

# City of Citrus Heights Pedestrian Master Plan



May 2016

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# Citrus Heights Pedestrian Master Plan

May 2016

Prepared by Alta Planning + Design for the City of Citrus Heights



*In partnership with*



# Acknowledgements

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# Table of Contents

<b>Chapter 1: Introduction.....</b>	<b>1-1</b>
Purpose of the Plan .....	1-1
Benefits of Improving Walking Conditions .....	1-2
Overview of the Plan.....	1-3
<b>Chapter 2: Vision, Goals, &amp; Objectives .....</b>	<b>2-1</b>
Vision.....	2-1
Goals & Objectives .....	2-1
Performance Measures .....	2-2
<b>Chapter 3: Citrus Heights NOW.....</b>	<b>3-1</b>
Setting .....	3-1
Activity Generators .....	3-5
Commuter Travel .....	3-11
Pedestrian-Involved Collisions.....	3-12
Engineering: Pedestrian Network Inventory .....	3-18
Education Programs.....	3-24
Encouragement Programs .....	3-25
Evaluation Programs.....	3-25
Enforcement Programs .....	3-25
<b>Chapter 4: Why? Walking Needs .....</b>	<b>4-1</b>
Pedestrian Demand.....	4-1
Public Workshops .....	4-3
Community Survey .....	4-4
Stakeholder Interviews .....	4-6
Needs Analysis Summary .....	4-8
<b>Chapter 5: Projects .....</b>	<b>5-1</b>
Priority Pedestrian Corridor Network .....	5-2
Infrastructure Recommendations.....	5-4
Projects and Studies.....	5-35
<b>Chapter 6: Programs.....</b>	<b>6-1</b>
Education .....	6-2
Encouragement .....	6-5
Enforcement.....	6-7
Evaluation .....	6-8
<b>Chapter 7: Setting the Course.....</b>	<b>7-1</b>
Project Evaluation Strategy .....	7-2
Cost Estimate Assumptions.....	7-3
Plan Project Cost Estimates .....	7-3
Priority Projects and Programs .....	7-4
Potential Funding Sources .....	7-12
<b>Chapter 8: Monitoring, Maintenance and Security .....</b>	<b>8-1</b>
Monitoring.....	8-2
Maintenance .....	8-3
Security .....	8-3
<b>Appendix A: Community Input .....</b>	<b>A-1</b>
<b>Appendix B: Needs Analysis.....</b>	<b>B-1</b>
<b>Appendix C: Recommended Changes to Codes and Standard Drawings .....</b>	<b>C-1</b>
<b>Appendix D: Plan and Policy Reivew .....</b>	<b>D-1</b>
<b>Appendix E: Projects List.....</b>	<b>E-1</b>
<b>Appendix F: Focus Area Plan Memo .....</b>	<b>F-1</b>

## Table of Figures

Figure 3-1: Land Use .....	3-2
Figure 3-2: Age in Citrus Heights vs Sacramento County .....	3-3
Figure 3-3: Vehicles Available by Household .....	3-3
Figure 3-4: Population Density.....	3-4
Figure 3-5: Pedestrian Attractors and Generators .....	3-6
Figure 3-6: Select 2012 Means of Transportation to Work .....	3-11
Figure 3-7: Walking Commuters in Citrus Heights .....	3-11
Figure 3-8: Pedestrian-Involved Collisions Over Time .....	3-12
Figure 3-9: Pedestrian-Involved Collisions .....	3-13
Figure 3-10: Age of Pedestrian Collision Victims vs Overall Population .....	3-14
Figure 3-11: Pedestrian Injury Severity .....	3-14
Figure 3-12: Fatalities by Victim Mode.....	3-15
Figure 3-13: Party at Fault .....	3-15
Figure 3-14: Pedestrian Action Preceding Collision.....	3-16
Figure 3-15: Pedestrian Network Inventory .....	3-19
Figure 3-16: Crosswalk Markings.....	3-21
Figure 3-17: Curb Ramp Types .....	3-22
Figure 4-1: Demand Composite.....	4-2
Figure 4-2: Reasons for Walking .....	4-4
Figure 4-3: Factors that Discourage Walking.....	4-5
Figure 5-1: Pedestrian Priority Corridor Map .....	5-3
Figure 5-2: Example Walkways (Los Altos, CA).....	5-4
Figure 5-3: Example Walkways.....	5-6
Figure 5-4: Typical Sidewalk.....	5-6
Figure 5-5: Recommended Path, Walkway, and Sidewalk Projects .....	5-9
Figure 5-6: Focus Area Plan Overview .....	5-11
Figure 5-7: Focus Area Plan – Auburn 1.....	5-12
Figure 5-8: Focus Area Plan – Auburn 2.....	5-13
Figure 5-9: Focus Area Plan – Greenback 1 .....	5-14
Figure 5-10: Focus Area Plan – Greenback 2.....	5-15
Figure 5-11: Focus Area Plan – Greenback 3.....	5-16
Figure 5-12: Focus Area Plan – Old Auburn 1 .....	5-17
Figure 5-13: Focus Area Plan – Old Auburn 2.....	5-18
Figure 5-14: Focus Area Plan – Old Auburn 3.....	5-19
Figure 5-15: Focus Area Plan – Old Auburn 4.....	5-20
Figure 5-16: Focus Area Plan – Sunrise 1 .....	5-21
Figure 5-17: Focus Area Plan – Sunrise 2.....	5-22
Figure 5-18: Focus Area Plan – Sunrise 3.....	5-23
Figure 5-19: Focus Area Plan – Sunrise 4.....	5-24
Figure 5-20: Focus Area Plan – Sunrise 5.....	5-25
Figure 5-21: Continental Crosswalk Markings.....	5-28
Figure 5-22: High-Visibility Crosswalk Upgrades .....	5-30
Figure 5-23: New Crosswalks at Controlled Intersections .....	5-32
Figure 5-24: Pedestrian Countdown Signal Head.....	5-33
Figure 5-25: Pedestrian Friendly Signal Timing .....	5-33

Figure 5-26: Advance Stop Bar ..... 5-34  
 Figure 5-27: Advance Yield Lines ..... 5-34  
 Figure 5-28: Speed Bump Striping..... 5-35  
 Figure 5-29: Projects and Studies..... 5-38

## Table of Tables

Table 2-1: Performance Measures ..... 2-2  
 Table 3-1: Citrus Heights Population ..... 3-3  
 Table 3-2: Parks..... 3-5  
 Table 3-3: Public Schools ..... 3-7  
 Table 3-4 : Private Schools ..... 3-7  
 Table 3-5: Top Private Employers..... 3-8  
 Table 3-6: Healthcare Providers ..... 3-9  
 Table 3-7: Senior Living Facilities ..... 3-9  
 Table 3-8: 2012 Means of Transportation to Work ..... 3-11  
 Table 3-9: Top Collision Corridors ..... 3-12  
 Table 3-10: Top Collision Intersections ..... 3-12  
 Table 3-11: Primary Collision Factors ..... 3-16  
 Table 3-12: Neighborhood Associations ..... 3-18  
 Table 3-13: Roadway Mileage by Street Type ..... 3-18  
 Table 5-1: Priority 1 Sidewalk/Walkway Projects..... 5-7  
 Table 5-2: Priority 1 Paths ..... 5-26  
 Table 5-3: Priority 1 High Visibility Crosswalk Upgrades..... 5-29  
 Table 5-4: Priority 1 New Crosswalks at Controlled Intersections ..... 5-31  
 Table 5-5: Priority 1 New Marked Crossings at Controlled Intersection Studies ..... 5-35  
 Table 5-6: Priority 1 New Marked Crossings at Uncontrolled Location Studies ..... 5-36  
 Table 5-7: Priority 1 LPI Study Intersections ..... 5-36  
 Table 5-8: Priority 1 Areas of Traffic Concern..... 5-37  
 Table 7-1: Project Evaluation Criteria..... 7-2  
 Table 7-2: Unit Cost Assumptions ..... 7-3  
 Table 7-3: Cost Estimate Summary by Project Type ..... 7-3  
 Table 7-4: Cost Estimate Summary by Priority ..... 7-4  
 Table 7-5: Priority 1 Projects on Local Streets by Type Summary ..... 7-4  
 Table 7-6: Priority 1 Projects on Local Streets ..... 7-5  
 Table 7-7: Priority 1 Projects on Collector Streets by Type Summary ..... 7-6  
 Table 7-8: Priority 1 Projects on Collector Streets ..... 7-6  
 Table 7-9: Priority 1 Projects on Arterial Streets by Type Summary ..... 7-9  
 Table 7-10: Priority 1 Projects on Arterial Streets..... 7-9  
 Table 7-11: Priority 1 Paths Summary ..... 7-11  
 Table 7-12: Priority 1 Paths ..... 7-11  
 Table 8-1: Maintenance Cost Assumptions ..... 8-3



# Chapter 1: Introduction

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*Walking is fundamental; it is not just how we move around but a primary form of exercise and social activity. Whether taking transit, walking the dog, or heading to the front door after parking the car, nearly everyone is a pedestrian for some portion of their day.*

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## Purpose of the Plan

The City of Citrus Heights recognizes the value of walking and developed this Pedestrian Master Plan to establish itself as a more walkable community.

The Pedestrian Master Plan provides a broad vision, strategies, and actions for improving the pedestrian environment in the unique neighborhoods of Citrus Heights. This Plan's recommendations are built on and consistent with local and regional goals and policies for increasing the number of people who walk in Citrus Heights. These goals include specific recommendations and design guidance for streets, sidewalks, and shared-use paths.

While walking is the least expensive mode of transportation, building and maintaining a high quality pedestrian infrastructure network requires comprehensive planning and long term funding. The recommendations in this Plan will help the City reach goals adopted in the General Plan by creating an environment and programs that support walking for transportation and recreation, encourage fewer trips by car, and support active lifestyles.

The Pedestrian Master Plan is a blueprint for the City to improve the pedestrian environment, secure funds dedicated to pedestrian safety and livable communities, and increase the number of walking trips.



## Benefits of Improving Walking Conditions

By planning for a more walkable city, Citrus Heights can address several interrelated challenges including helping alleviate traffic, improving air quality, creating a sense of community, increasing public health, and offer economic benefits to the community.

The City can also support walking as a safe and comfortable way to reach destinations for residents and visitors who must walk as their only transportation option.

### Traffic and air quality

Each time residents in Citrus Heights choose to walk instead of drive, vehicles are removed from the road. As Citrus Heights becomes more inviting to pedestrians, increasing numbers of work, school, shopping, and recreational trips can be made on foot. Cumulatively, this pattern can reduce traffic in some areas and improve air quality as emissions from motor vehicles are reduced.

### Quality of Life

Fostering conditions where walking is accepted and encouraged increases a community's livability. In areas where people walk, there are more opportunities for chance meetings. People have the opportunity to talk and interact with the people they meet.

Pedestrian activity also produces more "eyes on the street," or people looking out for one another. In some neighborhoods, this may make people feel more safe walking.

## Public Health

In recent years, public health professionals and urban planners have become increasingly aware that the impacts of vehicles on public health extend far beyond asthma and other respiratory conditions caused by air pollution. Dependency on vehicles has also decreased the amount of peoples' physical activity. Walking can improve public health by incorporating physical activity into everyday transportation.

A lack of physical activity ranks as the third-highest risk factor for death in the United States, behind only tobacco and alcohol.<sup>1</sup> Each additional hour spent in a car each day corresponds with a six percent increase in the risk of obesity.<sup>2</sup>

In response to these trends, the public health profession now advocates for walkable communities as an effective way to encourage active lifestyles.

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*Every \$1 spent on building non-motorized transportation facilities returns \$2.94 in medical benefits.<sup>3</sup>*

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<sup>1</sup> Mokdad, A., Marks, J., Stroup, D., & Gerberding, J. (2004). Actual Causes of Death in the United States, 2000. *Journal of the American Medical Association* 291:1238 – 1245.

<sup>2</sup> Goldberg, D., Chapman, J., Frank, L., Kavage, S., & McCann, B. (2007). New data for a new era: A summary of the SMARTRAQ findings. *Livable Communities Coalition*.

<sup>3</sup> Wang, G., Macera, C.A., Scudder-Soucie, B., Schmid, T., Pratt, M., & Buchner, D. (2008). A cost-benefit analysis of physical activity using bike/pedestrian trails. *Health Promotion Practice* 9: 426-433.

## Aging in Place

As adults age, walking provides an opportunity for low-impact exercise to be incorporated into their daily routine. Walking access to grocery stores, banks, and other amenities also helps older adults retain their independence after they can no longer drive themselves.

## Economic Benefits

With the fluctuating price of gasoline, walking can be a more economically reliable and efficient mode of transportation than driving a vehicle. According to 2013 data from AAA and the U.S. Census, ownership of one motor vehicle accounts for nearly 19 percent of a typical household's income annually.<sup>4,5</sup> As Citrus Heights becomes more walkable, residents who choose to travel on foot instead of by car can save money on gas, car maintenance, and repairs.

Walkable neighborhoods benefit homeowners, whether they walk or drive. Homes in walkable neighborhoods are valued between \$4,000 and \$34,000 higher than comparable homes in neighborhoods with average walkability.<sup>6</sup>

## Transportation Choices

The percent of Americans 16-24 years old with a driver's license peaked in 1983, and is now at its lowest rate since the early 1960's. Millennials are eschewing driving in favor of walking, bicycling, and public transit, and consistently express a preference for walkable, urban neighborhoods over suburban forms that demand automobile ownership.<sup>7</sup> As seniors age and lose their ability to drive, walkable communities can support their independence and prevent them from becoming isolated in their homes.

<sup>4</sup> <http://newsroom.aaa.com/2013/04/cost-of-owning-and-operating-vehicle-in-u-s-increases-nearly-two-percent-according-to-aaas-2013-your-driving-costs-study/>

<sup>5</sup> <https://www.census.gov/content/dam/Census/library/publications/2014/acs/acsbr13-02.pdf>

<sup>6</sup> Cortright, J. (2009). Walking the Walk: How walkability raises housing values in U.S. cities. CEOs for Cities.

<sup>7</sup> <http://www.calpirg.org/news/caf/new-report-shows-mounting-evidence-millennials%E2%80%99-shift-away-driving>

## Overview of the Plan

This Plan contains the following chapters:

Chapter 1: Introduction

Chapter 2: Vision, Goals and Objectives

Chapter 3: Citrus Heights Now

Chapter 4: Why? Walking Needs

Chapter 5: Project Recommendations

Chapter 6: Program Recommendations

Chapter 7: Setting the Course – Implementation

Chapter 8: Monitoring and Maintenance



*Old Auburn Trail*

## Chapter 2: Vision, Goals, & Objectives

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*This Pedestrian Master Plan will guide the development and implementation of the City's walking environment for years to come. The foundation for recommendations and implementation strategies are directly informed by this Plan's Vision, Goals and Objectives.*

A **vision** is a broad inspirational statement for the desired future state.

**Goals** are broad statements of what the City and residents hope to achieve over time.

**Objectives** are specific, action oriented statements that mark progress towards the goal.

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### Vision

*The City of Citrus Heights envisions a walking environment that supports active living, provides for safe and healthy transportation, embraces the unique character in its neighborhoods, and enables people of all ages and abilities to access jobs, recreation, school, shopping and transit by walking as a part of daily life.*

### Goals & Objectives

#### Goal 1: Improve walking safety.

*Objective 1.A:* Reduce the number of pedestrian related collisions, injuries and fatalities.

*Objective 1.B:* Reduce the severity of pedestrian related collisions.

*Objective 1.C:* Create an environment where people feel safe walking in Citrus Heights.

#### Goal 2: Increase and improve pedestrian access for all ages and abilities throughout the community.

*Objective 2.A:* Plan, design, construct, and manage a Complete Streets transportation network that accommodates the needs of all mobility types, users and ability levels (GP Goal 29).

*Objective 2.B:* Work to eliminate barriers to pedestrian travel.

*Objective 2.C:* Implement the City's ADA Transition Plan.

*Objective 2.D:* Require pedestrian improvements identified in this Plan to be installed throughout the City. Consider adopting an ordinance that establishes a financing mechanism and in-lieu options for new development where applicable.

*Objective 2.E:* Complete 20 percent of the sidewalk and walkway mileage recommended in this Plan by 2020.

#### Goal 3: Increase awareness and value of walking through encouragement, education, enforcement and evaluation programs.

*Objective 3.A:* Identify and support educational opportunities for those who drive, bicycle and walk, including their rights and responsibilities.

*Objective 3.B:* Identify and support encouragement opportunities to promote walking as an affordable and healthy mode of travel throughout the community.

*Objective 3.C:* Identify and support enforcement opportunities to support improved safety.

*Objective 3.D:* Identify and support evaluation programs that measure how well Citrus Heights is progressing towards meeting this Plan's goals.

#### Goal 4: Develop a walking environment that supports a vibrant community.

*Objective 4.A:* Create vibrant public spaces that encourage walking.

*Objective 4.B:* Create vibrant pedestrian friendly street environments in commercial and retail areas.

*Objective 4.C:* Create pedestrian priority corridors that serve as 'walksheds' to direct pedestrians to these safer, convenient paths between key destinations.

## Performance Measures

Performance measures monitor the progress made towards achieving the goals of this Pedestrian Master Plan. The measures outlined in **Table 2-1** should be reviewed and updated on a regular basis. The performance measures include target dates. The 2025 targets assume a 10 year time frame from Plan adoption and a reasonable expectation of ability to meet the measure.

