

CITY OF CITRUS HEIGHTS
2026 LOCAL ROADWAY SAFETY PLAN (LRSP) UPDATE

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2026 LOCAL ROADWAY SAFETY PLAN (LRSP) UPDATE

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List of Acronyms and Terminology

A	Suspected Serious Injury Collision
AASHTO	American Association of State Highway and Transportation Officials
ATP	Active Transportation Program
ARIDE	Advance Roadside Impaired Enforcement
B	Non-incapacitating Injury Collision
C	Possible Injury Collision
CA MUTCD	California Manual on Uniform Traffic Control Devices
CalEPA	California Environmental Protection Agency
Caltrans	California Department of Transportation
CCR	Critical Crash Rate
CEJST	Climate and Economic Justice Screening Tool
CMAQ	California Mitigation and Air Quality
CMF	Crash Modification Factor
CRF	Crash Reduction Factor
CTC	California Transportation Commission
DAC	Disadvantaged Communities
DEV	Daily Entering Volume
DRE	Drug Recognition Expert
EO	Executive Order
EPDO	Equivalent Property Damage Only
FAST	Fixing America's Surface Transportation
FHWA	Federal Highway Administration
GIS	Geographic Information System
HSIP	Highway Safety Improvement Program
HFST	High Friction Surface Treatment
HSM	Highway Safety Manual
IIP	Interregional Improvement Program
ITIP	Interregional Transportation Improvement Program

K	Fatal Collision
K+SI	Fatal and Severe Injury Crashes
LRSP	Local Roadway Safety Plan
LRSM	Local Roadway Safety Manual
MEV	Million Entering Vehicles
NEV	Neighborhood Electric Vehicle
NHTSA	National Highway Traffic Safety Administration
O	No Injury Collision (Property Damage Only)
PD	Police Department
PDO	Property Damage Only
RRFB	Rectangular Rapid Flashing Beacon
RIP	Regional Improvement Program
RSTP	Rural Surface Transportation Program
RTIP	Regional Transportation Improvement Program
R/W	Right-of-Way
SARC	School Accountability Report Card
SB	Senate Bill
SHSP	Strategic Highway Safety Plan
SRTS	Safe Routes to School
SACOG	Sacramento Area Council of Government
SS4A	Safe Streets and Roads for All
STIP	State Transportation Improvement Program
SWITRS	Statewide Integrated Traffic Records System
TCAS	Traffic Collision Analysis System (Draft)
TDM	Transportation Demand Model
TIMS	Transportation Injury Mapping System
US ACS	United States Census American Community Survey
VMT	Vehicle Miles Traveled

1. INTRODUCTION

The City of Citrus Heights (City) is an established community located 15 miles northeast of Sacramento. The City has a population of approximately 88,100 residents over a total area of 14.2 square miles. The City's transportation network includes 214 centerline miles of City-maintained roads and 67 traffic signals, the majority of which are located on key arterial and collector roadways (some of which are located along the shared boundary with Sacramento County). The City also owns, operates, and maintains three traffic signals located at pedestrian crossings and two traffic signals for emergency vehicles at fire stations.

The City has taken steps to enhance multi-modal safety by adopting and implementing its 2021 LRSP. The City builds upon these safety efforts in this LRSP Update (herein referred to as the "LRSP") by identifying areas of emphasis and systemic recommendations that can be implemented to enhance safety. This LRSP analyzes the next consecutive, five year period of recent crash data (January 1, 2020 – December 31, 2024), assessing crash trends observed during the COVID-19 Pandemic and in the years immediately following.

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 factors in the transportation network that inhibit safety for roadway users of all modes of travel
- Improve safety at high-crash locations and locations which experience a disproportionately high number of fatal and severe injury crashes
- 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 more favorable severity outcomes

The process and analysis performed for the City's LRSP includes a summary of vision and goals, crash history analysis, the establishment of emphasis areas, an equity assessment, a refreshed countermeasure toolbox, and a set of policy recommendations. The information compiled will provide a foundation for decision making and prioritization for safety countermeasures and projects that enhance safety equitably for all modes of travel within the City. The expanded implementation section will provide guidance to the City on applying for grant funding from various safety programs.

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
- Provide support for grant funding opportunities
- Aid in the prioritization of investments in traffic safety

The City seeks to improve roadway safety by implementing the **Safe System Approach**. The Safe System Approach, as defined in the Caltrans SHSP, is built upon the following principles [1]:

- Death and serious injuries are unacceptable
- Humans make mistakes
- Humans are vulnerable
- Responsibility is shared
- Safety is proactive
- Redundancy is crucial

Consistent with the safe systems approach, this report takes a comprehensive approach to roadway safety by making policy recommendations and including education and enforcement as potential non-engineering countermeasures.



Source: *What Is a Safe System Approach?* USDOT 2022.

[1] 2020-2024 SHSP – Jan 2023 (PDF), Caltrans. January 2023. dot.ca.gov/-/media/dot-media/programs/safety-programs/documents/shsp/2023-shsp-full-report-2020-2024-a11y.pdf

2. VISION, GOAL, AND OBJECTIVES

The Citrus Heights 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 modes, influences on the roadway network from adjacent municipalities, 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 systemic 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[2]. 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 City staff and a review of existing plans and policies for the area, the following Vision, Goals, and Objectives have been established for this project.

Vision:	**Support the California vision of moving towards significantly reducing fatalities and severe injuries for all road users.**
Goal:	Identify transportation safety initiatives (projects and programs) and partnerships to continue reducing fatalities and severe injuries in Citrus Heights.
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., flashing yellow arrow, retroreflective backplates, leading pedestrian interval, etc.) ▪ Promote safe, equitable, and multimodal mobility opportunities ▪ Document Citrus Height's procedures for on-going crash data monitoring

[2] Proven Safety Countermeasures, FHWA. Accessed January 2026. https://highways.dot.gov/safety/proven-safety-countermeasures

3. PROCESS

Providing safe, sustainable, and efficient mobility choices for their residents and visitors is a primary goal for the City and their safety partners. The City collaborated with safety partners to develop the 2021 LRSP and has continued to do so in its implementation (see **Section 4** and **Section 5**).

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

The FHWA encourages [3]:

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

Caltrans' guidance follows a similar outline with the following steps [4]:

1. Establish leadership
2. Analyze the safety data
3. Determine emphasis areas
4. Identify strategies
5. Prioritize and incorporate strategies
6. Evaluate and update the LRSP

This LRSP documents the results of data and information obtained, including the vision, goals, and objectives for the LRSP; existing safety efforts; crash analyses; emphasis areas; the City's existing countermeasure toolbox; and potential countermeasures for select priority locations. The development of the LRSP recommendations considers the "Five Es" of traffic safety defined by the California SHSP 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 would most likely benefit from safety enhancements were identified. Using historic crash data, crash risk factors for the entire network were 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.

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[3] Local Roadway Safety Plans, FHWA Office of Safety. Accessed January 2026. https://highways.dot.gov/sites/fhwa.dot.gov/files/Local%20Road%20Safety%20Plans_508.pdf

[4] Local Roadway Safety Plan (LRSP) and Systemic Safety Analysis Report Program (SSARP), Caltrans. Accessed January 2026. https://dot.ca.gov/programs/local-assistance/fed-and-state-programs/highway-safety-improvement-program/local-roadway-safety-plans

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

The purpose of the Local Roadway Safety: A Manual for California's Local Road Owners (Version 1.7, April 2024) (LRSM) is to encourage local agencies to pursue a proactive approach to identifying and analyzing safety issues, while positioning themselves to be eligible for competitive federal, state, and local grant programs for project implementation 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 grant 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 implementation of cost-effective countermeasures, preferably prioritized by benefit/cost ratio. The LRSM suggests using a combination of quantitative and qualitative measures to identify and rank locations that considers both crash frequency and crash rates. These findings should then be screened for patterns such as crash types and severity to aid in the determination of issues causing higher numbers of crashes and the potential countermeasures that could be most effective. Qualitative analysis should include field visits and a review of existing roadway characteristics and devices. The specific roadway context can then be used to assess what conditions may increase safety risk at the site and systematic level.

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

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, and 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 as well as identify and rank locations that (based on the implementation of a countermeasure) are most to 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 process. 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, or 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 screening methods described in this chapter: ranking, sliding window, and 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
- Local Critical Crash Rate Differential (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 sub-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. The crash type factors were:

- Crash severity – fatal, severe 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 were chosen based on crash activity, 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 countermeasure toolbox development. The intent is to populate the safety countermeasure 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 give a complete indication of the level of risk for those who use that intersection or roadway segment daily. The HSM describes the CCR method, which provides a statistical review of locations to determine where risk is higher than that experienced by similar locations. It is also the first step in analyzing 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 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. A roadway segment with a higher local CCR differential indicates that the segment's crash rate is higher than expected for its functional classification.

Local Critical Crash Rate Differential Formula:

$$MEV_i = \left[\frac{TEV_i}{\left(1{,}000{,}000 \times N_{Years} \times 365\ \frac{Days}{Year}\right)}\right]$$

$$LCR_i = \left[\frac{N_{crashes}}{(MEV_i)}\right]$$

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

$$LCCR_{Dif} = LCR_i - R_{c,i}$$

Where:

MEV_i = Million entering vehicles for intersection i

TEV_i = Total daily entering vehicles for intersection i

N_{Years} = Number of years in analysis

LCR_i = Local Crash Rate for intersection i

$N_{crashes}$ = Number of crashes at intersection i

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

R_a = Weighted average crash rate for reference population

P = P-value for corresponding confidence level

$LCCR_{Dif}$ = Local critical crash rate differential for intersection i

Source: Highway Safety Manual, 1st Edition, Pg 4-38.

Data Needs

CCR is calculated using:

- Daily Total Entering Volume (TEV) 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 System (GIS) or tabular form including coordinates or linear measures

Strengths

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

Weaknesses

- Does not account for regression to the mean bias

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 the 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 Highway Safety Manual. This method assigns weighting factors to crashes based on injury level 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).

EPDO Formula:

$$EPDO = \frac{(N_F + N_S) * \$2{,}162{,}000 + (N_O * \$193{,}000) + (N_C * \$110{,}000) + (N_{PDO} * \$18{,}000)}{\$18{,}000}$$

Where:

EPDO = Equivalent Property Damage Only (in units of crashes)

N_F = Number of fatal crashes

N_S = Number of severe injury crashes

N_O = Number of other visible injury crashes

N_C = Number of complaint of pain crashes

N_{PDO} = Number of PDO crashes

Source: Highway Safety Manual, 1st Edition, Pg 4-30

The cost to society for each crash type along signalized intersections is as follows:

- *Fatal: $2,162,000*
- *Severe: $2,162,000*
- *Other Visible Injury: $193,000*
- *Complaint of Pain: $110,000*
- *PDO: $18,000*

Source: Caltrans LRSM V1.6 Pg 106

To give an example from **Appendix A**, the intersection of Old Auburn Road and Sylvan Road/Auburn Boulevard experienced 53 crashes from 2020-2024. The crashes are broken down by severity as follows: 0 fatal crashes, 2 crashes resulting in severe injuries, 8 crashes resulting in other visible injuries, 11 crashes resulting in complaint of pain, and 32 PDO crashes.

$$EPDO = \frac{(0+2) * \$2{,}162{,}000 + (8 * \$193{,}000) + (11 * \$110{,}000) + (32 * \$18{,}000)}{\$18{,}000}$$
$$= 425\ PDO\ Crashes$$

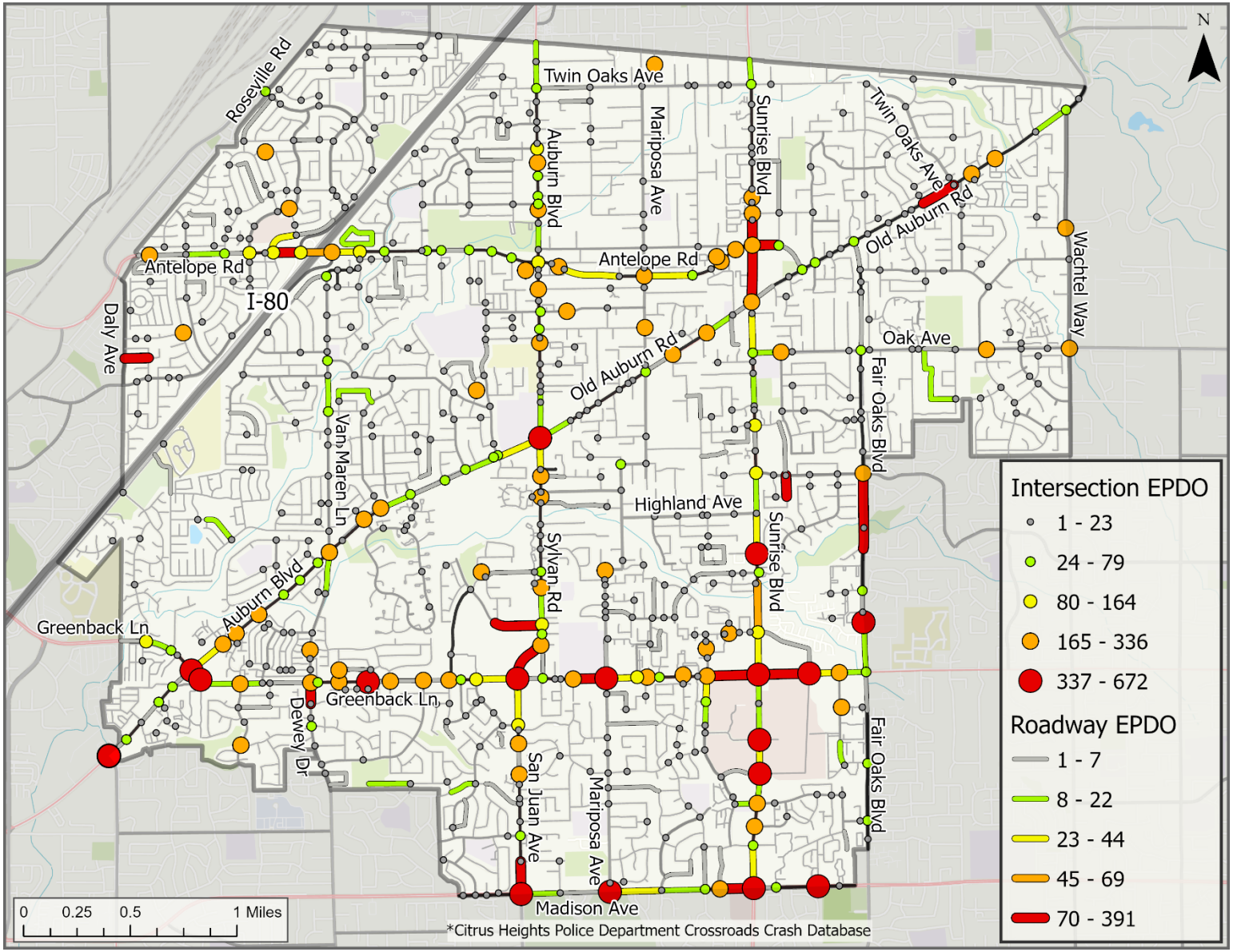
The 53 crashes of ranging severity that took place at the intersection of Old Auburn Road and Sylvan Road/Auburn Boulevard have the equivalent cost to society of approximately 425 PDO crashes. This intersection has a CCR Differential value of 0.15. Together the EPDO and CCR Differential values show that the intersection has historically had a relative crash rate that is higher than expected for similar facilities, and that that the crashes that have occurred there have generally resulted in severe levels of injury.

Locations with fatal and severe injury crashes will have a higher EPDO value compared to locations with less severe injury crashes. A number of locations with high EPDO values were identified for further study and are discussed in Section 7. Listed below are the roadway segment and intersection with the highest EPDO values:

- The roadway segment with the highest EPDO value was Greenback Lane between Sunrise Boulevard and Sunrise Vista Drive, with an EPDO value of 391 (1 fatal crash, 1 severe Injury crash, 17 crashes total)
- The intersection with the highest EPDO value was Greenback Lane and Auburn Boulevard, with an EPDO value of 663 (3 severe Injury crashes, 97 crashes total)

The results of the network screening analysis for both intersections and roadway segments are presented in **Appendix A** and **Appendix B**, respectively. **Figure 1** presents intersection and roadway segment EPDO.

Figure 1 — Citywide EPDO Values (2020-2024)



4. Citrus Heights Plans, Policies, and Programs

4.1. Review of Policies and Plans

Existing City plans and policies were compiled at the start of the LRSP update 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.

- 5-Year Capital Improvements Program (CIP)
- General Plan
- Pedestrian Master Plan
- Bikeway Master Plan
- ADA Transition Plan
- Comprehensive Transit Plan
- Smart Region Technology Implementation Plan (SACOG)
- Sunrise Tomorrow Specific Plan
- Multi-Modal Transportation Safety Program (MMTSP)
- Pavement Maintenance Program
- Metropolitan Transportation Plan / Sustainable Communities Strategy (SACOG)
- Sacramento Regional Blueprint (SACOG)
- Sacramento Region Trail Network Action Plan (SACOG)

While engineering countermeasures are a critical part of preventing fatal and severe injury crashes, the City also recognizes that policy plays a key role in safety as well. The city performed a literature review of relevant policies and programs to identify other means by which the Safe System Approach and road safety could be further established. **Appendix C** presents a summary of local programs, policies, and practices as well as considerations of how they can be improved or enhanced to further support and prioritize road safety.

4.2. Multi Modal Transportation Safety Program (MMTSP) Program

Citrus Heights adopted the Multi Modal Transportation Safety Program (MMTSP) in December 2020 [5]. The MMTSP superseded the City's existing neighborhood traffic management program, establishing a system for the City to assess and respond to community requests for traffic calming and safety improvements. As stated on the MMTSP homepage, the program includes:

- A clear and transparent process for addressing complaints, identifying the best way to fix the issue, and outlining when and how changes will be made
- A catalog of safety measures to address specific types of problems including guidelines for how to best apply different safety measures
- A process to prioritize citizen requests to address speeding, cut-through traffic, and other safety issues in their neighborhoods
- An interactive process that allows the city to quickly respond to citizen requests and track the status of requests on a quarterly basis
- Provides Citrus Heights residents with tools to promote safety in their neighborhoods

[5] Citrus Heights Multi Modal Transportation Safety Program. Accessed January 2026. https://www.citrusheights.net/945/MMTSP-Multimodal-Transportation-Safety

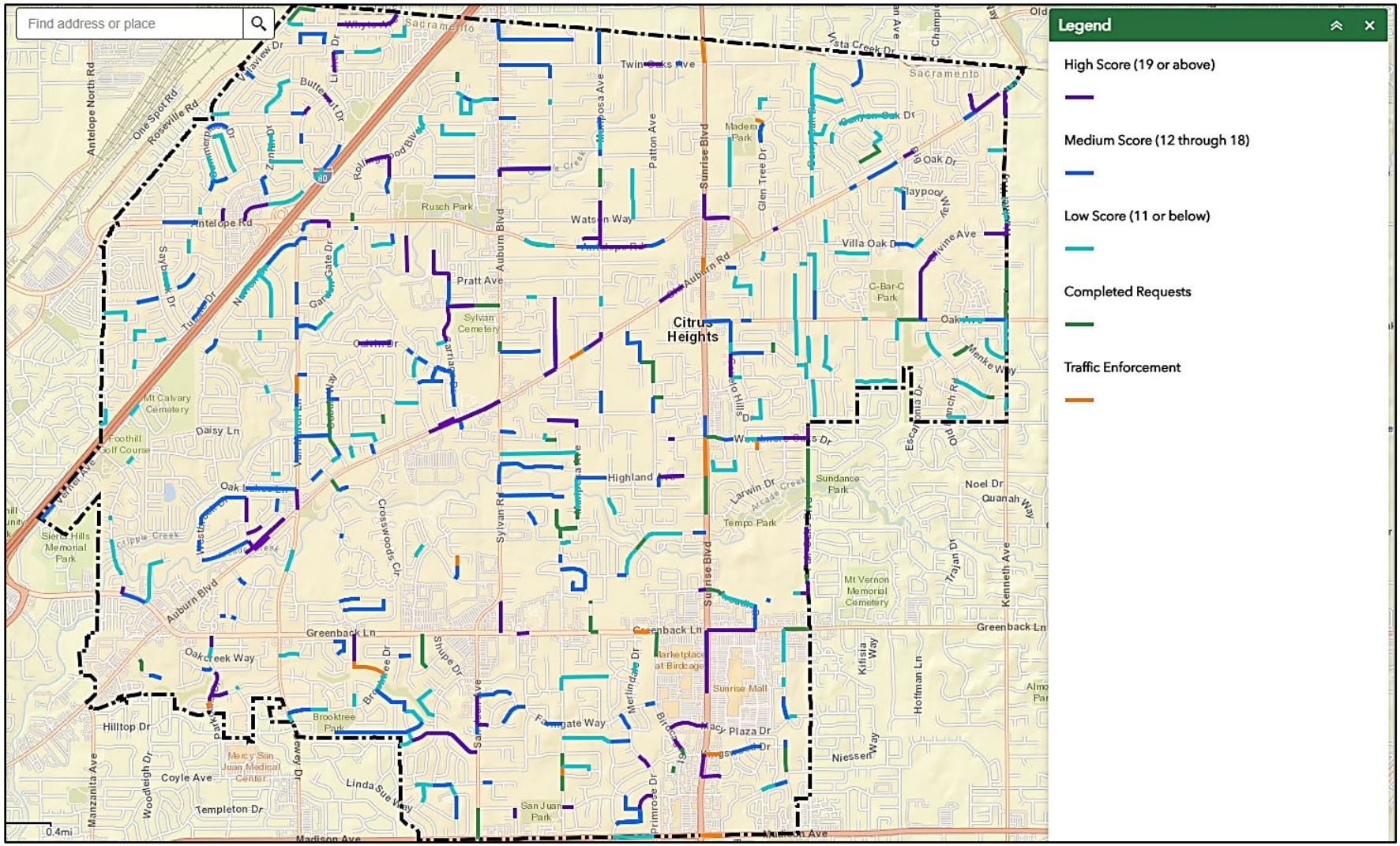
The City has also completed significant community engagement in connection with the MMTSP in support of the City's goal to provide safe places to walk, drive, bike, and roll. Yard signs and other materials to raise awareness for the program have been made available to community members, as depicted in **Figure 2**.

Figure 2 — MMTSP Yard Sign



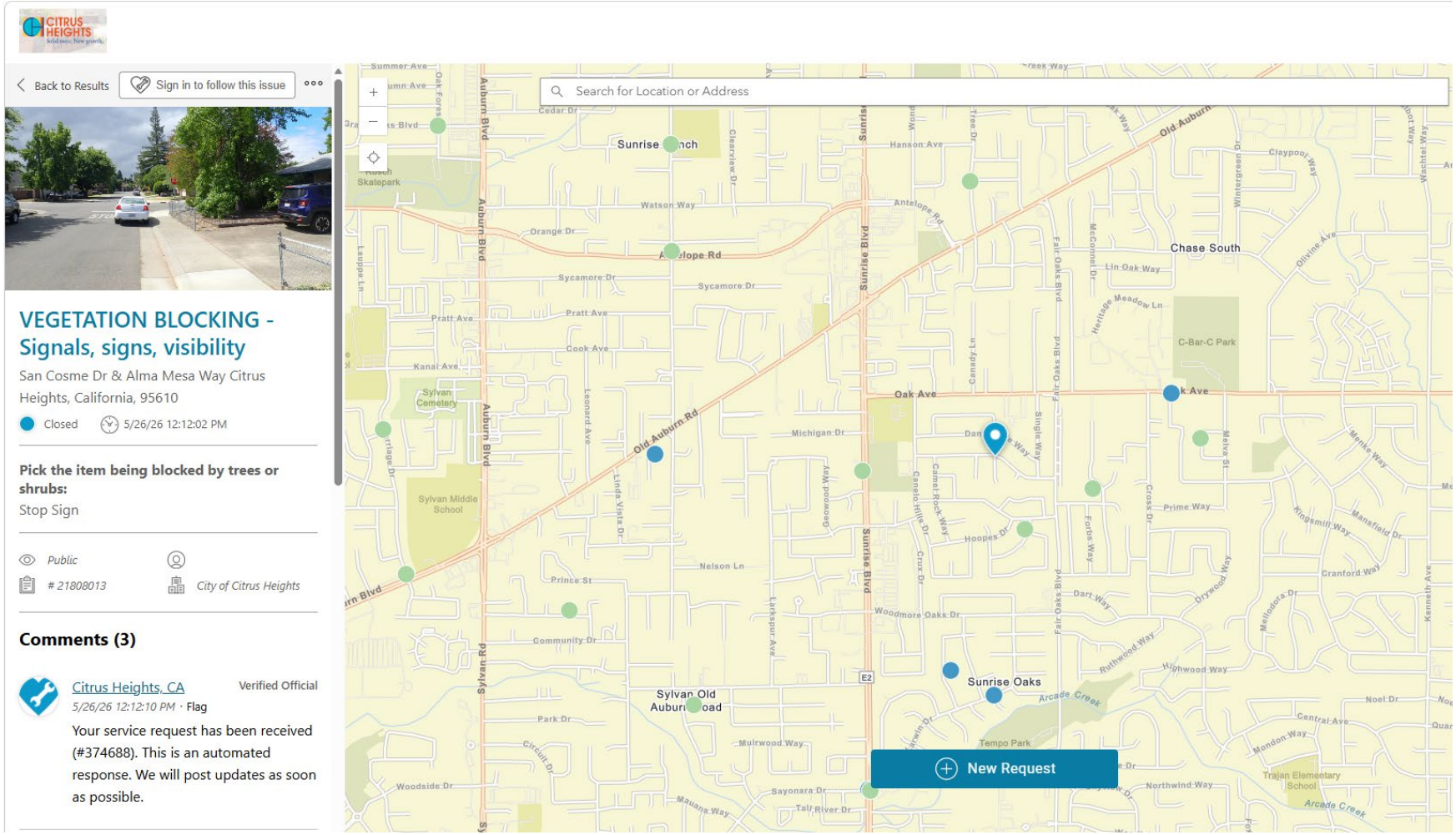
Since its inception in December 2020, the MMTSP has provided improvements at 160 locations throughout the City with additional studies and projects in development. Citrus Heights has dedicated over $500K to roadway safety improvements in response to community feedback through the MMTSP. **Figure 3** presents a map of MMTSP requests the City has received since the founding of the program. **Figure 4** presents a screenshot of the City's online map where community members can report roadway safety concerns. Community members can report concerns by phone, email, in person, or by using SeeClickFix (SCF), a City online reporting tool to submit the service requests. For example, a report was submitted using SCF that vegetation was blocking a stop sign at the intersection of San Cosme Drive and Alma Mesa Way, and the City responded to ensure vegetation was trimmed back to promote clear sight triangles.

