	6	19	6	4	16	1	0	0	0	1	12	3	2	5	2
SIERRA GARDENS DR & DOUGLAS BL	SIERRA GARDENS DR	DOUGLAS BL	3196	**29**	-0.09	118	0	0	5	8	16	6	4	14	0	2	0	1	0	17	3	2	9	2
FOOTHILLS BL & JUNCTION BL	FOOTHILLS BL	JUNCTION BL	1880	**28**	-0.08	406	2	0	1	8	17	7	4	6	4	5	0	0	0	12	1	5	10	4
SUNRISE AV & COLOMA WY	SUNRISE AV	COLOMA WY	2990	**28**	-0.03	291	0	1	4	12	11	5	2	15	2	3	0	0	0	16	2	6	10	2
WOODCREEK OAKS BL & BLUE OAKS BL	WOODCREEK OAKS BL	BLUE OAKS BL	1545	**27**	-0.17	131	0	0	6	9	12	9	3	10	1	2	0	0	1	6	3	4	9	2
FOOTHILLS BL & BLUE OAKS BL	FOOTHILLS BL	BLUE OAKS BL	1819	**27**	-0.14	82	0	0	2	7	18	3	4	17	0	2	0	0	0	15	1	2	5	3
RIVERSIDE AV & I-80 WB RAMPS	RIVERSIDE AV	I-80 WB RAMPS	2423	**27**	0.03	102	0	0	2	11	14	12	5	6	0	2	0	0	0	10	0	4	4	8
PLEASANT GROVE BL & SR 65 NB RAMPS	PLEASANT GROVE BL	SR 65 NB RAMPS	2629	**26**	-0.19	255	0	1	2	9	14	5	4	14	2	1	0	0	0	15	1	3	3	6
I-80 WB RAMPS & DOUGLAS BL	I-80 WB RAMPS	DOUGLAS BL	2971	**26**	-0.18	239	0	1	3	4	18	3	2	17	0	2	1	0	1	17	3	2	3	2
WOODCREEK OAKS BL & BASELINE RD	WOODCREEK OAKS BL	BASELINE RD	1320	**25**	0.26	105	0	0	2	12	11	8	2	13	0	1	0	0	0	16	4	3	11	2

Legend		
Fatal/Serious Injury Collisions	LCCR Differential	Probably of Collision Type Exceeding Threshold Proportion
> 1 KSI Collision	> 1.0	90-100%
= 1 KSI Collision	0.33 - 1.0	80-90%
	< 0.33	70-80%

Kimley»Horn

Intersection Network Screening Results

Intersection	Cross Street 1	Cross Street 2	FID	Crashes	Local CCR Differential[1]	Equivalent Property Damage Only	*Fatal*	*Serious Injury*	*Other Visible Injury*	*Complaint of Pain*	*PDO*	Broadside	Sideswipe	Rear End	Head On	Hit Object	Overturned	Pedestrian	Bicycle	Aggressive	Distracted	Impaired	Dark	Wet
AUBURN BL & ORLANDO AV	AUBURN BL	ORLANDO AV	2428	**25**	-0.12	55	0	0	0	6	19	11	10	1	0	0	0	0	1	4	1	1	5	6
SR 65 SB RAMPS & PLEASANT GROVE BL	SR 65 SB RAMPS	PLEASANT GROVE BL	2571	**24**	-0.22	64	0	0	1	6	17	3	2	18	0	0	0	0	0	19	6	0	4	6
SECRET RAVINE PW & E ROSEVILLE PW	SECRET RAVINE PW	E ROSEVILLE PW	3362	**24**	-0.02	64	0	0	1	6	17	5	8	10	0	1	0	0	0	9	1	4	3	0
JUNCTION BL & WASHINGTON BL	JUNCTION BL	WASHINGTON BL	2301	**23**	0.03	113	0	0	3	12	8	7	3	7	1	3	0	1	1	7	0	1	5	4
ROSEVILLE PW & CREEKSIDE RIDGE DR	ROSEVILLE PW	CREEKSIDE RIDGE DR	3151	**23**	-0.18	73	0	0	1	8	14	3	6	9	0	0	0	1	1	10	0	2	4	1
FOOTHILLS BL & VINEYARD RD	FOOTHILLS BL	VINEYARD RD	1896	**22**	-0.13	236	0	1	1	8	12	3	3	10	3	1	0	0	0	10	2	2	6	2
EUREKA RD & ROCKY RIDGE DR	EUREKA RD	ROCKY RIDGE DR	3300	**22**	-0.14	78	0	0	0	11	11	5	4	10	1	0	0	0	0	9	1	3	8	4
ORLANDO AVE & CIRBY WY	ORLANDO AVE	CIRBY WY	2663	**21**	-0.11	81	0	0	2	8	11	4	1	10	0	1	0	1	1	12	0	1	5	1
GALLERIA BL & ANTELOPE CREEK DR	GALLERIA BL	ANTELOPE CREEK DR	3109	**21**	-0.20	100	0	0	6	4	11	5	6	7	0	2	0	0	0	6	1	2	7	2
ROCKY RIDGE DR & CIRBY WY	ROCKY RIDGE DR	CIRBY WY	3233	**21**	-0.06	26	0	0	0	1	20	2	7	6	3	3	0	0	0	6	2	4	9	5
TJ MAXX PLAZA DRIVEWAY & DOUGLAS BLVD	TJ MAXX PLAZA DRIVEWAY	DOUGLAS BLVD	3859	**21**	-0.17	91	0	0	3	8	10	5	1	14	0	1	0	0	0	15	3	1	1	1
WOODCREEK OAKS BL & JUNCTION BL	WOODCREEK OAKS BL	JUNCTION BL	1373	**20**	0.09	421	0	2	5	5	8	9	2	4	3	2	0	0	0	6	2	4	7	3
WASHINGTON BL & ROSEVILLE PW	WASHINGTON BL	ROSEVILLE PW	2044	**20**	0.16	214	0	1	1	4	14	4	4	4	2	6	0	0	0	3	0	5	8	6
RESERVE DR & ROSEVILLE PW	RESERVE DR	ROSEVILLE PW	3026	**20**	-0.19	239	0	1	1	9	9	3	2	13	1	0	0	0	0	14	2	0	5	0
WATT AVE/SANTUCCI BL & BASELINE RD	WATT AVE/SANTUCCI BL	BASELINE RD	45	**19**	0.02	223	1	0	1	6	11	2	1	6	0	8	0	1	0	6	2	6	10	3
WOODCREEK OAKS BL & PLEASANT GROVE BL	WOODCREEK OAKS BL	PLEASANT GROVE BL	1526	**19**	-0.19	237	0	1	3	5	10	5	3	9	1	0	0	1	0	10	3	1	6	1
HARDING BL & LEAD HILL BL	HARDING BL	LEAD HILL BL	3062	**19**	-0.07	242	0	1	3	6	9	4	5	8	1	1	0	0	0	7	0	3	5	5
STANFORD RANCH RD & SR 65 NB RAMPS	STANFORD RANCH RD	SR 65 NB RAMPS	3103	**19**	-0.23	44	0	0	0	5	14	2	1	16	0	0	0	0	0	7	4	3	6	5
E ROSEVILLE PW & LEAD HILL BL	E ROSEVILLE PW	LEAD HILL BL	3443	**19**	-0.13	271	0	1	6	6	6	9	1	6	1	0	0	0	0	8	1	1	5	2
E ROSEVILLE PW & OLYMPUS DR	E ROSEVILLE PW	OLYMPUS DR	3588	**19**	-0.16	79	0	0	2	8	9	8	2	4	1	2	1	0	0	12	1	1	5	3
WASHINGTON BLVD & MAIN ST	WASHINGTON BLVD	MAIN ST	3857	**19**	0.39	49	0	0	0	6	13	1	3	10	1	2	0	0	0	6	1	4	2	2
STANFORD RANCH RD & FAIRWAY DR	STANFORD RANCH RD	FAIRWAY DR	3101	**18**	-0.14	57	0	0	3	2	13	5	2	6	2	2	0	0	1	8	1	1	3	1
ROCKY RIDGE DR & LEAD HILL BL	ROCKY RIDGE DR	LEAD HILL BL	3273	**18**	-0.10	58	0	0	2	4	12	3	5	6	1	1	0	0	2	6	1	3	6	4
NEW MEADOW DR & BLUE OAKS BL	NEW MEADOW DR	BLUE OAKS BL	1706	**17**	-0.25	77	0	0	3	6	8	5	1	9	0	2	0	0	0	11	2	2	3	2
WILLS RD & ATLANTIC ST	WILLS RD	ATLANTIC ST	3061	**17**	0.42	47	0	0	1	4	12	3	3	7	0	3	0	0	0	5	0	3	3	2
SIERRA COLLEGE BL & SECRET RAVINE PW	SIERRA COLLEGE BL	SECRET RAVINE PW	3778	**16**	-0.10	81	0	0	3	7	6	2	0	12	1	1	0	0	0	12	4	0	1	8
FOLSOM RD & DOUGLAS BL	FOLSOM RD	DOUGLAS BL	2884	**15**	-0.06	65	0	0	2	6	7	5	2	6	0	2	0	0	0	6	2	0	0	3
ESTATES DR & HARDING BL	ESTATES DR	HARDING BL	2994	**15**	-0.02	45	0	0	1	4	10	6	3	3	0	0	0	0	1	3	1	4	3	1
STRAUCH DR & PROFESSIONAL DR	STRAUCH DR	PROFESSIONAL DR	3271	**15**	-0.13	75	0	0	3	6	6	2	5	3	3	0	0	0	1	2	0	0	1	4
FIDDYMENT RD & BLUE OAKS BL	FIDDYMENT RD	BLUE OAKS BL	698	**14**	-0.16	233	0	1	1	9	3	4	0	6	0	2	0	0	2	7	2	1	5	3
SIERRA COLLEGE BL & DOUGLAS BL	SIERRA COLLEGE BL	DOUGLAS BL	3754	**14**	-0.30	24	0	0	0	2	12	1	1	6	1	3	0	0	0	6	1	1	3	2
FOOTHILLS BLVD & DENIO LOOP	FOOTHILLS BLVD	DENIO LOOP	3855	**14**	-0.24	54	0	0	1	6	7	1	3	7	0	3	0	0	0	5	1	2	4	0
SUNRISE AV & FRANCES DR	SUNRISE AV	FRANCES DR	2986	**13**	-0.25	48	0	0	1	5	7	3	1	4	0	4	0	0	0	9	1	1	3	3
HARDING BL & WILLS RD	HARDING BL	WILLS RD	3089	**13**	-0.12	53	0	0	2	4	7	2	0	9	0	1	0	0	0	7	0	2	1	0
WOODCREEK OAKS BL & MCANALLY DR	WOODCREEK OAKS BL	MCANALLY DR	1509	**12**	0.04	36	0	0	2	1	9	1	3	4	1	1	0	0	1	6	0	0	0	1
FOOTHILLS BL & RAND WY	FOOTHILLS BL	RAND WY	1879	**12**	-0.24	37	0	0	0	5	7	3	0	8	0	1	0	0	0	8	1	0	4	0
WASHINGTON BL & DIAMOND OAKS RD	WASHINGTON BL	DIAMOND OAKS RD	2018	**12**	-0.15	42	0	0	1	4	7	1	1	6	0	3	0	0	1	5	3	3	4	0
HALLISSY DR & PLEASANT GROVE BL	HALLISSY DR	PLEASANT GROVE BL	2312	**12**	-0.19	47	0	0	2	3	7	0	0	7	2	2	0	0	0	7	1	2	6	3
PLEASANT GROVE BL & HIGHLAND PARK DR	PLEASANT GROVE BL	HIGHLAND PARK DR	2763	**12**	-0.23	211	0	1	1	5	5	4	2	5	0	1	0	0	0	5	3	1	3	4
CENTER ST & ATLANTIC ST	CENTER ST	ATLANTIC ST	2953	**12**	0.84	67	0	0	1	9	2	6	3	2	0	0	0	0	1	2	0	1	4	1

Legend		
Fatal/Serious Injury Collisions	LCCR Differential	Probably of Collision Type Exceeding Threshold Proportion
> 1 KSI Collision	> 1.0	90-100%
= 1 KSI Collision	0.33 - 1.0	80-90%
	< 0.33	70-80%

Kimley»Horn

Intersection Network Screening Results

Intersection	Cross Street 1	Cross Street 2	FID	Crashes	Local CCR Differential[1]	Equivalent Property Damage Only	*Fatal*	*Serious Injury*	*Other Visible Injury*	*Complaint of Pain*	*PDO*	Broadside	Sideswipe	Rear End	Head On	Hit Object	Overturned	Pedestrian	Bicycle	Aggressive	Distracted	Impaired	Dark	Wet
EUREKA RD & LEAD HILL BL	EUREKA RD	LEAD HILL BL	3365	**12**	-0.24	201	0	1	0	5	6	3	0	6	0	2	0	0	1	5	0	0	5	0
E ROSEVILLE PW & EUREKA RD	E ROSEVILLE PW	EUREKA RD	3605	**12**	-0.23	52	0	0	1	6	5	4	2	4	1	1	0	0	0	4	2	1	3	1
SIERRA COLLEGE BLVD & OLD AUBURN RD	SIERRA COLLEGE BLVD	OLD AUBURN RD	3845	**12**	-0.26	53	0	0	0	8	4	6	1	4	1	0	0	0	0	7	0	1	2	4
AUTOMALL DR & N SUNRISE AVE	AUTOMALL DR	N SUNRISE AVE	3861	**12**	-0.23	42	0	0	2	2	8	2	3	2	0	1	0	2	0	5	1	0	1	1
I-80 SB RAMP & ATLANTIC ST	I-80 SB RAMP	ATLANTIC ST	3863	**12**	-0.19	215	0	1	2	4	5	3	1	5	1	1	1	0	0	8	0	2	5	0
CIRBY HILLS DR & CIRBY WY	CIRBY HILLS DR	CIRBY WY	2503	**11**	-0.25	41	0	0	1	4	6	8	1	2	0	0	0	0	0	1	1	0	1	0
VERNON ST & LINCOLN ST	VERNON ST	LINCOLN ST	2649	**11**	-0.04	41	0	0	2	2	7	3	2	1	1	0	0	1	3	1	0	2	4	1
FAIRWAY DR & CENTRAL PARK DR	FAIRWAY DR	CENTRAL PARK DR	2814	**11**	-0.25	205	0	1	1	4	5	4	1	6	0	0	0	0	0	6	1	2	2	3
I-80 EB RAMPS & DOUGLAS BL	I-80 EB RAMPS	DOUGLAS BL	3059	**11**	-0.31	51	0	0	2	4	5	0	0	5	3	1	1	0	1	5	0	1	2	1
MICHENER DR & PLEASANT GROVE BL	MICHENER DR	PLEASANT GROVE BL	1299	**10**	-0.26	50	0	0	1	6	3	1	1	6	0	2	0	0	0	5	0	2	3	1
FOOTHILLS BL & MCANALLY DR	FOOTHILLS BL	MCANALLY DR	1860	**10**	-0.29	45	0	0	1	5	4	4	2	4	0	0	0	0	0	6	1	1	4	1
LINDSAY DR & CIRBY WY	LINDSAY DR	CIRBY WY	2285	**10**	-0.30	35	0	0	0	5	5	0	0	8	0	1	0	1	0	6	1	0	2	1
FIVE STAR BL & FAIRWAY DR	FIVE STAR BL	FAIRWAY DR	3000	**10**	-0.08	15	0	0	0	1	9	2	5	3	0	0	0	0	0	4	0	0	1	3
N HAYDEN PW & FIDDYMENT RD	N HAYDEN PW	FIDDYMENT RD	802	**9**	0.96	29	0	0	0	4	5	0	2	7	0	0	0	0	0	5	1	1	1	0
COUNTRY CLUB DR & PLEASANT GROVE BL	COUNTRY CLUB DR	PLEASANT GROVE BL	1687	**9**	-0.30	34	0	0	0	5	4	1	2	3	2	1	0	0	0	7	0	1	3	2
VERNON ST & S GRANT ST	VERNON ST	S GRANT ST	2578	**9**	-0.15	39	0	0	1	4	4	4	1	1	0	0	0	3	0	0	0	0	1	1
OAK RIDGE DR & CIRBY WY	OAK RIDGE DR	CIRBY WY	3083	**9**	-0.28	54	0	0	2	5	2	4	2	2	0	0	0	1	0	3	1	2	0	2
E ROSEVILLE PW & ROCKY RIDGE DR	E ROSEVILLE PW	ROCKY RIDGE DR	3429	**9**	0.68	44	0	0	2	3	4	5	0	4	0	0	0	0	0	4	1	2	3	1
JUNCTION BL & BASELINE RD	JUNCTION BL	BASELINE RD	899	**8**	-0.27	172	0	1	0	0	7	0	0	3	0	2	0	1	1	3	0	1	2	2
PARK REGENCY DR & JUNCTION BL	PARK REGENCY DR	JUNCTION BL	1034	**8**	-0.20	52	0	0	3	3	2	7	0	0	0	1	0	0	0	1	0	1	1	1
DIAMOND CREEK BL & BLUE OAKS BL	DIAMOND CREEK BL	BLUE OAKS BL	1381	**8**	-0.34	33	0	0	0	5	3	3	0	0	2	2	0	0	1	5	0	0	2	1
RIVERSIDE AV & DARLING WY	RIVERSIDE AV	DARLING WY	2418	**8**	-0.20	33	0	0	1	3	4	2	0	2	1	1	0	1	1	1	0	2	3	1
OAK ST & LINCOLN ST	OAK ST	LINCOLN ST	2669	**8**	-0.24	23	0	0	0	3	5	3	4	1	0	0	0	0	0	1	0	0	2	0
CHASE DR & ROSEVILLE PW	CHASE DR	ROSEVILLE PW	2773	**8**	-0.33	47	0	0	3	2	3	3	0	4	0	1	0	0	0	5	0	0	4	2
SAN SIMEON DR & CIRBY WY	SAN SIMEON DR	CIRBY WY	2788	**8**	-0.31	37	0	0	3	0	5	2	0	3	2	1	0	0	0	3	1	0	3	0
GALLERIA BL & BERRY ST	GALLERIA BL	BERRY ST	3111	**8**	-0.25	28	0	0	0	4	4	0	1	6	0	1	0	0	0	5	2	0	1	0
ROSEVILLE PKWY & GIBSON DR	ROSEVILLE PKWY	GIBSON DR	3847	**8**	-0.33	38	0	0	1	4	3	1	1	4	0	1	0	1	0	4	0	0	2	0
KEEHNER AVE & DOUGLAS BLVD	KEEHNER AVE	DOUGLAS BLVD	3856	**8**	-0.17	28	0	0	0	4	4	3	0	4	0	1	0	0	0	5	0	0	0	1
YOSEMITE ST & ATLANTIC ST	YOSEMITE ST	ATLANTIC ST	3858	**8**	0.59	28	0	0	1	2	5	0	0	5	0	2	0	0	1	4	0	1	0	1
FIDDYMENT RD & DEL WEBB BL	FIDDYMENT RD	DEL WEBB BL	704	**7**	-0.31	22	0	0	1	1	5	1	1	3	0	1	0	0	1	2	0	3	1	1
CROCKER RANCH RD & BLUE OAKS BL	CROCKER RANCH RD	BLUE OAKS BL	1193	**7**	0.56	22	0	0	0	3	4	1	1	3	0	0	0	1	1	4	0	0	2	0
WOODCREEK OAKS BL & TRAILEE CT	WOODCREEK OAKS BL	TRAILEE CT	1444	**7**	-0.18	176	0	1	0	1	5	1	1	5	0	0	0	0	0	5	1	1	0	0
AMERICANA DR & JUNCTION BL	AMERICANA DR	JUNCTION BL	1841	**7**	-0.20	210	0	1	3	2	1	1	0	3	0	1	0	1	1	3	1	1	0	0
DEREK PL & WASHINGTON BL	DEREK PL	WASHINGTON BL	2227	**7**	-0.29	22	0	0	1	1	5	1	1	4	0	0	0	0	0	3	1	0	1	0
VERNON ST & JUDAH ST	VERNON ST	JUDAH ST	2502	**7**	-0.24	17	0	0	0	2	5	3	2	0	0	2	0	0	0	0	0	2	2	3
JUDAH ST & DOUGLAS BL	JUDAH ST	DOUGLAS BL	2596	**7**	-0.25	17	0	0	1	0	6	1	0	4	0	2	0	0	0	2	0	2	3	4
HARDING BL & ROSEVILLE SQUARE DRIVEWAY	HARDING BL	ROSEVILLE SQUARE DRIVEWAY	2954	**7**	-0.20	27	0	0	0	4	3	2	0	2	0	2	0	0	0	2	2	2	2	1
SUNRISE AV & SANDRINGHAM WY	SUNRISE AV	SANDRINGHAM WY	2996	**7**	-0.33	27	0	0	0	4	3	0	2	3	0	2	0	0	0	2	1	0	0	1
PARKVIEW DR & CIRBY WY	PARKVIEW DR	CIRBY WY	3170	**7**	-0.31	27	0	0	1	2	4	3	0	2	0	1	0	0	1	4	1	1	2	2
CIRBY WY & OLD AUBURN RD	CIRBY WY	OLD AUBURN RD	3407	**7**	-0.31	22	0	0	0	3	4	1	0	4	0	0	0	0	0	3	0	0	1	0