Table 2-1: Performance Measures

GOAL	PERFORMANCE MEASURE
<b><i>Goal 1: Improve walking safety.</i></b>	Measure 1.A: Reduce the number of pedestrian related collisions, injuries and fatalities by 50 percent from 2015 levels by 2025.  Measure 1.B: Provide routine maintenance of pedestrian network facilities, as funding and priorities allow.
<b><i>Goal 2: Increase and improve pedestrian access for all ages and abilities to community destinations.</i></b>	Measure 2. A: Increase the number of walking trips by 100% as measured by community survey by 2025.
<b><i>Goal 3: Increase awareness and value of walking through encouragement, education, enforcement and evaluation programs.</i></b>	Measure 3.A: In partnership with partners, develop and implement a traffic safety education program by 2020.  Measure 3.B: In partnership with partners, develop and implement program(s) to encourage walking by 2020.  Measure 3.C: In partnership with the Police Department, develop and implement traffic safety enforcement with a focus on pedestrian violations program by 2020.  Measure 3.D: Develop and implement an evaluation program to survey the community at intervals no greater than five years on pedestrian facilities and programs by 2017.
<b><i>Goal 4: Develop a walking environment that supports a vibrant community.</i></b>	Measure 4.A: Adopt changes to zoning code that identify improvements to the walking environment.

## Chapter 3: Citrus Heights NOW

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*The pedestrian experience in Citrus Heights is influenced by a wide variety of factors, from the pedestrian infrastructure available to the perceived or real safety and comfort of walking.*

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### Setting

Located in northeast Sacramento County, Citrus Heights lies just south of Placer County. The community is 12 miles northeast of Sacramento on Interstate 80.

The community expanded steadily in the 1900s, after the construction of Highway 40 in 1912 provided convenient highway access to San Francisco. Additional residents and visitors spurred a flurry of new business opportunities in the region, and historic fruit farming declined after 1930.

McClellan Air Force Base in nearby North Highlands was a critical supply center for Pacific Rim forces during World War II, and many families settled in the region. Postwar industries led to another period of rapid growth for Citrus Heights.

Although it began as a suburb to Sacramento, Citrus Heights soon established a thriving business community of its own, anchored by the Sunrise Mall—a regional shopping center established in the 1970s. Today, the community continues to be a prominent commercial hub for the region with commercial centers such as Sunrise MarketPlace, Stock Ranch, and Auburn Boulevard.

### Land Use

Parcels in Citrus Heights are organized among four broad categories of land use: Business/Commercial uses, Residential, Open Space, and Public uses, as shown in **Figure 3-1**.

Business and Commercial uses are clustered along a few primary corridors, including Interstate 80, Auburn Boulevard, Greenback Lane, Madison Avenue, and Sunrise Boulevard.

Residential uses cover the majority of the city. Most of this is low density residential, with some areas zoned as 'very low density residential' in the northeast part of the community. Medium and high density residential areas are located near commercial hubs, and primarily in the southern part of Citrus Heights.

Open space and public uses are distributed throughout the city.

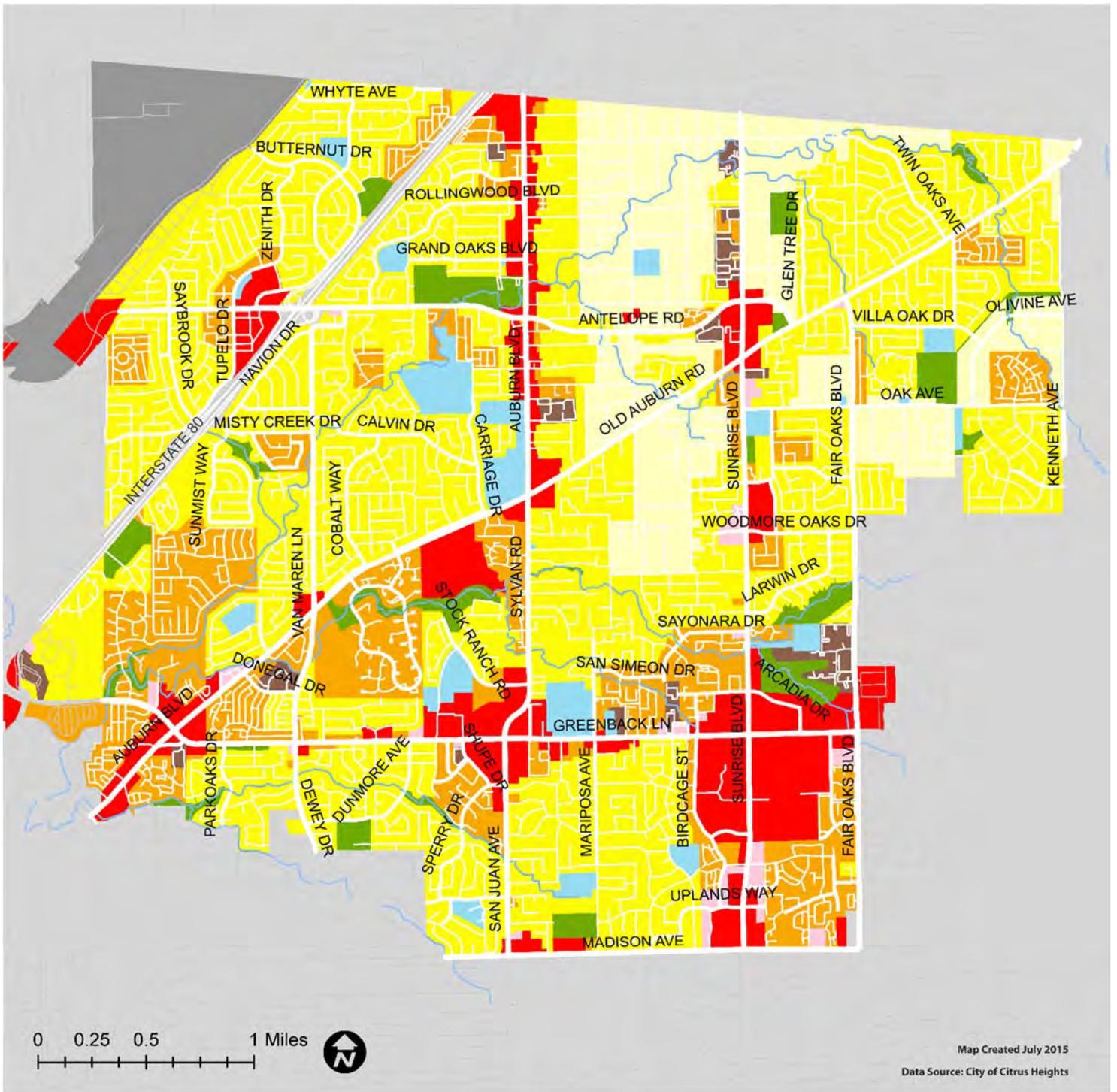


Figure 3-1: Land Use

## Demographics

### POPULATION

Citrus Heights is the third-largest city in Sacramento County, with a 2010 population of approximately 83,301 according to the U.S. Census Bureau. This represents a slight decline from 2000, although recent estimates show growth as of 2013 (see **Table 3-1**). Population densities in Citrus Heights range from 4,000 to 9,000 people per square mile, as shown in **Figure 3-4**.

Table 3-1: Citrus Heights Population

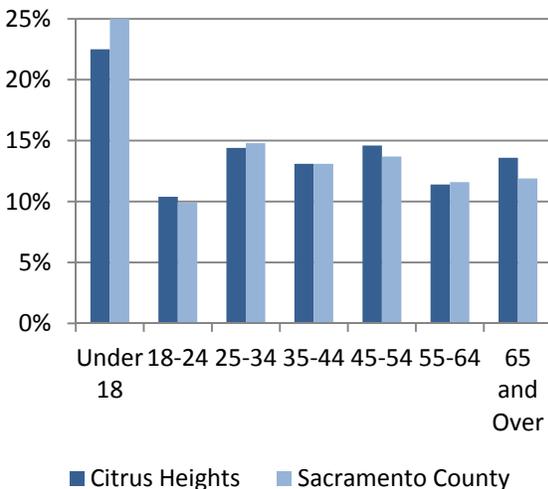
YEAR	POPULATION
1990	107,439*
2000	85,071
2010	83,301
2013	84,614**

\*Population of CDP, prior to incorporation

\*\*American Community Survey 2013 3-year estimate

### AGE

Citrus Heights has a larger percentage of residents over 65 years of age compared to Sacramento County at 13.6 and 11.9 percent respectively, as shown in **Figure 3-2**. Citrus Heights also has a smaller youth population, at 22.5 percent compared to 25 percent in Sacramento County.



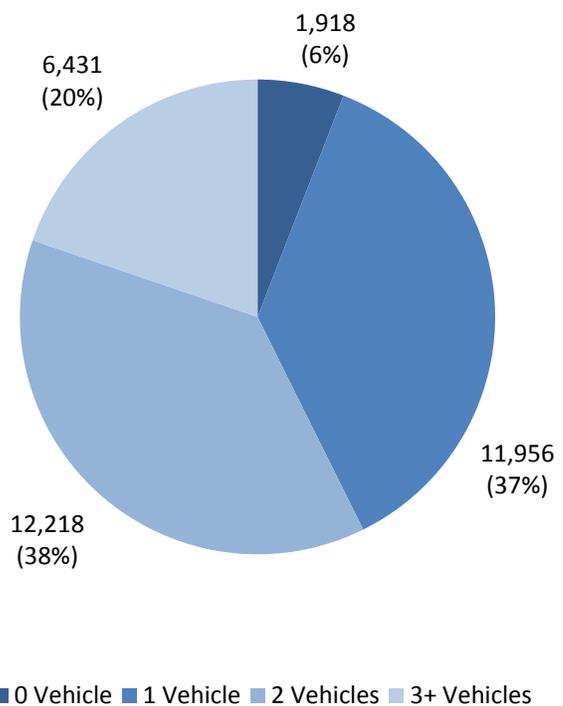
Source: American Community Survey 2013 3-year estimate

Figure 3-2: Age in Citrus Heights vs Sacramento County

### VEHICLES AVAILABLE

Households without a vehicle available must rely on other modes of transportation for their daily travel needs. As shown in **Figure 3-3**, 1,918 households in Citrus Heights do not have access to a vehicle (6 percent of households).

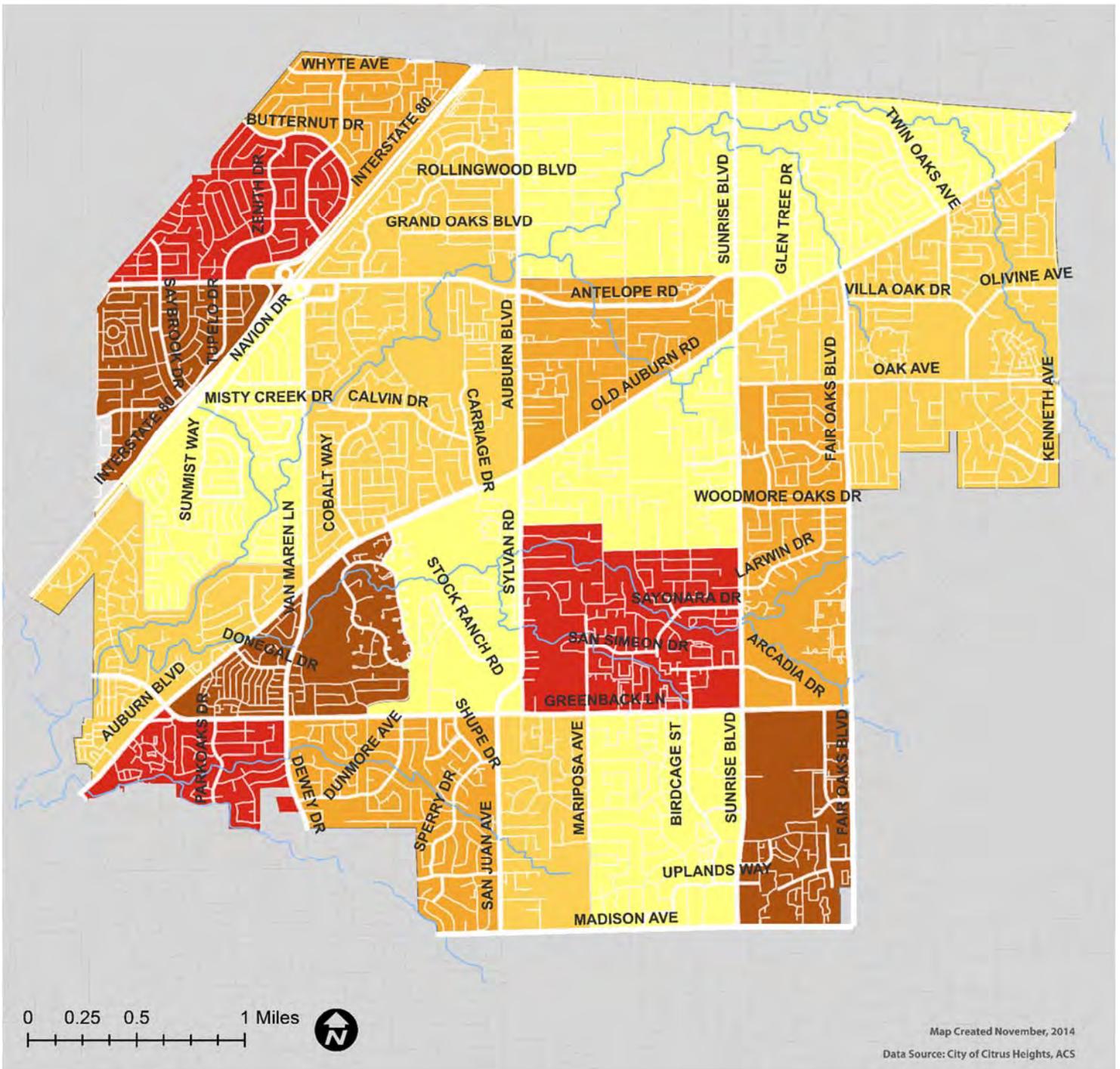
Based on the Citrus Heights average household size of 2.5 people, this means as many as 4,795 individuals rely on walking, bicycling, transit, or other modes of transportation.



Source: American Community Survey 2013 3-year estimate

Figure 3-3: Vehicles Available by Household

Nationwide, 9.2 percent of households do not have access to a vehicle, and 34 percent have access to one vehicle.



People per  
Square Mile by  
Census Tract



Figure 3-4: Population Density

## Activity Generators

Throughout Citrus Heights, there are a variety of destinations that may attract pedestrian traffic. Improvements to the pedestrian network near these destinations can improve safety and have great potential to increase walking in Citrus Heights. A map of all activity generators can be seen in **Figure 3-5**.

## Parks and Community Centers

Citrus Heights has 26 park facilities, listed in **Table 3-2**, including playgrounds, picnic areas, sport facilities, golf courses, and swimming pools that serve as recreational destinations for the community.

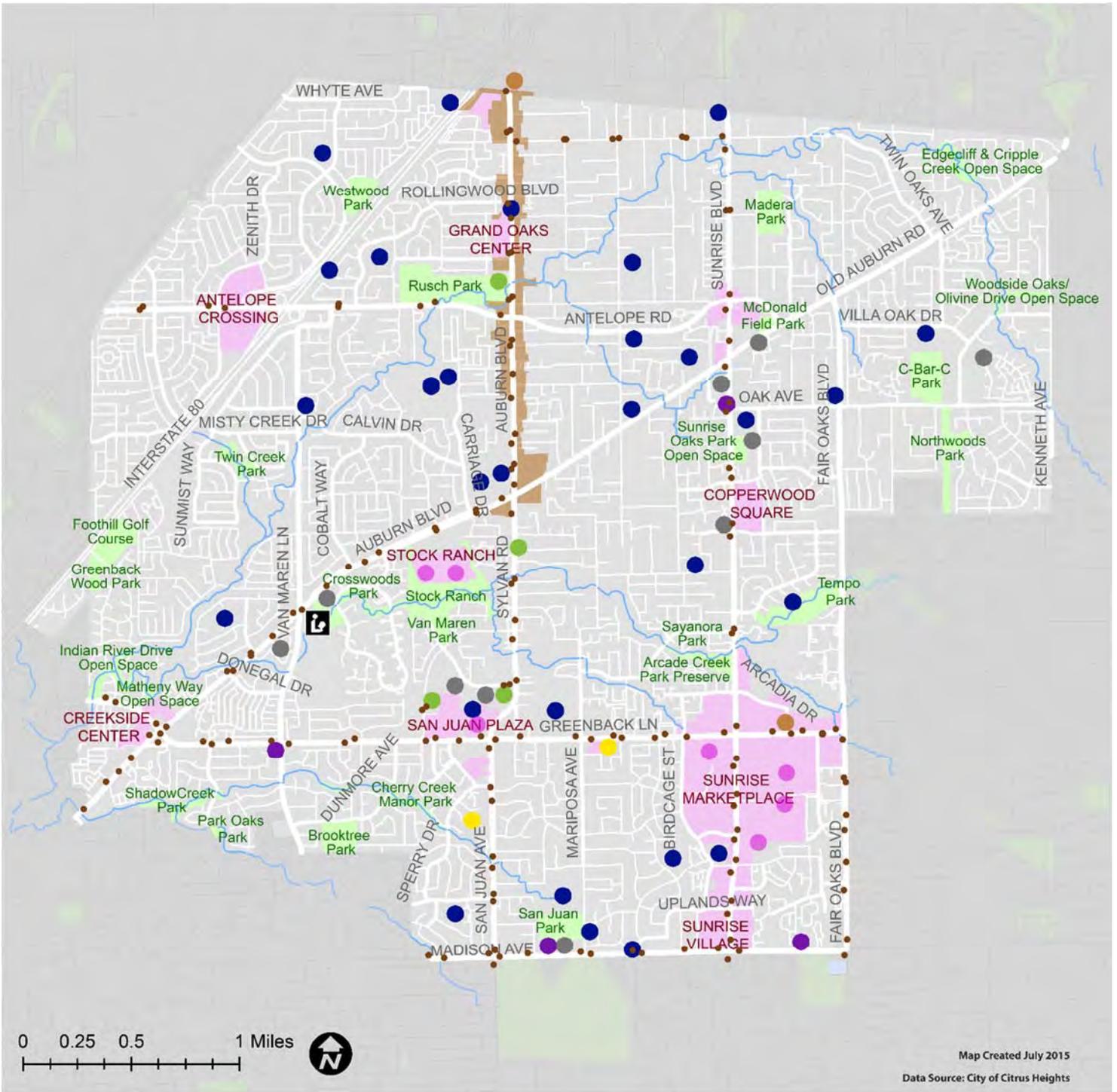
There are also three community centers in Citrus Heights for local gatherings—Citrus Heights Community Center, Rusch Park Community Center, and Sylvan Community Center—and a community garden.