Figure 3 — MMTSP Requests (7/1/2020-12/31/2025) [6]



[6] Citrus Heights MMTSP Results, Citrus Heights. Accessed May 2026. https://www.arcgis.com/apps/webappviewer/index.html?id=e6f999a6872e410389af1c559b96552b

Figure 4 — Sample of Community-Based Safety Improvements [7]



[7] Seeclickfix Web Portal, Citrus Heights. Accessed May 2026. https://seeclickfix.com/web_portal/Nt6vcimm5gS378kF9n8rv95U/issues/map/21583849?lat=38.70736866664575&lng=-121.31540318485328&max_lat=38.7222362313256&max_lng=-121.28381749149396&min_lat=38.692498009704245&min_lng=-121.34698887821263&zoom=14

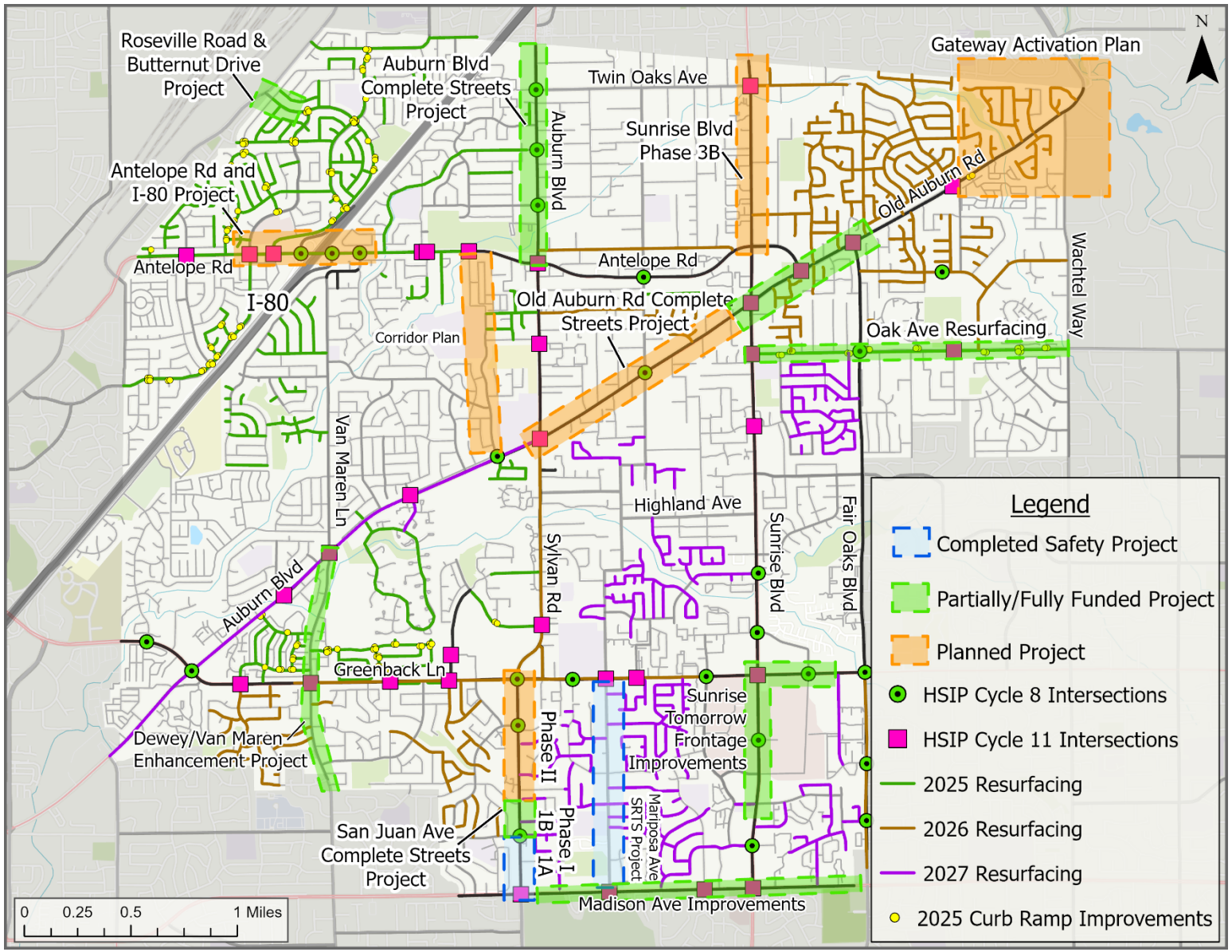
4.3. Existing Roadway Improvement and Safety Projects

The City has identified numerous safety and roadway improvement projects. While some of these projects are fully funded or constructed, funding gaps still exist for other improvements. The list below presents a sample of City projects completed, underway, or currently programmed in the CIP:

1. Old Auburn Road Complete Streets Phase 1
2. Auburn Boulevard Complete Streets Phase 2
3. San Juan Avenue Complete Streets Phases 1 and 2
4. Arcade Cripple Creek Trail
5. Arcade Cripple Creek Trail Extensions (Mariposa, Sylvan to Stock Ranch)
6. Mariposa Avenue Safe Routes to School
7. Intelligent Transportation System Enhancements (ITS)
8. Dewey/Van Maren Resurfacing and Pedestrian Enhancements Project
9. Antelope Road and I-80 Safety Improvements
10. Roseville Road and Butternut Drive Safety Improvements (HSIP Cycle 11)
11. Gateway Activation Plan (GAP)
12. Madison Avenue Repaving – Joint Project with Sacramento County
13. Carriage Lauppe Safe Schools Corridor Plan
14. Sunrise Tomorrow Specific Plan Frontage Improvements
15. Various Signalized Intersection Improvements (HSIP Cycle 8)
16. Systemic Signalized Intersection Improvements (HSIP Cycle 11)
17. City Resurfacing Plans (2025, 2026 and 2027) and 2025 curb ramp improvements
18. Sunrise Boulevard Resurfacing Project

Figure 5 presents the approximate locations of many of these City safety projects. These projects provide valuable safety improvements across the City's roadway network and, upon completion, are anticipated to reduce the quantity and severity of crashes within their respective sphere of influence.

Figure 5 — Roadway Improvements and Safety Projects



5. STAKEHOLDER ENGAGEMENT

As part of the LRSP development, project stakeholders were identified and included in the process to ensure the local perspective was kept at the forefront of this planning effort. The stakeholder group was comprised of staff from the City's General Services Department, the Citrus Heights Police Department, and the Sacramento Metropolitan Fire District. Because many of these stakeholders served as stakeholders on the 2021 LRSP, they were able to provide insights and direction on the LRSP update. City staff responsible for the administration of the MMTSP were also in attendance and provided perspective on community input and crash trends. A complete list of Stakeholders is available in the acknowledgements on Page iii.

These stakeholders were gathered to offer insight on the safety challenges present in the City's transportation network. The stakeholder group met on April 2, 2026, to review the results of the network screening and crash data analysis, provide comments, and ask questions. The stakeholder group provided valuable context about other roadway projects planned, underway, or recently completed in Citrus Heights (see list provided in Section 4.3). Following the review of the crash data,

6. Data Sources

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

6.1. Roadway Network

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

6.2. Intersections

The crash analysis also requires 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 (including roundabouts). The safety analysis also only compares intersection safety performance with similar control types (e.g., signalized intersections are only compared to signalized intersections, etc.) within the City.

6.3. Crashes

Collision data for the most recent four-year period (January 1, 2020, through December 31, 2024) was used for the collision analysis. Using data from 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 collision data was obtained from the City's crash database which is maintained by the Police Department (PD). Collision records were allocated to intersection and the roadway network segments.

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

- K – Fatal
- A –Severe injury
- B – Other Visible Injury
- C – Complaint of Pain
- O – No Injury/Property Damage Only (PDO)

6.4. 2021 LRSP

This report makes comparisons to the 2021 LRSP in an effort to understand how crash trends in the City have changed. The 2021 LRSP reviewed five years of crash data (January 1, 2015, through December 31, 2019) also using crash data from a Crossroads Database. The Crossroads database processed crash records from the Statewide Integrated Traffic Records System (SWITRS).

7. Safety Trends

The following sections contain the results of the analysis process which included evaluation of Citrus Heights' fatal and severe injury (KSI) crashes compared to statewide levels, among other evaluations including crash by severity level, cause, pedestrian, and bicycle crashes.

7.1. Citrus Heights KSI Crashes Compared to Statewide KSI 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 KA crash data as well as an extensive statewide outreach process that involved hundreds of diverse traffic safety partners around the state. Collisions in Citrus Heights can be attributed to 13 of the 16 challenge areas. **Table 1** presents a summary of City's historic challenge areas (2014-2023) by comparing local KSI crashes to the statewide KSI crashes. This extended study period allows for long-term trends to be better understood. The City of Citrus Heights was higher than the statewide average in the following six areas: Intersections, Pedestrians, Bicyclists, Motorcycles, Impaired Driving, and Distracted Driving.

Table 1 — Historical Trends: Citrus Heights KSI Crashes Compared to Statewide KSI Crashes

Challenge Areas	Citrus Heights Comparison to Statewide Percentages	Citrus Heights Percentages	Statewide Percentages	Differential
Intersections	**Higher**	**31.4%**	**24.7%**	**+6.6%**
Pedestrians	**Higher**	**25.4%**	**19.0%**	**+6.4%**
Bicyclists	**Higher**	**13.1%**	**7.2%**	**+6.0%**
Motorcyclists	**Higher**	**25.0%**	**20.7%**	**+4.3%**
Impaired Driving	**Higher**	**26.7%**	**23.6%**	**+3.1%**
Distracted Driving	**Higher**	**6.4%**	**4.2%**	**+2.1%**
Young Drivers	Lower	11.9%	12.1%	-0.3%
Aging Drivers	Lower	12.7%	13.0%	-0.3%
Occupant Protection	Lower	12.3%	13.6%	-1.3%
Work Zones	Lower	0.0%	1.6%	-1.6%
Commercial Vehicles	Lower	4.2%	6.6%	-2.4%
Aggressive Driving	Lower	28.8%	33.5%	-4.7%
Lane Departure	Lower	30.5%	41.6%	-11.1%

Source: Statewide Integrated Traffic Records System (2014 – 2023).
Note: Percentages will not add up to 100%, as a fatality or severe injury could have involved multiple Challenge Areas (i.e., a young driver that was impaired and unrestrained).

The 2021 LRSP reviewed SHSP crash data from 2009-2018, and the differential between the Citrus Heights and Statewide percentages was highest for crashes involving pedestrians. Many of the challenge areas in which the City was higher than the Statewide average are consistent between the 2021 and 2026 LRSPs such as intersections, bicyclists, and distracted driving. Compared to the 2021 LRSP, the City is no longer above the Statewide Average for crashes involving aging drivers, but is

higher for impaired driving. The City is now higher than the statewide average for crashes involving distracted driving. **Table 2** presents the differentials for each challenge area from both datasets, identifying which areas the differential has grown; the table is sorted in decreasing order by change in challenge area differential. For example, the City of Citrus Heights was -0.5% lower than the Statewide average for crashes involving motorcycles in the 2021 LRSP. The City was 4.3% above the Statewide average in the most recent dataset, indicating that that the differential has grown by 4.8%.

Table 2 — Change in Challenge Area Differentials

Challenge Areas	Comparison	NEW Differential	OLD Differential	Change in Differential
Motorcyclists	**Higher**	**4.3%**	**-0.5%**	**+4.8%**
Lane Departure	**Lower**	**-11.1%**	**-15.4%**	**+4.3%**
Impaired Driving	**Higher**	**3.1%**	**-0.6%**	**+3.7%**
Young Drivers	**Lower**	**-0.3%**	**-3.5%**	**+3.2%**
Intersections	**Higher**	**6.6%**	**3.5%**	**+3.1%**
Bicyclists	**Higher**	**6.0%**	**3.1%**	**+2.9%**
Occupant Protection	**Lower**	**-1.3%**	**-3.3%**	**+2.0%**
Distracted Driving	**Higher**	**2.1%**	**0.7%**	**+1.4%**
Commercial Vehicles	**Lower**	**-2.4%**	**-3.3%**	**+0.9%**
Work Zones	Lower	-1.6%	-0.5%	-1.1%
Pedestrians	Higher	6.4%	7.9%	-1.5%
Aggressive Driving	Lower	-4.7%	-0.3%	-4.4%
Aging Drivers	Lower	-0.3%	5.1%	-5.4%

7.2. California Office of Traffic Safety (OTS) Rankings for Citrus Heights

The California Office of Traffic Safety (OTS) publishes annual reports ranking agencies of similar population by their crash profile. **Table 3** presents the City's 2023 OTS rankings (the most current rankings available, given OTS processing time). OTS notes that "Number 1 in the rankings is the highest, or 'worst'" [8]. Compared to other cities of similar population, Citrus Heights ranks high in crashes involving motorcycles, unsafe speed, alcohol involved, bicyclists, and pedestrians. The City is also higher in hit and run crashes and nighttime crashes.

Table 3 — Citrus Heights OTS Ranking (2023)

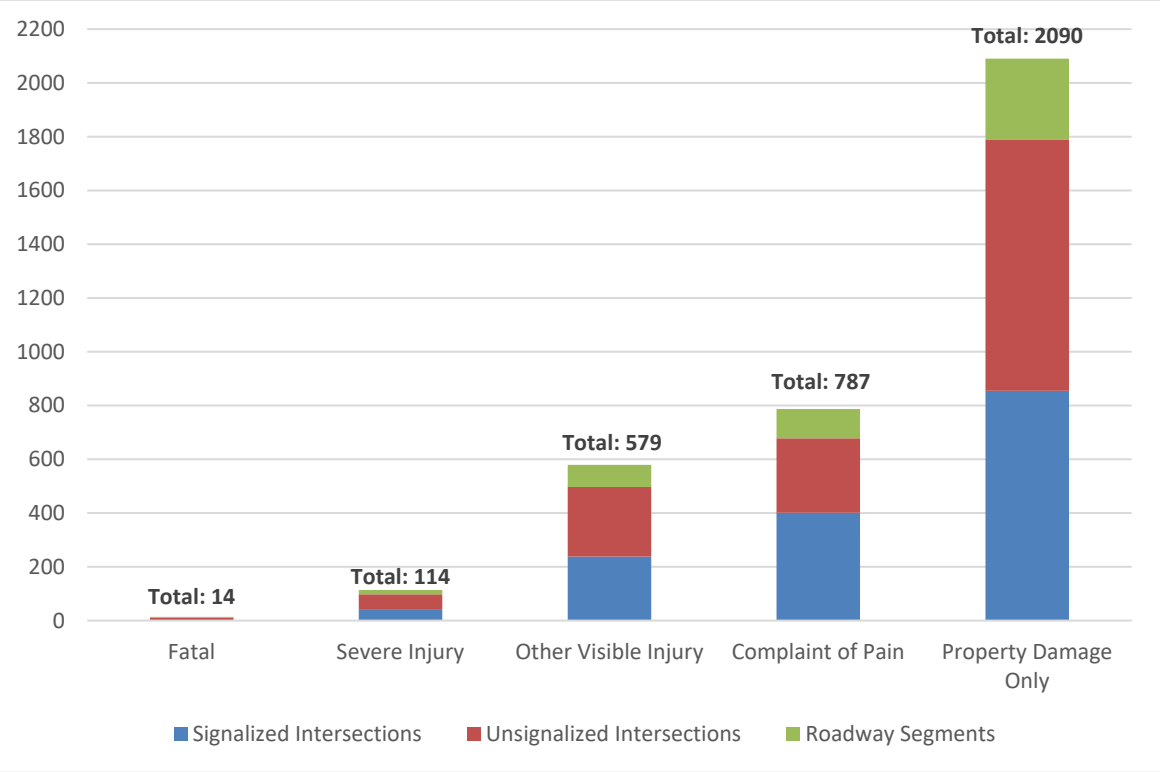
Crash Category	Victims Killed and Injured	OTS Ranking
Total Fatal and Injury	369	43/103
Alcohol Involved	**52**	**23/103**
Had Been Drinking Driver < 21	**4**	**31/103**
Had Been Drinking Driver 21 – 34	**29**	**15/103**
Motorcycles	**29**	**10/103**
Pedestrians	**28**	**39/103**
Pedestrians < 15	2	52/103
Pedestrians 65+	4	41/103
Bicycle	24	43/103
Bicyclist < 15	**5**	**26/103**
Composite	**242**	**13/103**
Crash Category	**Fatal and Injury Crashes**	**OTS Ranking**
Speed Related	**74**	**15/103**
Nighttime (9:00pm – 2:59am)	**44**	**26/103**
Hit and Run	**39**	**23/103**
Type of Arrests	**Arrests**	**OTS Ranking**
DUI Arrests	222	80/103

[8] City of Citrus Heights OTS Crash Rankings Results, California Office of Traffic Safety. Accessed February 2026. OTS Crash Rankings Results | Office of Traffic Safety

7.3. Severity Level

Over the observed five-year study period, there were a total of 3,584 crashes, 14 of which were fatal and 114 of which resulted in severe injuries (**Figure 6).** Approximately 58-percent of all crashes (2,090 out of 3,585) resulted in property damage only (no injury).

Figure 6 — Crash Severity by Facility Type (2020 – 2024)



Source: City of Citrus Heights Police Department Crash Database (2020 – 2024).

Eighty-five percent of crashes in the City occurred at intersections, split nearly evenly among signalized intersections and unsignalized intersections (1536 and 1538, respectively). **Table 4** presents the distribution of all crashes, and especially KSI crashes across the City's various facility types (signalized intersections, unsignalized intersections, and roadway segments). Fifty-two percent of all KSI crashes occurred at unsignalized intersections, followed by signalized intersections (33%) and roadway segments (15%). These proportions are similar to the trends reported in the 2021 LRSP.

Table 4 — KSI Crashes by Facility Type

Facility Type	Total Crashes	Percentage	KSI Crashes	Percentage
Signalized Intersections	1536	43%	42	33%
Unsignalized Intersections	1538	43%	67	52%
Roadway Segments	510	14%	19	15%
Total	**3584**	**100%**	**128**	**100%**

Source: City of Citrus Heights Police Department Crash Database (2020 – 2024).

Table 5 presents the distribution of all crashes by severity across the City's facility types. Signalized and unsignalized intersections experienced a nearly equal quantity of crashes, with unsignalized intersections experiencing the most KSI crashes. The proportion of KSI crashes at unsignalized intersections is consistent with the data reviewed in the 2021 LRSP, while the proportion of total crashes has increased by 1%.

Table 5 — Crashes by Severity (2020 – 2024)

Severity	Signalized Intersection		Unsignalized Intersection		Roadway Segment		Total	
	Crashes	%	Crashes	%	Crashes	%	Crashes	%
Fatal	2	0.1%	9	0.3%	3	0.1%	14	0.4%
Severe Injury	40	1.1%	58	1.6%	16	0.4%	114	3.2%
Other Visible Injury	238	7%	259	7%	82	2%	579	16%
Complaint of Pain	401	11%	277	8%	109	3%	787	22%
Property Damage Only	855	24%	935	26%	300	8%	2090	58%
Total	**1536**	**43%**	**1538**	**43%**	**510**	**14%**	**3584**	**100%**

Source: City of Citrus Heights Police Department Crash Database (2020 – 2024).

Figure 7 on the following page illustrates the locations of the KSI crashes which occurred during the study period, while **Figure 8** presents the locations of all crashes. KSI crashes have primarily occurred at intersections along the City's arterial network, consistent with the data reviewed in the 2021 LRSP. The following intersections experienced the highest number of severe injury crashes:

- Sunrise Blvd at Macy Plaza Dr (4)
- Greenback Ln at Auburn Blvd (3)
- Sunrise Blvd at Greenback Ln (3)
- San Juan Ave at Greenback Ln (3)
- San Juan Ave at Madison Ave (3)
- Madison Ave at Mariposa Ave (3)
- Sunrise Blvd at Sunrise Mall/Birdcage Ctr (3)

The roadway segment which experienced the highest number of KSI crashes was Greenback Lane between Birdcage Street and Sunrise Boulevard, with one fatal crash and one severe injury crash. The intersections with the highest number of KSI crashes (3 or more) did not experience any fatal crashes during the study period.

Figure 9 presents a map of the network screening results, depicting intersections and segments by the total number of crashes. The intersections along Greenback Lane presented in **Table 6** experienced the highest number of crashes in the City, consistent between both study periods.

Table 6 — Intersections with Highest Quantity of Crashes

Intersection	2020-2024	2015-2019
Greenback Lane at Auburn Boulevard	97	107
Greenback Lane at Sunrise Boulevard	81	85
Greenback Lane at San Juan Avenue	75	81

The roadway segment with the highest number of crashes during the study period was Sunrise Boulevard from Old Auburn Road to Antelope Road (35).

Figure 7 — Citywide KSI Crashes (2020-2024)

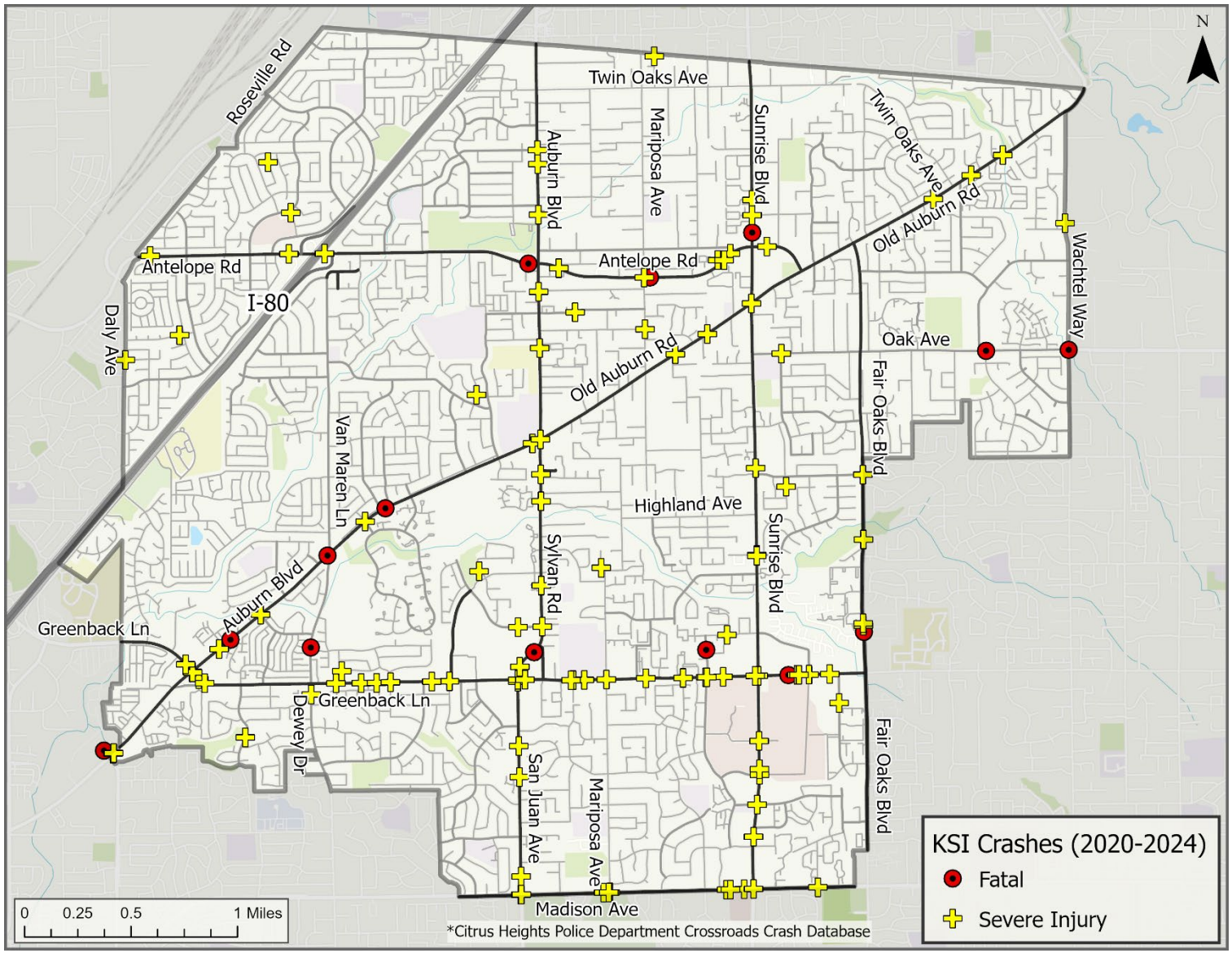


Figure 8 — Citywide Crashes (2020-2024)

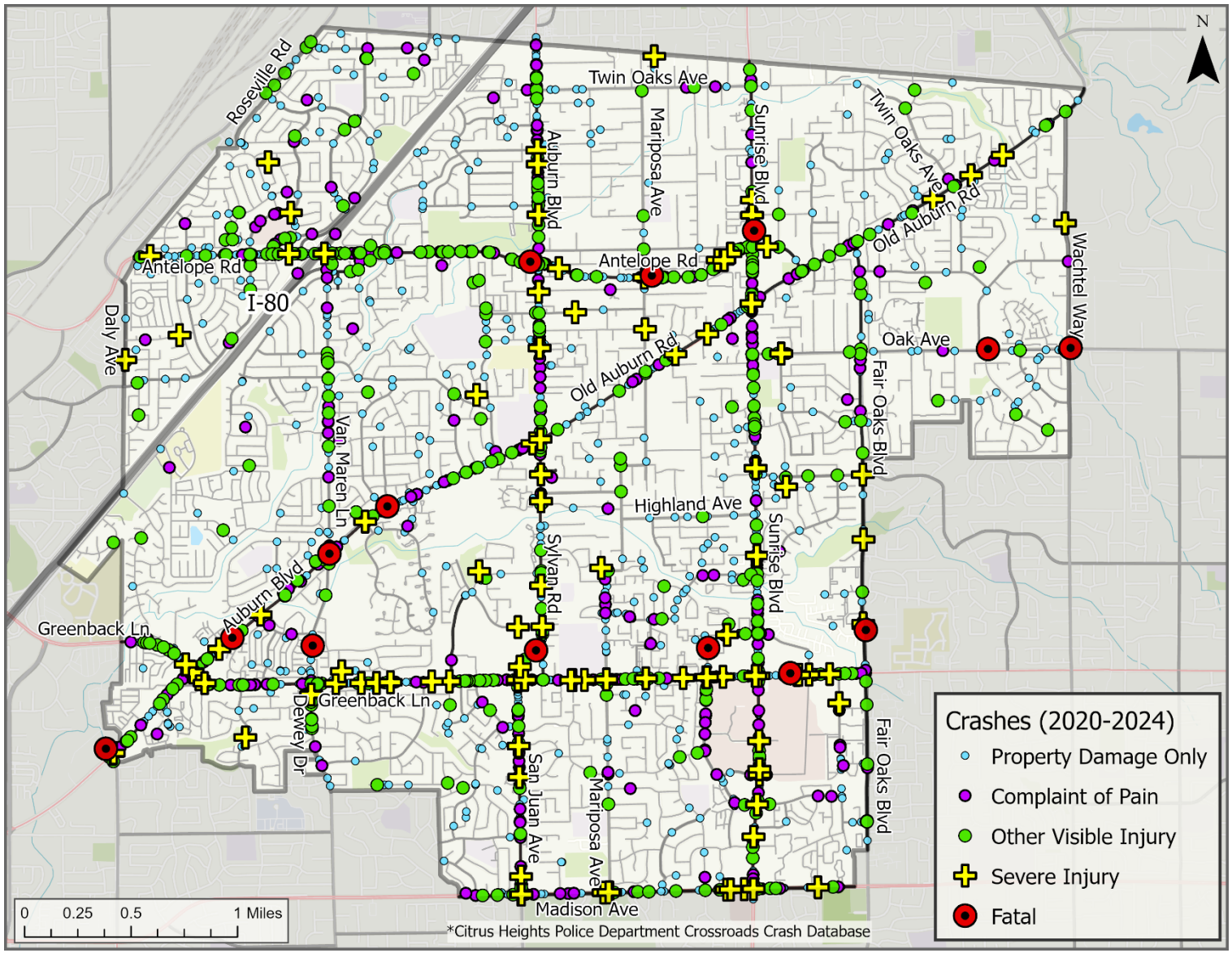
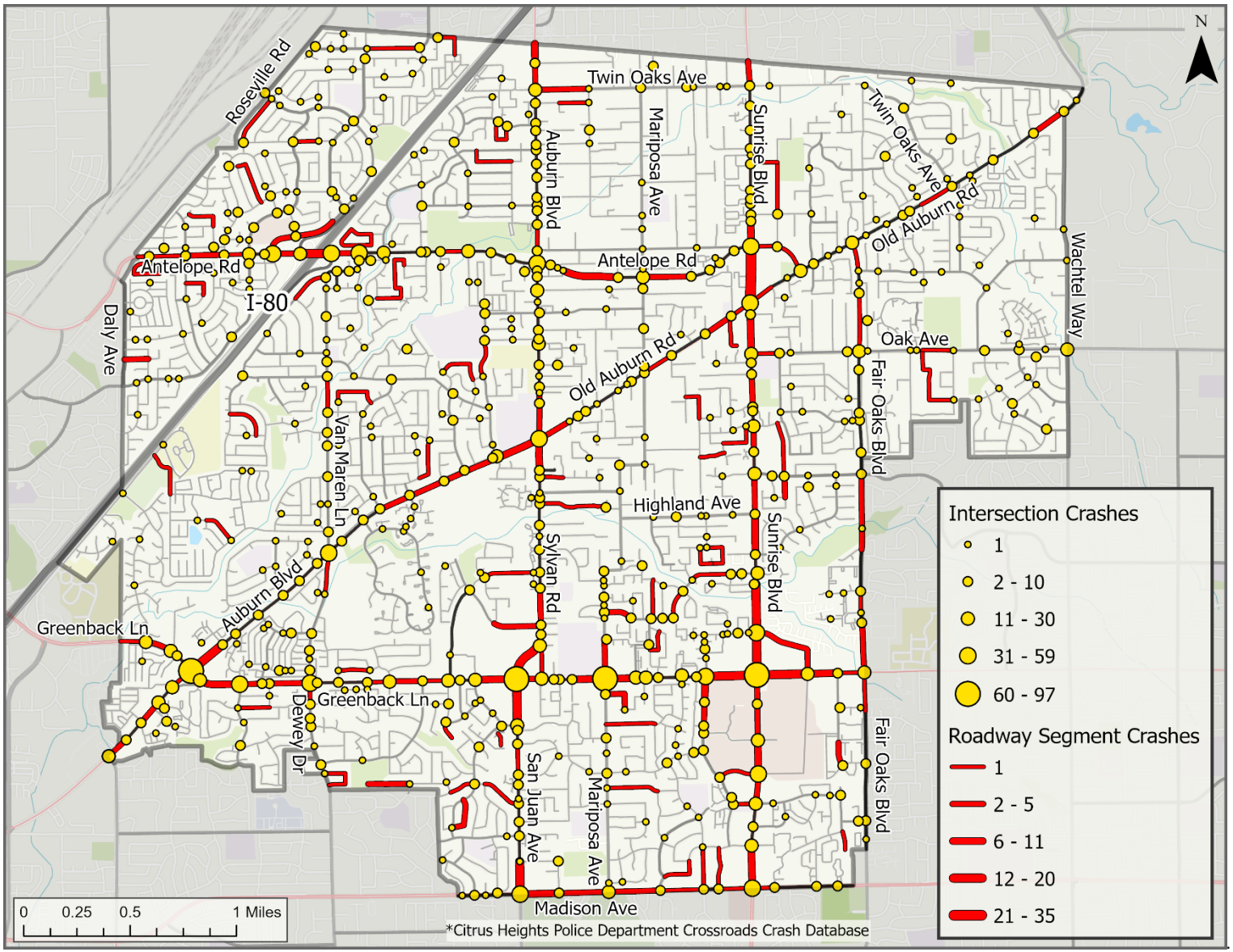


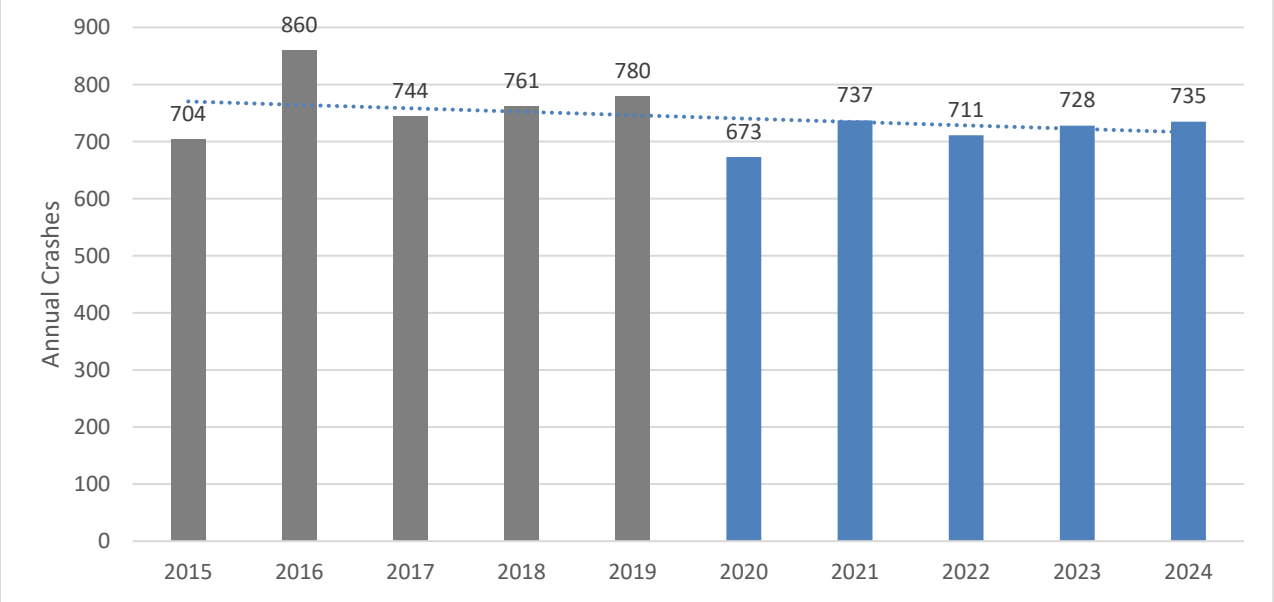
Figure 9 — Intersection and Segment Crashes (2020-2024)



7.4. Annual Crashes

Figure 10 presents the number of annual crashes on roads in the City beginning from the previous LRSP study period in 2015. The highest number of crashes was experienced in 2016 (860 total), while the lowest number of crashes was experienced in 2020 (673). Annual crashes have trended upwards, back to pre-pandemic levels since 2020, but the 10-year trend shows a general decrease in annual crashes.