Legend		
Fatal/Serious Injury Collisions	LCCR Differential	Probably of Collision Type Exceeding Threshold Proportion
> 1 KSI Collision	> 1.0	90-100%
= 1 KSI Collision	0.33 - 1.0	80-90%
	< 0.33	70-80%

Kimley»Horn

Intersection Network Screening Results

Intersection	Cross Street 1	Cross Street 2	FID	Crashes	Local CCR Differential[1]	Equivalent Property Damage Only	*Fatal*	*Serious Injury*	*Other Visible Injury*	*Complaint of Pain*	*PDO*	Broadside	Sideswipe	Rear End	Head On	Hit Object	Overturned	Pedestrian	Bicycle	Aggressive	Distracted	Impaired	Dark	Wet
MEDICAL PZ & SECRET RAVINE PW	MEDICAL PZ	SECRET RAVINE PW	3413	**7**	-0.35	22	0	0	1	1	5	3	2	1	0	0	0	0	0	0	0	0	0	0
E ROSEVILLE PW & ALEXANDR DR	E ROSEVILLE PW	ALEXANDR DR	3415	**7**	-0.34	56	0	0	3	4	0	2	1	4	0	0	0	0	0	3	0	2	2	1
DEL WEBB BLVD & BLUE OAKS BLVD	DEL WEBB BLVD	BLUE OAKS BLVD	3851	**7**	-0.27	31	0	0	2	1	4	1	0	3	1	1	0	0	1	3	0	1	3	1
ROSE CREEK RD & PLEASANT GROVE BL	ROSE CREEK RD	PLEASANT GROVE BL	1179	**6**	-0.34	36	0	0	1	4	1	1	1	4	0	0	0	0	0	5	1	0	0	0
ROSEHALL DR & FAIRWAY DR	ROSEHALL DR	FAIRWAY DR	2508	**6**	-0.34	16	0	0	1	0	5	0	1	3	0	1	1	0	0	4	1	0	2	3
GALLERIA BL & SR 65 SB RAMPS	GALLERIA BL	SR 65 SB RAMPS	3107	**6**	-0.36	26	0	0	0	4	2	1	0	5	0	0	0	0	0	4	1	1	0	1
E ROSEVILLE PW & VILLAGE DR	E ROSEVILLE PW	VILLAGE DR	3600	**6**	-0.30	30	0	0	2	1	3	3	0	1	0	2	0	0	0	6	1	0	2	1
FIDELITY WAY & BLUE OAKS BLVD	FIDELITY WAY	BLUE OAKS BLVD	3850	**6**	-0.36	16	0	0	0	2	4	0	3	3	0	0	0	0	0	3	1	0	0	0
WOODCREEK OAKS BL & PAINTED DESERT DR	WOODCREEK OAKS BL	PAINTED DESERT DR	1546	**5**	-0.35	30	0	0	1	3	1	3	0	2	0	0	0	0	0	0	0	0	1	1
INDUSTRIAL AV & FREEDOM WY	INDUSTRIAL AV	FREEDOM WY	1911	**5**	-0.17	35	0	0	2	2	1	2	0	0	3	0	0	0	0	0	0	0	2	0
FAIRWAY DR & CORTINA CI	FAIRWAY DR	CORTINA CI	2376	**5**	-0.36	39	0	0	3	1	1	2	0	3	0	0	0	0	0	3	0	0	1	0
VERNON ST & DOUGLAS BL	VERNON ST	DOUGLAS BL	2405	**5**	-0.35	10	0	0	0	1	4	1	2	1	0	1	0	0	0	2	1	1	3	1
OAK ST & S GRANT ST	OAK ST	S GRANT ST	2608	**5**	-0.32	25	0	0	1	2	2	0	1	0	0	1	0	0	2	0	0	1	0	0
BULJAN DR & DOUGLAS BL	BULJAN DR	DOUGLAS BL	2659	**5**	-0.27	25	0	0	0	4	1	3	0	2	0	0	0	0	0	5	1	0	2	1
OAK RIDGE DR & SUNRISE AV	OAK RIDGE DR	SUNRISE AV	3013	**5**	-0.34	183	1	0	1	1	2	2	0	1	0	2	0	0	0	0	0	2	1	0
ROCKY RIDGE DR & MEADOWLARK WY	ROCKY RIDGE DR	MEADOWLARK WY	3268	**5**	-0.35	40	0	0	2	3	0	0	0	2	0	1	0	0	2	2	0	0	2	0
SIERRA COLLEGE BL & EUREKA RD	SIERRA COLLEGE BL	EUREKA RD	3758	**5**	-0.36	183	0	1	1	1	2	3	0	1	0	1	0	0	0	2	0	1	2	0
CIRBY WAY & E ROSEVILLE PKWY	CIRBY WAY	E ROSEVILLE PKWY	3846	**5**	-0.35	20	0	0	1	1	3	1	1	2	0	1	0	0	0	2	0	1	0	2
COUNTRY CLUB DR & JUNCTION BL	COUNTRY CLUB DR	JUNCTION BL	1592	**4**	-0.37	19	0	0	1	1	2	2	1	1	0	0	0	0	0	2	0	2	2	0
STANFORD RANCH RD & HIGHLAND PARK DR	STANFORD RANCH RD	HIGHLAND PARK DR	3024	**4**	-0.04	14	0	0	0	2	2	0	2	2	0	0	0	0	0	1	0	2	2	1
N SUNRISE AV & SIERRA GARDENS DR	N SUNRISE AV	SIERRA GARDENS DR	3125	**4**	-0.36	14	0	0	1	0	3	1	2	1	0	0	0	0	0	1	0	0	0	0
MAHANY PARK LOT & PLEASANT GROVE BLVD	MAHANY PARK LOT	PLEASANT GROVE BLVD	3852	**4**	-0.38	29	0	0	1	3	0	0	0	3	0	1	0	0	0	2	0	1	1	0
Unsignalized Intersections																								
GALILEE RD & PLEASANT GROVE BL	GALILEE RD	PLEASANT GROVE BL	1964	**34**	0.27	308	0	1	4	14	15	3	2	24	0	2	0	0	0	25	5	0	4	4
SUNRISE AV & MADDEN LN	SUNRISE AV	MADDEN LN	2991	**27**	0.26	389	0	2	2	3	20	13	4	6	1	1	0	0	0	6	1	3	2	3
AUBURN BL & WHYTE AV	AUBURN BL	WHYTE AV	2425	**26**	0.27	100	0	0	5	5	16	10	3	9	1	0	0	0	1	9	6	2	0	3
FOOTHILLS BL & SWITCHMAN DR	FOOTHILLS BL	SWITCHMAN DR	1890	**22**	0.19	116	0	0	6	7	9	14	0	1	2	2	0	1	1	0	1	3	9	1
OAK ST & WASHINGTON BL	OAK ST	WASHINGTON BL	2641	**21**	0.62	210	0	1	1	3	16	1	7	5	0	5	0	1	1	5	1	4	7	4
I-80 NB RAMP & DOUGLAS BL	I-80 NB RAMP	DOUGLAS BL	3086	**19**	0.05	79	0	0	3	6	10	1	9	6	0	0	0	0	3	6	0	1	3	3
CRESTMONT AV & CIRBY WY	CRESTMONT AV	CIRBY WY	3214	**19**	0.29	247	0	1	4	5	9	8	1	1	1	2	0	4	2	2	1	1	2	3
VERNON ST & ATLANTIC ST	VERNON ST	ATLANTIC ST	2690	**18**	0.77	73	0	0	3	5	10	6	4	1	2	5	0	0	0	10	1	1	6	11
ALANTOWN DR & BLUE OAKS BL	ALANTOWN DR	BLUE OAKS BL	1945	**17**	0.20	32	0	0	0	3	14	4	1	7	0	5	0	0	0	6	0	1	2	1
VERNON ST & TAYLOR ST	VERNON ST	TAYLOR ST	2543	**17**	0.70	220	1	0	2	4	10	4	10	1	1	0	0	0	0	1	0	1	2	3
LINCOLN ST & ALL AMERICA CITY BL	LINCOLN ST	ALL AMERICA CITY BL	2465	**16**	0.28	71	0	0	2	7	7	8	0	2	2	0	4	0	0	2	0	5	7	1
SUNRISE AV & CONROY LN	SUNRISE AV	CONROY LN	2988	**16**	0.08	76	0	0	3	6	7	10	1	4	0	0	0	1	0	3	0	0	1	3
SUNRISE AV & SUNDOWN WY	SUNRISE AV	SUNDOWN WY	2989	**16**	0.09	61	0	0	1	7	8	4	2	7	1	0	0	1	0	4	2	1	4	2
MALLARD LN & ROCKY RIDGE DR	MALLARD LN	ROCKY RIDGE DR	3256	**16**	0.32	205	0	1	1	3	11	4	1	1	0	9	0	0	0	11	0	2	4	12
PACIFIC ST & N GRANT ST	PACIFIC ST	N GRANT ST	2548	**15**	0.36	198	0	1	2	0	12	0	3	5	1	2	0	2	1	4	0	5	3	1
SUNRISE AV & PALM AV	SUNRISE AV	PALM AV	2987	**15**	0.06	65	0	0	2	6	7	6	0	7	0	0	0	1	0	6	0	2	3	2
STRAUCH DR & DOUGLAS BL	STRAUCH DR	DOUGLAS BL	3251	**15**	0.04	70	0	0	2	7	6	2	4	8	1	0	0	0	0	4	0	0	0	4

Legend		
Fatal/Serious Injury Collisions	LCCR Differential	Probably of Collision Type Exceeding Threshold Proportion
> 1 KSI Collision	> 1.0	90-100%
= 1 KSI Collision	0.33 - 1.0	80-90%
	< 0.33	70-80%

Kimley»Horn

Intersection Network Screening Results

Intersection	Cross Street 1	Cross Street 2	FID	Crashes	Local CCR Differential[1]	Equivalent Property Damage Only	*Fatal*	*Serious Injury*	*Other Visible Injury*	*Complaint of Pain*	*PDO*	Broadside	Sideswipe	Rear End	Head On	Hit Object	Overturned	Pedestrian	Bicycle	Aggressive	Distracted	Impaired	Dark	Wet
GALLERIA CI & ANTELOPE CREEK DR	GALLERIA CI	ANTELOPE CREEK DR	3087	**14**	0.55	376	0	2	2	3	7	4	2	6	0	0	1	0	0	6	0	1	8	3
NIBLICK DR & BLUE OAKS BL	NIBLICK DR	BLUE OAKS BL	3864	**14**	0.03	693	0	4	2	1	7	2	2	6	1	0	0	2	1	3	1	0	6	1
CHURCH ST & IVY ST	CHURCH ST	IVY ST	2225	**13**	0.49	33	0	0	1	2	10	1	3	3	1	4	0	0	0	3	1	6	7	6
WASHINGTON BL & GROVE ST	WASHINGTON BL	GROVE ST	2489	**13**	0.24	52	0	0	3	2	8	5	2	3	0	1	0	0	2	3	0	2	3	3
LA PORTE DR & PLEASANT GROVE BL	LA PORTE DR	PLEASANT GROVE BL	1757	**12**	0.04	47	0	0	2	3	7	2	2	2	0	3	0	0	2	4	1	0	2	1
SUMMERGROVE CI & FIFTEEN MILE DR	SUMMERGROVE CI	FIFTEEN MILE DR	2244	**12**	0.44	57	0	0	1	7	4	0	1	9	0	1	1	0	0	8	2	0	2	1
BERKELEY AV & MAIN ST	BERKELEY AV	MAIN ST	2461	**12**	0.44	46	0	0	3	1	8	0	7	4	0	0	1	0	0	3	0	3	6	1
COUNTRY CLUB DR & BASELINE RD	COUNTRY CLUB DR	BASELINE RD	1552	**11**	0.13	36	0	0	1	3	7	7	0	2	0	1	0	0	0	2	1	0	7	3
CIRBY OAKS WY & CIRBY WY	CIRBY OAKS WY	CIRBY WY	2252	**11**	0.01	56	0	0	2	5	4	3	1	6	0	0	0	1	0	5	0	1	2	4
VISTA CREEK DR & CIRBY WY	VISTA CREEK DR	CIRBY WY	3132	**11**	0.10	56	0	0	1	7	3	8	0	2	0	0	0	0	0	2	1	0	1	1
CREEKSIDE RIDGE CT & ANTELOPE CREEK DR	CREEKSIDE RIDGE CT	ANTELOPE CREEK DR	3167	**11**	0.91	46	0	0	1	5	5	6	2	1	1	1	0	0	0	1	1	2	4	1
TAYLOR RD & STONEHOUSE CT	TAYLOR RD	STONEHOUSE CT	3272	**11**	0.28	190	0	1	0	3	7	3	1	4	1	2	0	0	0	3	0	3	4	0
CHAMPION OAKS DR & CIRBY WY	CHAMPION OAKS DR	CIRBY WY	3388	**11**	0.66	36	0	0	1	3	7	7	1	2	0	0	0	0	0	4	1	0	3	0
COUNTRY CLUB DR & MCANALLY DR	COUNTRY CLUB DR	MCANALLY DR	1690	**10**	0.39	70	0	0	3	6	1	7	0	0	0	0	0	1	2	5	2	0	3	0
RIVERSIDE AV & I-80 SB RAMP	RIVERSIDE AV	I-80 SB RAMP	2422	**10**	-0.02	194	0	1	1	2	6	4	3	3	0	0	0	0	0	2	1	2	2	0
YOSEMITE ST & TAHOE AV	YOSEMITE ST	TAHOE AV	2725	**10**	0.58	30	0	0	0	4	6	6	2	1	0	1	0	0	0	1	0	0	0	2
ASCOT DR & SUNRISE AV	ASCOT DR	SUNRISE AV	3051	**10**	0.21	45	0	0	1	5	4	6	2	0	0	2	0	0	0	1	0	1	3	0
CIRCUIT DR & CHURCH ST	CIRCUIT DR	CHURCH ST	2135	**9**	0.91	48	0	0	4	0	5	1	0	2	0	5	1	0	0	5	0	0	1	7
INGLIS WY & CIRBY WY	INGLIS WY	CIRBY WY	2187	**9**	-0.02	44	0	0	1	5	3	1	2	6	0	0	0	0	0	6	1	0	1	1
WASHINGTON BL & PLEASANT ST	WASHINGTON BL	PLEASANT ST	2488	**9**	0.11	361	2	0	1	3	3	3	0	3	0	0	0	2	1	1	0	0	4	0
OAK ST & TAYLOR ST	OAK ST	TAYLOR ST	2570	**9**	0.26	24	0	0	0	3	6	5	0	4	0	0	0	0	0	4	2	0	2	0
MONTROSE AV & FAIRWAY DR	MONTROSE AV	FAIRWAY DR	2595	**9**	0.03	203	0	1	0	6	2	7	2	0	0	0	0	0	0	0	0	0	3	2
BONNY KNOLL RD & DOUGLAS BL	BONNY KNOLL RD	DOUGLAS BL	2915	**9**	0.02	34	0	0	1	3	5	2	2	4	0	0	0	1	0	4	1	1	1	0
PLEASANT GROVE BL & PLEASANT GROVE BL	PLEASANT GROVE BL	PLEASANT GROVE BL	325	**8**	0.12	23	0	0	1	1	6	4	0	0	0	2	0	1	0	0	0	0	2	0
CAROLYN CT & BASELINE RD	CAROLYN CT	BASELINE RD	1245	**8**	0.12	23	0	0	0	3	5	0	0	8	0	0	0	0	0	8	0	0	0	0
WASHINGTON BL & INDUSTRIAL AV	WASHINGTON BL	INDUSTRIAL AV	1987	**8**	0.10	181	0	1	1	0	6	3	1	2	1	1	0	0	0	2	0	0	1	0
WASHINGTON BL & CAMELOT DR	WASHINGTON BL	CAMELOT DR	2039	**8**	0.20	53	0	0	1	7	0	1	3	2	0	1	1	0	0	2	1	1	3	2
CLINTON AV & PRATT ST	CLINTON AV	PRATT ST	2454	**8**	0.49	42	0	0	3	1	4	0	3	1	1	0	2	0	1	1	0	0	3	0
COCONUT AL & N GRANT ST	COCONUT AL	N GRANT ST	2457	**8**	0.58	13	0	0	0	1	7	0	2	0	0	4	1	0	1	2	0	1	1	1
CHURCH ST & CHURCH ST	CHURCH ST	CHURCH ST	2462	**8**	0.77	42	0	0	3	1	4	5	0	0	0	3	0	0	0	2	0	0	2	2
CARDINAL WY & DOUGLAS BL	CARDINAL WY	DOUGLAS BL	3127	**8**	-0.05	13	0	0	0	1	7	0	2	6	0	0	0	0	0	4	0	1	1	0
FOXBOROUGH WY & BASELINE RD	FOXBOROUGH WY	BASELINE RD	1792	**7**	0.03	31	0	0	2	1	4	1	1	2	0	2	0	0	1	3	0	0	2	1
ALANTOWN DR & INDUSTRIAL AV	ALANTOWN DR	INDUSTRIAL AV	1910	**7**	0.41	22	0	0	0	3	4	2	2	1	0	0	1	0	1	0	0	1	3	0
ATKINSON ST & DENIO LP	ATKINSON ST	DENIO LP	1986	**7**	0.25	12	0	0	0	1	6	3	0	3	0	1	0	0	0	1	0	1	1	1
AUBURN BL & I-80 NB RAMP	AUBURN BL	I-80 NB RAMP	2426	**7**	-0.02	27	0	0	1	2	4	2	1	3	0	0	0	0	0	4	0	1	1	0
COTTONWOOD DR & CIRBY WY	COTTONWOOD DR	CIRBY WY	3204	**7**	0.00	12	0	0	0	1	6	1	3	2	0	0	0	0	0	2	2	1	1	1
ROCKY RIDGE DR & LORETTO DR	ROCKY RIDGE DR	LORETTO DR	3265	**7**	0.02	51	0	0	3	3	1	2	1	0	1	0	0	2	1	0	1	0	2	3
PIEDMONT WY & CIRBY WY	PIEDMONT WY	CIRBY WY	3267	**7**	0.02	195	0	1	2	1	3	3	0	2	0	1	0	0	0	2	0	2	4	2
AMERICANA DR & BASELINE RD	AMERICANA DR	BASELINE RD	1759	**6**	0.00	21	0	0	1	1	4	1	1	2	0	2	0	0	0	2	0	0	2	2
BRADY LN & BASELINE RD	BRADY LN	BASELINE RD	1829	**6**	0.00	180	0	1	0	2	3	3	0	1	1	1	0	0	0	1	0	1	2	2

Legend		
Fatal/Serious Injury Collisions	LCCR Differential	Probably of Collision Type Exceeding Threshold Proportion
> 1 KSI Collision	> 1.0	90-100%
= 1 KSI Collision	0.33 - 1.0	80-90%
	< 0.33	70-80%