Table 3-2: Parks

CITRUS HEIGHTS PARKS	
Arcade Creek Park Preserve	Northwoods Park
Brooktree Park	Park Oaks Park
C-Bar-C Park	Rusch Community Park
Cherry Creek Manor Park	San Juan Park
Citrus Heights Community Garden	Sayonara Park
Crosswoods Park	Shadowcreek Park
Edgecliff Court/Cripple Creek Open Space	Stock Ranch
Foothill Golf Course	Sunrise Oaks Park
Greenback Woods Park	Tempo Park
Indian River Drive Open Space	Twin Creeks Park
Matheny Way Open Space	Van Maren Park
Madera Park	Westwood Park
McDonald Field Park	Woodside Oaks/Olivine Drive Open Space



Citrus Heights Community Center  
 Photo from: <http://www.citrusheights.net/>



- Senior Living Facilities
- Bus Stops
- Shopping Centers
- Healthcare Facilities
- Transit Centers
- Parks/Open Space
- Community Centers and Gardens
- Schools
- Auburn Blvd Plan Area
- Top Private Employers
- Public Services
- Libraries

Figure 3-5: Pedestrian Attractors and Generators

## Schools

Schools are a major attractor, bringing families to school sites every weekday during the school year. Schools also function as community centers where families travel to on evenings and weekends for events and youth sports.

Nearly 7,000 students are enrolled in the 13 public schools in Citrus Heights, representing a large population of potential pedestrians (**Table 3-3**). There are an additional 18 private schools in the community, listed in **Table 3-4**.

Table 3-3: Public Schools

NAME	ENROLLMENT
<b>Elementary Schools</b>	
Arlington Heights	308
Cambridge Heights	364
Carriage Drive	458
Citrus Heights*	371
Grand Oaks	345
Kingswood	627
Mariposa Avenue	436
Skycrest	475
<b>Middle Schools</b>	
Lichen K-8	595
Sylvan Middle School**	670
Woodside K-8	597
<b>High Schools</b>	
Mesa Verde	944
San Juan	725

\*Citrus Heights Elementary School closed in 2015.

\*\*Sylvan Middle School is now under construction.

Table 3-4 : Private Schools

NAME	
<b>Private Schools</b>	
Academy of Private Classic Education	Sunrise Christian
American Christian Academy	Sunrise Montessori
Arrow Christian Academy	Sunrise Tech Center
Faith Christian Academy	Valley Christian Academy
Gillette Home	Valley Oak Academy Antelope
Harvest Academy	Valley Oak Academy Madison
Holy Family Catholic School	Valley Oak Academy Mariposa
Martins' Achievement School	West Pioneer Academy
St. Mark's Lutheran Elementary	
<b>Higher Education</b>	
Carrington College	



School Zone Crosswalk on Lauppe Lane near Mesa Verde High School

## Commercial Centers

Retail centers can be high pedestrian trip generators. Citrus Heights’s retail centers are served by a combination of transit and surface parking. Citrus Heights is home to a number of commercial centers.

The largest commercial center in Citrus Heights is the Sunrise MarketPlace, located along Sunrise Boulevard at Greenback Lane. It is a 10-block area that includes over 400 businesses, services, and restaurants and is a regional center serving the broader Sacramento area.

Another major retail center, Antelope Crossing, is located at the Antelope Road interchange with Interstate 80. Business owners formed the Antelope Crossing Business Association in 2009 and, with a \$100,000 grant from the Sacramento Region Air Quality and Infill Streamlining Program, developed a Transformation Plan to help businesses capitalize on its unique location at the only freeway exit in Citrus Heights, improve connectivity with adjacent land uses, and develop a strong community identity.

Auburn Boulevard from the northern city limits to Old Auburn Road also has several pockets of commercial activity, the largest being Grand Oaks Center just north of Rusch Park.

Additional retail nodes exist at Greenback Lane and Sylvan Road, Auburn Boulevard and Greenback Lane, the Stock Ranch center on Auburn Boulevard west of Sylvan Road, Sunrise Boulevard and Antelope Road, and Sunrise Boulevard at Woodmore Oaks Drive.

## TOP EMPLOYERS

According to the Citrus Heights General Plan, over 1,800 people are employed by the top eight private employers in the city, listed in **Table 3-5**. Most of the major employers are retail businesses.

Table 3-5: Top Private Employers

NAME	EMPLOYEES	BUSINESS TYPE
WalMart	370	Retail
Lowe’s	300	Home Improvement
JC Penny	250	Retail
Manor Health	250	Health Care
Costco	220	Retail
Macys	175	Retail
Sears	150	Retail
Safeway	130	Grocery

## Healthcare

Pedestrian access to health care is important, particularly for those without access to a vehicle or who have reached an age where driving is no longer an option. Hospitals and other medical centers in Citrus Heights, listed in **Table 3-6**, have the potential to attract significant pedestrian activity given the large population of older adults in the community.

Table 3-6: Healthcare Providers

NAME	ADDRESS
Mercy Medical Group	8001 Madison Ave
Molina Medical Center	7400 Sunrise Blvd
UC Davis Medical Group	7551 Madison Ave
Whole Health Community Clinic	6560 Greenback Ln

## Senior Living Facilities

Citrus Heights has a large senior population, with 30 percent of residents age 55 or older. Some of these residents walk for most of their trips. Senior living facilities are listed in **Table 3-7**.

Table 3-7: Senior Living Facilities

NAME	ADDRESS
Arcade Creek Manor	6546 Auburn Blvd
Auburn Oaks Senior Living	7501 Sunrise Blvd
Citrus Heights Terrace	7952 Old Auburn Rd
Crosswood Oaks	6650 Crosswoods Dr
Merrill Gardens	7418 Stock Ranch Road
Normandy Park	7575 Madison Ave
On My Own	6939 Sunrise Blvd
Sun Oaks Assisted Living	7241 Canelo Hills Dr
SunGarden Villa	7523 Fireweed Cir
Vintage Oaks	7340 Stock Ranch Road

## Public Services

Two important community service destinations are located in Citrus Heights: the Sunrise Christian Food Ministry, and Women, Infants, and Children (WIC) Citrus Heights.

Because both of these centers serve low income residents, it is likely that patrons may choose to walk or take transit if they cannot afford to maintain a vehicle.

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*According to American Community Survey 2013 data, 30 percent of Citrus Heights residents are age 55 or older.*

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## Transit

Prioritizing improvements near transit stops and providing amenities like benches and shade structures can make walking to transit more comfortable.

Citrus Heights contracts with the Sacramento Regional Transit District for transit services in the city. Routes run primarily on Auburn Boulevard, Antelope Road, Greenback Lane, and Sylvan Road.

In addition to local routes, this service also connects passengers to destinations in Roseville, and other nearby communities. Transfer stations in Citrus Heights are located near Sunrise MarketPlace (Arcadia Station) and on Auburn Boulevard near the northern city limit (Orlando Avenue Station).

Public transit riders often face the “first and last mile” dilemma: how to connect their home and final destination with the actual transit route. This can be particularly challenging in Citrus Heights since transit stops are located along a few arterial roads, and may require riders to walk a great distance from their home. On the other end of the trip, a transit bus may take a passenger to within a mile of their employment site, requiring them to walk the remaining distance.



*Bus Shelter on Greenback Lane*

## Commuter Travel

Monitoring the percentage of Citrus Heights residents who walk to work offers a fairly reliable way to track the success of pedestrian facilities and programs, since this information is gathered by the Census bureau each year. While this provides important data about commute trips, these data only tell us about employed residents over 16 years of age, and how they typically travel to work.

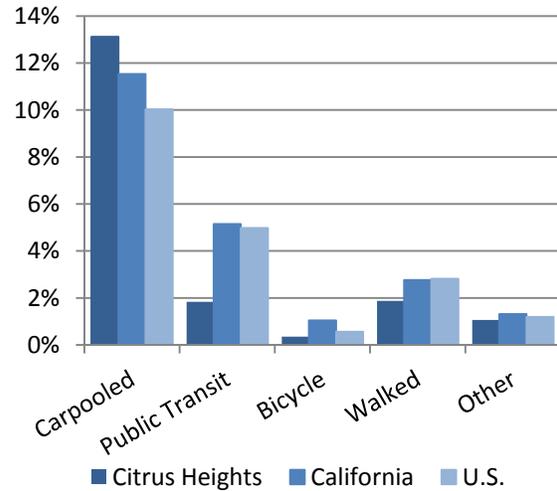
This Plan presents commute data from the American Community Survey for 2007 through 2012.

The majority of Citrus Heights residents currently drive to work alone, at 77.7 percent. Carpooling is the second most-used mode of transportation, at 13.1 percent. The remaining travel modes—transit, bicycling, walking, and ‘other’ modes—together amount to fewer than 6 percent of commute trips. When compared to statewide and national travel, Citrus Heights has a much lower percentage of walking commuters (see **Table 3-8** and **Figure 3-6**).

Table 3-8: 2012 Means of Transportation to Work

MODE	CITRUS HEIGHTS	CA	US
Drive alone	77.7%	73.0%	76.1%
Carpool	13.1%	11.5%	10.0%
Public Transit	1.8%	5.1%	5.0%
Bicycle	0.4%	1.0%	0.6%
<b>Walked</b>	<b>1.9%</b>	<b>2.8%</b>	<b>2.8%</b>
Other	1.1%	1.3%	1.2%
Work from home	4.0%	5.2%	4.3%

American Community Survey 2012 5-year estimates



American Community Survey 2012 5-year estimates

Figure 3-6: Select 2012 Means of Transportation to Work

Over the study period, the percent of Citrus Heights commuters who walk to work has increased slightly from 1.1 percent in 2007 to 1.9 percent in 2012, as shown in **Figure 3-7**.

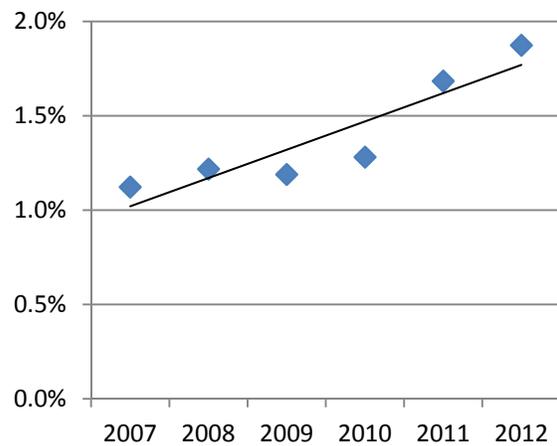


Figure 3-7: Walking Commuters in Citrus Heights

## Pedestrian-Involved Collisions

Safety can be a concern for current and potential pedestrians, and can be a determining factor in the decision to walk or use another mode of transportation. Analysis of pedestrian-involved collision data provides the City of Citrus Heights with a basis for infrastructure and program recommendations that can improve safety.

This section reviews collision data from Crossroads, a database of collision records maintained by the City. While collision data is sometimes incomplete and does not capture 'near misses,' it does provide a general sense of the safety issues facing pedestrians in Citrus Heights. Five years of data were evaluated, from November 1, 2009, to October 31, 2014.

### Total Collisions

There were a total of 120 reported pedestrian collisions during the study period, involving a total of 127 pedestrians. **Figure 3-8** shows the number of pedestrian-involved collisions in Citrus Heights from 2010 to October 2014. Because there were only two months of 2009 included in the study period, this figure omits that year to gain a clearer picture of annual trends.

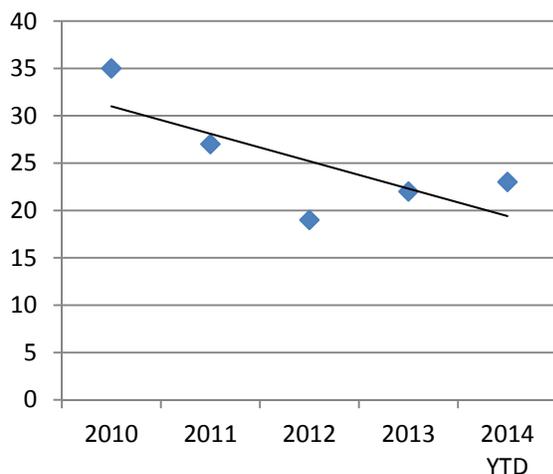


Figure 3-8: Pedestrian-Involved Collisions Over Time

Without additional data, such as trends in pedestrian volumes over the same period, the downward trend in the number of collisions may not provide a complete picture of the walking experience in Citrus Heights. It may be that fewer people are walking for all trips.

### Top Collision Locations

By taking a closer look at the locations in Citrus Heights where high numbers of pedestrian collisions have occurred over the last five years, priority corridors emerge that should be studied for safety improvements. Of the 120 reported pedestrian collisions, 90 occurred along three corridors, as shown in **Table 3-9**.

Table 3-9: Top Collision Corridors

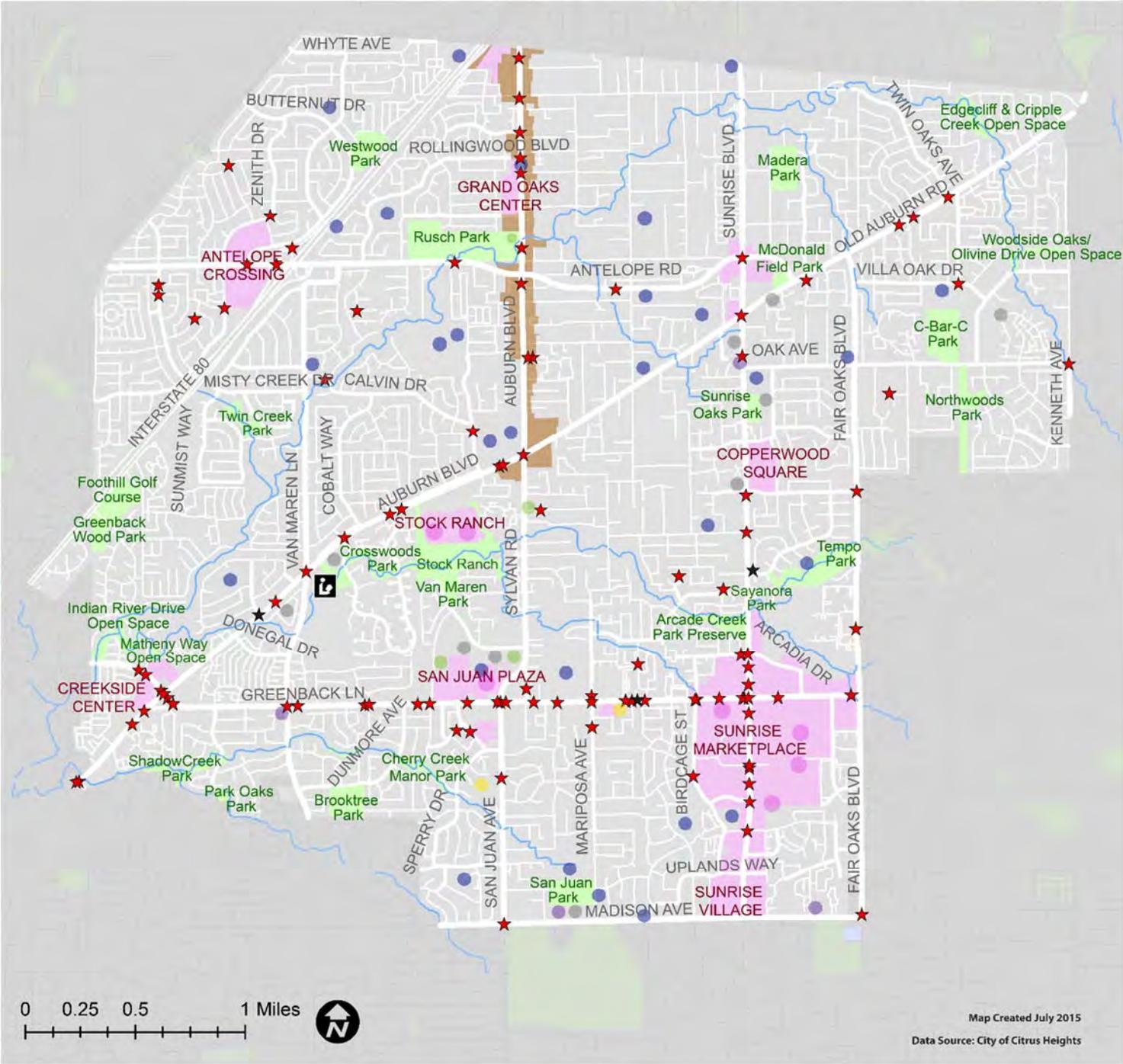
STREET NAME	COLLISIONS
Greenback Lane	44
Auburn Boulevard	39
Sunrise Boulevard	19

Twelve of these collisions occurred at the intersection of two top collision corridors, as listed in **Table 3-10**.