Figure 10 — Annual Crashes (2015 – 2024)

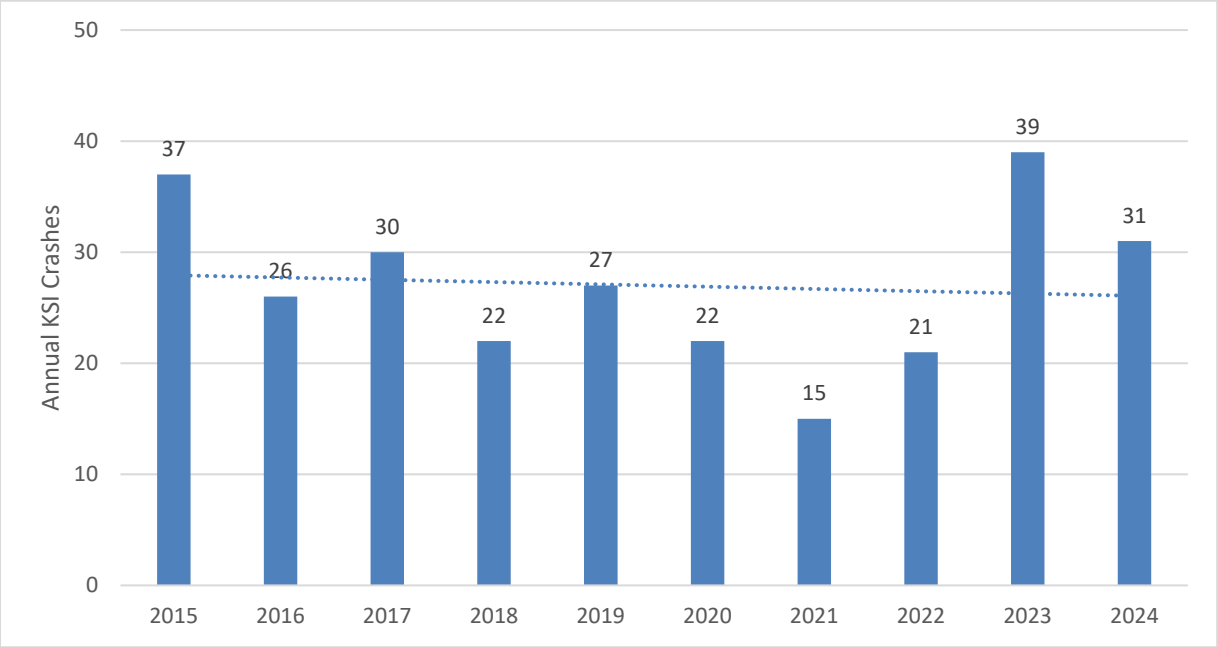


Source: City of Citrus Heights Police Department Crash Database (2015 – 2024).

It is likely that the COVID-19 pandemic influenced crash trends in 2020 and 2021. In 2020, the number of daily household trips decreased due to widespread shelter-in-place orders; fewer vehicles on the road could be connected to fewer vehicle conflicts and thus fewer crashes. However, reduced roadway volumes and congestion could also be connected to increased vehicle speeds, a phenomenon that numerous law enforcement agencies have reported. As volumes returned to "pre-pandemic" levels in 2021, law enforcement agencies in California anecdotally noted that vehicle speeds remained high; it is theorized that this pandemic-era aggressive driving behavior has persisted and is partially contributing to the increase in annual crashes than can be seen in 2021 (**Figure 10**).

The number of annual KSI crashes has overall trended downwards since 2015 but demonstrates significant variability (**Figure 11**). KSIs decreased from 2019 levels in consecutive years in 2020 and 2021 (possibly linked to reduced travel in the COVID-19 pandemic); however, the highest quantity of KSI crashes occurred in 2023 with 39 KSIs. Fewer KSI crashes were recorded in 2024 compared to 2023.

Figure 11 — Annual KSI Crashes (2015 – 2024)

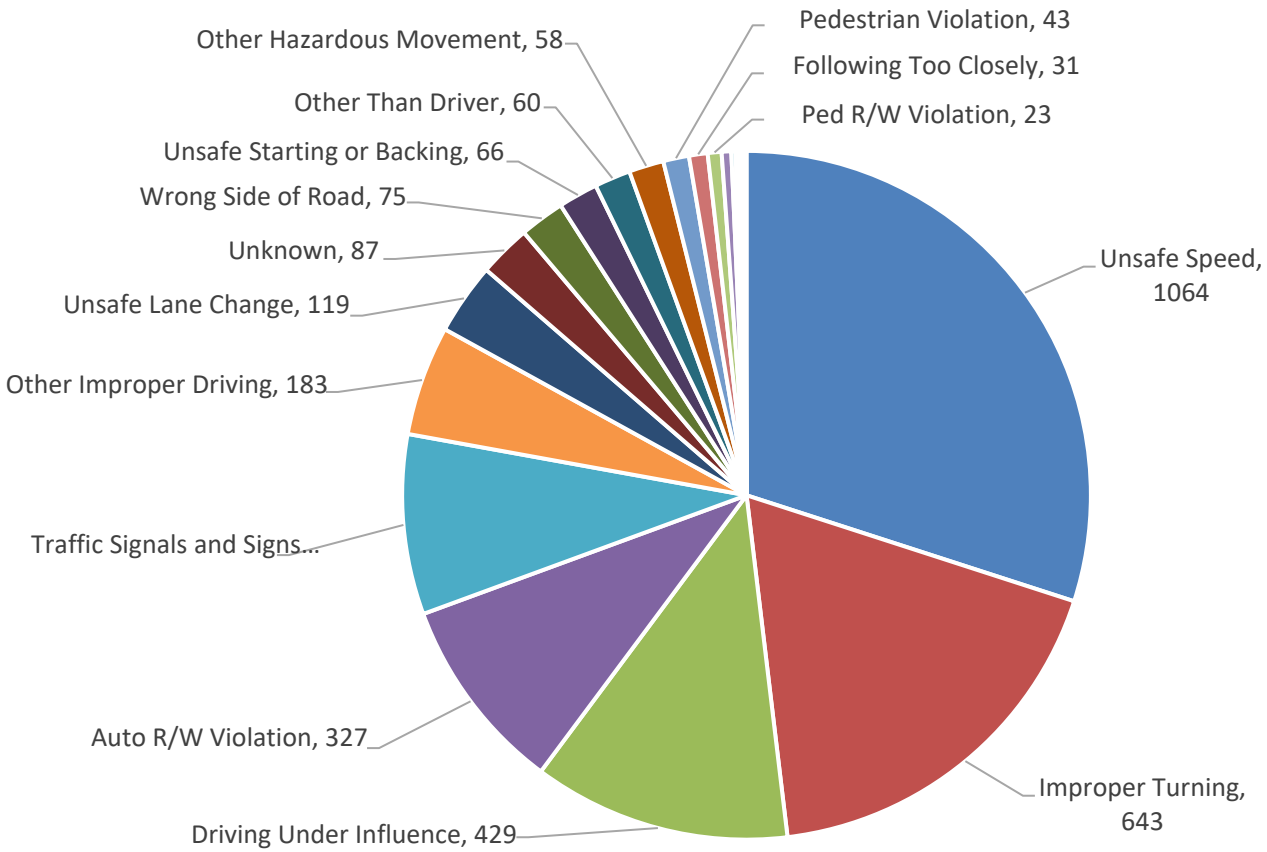


Source: City of Citrus Heights Police Department Crash Database (2015 – 2024).

7.5. Crash Causes

As shown in **Figure 12**, the most frequently identified crash causes were unsafe speed, traffic signals and signs violations, and unsafe lane changes. Crash causes that accounted for one percent are omitted from the figure. The leading crash causes were unsafe speed and improper turning, consistent with the 2021 LRSP. Driving under the influence accounted for 429 crashes (12%), an increase from the 9% of crashes from the previous study period.

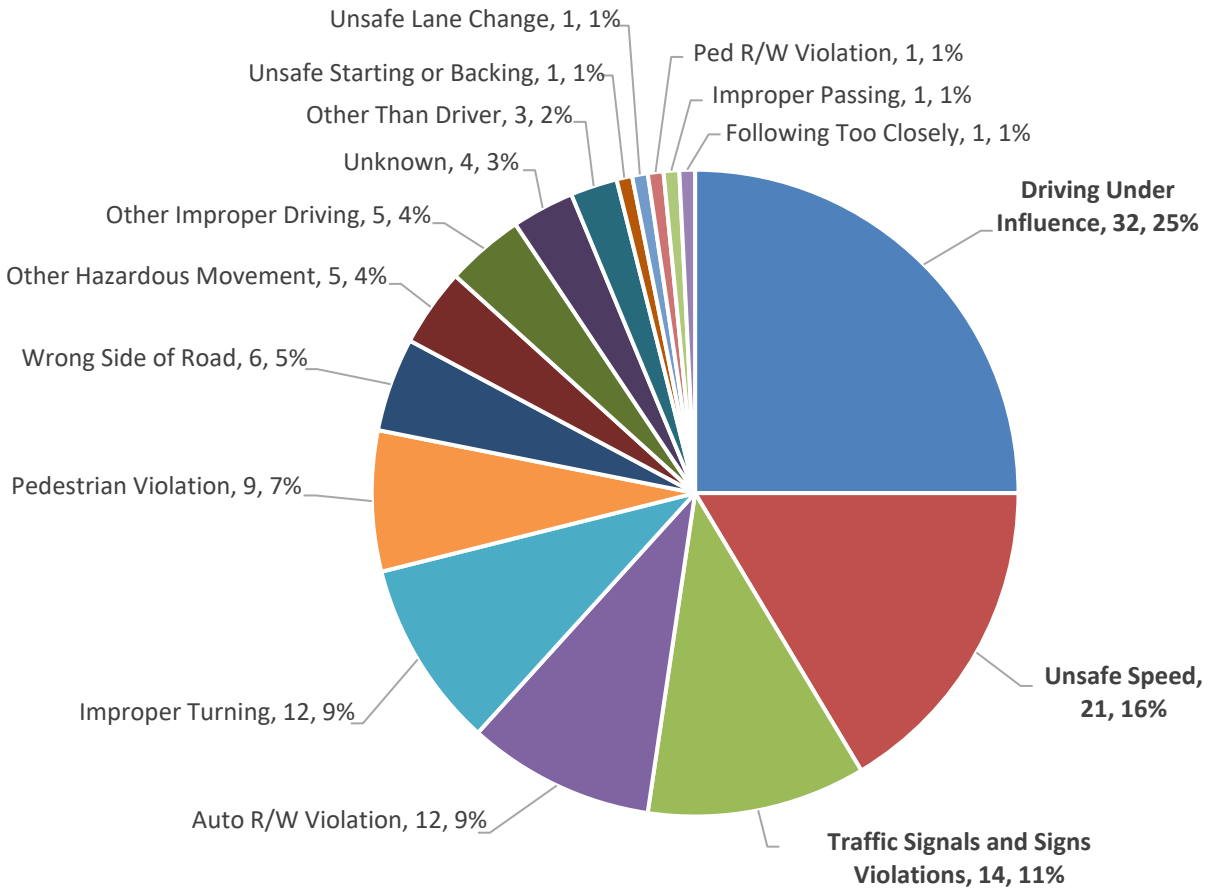
Figure 12 — Crashes by Cause (2020 – 2024)



Source: City of Citrus Heights Police Department Crash Database (2020 – 2024).

Figure 13 presents the causes of the KSI crashes which occurred during the study period. The most common causes for KSI crashes were DUIs, unsafe speed, and traffic signals and signs violations.

Figure 13 — KSI Crashes by Cause (2020 – 2024)



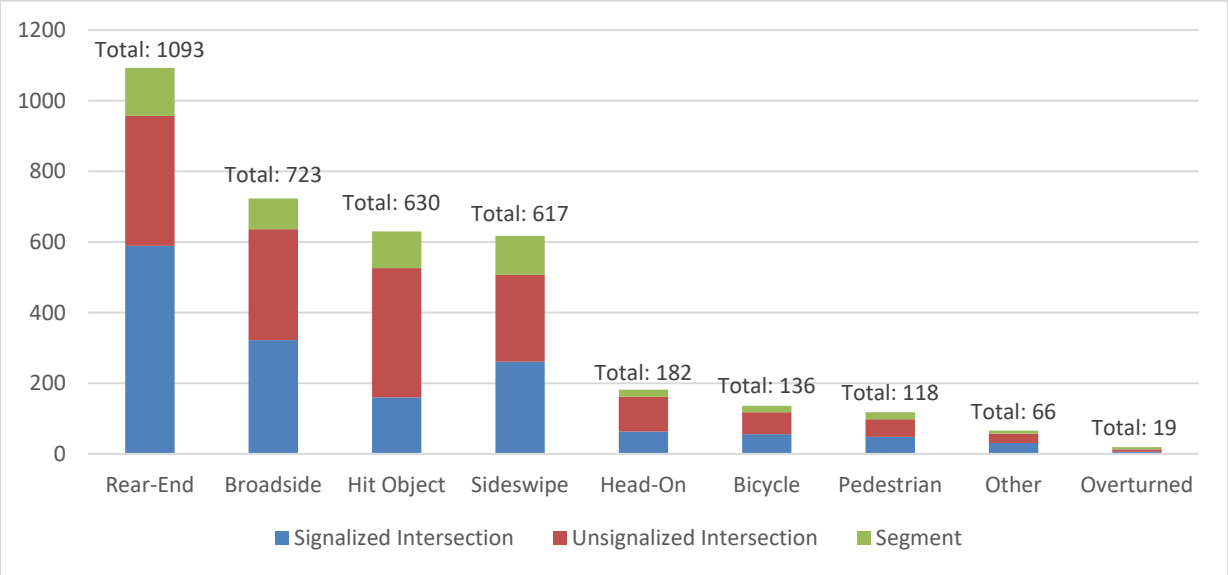
Source: City of Citrus Heights Police Department Crash Database (2020 – 2024).

7.6. Crash Types

According to reported data, 3,584 crashes occurred within the City during the five-year study period on city owned and maintained roadways. **Figure 14** indicates that rear-end crashes were the most common crash type within the City, followed closely by rear-end crashes. Hit-object crashes and sideswipes were the next most common crash types, particularly at signalized intersections. The most common crash types along roadway segments were rear-ends (53) and sideswipes (41).

The 2021 LRSP identified rear-ends as the most common crash type, followed by broadsides, hit-object crashes and sideswipes. Similar to the 2021 LRSP, the most common crash type along roadway segments was rear-ends, though hit-object crashes were the second most common. Head-on crashes accounted for less than 5% of crashes in both datasets, and the proportion of overturned vehicle crashes remained less than 1%.

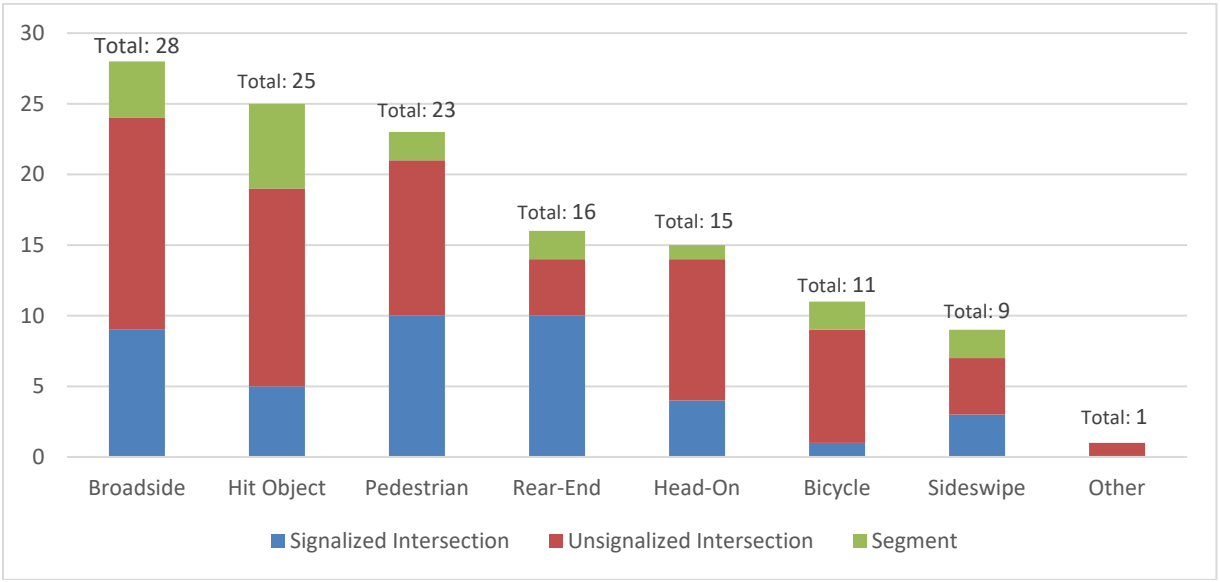
Figure 14 — Crashes by Type (2020 – 2024)



Source: City of Citrus Heights Police Department Crash Database (2020 – 2024).

The most common crash types which resulted in fatal and severe injuries were broadsides, hit-object crashes, and crashes involving pedestrians (**Figure 15**). Though crashes involving vulnerable road users (bicycles and pedestrians) accounted for 7% of all crashes, they accounted for a disproportionately higher percentage (26%) of all KSI crashes.

Figure 15 — KSI Crashes by Type (2020 – 2024)

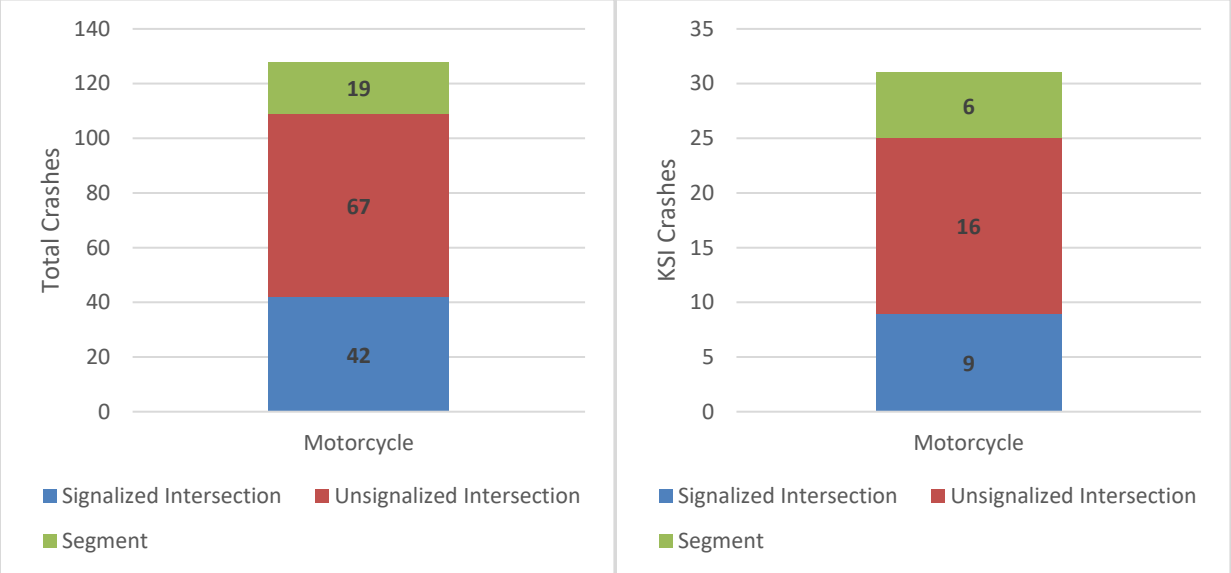


Source: City of Citrus Heights Police Department Crash Database (2020 – 2024).

7.7. Motorcycle Crashes

Approximately 4% of crashes from 2020-2024 involved motorcycles (128 total); however, motorcycle crashes accounted for 24% of all KSIs. Motorcycle crashes occurred most frequently in proximity to unsignalized intersections, as seen in **Figure 16**. A map of motorcycle crashes is presented in **Figure 17**. The intersection of Mariposa Avenue and Greenback Lane experienced the most motorcycle crashes during the study period (5), while the segment with the most motorcycle crashes was Sunrise Boulevard between Old Auburn Road and Antelope Road (three).

Figure 16 — Motorcycle Crashes (and KSI Crashes) at Facility Types (2020-2024)



Source: City of Citrus Heights Police Department Crash Database (2020 – 2024).

7.8. Lane Departure Crashes

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 831 lane departure crashes over the study period in the City, accounting for 23% of crashes (an increase from the 19% recorded from 2015-2019). Lane departure crashes accounted for 31% of total KSIs from 2020-2024. A majority of the lane departure crashes were hit-object crashes (75%), occurring primarily at unsignalized intersections. **Figure 18** presents a map of lane departure crashes.

Figure 17 — Motorcycle Crashes (2020-2024)

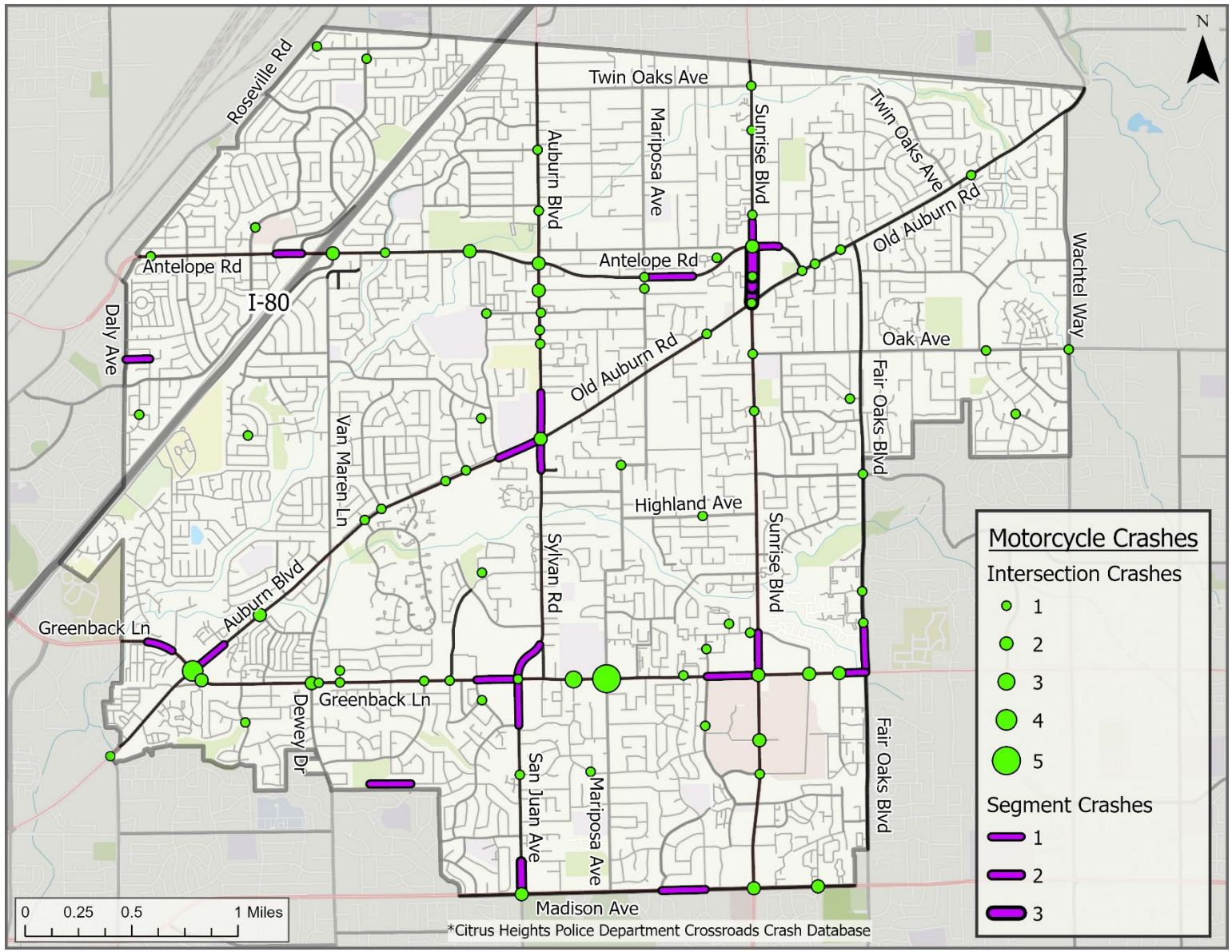
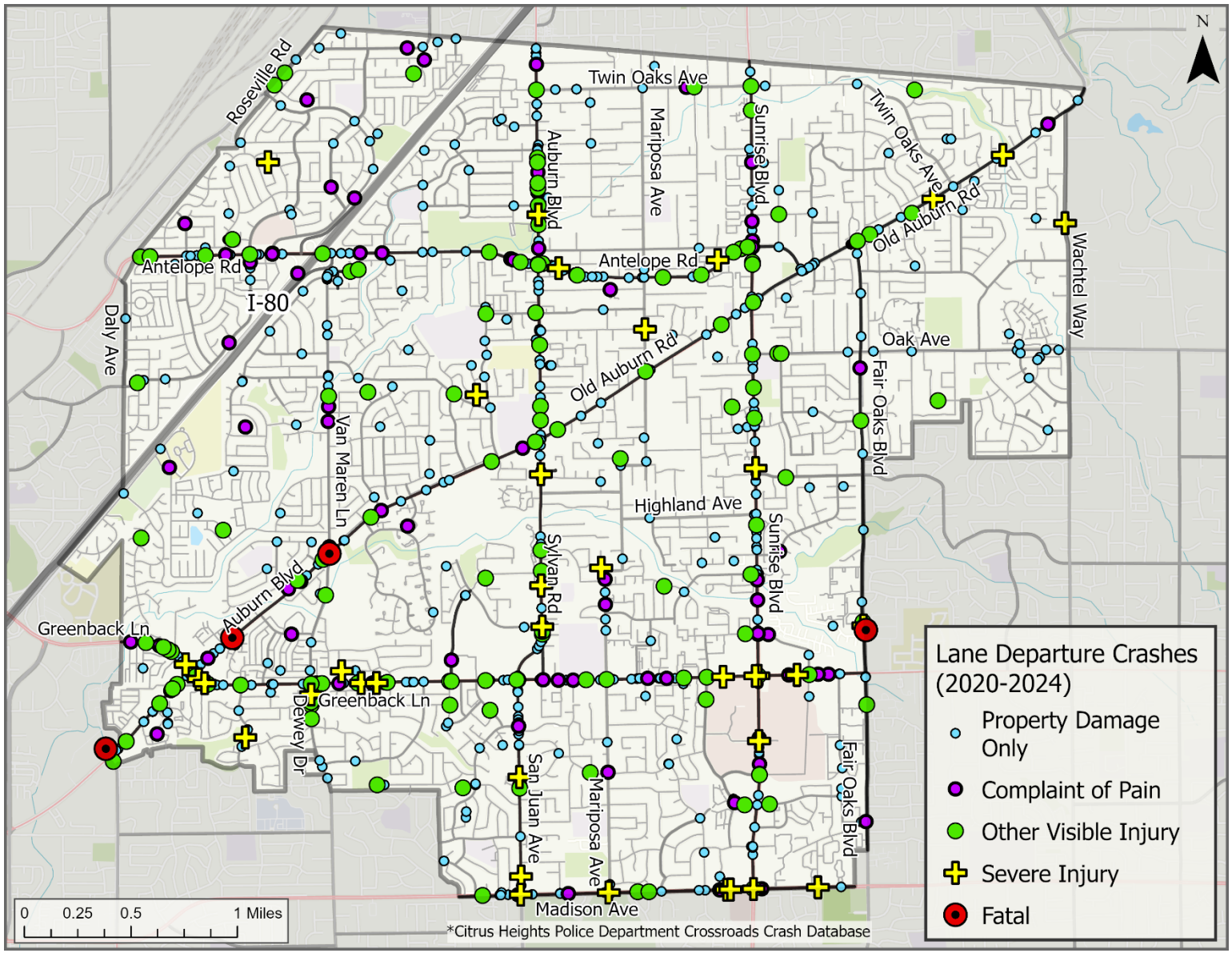


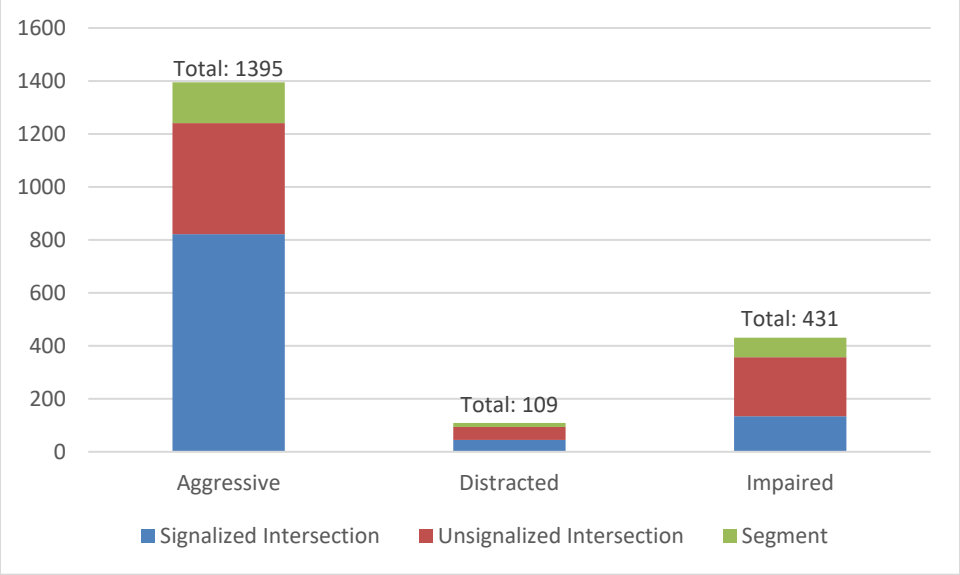
Figure 18 — Lane Departure Crashes (2020-2024)



7.9. Aggressive, Impaired, and Distracted Driving Crashes

Figure 19 summarizes aggressive and impaired driving crashes by intersections and segments. Additional information is included in the following sections.