Kimley»Horn

Intersection Network Screening Results

Intersection	Cross Street 1	Cross Street 2	FID	Crashes	Local CCR Differential[1]	Equivalent Property Damage Only	*Fatal*	*Serious Injury*	*Other Visible Injury*	*Complaint of Pain*	*PDO*	Broadside	Sideswipe	Rear End	Head On	Hit Object	Overturned	Pedestrian	Bicycle	Aggressive	Distracted	Impaired	Dark	Wet
INDUSTRIAL AV & INDUSTRIAL AV	INDUSTRIAL AV	INDUSTRIAL AV	1946	**6**	0.31	333	2	0	0	0	4	2	1	1	0	2	0	0	0	0	1	2	2	0
VERNON ST & SIXTH ST	VERNON ST	SIXTH ST	2106	**6**	0.16	26	0	0	1	2	3	0	1	0	0	4	1	0	0	0	0	5	5	1
RIVERSIDE AV & BONITA ST	RIVERSIDE AV	BONITA ST	2407	**6**	0.09	6	0	0	0	0	6	4	2	0	0	0	0	0	0	0	0	0	2	1
RIVERSIDE AV & SIXTH ST	RIVERSIDE AV	SIXTH ST	2417	**6**	0.09	11	0	0	0	1	5	0	1	1	0	3	0	1	0	0	3	2	2	2
SUNBURST AL & DOUGLAS BL	SUNBURST AL	DOUGLAS BL	2468	**6**	0.30	26	0	0	1	2	3	2	1	1	0	0	0	0	1	1	0	0	1	1
ALMOND ST & ATLANTIC ST	ALMOND ST	ATLANTIC ST	2696	**6**	0.50	41	0	0	2	3	1	4	2	0	0	0	0	0	0	0	0	0	0	1
CAPITOLA CT & TREHOWELL DR	CAPITOLA CT	TREHOWELL DR	2799	**6**	0.50	36	0	0	2	2	2	0	1	5	0	0	0	0	0	4	0	0	4	1
BERRY ST & BERRY ST	BERRY ST	BERRY ST	2947	**6**	0.28	343	0	2	1	0	3	2	0	0	1	1	0	1	0	0	0	2	0	1
EAST ST & ATLANTIC ST	EAST ST	ATLANTIC ST	2979	**6**	0.27	26	0	0	0	4	2	3	2	1	0	0	0	0	0	1	0	3	3	1
MEADOW OAKS DR & CIRBY WY	MEADOW OAKS DR	CIRBY WY	3100	**6**	-0.02	36	0	0	2	2	2	2	1	2	1	0	0	0	0	2	0	0	0	1
EUREKA RD & LAVA RIDGE CT	EUREKA RD	LAVA RIDGE CT	3373	**6**	-0.03	36	0	0	2	2	2	4	1	0	0	0	0	1	0	0	0	0	0	0
PROFESSIONAL DR & DOUGLAS BL	PROFESSIONAL DR	DOUGLAS BL	3498	**6**	-0.07	31	0	0	0	5	1	2	1	3	0	0	0	0	0	2	0	0	0	0
MISTY WOOD DR & PLEASANT GROVE BL	MISTY WOOD DR	PLEASANT GROVE BL	1803	**5**	-0.07	20	0	0	1	1	3	2	0	1	0	1	0	0	0	0	0	1	0	0
FOOTHILLS BL & CHIGNAHUAPAN WY	FOOTHILLS BL	CHIGNAHUAPAN WY	1892	**5**	-0.07	15	0	0	1	0	4	0	1	3	1	0	0	0	0	3	1	1	2	1
MICRO CT & JUNCTION BL	MICRO CT	JUNCTION BL	1947	**5**	-0.01	5	0	0	0	0	5	1	0	1	0	3	0	0	0	1	0	4	2	2
ATKINSON ST & BOOTH RD	ATKINSON ST	BOOTH RD	1952	**5**	0.30	10	0	0	0	1	4	2	1	2	0	0	0	0	0	1	0	1	1	0
ROSEVILLE RD & COMMERCE DR	ROSEVILLE RD	COMMERCE DR	1988	**5**	-0.07	15	0	0	0	2	3	0	2	0	1	0	2	0	0	0	0	1	2	1
ELIZABETH CT & ARLENE DR	ELIZABETH CT	ARLENE DR	2158	**5**	0.36	174	1	0	0	1	3	0	0	4	0	1	0	0	0	4	0	1	1	0
DURANTA ST & OAKLAND AV	DURANTA ST	OAKLAND AV	2302	**5**	0.90	15	0	0	1	0	4	0	1	0	2	0	0	0	0	0	0	3	2	0
RIVERSIDE AV & I-80 SB RAMP	RIVERSIDE AV	I-80 SB RAMP	2424	**5**	-0.06	30	0	0	1	3	1	0	0	4	0	0	0	1	0	4	1	1	2	1
OAK ST & JUDAH ST	OAK ST	JUDAH ST	2536	**5**	0.03	5	0	0	0	0	5	2	1	2	0	0	0	0	0	0	1	2	3	0
SEQUOIA ST & TAHOE AV	SEQUOIA ST	TAHOE AV	2769	**5**	0.36	29	0	0	2	1	2	1	1	3	0	0	0	0	0	0	1	1	4	0
LAS FLORES ST & SIERRA BL	LAS FLORES ST	SIERRA BL	2812	**5**	0.90	30	0	0	0	5	0	4	0	0	0	0	0	0	1	0	0	0	0	0
SUNRISE AV & I-80 NB RAMP	SUNRISE AV	I-80 NB RAMP	2995	**5**	-0.06	10	0	0	0	1	4	0	4	1	0	0	0	0	0	1	1	0	1	2
SUN TREE DR & SANDRINGHAM WY	SUN TREE DR	SANDRINGHAM WY	3018	**5**	0.36	10	0	0	0	1	4	1	0	0	2	2	0	0	0	0	0	2	4	1
HARDING BL & SHADOW RIDGE	HARDING BL	SHADOW RIDGE	3069	**5**	-0.05	25	0	0	1	2	2	0	0	3	1	1	0	0	0	2	1	0	0	1
ROCKY RIDGE DR & CONDOR CT	ROCKY RIDGE DR	CONDOR CT	3235	**5**	-0.02	25	0	0	1	2	2	0	0	2	0	2	1	0	0	0	0	3	2	3
EUREKA RD & EUREKA RD	EUREKA RD	EUREKA RD	3398	**5**	-0.03	29	0	0	2	1	2	2	0	1	1	1	0	0	0	1	0	1	1	2
BOB DOYLE DR & BOB DOYLE DR	BOB DOYLE DR	BOB DOYLE DR	368	**4**	0.02	9	0	0	0	1	3	0	2	1	0	0	0	1	0	0	0	0	0	0
WOODCREEK OAKS BL & CALLE LAS CASAS	WOODCREEK OAKS BL	CALLE LAS CASAS	1423	**4**	-0.04	24	0	0	1	2	1	2	0	0	0	1	0	0	1	0	0	0	0	0
FOOTHILLS BL & ZINFANDEL DR	FOOTHILLS BL	ZINFANDEL DR	1893	**4**	-0.09	9	0	0	0	1	3	1	0	2	0	0	0	0	1	1	0	1	1	0
OPPORTUNITY DR & VINEYARD RD	OPPORTUNITY DR	VINEYARD RD	1941	**4**	0.05	29	0	0	1	3	0	4	0	0	0	0	0	0	0	0	0	0	0	1
PORTER DR & MAIN ST	PORTER DR	MAIN ST	2000	**4**	0.13	19	0	0	1	1	2	2	0	1	0	0	0	0	1	0	0	0	1	0
WINSLOW DR & FARMINGTON CI	WINSLOW DR	FARMINGTON CI	2038	**4**	0.91	19	0	0	1	1	2	1	0	1	0	1	0	0	1	1	0	0	1	2
ROSEVILLE PW & Garden Park Dr/Manhattan Dr	ROSEVILLE PW	Garden Park Dr/Manhattan Dr	2200	**4**	0.01	23	0	0	2	0	2	1	0	0	0	2	0	0	0	0	0	1	2	1
CHURCH ST & HICKORY ST	CHURCH ST	HICKORY ST	2249	**4**	0.22	173	0	1	0	1	2	1	0	0	3	0	0	0	0	0	0	2	4	2
MARSHALL AV & MAIN ST	MARSHALL AV	MAIN ST	2266	**4**	0.91	4	0	0	0	0	4	0	0	2	1	0	0	0	0	0	0	3	4	2
ALLEY & FOURTH ST	ALLEY	FOURTH ST	2394	**4**	0.63	9	0	0	0	1	3	1	2	1	0	0	0	0	0	0	0	0	0	0
ALLEY & FIFTH ST	ALLEY	FIFTH ST	2396	**4**	0.91	19	0	0	1	1	2	1	0	1	0	0	1	0	0	2	0	1	1	1
BIRCH ST & CHURCH ST	BIRCH ST	CHURCH ST	2399	**4**	0.22	9	0	0	0	1	3	1	2	0	0	0	0	0	1	0	0	0	0	0

Legend		
Fatal/Serious Injury Collisions	LCCR Differential	Probably of Collision Type Exceeding Threshold Proportion
> 1 KSI Collision	> 1.0	90-100%
= 1 KSI Collision	0.33 - 1.0	80-90%
	< 0.33	70-80%

Kimley»Horn

Intersection Network Screening Results

Intersection	Cross Street 1	Cross Street 2	FID	Crashes	Local CCR Differential[1]	Equivalent Property Damage Only	*Fatal*	*Serious Injury*	*Other Visible Injury*	*Complaint of Pain*	*PDO*	Broadside	Sideswipe	Rear End	Head On	Hit Object	Overturned	Pedestrian	Bicycle	Aggressive	Distracted	Impaired	Dark	Wet
ALTA AV & MAIN ST	ALTA AV	MAIN ST	2416	**4**	0.91	19	0	0	1	1	2	1	1	2	0	0	0	0	0	2	1	0	0	0
COCONUT AL & MAIN ST	COCONUT AL	MAIN ST	2486	**4**	0.91	9	0	0	0	1	3	1	0	1	0	1	0	1	0	2	1	0	1	0
ROYER ST & DOUGLAS BL	ROYER ST	DOUGLAS BL	2533	**4**	0.11	19	0	0	1	1	2	1	0	2	0	1	0	0	0	3	1	2	1	1
ROYER ST & JUDAH ST	ROYER ST	JUDAH ST	2562	**4**	0.06	14	0	0	0	2	2	4	0	0	0	0	0	0	0	1	0	0	1	0
LINCOLN ST & AL	LINCOLN ST	AL	2587	**4**	0.63	9	0	0	0	1	3	0	1	1	0	1	0	1	0	1	0	0	1	1
DIAMOND OAKS RD & NICKLAUS CI	DIAMOND OAKS RD	NICKLAUS CI	2588	**4**	0.91	14	0	0	1	0	3	0	0	0	0	3	0	0	0	0	0	3	2	0
SOMER RIDGE DR & ORLANDO AV	SOMER RIDGE DR	ORLANDO AV	2623	**4**	0.05	19	0	0	1	1	2	0	0	2	1	1	0	0	0	0	0	1	0	0
YOSEMITE ST & SIERRA BL	YOSEMITE ST	SIERRA BL	2666	**4**	-0.02	9	0	0	0	1	3	2	0	0	0	0	0	0	0	0	0	1	3	0
YOSEMITE ST & CORONADO AV	YOSEMITE ST	CORONADO AV	2692	**4**	0.07	19	0	0	1	1	2	1	1	0	1	0	0	0	0	0	0	1	0	1
SALMON DR & CIRBY WY	SALMON DR	CIRBY WY	2902	**4**	-0.08	14	0	0	0	2	2	2	1	1	0	0	0	0	0	1	0	1	0	0
REGENCY DR & CIRBY WY	REGENCY DR	CIRBY WY	2937	**4**	-0.08	182	0	1	1	1	1	2	0	0	1	0	0	0	0	1	0	0	0	0
GREEN HILL DR & CIRBY WY	GREEN HILL DR	CIRBY WY	3036	**4**	-0.07	24	0	0	0	4	0	1	0	3	0	0	0	0	0	3	1	0	0	0
DAISY CT & CIRBY WY	DAISY CT	CIRBY WY	3157	**4**	-0.07	24	0	0	1	2	1	2	0	2	0	0	0	0	0	2	0	0	1	0
CRESTMONT AV & VISTA CREEK DR	CRESTMONT AV	VISTA CREEK DR	3212	**4**	0.63	177	0	1	1	0	2	0	0	2	1	0	0	1	0	0	1	1	1	0
EUREKA RD & PROFESSIONAL DR	EUREKA RD	PROFESSIONAL DR	3378	**4**	0.12	188	0	1	1	2	0	2	0	0	1	0	0	0	1	0	0	0	1	1
STONE CANYON DR & SECRET RAVINE PW	STONE CANYON DR	SECRET RAVINE PW	3614	**4**	-0.08	9	0	0	0	1	3	0	1	0	0	2	0	0	0	1	0	0	3	3
OLD AUBURN RD & EASTRIDGE DR	OLD AUBURN RD	EASTRIDGE DR	3807	**4**	0.23	9	0	0	0	1	3	0	0	4	0	0	0	0	0	3	2	1	1	0

Legend				
Fatal/Serious Injury Collisions		LCCR Differential		Probably of Collision Type Exceeding Threshold Proportion
	> 1 KSI Collision	> 1.0		90-100%
	= 1 KSI Collision	0.33 - 1.0		80-90%
		< 0.33		70-80%

Kimley»Horn

APPENDIX D

SEGMENT NETWORK SCREENING RESULTS

Segment Network Screening Results

Facility	FID_2	Cross Street 1	Cross Street 1	Crashes	Local CCR Differential[1]	Equivalent Property Damage Only	*Fatal*	*Serious Injury*	*Other Visible Injury*	*Complaint of Pain*	*PDO*	Broadside	Sideswipe	Rear End	Head On	Hit Object	Overturned	Pedestrian	Bicycle	Aggressive	Distracted	Impaired	Dark	Wet
Major Arterial																								
PLEASANT GROVE BL	732	GALILEE RD	FOOTHILLS BL	**34**	0.19	143	0	0	5	12	17	1	2	27	0	2	1	0	1	27	6	2	10	3
DOUGLAS BL	5121	E ROSEVILLE PW	SIERRA COLLEGE BL	**34**	0.13	129	0	0	4	11	19	7	6	18	0	1	0	0	1	17	0	1	2	5
ROSEVILLE PW	514	W GIBSON DR	CHASE DR	**30**	0.21	302	0	1	7	8	14	9	1	12	1	6	1	0	0	11	3	2	11	6
PLEASANT GROVE BL	439	HIGHLAND POINTE DR	ROSEVILLE PW	**25**	0.13	105	0	0	2	12	11	7	3	13	0	1	0	0	1	10	4	1	7	0
ROSEVILLE PW	3390	CREEKSIDE RIDGE DR	TAYLOR RD	**25**	0.04	129	0	0	6	9	10	1	1	20	1	0	0	0	1	19	4	0	0	2
FOOTHILLS BL	2944	CIRBY WY	DENIO LP	**23**	-0.05	107	0	0	5	7	11	1	7	10	2	3	0	0	0	11	0	3	3	5
DOUGLAS BL	3388	ROCKY RIDGE DR	EUREKA RD	**23**	0.17	113	0	0	3	12	8	1	0	20	1	0	0	1	0	16	2	0	2	6
STANFORD RANCH RD	3393	FIVE STAR BL	SR 65 NB ON RAMP	**22**	0.37	108	0	0	1	15	6	1	1	19	1	0	0	0	0	19	3	1	6	3
DOUGLAS BL	5337	I-80 SB OFF RAMP	I-80 NB ON RAMP	**16**	0.11	76	0	0	3	6	7	2	2	10	0	0	0	0	0	8	1	0	3	2
DOUGLAS BL	2239	EUREKA RD	PROFESSIONAL DR	**14**	-0.08	54	0	0	1	6	7	2	0	11	0	0	0	1	0	9	2	0	2	5
DOUGLAS BL	3385	SIERRA GARDENS DR	TJ MAXX PLAZA	**14**	0.17	59	0	0	1	7	6	2	1	11	0	0	0	0	0	10	3	1	1	3
GALLERIA BL	3391	ROSEVILLE PW	ANTELOPE CREEK DR	**12**	-0.02	47	0	0	1	5	6	0	2	5	1	3	0	0	1	5	0	1	5	1
ROSEVILLE PW	463	PLEASANT GROVE BL	ANTELOPE CREEK DR	**11**	-0.03	233	0	1	5	2	3	1	2	4	1	2	0	0	1	2	0	2	7	1
FOOTHILLS BL	1375	JUNCTION BL	MCANALLY DR	**11**	-0.09	36	0	0	1	3	7	8	1	1	0	0	0	0	0	0	0	2	4	4
GALLERIA BL	3392	ANTELOPE CREEK DR	SR 65 SB RAMPS	**11**	-0.06	41	0	0	2	2	7	3	3	4	1	0	0	0	0	4	0	1	0	2
PLEASANT GROVE BL	6055	SR 65 SB RAMPS	HIGHLAND POINTE DR	**11**	0.07	46	0	0	1	5	5	0	1	9	0	0	0	0	1	6	2	1	3	0
PLEASANT GROVE BL	495	ROSEVILLE PW	PIONEER RD	**10**	0.04	44	0	0	3	1	6	4	1	4	0	0	0	0	0	2	0	0	4	1
EUREKA RD	6048	ROCKY RIDGE DR	LEAD HILL DR	**10**	0.25	35	0	0	0	5	5	3	3	3	0	0	0	0	0	3	1	0	0	2
ROSEVILLE PW	875	WEST DR	RESERVE DR	**9**	-0.13	24	0	0	1	1	7	0	1	8	0	0	0	0	0	6	3	0	0	1
E ROSEVILLE PW	1250	TAYLOR RD	N SUNRISE AV	**9**	-0.14	34	0	0	0	5	4	0	4	5	0	0	0	0	0	3	1	0	1	1
BASELINE RD	1969	FOOTHILLS BL	BRADY LN	**9**	-0.10	53	0	0	3	3	3	7	0	0	0	1	0	0	1	0	0	0	1	0
E ROSEVILLE PW	6026	N SUNRISE AV	SECRET RAVINE PW	**9**	0.15	198	0	1	1	3	4	0	3	4	1	0	0	0	1	4	0	0	2	0
PLEASANT GROVE BL	578	GOLD COAST DR	PIONEER RD	**8**	-0.15	43	0	0	2	3	3	1	0	3	0	2	0	0	0	2	0	2	2	2
PLEASANT GROVE BL	664	ABBEY LN	WASHINGTON BL	**7**	-0.14	12	0	0	0	1	6	0	1	6	0	0	0	0	0	6	3	0	1	1
FOOTHILLS BL	955	SOUTH BLUFF DR	PLEASANT GROVE BL	**7**	-0.12	196	0	1	1	3	2	3	1	2	0	0	0	0	1	3	1	1	2	0
ROSEVILLE PW	6049	GALLERIA BL	CREEKSIDE RIDGE DR	**7**	-0.05	22	0	0	1	1	5	0	3	3	0	1	0	0	0	2	0	1	0	0
BLUE OAKS BL	6098	FIDDYMENT RD	HAYDEN PW	**7**	-0.04	27	0	0	1	2	4	0	0	4	0	2	0	0	0	3	0	2	1	2
BLUE OAKS BL	6122	FOOTHILLS BL	NEW MEADOW DR	**7**	-0.18	27	0	0	0	4	3	1	3	2	0	1	0	0	0	3	0	0	1	0
DOUGLAS BL	2244	CARDINAL WY	SANTA CLARA DR	**6**	-0.15	16	0	0	0	2	4	1	0	5	0	0	0	0	0	4	1	1	2	0
PLEASANT GROVE BL	3362	FAIRWAY DR	SR 65 WB OFF RAMP	**6**	-0.15	190	0	1	0	4	1	0	2	4	0	0	0	0	0	4	0	0	1	0
BLUE OAKS BL	24	ALANTOWN DR	FOOTHILLS BL	**5**	-0.19	15	0	0	0	2	3	0	0	4	0	0	0	0	0	2	0	0	1	1
DOUGLAS BL	3384	SANTA CLARA DR	SIERRA GARDENS DR	**5**	-0.13	25	0	0	1	2	2	1	1	2	0	0	0	0	0	1	0	0	3	0
DOUGLAS BL	3389	PROFESSIONAL DR	E ROSEVILLE PW	**5**	-0.18	25	0	0	1	2	2	0	0	4	0	1	0	0	0	4	1	0	0	0
ROSEVILLE PW	6051	RESERVE DR	GALLERIA BL	**5**	0.00	5	0	0	0	0	5	1	1	2	0	1	0	0	0	1	1	2	2	1
BLUE OAKS BL	6094	DEL WEBB BL	CROCKER RANCH RD	**5**	0.02	189	0	1	1	2	1	0	3	1	0	0	1	0	0	1	0	2	1	0
BASELINE RD	1977	WOODCREEK OAKS BL	CAROLYN CT	**4**	-0.15	34	0	0	2	2	0	0	2	2	0	0	0	0	0	4	0	0	0	2

Legend					
Fatal/Serious Injury Collisions		LCCR Differential		Probably of Collision Type Exceeding Threshold Proportion	
	> 1 KSI Collision		> 1.0		90-100%
	= 1 KSI Collision		0.33 - 1.0		80-90%
			< 0.33		70-80%