Table 3-10: Top Collision Intersections

INTERSECTION	COLLISIONS
Auburn Boulevard & Greenback Lane	6
Greenback Lane & Sunrise Boulevard	6

For a map of all pedestrian-involved collisions in Citrus Heights, see **Figure 3-9**.



- Senior Living Facilities
- Healthcare Facilities
- Community Centers and Gardens
- Top Private Employers
- ★ Pedestrian Collisions
- ★ Pedestrian Fatalities
- Schools
- Public Services
- Shopping Centers
- Parks/Open Space
- Auburn Blvd Plan Area
- Libraries

Figure 3-9: Pedestrian-Involved Collisions

### Age

When the age distribution of pedestrians involved in collisions is compared to that of the overall population in **Figure 3-10**, it becomes clear that pedestrians under 25 years old are overrepresented among collision victims. Nearly one-third of pedestrians involved in a collision are under 18 years of age, and over 50 percent are under 25 years of age.

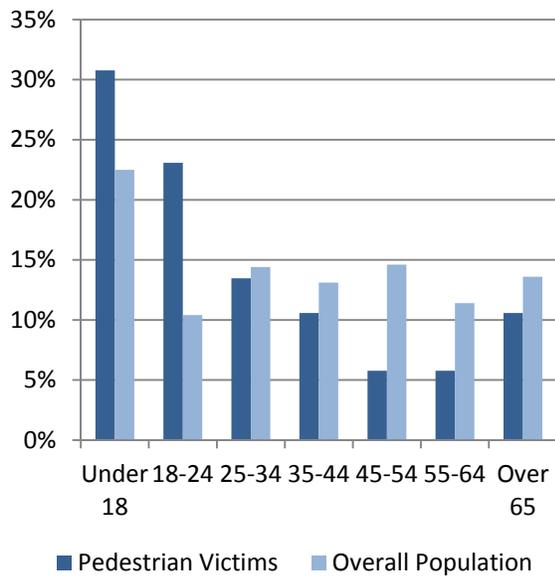


Figure 3-10: Age of Pedestrian Collision Victims vs Overall Population

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*Over 50 percent of pedestrian collision victims in Citrus Heights are under 25 years of age.*

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According to Office of Traffic Safety data from 2012, Citrus Heights ranked 25<sup>th</sup> out of 102 similarly sized cities for the highest rate of pedestrian-involved collisions with victims under 15 years old.

### Collision severity

Of the 127 pedestrians involved in collisions in Citrus Heights, 57 percent had visible or severe injuries. Two percent were fatally injured. See **Figure 3-11**.

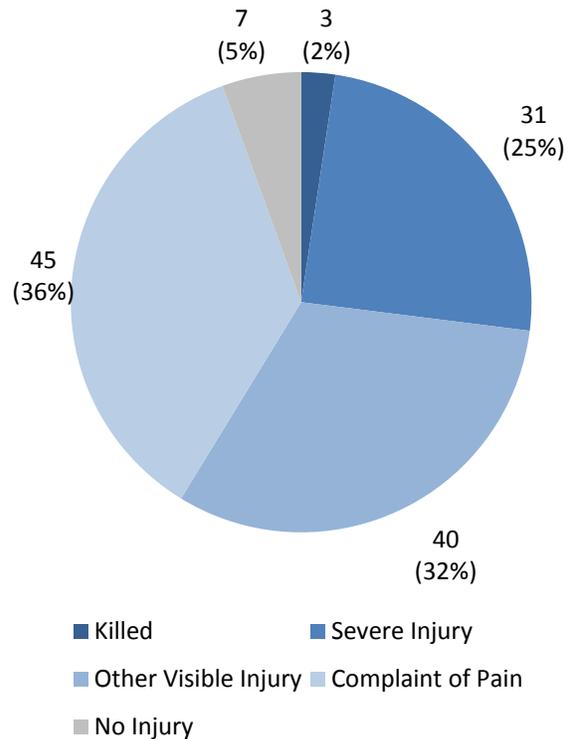


Figure 3-11: Pedestrian Injury Severity

While walking accounts for fewer than two percent of commute trips in Citrus Heights, **Figure 3-12** indicates they are overrepresented in traffic fatalities in the community. Between 2008 and 2012, 24 percent of people killed in collisions were pedestrians.<sup>1</sup>

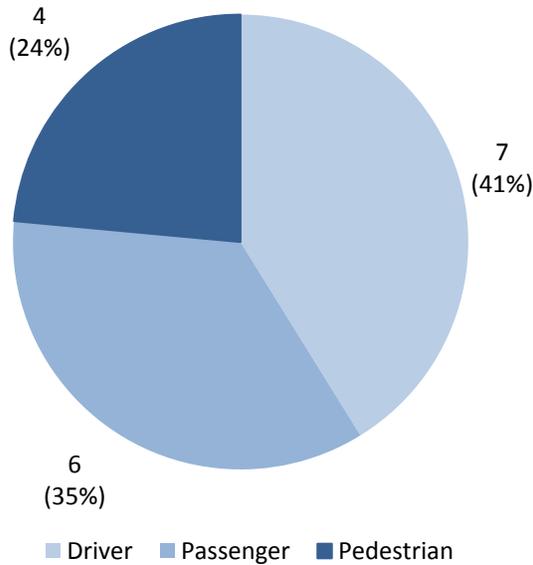


Figure 3-12: Fatalities by Victim Mode

### Fault and Primary Collision Factors

When a collision report is made, the reporting officer determines whether one party is at fault for the collision, along with information on the factors that contributed to the collision and the preceding movements of all parties.

As seen in **Figure 3-13**, pedestrians were deemed to be at fault in fewer than half of all pedestrian-involved collisions in the study period.

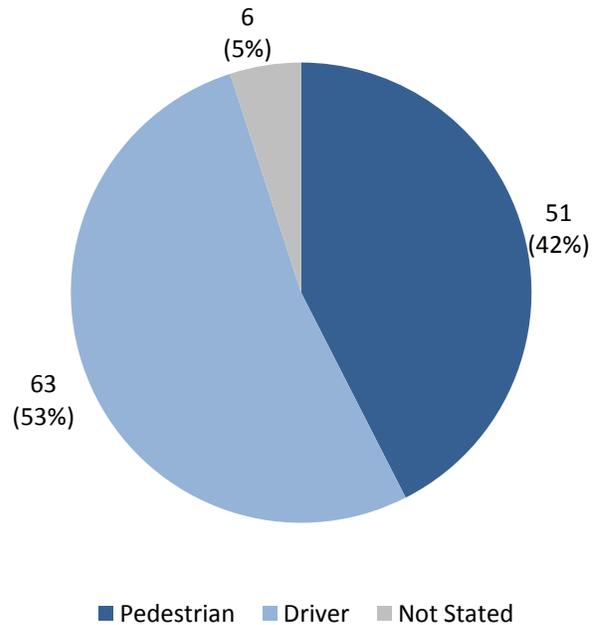


Figure 3-13: Party at Fault

<sup>1</sup> Figure 3-12 uses collision report data from the Statewide Integrated Traffic Records System (SWITRS) and includes data from 2008-2012. All other tables and figures in this chapter use data from Crossroads from November 1, 2009 to October 31, 2014.

These fault determinations can be further clarified by examining the primary collision factor identified in the collision report. According to these reports, 52 collisions resulted from pedestrian violations, which mean the pedestrian failed to obey a traffic law or yield to another road user appropriately.

Across the remaining 68 collisions, just over half had primary collision factors identified (34 were reported as “Other,” “Unknown,” or “Other Hazardous Movement”). See **Table 3-11**.

Table 3-11: Primary Collision Factors

PRIMARY COLLISION FACTOR	NUMBER
Pedestrian Violation	52
Pedestrian Right of Way Violation	7
Failure to Obey Traffic Signals and Signs	5
Improper Turning	5
Unsafe Starting or Backing	5
Driving Under the Influence	4
Auto Right of Way Violation	3
Unsafe Speed	3
Improper Passing or Lane Change	2
Other Hazardous Movement	21
Other/Unknown	13

### PEDESTRIAN ACTION PRECEDING COLLISION

An examination of the pedestrian actions preceding the collision can offer some additional insight into pedestrian education needs, or deficiencies in the pedestrian network where desired paths of travel are not being fully supported.

**Figure 3-14** shows the most common of these actions was a pedestrian crossing a street outside of a crosswalk, which contributed to 33 percent of the collisions. This may suggest a need for more frequent crosswalks to reduce the number of pedestrians crossing at unmarked locations, or for pedestrian safety education.

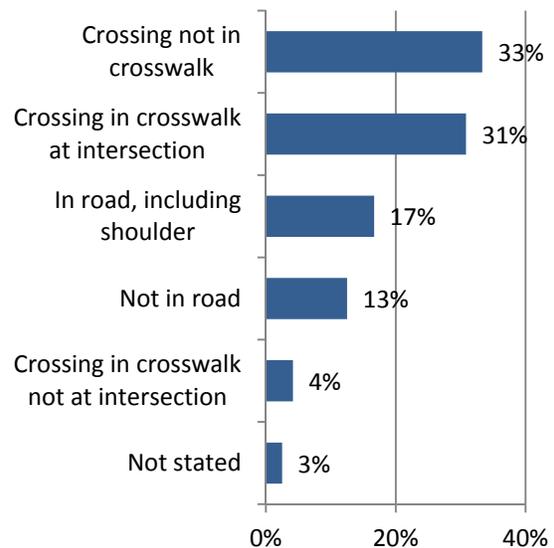


Figure 3-14: Pedestrian Action Preceding Collision

An additional 31 percent of pedestrians were crossing in a crosswalk at an intersection, which may indicate poor yielding from motorists or poor visibility of crosswalk markings. Education on the rights of pedestrians and the importance of looking out for vulnerable road users may reduce the frequency of this type of collision in the future, along with increasing visibility of crosswalks with high-visibility markings or other treatments.

Fifteen pedestrians were involved in collisions despite being reported as “not in road,” which suggests they were on the sidewalk when the collision occurred. Of these, seven involved motorists making right turns out of driveways onto arterial roadways. Nine out of the fifteen were felony hit-and-run collisions, including two drivers who had been drinking.

## Engineering: Pedestrian Network Inventory

Citrus Heights is a city of neighborhoods, with eleven numbered neighborhood associations, listed in **Table 3-12**. Neighborhoods 7 and 8 hold joint meetings and have formed one collaborative association.

Table 3-12: Neighborhood Associations

#	ASSOCIATION NAME
1	Northwest Neighborhood Association
2	Rusch Park Neighborhood Association
3	Citrus Heights Association Number Three (CHANT)
4	Arcade Creek Neighborhood Empowerment Association
5	Park Oaks Neighborhood Association (PONA)
6	Sunrise Ranch Neighborhood Association
7 & 8	Citrus Heights Area Seven and Eight (CHASE)
9	Sunrise Oaks Neighborhood Association
10	Sylvan Old Auburn Road Neighborhood Association
11	Birdcage Heights Neighborhood Association

The City of Citrus Heights is laid out across a large grid of arterial streets spaced approximately 1 mile apart. These arterial corridors are largely oriented to run north-south or east-west, with two notable exceptions. Interstate 80 and Old Auburn Road both cut a diagonal path across the city, running from southwest to northeast.

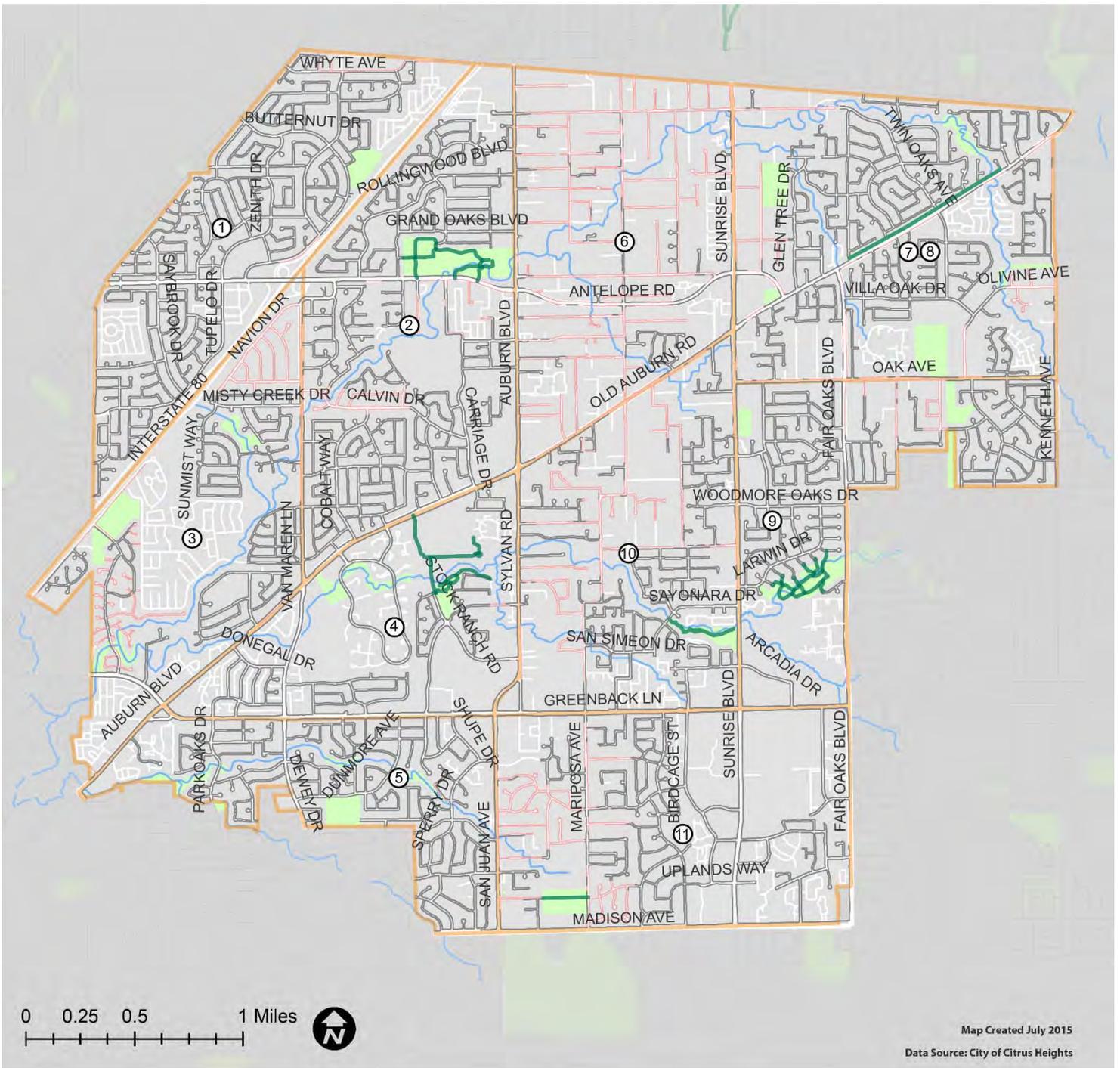
Within this grid framework, collector and local roads provide access to businesses, homes, and community destinations. Many of these streets are curvilinear, suburban-style neighborhoods, with a single road serving as the only entrance and exit to a disconnected inner system. Mileage for each of the road types in Citrus Heights is shown in **Table 3-13**. A map of the existing network is shown in **Figure 3-15**.

Table 3-13: Roadway Mileage by Street Type

STREET TYPE	MILES
Highway or Ramp	8.8
Arterial	23.9
Collector	37.0
Local	209.5
<b>Total</b>	<b>279.2</b>

A significant barrier to pedestrian travel is Interstate 80, which cuts across the northwest corner of the city on a diagonal. Neighborhood 1 is isolated by this barrier that makes walking and bicycling challenging. There is only one overcrossing over Interstate 80 in Citrus Heights, at Antelope Road, and this is the only location where cars, bicyclists, pedestrians, or transit can cross. The next crossing opportunities are located just outside the city limits at Greenback Lane/Elkhorn Boulevard and at Auburn Boulevard/Riverside Avenue.

The distances between these crossings are too great to support walking as a viable mode of transportation. The Greenback Lane/Elkhorn Boulevard crossing is located 2.25 miles southwest of Antelope Road, while the Auburn Boulevard/Riverside Avenue crossing is 1.6 miles northeast.



- Walkways
- No Walkway
- Private Streets
- Creeks
- Paths
- Parks/Open Space
- 5 Neighborhood Boundaries

Figure 3-15: Pedestrian Network Inventory

## Sidewalks

Citrus Heights has a mix of areas with and without sidewalks.

Neighborhoods 6 and 10 do not have an extensive sidewalk network. A number of corridors, listed below, also lack sidewalks for notable distances.

- ◆ Fair Oaks Boulevard (north of Copperwood Drive)
- ◆ Mariposa Avenue
- ◆ Oak Avenue
- ◆ Old Auburn Road (east of Auburn Boulevard)
- ◆ Sunrise Boulevard (north of Antelope Road)
- ◆ Twin Oaks Avenue
- ◆ Van Maren Lane

Approximately 59 percent of the City's street network has sidewalks, totaling 330 miles.

The width and condition of sidewalks vary throughout the City. Most sidewalk through zones are approximately 4-feet wide. The American with Disabilities Act (ADA) requires a minimum 4-foot wide sidewalk.