Figure 19 — Aggressive and Impaired Driving Crashes



Source: City of Citrus Heights Police Department Crash Database (2020 – 2024).

7.9.1. Aggressive Driving Crashes

Aggressive driving includes primary collision factors such as unsafe speed, following too closely, and violations related to traffic signals and signs. There were 1,395 aggressive driving crashes between 2020-2024. Four of the crashes resulted in fatalities and thirty-two resulted in severe injuries. **Figure 20** illustrates the aggressive driving crashes within the City. Aggressive driving crashes occurred most commonly at signalized intersections, notably along Sunrise Boulevard and Greenback Lane.

The 2021 LRSP reported 1,438 aggressive driving crashes between 2015 and 2019, resulting in one fatality and twenty-six counts of severe injuries. While the total number of aggressive driving crashes is lower in the more recent dataset, the total of KSIs related to aggressive driving has increased.

7.9.2. Impaired Driving Crashes

Impaired driving crashes include all crashes where there was any evidence of drug or alcohol use by the driver. Drivers do not need to exceed the legally defined threshold of intoxication to be counted, as Caltrans considers any level of alcohol consumption to have the potential to impact driver responsiveness and decision making. There were 431impaired driving crashes between 2020-2024, six of which resulted in a fatality and twenty-six of which resulted in severe injuries. Impaired driving crashes occurred most commonly at unsignalized intersections, notably along Sunrise Boulevard and Antelope Road. **Figure 21** depicts the impaired driving crashes within the City.

The 2021 LRSP reported a total of 569 impaired driving crashes, resulting in four fatal crashes and twenty-four severe injury crashes. The recent dataset indicates a reduction in the total number of impaired driving crashes but an increase in the number of KSI impaired driving crashes.

7.9.1. Distracted Driving Crashes

Distracted driving crashes include crashes where a cell phone was in use by the driver. Distracted driving is commonly understood to be underreported as it depends on the self-admission of the parties involved in the crash. A total of 109 crashes occurred in the study period which are attributed to distracted driving. Distracted driving crashes mainly occurred at intersections and resulted in one fatal crash and two severe injury crashes. **Figure 22** depicts the distracted driving crashes within the City.

The 2021 LRSP reported a total of 243 distracted driving crashes, including two fatal crashes and five severe injury crashes. The recent dataset indicates a reduction in the total number of distracted driving crashes and KSI distracted driving crashes.

Figure 20 — Aggressive Driving Crashes (2020-2024)

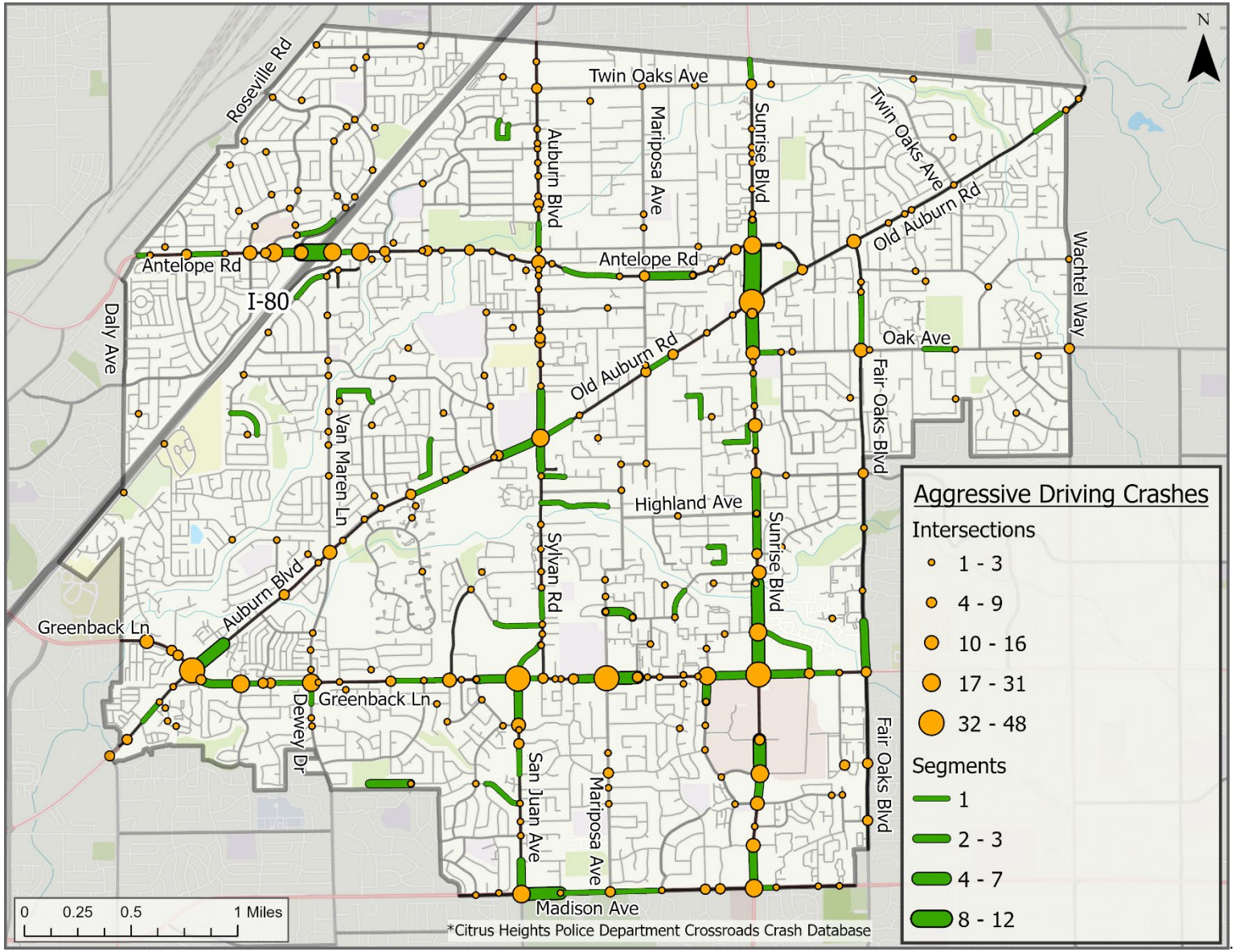


Figure 21 — Impaired Driving Crashes (2020-2024)

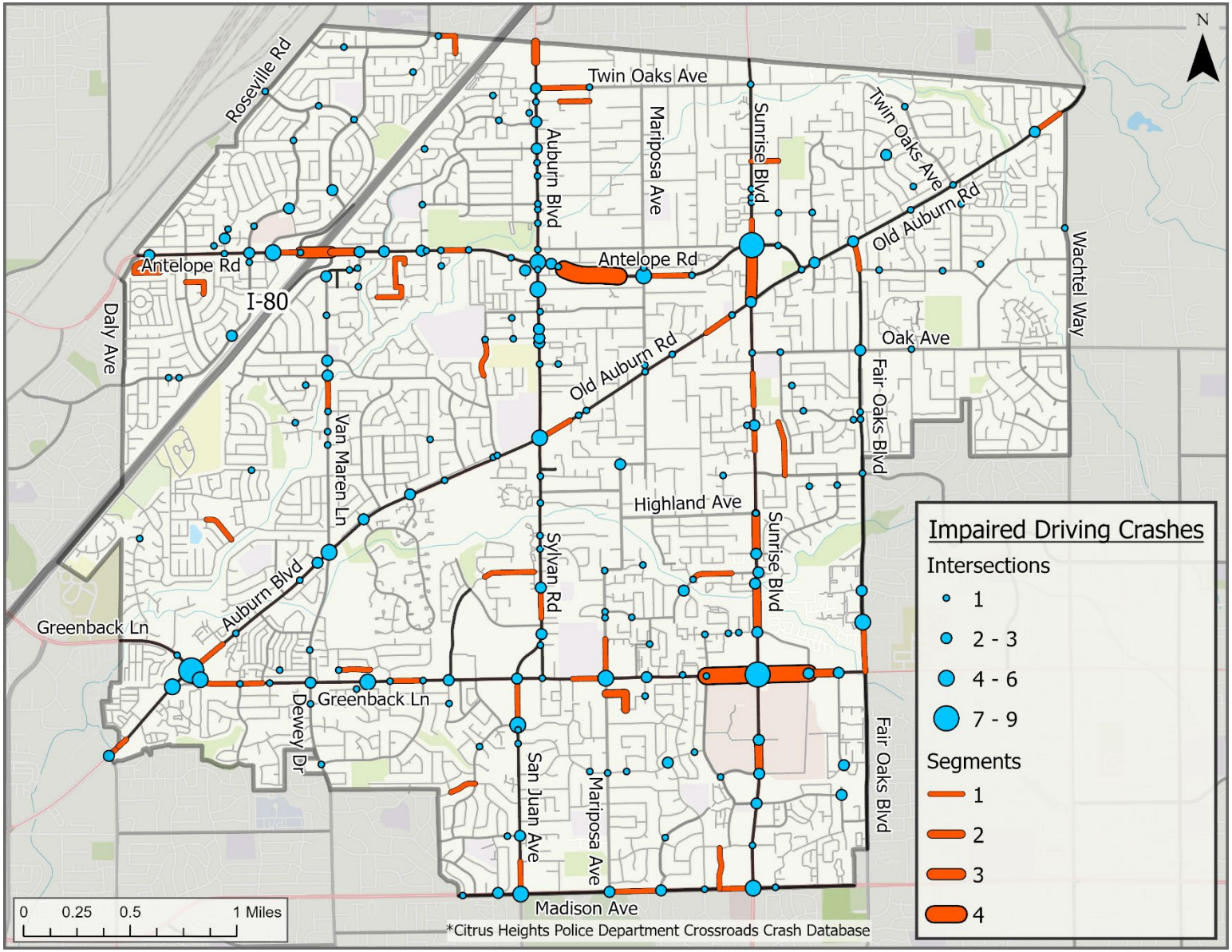


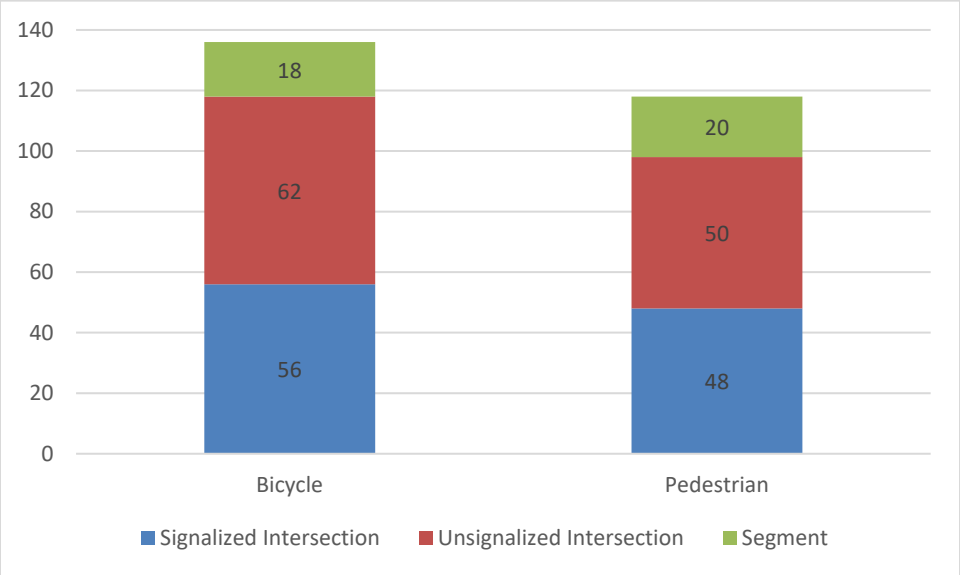
Figure 22 — Distracted Driving Crashes (2020-2024)



7.10. Non-Motorized Crashes

There were a total of 136 crashes involving bicycles and 118 crashes involving pedestrians, as shown in **Figure 23**. Bicycle crashes were most common at intersections, with 45% occurring at unsignalized intersections. Pedestrian crashes occurred most frequently at unsignalized intersections as well, followed closely by signalized intersections.

Figure 23 — Bicycle and Pedestrian Crashes (2020-2024)



Source: City of Citrus Heights Police Department Crash Database (2020 – 2024).

7.10.1. Bicycle Crashes

There were 136 bicycle-vehicle crashes in the City over the study period. Of the bicycle-involved crashes, 3 resulted in fatalities, 8 were reported with severe injuries, 67 with other visible injuries, 36 with complaints of pain, and 22 with property damage only. The fatal bicycle crashes occurred at the following locations:

- 355-Feet north of the Sunrise Boulevard intersection with Antelope Road
- San Juan Avenue intersection with Sylvan Road
- Van Maren Lane intersection with Mercedes Avenue

The most common primary collision factor for bicycle-vehicle crashes was riding on the wrong side of the road (34%), followed by vehicle violations such as auto right of way violations (15%) and improper turning (12%). The most common PCFs among KSI bicycle-vehicle crashes were the same: riding on the wrong side of the road (45%), followed by vehicle violations such as auto right of way violations (18%) and improper turning (18%).

Fewer bicycle crashes and bicycle KSI crashes were reported between 2020 and 2024 than in the previous dataset; a total of 143 bicycle crashes occurred between 2015-2019, including 19 KSIs. **Figure 24** illustrates the locations of bicycle crashes within the City.

7.10.2. Pedestrian Crashes

There were 118 pedestrian-vehicle crashes in the City over the study period. Of the pedestrian-involved crashes, 2 resulted in fatalities, 21 were reported with severe injuries, 53 with other visible injuries, 31 with complaints of pain, and 11 with property damage only. The fatal pedestrian crashes occurred at the following locations:

- Auburn Boulevard and Cobalt Way
- Auburn Boulevard and Antelope Road

A fatal pedestrian crash occurred along San Juan Avenue between Greenback Lane and Sylvan Road in May 2026 (outside of the project study period). The City recognizes the opportunity for a focused study of this area in the future.

Pedestrian violations accounted for 34% of pedestrian-vehicle crashes, followed by various driver violations such as right of way violations (15%) and other improper driving (11%). The most common PCFs among KSI pedestrian-vehicle crashes were pedestrian violations (39%), followed by traffic signals and signs violations (13%) or unknown cause (13%).

Fewer pedestrian crashes and pedestrian KSI crashes were reported between 2020 and 2024 than in the previous dataset; a total of 131 pedestrian crashes occurred between 2015-2019, including 42 KSIs.

Figure 25 presents the locations of pedestrian crashes in the City.

Figure 24 — Bicycle Crashes (2020-2024)

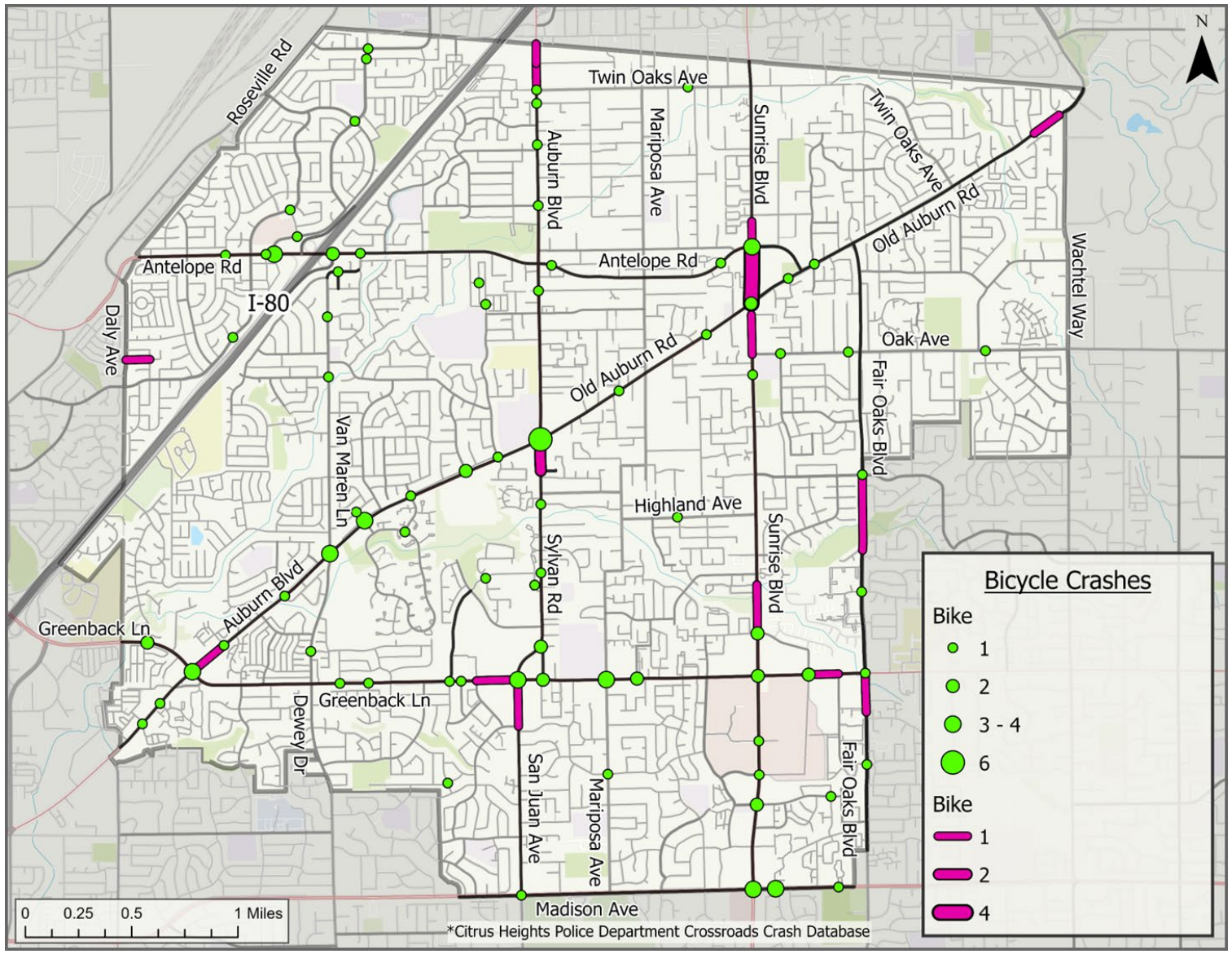
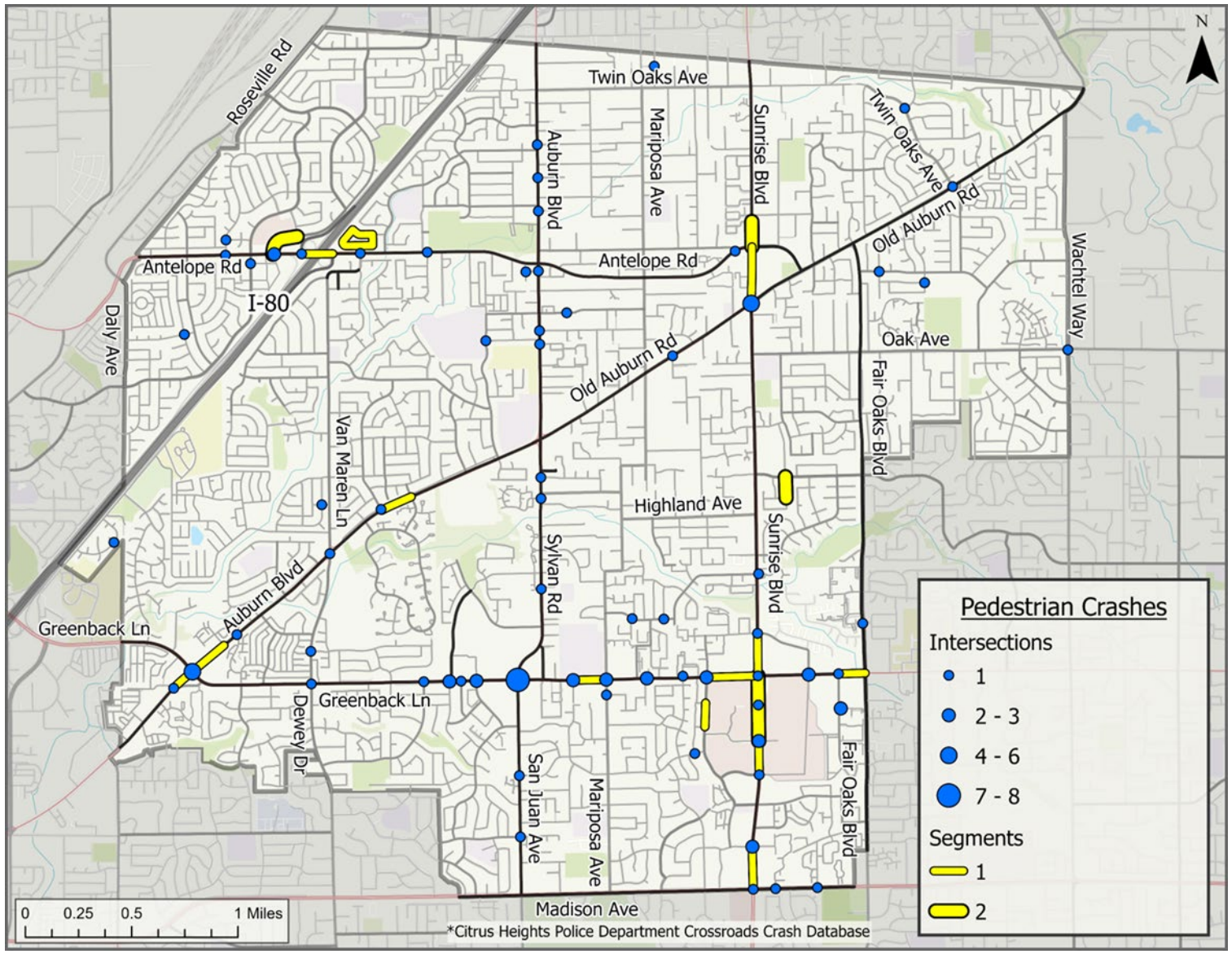


Figure 25 — Pedestrian Crashes (2020-2024)

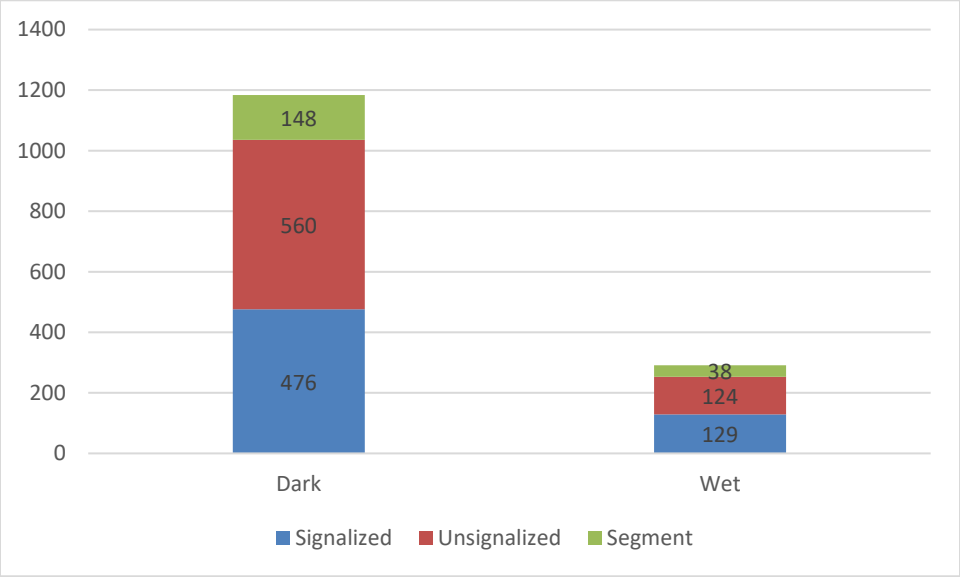


7.11. Roadway Factors

A total of 1,184 crashes occurred during dark conditions, inclusive of crashes in the presence of streetlights (working or not working). Four of these crashes resulted in fatalities and 48 crashes resulted in severe injuries. Of these KSI dark-crashes, 9 involved pedestrians and 2 involved bicycles, while the most common PCFs were DUIS (42%), unsafe speed (14%) and traffic signal and signs violations (14%). Crashes which occurred during dark roadway conditions most commonly took place at unsignalized intersections, as presented in **Figure 26**.

A total of 291 crashes occurred during wet roadway conditions, including 1 fatal crash and 10 severe injury crashes. The most common PCF among the KSI crashes which occurred under wet roadway conditions were DUIs (55%) and unsafe speed (36%). Crashes which occurred during wet roadway conditions most commonly occurred at signalized intersections, followed by unsignalized intersections.

Figure 26 — Dark and Wet Roadway Crashes (2020-2024)



Source: City of Citrus Heights Police Department Crash Database (2020 – 2024).