Kimley»Horn

Segment Network Screening Results

Facility	FID_2	Cross Street 1	Cross Street 1	Crashes	Local CCR Differential[1]	Equivalent Property Damage Only	*Fatal*	*Serious Injury*	*Other Visible Injury*	*Complaint of Pain*	*PDO*	Broadside	Sideswipe	Rear End	Head On	Hit Object	Overturned	Pedestrian	Bicycle	Aggressive	Distracted	Impaired	Dark	Wet
FOOTHILLS BL	2400	ENTERPRISE WY	VINEYARD RD	**4**	-0.21	14	0	0	0	2	2	0	1	2	0	1	0	0	0	3	0	0	0	1
SIERRA COLLEGE BL	3265	OLD AUBURN RD	CITY LIMITS	**4**	-0.09	9	0	0	0	1	3	0	1	3	0	0	0	0	0	3	0	0	0	0
Minor Arterial																								
TAYLOR RD	1448	EUREKA RD	E ROSEVILLE PW	**26**	0.11	298	0	1	7	8	10	12	2	7	5	0	0	0	0	3	1	1	3	2
CIRBY WY	3560	REGENCY DR	SUNRISE AV	**25**	0.65	95	0	0	2	10	13	10	2	4	6	2	0	0	1	3	0	1	1	1
SUNRISE AV	3884	DOUGLAS BL	SIERRA GARDENS DR	**24**	0.29	252	0	1	3	7	13	14	4	2	2	0	0	1	1	2	2	2	1	3
SUNRISE AV	2774	COLOMA WY	SUNDOWN WY	**22**	0.27	289	0	1	7	7	7	7	4	6	1	1	1	1	1	5	3	1	2	2
ROCKY RIDGE DR	4349	LEAD HILL BL	DOUGLAS BL	**18**	0.08	96	0	0	7	2	9	9	3	2	0	1	0	1	0	1	2	1	3	3
ATLANTIC ST	1416	I-80 SB On Ramp	TAYLOR RD	**16**	0.14	70	0	0	4	3	9	2	3	5	2	0	3	0	0	8	2	2	6	0
CIRBY WY	3561	SUNRISE AV	GABRIELLI DR	**16**	0.55	61	0	0	1	7	8	8	0	3	4	0	0	1	0	1	0	1	1	1
FAIRWAY DR	3361	CENTRAL PARK DR	PLEASANT GROVE BL	**13**	0.00	53	0	0	2	4	7	6	1	3	2	0	1	0	0	2	0	0	0	1
PLEASANT GROVE BL	6105	WOODCREEK OAKS BL	MAHANY PARK LOT	**13**	0.04	58	0	0	1	7	5	7	2	2	0	1	0	0	1	1	0	0	0	0
CIRBY WY	2962	FOOTHILLS BL	VERNON ST	**12**	-0.04	62	0	0	2	6	4	2	1	8	0	0	0	0	1	5	0	0	1	0
HARDING BL	2167	HARDING BL	MAHAN CT	**11**	-0.02	46	0	0	2	3	6	5	1	2	2	1	0	0	0	1	0	2	2	3
RIVERSIDE AV	2950	KENROY LN	CIRBY WY	**10**	0.01	194	1	0	0	4	5	2	0	6	0	1	0	1	0	5	2	0	4	0
WOODCREEK OAKS BL	46	PAINTED DESERT DR	BLUE OAKS BL	**9**	0.42	44	0	0	2	3	4	7	0	0	1	0	0	0	1	0	0	0	1	1
TAYLOR RD	5353	E ROSEVILLE PW	I-80 NB OFF RAMP	**9**	0.23	34	0	0	0	5	4	3	2	3	0	1	0	0	0	2	1	3	2	1
CIRBY WY	2956	LINDSAY DR	MELODY LN	**8**	-0.05	18	0	0	0	2	6	2	1	5	0	0	0	0	0	5	0	1	2	1
SUNRISE AV	3031	CIRBY WY	KENSINGTON DR	**8**	-0.05	38	0	0	2	2	4	3	0	4	0	0	0	0	1	2	0	0	0	1
SUNRISE AV	3226	KENSINGTON DR	SANDRINGHAM WY	**8**	-0.14	43	0	0	1	5	2	0	0	7	1	0	0	0	0	5	0	0	1	1
GALLERIA BL	6033	BERRY ST	ROSEVILLE PW	**8**	-0.14	33	0	0	1	3	4	0	2	6	0	0	0	0	0	4	1	0	1	0
WASHINGTON BL	927	KASEBERG DR	DIAMOND OAKS RD	**7**	-0.21	210	0	1	3	2	1	1	1	4	0	0	0	0	1	4	0	1	2	0
CIRBY WY	2947	CIRBY HILLS DR	ORLANDO AVE/MARLIN DR	**7**	-0.17	42	0	0	1	5	1	0	1	5	0	1	0	0	0	3	0	1	0	1
SUNRISE AV	2941	MADDEN LN	CIRBY WY	**6**	-0.15	16	0	0	1	0	5	1	1	2	1	1	0	0	0	2	1	1	0	0
ROCKY RIDGE DR	4350	DOUGLAS BL	PROFESSIONAL DR	**6**	-0.10	26	0	0	0	4	2	1	2	0	0	0	0	0	1	0	0	0	1	0
FAIRWAY DR	238	CENTRLA PARK DR	HOME DEPOT	**5**	-0.24	20	0	0	1	1	3	0	0	5	0	0	0	0	0	2	1	2	2	2
WOODCREEK OAKS BL	740	CANEVARI DR	CALLE LAS CASAS	**5**	-0.23	30	0	0	1	3	1	1	0	0	1	1	2	0	0	1	1	2	0	1
PLEASANT GROVE BL	752	FOOTHILLS BL	MISTY WOOD DR	**5**	-0.17	20	0	0	0	3	2	1	1	3	0	0	0	0	0	3	0	0	0	0
WASHINGTON BL	835	DIAMOND OAKS RD	PLEASANT GROVE BL	**5**	-0.20	20	0	0	1	1	3	0	2	3	0	0	0	0	0	2	0	0	0	0
TAYLOR RD	841	STONEHOUSE CT	PLUMBER WY	**5**	-0.22	184	0	1	0	3	1	1	0	2	1	1	0	0	0	2	1	1	0	0
WOODCREEK OAKS BL	936	PLEASANT GROVE BL	CANEVARI DR	**5**	-0.22	15	0	0	1	0	4	1	2	2	0	0	0	0	0	2	1	0	0	1
N SUNRISE AV	3885	SIERRA GARDENS DR	LEAD HILL BL	**5**	0.77	15	0	0	0	2	3	2	0	3	0	0	0	0	0	2	1	0	1	0
TAYLOR RD	1249	I-80 SB ON RAMP	STONEHOUSE CT	**4**	-0.22	24	0	0	1	2	1	3	0	0	1	0	0	0	0	0	0	0	1	0
HARDING BL	2196	HARDING BL	HARDING BL	**4**	-0.18	28	0	0	2	1	1	4	0	0	0	0	0	0	0	1	0	0	0	1
CIRBY WY	2949	RIVERSIDE AV	CIRBY HILLS DR	**4**	-0.05	9	0	0	0	1	3	0	0	4	0	0	0	0	0	4	0	0	1	0
CIRBY WY	3568	PARKVIEW DR	COTTONWOOD DR	**4**	-0.02	4	0	0	0	0	4	1	1	1	0	1	0	0	0	0	0	1	0	1
TAYLOR RD	5370	I-80 SB ON RAMP	I-80 NB OFF RAMP	**4**	-0.22	331	0	2	0	0	2	2	1	0	0	1	0	0	0	0	1	0	1	0

Legend					
Fatal/Serious Injury Collisions		LCCR Differential		Probably of Collision Type Exceeding Threshold Proportion	
	> 1 KSI Collision		> 1.0		90-100%
	= 1 KSI Collision		0.33 - 1.0		80-90%
			< 0.33		70-80%

Kimley»Horn

Segment Network Screening Results

Facility	FID_2	Cross Street 1	Cross Street 1	Crashes	Local CCR Differential[1]	Equivalent Property Damage Only	*Fatal*	*Serious Injury*	*Other Visible Injury*	*Complaint of Pain*	*PDO*	Broadside	Sideswipe	Rear End	Head On	Hit Object	Overturned	Pedestrian	Bicycle	Aggressive	Distracted	Impaired	Dark	Wet
SIERRA COLLEGE BL	5385	POLO RANCH PL	MINERS RAVINE DR	**4**	-0.26	14	0	0	1	0	3	1	0	1	0	0	2	0	0	3	0	2	2	1
SUNRISE AV	5655	I-80 NB ON RAMP	OAK RIDGE DR	**4**	0.31	14	0	0	1	0	3	1	1	0	1	1	0	0	0	0	0	2	2	0
Collector																								
LEAD HILL BL	3378	HARDING BL	SUNRISE AV	**9**	0.14	14	0	0	0	1	8	0	1	8	0	0	0	0	0	4	0	0	1	3
RESERVE DR	1006	DIAMOND OAKS RD	ROSEVILLE PW	**7**	0.07	27	0	0	1	2	4	2	0	0	3	1	0	1	0	0	0	1	5	0
PROFESSIONAL DR	2313	STRAUCH DR	ROCKY RIDGE DR	**5**	0.07	34	0	0	3	0	2	3	1	1	0	0	0	0	0	0	0	0	0	0
LEAD HILL BL	3379	N SUNRISE AV	PRIVATE STREET	**5**	-0.02	25	0	0	1	2	2	1	0	4	0	0	0	0	0	3	0	1	0	0
INDUSTRIAL AV	4946	ALANTOWN DR	JUSTICE CENTER DR	**5**	0.41	337	2	0	0	1	2	0	1	1	0	2	1	0	0	2	0	2	2	0
INDUSTRIAL AV	426	INDUSTRIAL AV	FREEDOM WY	**4**	-0.09	19	0	0	1	1	2	2	0	1	0	1	0	0	0	0	0	0	2	0
E GIBSON DR	621	ROSEVILLE PW	CONFERENCE CENTER DR	**4**	-0.09	28	0	0	2	1	1	1	0	0	0	3	0	0	0	0	0	1	0	0
ORLANDO AV	3172	ORLANDO AV	LIVOTI AV	**4**	0.48	341	0	2	0	2	0	0	0	1	2	1	0	0	0	1	0	2	0	0
Residential																								
ANTELOPE CREEK DR	843	GALLERIA BL	CREEKSIDE RIDGE CT	**12**	0.15	52	0	0	2	4	6	9	1	0	2	0	0	0	0	0	0	0	1	0
FIVE STAR BL	4602	STANFORD RANCH RD	FAIRWAY COMMONS	**12**	0.12	82	0	0	3	8	1	9	1	0	0	0	0	1	0	0	0	0	1	0
GALILEE RD	677	PLEASANT GROVE BL	INDUSTRIAL AV	**4**	-0.10	9	0	0	0	1	3	0	1	2	0	0	0	1	0	1	0	0	0	0
ANTELOPE CREEK DR	897	CREEKSIDE RIDGE CT		**4**	-0.09	336	0	2	0	1	1	1	0	0	1	0	2	0	0	1	0	2	0	0
ATLANTIC ST	2152	TAYLOR ST	GRANT ST	**4**	0.07	19	0	0	0	3	1	0	0	4	0	0	0	0	0	2	1	0	0	0
BUCKSKIN LN	184	HASKIN CT	STAGECOACH CI	**2**	-0.15	12	0	0	0	2	0	2	0	0	0	0	0	0	0	2	2	0	0	0
PIONEER RD	567	PLEASANT GROVE BL	RED OAK CT	**2**	-0.12	12	0	0	1	0	1	1	0	0	0	1	0	0	0	1	0	0	0	0
CREEKSIDE RIDGE DR	1036	ROSEVILLE PW	ANTELOPE CREEK DR	**2**	-0.15	7	0	0	0	1	1	0	0	1	0	1	0	0	0	1	0	1	1	0
UNION ST	2204	FOOTHILLS BL	OPPORTUNITY DR	**2**	-0.13	2	0	0	0	0	2	0	0	0	1	1	0	0	0	0	0	0	2	0
CLINTON AV	2661	FERN ST	DARLING WY	**2**	-0.13	2	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	1	2	0
LINCOLN ST	4022	SUTTER AV	CLAIBORNE AV	**2**	-0.02	2	0	0	0	0	2	0	1	0	0	0	0	0	0	0	0	0	1	0
NEVADA AV	4026	SUTTER AV	BEN EZRA AV	**2**	0.02	7	0	0	0	1	1	0	1	1	0	0	0	0	0	1	0	1	1	0
SCARBOROUGH DR	5088	OBERON WY	SECRET RAVINE PW	**2**	0.09	12	0	0	1	0	1	0	0	0	1	1	0	0	0	2	1	0	1	0

Legend					
Fatal/Serious Injury Collisions		LCCR Differential		Probably of Collision Type Exceeding Threshold Proportion	
	> 1 KSI Collision		> 1.0		90-100%
	= 1 KSI Collision		0.33 - 1.0		80-90%
			< 0.33		70-80%

Kimley»Horn

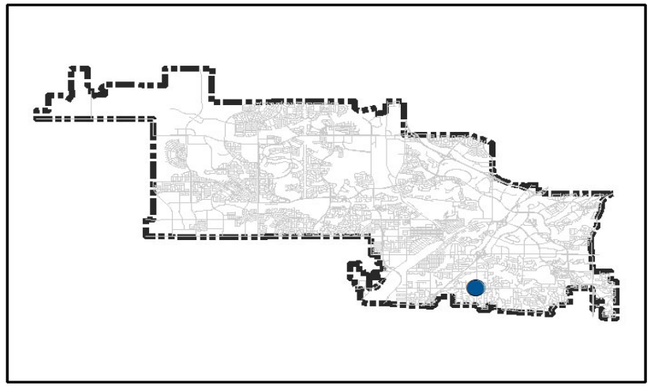
APPENDIX E

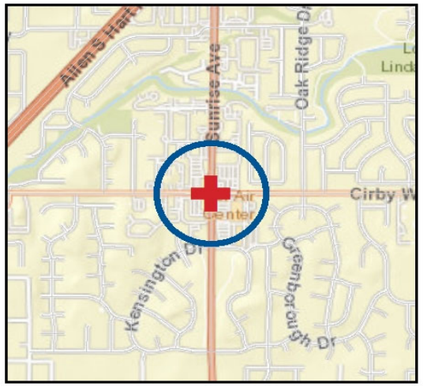
PROJECT SHEETS

Roseville Local Road Safety Plan
Project Description for Intersection Improvements

Signalized Intersection

Location: Sunrise Avenue & Cirby Way
Agency Name: City of Roseville
Contact Name: Cervanes, Jana
E-mail: jcervantes@roseville.ca.us





Total Crashes	73
Local CCR Differential	0.30
Equivalent Property Damage Only	432
Fatal	0
Serious Injury	1
Other Visible Injury	9
Complaint of Pain	17
PDO	46
Crash Type	
Broadside	20
Sideswipe	13
Rear End	30
Head On	1
Hit Object	2
Overturned	0
Non-Motorist Crashes	
Pedestrian	3
Bicycle	3
Contributing Factors	
Aggressive	26
Distracted	2
Impaired	8
Crash Conditions	
Dark	20
Wet	7

NOTES	COLLISION TYPE	RECOMMENDATION	LRSM/CMF COUNTERMEASURE	LRSM #	Expected Life (Years)	CMF	CALTRANS FUNDING	NUMBER OF CRASHES (2015-2019)		NUMBER OF HISTORIC CRASHES REDUCED	10-YEAR CRASH REDUCTION ESTIMATE	CRASH SEVERITY COST	10-YEAR CRASH REDUCTION BENEFIT (2016 $)	TOTAL 10-YEAR CRASH REDUCTION BENEFIT (2016 $)	QUANTITY/ NUMBER OF UNITS	UNIT COST	COST ESTIMATE	BENEFIT/COST
-	All	Install Retroreflective Backplates	Improve signal hardware: lenses, back-plates with retroreflective borders, mounting, size, and number	S02	10	0.85	100%	FATAL	0	0	0.00	$ 1,590,000	$ -	$ 1,457,343	20 Retroreflective Backplates	$ 750	$ 15,000	**97.2**
								SERIOUS	1	0.15	0.30	$ 1,590,000	$ 477,000					
								OTHER VISIBLE	9	1.35	2.70	$ 142,301	$ 384,213					
								COMPLAINT OF PAIN	17	2.55	5.10	$ 80,900	$ 412,590					
								PDO	46	6.9	13.80	$ 13,300	$ 183,540					
-	Bike and Pedestrian	Install leading pedestrian interval (LPI)	Modify signal phasing to impliment a Leading Pedestrian Interval (LPI)	S21PB	10	0.40	100%	FATAL	0	0	0.00	$ 1,590,000	$ -	$ 567,602	1 Signal (LPI)	$ 5,000	$ 5,000	**113.5**
								SERIOUS	0	0	0.00	$ 1,590,000	$ -					
								OTHER VISIBLE	2	1.2	2.40	$ 142,301	$ 341,522					
								COMPLAINT OF PAIN	2	1.2	2.40	$ 80,900	$ 194,160					
								PDO	2	1.2	2.40	$ 13,300	$ 31,920					
-	Bike and Pedestrian	Advanced Stop Bars to encourage drivers to stop further back from crosswalks for added safety of crossing pedestrians	Install advance stop bar before crosswalk (Bicycle Box)	S20PB	10	0.85	100%	FATAL	0	0	0.00	$ 1,590,000	$ -	$ 141,901	225 Linear Feet	$ 6	$ 1,350	**105.1**
								SERIOUS	0	0	0.00	$ 1,590,000	$ -					
								OTHER VISIBLE	2	0.3	0.60	$ 142,301	$ 85,381					
								COMPLAINT OF PAIN	2	0.3	0.60	$ 80,900	$ 48,540					
								PDO	2	0.3	0.60	$ 13,300	$ 7,980					
-	All	Restrict left turns out of shopping center driveway at S/E corner onto westbound Cirby Way (extend median on east leg)	Install raised median on approaches	S12	20	0.75	100%	FATAL	0	0	0.00	$ 1,590,000	$ -	$ 2,428,905	50 Linear Feet	$ 70	$ 3,500	**694.0**
								SERIOUS	1	0.25	0.50	$ 1,590,000	$ 795,000					
								OTHER VISIBLE	9	2.25	4.50	$ 142,301	$ 640,355					
								COMPLAINT OF PAIN	17	4.25	8.50	$ 80,900	$ 687,650					
								PDO	46	11.5	23.00	$ 13,300	$ 305,900					
-	All	Install "STOP HERE ON RED" (R10-6) sign for the northbound right turn	Install/Upgrade signs with new fluorescent sheeting (regulatory or warning)	R22*	10	0.85	100.00%	FATAL	0	0	0.00	$ 1,590,000	$ -	$ 1,457,343	1 Sign	$ 400	$ 400	**3,643.4**
								SERIOUS	1	0.15	0.30	$ 1,590,000	$ 477,000					
								OTHER VISIBLE	9	1.35	2.70	$ 142,301	$ 384,213					
								COMPLAINT OF PAIN	17	2.55	5.10	$ 80,900	$ 412,590					
								PDO	46	6.9	13.80	$ 13,300	$ 183,540					

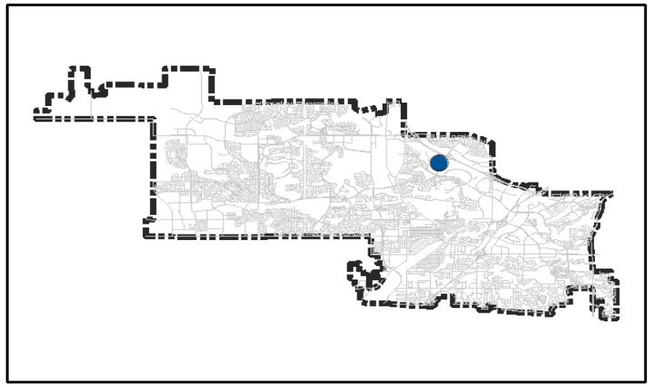
* The R22 LRSM Countermeasure must be completed as a part of a larger sign audit project.

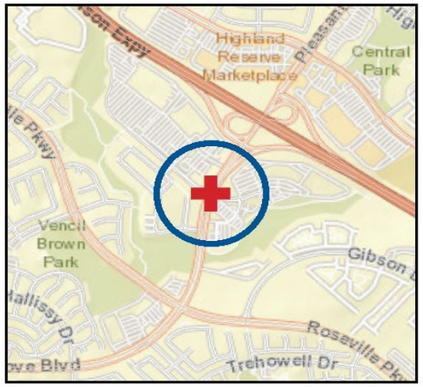
Kimley»Horn

Roseville Local Road Safety Plan
Project Description for Intersection Improvements

Signalized Intersection

Location: Pleasant Grove Boulevard & Highland Pointe Drive
Agency Name: City of Roseville
Contact Name: Cervanes, Jana
E-mail: jcervantes@roseville.ca.us





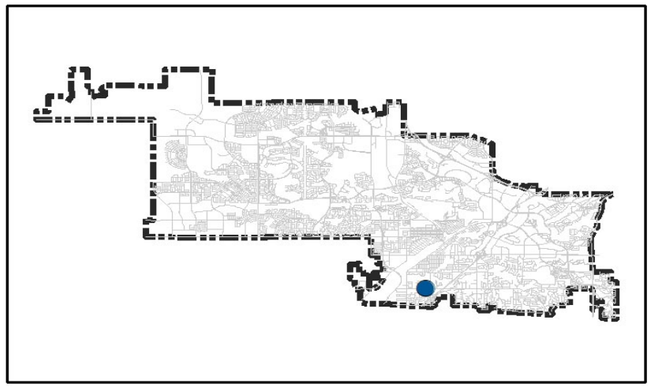
Total Crashes	64
Local CCR Differential	0.65
Equivalent Property Damage Only	462
Fatal	0
Serious Injury	1
Other Visible Injury	10
Complaint of Pain	21
PDO	32
Crash Type	
Broadside	24
Sideswipe	9
Rear End	22
Head On	5
Hit Object	1
Overturned	0
Non-Motorist Crashes	
Pedestrian	0
Bicycle	1
Contributing Factors	
Aggressive	33
Distracted	5
Impaired	4
Crash Conditions	
Dark	17
Wet	5