Sidewalks in the City include either vertical or rolled curbs. Rolled curbs are mountable, allowing vehicles to encroach on the sidewalk, which can be advantageous for emergency vehicle maneuverability. However, rolled curbs also make it easy for cars to park atop the curb, potentially obstructing pedestrian movement.



Wide sidewalks exist on Greenback Lane near Sunrise MarketPlace

## Crosswalks

Crosswalks are a legal extension of the sidewalk and provide guidance for pedestrians who are crossing roadways by defining and delineating their path-of-travel. Crosswalks are not required to be marked. However, crosswalk markings alert motorists of a pedestrian crossing point. Marked crosswalks exist throughout the City, typically at intersections along arterial and collector streets. Most marked crosswalks are standard (also called transverse) crosswalks consisting of two parallel white lines marked on the pavement. High visibility or 'ladder' style crosswalks add bold perpendicular lines that are more conspicuous to motorists, as shown in **Figure 3-16**.

At some marked crosswalks, the City has installed additional treatments, such as distinct paving materials. Distinct paving material, such as pavers or colored concrete, further differentiates the crossing zone from the remainder of the street. Examples of marked crosswalks with distinct paving materials include the crosswalks on Greenback Lane at Sunrise Marketplace.

State law requires marked pedestrian crosswalks located in a roadway contiguous to a school building or school grounds to be yellow. Additionally, a marked pedestrian crosswalk located within 600 feet (and in some circumstances up to 2,800 feet) from a school building or school grounds may be yellow.

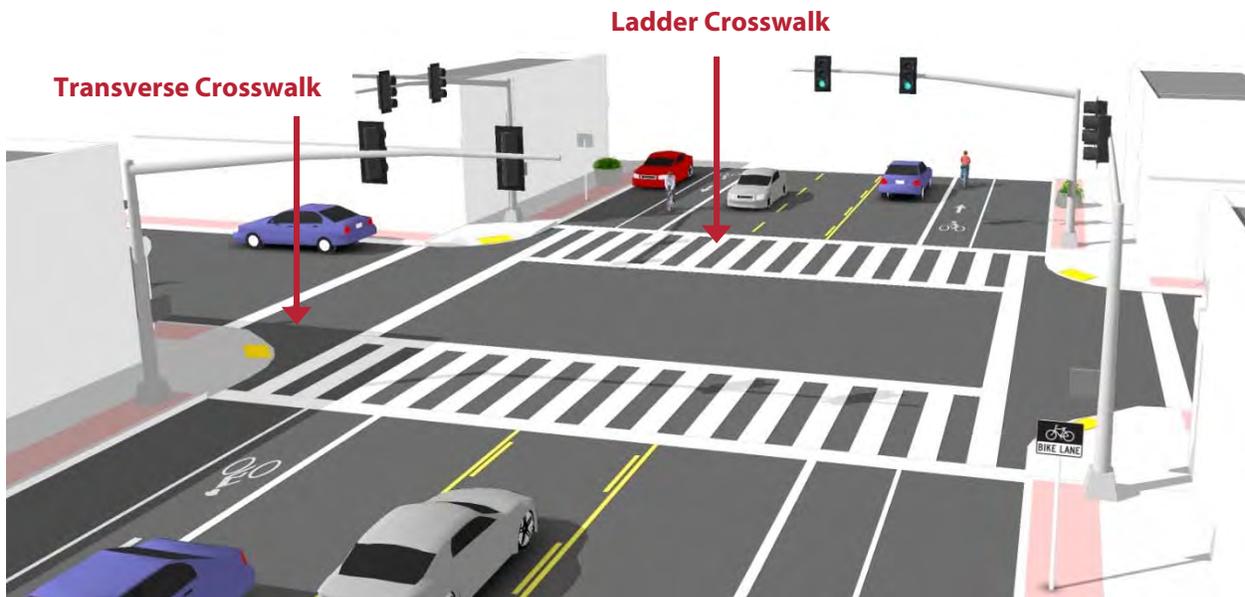


Figure 3-16: Crosswalk Markings

## Curb Ramps

Curb ramps ease the transition between a sidewalk and street by creating a "bridge" between the curb height and ground level, as illustrated in **Figure 3-17**. Curb ramps provide street and sidewalk access to pedestrians using wheelchairs and strollers. Standards require curb ramps wherever an accessible route crosses a curb. Per ADAAG (Americans with Disabilities Act Accessibility Guidelines), an accessible route is a continuous unobstructed path connecting all accessible elements and spaces of a building or facility, including parking access aisles, curb ramps, crosswalks at vehicular ways, walks, ramps, and lifts.

Curb ramp types at street corners in Citrus Heights include mostly diagonal ramps.

Curb ramps are required to include detectable warnings or raised truncated domes to provide directional and hazard warning information to pedestrians who are visually impaired. The City installs new curb ramps whenever roadways are resurfaced or reconstructed and upon request (as funding allows). All recently upgraded curb ramps have raised truncated domes.

## Signage

The California Manual on Uniform Traffic Control Devices (CA MUTCD) outlines the requirements for a variety of sign types, including:

- ◆ Regulatory (e.g., stop, yield, speed limit, pedestrian crosswalk, no parking, sidewalk closed ahead)
- ◆ Warning (e.g., pedestrian crossing, school advance warning, school plaque, playground, senior citizen facility, stop ahead)

The City has installed CA MUTCD standard signs regulation and warning signs throughout the city.

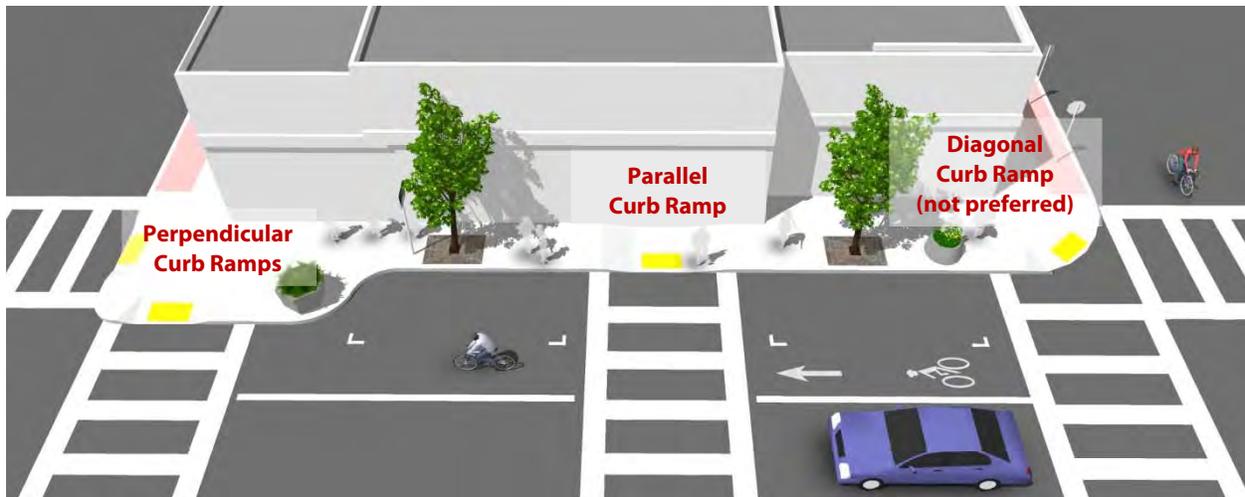


Figure 3-17: Curb Ramp Types

## Traffic Signals

Pedestrian movement at major intersections is controlled by a variety of signal technologies, including pedestrian signal heads. Pedestrian signal heads<sup>2</sup> are typically installed at signalized intersections with high pedestrian crossing volumes and at school crossings. In Citrus Heights, the pedestrian crossing phase of any signal includes pedestrian signal indications as shown in the images at right.

Intersections in Citrus Heights include two to several traffic signals, depending on the roadway geometries. All new or recently retrofitted signalized intersections in the City of Citrus Heights have pedestrian countdown signal heads, and intersections are updated any time old signals are replaced. Typically, pedestrians trigger the pedestrian phase of signal by pressing a pedestrian push button. Most traffic signals (approximately 90 percent) include one or two pedestrian push buttons.

Traffic signals in Citrus Heights will not recall the WALK phase if the concurrent green phase for vehicles has already begun, and will instead wait for the following cycle to permit pedestrian crossings.

Traffic signals in Citrus Heights employ standard signal timing. Some have signal timing of three feet per second and others four feet per second.<sup>3</sup>



*Pedestrian Countdown Signal Head*



*A pedestrian push-button provides information on when pedestrians should cross.*

<sup>2</sup> A signal head is an assembly of one or more signal faces together with the associated signal housings. A pedestrian signal head is a signal head, which contains the symbols WALKING PERSON (symbolizing WALK) and UPRAISED HAND (symbolizing DONT WALK), that is installed to direct pedestrian traffic at a traffic control signal.

<sup>3</sup> Signal timing refers to the amount of time allocated for the display of a signal indication (CA MUTCD 2010).

## Education Programs

### Traffic Safety Assemblies

The Citrus Heights Police Department offers traffic safety assemblies at a few schools in the community. This program includes at least two seminars each year at the two high schools. Additionally the Police Department has offered assemblies at Mariposa Avenue Elementary and Sylvan Middle School. These include information on safe walking, bicycling, and driving.

The Department also hosted a Traffic Safety Day at Sunrise Mall in 2013, open to all community members.

### Classroom Lessons

In-class lessons on pedestrian safety are tailored to the appropriate grade level. Lessons can include basic traffic safety, rules of the road, how to cross streets safely, and more.

Classroom lessons have been offered at eleven schools in the San Juan Unified School District, but the frequency of these lessons is dependent on available funding.

### School Yard Lessons

Building on the material learned in classroom lessons, schoolyard pedestrian lessons take students through a course designed to simulate street conditions in their community, giving them the opportunity to practice skills like crossing the street.

Schoolyard lessons have been offered at Lichen K-8, Skycrest Elementary, Kingswood Elementary, and Arlington Heights Elementary. The frequency of these lessons is dependent on available grant funding.

### Suggested Route Maps

Suggested route maps help parents and students choose a path to walk to school by identifying locations where sidewalks, crosswalks, and other pedestrian amenities create a safe and comfortable walking environment.

Route maps have been developed for Carriage Drive Elementary and Kingswood K-8.

## Encouragement Programs

### International Walk to School Day

On International Walk to School Day in October, students and families around the world are encouraged to try walking to school for one day. Schools often have additional programming on this day, including small prizes or rewards for students who walk, or contests between classrooms based on the number of students who walk.

Schools in Citrus Heights participate in Walk to School Day as Walk + Bike Days when there is available funding and there are parent champions to assist with the event.

### Walk + Bike Days

Throughout the year, walk + bike days build on the enthusiasm generated by International Walk to School day. Schools can choose to participate in this activity a few times each year, monthly, or even weekly with programs like “Walking Wednesdays.”

At least eleven schools in Citrus Heights offer Walk + Bike Days, although the frequency is dependent on funding and availability of parent champions. The schools offer incentives to students to encourage them to participate in Walk + Bike Days.

## Evaluation Programs

### Student Travel Tallies

In 2012, the City of Citrus Heights partnered with WalkSacramento to evaluate walking and bicycling at eleven schools in the community. Using resources provided by the National Center for Safe Routes to School, WalkSacramento conducted student travel tallies at each school to gather data on how students arrive at school each day, and how they travel home each afternoon.

### School Site Audits

Walking and bicycling audits of school sites and the surrounding streets identify challenges for bicyclists and pedestrians and inform recommended engineering improvements. WalkSacramento conducted school site audits at eleven schools in 2012 and 2013.

## Enforcement Programs

No existing enforcement programs were documented.



## Chapter 4: Why? Walking Needs

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*The walking needs of the Citrus Heights community are diverse, and are influenced by pedestrian network quality, age, trip type, and many other factors. This chapter includes an overview of pedestrian needs identified through a pedestrian demand model, community surveys, workshops, and stakeholder interviews.*

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### Pedestrian Demand

Understanding pedestrian related demand will help identify locations for walking improvements and help prioritize implementation.

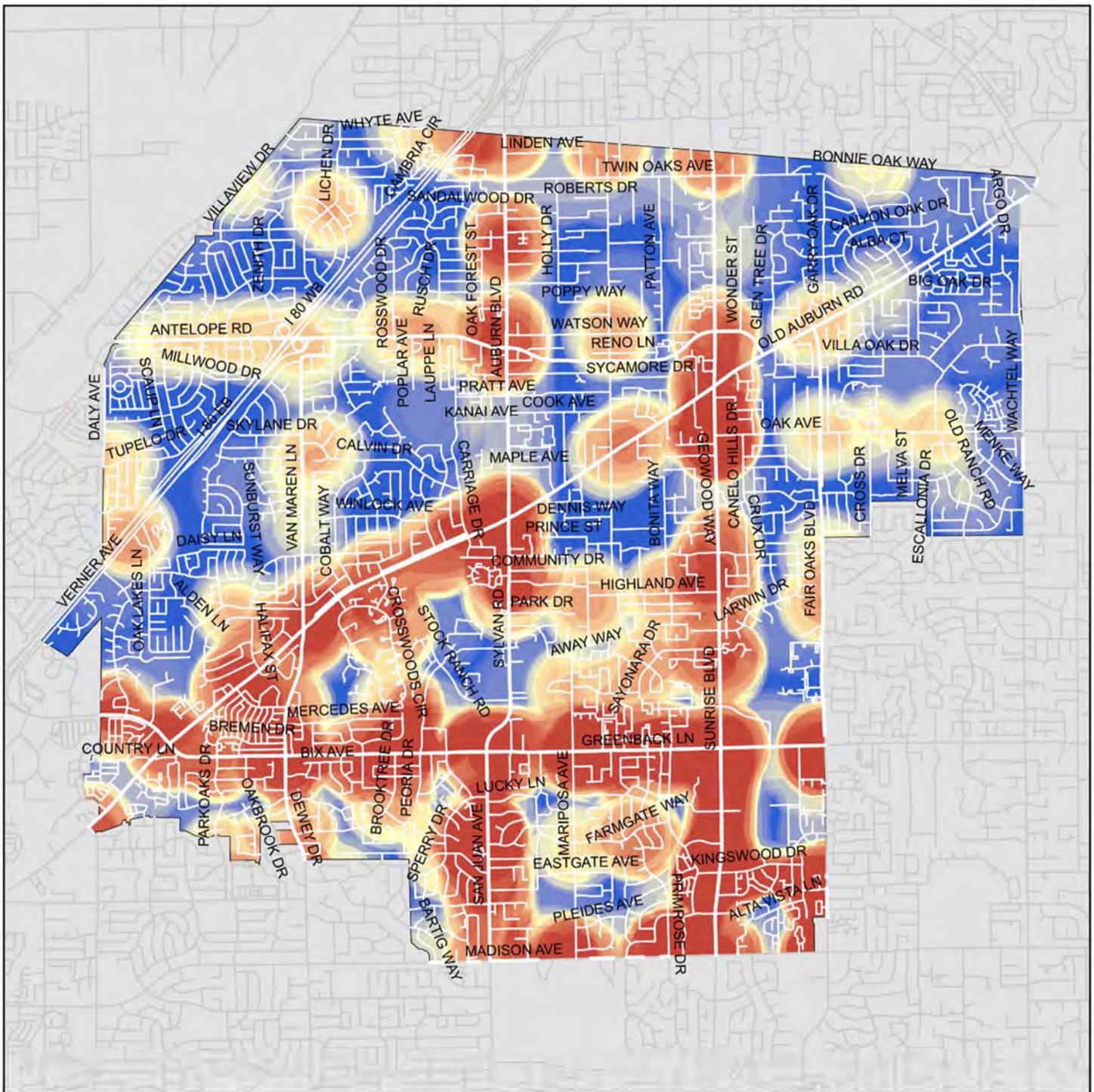
The Pedestrian Suitability Index (PSI) model provides a general understanding of expected activity in the pedestrian environment by combining categories representative of where people live, work, play, access transit, and go to school into a composite of estimated citywide demand. Citrus Heights' specific land use and transportation factors, such as retail and commercial nodes, are considered as well as demographic factors that are correlated with high pedestrian trip generation, such as a high percentage of zero vehicle households.

The model results, illustrated in **Figure 4-1** shows high walking demand areas in red. Areas that yielded highest demand include the confluence of schools, retail, high employment, and higher density residential areas.

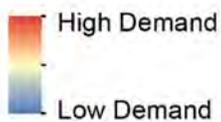
Areas with potential high pedestrian demand include:

- ◆ Greenback Lane
- ◆ Auburn Boulevard
- ◆ Old Auburn Boulevard (near Sunrise Boulevard)
- ◆ Sunrise Boulevard
- ◆ Sylvan Road
- ◆ San Juan Avenue

See **Appendix B** for a detailed description of the PSI model process and data used.



**Composite Pedestrian Demand**



Sources: U.S. Census Bureau, SACOG, City of Citrus Heights

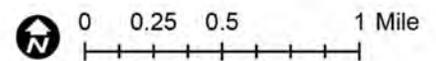


Figure 4-1: Demand Composite

## Public Workshops

### Workshop #1

A public workshop was held to gather input from community residents on January 29, 2015. Workshop participants were presented with an overview of the planning process, and then invited to view maps and figures from the Existing Conditions report and provide comments or suggestions for improving the walking experience in Citrus Heights. The most common improvement themes from this feedback included:

- ◆ Complete sidewalk gaps, especially along key corridors including Antelope Road, Mariposa Avenue, Sunrise Boulevard, and Van Maren Lane.
- ◆ Improve existing sidewalks where they are obstructed or too narrow, lack sufficient separation from traffic, or where pavement is broken and uneven.