Figure 27 presents the locations of crashes which occurred during dark conditions in Citrus Heights, while **Figure 28** presents the locations of crashes which occurred under wet roadway conditions.

Figure 27 — Dark Roadway Condition Crashes (2020-2024)

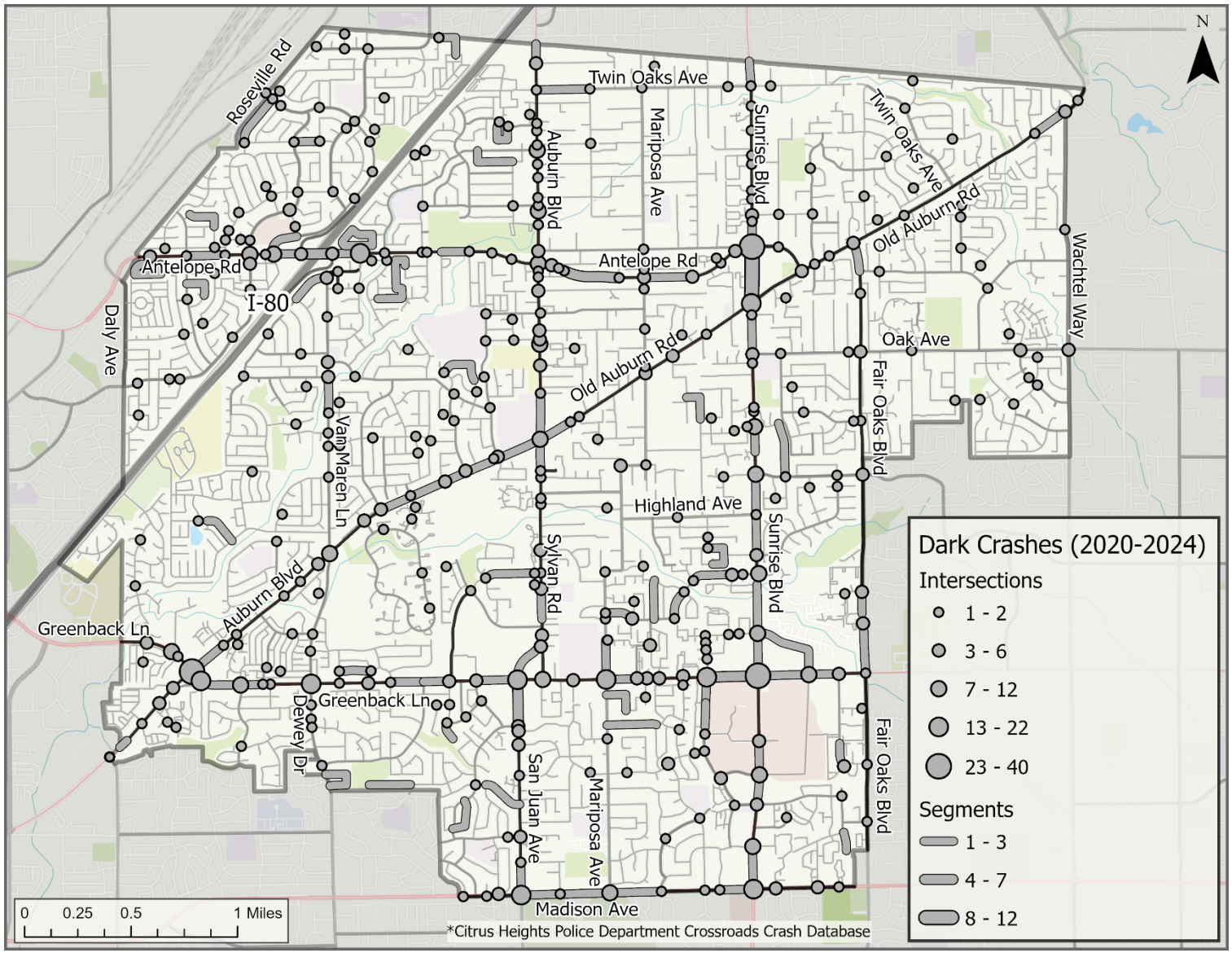
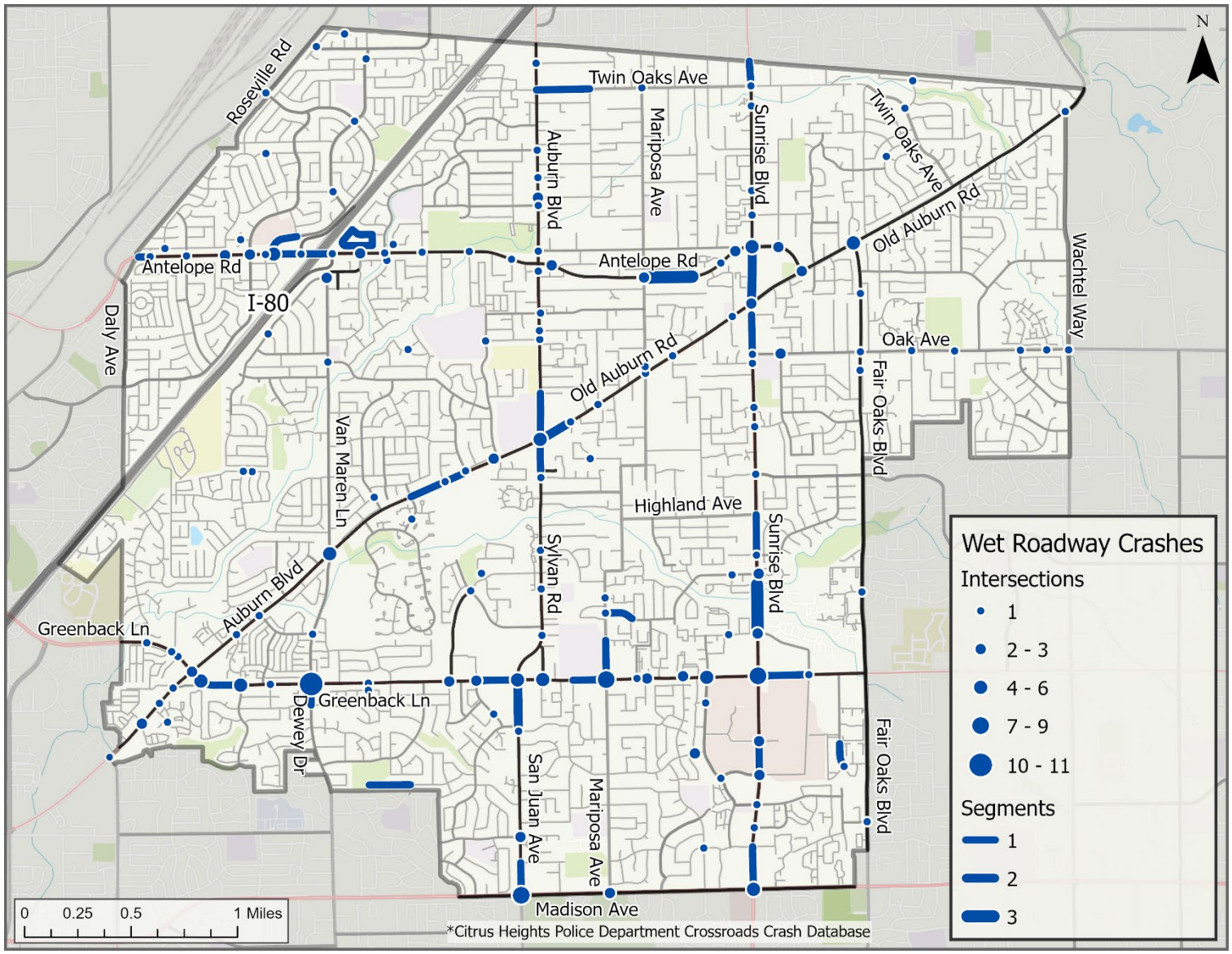


Figure 28 — Wet Roadway Condition Crashes (2020-2024)



Kimley»Horn

8. RECOMMENDATIONS

The following sections provide more information on potential engineering and non-infrastructure safety countermeasures that might address conditions that were observed to contribute to crash activity in the City. The following sections also outline the efficacy of those countermeasures employed by the City since the 2021 LRSP was adopted.

8.1. Engineering Countermeasures

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

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 29** illustrates the definition of CMFs.

Figure 29 — 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

A Crash Reduction Factor (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. In application, the higher a CRF value is, the more effective the countermeasure is at preventing crashes. **Figure 30** shows how a CRF is calculated in relationship to a CMF.

Figure 30 — CRF Calculation

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

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 31** is a sample calculation of the CMF method with one CMF being applied to a particular site for a single year.

Figure 31 — 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%

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, FHWA Proven Safety Countermeasures, 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 LRSP were chosen because of their effectiveness in reducing crashes, especially those most commonly occurring in the City.

8.1.2. Engineering Countermeasures Toolbox

The systemic improvements identified as most likely to be effective for Citrus Heights are listed in **Table 7,** and include a wide range of countermeasures that can be implemented in phases where appropriate. Many of these proposed countermeasures have already been implemented in the City, including, but not limited to, pedestrian countdown signal heads, conversion of stop-controlled intersections to roundabouts, and installation of retro-reflective backplates on traffic signal heads.

The CMF indicates how effective the countermeasure is at reducing crashes. CMFs and CRFs have been provided for reference to aid the City of Citrus Heights in understanding potential reductions from crashes by different countermeasures. Caltrans funding levels for each countermeasure are also provided to aid the City in determining what the local match would likely be if the City were to pursue grant funding. Most countermeasures are eligible for Caltrans funding up to 90%, though some are lower.

Table 7 — Citrus Heights Engineering Countermeasures Toolbox

Countermeasure	Crash Modification Factor (CMF)	Crash Reduction Factor (CRF)	CRF Applies to			Caltrans Funding	Cost to Implement
			All	Nighttime	Pedestrian and Bicycle		
Signalized Intersections							
Modify signal to provide a Leading Pedestrian Interval (LPI)	0.4	60%			X	90%	$
Install Left Turn Lane, Add Left Turn Phase	0.45	55%	X			90%	$$$
Install High Friction Surface Treatment (HFST)	0.45	55%	X			90%	$$$
Install intersection lighting	0.6	40%		X		90%	$$
Pedestrian scramble	0.6	40%			X	90%	$$
Curb extensions	0.63	37%			X	N/A	$$
Install pedestrian median fencing on approaches	0.65	35%			X	90%	$$
Protected left turn phase	0.7	30%	X			90%	$$
Convert signal from pedestal-mounted to mast arm	0.7	30%	X			90%	$$$
Install signs with LED borders as advanced warning	0.7	30%	X			90%	$$
Install raised median on approaches	0.75	25%	X			90%	$$
Pedestrian countdown signal heads	0.75	25%			X	90%	$
Signal ahead warning signs	0.85	15%	X			N/A	$
Retroreflective backplates	0.85	15%	X			90%	$
Improve signal timing (coordination)	0.85	15%	X			50%	$$
Advanced stop bar before crosswalk and bicycle box	0.85	15%			X	90%	$
Install raised pavement markers and striping	0.9	10%	X			90%	$
Flashing yellow arrow	0.94	6%	X			N/A	$
Convert intersection to roundabout (from signal)	Varies	Varies	X			90%	$$$
Convert intersection to mini/compact roundabout (from signal)	Varies	Varies	X			90%	$$
Install protected intersection					X	N/A	$$$
Install a raised intersection	Not Available	Not Available			X	N/A	$$
Unsignalized Intersections							
Install High Friction Surface Treatment (HFST)	0.55	55%	X			90%	$$$
Pedestrian Signal or Pedestrian High Intensity Activated Crosswalk (HAWK)	0.45	55%			X	90%	$$$
Install all-way STOP control	0.5	50%	X			90%	$
Directional median openings to restrict turning movements	0.5	50%	X			90%	$$
Reduced Left-Turn Conflict (R-CUT) intersections	0.5	50%	X			90%	$$$

$$$ Requires design and construction of extensive infrastructure improvements
$$ Requires procurement and/or minor construction activities
$ Requires limited staff resources and can be implemented in-house with current engineering and/or maintenance staff

Countermeasure	Crash Modification Factor (CMF)	Crash Reduction Factor (CRF)	CRF Applies to			Caltrans Funding	Cost to Implement
			All	Nighttime	Pedestrian and Bicycle		
Pedestrian refuge island	0.55	45%			X	90%	$$
Install splitter-islands on minor road approaches	0.6	40%	X			90%	$$
Crosswalk lighting	0.6	40%		X	X	90%	$$
Install splitter-islands on minor road approaches	0.6	40%	X			90%	$$
Add intersection lighting	0.6	40%		X		90%	$$
Colored bicycle lanes	0.61	39%			X	90%	$
Curb extensions	0.63	37%			X	N/A	$$$
Install/upgrade pedestrian crossing with enhanced safety features	0.65	35%			X	90%	$$$
Rectangular Rapid Flashing Beacon (RRFB)	0.65	35%			X	90%	$$
Install left-turn lane	0.65	35%	X			90%	$$
Install flashing beacons as advanced warning	0.7	30%	X			90% (if beacons are utilized)	$$
Upgrade pavement markings	0.75	25%	X			90%	$
Install raised median on approaches	0.75	25%	X			90%	$$
Clear sight triangles	0.8	20%	X			90%	$
Install right-turn lane	0.8	20%	X			90%	$$
Install/upgrade intersection warning/regulatory signs	0.85	15%	X			90%	$
Install flashing beacons at stop-controlled intersections	0.85	15%	X			90%	$$
Convert intersection to roundabout	Varies	Varies	X			90%	$$$
Retroreflective strips on sign posts	Not Available	Not Available	X			90%	$
Install a raised intersection	Not Available	Not Available	X		X	N/A	$$$
Partial street closure or diagonal diverter	Not Available	Not Available	X		X	N/A	$$
Install protected intersection					X	N/A	$$$
Full street closure	Not Available	Not Available	X		X	N/A	$$
Roadway Segments							
Improve pavement friction (High Friction Surface Treatment)	0.45	55%	X			90%	$$$
Install chevron signs on horizontal curves	0.60	40%	X			90%	$
Remove or relocate fixed object outside of Clear Recovery Zone	0.65	35%	X			90%	$$$
Install pedestrian median fencing	0.65	35%			X	90%	$$
Install bike lanes	0.65	35%			X	90%	$
Add segment lighting	0.65	35%		X		90%	$$

$$$ Requires design and construction of extensive infrastructure improvements
$$ Requires procurement and/or minor construction activities
$ Requires limited staff resources and can be implemented in-house with current engineering and/or maintenance staff

Countermeasure	Crash Modification Factor (CMF)	Crash Reduction Factor (CRF)	CRF Applies to			Caltrans Funding	Cost to Implement
			All	Nighttime	Pedestrian and Bicycle		
Install/upgrade pedestrian crossing (with enhanced safety features)	0.65	35%			X	90%	$$
Install raised pedestrian crossing	0.65	35%			X	90%	$$
Install rectangular rapid flashing beacon	0.65	35%			X	90%	$$
Install curve advance warning signs (flashing beacon)	0.70	30%	X			90%	$$
Install dynamic/variable speed warning signs	0.70	30%	X			90%	$$
Install curve advance warning signs	0.75	25%	X			90%	$
Install impact attenuators	0.75	25%	X			90%	$$
Install centerline rumble strips/stripes	0.80	20%	X			90%	$$
Install edgeline rumble strips/stripes	0.85	15%	X			90%	$$
Install/Upgrade signs with new fluorescent sheeting (regulatory/warning)	0.85	15%	X			90%	$
Install delineators, reflectors and/or object markers	0.85	15%	X			90%	$
Speed feedback signs (mobile or fixed)	Not Available	Not Available	X			Opportunity for OTS funding	$$
Install lane narrowing treatments (extend curb inward/extend median)	Not Available	Not Available	X			N/A	$$
Install a chicane, deviation, or angled slow point	Not Available	Not Available	X			N/A	$$$
Install speed hump	Not Available	Not Available	X			N/A	$$
Speed Reduction Markings	Not Available	Not Available	X			90%	$
Install motorcycle guardrail	Not Available	Not Available	Motorcycles			Not Available	$$$

$$$ Requires design and construction of extensive infrastructure improvements
$$ Requires procurement and/or minor construction activities
$ Requires limited staff resources and can be implemented in-house with current engineering and/or maintenance staff

The countermeasures in the toolbox can be considered as near-term, mid-term and long-term improvements. Near-term improvements are lower cost and can be implemented most readily. Mid-term improvements are higher cost improvements, while long-term improvements are the highest cost and may require engineering design and permitting to implement. **Table 8** presents an estimated time range for various countermeasures.

Table 8 – Near-Term, Mid-Term, and Long-Term Improvements

Near-Term Improvements (0-3 Years)	Mid-Term Improvements (3-5 Years)	Long-Term Improvements (5+ Years)
• Install retroreflective backplates and/or additional signal heads • Install retroreflective strips • Install raised pavement markings and striping • Install pedestrian countdown signal heads • Advanced stop bars (bicycle box) • Improve signal timing • Implement Leading Pedestrian Interval • Implement All-Way-Stop-Control at intersection • Install/Upgrade intersection warning/regulatory signs • Clear sight triangles/intersection daylighting • Install/upgrade pedestrian crossing • Colored bicycle lanes • Install/upgrade signs with new fluorescent sheeting (regulatory or warning) • Install delineators, reflectors and/or object markers • Install dynamic speed warning signs	• Signalize right-turn slip lanes • Install rumble strips (edgeline and centerline) • Install intersection lighting • Install emergency vehicle preemption • Install protected left turn phase • Complete a roadway signage safety audit • Install raised median • Create directional median openings • Install flashing beacons in advanced warning or curve or intersection • Install splitter islands on minor road approaches • Install RRFB • Install bike lane • Install motorcycle guardrail • ADA curb ramps	• Install left turn lane and add left turn phase • Replace Signal mast-arms to support the installation of additional signal heads • Realign intersection approaches and driveways • Convert signal from pedestal mounted to mast arm • Install high-friction surface treatment • Install signal • Curb extensions and bulb-outs • Remove/relocate fixed object out of clear recovery zone • Install separated bike lanes • Install acceleration/deceleration lanes • Add two-way left turn lane/Implement road diet • Install pedestrian refuge island or raised pedestrian crossing • Convert intersection to roundabout • Protected intersection

8.1.3. 2021 LRSP Priority Projects

Four case study locations were selected for further analysis and recommendations in the 2021 LRSP. Two citywide safety projects were also developed. For each of these projects, 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.

The status of each project is described below. For locations which have not yet entered into design or construction, the crash history in the updated dataset has been evaluated to determine the location's recent performance:

1. Signalized Intersection Safety Improvements (Citywide)
   - This project included the installation of retroreflective Backplates at 33 signalized intersections across the City.
   - The City secured HSIP Cycle 11 funding for this project and began construction in 2026.
2. Unsignalized intersection safety improvements (Citywide)
   - This project included upgrading signage and pavement markings at unsignalized intersections across the City, with improved intersection lighting as needed.
   - This project has not been implemented as of Spring 2026 and is re-evaluated in section 8.1.4 based on the new crash dataset.
3. Butternut Drive between Villaview Drive and Roseville Road
   - This project included a new left-turn lane on Roseville Road, refreshed bike lanes, signage, & striping, drainage improvements, bulbouts on Butternut Drive, and Street Lighting adjustments.
   - Construction is expected to be completed in September 2026.
4. Van Maren Lane between Auburn Lane and Kittery Avenue/Campfire Way
   - The 2021 LRSP proposed a road diet and buffered bike lanes. These improvements have not yet been funded.
   - According to the crash dataset (2020-2024), 3 crashes occurred along the corridor (1 broadside, 1 sideswipe, and 1rear-end).
5. Greenback Lane/San Juan Avenue and Greenback Lane/Mariposa Avenue
   - Retroreflective backplates will be installed at the intersection of Greenback Lane and San Juan Avenue per the HSIP Cycle 11 project. The intersection of Greenback Lane and Mariposa Avenue was included in the HSIP Cycle 8 signalized intersection improvements.
   - The LRSP identified the following improvements: implement a leading pedestrian interval, install green bike lane markings, improved striping through the intersection, and advanced stop bars, and replace J-arms to accommodate additional signal heads.
   - The crash history indicates that these intersections remain priorities:
     - Greenback Lane/San Juan Avenue experienced 75 crashes and an EPDO value of 582
     - Greenback Lane/Mariposa Avenue experienced 63 crashes and an EPDO value of 410

8.1.4. New Priority Projects

Based on the crash data analysis, stakeholder input, and understanding of community requests received through the MMTSP, new priority projects were developed for Citrus Heights. These projects are estimated to provide significant safety improvement across the City, benefiting all eleven neighborhoods and road users of all ages and abilities. **Table 9** presents three of the priority locations and the anticipated benefit-cost ratio of the improvements. The following section provides additional information about these improvements, while the project-specific calculations are found in **Appendix D**. Additional priority safety projects have been developed (beyond the three presented in **Table 9**) which the City will evaluate for implementation moving forward.

Table 9 — Priority Project Benefit-Cost Ratios

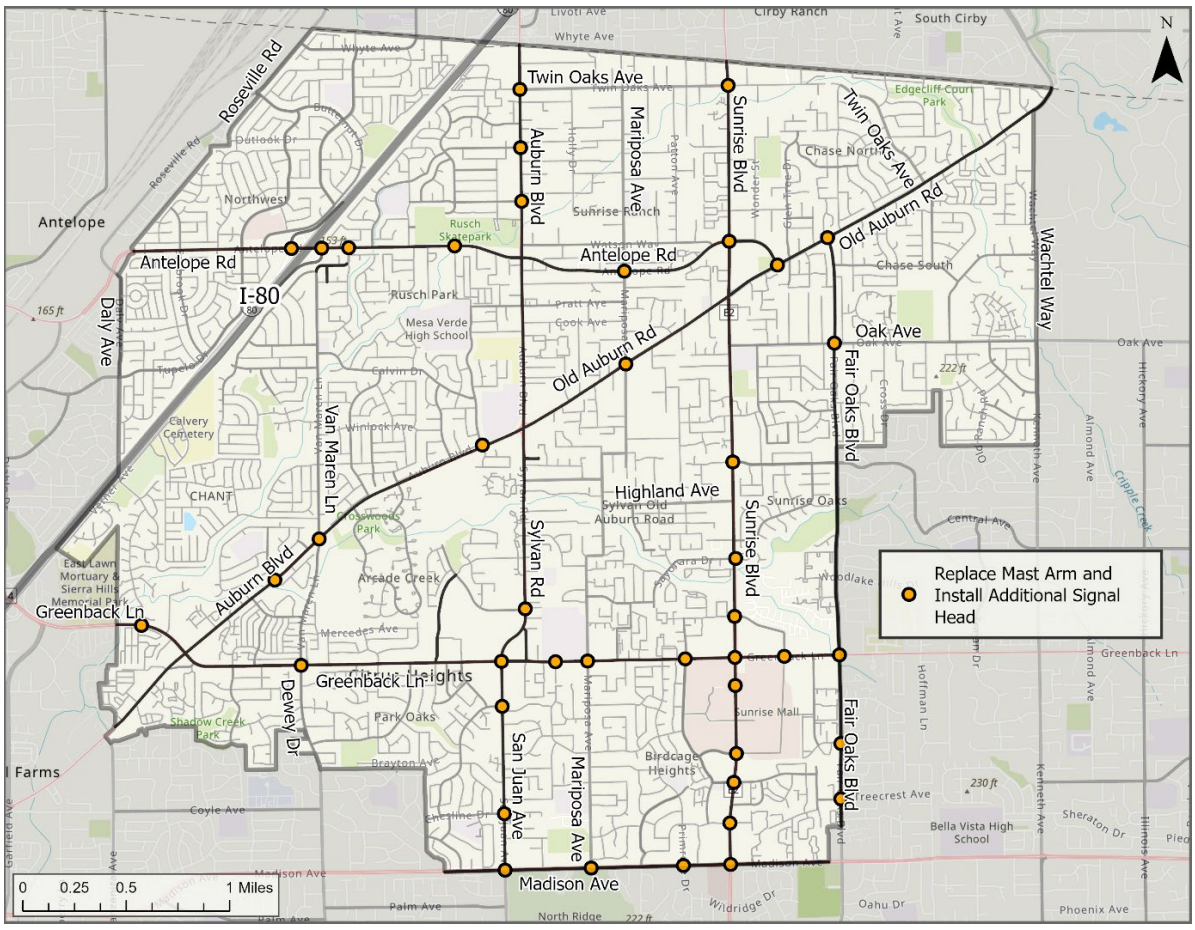
Priority Project	Benefit	Cost	BCR
Supplemental traffic signal heads and mast arm improvements	$32,600,000	$7,000,000	4.6
Arterial and collector regulatory and warning sign improvements	$106,300,000	$5,200,000	20.4
Old Auburn Road Safety Improvements	$5,700,000	$1,500,000	3.8
Combined	**$144,600,000**	**$13,700,000**	**10.6**

1. Traffic Signal Mast Arm Improvements

The City has taken an incremental approach to signal improvements in the past, improving signal timing, signal head visibility, and pedestrian crossings through systemic projects. Signalized intersections remain a safety priority for Citrus Heights, accounting for 43% of all crashes and 33% of all KSI crashes. This project recommends improvements at 42 intersections which include the installation of 100 supplemental signal heads and the replacement of 88 mast arms.

The City has several corridors with posted speed limits of 45 mph, such as Antelope Road, Madison Avenue, and Fair Oaks Boulevard. The California Manual of Traffic Control Devices (CAMUTCD) requires that signal heads be installed facing each through lane at signalized intersections with speed limits of 45 mph or higher. This project proposes that additional signal heads be installed on such corridors to meet this CAMUTCD standard. It is understood that the City will likely need to replace the existing mast arms with different poles which are rated to support the load of an additional signal head, indicating that foundation upgrades and civil costs will likely be required. The City also has older non-standard traffic signal equipment (such as J-Arms) installed at intersections along its arterial network at which the City would like to install additional signal heads facing through-lanes. This project includes the replacement of these J-arm poles to improve signal head visibility and intersection safety. Project locations are presented in **Figure 32**.

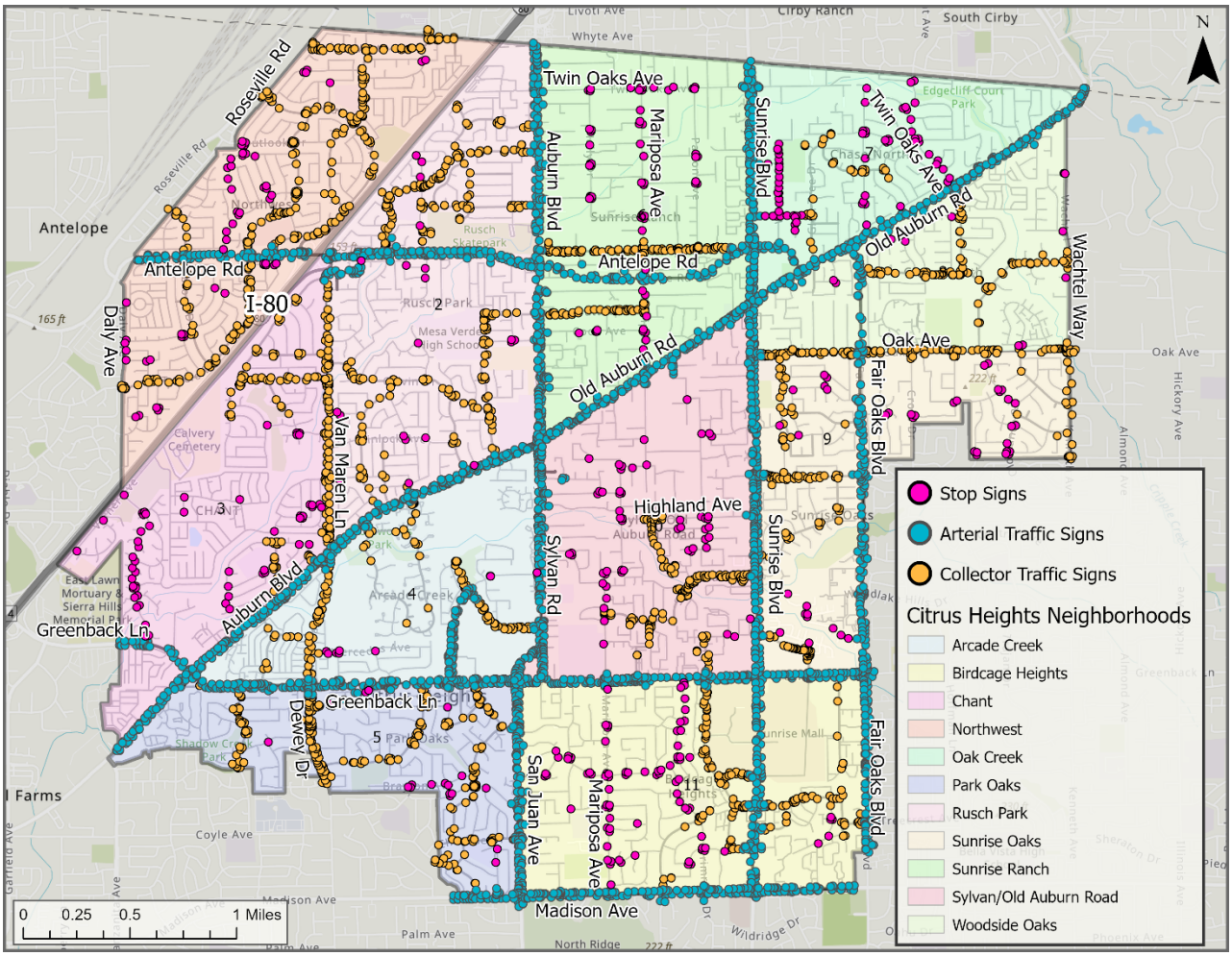
Figure 32 — Mast Arm Improvements



2. Regulatory and Warning Sign Improvements at Unsignalized Intersections, Arterials and Collectors

Unsignalized intersections experienced more than half of all KSI crashes from 2020-2024. The City has therefore developed a project to improve road safety at unsignalized intersections and the roadway corridors connecting them. **Figure 33** presents the approximate locations of the signs to be replaced.