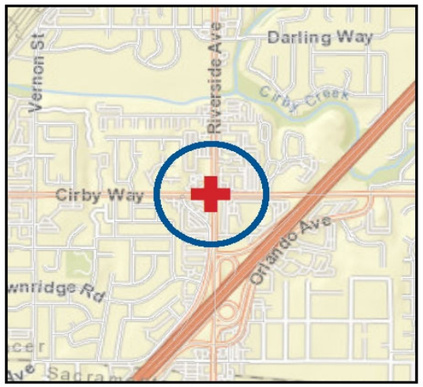
NOTES	COLLISION TYPE	RECOMMENDATION	LRSM/CMF COUNTERMEASURE	LRSM #	Expected Life (Years)	CMF	CALTRANS FUNDING	NUMBER OF CRASHES (2015-2019)		NUMBER OF HISTORIC CRASHES REDUCED	10-YEAR CRASH REDUCTION ESTIMATE	CRASH SEVERITY COST	10-YEAR CRASH REDUCTION BENEFIT (2016 $)	TOTAL 10-YEAR CRASH REDUCTION BENEFIT (2016 $)	QUANTITY/ NUMBER OF UNITS	UNIT COST	COST ESTIMATE	BENEFIT/COST
-	All	Install Retroreflective Backplates	Improve signal hardware: lenses, back-plates with retroreflective borders, mounting, size, and number	S02	10	0.85	100%	FATAL	0	0	0.00	$ 1,590,000	$ -	$ 1,541,253	22 Retroreflective Backplates	$ 750	$ 16,500	**93.4**
								SERIOUS	1	0.15	0.30	$ 1,590,000	$ 477,000					
								OTHER VISIBLE	10	1.5	3.00	$ 142,301	$ 426,903					
								COMPLAINT OF PAIN	21	3.15	6.30	$ 80,900	$ 509,670					
								PDO	32	4.8	9.60	$ 13,300	$ 127,680					
-	Bike and Pedestrian	Green bike lane markings at vehicle/bicycle conflict zones (all approaches)	Install Bike lanes	R32PB	20	0.65	90%	FATAL	0	0	0.00	$ 1,590,000	$ -	$ 99,611	4800 SQFT	$ 8	$ 38,400	**2.6**
								SERIOUS	0	0	0.00	$ 1,590,000	$ -					
								OTHER VISIBLE	1	0.35	0.70	$ 142,301	$ 99,611					
								COMPLAINT OF PAIN	0	0	0.00	$ 80,900	$ -					
								PDO	0	0	0.00	$ 13,300	$ -					
-	All	Install additional pavement markings (freeway shield) to guide northbound and eastbound drivers to downstream freeway access	Install raised pavement markers and striping	S09	10	0.90	100%	FATAL	0	0	0.00	$ 1,590,000	$ -	$ 1,027,502	200 SQFT	$ 15	$ 3,000	**342.5**
								SERIOUS	1	0.1	0.20	$ 1,590,000	$ 318,000					
								OTHER VISIBLE	10	1	2.00	$ 142,301	$ 284,602					
								COMPLAINT OF PAIN	21	2.1	4.20	$ 80,900	$ 339,780					
								PDO	32	3.2	6.40	$ 13,300	$ 85,120					
-	All	Signal Timing (Coordination) along Pleasant Grove Boulevard	Improve signal timing (coordination, phases, red, yellow, or operation)	S03	10	0.85	50%	FATAL	0	0	0.00	$ 1,590,000	$ -	$ 1,541,253	1 Intersection	$ 5,000	$ 5,000	**308.3**
								SERIOUS	1	0.15	0.30	$ 1,590,000	$ 477,000					
								OTHER VISIBLE	10	1.5	3.00	$ 142,301	$ 426,903					
								COMPLAINT OF PAIN	21	3.15	6.30	$ 80,900	$ 509,670					
								PDO	32	4.8	9.60	$ 13,300	$ 127,680					

Kimley»Horn

Signalized Intersections

Location: Cirby Way & Riverside Avenue and Cirby Way & Melody Lane
Agency Name: City of Roseville
Contact Name: Cervanes, Jana
E-mail: jcervantes@roseville.ca.us





Intersection	Riverside	Melody
Total Crashes	94	70
Local CCR Differential	0.39	0.41
Equivalent Property Damage Only	473	343
Fatal	0	0
Serious Injury	1	0
Other Visible Injury	7	13
Complaint of Pain	29	29
PDO	57	28
Crash Type		
Broadside	28	36
Sideswipe	22	6
Rear End	26	16
Head On	2	8
Hit Object	7	0
Overturned	0	0
Non-Motorist Crashes		
Pedestrian	0	0
Bicycle	5	1
Contributing Factors		
Aggressive	34	33
Distracted	3	7
Impaired	10	6
Crash Conditions		
Dark	23	16
Wet	13	6

NOTES	COLLISION TYPE	RECOMMENDATION	LRSM/CMF COUNTERMEASURE	LRSM #	Expected Life (Years)	CMF	CALTRANS FUNDING	NUMBER OF CRASHES (2015-2019)		NUMBER OF HISTORIC CRASHES REDUCED	10-YEAR CRASH REDUCTION ESTIMATE	CRASH SEVERITY COST	10-YEAR CRASH REDUCTION BENEFIT (2016 $)	TOTAL 10-YEAR CRASH REDUCTION BENEFIT (2016 $)	QUANTITY/ NUMBER OF UNITS	UNIT COST	COST ESTIMATE	BENEFIT/COST
Riverside Intersection	All	Install Retroreflective Backplates (where currently not provided)	Improve signal hardware: lenses, back-plates with retroreflective borders, mounting, size, and number	S02	10	0.85	100%	FATAL	0	0	0.00	$ 2,190,000	$ -	$ 1,887,092	30 Retroreflective Backplates	$ 750	$ 22,500	**83.9**
								SERIOUS	1	0.15	0.30	$ 2,190,000	$ 657,000					
								OTHER VISIBLE	7	1.05	2.10	$ 142,301	$ 298,832					
								COMPLAINT OF PAIN	29	4.35	8.70	$ 80,900	$ 703,830					
								PDO	57	8.55	17.10	$ 13,300	$ 227,430					
Riverside Intersection	All	Install additional 3-section signal head for eastbound traffic for enhanced visibility	Improve signal hardware: lenses, back-plates with retroreflective borders, mounting, size, and number	S02	10	0.85	100%	FATAL	0	0	0.00	$ 2,190,000	$ -	$ 1,887,092	3 Signal Heads	$ 3,000	$ 9,000	**209.7**
								SERIOUS	1	0.15	0.30	$ 2,190,000	$ 657,000					
								OTHER VISIBLE	7	1.05	2.10	$ 142,301	$ 298,832					
								COMPLAINT OF PAIN	29	4.35	8.70	$ 80,900	$ 703,830					
								PDO	57	8.55	17.10	$ 13,300	$ 227,430					
Riverside Intersection	Night	Install additional street lights on west leg	Add intersection lighting	S01	20	0.60	100%	FATAL	0	0.00	0.00	$ 2,190,000	$ -	$ 785,520	1 Luminaire	$ 10,000	$ 10,000	**78.6**
								SERIOUS	0	0.00	0.00	$ 2,190,000	$ -					
								OTHER VISIBLE	0	0.00	0.00	$ 142,301	$ -					
								COMPLAINT OF PAIN	10	4.00	8.00	$ 80,900	$ 647,200					
								PDO	13	5.20	10.40	$ 13,300	$ 138,320					
Riverside Intersection	All	Install additional signage to guide drivers to downstream freeway access	Install/upgrade larger or additional signs or other intersection warning/regulatory signs	R22*	10	0.85	100%	FATAL	0	0	0.00	$ 2,190,000	$ -	$ 1,887,092	3 Signs	$ 400	$ 1,200	**1,572.6**
								SERIOUS	1	0.15	0.30	$ 2,190,000	$ 657,000					
								OTHER VISIBLE	7	1.05	2.10	$ 142,301	$ 298,832					
								COMPLAINT OF PAIN	29	4.35	8.70	$ 80,900	$ 703,830					
								PDO	57	8.55	17.10	$ 13,300	$ 227,430					

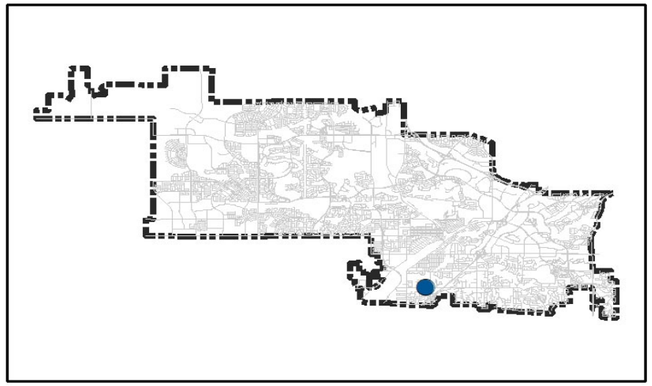
* The R22 LRSM Countermeasure must be completed as a part of a larger sign audit project.

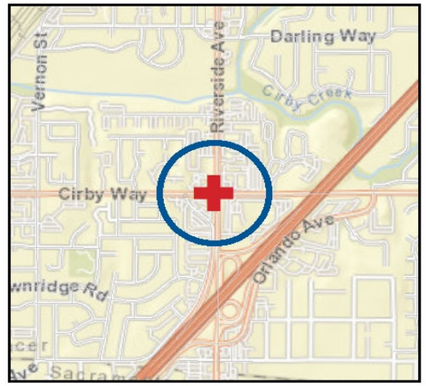
Kimley»Horn

Roseville Local Road Safety Plan
Project Description for Intersection Improvements

Signalized Intersections

Location: Cirby Way & Riverside Avenue and Cirby Way & Melody Lane
Agency Name: City of Roseville
Contact Name: Cervanes, Jana
E-mail: jcervantes@roseville.ca.us





Intersection	Riverside	Melody
Total Crashes	94	70
Local CCR Differential	0.39	0.41
Equivalent Property Damage Only	473	343
Fatal	0	0
Serious Injury	1	0
Other Visible Injury	7	13
Complaint of Pain	29	29
PDO	57	28
Crash Type		
Broadside	28	36
Sideswipe	22	6
Rear End	26	16
Head On	2	8
Hit Object	7	0
Overturned	0	0
Non-Motorist Crashes		
Pedestrian	0	0
Bicycle	5	1
Contributing Factors		
Aggressive	34	33
Distracted	3	7
Impaired	10	6
Crash Conditions		
Dark	23	16
Wet	13	6

NOTES	COLLISION TYPE	RECOMMENDATION	LRSM/CMF COUNTERMEASURE	LRSM #	Expected Life (Years)	CMF	CALTRANS FUNDING	NUMBER OF CRASHES (2015-2019)		NUMBER OF HISTORIC CRASHES REDUCED	10-YEAR CRASH REDUCTION ESTIMATE	CRASH SEVERITY COST	10-YEAR CRASH REDUCTION BENEFIT (2016 $)	TOTAL 10-YEAR CRASH REDUCTION BENEFIT (2016 $)	QUANTITY/ NUMBER OF UNITS	UNIT COST	COST ESTIMATE	BENEFIT/COST
Melody Intersection	All	Install advanced warning system with flashing beacon	Install flashing beacon as advanced warning (S.I.)	S10	10	0.70	100%	FATAL	0	0	0.00	$ 2,190,000	$ -	$ 2,741,048	1 Beacon	$ 35,000	$ 35,000	**78.3**
								SERIOUS	0	0	0.00	$ 2,190,000	$ -				
								OTHER VISIBLE	13	3.9	7.80	$ 142,301	$ 1,109,948				
								COMPLAINT OF PAIN	29	8.7	17.40	$ 80,900	$ 1,407,660				
								PDO	28	8.4	16.80	$ 13,300	$ 223,440				
Melody Intersection	All	Install additional signage and pavement markings (freeway shields) to guide drivers to downstream freeway access	Install raised pavement markers and striping	S09	10	0.90	100%	FATAL	0	0	0.00	$ 2,190,000	$ -	$ 913,683	120 SF	$ 15	$ 1,800	**507.6**
								SERIOUS	0	0	0.00	$ 2,190,000	$ -				
								OTHER VISIBLE	13	1.3	2.60	$ 142,301	$ 369,983				
								COMPLAINT OF PAIN	29	2.9	5.80	$ 80,900	$ 469,220				
								PDO	28	2.8	5.60	$ 13,300	$ 74,480				
Melody Intersection	All	Install additional signage to guide drivers to downstream freeway access	Install/upgrade larger or additional signs or other intersection warning/regulatory signs	R22*	10	0.85	100%	FATAL	0	0	0.00	$ 2,190,000	$ -	$ 1,370,524	2 Signs	$ 400	$ 800	**1,713.2**
								SERIOUS	0	0	0.00	$ 2,190,000	$ -				
								OTHER VISIBLE	13	1.95	3.90	$ 142,301	$ 554,974				
								COMPLAINT OF PAIN	29	4.35	8.70	$ 80,900	$ 703,830				
								PDO	28	4.2	8.40	$ 13,300	$ 111,720				
Melody Intersection	All	Install speed limit pavement markings on eastbound Cirby Wy	Install raised pavement markers and striping	S09	10	0.90	100%	FATAL	0	0	0.00	$ 2,190,000	$ -	$ 913,683	60 SF	$ 15	$ 900	**1,015.2**
								SERIOUS	0	0	0.00	$ 2,190,000	$ -				
								OTHER VISIBLE	13	1.3	2.60	$ 142,301	$ 369,983				
								COMPLAINT OF PAIN	29	2.9	5.80	$ 80,900	$ 469,220				
								PDO	28	2.8	5.60	$ 13,300	$ 74,480				

* The R22 LRSM Countermeasure must be completed as a part of a larger sign audit project.

Kimley»Horn

Roseville Local Road Safety Plan
Project Description for Segment Improvements

Segment

Location: Atlantic Street / Vernon Street from Jefferson Street to Branstetter Street
Agency Name: City of Roseville
Contact Name: Cervanes, Jana
E-mail: jcervantes@roseville.ca.us

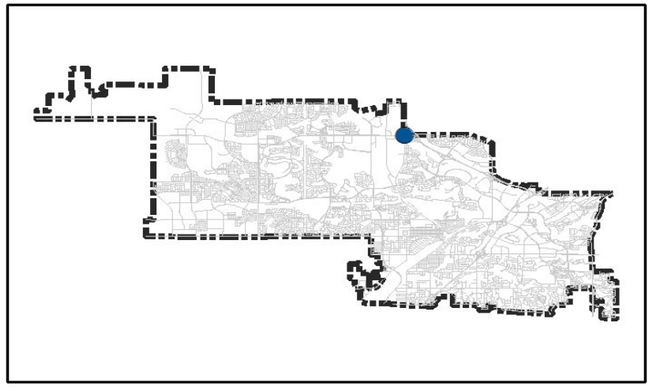
Total Crashes	29
Local CCR Differential	9.15
Equivalent Property Damage Only	143
Fatal	0
Serious Injury	0
Other Visible Injury	6
Complaint of Pain	11
PDO	12
Crash Type	
Broadside	11
Sideswipe	5
Rear End	2
Head On	3
Hit Object	6
Overturned	1
Non-Motorist Crashes	
Pedestrian	0
Bicycle	1
Contributing Factors	
Aggressive	10
Distracted	1
Impaired	0
Crash Conditions	
Dark	6
Wet	15

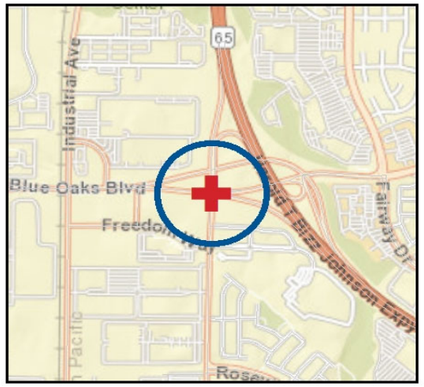
NOTES	COLLISION TYPE	RECOMMENDATION	LRSM/CMF COUNTERMEASURE	LRSM #	Expected Life (Years)	CMF	CALTRANS FUNDING	NUMBER OF CRASHES (2015-2019)		NUMBER OF HISTORIC CRASHES REDUCED	10-YEAR CRASH REDUCTION ESTIMATE	CRASH SEVERITY COST	10-YEAR CRASH REDUCTION BENEFIT (2016 $)	TOTAL 10-YEAR CRASH REDUCTION BENEFIT (2016 $)	QUANTITY/ NUMBER OF UNITS	UNIT COST	COST ESTIMATE	BENEFIT/COST
-	All	Install Roundabout	Install Roundabout at Vernon and Folsom / Walnut St to improve traffic flow, straighten the direction of travel, and reduce crashes	NS05	20	0.56	100%	FATAL	0	0	0	$ 2,190,000	$ -	$ 1,674,909	1 Roundabout	$ 1,500,000	$ 1,500,000	**1.1**
								SERIOUS	0	0	0	$ 2,190,000	$ -				
								OTHER VISIBLE	6	2.64	5.28	$ 142,301	$ 751,349				
								COMPLAINT OF PAIN	11	4.84	9.68	$ 80,900	$ 783,112				
								PDO	12	5.28	10.56	$ 13,300	$ 140,448				
-	Night	Enhanced Street lighting	Add intersection lighting	NS01	20	0.60	100%	FATAL	0	0	0	$ 2,190,000	$ -	$ 63,840	5 Luminaires	$ 10,000	$ 50,000	**1.3**
								SERIOUS	0	0	0	$ 2,190,000	$ -				
								OTHER VISIBLE	0	0	0	$ 142,301	$ -				
								COMPLAINT OF PAIN	0	0	0	$ 80,900	$ -				
								PDO	6	2.40	4.80	$ 13,300	$ 63,840				
-	Bike and Pedestrian	Enhanced Pedestrian Crossing for Vernon Street near Jefferson Street with flashing beacons and "yield" markings	Install/upgrade pedestrian crossing at uncontrolled locations (with enhanced safety features)	NS21PB	20	0.65	100%	FATAL	0	0	0	$ 2,190,000	$ -	$ 99,611	1 Crosswalk	$ 15,000	$ 15,000	**6.6**
								SERIOUS	0	0	0	$ 2,190,000	$ -				
								OTHER VISIBLE	1	0	0.70	$ 142,301	$ 99,611				
								COMPLAINT OF PAIN	0	0	0	$ 80,900	$ -				
								PDO	0	0	0	$ 13,300	$ -				
-	All	Install additional curve signage on eastbound approach on Vernon Street	Install chevron signs on horizantal curves	R23	10	0.60	100%	FATAL	0	0	0	$ 2,190,000	$ -	$ 1,522,645	5 Signs	$ 400	$ 2,000	**761.3**
								SERIOUS	0	0	0	$ 2,190,000	$ -				
								OTHER VISIBLE	6	2.40	4.80	$ 142,301	$ 683,045				
								COMPLAINT OF PAIN	11	4.40	8.80	$ 80,900	$ 711,920				
								PDO	12	4.80	9.60	$ 13,300	$ 127,680				

Roseville Local Road Safety Plan
Project Description for Intersection Improvements

Signalized Intersection

Location: Blue Oaks Boulevard & Washington Boulevard
Agency Name: City of Roseville
Contact Name: Cervanes, Jana
E-mail: jcervantes@roseville.ca.us





Total Crashes	54
Local CCR Differential	0.71
Equivalent Property Damage Only	396
Fatal	0
Serious Injury	1
Other Visible Injury	9
Complaint of Pain	18
PDO	26
Crash Type	
Broadside	21
Sideswipe	8
Rear End	16
Head On	2
Hit Object	2
Overturned	0
Non-Motorist Crashes	
Pedestrian	0
Bicycle	3
Contributing Factors	
Aggressive	24
Distracted	5
Impaired	3
Crash Conditions	
Dark	11
Wet	4

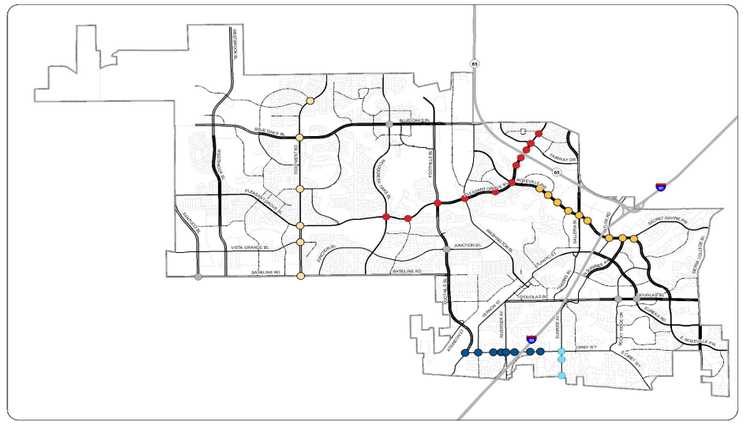
NOTES	COLLISION TYPE	RECOMMENDATION	LRSM/CMF COUNTERMEASURE	LRSM #	Expected Life (Years)	CMF	CALTRANS FUNDING	NUMBER OF CRASHES (2015-2019)		NUMBER OF HISTORIC CRASHES REDUCED	10-YEAR CRASH REDUCTION ESTIMATE	CRASH SEVERITY COST	10-YEAR CRASH REDUCTION BENEFIT (2016 $)	TOTAL 10-YEAR CRASH REDUCTION BENEFIT (2016 $)	QUANTITY/ NUMBER OF UNITS	UNIT COST	COST ESTIMATE	BENEFIT/COST
-	Bike and Pedestrian	Install bike lane striping and raised delineators along Blue Oaks Blvd	Install Bike lanes	R32PB	20	0.65	90%	FATAL	0	0	0.00	$ 1,590,000	$ -	$ 1,312,221	720 SQFT 27 Raised Delineators	$8 (pavement markings) $300 (raised delineators)	$ 13,860	**94.7**
								SERIOUS	1	0.35	0.70	$ 1,590,000	$ 1,113,000				
								OTHER VISIBLE	2	0.7	1.40	$ 142,301	$ 199,221				
								COMPLAINT OF PAIN	0	0	0.00	$ 80,900	$ -				
								PDO	0	0	0.00	$ 13,300	$ -				
-	Bike and Pedestrian	Install mid-block signals for bicycle crossing on SR 65 SB On-Ramps	Install/upgrade pedestrian crossing (with enhanced safety features)	R35PB	20	0.65	90%	FATAL	0	0	0.00	$ 1,590,000	$ -	$ 1,312,221	1 Bicycle Signal	$ 80,000	$ 80,000	**16.4**
								SERIOUS	1	0.35	0.70	$ 1,590,000	$ 1,113,000				
								OTHER VISIBLE	2	0.7	1.40	$ 142,301	$ 199,221				
								COMPLAINT OF PAIN	0	0	0.00	$ 80,900	$ -				
								PDO	0	0	0.00	$ 13,300	$ -				