Participants also noted the following concerns:

- ◆ Motorists do not consistently yield to pedestrians in crosswalks
- ◆ Some signals do not allow sufficient time to cross, including along Antelope Road, Auburn Boulevard, Greenback Lane and Sunrise Boulevard
- ◆ Some bus stops are challenging to access
- ◆ Desire for an easy way to report pedestrian challenges to the city
- ◆ Preserve trees and shade for pedestrian comfort
- ◆ Perceived speeding
- ◆ Additional lighting is needed in many pedestrian areas

### Workshop #2

A second workshop was held July 29, 2015. Attendees reviewed draft recommendations, including recommendations for crosswalk improvements, focus area improvements, and the priority pedestrian network.

Feedback received at this workshop was generally positive, with few concerns noted about the draft recommendations. Broad themes in the comments received include:

- ◆ Areas of missing sidewalks
- ◆ Areas for improved pedestrian crossings
- ◆ Locations for improved pedestrian scaled lighting

### Workshop #3

The third public workshop was held November 17, 2015. Workshop participants reviewed the Public Draft Pedestrian Master Plan and Appendices, with a focus on reviewing the draft sidewalk and walkway projects recommended in the Plan.

Some participants reported concerns about walkway alignment in a few locations, noting constrained right-of-way or other challenges.

Others voiced support for the Plan and recommended projects, including a desire to see sidewalk gaps closed and the City to move

## Community Surveys

### Online Survey

A community survey was available online from January 6, 2015 through March 4, 2015, and handed out in hard copy at the public workshop on January 29 as well as at numerous neighborhood meetings. A total of 310 responses to the survey were received; these are summarized below and detailed in **Appendix A**.

Who responded to the survey?

- ◆ Adults over 55 years of age (65 percent)
- ◆ Women (64 percent)

Seven percent of respondents use mobility assistive devices including canes, wheelchairs, and motorized scooters.

How do survey participants typically travel?

- ◆ For trips less than one mile, driving alone was the most commonly used mode (56.6 percent) followed by walking (28.8 percent).
- ◆ For trips between one and five miles, driving alone was the most commonly used mode (75.8 percent), followed by carpooling (12.9 percent).

How often do participants walk for different trip types?

- ◆ Respondents most commonly reported that they frequently walk for exercise or health, for recreation, or to walk the dog.
- ◆ The least common walking trip purpose reported was commuting to work or school.

Exercise was overwhelmingly the most common reason respondents chose to walk instead of taking some other form of transportation, as shown in **Figure 4-2**. Several common themes emerged in the write-in responses for the “other” category, where respondents reported they also choose to walk for environmental reasons, to walk their dogs, because they have no other transportation options, because of disabilities, or to access transit.

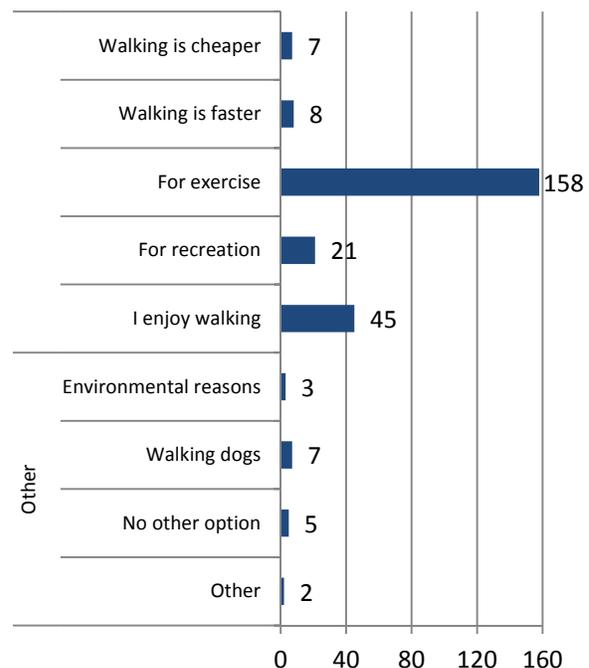


Figure 4-2: Reasons for Walking

Locations listed as respondents’ favorite places to walk included Arcade Creek Park Preserve, Stock Ranch Nature Preserve, Mariposa Avenue, Old Auburn Road, and Sunrise Mall.

Least favorite places reported included Auburn Boulevard, Greenback Lane, Sunrise Boulevard, and Van Maren Lane. Many of these corridors showed high potential pedestrian demand in the PSI model, indicating there is potential for increased walking trips in these areas but residents are currently uncomfortable walking there.

When asked what factors prevent them from walking more often, respondents most cited safety concerns, lack of time, and destinations that were out of walking distance (see **Figure 4-3**). Destinations that respondents would like to see improved walking access to include parks, retail districts, and transit stops.

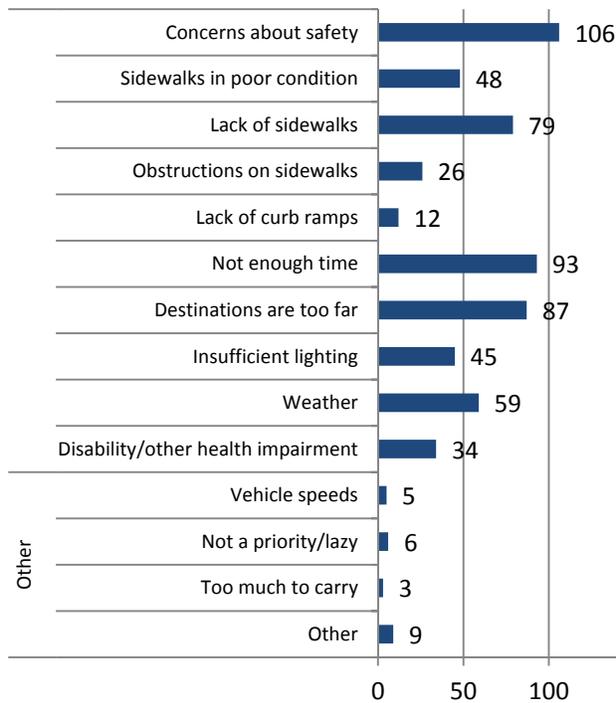


Figure 4-3: Factors that Discourage Walking

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*Citrus Heights is an aging community  
where people are very used to driving.*

*As we're all getting older,  
we're going to have to walk places  
and feel comfortable*

*- Stakeholder Interviewee*

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### Survey Mailing

As part of sharing the Draft Plan, the City mailed surveys to residents living near proposed sidewalk/walkway projects. Surveys were mailed to 3,400 residences, and the City received 357 responses (about 10.5% response rate).

Most respondents indicated they would like to see pedestrian improvements in their neighborhood (69%) and would walk more if there were improvements (62%).

For a more detailed description of the mailed survey results, see **Appendix A**.

## Stakeholder Interviews

Stakeholder interviews were conducted with representatives of key groups that might not normally participate in the public engagement process. These groups included:

- ◆ Citrus Heights Chamber of Commerce
- ◆ Citrus Heights Rotary
- ◆ Local business owners
- ◆ Carrington College
- ◆ Safe Routes to School
- ◆ San Juan Unified School District
- ◆ Sunrise Recreation and Park District
- ◆ Paratransit
- ◆ Antelope Crossing Business Association
- ◆ Sylvan Library
- ◆ Sunrise MarketPlace
- ◆ Sunrise Mall
- ◆ Citrus Heights Collaborative

For a detailed description of the interview process and responses, see **Appendix A**.

## Overall Walkability and Access

In general, participants indicated the pedestrian experience in Citrus Heights could benefit from improvement. Some noted that Citrus Heights was not designed to be a walkable community.

Specific challenges that participants noted include the City's layout, multi-lane roadways with fast-moving vehicles, lack of connectivity between residential and retail areas, and transient populations.

## Preferred Methods of Transportation

Stakeholders overwhelmingly noted the predominant mode of transportation in Citrus Heights is personal vehicles, followed by public transportation. Walking was identified as the least likely mode of transportation for multiple reasons, including large distances between residences and jobs, lack of knowledge of walkable routes, and a desire for the convenience of driving to additional destinations.

Some stakeholders reported students, seniors, and recreational pedestrians were the most likely to walk in the community. Others observed that individuals with limited mobility may rely heavily on public transportation and the pedestrian network to access their destinations.

## Current Pedestrian Infrastructure

Many stakeholders felt the pedestrian infrastructure in Citrus Heights is not inviting. Distances between marked crosswalks are great, and there is no separation between sidewalks and fast-moving traffic on arterial streets. Participants also noted concerns about motorists failing to yield to pedestrians, a lack of accessible facilities for seniors, and a desire for increased visibility of crossings.

Bus shelters and benches could use better maintenance or are missing, and some stakeholders noted these shelters are sometimes used by transients.

Multiple stakeholders expressed a desire for a pedestrian overcrossing between Sunrise Mall and Birdcage Center, and one across Interstate 80.

Business associations indicated changing sidewalk designs would likely benefit their businesses by improving pedestrian access; however any construction that requires private right-of-way and impacts parking would be a challenge. Some businesses are concerned that street trees or other features would decrease visibility of their business from the street, while tenants in the Sunrise MarketPlace have agreements requiring high parking ratios.

### Benefits and Opportunities

Stakeholders overwhelmingly felt improving the pedestrian experience in Citrus Heights would benefit the community by increasing the number of visitors that patronize businesses, increasing enrollment at the local private college, and making the community safer for seniors and people with disabilities.

Specific opportunities to improve pedestrian safety were expressed by stakeholders, including providing barriers or separation between sidewalks and roadways, and adding crosswalk-warning systems. Other opportunities to improve connectivity included constructing sidewalks and paths that avoid high-traffic areas and that connect homes to parks and retail areas.

### Programming Opportunities

Stakeholders also noted there are programmatic opportunities, including:

- ◆ Educational programming – incorporate outreach to schools, parks department, and non-English-speaking communities
- ◆ Economic development – encourage complementary locations of new businesses, promoting walking by encouraging lunch restaurants near office parks or improving access between existing businesses

## Needs Analysis Summary

An analysis of community needs reveals opportunities for both infrastructure and programmatic improvements.

### Infrastructure Needs

Infrastructure needs identified by the demand analysis, by public workshop input, community survey responses, and stakeholder interviews include:

- ◆ A pedestrian network that provides connectivity between residential areas and community destinations
- ◆ Additional separation between pedestrians and vehicle traffic on higher-speed or higher-volume arterials
- ◆ Improved pedestrian crossings
- ◆ Improved access for pedestrians with mobility impairments
- ◆ Improve access to and amenities at transit stops

Key corridors that emerged as community priorities for improved pedestrian facilities through public workshop input, community survey responses, and stakeholder interviews include:

- ◆ Antelope Road
- ◆ Auburn Boulevard
- ◆ Fair Oaks Boulevard
- ◆ Greenback Lane
- ◆ Mariposa Avenue
- ◆ Oak Avenue
- ◆ Old Auburn Road
- ◆ San Juan Avenue
- ◆ Sunrise Boulevard
- ◆ Sylvan Road
- ◆ Twin Oaks Road
- ◆ Van Maren Lane

### Program Needs

Based on the community survey, public workshop, and stakeholder interviews, several needs for programs were identified:

- ◆ Educational programming for motorists, pedestrians, and bicyclists, including through schools, parks department, and non-English speaking communities
- ◆ Targeted enforcement to address challenging locations

## Chapter 5: Projects

*The City of Citrus Heights envisions a walking environment that supports active living, provides for safe and healthy transportation, embraces the unique character in its neighborhoods, and enables people of all ages and abilities to access jobs, recreation, school, shopping and transit by walking as a part of daily life.*

The following chapter presents recommended pedestrian related physical improvements developed from community input and needs analysis. The proposed improvements are intended to make walking trips more comfortable, enjoyable, and safer for pedestrians of all ages and abilities and all trip purposes.

This chapter presents the following improvement types:

- ◆ **Priority Pedestrian Corridor Network** identifies a corridor network intended to provide a connected pedestrian friendly network where improvements should be focused.
- ◆ **Infrastructure Recommendations** identifies locations for paths, sidewalks and crossing improvements.
- ◆ **Focus area Plans** identify specific locations for focused improvements along key corridors.
- ◆ **Projects and Studies** identify potential improvements for consideration and further analysis.

Not discussed in this Plan but an important element of an enjoyable walking environment are street trees. Street trees not only enhance the aesthetics but provide shade for those walking. The City is currently developing the Citrus Heights Urban Greening Strategy (CHUGS) process which will support street trees.



## Priority Pedestrian Corridor Network

**Figure 5-1** presents the recommended Priority Pedestrian Corridor Network: a connected network of streets intended to improve pedestrian connections to neighborhood destinations, transit and recreational opportunities and serve walking demand as identified in the demand modeling.

The network is based, in part, on the Pedestrian Suitability Index model presented in the Needs Analysis Chapter and community desire for walking within neighborhoods for recreation.

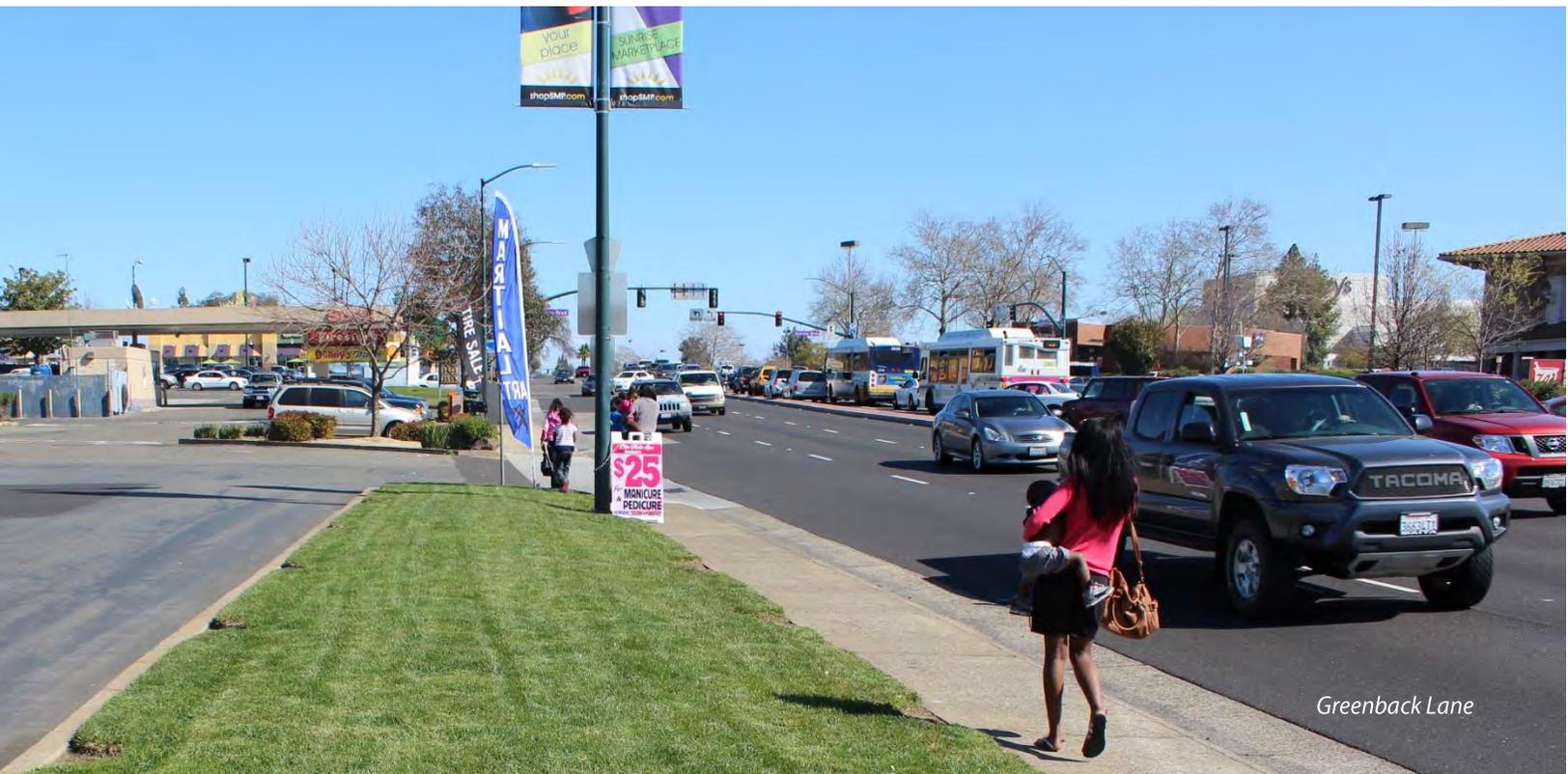
The network includes two layers, the arterial/collector network and the local network. The arterial/collector network provides connections to retail, commercial, employment and transit. The local network provides connections through neighborhoods supporting walking for recreation.

The network was developed to offer logical street network connections, while considering the unique characteristics of each neighborhood.