Figure 33 — Signage Improvements



This project proposes that stop signs at unsignalized intersections be replaced with retroreflective and/or larger signs as applicable, and that retroreflective strips be installed on signposts. This improvement is anticipated to improve driver compliance at stop signs and address common crash types such as broadsides, rear-ends, and vehicle-pedestrian incidents.

This project also recommends that deficient regulatory and warning signs on arterial and collector corridors be replaced with signs which have fluorescent sheeting. It is recommended that the City consider evaluating and implementing improvements by neighborhood to best manage the scale of

the improvements. The California LRSM provides the following guidance[9] on roadway signage upgrades:

"This CM only applies to crashes occurring within the influence area of the new/upgraded signs. This CM is not intended for maintenance upgrades of street-name, parking, guide, or any other signs without a primary focus on roadway safety. This CM is not eligible unless it is done as part of a larger sign audit project, including the study of: 1) the existing signs' locations, sizes and information per MUTCD standards, 2) missing signs per MUTCD standards, and 3) sign retroreflectivity. The overall sign audit scope (or a special exception from the HSIP program manager) must be documented in the Narrative Questions in the application. Based on the scope of the project/audit, it may be appropriate to combine other CMs in the B/C calculation."

An estimate of the quantity of signs and project BCR is presented in **Table 10**.

Table 10 — Signage Improvement Benefit Cost Ratios

Facility Type	Quantity of Signs			Facility BCR
	Segments	Unsignalized Intersections	Signalized Intersections	
Arterials	711	1689	1613	41.2
Collectors	255	1899	27	15.7
Local Roads	-	500	-	13
Total	**966**	**4,088**	**1,640**	**20***

*Including contingency cost

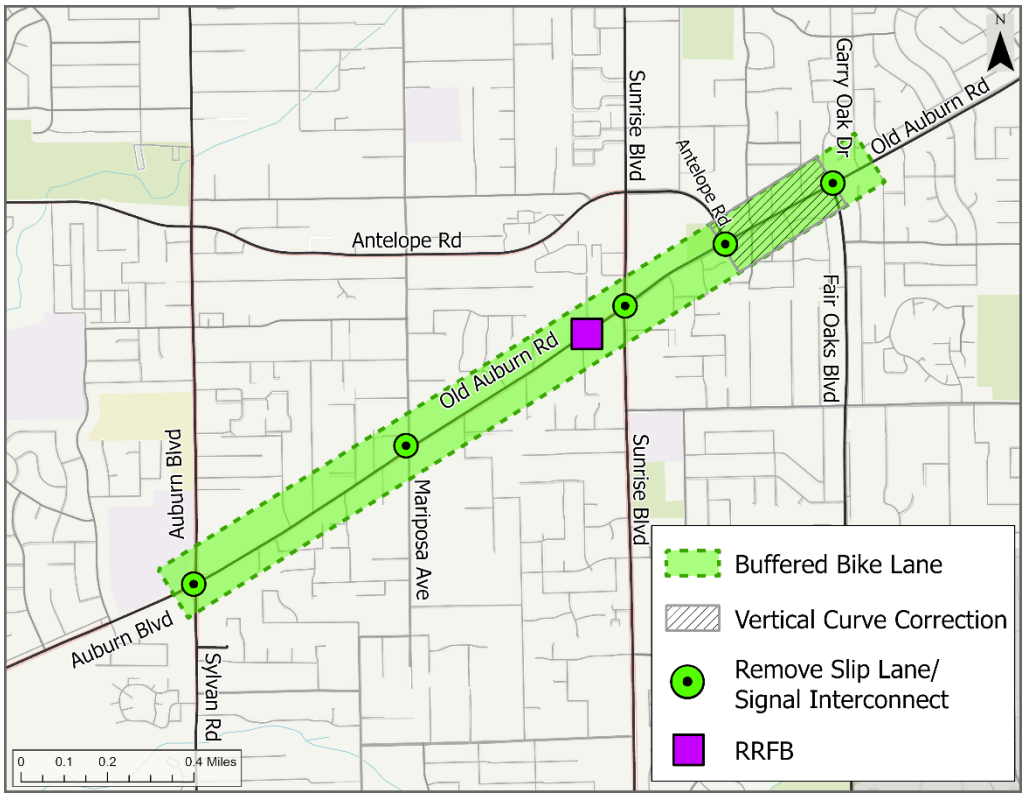
[9] Local Roadway Safety Manual Version 1.7, Page 83, Caltrans, April 2024

3. Old Auburn Road Safety Improvements

Many intersections along Old Auburn Road experienced higher EPDO values during the study period. The corridor also experienced aggressive driving trends and bicycle crashes at intersections. The City has identified complete streets safety improvements along Auburn Road to provide multimobility safety improvements along this priority corridor. Phase 1 of the project extends from Garry Oak Drive to Tiara Way while Phase 2 extends from Tiara Way to Sylvan Road/Auburn Boulevard. This project includes a suite of roadway and intersection improvements, many of which have been evaluated for their respective benefit-cost ratios.

The intersections of Old Auburn Road with Auburn Boulevard/Sylvan Road, Mariposa Avenue, Sunrise Boulevard, Antelope Road, and Fair Oaks Boulevard each have at least one right-turn slip lane. The City ultimately plans to construct protected intersections and is considering a project to signalize these right-turn movements as a first step. These signals are planned to be interconnected and coordinated to control traffic flow and reduce the occurrence of rear-end crashes and incidences of aggressive driving crashes. The City has also identified that a segment of Old Auburn Road between Antelope Road and Garry Oak Drive would benefit from a vertical curve correction, as the existing geometry presents sight distance challenges. The vertical curve correction is included in this project along with buffered bike lanes along Old Auburn Road between Sylvan Road and Garry Oak Drive. Lastly, this project includes the installation of an RRFB, pedestrian median island, and high-visibility crosswalk at the intersection of Old Auburn Road and Tiara Way. The project extents are depicted in **Figure 34**. Estimates of project benefit-cost ratios can be found in **Appendix D**.

Figure 34 — Old Auburn Road Safety Improvements

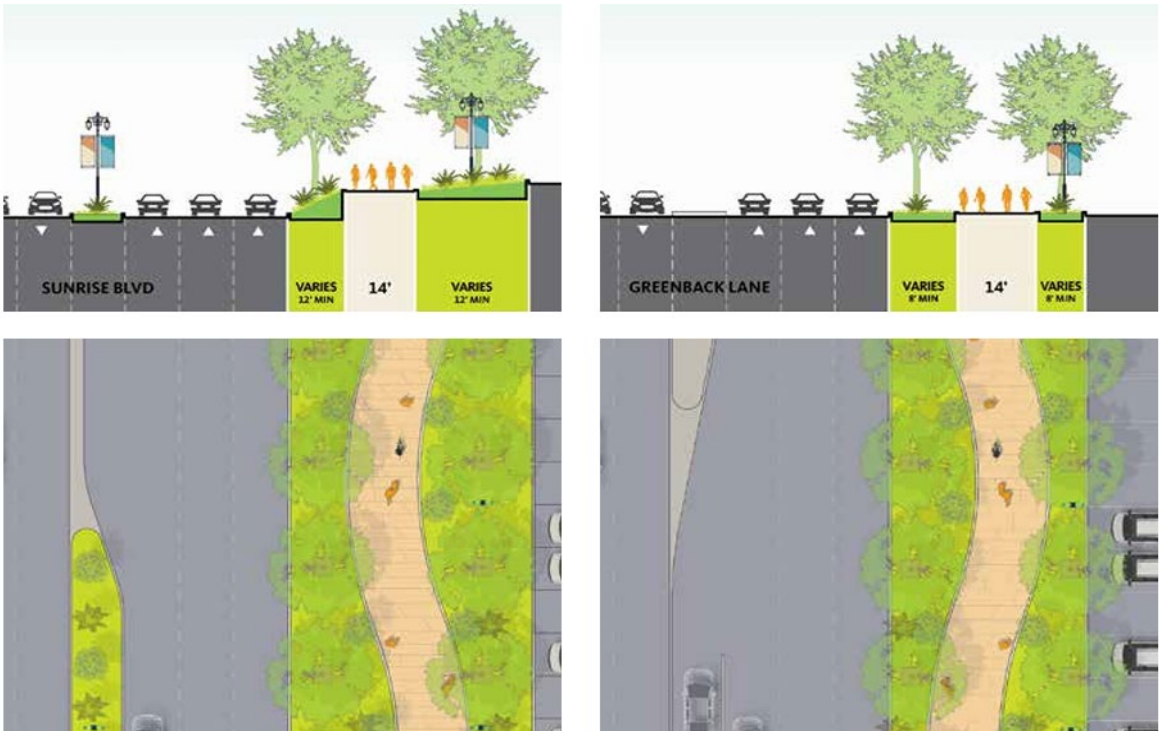


While this report has focused on the improvements which are explicitly tied to countermeasures found in the 2024 LRSM, the Old Auburn Road Complete Streets Project includes many other features which are anticipated to provide significant safety benefits to all road users. Such improvements include installing protected intersections, the installation of landscaping to reduce the roadway width and provide traffic calming effects, relocating offset driveways and realigning intersection approaches, and others. This LRSP report recognizes the safety need along Old Auburn Road and confirms that these improvements would result in a safety benefit to the community.

4. Sunrise Tomorrow Specific Plan Frontage Improvements

The City has plans to redevelop the Sunrise Mall as described in the Sunrise Tomorrow Specific Plan [10]. Frontage improvements have been developed along Sunrise Boulevard and Greenback Lane along with plans for roadway reconfiguration, traffic signal modifications, and a new transit center. The construction of a shared-use path for pedestrians and cyclists will provide enhanced safety and mobility for these vulnerable road users at this new community center. The implementation of a leading pedestrian interval at the intersection of Sunrise Boulevard and Greenback Lane will also improve pedestrian safety on the approach to the project site. Community engagement has played a critical role in the project and has shaped the project's focus on connections to local trails and employment. The frontage improvements are anticipated to improve safety for all road users along these high-EPDO roadway segments and intersections along Greenback Lane and Sunrise Boulevard. An excerpt of the roadway plans is presented in **Figure 35**.

Figure 35 — Excerpt of Sunrise Tomorrow Frontage Improvements



Sunrise Tomorrow Specific Plan, Page 163

[10] Sunrise Tomorrow Specific Plan, City of Citrus Heights. Adopted 2021. https://www.citrusheights.net/DocumentCenter/View/17356/SunriseTomorrowSpecificPlan_11x17

5. Miscellaneous Safety Improvements

As referenced in section 8.1.1, the City identified improvements at the intersections of Greenback Lane with San Juan Avenue and Mariposa Avenue. These improvements are still recommended given the high EPDO values and crash history observed between 2020-2024 (including crashes involving pedestrians and cyclists).

Intersection daylighting (restricting on-street parking within 20-feet of intersection approaches) can improve sight triangles for vehicles and pedestrians. The improvement can be implemented systemically across the City through the use of red curb, hatching out the pavement to restrict parking by corners, or vertical treatments (raised delineators, curb extensions, planters). This treatment can be applied systemically at unsignalized intersections to provide a 20% crash reduction benefit (Countermeasure NS13 in the LRSM[9]).

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 11** contains countermeasures that have demonstrated effectiveness and could be applied at the City level.

Table 11 — Non-Infrastructure Countermeasures Toolbox

Countermeasure	Effectiveness	Cost to Implement	Use	Time to Implement
Aggressive Driving				
Automated enforcement systems (red light camera systems)	Effective	$$$†	Medium	3-12 Months
Impaired Driving				
Publicized Sobriety Checkpoints	Effective	$$$	Medium	Less than 3 months
High-Visibility Saturation Patrols (large number of law enforcement officers patrolling a specific area)	Situational	$$	High	Less than 3 months
Occupant Protection (Seat Belts, Helmets, Child Seats)				
Short-term high visibility enforcement	Effective	$$$	Medium	3-12 Months
Integrated nighttime seat belt enforcement (night time seat belt enforcement in conjunction with High-Visibility Saturation Patrols for impaired driving)	Situational	$$$	Unknown	3-12 Months
Distracted Driving				
High visibility cellphone/text messaging enforcement	Situational	$$$	Low	3-12 Months

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

Note that while there are several other non-infrastructure countermeasures available, only those which have an effectiveness rating of four stars or higher are presented. Access to Drug Recognition Experts (DREs) and Advanced Roadside Impaired Driving Enforcement (ARIDE) training for law enforcement is not included in the document but are countermeasures that could also be considered for the City.

9. Evaluation and Implementation

9.1. Evaluation

The success of the LRSP can be evaluated using the general process outlined below. This process can be useful to monitor progress towards implementation of safety improvement projects and strategies, and to determine when updates to the LRSP should be considered.

- Law enforcement continues monitoring and recording of traffic incidents on local roadways.
- Conduct frequent progress meetings (annually or quarterly) between City staff and a working group (i.e. traffic safety committee) to review the latest crash data, including assessing the effectiveness of safety countermeasures implemented, discussing ongoing traffic safety challenges, and tracking progress on plan implementation.
- Maintain a list of focus/priority areas where there are transportation safety concerns based on review of crash data. The list of priority and/or top crash locations can be updated as an outcome of review of updated crash data and trends.
- Perform an update to the plan after no more than five years. It is recommended that updates to the LRSP be approved by City Council and made available to the public in accordance with Caltrans' Local Roadway Safety Plan guidance.

9.2. Implementation

Implementation of the LRSP can be accomplished through development and implementation of safety improvement projects and strategies, the establishment of new/updated policies and programs, and development/strengthening of relationships with stakeholders.

Regarding projects, the following section 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:

1. Intersections (Signalized and Unsignalized)
2. Aggressive and Impaired Driving
3. Pedestrians
4. Broadsides

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

9.3. Funding

Competitive funding resources are available to assist in the development and implementation of safety projects in Citrus Heights. 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 Citrus Heights. The following is a high-level introduction into some of the main funding programs and grants for which the City can apply.

9.3.1. Highway Safety Improvement Program (HSIP)

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

- New or upgraded traffic signals
- Upgraded guard rails
- Pedestrian warning flashing beacons
- Marked crosswalks

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

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

9.3.2. Safe Streets and Roads for All (SS4A)

The SS4A Grant Program is a federal program established by the Bipartisan Infrastructure Law. A total of $5 billion is available from 2022–2026 in the form of planning grants and implementation grants. Grant applications for projects that implement the Safe Systems Approach, such as those related to speed management, improvements in underserved communities, and vulnerable road users, are encouraged. Implementation grant projects must be identified in an applicant's qualifying Safety Action Plan. The SS4A Self-Certification Eligibility Worksheet describes the required elements of an Action Plan and can be accessed at: https://www.transportation.gov/sites/dot.gov/files/2024-02/SS4A-FY24-Self-Certification-Worksheet.pdf.

Additional information about implementation grants can be found at: https://www.transportation.gov/grants/ss4a/implementation-grants.

9.3.3. 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/.

9.3.4. State Transportation Improvement Program (STIP)

The 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.

9.3.5. California 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 funding 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 ATP.
- Local Planning Grants: $25 million

9.3.6. California 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

9.3.7. SACOG Regional Funding Programs

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 Congestion Mitigation and Air Quality (CMAQ), Rural Surface Transportation Program (RSTP), or STIP funds.

Performance outcomes which are considered for selection include those which:

- Reduce regional VMT per capita
- Reduce regional congestion 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 has completed this LRSP to continue to guide the process of future transportation safety improvements for years to come. This report also serves as an update to the 2021 LRSP, providing the City with an opportunity to share how crash trends have changed during the COVID-19 Pandemic and in the years following. The data-driven analysis process identified crash types, related primary crash factors, and locations of crashes. Also as part of this process, emphasis areas were identified to inform and guide further safety evaluation of the City's transportation network. These emphasis areas will guide corridor improvements, education programs, and capital improvements for the City.

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

- Apply for HSIP, SS4A, or other similar grant funding to implement infrastructure improvements throughout the City
- Actively seek other funding opportunities to improve safety for all modal users
- Collaborate with established stakeholders, safety partners, and neighboring municipalities as improvements are made to create a cohesive transportation network
- Review applicable LRSP data to guide the prioritization of MMTSP requests
- Iteratively evaluate existing and proposed transportation safety programs and capital improvements to design a safer transportation network in the City

Based on Caltrans and FHWA guidelines, the City will plan to update the LRSP within five years (by 2031 or earlier). The City intends that this plan will serve as a living document. City staff may make updates or changes as needed prior to the next major update in approximately five years.

APPENDIX A

INTERSECTION NETWORK SCREENING RESULTS

Intersection	Crashes	Local CCR Differential[1]	EPDO[2]	*Fatal*	*Serious Injury*	*Other Visible Injury*	*Complaint of Pain*	*PDO*	Broadside	Sideswipe	Rear End	Head On	Hit Object	Overturned	Other	Pedestrian	Bicycle	Aggressive	Distracted	Impaired	Dark	Wet	Motorcycle
Signalized Intersections																							
GREENBACK LN & AUBURN BLVD	97	0.29	663		3	12	18	64	7	25	42	3	8	1	1	6	4	48	3	8	30	3	4
SUNRISE BLVD & GREENBACK LN	81	0.14	662		3	13	19	46	26	17	22	5	4	1	3	1	2	42	1	9	40	9	2
SAN JUAN AVE & GREENBACK LN	75	0.17	582		3	7	16	49	11	14	24	5	5		5	8	3	35	3	3	22	6	1
MARIPOSA AVE & GREENBACK LN	63	0.23	410		1	15	16	31	15	9	24	2	6		1	2	4	35	1	6	16	8	5
SUNRISE BLVD & ANTELOPE RD	59	0.12	174			5	13	41	13	12	24	2	5				3	29		9	29	5	2
SYLVAN RD & OLD AUBURN RD	53	0.15	425		2	8	11	32	4	11	25	1	5		1		6	23	2	4	12	4	2
SUNRISE BLVD & OLD AUBURN RD	53	0.11	315		1	11	7	34	7	6	27	3	3		1	4	2	35	2	3	15	2	1
SAN JUAN AVE & MADISON AVE	51	0.01	538		3	6	14	28	20	7	17		6				1	24	3	4	16	7	2
SUNRISE BLVD & MADISON AVE	51	-0.03	462		2	12	11	26	10	12	19	2	3	1		1	3	22		5	18	4	2
DEWEY DR & GREENBACK LN	49	-0.01	209			8	16	25	15	12	14	2	5			1		28		3	16	11	2
LICHEN DR & ANTELOPE RD	45	0.47	164			7	10	28	7	9	17	2	3		1	2	4	20	2	4	12	5	
PARKOAKS DR & GREENBACK LN	39	0.01	194			6	19	14	8	3	24	1	2		1			31	2	1	11	4	
BIRDCAGE ST & GREENBACK LN	37	-0.05	336		2	1	10	24	3	9	15	3	4			3		21		1	14	5	
VAN MAREN LN & AUBURN BLVD	36	0.07	295	1		7	14	14	11	6	6	1	8			1	3	14	2	4	9	6	
SUNRISE BLVD & MACY PLAZA DR	35	-0.02	591		4	4	8	19	9	7	15	1	1			1	1	19	1	2	7	3	1
AUBURN BLVD & ANTELOPE RD	35	-0.09	134			7	6	22	6	8	12	3	5		1			16	1	5	12		2
SUNRISE BLVD & ARCADIA DR	33	-0.01	143			4	14	15	8	2	16	1	3			1	2	23	3	2	7	2	
GARDEN GATE DR & ANTELOPE RD	33	-0.08	133			5	10	18	5	4	21	1				1	1	26		2	13	2	
ANTELOPE RD & I 80 EB RAMPS	31	-0.14	260		1	5	12	14	10	2	13	1	1	1	1		2	24			6	1	2
INDIAN RIVER DR & GREENBACK LN	30	-0.14	144			7	9	14	6	9	11	1			1		2	16			6	1	
SUNRISE BLVD & ALTA SUNRISE DR	28	-0.08	79			1	8	19	8	6	7	1	4			2		12	2	1	8		
TUPELO DR & ANTELOPE RD	27	-0.12	97			3	8	16	5	5	12	2	3					12	1	3	9	2	
SUNRISE VISTA DR & GREENBACK LN	26	-0.10	363		2	7	6	11	6	5	6	1	1	1	1	3	2	7		2	10	1	2
PEORIA DR & GREENBACK LN	24	-0.17	208		1	4	5	14	3	6	7	2	2		1	2	1	10	1	2	3	2	1
SUNRISE BLVD & KINGSWOOD DR	21	-0.18	209		1	5	4	11	7	1	9		2				2	12		2	5	1	
BURICH AVE & GREENBACK LN	21	-0.20	95			5	5	11	5		8	1	4		1		2	9	1		5	1	
SUNRISE BLVD & SUNGARDEN DR	21	-0.16	116			5	9	7	9		10	1	1					15	1	3	9	1	
MARIPOSA AVE & MADISON AVE	18	-0.25	400		3	1	3	11	3	6	4	1	4					7		2	7	3	

Intersection	Crashes	Local CCR Differential[1]	EPDO[2]	*Fatal*	*Serious Injury*	*Other Visible Injury*	*Complaint of Pain*	*PDO*	Broadside	Sideswipe	Rear End	Head On	Hit Object	Overturned	Other	Pedestrian	Bicycle	Aggressive	Distracted	Impaired	Dark	Wet	Motorcycle
SAN JUAN AVE & SPERRY DR	18	-0.09	107			7	4	7	10		2		6					10		4	4		
SUNRISE BLVD & OAK AVE	18	-0.21	63			2	5	11	1		10	2	4		1			13		1	5	1	1
AUBURN BLVD & CARLETON LN	18	-0.13	182		1	2	5	10	1	3	8	1	3		1	1		6	2	3	8		1
BRIMSTONE DR & ANTELOPE RD	18	-0.26	88			4	6	8	5	2	10					1		15		1	5	1	
SUNRISE BLVD & ARCADE LAKE LN	17	-0.22	57			2	4	11	2	1	9	1	3			1		12	2	3	9	3	
FAIR OAKS BLVD & OLD AUBURN RD	17	-0.05	52			1	5	11		1	7		8		1			11		2	6	5	
FAIR OAKS BLVD & GREENBACK LN	16	-0.19	51			1	5	10	4	3	6		2				1	8			1		
MARIPOSA AVE & ANTELOPE RD	15	-0.18	279	1	1		5	8	5	4	3	1	2					8	1	4	5	2	1
AUBURN BLVD & MANZANITA AVE	15	-0.22	396	1	2	2	1	9	2	4	2		6	1				6		2	6	2	
SUNRISE BLVD & WOODMORE OAKS DR	14	-0.26	158		1	2	1	10	2	3	6		3					6			7	1	
BINET DR & GREENBACK LN	13	-0.29	173		1	1	6	5	5	2	3		2		1			8	1	1	2		
ANTELOPE RD & OLD AUBURN RD	13	-0.14	48			2	3	8	3		3		6		1			9		1	5	2	1
FAIR OAKS BLVD & OAK AVE	12	-0.24	52			2	4	6	1	1	10							10		2	4	1	
CARRIAGE DR & AUBURN BLVD	11	-0.26	51			1	6	4	5	1	4						1	6		1	4		
LAUPPE LN & ANTELOPE RD	11	-0.29	55			4	1	6	3	3	4		1					6	1	1	2	1	2
AUBURN BLVD & TWIN OAKS AVE	11	-0.27	61			2	6	3	2	1	5			1	1		1	8		2	2		
SAN TOMAS DR & AUBURN BLVD	10	-0.26	36				5	5		2	7						1	7	1	2	1		
APPLEBEES DWY & AUBURN BLVD	10	-0.26	30			1	2	7	3	1	4		2					3	2	1	3	1	1
PRIMROSE DR & MADISON AVE	9	-0.35	34			2	1	6	3	2	1	1	1		1			6	1	1	1		
WILKINS WAY & GREENBACK LN	9	-0.34	267		2	1	2	4	1	1	2	1			2	2		6			5		3
SAYBROOK DR & ANTELOPE RD	9	-0.32	19			1		8	1	2	3		3					4			1	1	
AMSTERDAM AVE & ANTELOPE RD	9	-0.32	39			2	2	5	2	1	4		1			1		4		1	2		
FAIR OAKS BLVD & SUNRISE EAST WAY	8	-0.24	33			2	1	5	1	2	4						1	5			2		
AUBURN BLVD & GRAND OAKS BLVD	8	-0.33	33			2	1	5	1	2	2	1	1				1	4		1	2	1	
AUBURN BLVD & ROLLINGWOOD BLVD	8	-0.32	137		1		2	5	4		1	1	2					2		2	7	1	1
SUNRISE BLVD & TWIN OAKS AVE	8	-0.35	38			2	2	4	1	1	3		2		1			5		1	2	1	1
MARIPOSA AVE & OLD AUBURN RD	8	-0.29	32			2	1	5	1	2	3	1	1					4		2	3	1	
AUBURN BLVD & KANAI AVE	7	-0.34	17				2	5	2	2	2		1					4		2	4	1	
SAN JUAN AVE & WILLOWCREEK DR	6	-0.36	31			2	1	3			4	1				1		1		3	3	3	

Intersection	Crashes	Local CCR Differential[1]	EPDO[2]	*Fatal*	*Serious Injury*	*Other Visible Injury*	*Complaint of Pain*	*PDO*	Broadside	Sideswipe	Rear End	Head On	Hit Object	Overturned	Other	Pedestrian	Bicycle	Aggressive	Distracted	Impaired	Dark	Wet	Motorcycle
FAIR OAKS BLVD & TREECREST AVE	6	-0.33	45			3	2	1	3		1	1	1					4			1	1	
ROSSWOOD DR & ANTELOPE RD	6	-0.37	21			1	1	4		3	2		1					1		2	2	1	
SYLVAN RD & STOCK RANCH RD	5	-0.38	134		1		2	2		1	1	2	1					3					
HALIFAX ST & AUBURN BLVD	5	-0.32	29			2	1	2	3		2							4					
TWIN OAKS AVE & OLD AUBURN RD	3	-0.43	18			1	1	1			1		1			1		1		1			
SUNRISE BLVD & SUNRISE MALL DWY	3	-0.43	8				1	2		1					1	1							
Unsignalized Intersections																							
SUNRISE BLVD & S SUNRISE MALL/BIRDCAGE CTR	27	0.21	672		3	4	7	13	9	5	6	1	3			2	1	8	2	2	5	2	2
DESIMONE LN & GREENBACK LN	20	0.08	445		2	3	3	12		1	5	1	11		2			8	1	6	13	4	2
SHUPE DR & GREENBACK LN	19	0.07	94			4	7	8	5	6	4	1				3		2	2		3	2	
MATHENY WAY & GREENBACK LN	18	0.03	77			4	4	10	2	5	4		7					5			7	1	
SYLVAN RD & GREENBACK LN	17	0.22	62			2	5	10	6	1	5	1	2				2	5		1	8	5	
PATTERSON LN & GREENBACK LN	16	0.19	231		1	1	3	11	5	1	4		4			2		2		2	5	2	
AUBURN BLVD & DESIMONE LN	14	0.36	59			3	3	8	3	1	1		8			1		3	1	4	6	1	
MERLINDALE DR & GREENBACK LN	14	0.01	244		1	2	4	7	5		2		6			1		3		1	5	3	1
KENNETH AVE & OAK AVE	13	0.42	252	1		4	2	6	8		3		1			1		6			4	1	1
AUBURN BLVD & SHADOW LN	12	0.07	61			4	2	6	3	2	2	2	2				1	3			5	1	
SYLVAN RD & SYLVAN RD	12	0.08	242	1		3	2	6	5	1	1		3				2	2		1	3		
AUBURN BLVD & SYCAMORE DR	12	0.06	256		1	5	1	5	7	1	1		2				1	1		4	6		2
ROLLINGWOOD BLVD & ANTELOPE RD	12	0.03	61			4	2	6	2	1	6	1	1		1			6	1	2	1	1	1
SAN JUAN AVE & NORTHLEA WAY	10	0.05	230		1	2	2	5		1	7	2						5		1	3		
SUNRISE VISTA DR & GREENBACK LN	10	-0.01	235		1	2	3	4	4	1	1	1	2			1		2		2	5		2
TERRELL DR & GREENBACK LN	10	-0.03	49			3	2	5		4	4					1	1	2					
COUNTRY LN & GREENBACK LN	10	-0.05	15				1	9		3	5	1	1					4	1	1	1	1	
FAIR OAKS BLVD & WOODMORE OAKS DR	10	0.16	235		1	2	3	4	7		2						1	8	2	1	3		1
MANGO TREE WAY & ANTELOPE RD	10	0.01	254		1	4	3	2	4		1		5					1	1	2	6	1	1
ANTELOPE RD & ANTELOPE PLAZA DWY	10	-0.04	20			1		9		3	5		1				1	4			1	1	
SUNRISE BLVD & HANSON AVE	10	-0.02	231		1		6	3	5	2	3							3			3	1	1
AUBURN BLVD & AUBURN BLVD	9	0.01	54			3	3	3	2	1	5		1					4					