Kimley»Horn

Roseville Local Road Safety Plan
Project Description for Signalized Intersection Improvements

Signalized Intersections - Citywide

Location: Citywide Signalized Intersections (42 signals)
Agency Name: City of Roseville
Contact Name: Cervanes, Jana
E-mail: jcervantes@roseville.ca.us



List of Groupings:
Dark Blue CIRBY WAY
Light Blue SUNRISE AVENUE
Red PLEASANT GROVE BOULEVARD
Gold ROSEVILLE PARKWAY
Light Gold FIDDYMENT ROAD
Grey MISCELLANEOUS INTERSECTIONS

Total Crashes	1,409
Local CCR Differential	N/A
Equivalent Property Damage Only	9,423
Fatal	4
Serious Injury	22
Other Visible Injury	146
Complaint of Pain	461
PDO	776
Crash Type	
Broadside	347
Sideswipe	222
Rear End	571
Head On	74
Hit Object	80
Overturned	6
Non-Motorist Crashes	
Pedestrian	17
Bicycle	26
Contributing Factors	
Aggressive	634
Distracted	111
Impaired	142
Crash Conditions	
Dark	381
Wet	194

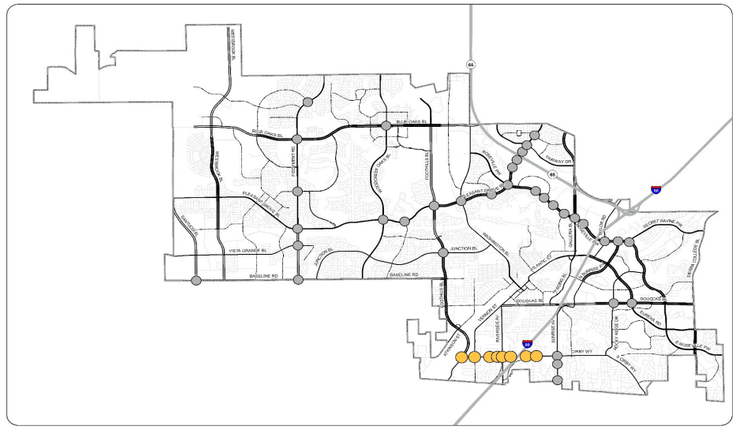
Note: There are 42 Signalized Intersections within this grouping

NOTES	COLLISION TYPE	RECOMMENDATION	LRSM/CMF COUNTERMEASURE	LRSM #	Expected Life (Years)	CMF	CALTRANS FUNDING	NUMBER OF CRASHES (2015-2019)		NUMBER OF HISTORIC CRASHES REDUCED	10-YEAR CRASH REDUCTION ESTIMATE	CRASH SEVERITY COST	10-YEAR CRASH REDUCTION BENEFIT (2016 $)	TOTAL 10-YEAR CRASH REDUCTION BENEFIT (2016 $)	QUANTITY/ NUMBER OF UNITS	UNIT COST	COST ESTIMATE	BENEFIT/COST
-	All	Install Retroreflective Backplates	Improve signal hardware: lenses, back-plates with retroreflective borders, mounting, size, and number	S02	10	0.85	100%	FATAL	4	0.6	1.20	$ 1,590,000	$ 1,908,000	$ 32,919,494	840 Retroreflective Backplates (42 signals at 20 per signal)	$ 750	$ 630,000	**52.3**
								SERIOUS	22	3.3	6.60	$ 1,590,000	$ 10,494,000					
								OTHER VISIBLE	146	21.9	43.80	$ 142,301	$ 6,232,784					
								COMPLAINT OF PAIN	461	69.15	138.30	$ 80,900	$ 11,188,470					
								PDO	776	116.4	232.80	$ 13,300	$ 3,096,240					
-	All	Signal Timing (Coordination)	Improve signal timing (coordination, phases, red, yellow, or operation)	S03	10	0.85	50%	FATAL	0	0	0.00	$ 1,590,000	$ -	$ 26,676,188	36 Signals (Retiming)	$ 5,000	$ 180,000	**148.2**
								SERIOUS	19	2.85	5.70	$ 1,590,000	$ 9,063,000					
								OTHER VISIBLE	125	18.75	37.50	$ 142,301	$ 5,336,288					
								COMPLAINT OF PAIN	398	59.7	119.40	$ 80,900	$ 9,659,460					
								PDO	656	98.4	196.80	$ 13,300	$ 2,617,440					
-	All	Provide Advanced Dilemma Zone Detection for high speed approaches	Provide Advanced Dilemma Zone Detection for high speed approaches	S04	10	0.60	100%	FATAL	0	0	0.00	$ 1,590,000	$ -	$ 22,557,633	14 Signals (Detection)	$ 40,000	$ 560,000	**40.3**
								SERIOUS	5	2	4.00	$ 1,590,000	$ 6,360,000					
								OTHER VISIBLE	41	16.4	32.80	$ 142,301	$ 4,667,473					
								COMPLAINT OF PAIN	141	56.4	112.80	$ 80,900	$ 9,125,520					
								PDO	226	90.4	180.80	$ 13,300	$ 2,404,640					
-	Pedestrian and Bicyclist	Advanced Stop Bars to encourage drivers to stop further back from crosswalks for added safety of crossing pedestrians	Install advance stop bar before crosswalk (Bicycle Box)	S20PB	10	0.85	100%	FATAL	0	0	0.00	$ 1,590,000	$ -	$ 829,621	2016 Linear Feet	$ 6	$ 12,096	**68.6**
								SERIOUS	1	0.15	0.30	$ 1,590,000	$ 477,000					
								OTHER VISIBLE	4	0.6	1.20	$ 142,301	$ 170,761					
								COMPLAINT OF PAIN	7	1.05	2.10	$ 80,900	$ 169,890					
								PDO	3	0.45	0.90	$ 13,300	$ 11,970					
-	Pedestrian and Bicyclist	Implement leading pedestrian interval (LPI)	Modify signal phasing to implement a Leading Pedestrian Interval (LPI)	S21PB	10	0.40	100%	FATAL	1	0.6	1.20	$ 1,590,000	$ 1,908,000	$ 13,832,660	42 Signals (LPI)	$ 5,000	$ 210,000	**65.9**
								SERIOUS	4	2.4	4.80	$ 1,590,000	$ 7,632,000					
								OTHER VISIBLE	17	10.2	20.40	$ 142,301	$ 2,902,940					
								COMPLAINT OF PAIN	13	7.8	15.60	$ 80,900	$ 1,262,040					
								PDO	8	4.8	9.60	$ 13,300	$ 127,680					

Roseville Local Road Safety Plan
Project Description for Signalized Intersection Improvements

Signalized Intersections - Cirby Way

Location: Signalized Intersections - Cirby Way (8 signals)
Agency Name: City of Roseville
Contact Name: Cervanes, Jana
E-mail: jcervantes@roseville.ca.us



Note: There are 8 Signalized Intersections within this grouping

List of Signals:
CIRBY WY & RIVERSIDE AV
CIRBY WY & MELODY LN
CIRBY WY & FOOTHILLS BL
CIRBY WY & VERNON ST
CIRBY WY & ORLANDO AVE
CIRBY WY & SAN SIMEON DR
CIRBY WY & CIRBY HILLS DR
CIRBY WY & LINDSAY DR

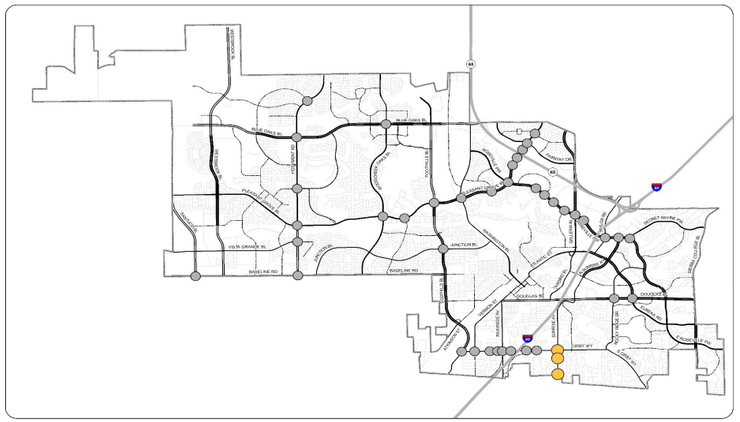
Total Crashes	297
Local CCR Differential	N/A
Equivalent Property Damage Only	1,459
Fatal	0
Serious Injury	2
Other Visible Injury	31
Complaint of Pain	105
PDO	159
Crash Type	
Broadside	94
Sideswipe	48
Rear End	92
Head On	18
Hit Object	18
Overturned	2
Non-Motorist Crashes	
Pedestrian	3
Bicycle	8
Contributing Factors	
Aggressive	120
Distracted	21
Impaired	29
Crash Conditions	
Dark	72
Wet	36

NOTES	COLLISION TYPE	RECOMMENDATION	LRSM/CMF COUNTERMEASURE	LRSM #	Expected Life (Years)	CMF	CALTRANS FUNDING	NUMBER OF CRASHES (2015-2019)		NUMBER OF HISTORIC CRASHES REDUCED	10-YEAR CRASH REDUCTION ESTIMATE	CRASH SEVERITY COST	10-YEAR CRASH REDUCTION BENEFIT (2016 $)	TOTAL 10-YEAR CRASH REDUCTION BENEFIT (2016 $)	QUANTITY/ NUMBER OF UNITS	UNIT COST	COST ESTIMATE	BENEFIT/COST
-	All	Install Retroreflective Backplates	Improve signal hardware: lenses, back-plates with retroreflective borders, mounting, size, and number	S02	10	0.85	100%	FATAL	0	0	0.00	$ 1,590,000	$ -	$ 5,460,159	160 Retroreflective Backplates (8 signals at 20 per signal)	$ 750	120000	**45.5**
								SERIOUS	2	0.3	0.60	$ 1,590,000	$ 954,000					
								OTHER VISIBLE	31	4.65	9.30	$ 142,301	$ 1,323,399					
								COMPLAINT OF PAIN	105	15.75	31.50	$ 80,900	$ 2,548,350					
								PDO	159	23.85	47.70	$ 13,300	$ 634,410					
-	All	Signal Timing (Coordination)	Improve signal timing (coordination, phases, red, yellow, or operation)	S03	10	0.85	50%	FATAL	0	0	0.00	$ 1,590,000	$ -	$ 5,460,159	8 Signals (Retiming)	$ 5,000	$ 40,000	**136.5**
								SERIOUS	2	0.3	0.60	$ 1,590,000	$ 954,000					
								OTHER VISIBLE	31	4.65	9.30	$ 142,301	$ 1,323,399					
								COMPLAINT OF PAIN	105	15.75	31.50	$ 80,900	$ 2,548,350					
								PDO	159	23.85	47.70	$ 13,300	$ 634,410					
-	All	Provide Advanced Dilemma Zone Detection for high speed approaches	Provide Advanced Dilemma Zone Detection for high speed approaches	S04	10	0.60	100%	FATAL	0	0	0.00	$ 1,590,000	$ -	$ 14,560,425	8 Signals (Detection)	$ 40,000	$ 320,000	**45.5**
								SERIOUS	2	0.8	1.60	$ 1,590,000	$ 2,544,000					
								OTHER VISIBLE	31	12.4	24.80	$ 142,301	$ 3,529,065					
								COMPLAINT OF PAIN	105	42	84.00	$ 80,900	$ 6,795,600					
								PDO	159	63.6	127.20	$ 13,300	$ 1,691,760					
-	Pedestrian and Bicyclist	Advanced Stop Bars to encourage drivers to stop further back from crosswalks for added safety of crossing pedestrians	Install advance stop bar before crosswalk (Bicycle Box)	S20PB	10	0.85	100%	FATAL	0	0	0.00	$ 1,590,000	$ -	$ 734,401	1152 Linear Feet	$ 6	$ 6,912	**106.3**
								SERIOUS	1	0.15	0.30	$ 1,590,000	$ 477,000					
								OTHER VISIBLE	3	0.45	0.90	$ 142,301	$ 128,071					
								COMPLAINT OF PAIN	5	0.75	1.50	$ 80,900	$ 121,350					
								PDO	2	0.3	0.60	$ 13,300	$ 7,980					
-	Pedestrian and Bicyclist	Implement leading pedestrian interval (LPI)	Modify signal phasing to implement a Leading Pedestrian Interval (LPI)	S21PB	10	0.40	100%	FATAL	0	0	0.00	$ 1,590,000	$ -	$ 2,937,604	8 Signals (LPI)	$ 5,000	$ 40,000	**73.4**
								SERIOUS	1	0.6	1.20	$ 1,590,000	$ 1,908,000					
								OTHER VISIBLE	3	1.8	3.60	$ 142,301	$ 512,284					
								COMPLAINT OF PAIN	5	3	6.00	$ 80,900	$ 485,400					
								PDO	2	1.2	2.40	$ 13,300	$ 31,920					

Roseville Local Road Safety Plan
Project Description for Signalized Intersection Improvements

Signalized Intersections - Sunrise Avenue

Location: Signalized Intersections - Sunrise Avenue (3 signals)
Agency Name: City of Roseville
Contact Name: Cervanes, Jana
E-mail: jcervantes@roseville.ca.us



Note: There are 3 Signalized Intersections within this grouping

List of Signals:
SUNRISE AV & CIRBY WY
SUNRISE AV & SANDRINGHAM WY
SUNRISE AV & KENSINGTON DR

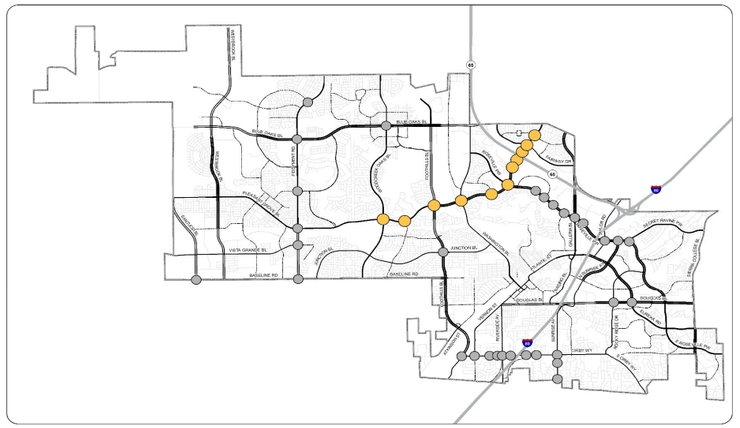
Total Crashes	119
Local CCR Differential	N/A
Equivalent Property Damage Only	576
Fatal	0
Serious Injury	1
Other Visible Injury	15
Complaint of Pain	29
PDO	74
Crash Type	
Broadside	28
Sideswipe	16
Rear End	51
Head On	3
Hit Object	5
Overturned	0
Non-Motorist Crashes	
Pedestrian	5
Bicycle	8
Contributing Factors	
Aggressive	47
Distracted	6
Impaired	13
Crash Conditions	
Dark	22
Wet	12

NOTES	COLLISION TYPE	RECOMMENDATION	LRSM/CMF COUNTERMEASURE	LRSM #	Expected Life (Years)	CMF	CALTRANS FUNDING	NUMBER OF CRASHES (2015-2019)		NUMBER OF HISTORIC CRASHES REDUCED	10-YEAR CRASH REDUCTION ESTIMATE	CRASH SEVERITY COST	10-YEAR CRASH REDUCTION BENEFIT (2016 $)	TOTAL 10-YEAR CRASH REDUCTION BENEFIT (2016 $)	QUANTITY/ NUMBER OF UNITS	UNIT COST	COST ESTIMATE	BENEFIT/COST
-	All	Install Retroreflective Backplates	Improve signal hardware: lenses, back-plates with retroreflective borders, mounting, size, and number	S02	10	0.85	100%	FATAL	0	0	0.00	$ 1,590,000	$ -	$ 2,116,445	60 Retroreflective Backplates (3 signals at 20 per signal)	$ 750	$ 45,000	**47.0**
								SERIOUS	1	0.15	0.30	$ 1,590,000	$ 477,000					
								OTHER VISIBLE	15	2.25	4.50	$ 142,301	$ 640,355					
								COMPLAINT OF PAIN	29	4.35	8.70	$ 80,900	$ 703,830					
								PDO	74	11.1	22.20	$ 13,300	$ 295,260					
-	All	Signal Timing (Coordination)	Improve signal timing (coordination, phases, red, yellow, or operation)	S03	10	0.85	50%	FATAL	0	0	0.00	$ 1,590,000	$ -	$ 2,116,445	3 Signals (Retiming)	$ 5,000	$ 15,000	**141.1**
								SERIOUS	1	0.15	0.30	$ 1,590,000	$ 477,000					
								OTHER VISIBLE	15	2.25	4.50	$ 142,301	$ 640,355					
								COMPLAINT OF PAIN	29	4.35	8.70	$ 80,900	$ 703,830					
								PDO	74	11.1	22.20	$ 13,300	$ 295,260					
CM not utilized within this grouping	All	Provide Advanced Dilemma Zone Detection for high speed approaches	Provide Advanced Dilemma Zone Detection for high speed approaches	S04	10	0.60	100%	FATAL										
								SERIOUS										
								OTHER VISIBLE										
								COMPLAINT OF PAIN										
								PDO										
CM not utilized within this grouping	Pedestrian and Bicyclist	Advanced Stop Bars to encourage drivers to stop further back from crosswalks for added safety of crossing pedestrians	Install advance stop bar before crosswalk (Bicycle Box)	S20PB	10	0.85	100%	FATAL										
								SERIOUS										
								OTHER VISIBLE										
								COMPLAINT OF PAIN										
								PDO										
-	Pedestrian and Bicyclist	Implement leading pedestrian interval (LPI)	Modify signal phasing to implement a Leading Pedestrian Interval (LPI)	S21PB	10	0.40	100%	FATAL	0	0	0.00	$ 1,590,000	$ -	$ 1,460,767	3 Signals (LPI)	$ 5,000	$ 15,000	**97.4**
								SERIOUS	0	0	0.00	$ 1,590,000	$ -					
								OTHER VISIBLE	6	3.6	7.20	$ 142,301	$ 1,024,567					
								COMPLAINT OF PAIN	4	2.4	4.80	$ 80,900	$ 388,320					
								PDO	3	1.8	3.60	$ 13,300	$ 47,880					

Roseville Local Road Safety Plan
Project Description for Signalized Intersection Improvements

Signalized Intersections - Pleasant Grove Boulevard

Location: Signalized Intersections - Pleasant Grove Boulevard (11 signals)
Agency Name: City of Roseville
Contact Name: Cervanes, Jana
E-mail: jcervantes@roseville.ca.us



Note: There are 11 Signalized Intersections within this grouping

List of Signals:
PLEASANT GROVE BL & FOOTHILLS BL
PLEASANT GROVE BL & WASHINGTON BL
PLEASANT GROVE BL & WOODCREEK OAKS BL
PLEASANT GROVE BL & HIGHLAND PARK DR
PLEASANT GROVE BL & SR 65 NB RAMPS
PLEASANT GROVE BL & SR 65 SB RAMPS
PLEASANT GROVE BL & COUNTRY CLUB DR
PLEASANT GROVE BL & FAIRWAY DR
PLEASANT GROVE BL & HALLISSY DR
PLEASANT GROVE BL & HIGHLAND POINTE DR
PLEASANT GROVE BL & ROSEVILLE PW

Total Crashes	415
Local CCR Differential	N/A
Equivalent Property Damage Only	2,985
Fatal	0
Serious Injury	9
Other Visible Injury	45
Complaint of Pain	130
PDO	231
Crash Type	
Broadside	96
Sideswipe	69
Rear End	187
Head On	26
Hit Object	18
Overturned	2
Non-Motorist Crashes	
Pedestrian	2
Bicycle	1
Contributing Factors	
Aggressive	213
Distracted	36
Impaired	33
Crash Conditions	
Dark	109
Wet	71