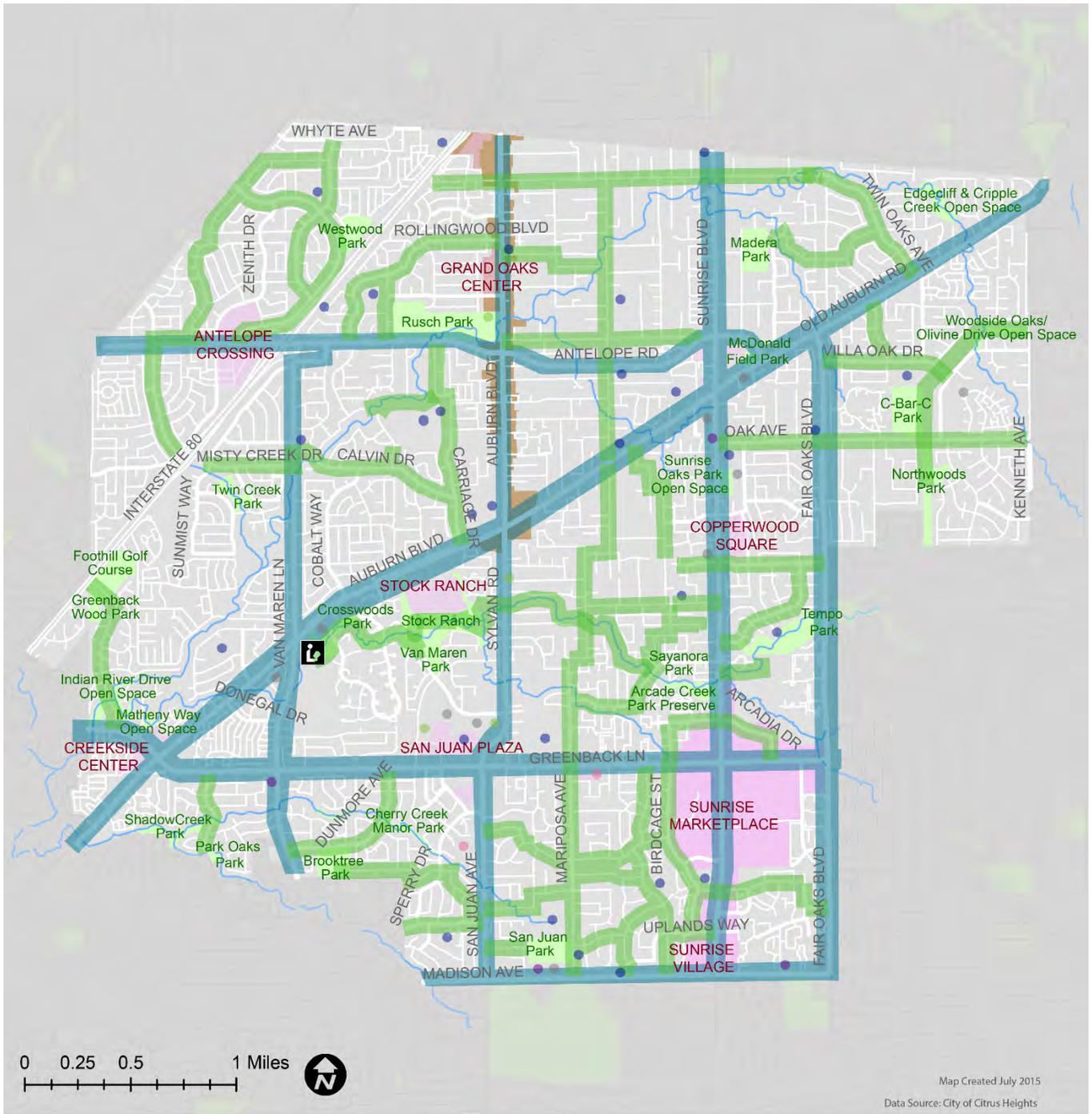
### **Recommendations**

The Priority Pedestrian Corridor Network is a starting point designed to focus improvements where people are most likely to walk or areas with greater safety issues where improvements should be prioritized. The network should provide high quality pedestrian connections to residential areas, transit, recreation, and retail. The City should consider additional street trees, plantings, and wide sidewalks or walkways on many of these corridors.

The City should prioritize pedestrian travel on this network and consider implementation of pedestrian improvements with roadway and planning projects along these corridors.



Greenback Lane



RECOMMENDATIONS

- Arterial Priority Corridors
- Local Priority Corridors

ATTRACTORS

- Senior Living Facilities
- Healthcare Facilities
- Community Centers and Gardens
- Schools
- Libraries
- Public Services
- Shopping Centers
- Parks/Open Space
- Auburn Blvd Plan Area

Figure 5-1: Pedestrian Priority Corridor Map

## Infrastructure Recommendations

This Plan includes the following recommended improvements to improve walkability throughout the community. While not every street is identified to receive improvements, the Plan strives to create a pedestrian network that is accessible to all members of the community within a short walk. This network is comprised of sidewalks, paths, focus area plans, and other improved infrastructure.

- ◆ **Sidewalks** are paved areas for pedestrian travel, usually parallel to a street and within the same right of way. Sidewalks may be attached to the curb, or be separated from the roadway by a landscaped area or other furnishings.
- ◆ **Walkways (Figure 5-2)** have a less urban feel than sidewalks while still providing an Americans with Disabilities Act compliant path of travel for pedestrians. They may be softer surfaces, such as decomposed granite or asphalt.
- ◆ **Focus Area Plans** provide more in-depth recommendations for improving the pedestrian environment along four of the major commercial corridors.
- ◆ **Paths** are shared bicycle and pedestrian facilities consisting of a paved right of way.

The intent of these recommendations is to create a safer place for residents and visitors to walk, including walking for transportation and walking for recreation.

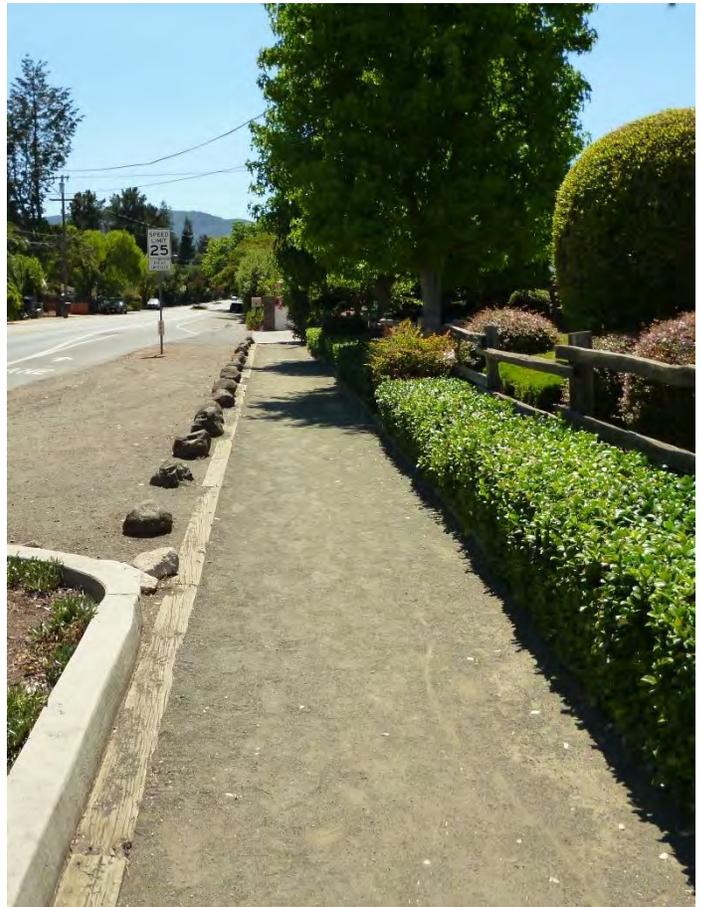


Figure 5-2: Example Walkways (Los Altos, CA)

The projects presented in this Chapter are the priority projects only. All infrastructure projects were evaluated to determine how closely they meet this Plan's goals.

The intent of evaluating projects is to create a prioritized list of projects for implementation. The project list and individual projects to be included in this Plan are flexible concepts that serve as a guideline. The priority project list, and perhaps the overall project list, may change over time as a result of changing walking patterns, land use patterns, implementation constraints and opportunities and the development of other transportation improvements. The criteria used to evaluate projects is outlined below. For a more detailed description, see **Chapter 7**.

Projects that had a cumulative high score based on the criteria below are presented in this Chapter. For a complete list of projects, see **Appendix E**.

**Safety and Accessibility:**

Projects near locations with high incidents of pedestrian related collisions within a quarter mile buffer of the proposed project receive higher scores.

This evaluation criteria gives higher scores to projects on corridors with high need for accessibility improvements based on the City's ADA Transition Plan.

**Pedestrian Priority Corridor Network:**

Projects on the Pedestrian Priority Local Corridor Network described in the previous section receive higher scores.

**Community Identified Improvement:**

Projects at locations or on corridors that the community identified through Community Workshops, survey, and comments submitted through the project website receive higher scores.

**Gap Closure:**

Projects that close a gap in the walking network (for example missing sidewalk) receive higher scores.

**Youth and Seniors:**

Projects near schools and senior facilities receive higher scores.

**Community Attractors and Transit Access:**

Projects near transit, health care facilities, community centers and gardens, top private employers, public services, shopping centers, parks and libraries receive higher scores.

**Feasibility:**

Projects that can be built within one to five years receive higher scores.

## Sidewalks and Walkways

Most streets in Citrus Heights include sidewalks on both sides of the street; however there are a number that do not have sidewalks and present gaps in the network (see Figure 3-15 in Chapter 3).

Areas without sidewalks (sidewalk gaps) may force pedestrians to walk in the roadway and are a mobility issue for those who use assistive devices.

While not all streets with sidewalk gaps have a high demand for walking, there are a number that would benefit from sidewalks or walkways.

Walkways, as defined in this Plan, are ADA compliant paths of travel that feel less urban than sidewalks (**Figure 5-3**). A typical sidewalk is shown in **Figure 5-4**.

Some areas in Citrus Heights feel more rural and a traditional sidewalk may not be desirable. In those instances, walkways comprised of decomposed granite or asphalt are alternatives that can create a safe and accessible surface for walking while maintaining the rural character of the neighborhood.

This Plan recommends sidewalks or walkways (as appropriate) based on:

- ◆ Community input
- ◆ Priority Pedestrian Corridor Network
- ◆ Connections to schools, parks, and major retail districts
- ◆ ADA Transition Plan

### Recommendations

This Plan recommends the City prioritize sidewalk/walkway installation along the Pedestrian Priority Network and along the corridors identified in **Table 5-1** and shown on **Figure 5-5**. **Table 5-1** includes priority 1 sidewalks/walkways. Projects that are part of ongoing complete streets projects are identified in the last column.

For a complete list of sidewalk and walkway projects, see **Appendix E**.

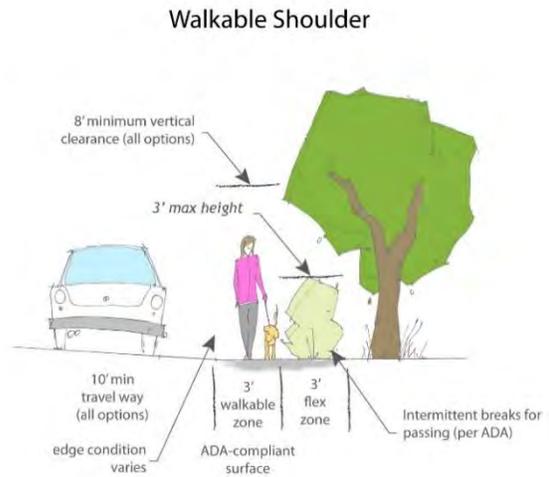


Figure 5-3: Example Walkways



Figure 5-4: Typical Sidewalk

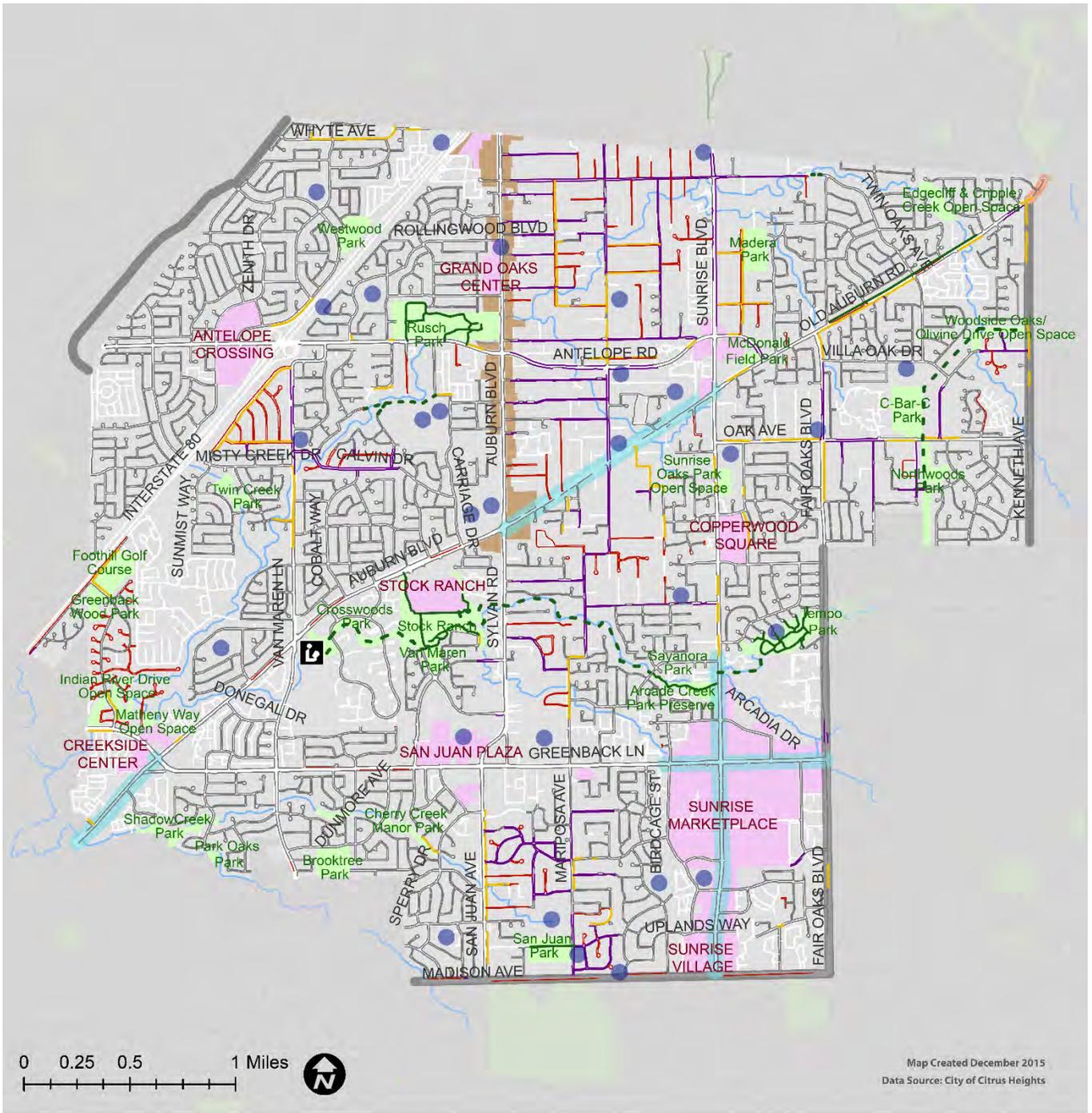
Table 5-1: Priority 1 Sidewalk/Walkway Projects

LOCATION	CROSS STREET A	CROSS STREET B	STREET TYPE	LENGTH (FT)	SIDE	COMPLETE STREET PROJECT <sup>1</sup>
Antelope Road	Rosswood Drive	Amsterdam Avenue	Arterial	100	N	Yes
Auburn Boulevard	North Of Greenback Lane	South Of Creekbed Lane	Arterial	210	N	
Baird Way	Holly Drive	East Of Auburn Boulevard	Local	1050	N	
Baird Way	Holly Drive	East Of Auburn Boulevard	Local	1010	S	
Farmgate Way	Mariposa Avenue	West Of Our Way	Local	200	N	
Highland Avenue	Locher Way	East Of Deerfield Drive	Local	150	N	
Highland Avenue	Sunrise Boulevard	Locher Way	Local	590	S	
Highland Avenue	Deerfield Drive	West Of Locher Way	Local	80	N	
Highland Avenue	East Of Locher Way	West Of Sunrise Boulevard	Local	130	N	
Highland Avenue	Rosa Vista Lane	Larkspur Avenue	Local	920	N	
Highland Avenue	Mariposa Avenue	Beam Drive	Local	1000	N	
Highland Avenue	Mariposa Avenue	West Of Rinconada Drive	Local	600	S	
Mariposa Avenue	Northeast Circle	Madison Avenue	Collector	1430	E	
Mariposa Avenue	Madison Avenue	Capricorn Drive	Collector	230	W	
Mariposa Avenue	North Of Pleides Avenue	South Of Northeast Circle	Collector	120	W	
Mariposa Avenue	Antelope Road	Old Auburn Road	Collector	2160	W	
Mariposa Avenue	Antelope Road	Heredia Drive	Collector	780	W	
Mariposa Avenue	Cina Way	Watson Way	Collector	700	W	
Mariposa Avenue	Reno Lane	Antelope Road	Collector	300	W	
Mariposa Avenue	Oak Grove Avenue	Loleta Avenue	Collector	1460	E	
Mariposa Avenue	Cook Avenue	Old Auburn Road	Collector	1010	E	
Mariposa Avenue	Old Auburn Road	Rosa Vista	Collector	2180	E	
Mariposa Avenue	Barca Lane	Cina Way	Collector	670	W	
Mariposa Avenue	South Of Twin Oaks Avenue	City Limit	Collector	1070	E	
Mariposa Avenue	Walnut Drive	Scribner Avenue	Collector	660	W	
Mariposa Avenue	Old Auburn Road	Dennis Way	Collector	1450	W	
Mariposa Avenue	Twin Oaks Avenue	Roberts Drive	Collector	340	W	
Mariposa Avenue	Twin Oaks Avenue	City Limit	Collector	860	W	
Mariposa Avenue	Northeast Circle	North Of Pleides Avenue	Collector	300	W	
Mariposa Avenue	Oak Grove Avenue	Jessie Avenue	Collector	170	W	
Mariposa Avenue	Roberts Drive	South Of Twin Oaks Avenue	Collector	130	E	
Mariposa Avenue	Loleta Avenue	Barca Lane	Collector	170	W	
Mariposa Avenue	Scribner Avenue	Loleta Avenue	Collector	70	W	
Mariposa Avenue	Trilby Court	Chula Vista Drive	Collector	1490	W	
Mariposa Avenue	Northridge Drive	Farmgate Way	Collector	1170	E	
Mariposa Avenue	Maddie Mae Lane	Bullock Lane	Collector	2860	S/E	
Mariposa Avenue	Farmgate Way	Eastgate Avenue	Collector	690	E	