Intersection	Crashes	Local CCR Differential[1]	EPDO[2]	*Fatal*	*Serious Injury*	*Other Visible Injury*	*Complaint of Pain*	*PDO*	Broadside	Sideswipe	Rear End	Head On	Hit Object	Overturned	Other	Pedestrian	Bicycle	Aggressive	Distracted	Impaired	Dark	Wet	Motorcycle
HILLTREE AVE & GREENBACK LN	9	-0.04	409		2	1	2	4		4	1	1	2				1		2	5	4	1	
BROOKTREE DR & GREENBACK LN	9	-0.04	219		1	1	2	5		5	2	1				1		2		1			1
EVESHAM CIR & AUBURN BLVD	9	0.02	39			2	2	5	3	2	2		2					1	1	3	3		
SUNRISE BLVD & LARWIN DR	9	-0.03	410		2		4	3	2	1	3		2	1				5		2	5	1	
RAINTREE DR & AUBURN BLVD	9	0.02	24			1	1	7	1	3	3						2	3			4	1	1
VAN MAREN LN & NAVION DR	9	0.10	24				3	6	2	2		1	4					3		2	4	2	
AUBURN BLVD & LONDA VISTA MHP	9	0.01	9					9	2	1	3		2			1		2		1	2	1	
ANTELOPE RD & WATSON WAY	9	0.02	228		1	3		5	1			1	6			1		5			4	3	
SUNRISE EAST WAY & TARGA CIR	8	0.84	13				1	7	1	4	2		1					4		2	4	1	
AUBURN BLVD & CROSSWOODS PKWY	8	-0.01	238		1	3	2	2	1		2		2				3	1		2	3		1
AUBURN BLVD & RAMONA LN	8	-0.01	23				3	5	3		3		2					2		1	3		
CANELO HILLS DR & OAK AVE	8	0.26	227		1	3		4	4	1			2				1	2		1	2	3	
AUBURN BLVD & COOK AVE	8	-0.01	38			2	2	4	1	1	2		3			1		1	1	2	4	1	1
ALMADEN WAY & MADISON AVE	7	-0.07	392		2		1	4	3		1		2			1		1			3		2
HERITAGE TREE LN & MADISON AVE	7	-0.03	42			2	3	2			3					1	3	2		1	4		
BIRDCAGE ST & FARMGATE WAY	7	0.28	22				3	4	1		6							3			2		
DEWEY DR & MEADOWCREEK WAY	7	-0.02	32			2	1	4	5		2							2			1		
GREENBACK LN & CALIFORNIA AVE	7	-0.07	51			4	1	2		2	3		2					3					1
PARIS ST & GREENBACK LN	8	-0.05	203		1		1	6	1	2	2		2				1	4			2		1
COBALT WAY & AUBURN BLVD	7	-0.02	217	1		1	2	3	3	1		1	1			1		1	1		3		1
VAN MAREN LN & CALVIN DR	7	0.05	41			3	1	3	1	3	3							3		2	3	1	
BONITA WAY & OLD AUBURN RD	7	0.01	236		1	4		2	2	1	3					1		4		1	4	1	
GLEN TREE DR & OLD AUBURN RD	7	0.40	41			3	1	3	3			1	2				1			2	2		1
ANTELOPE RD & ANTELOPE RD	7	0.03	32			2	1	4	6				1					1		1	1	2	
SUMMERPLACE DR & ANTELOPE RD	7	0.05	37			2	2	3		1	2		2			1	1	2		1	2	2	
SUNRISE BLVD & SUNRISE WOODS DWY	7	-0.06	22				3	4	2	1	2		2					3	1		1		
AUBURN BLVD & CRIPPLE CREEK RD	7	-0.03	222		1	1	3	2			1	1	4			1		1		1	7		1
AUBURN BLVD & CEDAR DR	7	-0.03	46			3	2	2	2		2		3					1	1		1	2	
AUBURN BLVD & LOHSE WAY	7	-0.03	42			2	3	2	3		1		2			1		1		1	1	1	

Intersection	Crashes	Local CCR Differential[1]	EPDO[2]	*Fatal*	*Serious Injury*	*Other Visible Injury*	*Complaint of Pain*	*PDO*	Broadside	Sideswipe	Rear End	Head On	Hit Object	Overturned	Other	Pedestrian	Bicycle	Aggressive	Distracted	Impaired	Dark	Wet	Motorcycle
AUBURN BLVD & BAIRD WAY	7	-0.03	217		1	2		4	4		1	1	1					1		1	1		
AUBURN BLVD & SUN AVE	7	-0.04	17				2	5	4	2	1									3	1		
FLEETWOOD DR & MADISON AVE	6	5.42	16			1		5		1	1		4					1		2	3		
HIGHVIEW LN & MADISON AVE	6	-0.08	16				2	4	1		2		3					1			1		
DEWEY DR & DUNMORE AVE	6	-0.04	11				1	5	2	2			2							1	1		
OAKSIDE DR & GREENBACK LN	6	-0.08	21			1	1	4			4		2					4	1	1	2	1	
SAN PABLO DR & BURICH AVE	6	0.50	11				1	5	2	2	1		1					1		1	4		
FAIR OAKS BLVD & WOODLAKE HILLS DR	6	0.03	26			1	2	3	3	1	1						1	2		2	4	1	1
DONEGAL DR & AUBURN BLVD	6	-0.04	221		1	1	3	1	6													1	2
SYLVAN RD & CORONADO LN	6	0.03	201		1		1	4			1		4			1		1		3	3	1	
MARIPOSA AVE & PRINCE ST	6	0.98	25			2		4		1	1		2		2			3		2	5		1
VAN MAREN LN & CANDELABRA DR	6	0.02	36			1	4	1	1		3	2						3		1	2		
SUNRISE BLVD & VISTA RIDGE DR	6	-0.07	11				1	5	1	2	1		2					1			2	1	
POPLAR AVE & ANTELOPE RD	6	-0.06	40			3	1	2	1	1	4							3		1			
OAKWOOD LN & ANTELOPE RD	6	-0.06	26			1	2	3	1		4	1						3			1		
WACHTEL WAY & OLD AUBURN RD	6	0.01	31			1	3	2	5		1							3			3	1	
AUBURN BLVD & WALNUT DR	6	-0.05	11				1	5	2	1			1			1	1	1			2		
AUBURN BLVD & LINDEN AVE	6	-0.05	16				2	4	2		1		3					1			3	1	
FAIR OAKS BLVD & COLDANI ST	6	-0.01	206	1		1		4			1		4	1		1		2		3	1		2
FORBOROUGH DWY & ANTELOPE RD	5	-0.06	214		1	2		2	2	1	1						1	1			1		
FAIR OAKS BLVD & WELLES LN	5	-0.01	395		2	1		2					4			1				3	3		
UPLANDS WAY & MADISON AVE	5	-0.10	5					5	2		2		1					1		3	1		
GREENBACK LN & THE RENAISSANCE DWY	5	-0.09	26			1	2	2			2		3					2			3		
VILLAGE WAY & MADISON AVE	5	-0.10	220		1	2	1	1		1	2		2					4			1		
BIRDCAGE ST & MACY PLAZA DR	5	0.08	10				1	4		1	4							2		1	4	1	
MARIPOSA AVE & FARMGATE WAY	5	0.21	15				2	3	1		1	1	1				1	4	2	1			
SAN JUAN AVE & WESTGATE DR	5	-0.06	205		1		2	2	1			2	1			1					2		1
SAN JUAN AVE & LUCKY LN	5	-0.06	10				1	4		1	1		2		1			1		1	3	1	
SYLVAN RD & STODDARD LN	5	-0.07	24			2		3		1			4					1		3	4	1	

Intersection	Crashes	Local CCR Differential[1]	EPDO[2]	*Fatal*	*Serious Injury*	*Other Visible Injury*	*Complaint of Pain*	*PDO*	Broadside	Sideswipe	Rear End	Head On	Hit Object	Overturned	Other	Pedestrian	Bicycle	Aggressive	Distracted	Impaired	Dark	Wet	Motorcycle
SYLVAN RD & WOODSIDE DR	5	-0.07	30			2	1	2	1	1	1	1					1	1			1		
SUNRISE BLVD & TALL RIVER DR	5	-0.09	20			1	1	3		1	3		1					2		2			
SYLVAN RD & CIRCUIT DR	5	-0.07	15			1		4		2		2	1					1		1	3	1	
SYLVAN RD & SYLVAN VALLEY WAY	5	-0.07	20			1	1	3	2	1	1						1			1	1		
FRONTAGE RD & AUBURN BLVD	5	-0.07	25			1	2	2			3		2					2		1	1	2	
VAN MAREN LN & BRIDGEMONT WAY	5	-0.02	10				1	4	2		2				1			1		1	2		
VAN MAREN LN & MISTY CREEK DR	5	-0.02	15			1		4	1			1	2				1	1		2	3		
SUNRISE BLVD & SUNRISE OAKS DWY	5	-0.09	15				2	3		1	4							4			1		
TAD LN & OLD AUBURN RD	5	0.05	15				2	3	1	1	2		1					2		1		1	
AUBURN BLVD & PRATT AVE	5	-0.07	30			2	1	2	3		1		1					1	1	1	2	1	1
FORBOROUGH W DWY & ANTELOPE RD	5	-0.07	35			2	2	1	1	1	1		2					1		1	3		
COLOGNE WAY & ANTELOPE RD	5	-0.08	35			2	2	1		1	1		3					1	1	1	2	1	
BRIMSTONE DR & ZENITH DR	5	0.41	195		1			4		2		2					1	2		2	4		
SUNRISE BLVD & ARBORELLE DWY	5	-0.09	15			1		4	2		2		1					2		1	2	1	
SAN JUAN AVE & WELLS AVE	4	-0.09	14				2	2		2	2							3	1				
CELINE DR & KINGSWOOD DR	4	0.07	4					4		2			2					1		2	1		
FARMGATE WAY & BIRDCAGE VILLAGE DWY	4	0.89	23			2		2	2		1					1				1	2	2	
PRIMROSE DR & FARMGATE WAY	4	0.89	4					4	1	1			2							2	3		
BIRDCAGE ST & BIRDCAGE VILLAGE DWY	4	0.04	29			2	1	1		2	1	1						1				1	
SHADOW LN & SHADOW LN	4	0.48	4					4		2		2						3			1	1	
LONGFORD DR & GREENBACK LN	4	-0.10	14				2	2			4							4	1		1		
7532 GREENBACK LN DWY & GREENBACK LN	4	-0.10	9				1	3		1			2		1			2					
VAN MAREN LN & MERCEDES AVE	4	-0.06	204	1		1		2		2						1	1	1		1	2		
CREEKBED LN & AUBURN BLVD	4	-0.08	194		1			3	1		1		1				1				1		
SANTA CATARINA WAY & SAN SIMEON DR	4	0.32	9				1	3	2	1						1		1		1	3		
ROSEVILLE RD AND WHYTE AVE	4	0.01	23			2		2	1	1	1				1			1		1		1	1
FAIR OAKS BLVD & COPPERWOOD DR	4	-0.07	14			1		3	2	1		1								1	2		
SUNRISE BLVD & MCLIN WAY	4	-0.10	19			1	1	2			3		1					3			1	1	
TUPELO DR & GLENHURST WAY	4	0.34	19			1	1	2		1	1	1					1			2	2		

Intersection	Crashes	Local CCR Differential[1]	EPDO[2]	*Fatal*	*Serious Injury*	*Other Visible Injury*	*Complaint of Pain*	*PDO*	Broadside	Sideswipe	Rear End	Head On	Hit Object	Overturned	Other	Pedestrian	Bicycle	Aggressive	Distracted	Impaired	Dark	Wet	Motorcycle
MENKE WAY & OAK AVE	4	-0.05	14			1		3	1		1		2								3	1	
LOI LINDA LN & OLD AUBURN RD	4	-0.08	204		1	1		2	1		1		1				1	1			1		1
VAN MAREN LN & MARINVALE DR	4	-0.06	9				1	3	2					1			1	1		1	2		
LONDA VISTA MHP & LONDA VISTA MHP	4	0.89	194	1				3	1		1		1			1		1		2			
TUPELO DR & ANTELOPE PLAZA DWY	4	0.34	19			1	1	2			1	1	1			1			2	1	4		
ANTELOPE HILLS DWY & ANTELOPE RD	4	-0.09	9				1	3					3				1	1		2	3	2	
AUBURN BLVD & WATSON WAY	4	-0.09	9				1	3			1		3					1		1	4	1	
BRIMSTONE DR & LICHEN DR	4	-0.01	14			1		3	1		2						1	2					
SUMMERPLACE DR & CARMELWOOD DR	4	0.80	4					4	3	1								3			2		
AUBURN BLVD & OAK GROVE AVE	4	-0.09	14				2	2		2	2							1			1		
BUTTERNUT DR & LICHEN DR	4	0.29	14			1		3			1	1	1				1	2		1	2	1	
MARIPOSA AVE & TWIN OAKS AVE	4	0.25	14			1		3	1	1	1		1					1			1	1	
ROSEVILLE RD & BUTTERNUT DR	4	-0.13	29			2	1	1	4											1	1	1	
LINDA SUE WAY & MADISON AVE	3	-0.12	8				1	2	1		2							2					
VENTANA PL & MADISON AVE	3	-0.12	18			1	1	1			1		1				1	1			1		
SUNRISE BLVD & PEBBLE BEACH DR	3	-0.12	193		1			2			2		1					2				1	
BIRDCAGE ST & KINGSWOOD DR	3	-0.05	8				1	2		2			1					1			2		
AUBURN BLVD & IMPERIAL WAY	3	-0.09	8				1	2					2				1				2	2	
SHUPE DR & SPERRY DR	3	0.17	8				1	2	1		1				1			1					
DEWEY DR & GREENCREEK WAY	3	-0.11	22			2		1	1			1	1					1			2		
MARIPOSA AVE & RITA LOU WAY	3	0.02	13			1		2	1	1						1							
SHADOW LN & SHADOW LN	3	0.17	3					3		1	1		1					1					
BIRDCAGE CENTER DWY & GREENBACK LN	3	-0.12	3					3		2	1							1					
MARIPOSA AVE & WOODGLEN DWY	3	0.04	3					3	1		1		1								1		
DENTON WAY & SUN HILL DR	3	0.07	3					3		1	2									1	1		
VAN MAREN LN & DONEGAL DR	3	-0.10	3					3		1	1		1					2			1	1	
CHARWOOD LN & AUBURN BLVD	3	-0.08	203	1		1		1		1		1				1				1	1	1	
MARIPOSA AVE & SAN SIMEON DR	3	0.08	8				1	2	2		1							1		1	1	1	
FOUNTAIN SQUARE DR & WOODSIDE DR	3	-0.04	3					3			1		2					2			1	1	

Intersection	Crashes	Local CCR Differential[1]	EPDO[2]	*Fatal*	*Serious Injury*	*Other Visible Injury*	*Complaint of Pain*	*PDO*	Broadside	Sideswipe	Rear End	Head On	Hit Object	Overturned	Other	Pedestrian	Bicycle	Aggressive	Distracted	Impaired	Dark	Wet	Motorcycle
THALIA WAY & WOODSIDE DR	3	0.33	22			2		1		1			1				1				1		
SAYONARA DR & MAUANA WAY	3	0.14	3					3		1	1		1							2	2		
MING WAY & SAYONARA DR	3	0.25	3					3		1	2										3	1	
JANET LN & AUBURN BLVD	3	-0.11	8				1	2			1		2					1	1				
SYLVAN RD & SYLVAN CREEK CT	3	-0.11	3					3			3							1					
SUNRISE BLVD & HIGHLAND AVE	3	-0.12	3					3			1		2					1		1	1		
TROVITA WAY & WOODMORE OAKS DR	3	0.56	13			1		2		1			2					1			1		
VAN MAREN LN & CAMPFIRE WAY	3	-0.10	8				1	2	1		2							3			1		
SYLVAN RD & ALMONDWOOD AVE	3	-0.11	193		1			2				1	1			1		1		1	2	1	
VAN MAREN LN & WINLOCK AVE	3	-0.09	18			1	1	1		1	2							2		1	1		
SUNRISE BLVD & MICHIGAN DR	3	-0.11	18			1	1	1			2						1	2	1				
PLEASANT VIEW DR & OAK AVE	3	-0.10	8				1	2	1	1		1										1	
COBALT WAY & CALVIN DR	3	0.17	3					3	2				1					2					
OLD RANCH RD & OAK AVE	3	-0.07	198	1			1	1	2								1						1
SAINT PHILOMENA WAY & SAINT JEANNE WAY	3	0.52	3					3		3													
DEANTON CT & ANTELOPE RD	3	-0.11	3					3			2		1					3	1		1		
PEPPERCRESS CT & GARDENVINE AVE	3	1.03	18			1	1	1		1	2							1			1		
ASHMONT ST & STONEHAND AVE	3	0.52	3					3		2		1								1	1		
ZENITH DR & ZENITH DR	3	0.03	13				2	1	1		1				1			1		1			1
SUMMERPLACE DR & BLACKSTAR DR	3	0.54	22			2		1				1	1			1				2	1		
ROSSWOOD DR & GRAND OAKS BLVD	3	0.04	3					3	1	1			1							1	1		
CORAL OAK WAY & OLD AUBURN RD	3	-0.08	3					3	1		1		1					2			2		
WOODDALE WAY & OLD AUBURN RD	3	-0.08	18			1	1	1			2		1					2		1			
SUNRISE BLVD & OLIVIA LN	3	-0.11	3					3		2			1							1			
SUNRISE BLVD & ARBORELLE S DWY	3	-0.11	198		1		1	1	1		2									1	1		
ORELLE CREEK CT & OLD AUBURN RD	3	-0.09	198		1		1	1	1			1	1										
SUNRISE BLVD & EVA RETTA CT	3	-0.11	8				1	2			3							2			2		1
VILLAVIEW DR & OUTLOOK DR	3	0.33	3					3	1	1		1						2	2		1		
AUBURN BLVD & CHERRY GLEN AVE	3	-0.11	13			1		2	1				1				1			1			

Intersection	Crashes	Local CCR Differential[1]	EPDO[2]	*Fatal*	*Serious Injury*	*Other Visible Injury*	*Complaint of Pain*	*PDO*	Broadside	Sideswipe	Rear End	Head On	Hit Object	Overturned	Other	Pedestrian	Bicycle	Aggressive	Distracted	Impaired	Dark	Wet	Motorcycle
ROBIE WAY & PINE DR	3	0.52	193		1			2		1			1			1					1		
ROSEVILLE RD & WHITE AVE	3	0.02	13			1		2	1		1				1			1				1	

1. Local Critical Crash Rate Differential

2. Equivalent Property Damage Only Crashes

APPENDIX B

SEGMENT NETWORK SCREENING RESULTS

Facility	Limits	Crashes	Local CCR Differential[1]	EPDO[2]	*Fatal*	*Serious Injury*	*Other Visible Injury*	*Complaint of Pain*	*PDO*	Broadside	Sideswipe	Rear End	Head On	Hit Object	Overturned	Other	Pedestrian	Bicycle	Aggressive	Distracted	Impaired	Dark	Wet	Motorcycle
Arterials																								
SUNRISE BLVD	OLD AUBURN RD - ANTELOPE RD	**35**	6.12	163			9	8	18	6	6	13	1	3	1		1	4	12	2	3	12	2	3
GREENBACK LN	BIRDCAGE ST - SUNRISE BLVD	**20**	0.46	234		1	3	4	12	7	5	5		1		1	1		2		4	4		1
GREENBACK LN	SUNRISE BLVD - SUNRISE VISTA DR	**17**	0.57	391	1	1	2	5	8	9	2	4		2					2		4	2	1	
SAN JUAN AVE	SPERRY DR - GREENBACK LN	**17**	1.19	42			2	1	14	4	4	4		4				1	2		1	4	2	1
AUBURN BLVD	GREENBACK LN - CREEKBED LN	**16**	1.39	36			1	2	13	3	3	4	2	2			1	1	4		1	2		1
ANTELOPE RD	BRIMSTONE DR - PURSLANE WAY	**14**	0.46	69			2	7	5	1	2	10					1		9		3	7	1	
SUNRISE BLVD	GREENBACK LN - ARCADIA DR	**13**	0.39	33			1	2	10	1	5	4				2	1		4	1		2		1
SUNRISE BLVD	ARCADIA DR/SUN HILL DR - TALL RIVER DR	**13**	0.29	63			2	6	5	2	3	5		2				1	7		2	1	3	
SAN JUAN AVE	MADISON AVE - KALAMAZOO DR	**12**	1.13	230		1	5	1	5	6	3	2		1					3		1	2	1	2
SAN JUAN AVE	GREENBACK LN - SYLVAN RD	**12**	0.75	216		1	2	4	5	7	3	2							1			1		1
AUBURN BLVD	CARRIAGE DR - SYLVAN RD	**11**	0.56	36			1	3	7	4	3	3	1						3			2		1
GREENBACK LN	SHUPE DR - SAN JUAN AVE	**10**	0.09	35			1	3	6	1	3	2		2		1		1	2			1	1	1
MADISON AVE	SAN JUAN AVE - HIGHVIEW LN	**9**	-0.01	14				1	8	3	2	3		1					4	1		1		
SUNRISE BLVD	MACY PLAZA DR - SUNRISE MALL	**9**	0.19	44			2	3	4	1	1	3		3			1		5		2	2	1	
ANTELOPE RD	ORANGE DR - DEANTON CT	**9**	0.18	34			2	1	6			1		7		1			1	1	4	5		
SUNRISE BLVD	OAK AVE - SUNRISE OAKS DWY	**8**	0.05	28				4	4	1	1	4		1				1	5			1	1	
SUNRISE BLVD	ANTELOPE RD - SUNRISE WOODS DWY	**8**	0.32	198	1		1	3	3		2	3					2	1	2	1	1	2		1
GREENBACK LN	MARIPOSA AVE - BURICH AVE	**7**	-0.01	32			1	3	3		3	4							5			2		
GREENBACK LN	DESIMONE LN - PARKOAKS DR	**7**	-0.10	17			1		6		2	1		4					2		1	2	1	
SYLVAN RD	ALMONDWOOD AVE - OLD AUBURN RD	**7**	0.27	32			1	3	3	1	1	2		1				2	2			1	1	1
AUBURN BLVD	LINDEN AVE - N CITY LIMIT	**7**	0.79	22				3	4	3	1			2				1			2	2		
SUNRISE BLVD	MADISON AVE - ALTA SUNRISE DR	**6**	-0.14	26			1	2	3	2	1	1				1	1		2			1	1	
GREENBACK LN	WILKINS WAY - MARIPOSA AVE	**6**	-0.12	184		1	1	1	3		2	1		2			1		2	1	1		1	
GREENBACK LN	SUNRISE VISTA DR - SUNRISE VISTA DR	**6**	0.03	36			2	2	2	2		1	2					1	1		2	2		
SUNRISE BLVD	LARWIN DR - HIGHLAND AVE	**6**	-0.11	30			2	1	3		1	1		4					3		2	2	1	
ANTELOPE RD	MARIPOSA AVE - FORBOROUGH W DWY	**5**	-0.12	39			3	1	1	1	2	1		1					3		1	1	3	1
ANTELOPE RD	LICHEN DR - BRIMSTONE DR	**5**	-0.16	169		1			4		2	3							2		1	1	1	1
FAIR OAKS BLVD	GREENBACK LN - WELLES LN	**4**	-0.05	14			1		3			1		3					2		1	2		1

Facility	Limits	Crashes	Local CCR Differential[1]	EPDO[2]	*Fatal*	*Serious Injury*	*Other Visible Injury*	*Complaint of Pain*	*PDO*	Broadside	Sideswipe	Rear End	Head On	Hit Object	Overturned	Other	Pedestrian	Bicycle	Aggressive	Distracted	Impaired	Dark	Wet	Motorcycle
GREENBACK LN	INDIAN RIVER DR - MATHENY WAY	**4**	-0.26	19			1	1	2		3			1										1
SUNRISE BLVD	HIGHLAND AVE - WOODMORE OAKS DR	**4**	-0.26	9				1	3		1	2		1					2			2		
SUNRISE BLVD	SUNRISE TERRACE LN - SUNGARDEN DR	**4**	-0.17	4					4		3			1					1		1	1		
AUBURN BLVD	OLD AUBURN RD - HACKNEY WAY	**4**	-0.23	19			1	1	2		1	1	1			1			2	1		3	1	1
ANTELOPE RD	PURSLANE WAY - GARDEN GATE DR	**4**	-0.25	23			2		2		1	2		1					1		2	1		
MADISON AVE	MARIPOSA AVE - UPLANDS WAY	**4**	-0.25	28			2	1	1			1	1	2					1		1	2		
SUNRISE BLVD	KINGSWOOD DR - MACY PLAZA DR	**3**	-0.32	8				1	2			3							3			1		
SUNRISE BLVD	SUNRISE MALL - GREENBACK LN	**3**	-0.36	13				2	1		1						2							
AUBURN BLVD	IMPERIAL WAY - SHADOW LN	**3**	-0.23	3					3			1		2					1					
GREENBACK LN	PARKOAKS DR - LONGFORD DR	**3**	-0.30	8				1	2			2		1					1		1	1		
GREENBACK LN	BINET DR - BROOKTREE DR	**3**	-0.34	3					3					3					1		1	2		
AUBURN BLVD	RAINTREE DR - CARRIAGE DR	**3**	-0.24	18			1	1	1	2	1											1		
OLD AUBURN RD	MARIPOSA AVE - BONITA WAY	**3**	-0.11	8				1	2			3							3			1	1	
OLD AUBURN RD	SYLVAN RD - LITTLE OL CT	**3**	-0.22	13			1		2			1		2					1	1	1	1	2	
ANTELOPE RD	SAYBROOK DR - SUMMERPLACE DR	**3**	-0.32	13			1		2			1		2					1			1		
OLD AUBURN RD	ARGO DR - OAKWOOD HILLS CIR	**3**	0.00	18			1	1	1					1	1			1	1		1	1		
AUBURN BLVD	TWIN OAKS AVE - LINDEN AVE	**3**	-0.20	22			2		1	1	1							1						
Collectors																								
BIRDCAGE ST	BIRDCAGE VILLAGE/HOBBY LOBBY DWY - GREENBACK LN	**6**	3.24	26			1	2	3	3	1	2							2	1		2		
LICHEN DR	ANTELOPE RD - BRIMSTONE DR	**4**	0.78	24			1	2	1			2					2					1	1	
SUNRISE VISTA DR	SUNRISE E WAY - LEGACY PARK	**3**	5.15	13				2	1	1	1		1									1	1	
Local																								
ROSEVILLE RD	BUTTERNUT RD - WHYTE AVE	**4**	-0.12	23			2		2		1			2	1				2					
BRAYTON AVE	BROOKTREE PARK - KERMIT LN	**4**	8.70	14			1		3			2		2					3			2	1	1
TWIN OAKS AVE	AUBURN BLVD - HOLLY DR	**3**	1.35	3					3	1				2							1	1	1	

1. Local Critical Crash Rate Differential

2. Equivalent Property Damage Only Crashes

APPENDIX C

SUMMARY OF PROGRAMS, POLICIES, AND PRACTICES FOR THE CITY OF CITRUS HEIGHTS

Topic	Current Status	Recommendation
Complete Streets Policy		
Safe Routes to School (SRTS) Funding		
Traffic Safety Education		
Program for Reviewing Crash Activity		
Crossroads Database Updates		
Speed Limits		
City Enforcement on Bicycle Rules		
Sobriety / Seatbelt Checks		
City Law Enforcement Coordination with Adjacent Jurisdictions		

Topic	Current Status	Recommendation
Traffic Calming Policies		
Speed Surveys		
Transit Vehicles Accommodation of Bicycles		
Coordination of Transit Providers and City Staff		
Bicycle and Pedestrian Master Plans		
General Plan Addresses Multimodal Traffic Safety		
Inventory of Bicycle, Pedestrian, Parking, and other facilities		
Traffic Safety Audit Program		
Coordination between Local Health Agencies and City Transportation Planning		
Coordination between Emergency Response and City Transportation Planning		

Topic	Current Status	Recommendation
Resident Feedback		
Maintenance of Roadway Surfaces		
Transportation Demand Management (TDM) Policies/Programs		
Use of overlays, specific plans, redevelopment areas to encourage infill development to reduce VMT		
Regular Collection of Traffic / Bicycle / Pedestrian Volumes		
School Zone Safety		
Program for Installing Wayfinding Signage		
Warrants for Traffic Control Devices		
Crosswalk Safety		