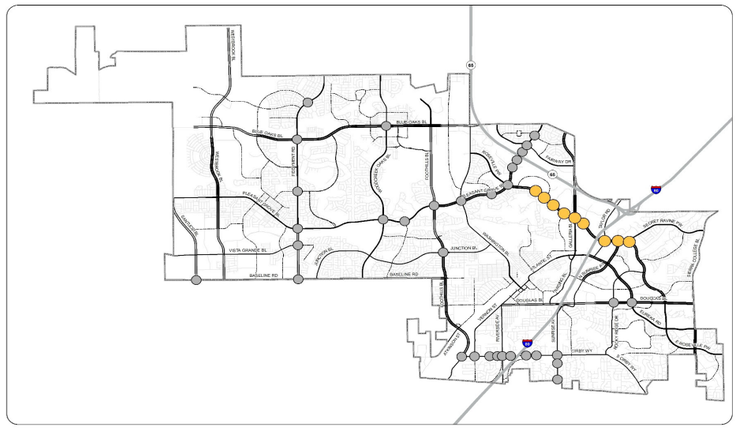
NOTES	COLLISION TYPE	RECOMMENDATION	LRSM/CMF COUNTERMEASURE	LRSM #	Expected Life (Years)	CMF	CALTRANS FUNDING	NUMBER OF CRASHES (2015-2019)		NUMBER OF HISTORIC CRASHES REDUCED	10-YEAR CRASH REDUCTION ESTIMATE	CRASH SEVERITY COST	10-YEAR CRASH REDUCTION BENEFIT (2016 $)	TOTAL 10-YEAR CRASH REDUCTION BENEFIT (2016 $)	QUANTITY/ NUMBER OF UNITS	UNIT COST	COST ESTIMATE	BENEFIT/COST
-	All	Install Retroreflective Backplates	Improve signal hardware: lenses, back-plates with retroreflective borders, mounting, size, and number	S02	10	0.85	100%	FATAL	0	0	0.00	$ 1,590,000	$ -	$ 10,290,854	220 Retroreflective Backplates (11 signals at 20 per signal)	$ 750	$ 165,000	**62.4**
								SERIOUS	9	1.35	2.70	$ 1,590,000	$ 4,293,000					
								OTHER VISIBLE	45	6.75	13.50	$ 142,301	$ 1,921,064					
								COMPLAINT OF PAIN	130	19.5	39.00	$ 80,900	$ 3,155,100					
								PDO	231	34.65	69.30	$ 13,300	$ 921,690					
-	All	Signal Timing (Coordination)	Improve signal timing (coordination, phases, red, yellow, or operation)	S03	10	0.85	50%	FATAL	0	0	0.00	$ 1,590,000	$ -	$ 10,290,854	11 Signals (Retiming)	$ 5,000	$ 55,000	**187.1**
								SERIOUS	9	1.35	2.70	$ 1,590,000	$ 4,293,000					
								OTHER VISIBLE	45	6.75	13.50	$ 142,301	$ 1,921,064					
								COMPLAINT OF PAIN	130	19.5	39.00	$ 80,900	$ 3,155,100					
								PDO	231	34.65	69.30	$ 13,300	$ 921,690					
CM not utilized within this grouping	All	Provide Advanced Dilemma Zone Detection for high speed approaches	Provide Advanced Dilemma Zone Detection for high speed approaches	S04	10	0.60	100%	FATAL										
								SERIOUS										
								OTHER VISIBLE										
								COMPLAINT OF PAIN										
								PDO										
CM not utilized within this grouping	Pedestrian and Bicyclist	Advanced Stop Bars to encourage drivers to stop further back from crosswalks for added safety of crossing pedestrians	Install advance stop bar before crosswalk (Bicycle Box)	S20PB	10	0.85	100%	FATAL										
								SERIOUS										
								OTHER VISIBLE										
								COMPLAINT OF PAIN										
								PDO										
-	Pedestrian and Bicyclist	Implement leading pedestrian interval (LPI)	Modify signal phasing to implement a Leading Pedestrian Interval (LPI)	S21PB	10	0.40	100%	FATAL	0	0	0.00	$ 1,590,000	$ -	$ 2,094,721	11 Signals (LPI)	$ 5,000	$ 55,000	**38.1**
								SERIOUS	1	0.6	1.20	$ 1,590,000	$ 1,908,000					
								OTHER VISIBLE	1	0.6	1.20	$ 142,301	$ 170,761					
								COMPLAINT OF PAIN	0	0	0.00	$ 80,900	$ -					
								PDO	1	0.6	1.20	$ 13,300	$ 15,960					

Kimley»Horn

Roseville Local Road Safety Plan
Project Description for Signalized Intersection Improvements

Signalized Intersections - Roseville Parkway

Location: Signalized Intersections - Roseville Parkway (9 signals)
Agency Name: City of Roseville
Contact Name: Cervanes, Jana
E-mail: jcervantes@roseville.ca.us



Note: There are 9 Signalized Intersections within this grouping

List of Signals:
ROSEVILLE PW & CHASE DR
ROSEVILLE PW & GIBSON DR
ROSEVILLE PW & WEST DR
ROSEVILLE PW & RESERVE DR
ROSEVILLE PW & GALLERIA BL
ROSEVILLE PW & CREEKSIDE RIDGE DR
ROSEVILLE PW & TAYLOR RD
ROSEVILLE PW & SUNRISE AV
ROSEVILLE PW & SECRET RAVINE PW

Total Crashes	301
Local CCR Differential	N/A
Equivalent Property Damage Only	1,955
Fatal	0
Serious Injury	5
Other Visible Injury	29
Complaint of Pain	109
PDO	158
Crash Type	
Broadside	62
Sideswipe	51
Rear End	133
Head On	16
Hit Object	12
Overturned	0
Non-Motorist Crashes	
Pedestrian	5
Bicycle	3
Contributing Factors	
Aggressive	138
Distracted	22
Impaired	29
Crash Conditions	
Dark	83
Wet	42

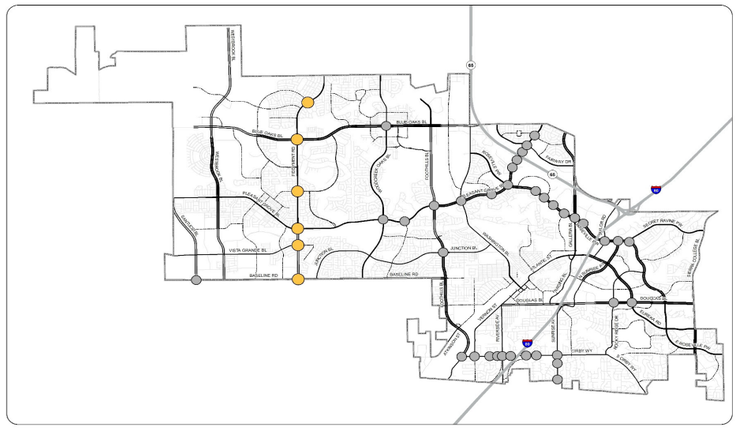
NOTES	COLLISION TYPE	RECOMMENDATION	LRSM/CMF COUNTERMEASURE	LRSM #	Expected Life (Years)	CMF	CALTRANS FUNDING	NUMBER OF CRASHES (2015-2019)		NUMBER OF HISTORIC CRASHES REDUCED	10-YEAR CRASH REDUCTION ESTIMATE	CRASH SEVERITY COST	10-YEAR CRASH REDUCTION BENEFIT (2016 $)	TOTAL 10-YEAR CRASH REDUCTION BENEFIT (2016 $)	QUANTITY/ NUMBER OF UNITS	UNIT COST	COST ESTIMATE	BENEFIT/COST
-	All	Install Retroreflective Backplates	Improve signal hardware: lenses, back-plates with retroreflective borders, mounting, size, and number	S02	10	0.85	100%	FATAL	0	0	0.00	$ 1,590,000	$ -	$ 6,898,869	180 Retroreflective Backplates (9 signals at 20 per signal)	$ 750	$ 135,000	**51.1**
								SERIOUS	5	0.75	1.50	$ 1,590,000	$ 2,385,000					
								OTHER VISIBLE	29	4.35	8.70	$ 142,301	$ 1,238,019					
								COMPLAINT OF PAIN	109	16.35	32.70	$ 80,900	$ 2,645,430					
								PDO	158	23.7	47.40	$ 13,300	$ 630,420					
-	All	Signal Timing (Coordination)	Improve signal timing (coordination, phases, red, yellow, or operation)	S03	10	0.85	50%	FATAL	0	0	0.00	$ 1,590,000	$ -	$ 6,898,869	9 Signals (Retiming)	$ 5,000	$ 45,000	**153.3**
								SERIOUS	5	0.75	1.50	$ 1,590,000	$ 2,385,000					
								OTHER VISIBLE	29	4.35	8.70	$ 142,301	$ 1,238,019					
								COMPLAINT OF PAIN	109	16.35	32.70	$ 80,900	$ 2,645,430					
								PDO	158	23.7	47.40	$ 13,300	$ 630,420					
CM not utilized within this grouping	All	Provide Advanced Dilemma Zone Detection for high speed approaches	Provide Advanced Dilemma Zone Detection for high speed approaches	S04	10	0.60	100%	FATAL										
								SERIOUS										
								OTHER VISIBLE										
								COMPLAINT OF PAIN										
								PDO										
CM not utilized within this grouping	Pedestrian and Bicyclist	Advanced Stop Bars to encourage drivers to stop further back from crosswalks for added safety of crossing pedestrians	Install advance stop bar before crosswalk (Bicycle Box)	S20PB	10	0.85	100%	FATAL										
								SERIOUS										
								OTHER VISIBLE										
								COMPLAINT OF PAIN										
								PDO										
-	Pedestrian and Bicyclist	Implement leading pedestrian interval (LPI)	Modify signal phasing to implement a Leading Pedestrian Interval (LPI)	S21PB	10	0.40	100%	FATAL	0	0	0.00	$ 1,590,000	$ -	$ 4,766,886	9 Signals (LPI)	$ 5,000	$ 45,000	**105.9**
								SERIOUS	2	1.2	2.40	$ 1,590,000	$ 3,816,000					
								OTHER VISIBLE	5	3	6.00	$ 142,301	$ 853,806					
								COMPLAINT OF PAIN	1	0.6	1.20	$ 80,900	$ 97,080					
								PDO	0	0	0.00	$ 13,300	$ -					

Kimley»Horn

Roseville Local Road Safety Plan
Project Description for Signalized Intersection Improvements

Signalized Intersections - Fiddyment Road

Location: Signalized Intersections - Fiddyment Road (6 signals)
Agency Name: City of Roseville
Contact Name: Cervanes, Jana
E-mail: jcervantes@roseville.ca.us



Note: There are 6 Signalized Intersections within this grouping

List of Signals:
FIDDYMENT RD & HAYDEN PW
FIDDYMENT RD & WESTHILLS DR
FIDDYMENT RD & PLEASANT GROVE BL
FIDDYMENT RD & DEL WEBB BL
FIDDYMENT RD & BLUE OAKS BL
FIDDYMENT RD & BASELINE RD

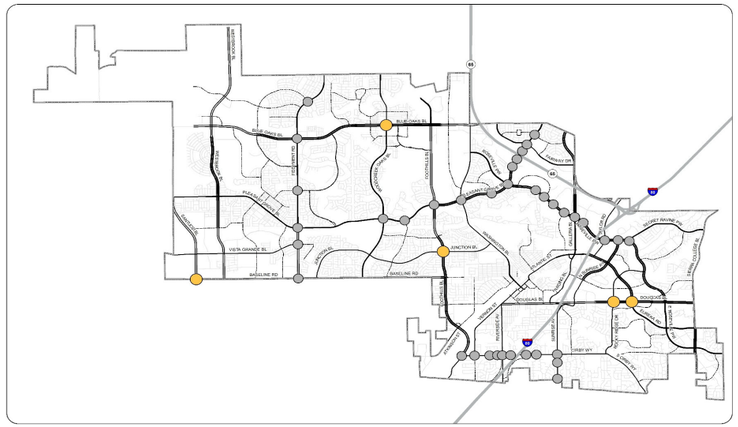
Total Crashes	116
Local CCR Differential	N/A
Equivalent Property Damage Only	887
Fatal	0
Serious Injury	3
Other Visible Injury	10
Complaint of Pain	36
PDO	67
Crash Type	
Broadside	22
Sideswipe	17
Rear End	53
Head On	4
Hit Object	8
Overturned	2
Non-Motorist Crashes	
Pedestrian	0
Bicycle	4
Contributing Factors	
Aggressive	54
Distracted	8
Impaired	15
Crash Conditions	
Dark	39
Wet	15

NOTES	COLLISION TYPE	RECOMMENDATION	LRSM/CMF COUNTERMEASURE	LRSM #	Expected Life (Years)	CMF	CALTRANS FUNDING	NUMBER OF CRASHES (2015-2019)		NUMBER OF HISTORIC CRASHES REDUCED	10-YEAR CRASH REDUCTION ESTIMATE	CRASH SEVERITY COST	10-YEAR CRASH REDUCTION BENEFIT (2016 $)	TOTAL 10-YEAR CRASH REDUCTION BENEFIT (2016 $)	QUANTITY/ NUMBER OF UNITS	UNIT COST	COST ESTIMATE	BENEFIT/COST
-	All	Install Retroreflective Backplates	Improve signal hardware: lenses, back-plates with retroreflective borders, mounting, size, and number	S02	10	0.85	100%	FATAL	0	0	0.00	$ 1,590,000	$ -	$ 2,998,953	120 Retroreflective Backplates (6 signals at 20 per signal)	$ 750	$ 90,000	**33.3**
								SERIOUS	3	0.45	0.90	$ 1,590,000	$ 1,431,000					
								OTHER VISIBLE	10	1.5	3.00	$ 142,301	$ 426,903					
								COMPLAINT OF PAIN	36	5.4	10.80	$ 80,900	$ 873,720					
								PDO	67	10.05	20.10	$ 13,300	$ 267,330					
CM used for all signals except Fiddyment Rd & Baseline Rd	All	Signal Timing (Coordination)	Improve signal timing (coordination, phases, red, yellow, or operation)	S03	10	0.85	50%	FATAL	0	0	0.00	$ 1,590,000	$ -	$ 2,998,953	5 Signals (Retiming)	$ 5,000	$ 25,000	**120.0**
								SERIOUS	3	0.45	0.90	$ 1,590,000	$ 1,431,000					
								OTHER VISIBLE	10	1.5	3.00	$ 142,301	$ 426,903					
								COMPLAINT OF PAIN	36	5.4	10.80	$ 80,900	$ 873,720					
								PDO	67	10.05	20.10	$ 13,300	$ 267,330					
-	All	Provide Advanced Dilemma Zone Detection for high speed approaches	Provide Advanced Dilemma Zone Detection for high speed approaches	S04	10	0.60	100%	FATAL	0	0	0.00	$ 1,590,000	$ -	$ 7,997,208	6 Signals (Detection)	$ 40,000	$ 240,000	**33.3**
								SERIOUS	3	1.2	2.40	$ 1,590,000	$ 3,816,000					
								OTHER VISIBLE	10	4	8.00	$ 142,301	$ 1,138,408					
								COMPLAINT OF PAIN	36	14.4	28.80	$ 80,900	$ 2,329,920					
								PDO	67	26.8	53.60	$ 13,300	$ 712,880					
-	Pedestrian and Bicyclist	Advanced Stop Bars to encourage drivers to stop further back from crosswalks for added safety of crossing pedestrians	Install advance stop bar before crosswalk (Bicycle Box)	S20PB	10	0.85	100%	FATAL	0	0	0.00	$ 1,590,000	$ -	$ 95,220	864 Linear Feet	$ 6	$ 5,184	**18.4**
								SERIOUS	0	0	0.00	$ 1,590,000	$ -					
								OTHER VISIBLE	1	0.15	0.30	$ 142,301	$ 42,690					
								COMPLAINT OF PAIN	2	0.3	0.60	$ 80,900	$ 48,540					
								PDO	1	0.15	0.30	$ 13,300	$ 3,990					
-	Pedestrian and Bicyclist	Implement leading pedestrian interval (LPI)	Modify signal phasing to implement a Leading Pedestrian Interval (LPI)	S21PB	10	0.40	100%	FATAL	0	0	0.00	$ 1,590,000	$ -	$ 380,881	6 Signals (LPI)	$ 5,000	$ 30,000	**12.7**
								SERIOUS	0	0	0.00	$ 1,590,000	$ -					
								OTHER VISIBLE	1	0.6	1.20	$ 142,301	$ 170,761					
								COMPLAINT OF PAIN	2	1.2	2.40	$ 80,900	$ 194,160					
								PDO	1	0.6	1.20	$ 13,300	$ 15,960					

Roseville Local Road Safety Plan
Project Description for Signalized Intersection Improvements

Signalized Intersections - Miscellaneous

Location: Signalized Intersections - Miscellaneous (5 signals)
Agency Name: City of Roseville
Contact Name: Cervanes, Jana
E-mail: jcervantes@roseville.ca.us



Note: There are 5 Signalized Intersections within this grouping

List of Signals:
ROCKY RIDGE DR & DOUGLAS BL
EUREKA RD & DOUGLAS BL
FOOTHILLS BL & JUNCTION BL
SANTUCCI BL & BASELINE RD
WOODCREEK OAKS BL & BLUE OAKS BL

Total Crashes	161
Local CCR Differential	N/A
Equivalent Property Damage Only	1,562
Fatal	4
Serious Injury	2
Other Visible Injury	16
Complaint of Pain	52
PDO	87
Crash Type	
Broadside	45
Sideswipe	21
Rear End	55
Head On	7
Hit Object	19
Overturned	0
Non-Motorist Crashes	
Pedestrian	2
Bicycle	2
Contributing Factors	
Aggressive	62
Distracted	18
Impaired	23
Crash Conditions	
Dark	56
Wet	18

NOTES	COLLISION TYPE	RECOMMENDATION	LRSM/CMF COUNTERMEASURE	LRSM #	Expected Life (Years)	CMF	CALTRANS FUNDING	NUMBER OF CRASHES (2015-2019)		NUMBER OF HISTORIC CRASHES REDUCED	10-YEAR CRASH REDUCTION ESTIMATE	CRASH SEVERITY COST	10-YEAR CRASH REDUCTION BENEFIT (2016 $)	TOTAL 10-YEAR CRASH REDUCTION BENEFIT (2016 $)	QUANTITY/ NUMBER OF UNITS	UNIT COST	COST ESTIMATE	BENEFIT/COST
-	All	Install Retroreflective Backplates	Improve signal hardware: lenses, back-plates with retroreflective borders, mounting, size, and number	S02	10	0.85	100%	FATAL	4	0.6	1.20	$ 1,590,000	$ 1,908,000	$ 5,154,215	100 Retroreflective Backplates (5 signals at 20 per signal)	$ 750	$ 75,000	**68.7**
								SERIOUS	2	0.3	0.60	$ 1,590,000	$ 954,000					
								OTHER VISIBLE	16	2.4	4.80	$ 142,301	$ 683,045					
								COMPLAINT OF PAIN	52	7.8	15.60	$ 80,900	$ 1,262,040					
								PDO	87	13.05	26.10	$ 13,300	$ 347,130					
CM not utilized within this grouping	All	Signal Timing (Coordination)	Improve signal timing (coordination, phases, red, yellow, or operation)	S03	10	0.85	50%	FATAL										
								SERIOUS										
								OTHER VISIBLE										
								COMPLAINT OF PAIN										
								PDO										
CM not utilized within this grouping	All	Provide Advanced Dilemma Zone Detection for high speed approaches	Provide Advanced Dilemma Zone Detection for high speed approaches	S04	10	0.60	100%	FATAL										
								SERIOUS										
								OTHER VISIBLE										
								COMPLAINT OF PAIN										
								PDO										
CM not utilized within this grouping	Pedestrian and Bicyclist	Advanced Stop Bars to encourage drivers to stop further back from crosswalks for added safety of crossing pedestrians	Install advance stop bar before crosswalk (Bicycle Box)	S20PB	10	0.85	100%	FATAL										
								SERIOUS										
								OTHER VISIBLE										
								COMPLAINT OF PAIN										
								PDO										
-	Pedestrian and Bicyclist	Implement leading pedestrian interval (LPI)	Modify signal phasing to implement a Leading Pedestrian Interval (LPI)	S21PB	10	0.40	100%	FATAL	1	0.6	1.20	$ 1,590,000	$ 1,908,000	$ 2,191,801	5 Signals (LPI)	$ 5,000	$ 25,000	**87.7**
								SERIOUS	0	0	0.00	$ 1,590,000	$ -					
								OTHER VISIBLE	1	0.6	1.20	$ 142,301	$ 170,761					
								COMPLAINT OF PAIN	1	0.6	1.20	$ 80,900	$ 97,080					
								PDO	1	0.6	1.20	$ 13,300	$ 15,960					