APPENDIX D

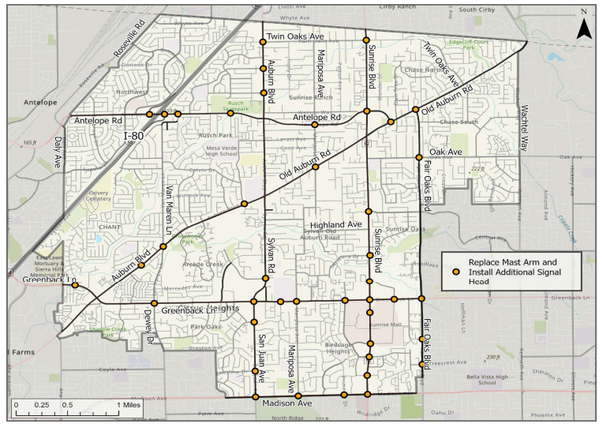
PROJECT SHEETS

Citrus Heights Local Roadway Safety Plan (2026)

Systemic Signalized Intersections

Location: 42 Signalized intersections (100 Signal Heads, 88 Mast Arms)

Agency Name: City of Citrus Heights
Contact Name: Molly Poole
E-mail: MPoole@citrusheights.net



Crashes on intersection approaches with mast arms to be replaced

Applicable Crashes	771
Local CCR Differential	-
Equivalent Property Damage Only	6032
Fatal	2
Severe Injury	23
Other Visible Injury	125
Complaint of Pain	209
Property Damage Only	412

Project Intersections

1	BRIMSTONE DR AND ANTELOPE RD	27	SUNRISE BLVD AND ARCADIA DR
2	SUNRISE BLVD AND ANTELOPE RD	28	INDIAN RIVER DR AND GREENBACK LN
3	SAN JUAN AVE AND MADISON AVE	29	SYLVAN RD AND UNNAMED RD
4	MARIPOSA AVE AND MADISON AVE	30	HALIFAX ST AND AUBURN BLVD
5	PRIMROSE DR AND MADISON AVE	31	VAN MAREN LN AND AUBURN BLVD
6	SUNRISE BLVD AND MADISON AVE	32	SUNRISE BLVD AND ARCADE LAKE LN
7	FAIR OAKS BLVD AND TREECREST AVE	33	SUNRISE BLVD AND WOODMORE OAKS DR
8	FAIR OAKS BLVD AND SUNRISE EAST WAY	34	CARRIAGE DR AND AUBURN BLVD
9	FAIR OAKS BLVD AND GREENBACK LN	35	MARIPOSA AVE AND OLD AUBURN RD
10	MARIPOSA AVE AND ANTELOPE RD	36	FAIR OAKS BLVD AND OAK AVE
11	LAUPPE LN AND ANTELOPE RD	37	ANTELOPE RD AND OLD AUBURN RD
12	ANTELOPE RD AND I 80 EB RAMPS	38	FAIR OAKS BLVD AND OLD AUBURN RD
13	GARDEN GATE DR AND ANTELOPE RD	39	AUBURN BLVD AND GRAND OAKS BLVD
14	SUNRISE BLVD AND TWIN OAKS AVE	40	AUBURN BLVD AND ROLLINGWOOD BLVD
15	SUNRISE BLVD AND ALTA SUNRISE DR	41	AUBURN BLVD AND TWIN OAKS AVE
16	SAN JUAN AVE AND WILLOWCREEK DR	42	SUNRISE BLVD AND SUNRISE MALL DWY
17	SUNRISE BLVD AND KINGSWOOD DR		
18	SUNRISE BLVD AND MACY PLAZA DR		
19	SUNRISE BLVD AND GREENBACK LN		
20	SAN JUAN AVE AND SPERRY DR		
21	WILKINS WAY AND GREENBACK LN		
22	BIRDCAGE ST AND GREENBACK LN		
23	SUNRISE VISTA DR AND GREENBACK LN		
24	DEWEY DR AND GREENBACK LN		
25	SAN JUAN AVE AND GREENBACK LN		
26	MARIPOSA AVE AND GREENBACK LN		

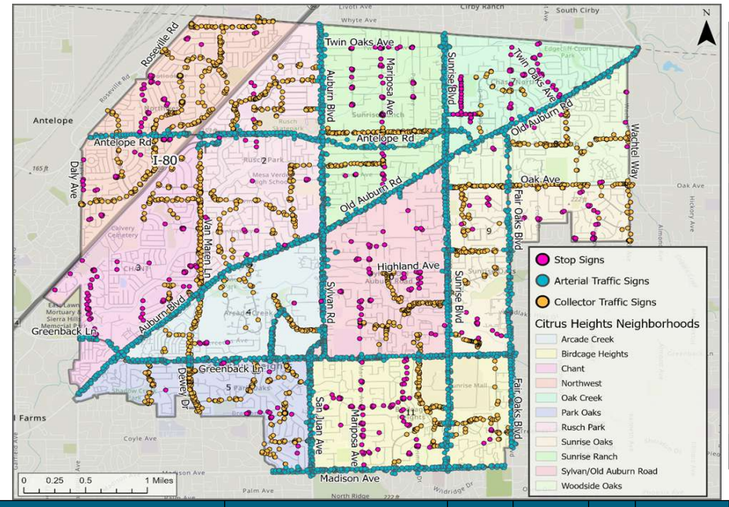
NOTES	COLLISION TYPE	RECOMMENDATION	LOCAL ROADWAY SAFETY MANUAL (LRSM) COUNTERMEASURE	LRSM #	Expected Life (Years)	CMF	CALTRANS FUNDING	NUMBER OF CRASHES (2020-2024)		NUMBER OF HISTORIC CRASHES REDUCED	10-YEAR CRASH REDUCTION ESTIMATE	CRASH SEVERITY COST (2026 $)	10-YEAR CRASH REDUCTION BENEFIT (2026 $)	10-YEAR CRASH REDUCTION BENEFIT (2026 $)	QUANTITY/ NUMBER OF UNITS	UNIT COST (2026 $)	COST ESTIMATE (2026 $)	BENEFIT/COST
Crashes which occurred on intersection approaches with proposed traffic signal/mast arm improvements		Install supplemental signal heads; replace existing traffic signal mast arms	Improve signal hardware: lenses, back-plates with retroreflective borders, mounting, size, and number	SI02	10	0.85	0.9	FATAL	2	0.3	0.60	$ 2,162,000	$ 1,297,200	$ 32,574,300	Lump Sum	$ 5,382,520	$ 5,382,520	**6.1**
								SEVERE	23	3.45	6.90	$ 2,162,000	$ 14,917,800					
								OTHER VISIBLE	125	18.75	37.50	$ 193,000	$ 7,237,500					
								COMPLAINT OF PAIN	209	31.35	62.70	$ 110,000	$ 6,897,000					
								PROPERTY DAMAGE ONLY	412	61.8	123.60	$ 18,000	$ 2,224,800					

Total Cost	**$ 5,382,520**
Contingency	**$ 1,614,756**
Contingency + Cost	**$ 6,997,276**
Benefit	**$ 32,574,300**
Benefit Cost Ratio:	**4.7**

Systemic Roadway Signage Improvements

Location: Systemic: City Arterials and Collectors

Agency Name: City of Citrus Heights
Contact Name: Molly Poole
E-mail: MPoole@citrusheights.net



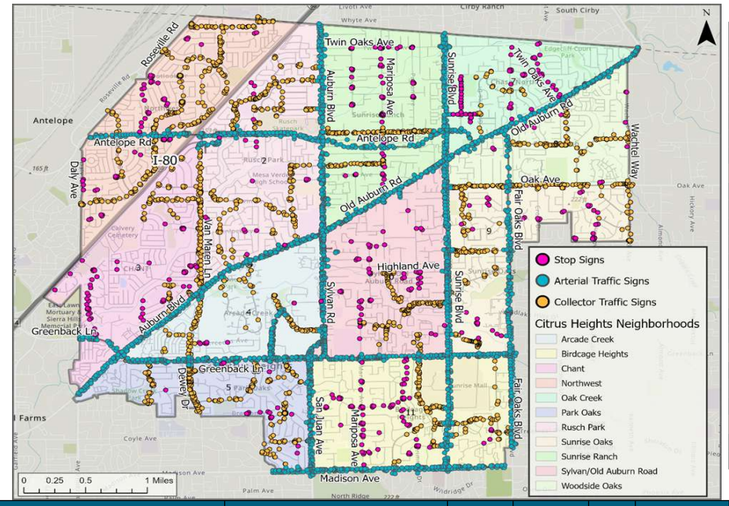
	Arterial Segments	Arterial Unsignalized Intxs	Arterial Signalized Intxs	Collector Segments	Collector Unsignalized Intxs	Collector Signalized Intxs	All crashes at stop control intx crashes
Crashes	408	867	1537	36	361	2	116
Local CCR Differential	-	-	-	-	-	-	-
Equivalent Property Damage Only	4211	11109	10913	541	2627	2	1331
Fatal	2	5	2	0	4	0	0
Severe Injury	12	42	40	2	5	0	5
Other Visible Injury	69	157	239	6	53	0	23
Complaint of Pain	92	193	401	13	53	0	8
Property Damage Only	233	470	855	15	246	2	80
Crash Type							
Broadside	75	190	322	6	72	0	
Sideswipe	88	120	260	7	66	1	
Rear End	118	225	590	9	76	1	
Head On	10	36	63	5	27	0	
Hit Object	75	219	160	6	83	0	
Other	9	9	37	0	13	0	
Non-Motorist Crashes							
Pedestrian	15	30	48	3	10	0	
Bicycle	18	38	57	0	14	0	
Contributing Factors							
Aggressive	128	246	822	12	100	1	
Distracted	11	27	44	2	13	1	
Impaired	52	122	134	4	52	1	
Crash Conditions							
Dark	9	44	62	1	14	1	
Wet	30	79	128	4	23	0	

NOTES	COLLISION TYPE	RECOMMENDATION	LOCAL ROADWAY SAFETY MANUAL (LRSM) COUNTERMEASURE	LRSM #	Expected Life (Years)	CMF	CALTRANS FUNDING	NUMBER OF CRASHES (2020-2024)		NUMBER OF HISTORIC CRASHES REDUCED	10-YEAR CRASH REDUCTION BENEFIT (2026 $)	CRASH SEVERITY COST (2026 $)	10-YEAR CRASH REDUCTION BENEFIT (2025 $)	10-YEAR CRASH REDUCTION BENEFIT (2026 $)	QUANTITY/ NUMBER OF UNITS	UNIT COST (2026 $)	COST ESTIMATE (2026 $)	BENEFIT/COST
Stop Controlled Intersections (225)	All crashes	Replace existing stop signs at local road intersections with larger or retroreflective with reflective strips on the posts	Install/upgrade larger or additional stop signs or other intersection warning/regulatory signs	NS08	10	0.85	0.9	FATAL	0	0	0.00	$ 2,978,000	$ -	$ 6,494,700	500 Signs	$ 1,000	$ 500,000	**13.0**
								SEVERE	5	0.75	1.50	$ 2,978,000	$ 4,467,000					
								OTHER VISIBLE	23	3.45	6.90	$ 193,000	$ 1,331,700					
								COMPLAINT OF PAIN	8	1.2	2.40	$ 110,000	$ 264,000					
								PROPERTY DAMAGE ONLY	80	12	24.00	$ 18,000	$ 432,000					
Arterial Segments	All	Replace existing regulatory and warning signs along arterial roadway segments with larger or retroreflective	Install/Upgrade signs with new fluorescent sheeting (regulatory or warning)	R22	10	0.85	0.9	FATAL	2	0.3	0.60	$ 3,440,000	$ 2,064,000	$ 22,737,300	711 Signs	$ 500	$ 355,500	**64.0**
								SEVERE	12	1.8	3.60	$ 3,440,000	$ 12,384,000					
								OTHER VISIBLE	69	10.35	20.70	$ 193,000	$ 3,995,100					
								COMPLAINT OF PAIN	92	13.8	27.60	$ 110,000	$ 3,036,000					
								PROPERTY DAMAGE ONLY	233	34.95	69.90	$ 18,000	$ 1,258,200					
Arterial Unsignalized Intersections	All	Replace existing regulatory and warning signs at unsignalized arterial intersections with larger or retroreflective	Install/upgrade larger or additional stop signs or other intersection warning/regulatory signs	NS08	10	0.85	0.9	FATAL	5	0.75	1.50	$ 2,978,000	$ 4,467,000	$ 59,987,100	1689 Signs	$ 500	$ 844,500	**71.0**
								SEVERE	42	6.3	12.60	$ 2,978,000	$ 37,522,800					
								OTHER VISIBLE	157	23.55	47.10	$ 193,000	$ 9,090,300					
								COMPLAINT OF PAIN	193	28.95	57.90	$ 110,000	$ 6,369,000					
								PROPERTY DAMAGE ONLY	470	70.5	141.00	$ 18,000	$ 2,538,000					
Arterial Signalized Intersections	All	Replace existing regulatory and warning signs at signalized arterial intersections with retroreflective	-	-	-	-	-	FATAL	-	-	-	$ 2,162,000	-	$ -	1613 Signs	$ 500	$ 806,500	-
								SEVERE	-	-	-	$ 2,162,000	-					
								OTHER VISIBLE	-	-	-	$ 193,000	-					
								COMPLAINT OF PAIN	-	-	-	$ 110,000	-					
								PROPERTY DAMAGE ONLY	-	-	-	$ 18,000	-					
																	Combined Arterial BCR	**41.2**

Systemic Roadway Signage Improvements

Location: Systemic: City Arterials and Collectors

Agency Name: City of Citrus Heights
Contact Name: Molly Poole
E-mail: MPoole@citrusheights.net



	Arterial Segments	Arterial Unsignalized Intxs	Arterial Signalized Intxs	Collector Segments	Collector Unsignalized Intxs	Collector Signalized Intxs	All crashes at stop control intx crashes
Crashes	408	867	1537	36	361	2	116
Local CCR Differential	-	-	-	-	-	-	-
Equivalent Property Damage Only	4211	11109	10913	541	2627	2	1331
Fatal	2	5	2	0	4	0	0
Severe Injury	12	42	40	2	5	0	5
Other Visible Injury	69	157	239	6	53	0	23
Complaint of Pain	92	193	401	13	53	0	8
Property Damage Only	233	470	855	15	246	2	80
Crash Type							
Broadside	75	190	322	6	72	0	
Sideswipe	88	120	260	7	66	1	
Rear End	118	225	590	9	76	1	
Head On	10	36	63	5	27	0	
Hit Object	75	219	160	6	83	0	
Other	9	9	37	0	13	0	
Non-Motorist Crashes							
Pedestrian	15	30	48	3	10	0	
Bicycle	18	38	57	0	14	0	
Contributing Factors							
Aggressive	128	246	822	12	100	1	
Distracted	11	27	44	2	13	1	
Impaired	52	122	134	4	52	1	
Crash Conditions							
Dark	9	44	62	1	14	1	
Wet	30	79	128	4	23	0	

NOTES	COLLISION TYPE	RECOMMENDATION	LOCAL ROADWAY SAFETY MANUAL (LRSM) COUNTERMEASURE	LRSM #	Expected Life (Years)	CMF	CALTRANS FUNDING	NUMBER OF CRASHES (2020-2024)		NUMBER OF HISTORIC CRASHES REDUCED	10-YEAR CRASH REDUCTION BENEFIT (2026 $)	CRASH SEVERITY COST (2026 $)	10-YEAR CRASH REDUCTION BENEFIT (2025 $)	10-YEAR CRASH REDUCTION BENEFIT (2026 $)	QUANTITY/ NUMBER OF UNITS	UNIT COST (2026 $)	COST ESTIMATE (2026 $)	BENEFIT/COST
Collector Segments	All	Replace existing regulatory and warning signs along collector roadway segments with larger or retroreflective	Install/Upgrade signs with new fluorescent sheeting (regulatory or warning)	R22	10	0.85	0.9	FATAL	0	0	0.00	$ 3,440,000	$ -	$ 2,921,400	255 Signs	$ 500	$ 127,500	**22.9**
								SEVERE	2	0.3	0.60	$ 3,440,000	$ 2,064,000					
								OTHER VISIBLE	6	0.9	1.80	$ 193,000	$ 347,400					
								COMPLAINT OF PAIN	13	1.95	3.90	$ 110,000	$ 429,000					
								PROPERTY DAMAGE ONLY	15	2.25	4.50	$ 18,000	$ 81,000					
Collector Unsignalized Intersections	All	Replace existing regulatory and warning signs at unsignalized collector intersections with larger or retroreflective	Install/upgrade larger or additional stop signs or other intersection warning/regulatory signs	NS08	10	0.85	0.9	FATAL	4	0.6	1.20	$ 2,978,000	$ 3,573,600	$ 14,186,700	1899 Signs	$ 500	$ 949,500	**14.9**
								SEVERE	5	0.75	1.50	$ 2,978,000	$ 4,467,000					
								OTHER VISIBLE	53	7.95	15.90	$ 193,000	$ 3,068,700					
								COMPLAINT OF PAIN	53	7.95	15.90	$ 110,000	$ 1,749,000					
								PROPERTY DAMAGE ONLY	246	36.9	73.80	$ 18,000	$ 1,328,400					
Collector Signalized Intersections	All	Replace existing regulatory and warning signs at signalized collector intersections with retroreflective	-	-	-	-	-	FATAL	-	-	-	$ 2,162,000	-	$ -	27 Signs	$ 500	$ 13,500	-
								SEVERE	-	-	-	$ 2,162,000	-					
								OTHER VISIBLE	-	-	-	$ 193,000	-					
								COMPLAINT OF PAIN	-	-	-	$ 110,000	-					
								PROPERTY DAMAGE ONLY	-	-	-	$ 18,000	-					
																Combined Collector BCR		**15.7**

Total Cost	**$ 3,597,000**
Contingency	**$ 1,079,100**
Contingency + Cost	**$ 5,176,100**
Benefit	**$ 106,327,200**
Benefit Cost Ratio:	**20.5**

Corridor Improvements

Location: Old Auburn Rd between Auburn Boulevard/Sylvan Rd and Gary Oaks Dr

Agency Name: City of Citrus Heights
Contact Name: Molly Poole
E-mail: MPoole@citrusheights.net



	Old Auburn Rd at:				
	Sylvan Rd/ Auburn Blvd	Mariposa Ave	Sunrise Blvd	Antelope Rd	Fair Oaks Blvd
Applicable Crashes	12	1	9	0	0
Local CCR Differential	-	-	-	-	-
Equivalent Property Damage Only	37	1	153	0	0
Fatal	0	0	0	0	0
Severe Injury	0	0	1	0	0
Other Visible Injury	1	0	2	0	0
Complaint of Pain	3	0	1	0	0
Property Damage Only	8	1	5	0	0
Crash Type					
Broadside	0	0	0	0	0
Sideswipe	4	0	2	0	0
Rear End	4	1	1	0	0
Head On	0	0	0	0	0
Hit Object	2	0	3	0	0
Other	0	0	0	0	0
Non-Motorist Crashes					
Pedestrian	0	0	1	0	0
Bicycle	2	0	2	0	0
Contributing Factors					
Aggressive	3	1	4	0	0
Distracted	1	0	0	0	0
Impaired	0	0	0	0	0
Crash Conditions					
Dark	0	0	1	0	0
Wet	0	0	1	0	0

NOTES	COLLISION TYPE	RECOMMENDATION	LOCAL ROADWAY SAFETY MANUAL (LRSM) COUNTERMEASURE	LRSM #	Expected Life (Years)	CMF	CALTRANS FUNDING	NUMBER OF CRASHES (2020-2024)		NUMBER OF HISTORIC CRASHES REDUCED	10-YEAR CRASH REDUCTION ESTIMATE	CRASH SEVERITY COST (2026 $)	10-YEAR CRASH REDUCTION BENEFIT (2026 $)	10-YEAR CRASH REDUCTION BENEFIT (2026 $)	QUANTITY/ NUMBER OF UNITS	UNIT COST (2026 $)	COST ESTIMATE (2026 $)	BENEFIT/COST
-	Crashes along Old Auburn Blvd	Coordinate the traffic signals along Old Auburn Rd between Sylvan Auburn Blvd and Fair Oaks Blvd (5 intersections)	improve signal timing (coordination, phases, red, yellow, or operation)	SI03	10	0.85	0.5	FATAL	0	0	0.00	$ 2,162,000	$ -	$ 1,631,400	1 Lump Sum	$ 35,000	$ 35,000	**46.6**
								SEVERE	1	0.15	0.30	$ 2,162,000	$ 648,600					
								OTHER VISIBLE	8	1.2	2.40	$ 193,000	$ 463,200					
								COMPLAINT OF PAIN	11	1.65	3.30	$ 110,000	$ 363,000					
								PROPERTY DAMAGE ONLY	29	4.35	8.70	$ 18,000	$ 156,600					
Auburn Blvd/ Sylvan Rd	Crashes related to the RT Slip Lane	Signalize the channelized right turn movements Enhanced Pavement Markings Square up the SE Corner	Improve signal hardware: lenses, back-plates with retroreflective borders, mounting, size, and number	SI02	10	0.85	0.9	FATAL	0	0	0.00	$ 2,162,000	$ -	$ 200,100	1 Lump Sum	$ 72,000	$ 72,000	**2.8**
								SEVERE	0	0	0.00	$ 2,162,000	$ -					
								OTHER VISIBLE	1	0.15	0.30	$ 193,000	$ 57,900					
								COMPLAINT OF PAIN	3	0.45	0.90	$ 110,000	$ 99,000					
								PROPERTY DAMAGE ONLY	8	1.2	2.40	$ 18,000	$ 43,200					
Sunrise Blvd		Signalize the channelized right turn movements Striping/Civil improvements associated with Old Auburn Rd road diet	Improve signal hardware: lenses, back-plates with retroreflective borders, mounting, size, and number	SI02	10	0.85	0.9	FATAL	0	0	0.00	$ 2,162,000	$ -	$ 824,400	1 Lump Sum	$ 270,000	$ 270,000	**3.1**
								SEVERE	1	0.15	0.30	$ 2,162,000	$ 648,600					
								OTHER VISIBLE	2	0.3	0.60	$ 193,000	$ 115,800					
								COMPLAINT OF PAIN	1	0.15	0.30	$ 110,000	$ 33,000					
								PROPERTY DAMAGE ONLY	5	0.75	1.50	$ 18,000	$ 27,000					
Mariposa Ave	SI02 applied to mast arm improvements for separate project	Signalize the channelized right turn movements	Improve signal hardware: lenses, back-plates with retroreflective borders, mounting, size, and number	SI02	10	0.85	0.9	FATAL	0	0	0.00	$ 2,162,000	$ -		1 Intersection Corner	$ 20,000	$ 20,000	**0.0**
								SEVERE	0	0	0.00	$ 2,162,000	$ -					
								OTHER VISIBLE	0	0	0.00	$ 193,000	$ -					
								COMPLAINT OF PAIN	0	0	0.00	$ 110,000	$ -					
								PROPERTY DAMAGE ONLY	1	0.15	0.30	$ 18,000	$ 5,400					
Antelope Rd	No crashes identified related to the slip lane. Crashes occurred within influence area of proposed median	Install raised median along Antelope Rd Signalize channelized right turn movement (no calculated benefit)	Improve signal hardware: lenses, back-plates with retroreflective borders, mounting, size, and number	SI11 SI02	10	0.75	0.9	FATAL	0	0	0.00	$ 2,162,000	$ -	$ 366,000	1 Lump Sum	$ 30,000	$ 30,000	**12.2**
								SEVERE	0	0	0.00	$ 2,162,000	$ -					
								OTHER VISIBLE	2	0.5	1.00	$ 193,000	$ 193,000					
								COMPLAINT OF PAIN	2	0.5	1.00	$ 110,000	$ 110,000					
								PROPERTY DAMAGE ONLY	7	1.75	3.50	$ 18,000	$ 63,000					
Fair Oaks Blvd		Install raised median along Antelope Rd west of the intersection Signalize channelized right turn movement (no calculated benefit)	Improve signal hardware: lenses, back-plates with retroreflective borders, mounting, size, and number	SI02	10	0.75	0.9	FATAL	0	0	0.00	$ 2,162,000	$ -	$ 293,000	1 Intersection Corner	$ 26,250	$ 26,250	**11.2**
								SEVERE	0	0	0.00	$ 2,162,000	$ -					
								OTHER VISIBLE	0	0	0.00	$ 193,000	$ -					
								COMPLAINT OF PAIN	5	1.25	2.50	$ 110,000	$ 275,000					
								PROPERTY DAMAGE ONLY	2	0.5	1.00	$ 18,000	$ 18,000					

Corridor Improvements

Location: Old Auburn Rd between Auburn Boulevard/Sylvan Rd and Gary Oaks Dr

Agency Name: City of Citrus Heights
Contact Name: Molly Poole
E-mail: MPoole@citrusheights.net



	Old Auburn Rd at: Sylvan Rd/ Auburn Blvd	Mariposa Ave	Sunrise Blvd	Antelope Rd	Fair Oaks Blvd
Applicable Crashes	12	1	9	0	0
Local CCR Differential	-	-	-	-	-
Equivalent Property Damage Only	37	1	153	0	0
Fatal	0	0	0	0	0
Severe Injury	0	0	1	0	0
Other Visible Injury	1	0	2	0	0
Complaint of Pain	3	0	1	0	0
Property Damage Only	8	1	5	0	0
Crash Type					
Broadside	0	0	0	0	0
Sideswipe	4	0	2	0	0
Rear End	4	1	1	0	0
Head On	0	0	0	0	0
Hit Object	2	0	3	0	0
Other	0	0	0	0	0
Non-Motorist Crashes					
Pedestrian	0	0	1	0	0
Bicycle	2	0	2	0	0
Contributing Factors					
Aggressive	3	1	4	0	0
Distracted	1	0	0	0	0
Impaired	0	0	0	0	0
Crash Conditions					
Dark	0	0	1	0	0
Wet	0	0	1	0	0

NOTES	COLLISION TYPE	RECOMMENDATION	LOCAL ROADWAY SAFETY MANUAL (LRSM) COUNTERMEASURE	LRSM #	Expected Life (Years)	CMF	CALTRANS FUNDING	NUMBER OF CRASHES (2020-2024)		NUMBER OF HISTORIC CRASHES REDUCED	10-YEAR CRASH REDUCTION ESTIMATE	CRASH SEVERITY COST (2026 $)	10-YEAR CRASH REDUCTION BENEFIT (2026 $)	10-YEAR CRASH REDUCTION BENEFIT (2026 $)	QUANTITY/ NUMBER OF UNITS	UNIT COST (2026 $)	COST ESTIMATE (2026 $)	BENEFIT/COST
Between Antelope Road and Fair Oaks Blvd	All	Vertical Curve correction between Antelope Road and Fair Oaks Blvd	Flatten crest vertical curve	R18	20	0.75	0.9	FATAL	0	0	0.00	$ 2,162,000	$ -	$ 838,500	1 Lump Sum	$ 600,000	$ 600,000	**1.4**
								SEVERE	0	0	0.00	$ 2,162,000	$ -				
								OTHER VISIBLE	5	1.25	2.50	$ 193,000	$ 482,500					
								COMPLAINT OF PAIN	5	1.25	2.50	$ 110,000	$ 275,000					
								PROPERTY DAMAGE ONLY	9	2.25	4.50	$ 18,000	$ 81,000					
Between Sylvan Rd and Gary Oaks Blvd	Bicycle Crashes	Install Buffered Bike Lane	Install Separated Bike Lanes	R34PB	20	0.55	0.9	FATAL	0	0	0.00	$ 2,162,000	$ -	$ 1,509,300	19750 LF	$ 2	$ 39,500	**38.2**
								SEVERE	0	0	0.00	$ 2,162,000	$ -				
								OTHER VISIBLE	5	2.25	4.50	$ 193,000	$ 868,500					
								COMPLAINT OF PAIN	5	2.25	4.50	$ 110,000	$ 495,000					
								PROPERTY DAMAGE ONLY	9	4.05	8.10	$ 18,000	$ 145,800					
Old Auburn Rd and Tiara Way	Pedestrian and Bicycle Crashes	Install RRFB, Pedestrian Median Island, and Hi-Visibility Crosswalk	Install Rectangular Rapid Flashing Beacon (RRFB)	NS24PB	20	0.65	0.9	FATAL	0	0	0.00	$ 2,162,000	$ -	$ -	1 Lump Sum	$ 47,000	$ 47,000	**0.0**
								SEVERE	0	0	0.00	$ 2,162,000	$ -				
								OTHER VISIBLE	0	0	0.00	$ 193,000	$ -				
								COMPLAINT OF PAIN	0	0	0.00	$ 110,000	$ -				
								PROPERTY DAMAGE ONLY	0	0	0.00	$ 18,000	$ -				

Total Cost	**$ 1,139,750**
Contingency	**$ 341,925**
Contingency + Cost	**$ 1,481,675**
Benefit	**$ 5,662,700**
Benefit Cost Ratio:	**3.8**