APPENDIX F

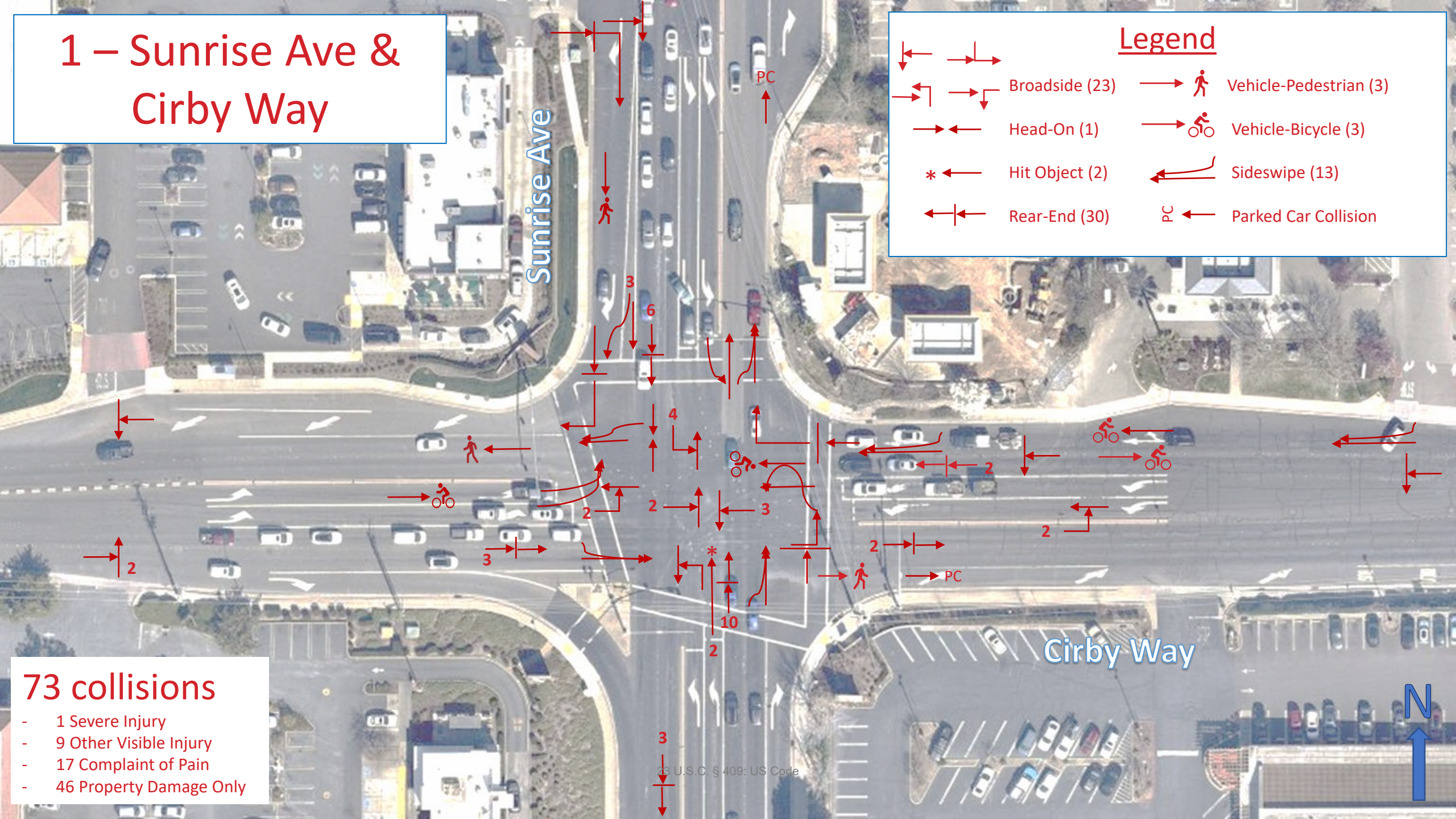
SIGNALIZED INTERSECTION SAFETY COUNTERMEASURES MATRIX

Signal Grouping	North-South Street	East-West Street	Countermeasures				
			S02	S03	S04	S20PB	S21PB
			RR Backplates (15% CRF - All Crashes)	Signal Timing (Coordination) (15% CRF - All Crashes)	Advanced Dillemma Zone Detection (40% CRF - All Crashes)	Advanced Stop Bars (15% CRF - Bike/Ped Crashes)	Leading Pedestrian Interval (LPI) (60% CRF - Bike/Ped Crashes)
Cirby Way	RIVERSIDE AV	CIRBY WY	X	X	X	X	X
Cirby Way	MELODY LN	CIRBY WY	X	X	X	X	X
Cirby Way	FOOTHILLS BL	CIRBY WY	X	X	X	X	X
Cirby Way	VERNON ST	CIRBY WY	X	X	X	X	X
Cirby Way	ORLANDO AVE	CIRBY WY	X	X	X	X	X
Cirby Way	SAN SIMEON DR	CIRBY WY	X	X	X	X	X
Cirby Way	CIRBY HILLS DR	CIRBY WY	X	X	X	X	X
Cirby Way	LINDSAY DR	CIRBY WY	X	X	X	X	X
Sunrise Avenue	SUNRISE AV	CIRBY WY	X	X			X
Sunrise Avenue	SUNRISE AV	SANDRINGHAM WY	X	X			X
Sunrise Avenue	SUNRISE AV	KENSINGTON DR	X	X			X
Pleasant Grove Boulevard	FOOTHILLS BL	PLEASANT GROVE BL	X	X			X
Pleasant Grove Boulevard	WASHINGTON BL	PLEASANT GROVE BL	X	X			X
Pleasant Grove Boulevard	WOODCREEK OAKS BL	PLEASANT GROVE BL	X	X			X
Pleasant Grove Boulevard	PLEASANT GROVE BL	HIGHLAND PARK DR	X	X			X
Pleasant Grove Boulevard	PLEASANT GROVE BL	SR 65 NB RAMPS	X	X			X
Pleasant Grove Boulevard	SR 65 SB RAMPS	PLEASANT GROVE BL	X	X			X
Pleasant Grove Boulevard	COUNTRY CLUB DR	PLEASANT GROVE BL	X	X			X
Pleasant Grove Boulevard	PLEASANT GROVE BL	FAIRWAY DR	X	X			X
Pleasant Grove Boulevard	HALLISSY DR	PLEASANT GROVE BL	X	X			X
Pleasant Grove Boulevard	PLEASANT GROVE BLVD	HIGHLAND POINTE DR	X	X			X
Pleasant Grove Boulevard	PLEASANT GROVE BL	ROSEVILLE PW	X	X			X
Roseville Parkway	CHASE DR	ROSEVILLE PW	X	X			X
Roseville Parkway	ROSEVILLE PKWY	GIBSON DR	X	X			X
Roseville Parkway	WEST DR	ROSEVILLE PW	X	X			X
Roseville Parkway	RESERVE DR	ROSEVILLE PW	X	X			X
Roseville Parkway	GALLERIA BL	ROSEVILLE PW	X	X			X
Roseville Parkway	ROSEVILLE PW	CREEKSIDE RIDGE DR	X	X			X
Roseville Parkway	TAYLOR RD	ROSEVILLE PW	X	X			X
Roseville Parkway	SUNRISE AV	ROSEVILLE PW	X	X			X
Roseville Parkway	SECRET RAVINE PW	ROSEVILLE PW	X	X			X
Fiddyment Road	HAYDEN PW	FIDDYMENT RD	X	X	X	X	X
Fiddyment Road	FIDDYMENT RD	WESTHILLS DR	X	X	X	X	X
Fiddyment Road	FIDDYMENT RD	PLEASANT GROVE BL	X	X	X	X	X
Fiddyment Road	FIDDYMENT RD	DEL WEBB BL	X	X	X	X	X
Fiddyment Road	FIDDYMENT RD	BLUE OAKS BL	X	X	X	X	X
Fiddyment Road	FIDDYMENT RD	BASELINE RD	X		X	X	X
Miscellaneous	ROCKY RIDGE DR	DOUGLAS BL	X				X
Miscellaneous	EUREKA RD	DOUGLAS BL	X				X
Miscellaneous	FOOTHILLS BL	JUNCTION BL	X				X
Miscellaneous	SANTUCCI BL	BASELINE RD	X				X
Miscellaneous	WOODCREEK OAKS BL	BLUE OAKS BL	X				X

APPENDIX G

CRASH DIAGRAMS

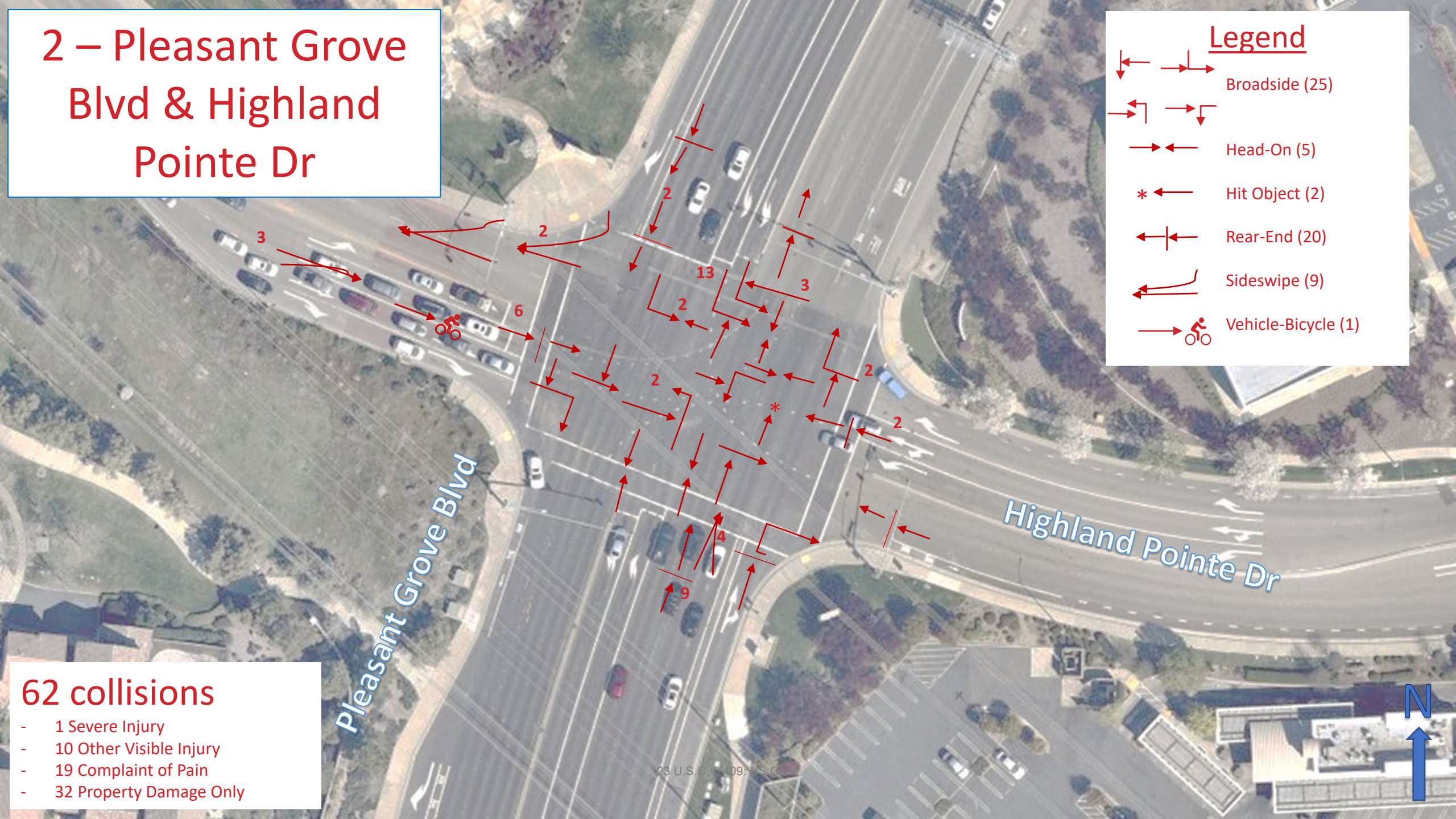
1 – Sunrise Ave & Cirby Way



73 collisions

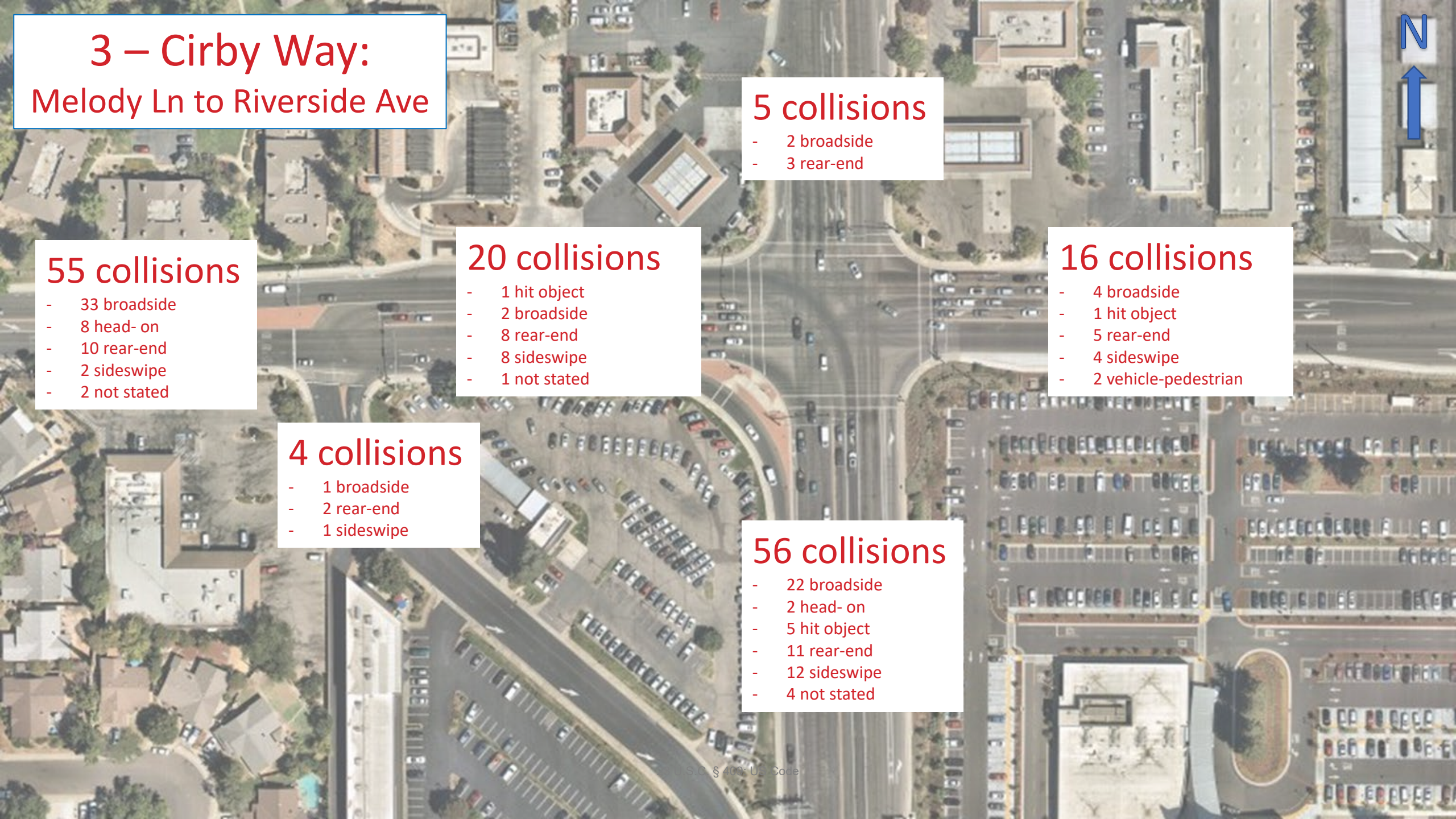
- 1 Severe Injury
- 9 Other Visible Injury
- 17 Complaint of Pain
- 46 Property Damage Only

2 – Pleasant Grove Blvd & Highland Pointe Dr



62 collisions

- 1 Severe Injury
- 10 Other Visible Injury
- 19 Complaint of Pain
- 32 Property Damage Only

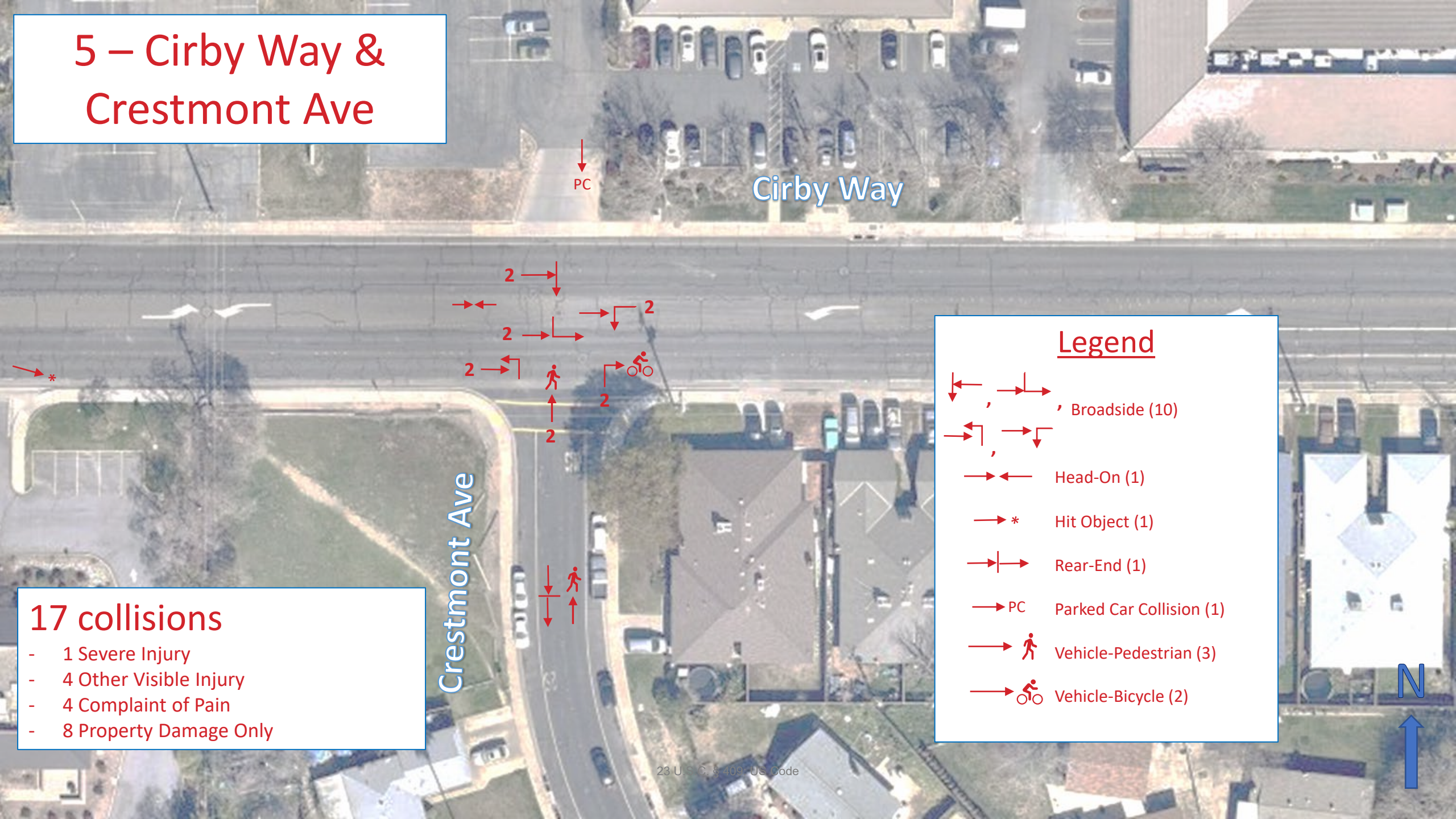

3 – Cirby Way:
Melody Ln to Riverside Ave
N
5 collisions
- 2 broadside
- 3 rear-end
55 collisions
- 33 broadside
- 8 head- on
- 10 rear-end
- 2 sideswipe
- 2 not stated
20 collisions
- 1 hit object
- 2 broadside
- 8 rear-end
- 8 sideswipe
- 1 not stated
16 collisions
- 4 broadside
- 1 hit object
- 5 rear-end
- 4 sideswipe
- 2 vehicle-pedestrian
4 collisions
- 1 broadside
- 2 rear-end
- 1 sideswipe
56 collisions
- 22 broadside
- 2 head- on
- 5 hit object
- 11 rear-end
- 12 sideswipe
- 4 not stated

4 – Atlantic St & Vernon St

31 collisions

- 0 Severe Injury
- 3 Other Visible Injury
- 5 Complaint of Pain
- 12 Property Damage Only

5 – Cirby Way & Crestmont Ave



17 collisions

- 1 Severe Injury
- 4 Other Visible Injury
- 4 Complaint of Pain
- 8 Property Damage Only

APPENDIX H

SAFETY DATA ANALYSIS CHECKLIST

SAFETY DATA ANALYSIS CHECKLIST

- ☐ Traffic Engineering Manager reviews crash reports obtained from Police Department to identify crash trends and patterns. Additional items to review and compare with previous years data include:
  - Number of fatal and severe injury crashes
  - Number of non-motorized (pedestrian and bicycle) crashes
  - Crashes by cause
  - Highest occurring crashes type
  - Top ten crash locations (intersections and segments)
  - Other emerging crash trends

- ☐ **Multi-disciplinary Safety Team Meetings** ***[Bi-Annual]*** **-** Traffic Engineering, Police Department, Signal Maintenance, Street Maintenance, and Risk Management departments

  - ☐ Review top ten crash locations to identify safety concerns, trends in crash types and contributing factors.

  - ☐ Review potential safety countermeasures and discuss prioritization of implementation. *Refer to Engineering Countermeasures Toolbox (Table 3 in LRSP Report) and Non-Engineering Countermeasures Toolbox (Table 5 in LRSP Report)*

- ☐ Multi-disciplinary Accident Investigation Team (MAIT) reviews fatal and serious injury crashes for further investigation

- ☐ Traffic Engineering reviews existing roadway conditions including striping and signage at all locations with fatal and serious injury crashes

- ☐ **Safe Routes to School Meetings** - Traffic Engineering, Police Department, and Safe Routes to School (SRTS) Coordinator conducts meetings with all district schools to review traffic control and develop/update SRTS map and informational material ***[All new schools and on rotational basis for existing schools]***

Checklist completed by:_____

Date: _____