<sup>1</sup> Project is part of an ongoing complete streets project

Projects

LOCATION	CROSS STREET A	CROSS STREET B	STREET TYPE	LENGTH (FT)	SIDE	COMPLETE STREET PROJECT <sup>1</sup>
Mariposa Avenue	Mariposa Glen Way	Trilby Court	Collector	330	N	
Mariposa Avenue	Peter Ray Court	Bullock Lane	Collector	350	W	
Mariposa Avenue	Sylvan Valley Way	Peter Ray Court	Collector	870	W	
Mariposa Avenue	Prince Street	Karen Anne Lane	Collector	870	W	
Mariposa Avenue	Prince Street	Maddie Mae	Collector	580	N	
Mariposa Avenue	Nelson Lane	Rosa Vista Avenue	Collector	330	W	
Mariposa Avenue	Northeast Circle	South Of Northeast Circle	Collector	70	E	
Oak Avenue	Sunrise Boulevard	Canelo Hills Drive	Collector	650	N	
Oak Avenue	Wesley Lane	Fair Oaks Boulevard	Collector	1450	N	
Oak Avenue	Fair Oaks Boulevard	Cross Drive	Collector	1180	S	
Oak Avenue	Fair Oaks Boulevard	Fox Meadow Lane	Collector	1020	N	
Oak Avenue	Cross Drive	Streng Avenue	Collector	260	S	
Oak Avenue	Streng Drive	Melva Street	Collector	680	S	
Oak Avenue	Olivine Avenue	Old Ranch Road	Collector	410	N	
Oak Avenue	Melva Street	Olivine Avenue	Collector	400	N	
Old Auburn Road	Sunrise Boulevard	Soquel Way	Arterial	610	N	
Pleides Avenue	Mariposa Avenue	Celestial Way	Local	210	N	
Pleides Avenue	Mariposa Avenue	Celestial Way	Local	210	S	
Sunrise Boulevard	North Of Highland Avenue	South Of Woodmore Oaks Drive	Arterial	460	W	Yes
Sunrise Boulevard	Michigan Drive	South Of Vista Ridge Drive	Arterial	490	W	Yes
Sunrise Boulevard	Mclin Way	South Of Michigan Drive	Arterial	200	W	Yes
Sunrise Boulevard	Twin Oaks Avenue	City Limit	Arterial	570	W	Yes
Sunrise Boulevard	Twin Oaks Avenue	City Limit	Arterial	570	E	Yes
Twin Oaks Avenue	Auburn Boulevard	Sunrise Boulevard	Collector	5380	N	
Twin Oaks Avenue	Auburn Boulevard	Mariposa Avenue	Collector	1970	S	
Twin Oaks Avenue	Lee Drive	Sunrise Boulevard	Collector	1900	S	
Twin Oaks Avenue	Mariposa Avenue	Lee Drive	Collector	590	S	
Van Maren Lane	Misty Creek Drive	Skylane Drive	Collector	940	E	



**WALKWAYS**

- |  |                   |  |                              |  |                       |
|--|-------------------|--|------------------------------|--|-----------------------|
|  | Existing Walkways |  | Gap Fill - Both Sides        |  | Shopping Centers      |
|  | Private Streets   |  | Gap Fill - One Side          |  | Focus Area Plans      |
|  | Paths             |  | Gap - No Fill                |  | Auburn Blvd Plan Area |
|  | Planned Paths     |  | Requires County Coordination |  | Libraries             |
|  |                   |  |                              |  | Schools               |

Figure 5-5: Recommended Path, Walkway, and Sidewalk Projects

## Focus Area Plans

The purpose of the Focus Area Plans is to provide more in-depth recommendations for improving the pedestrian environment along four of the major, commercial corridors with high walking demand and pedestrian-related accidents within the City of Citrus Heights:

- ◆ Old Auburn Road from Sunrise Boulevard to Auburn Boulevard
- ◆ Greenback Lane from Birdcage Drive to Fair Oaks Boulevard
- ◆ Sunrise Boulevard from Madison Avenue to Sayonara Drive
- ◆ Auburn Boulevard from Manzanita Avenue to Greenback Lane

Three of these corridors, Sunrise Boulevard, Greenback Lane, and Auburn Boulevard, are heavily traveled arterial roads fronted primarily by commercial and service-oriented land uses. These facilities generally have four to six foot wide sidewalks, adjacent rolled curbs, and prevailing traffic speeds in excess of 40 mph. Pedestrian use of these corridors can be a challenging experience, particularly during times of heavy traffic, as a result of minimal separation between pedestrians and vehicle facilities and inadequate safety treatments (i.e., lighting, adequate sidewalk widths, etc.). While the fourth corridor, Old Auburn Road, experiences less traffic and is primarily fronted by residential properties, much of this stretch has no sidewalks.

Improving pedestrian conditions on these routes can be accomplished through a number of strategies, including:

- ◆ Installation or reconfiguration of sidewalks to widen walkways and create separation from the adjacent roadway;
- ◆ Replacement of rolled curbs with vertical curbs to provide a stronger physical separation;
- ◆ Installation or improvement of bus stops with dedicated pull-off lanes, shelters, and related amenities;
- ◆ Enhancement of crosswalks with raised, patterned textures and/or high visibility markings and directional curb ramps;
- ◆ Limited addition of pedestrian-activated traffic control devices, including traffic signals and/or warning beacons;
- ◆ Installation of pedestrian-scale lighting and other amenities such as banners and benches; and
- ◆ Appropriate, drought-tolerant landscaping in sidewalk planters.

The following pages illustrate the corridors and recommended improvements. **Appendix F** includes a more detailed overview of the Focus Area Plans.



RECOMMENDATIONS

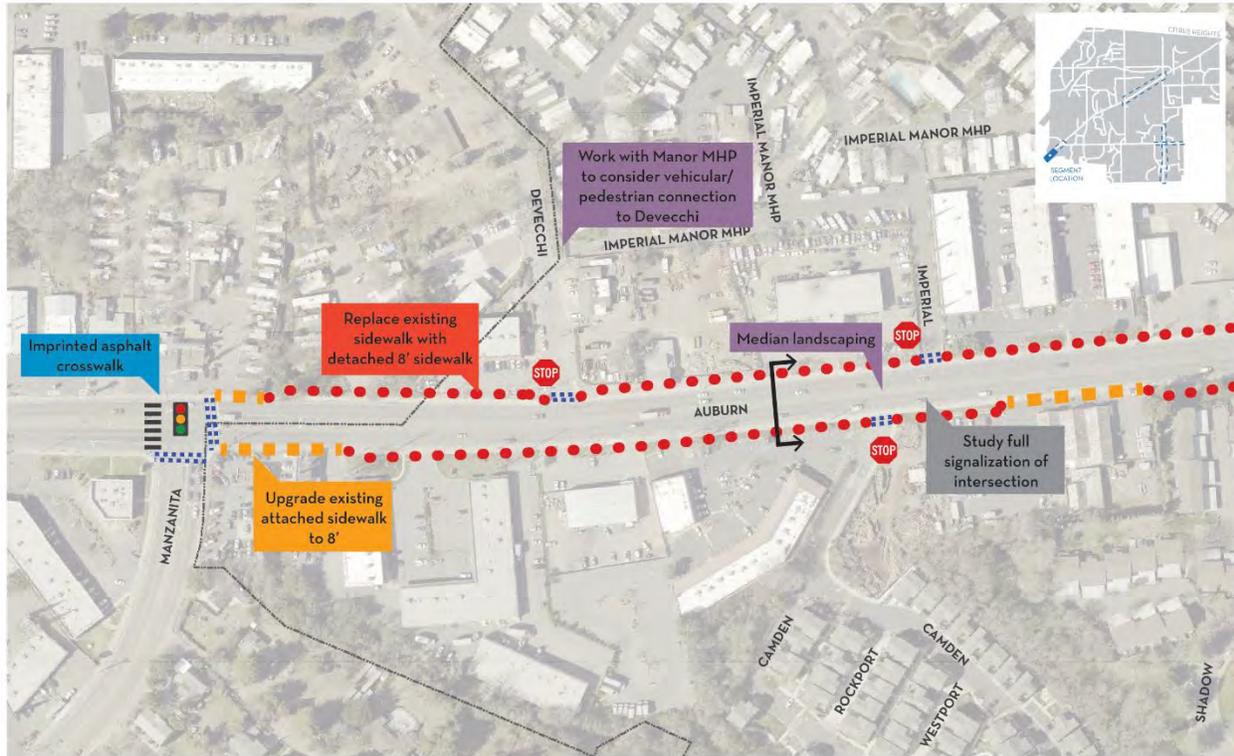
 Focus Area Plans

ATTRACTORS

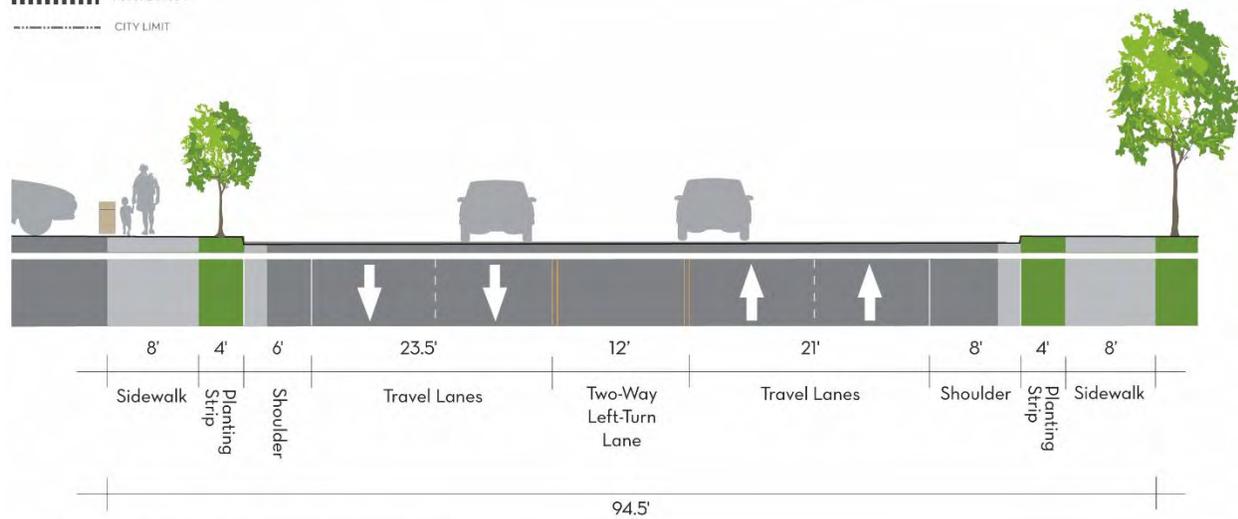
-  Senior Living Facilities
-  Healthcare Facilities
-  Community Centers and Gardens
-  Schools
-  Public Services
-  Shopping Centers
-  Parks/Open Space
-  Auburn Blvd Plan Area
-  Libraries

Figure 5-6: Focus Area Plan Overview

# AUBURN 1



## PLAN VIEW



## CROSS SECTION - PROPOSED

CITY OF CITRUS HEIGHTS PEDESTRIAN MASTER PLAN

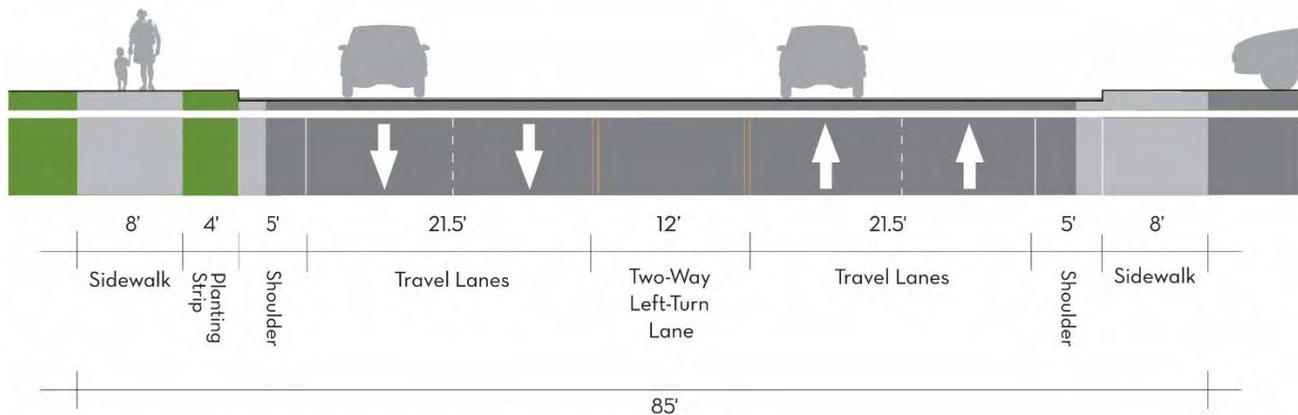
Figure 5-7: Focus Area Plan – Auburn 1

# AUBURN 2



## PLAN VIEW

- REPLACE EXISTING SIDEWALK WITH DETACHED 8' SIDEWALK
- ▬▬▬▬▬ UPGRADE EXISTING ATTACHED SIDEWALK TO 8'
- ▬▬▬▬▬ IMPRINTED ASPHALT CROSSWALK
- STOP-CONTROLLED OR SIGNALIZED INTERSECTION
- CROSS-SECTION LOCATION

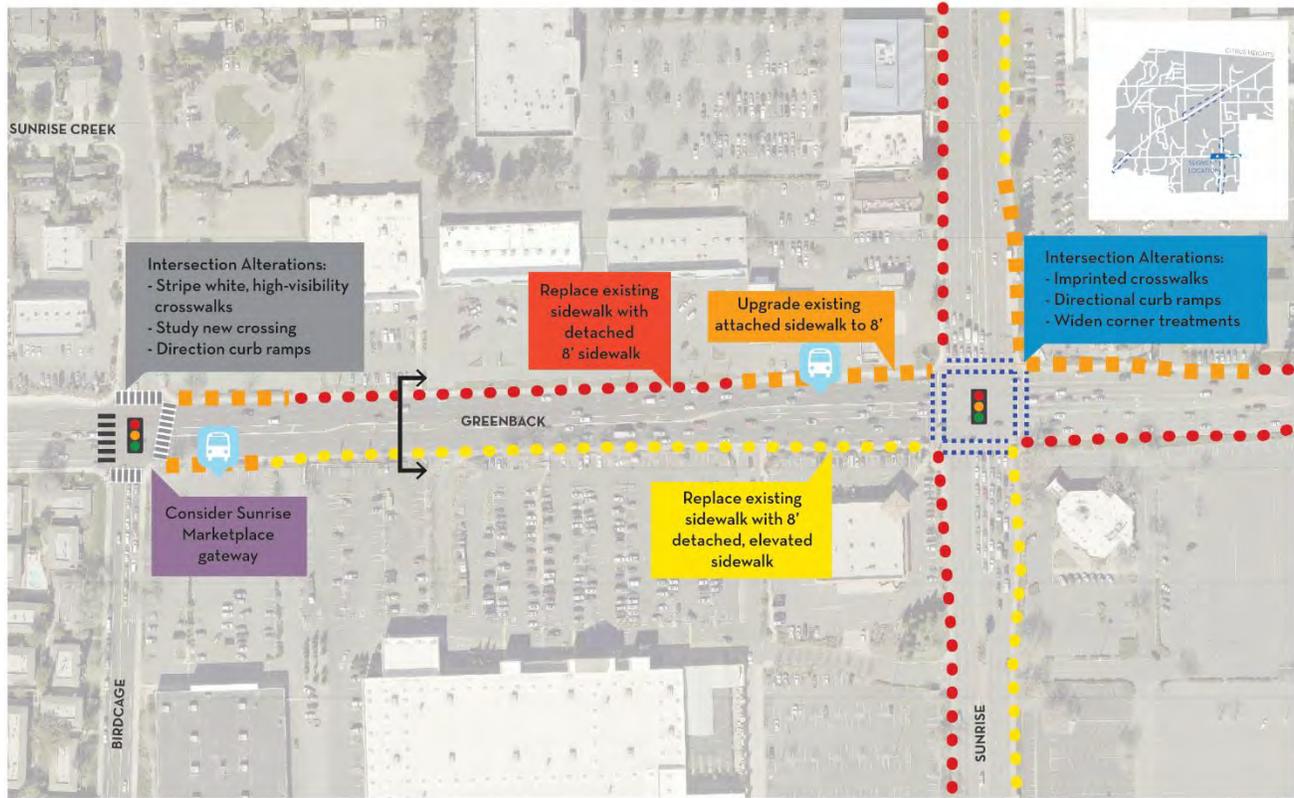


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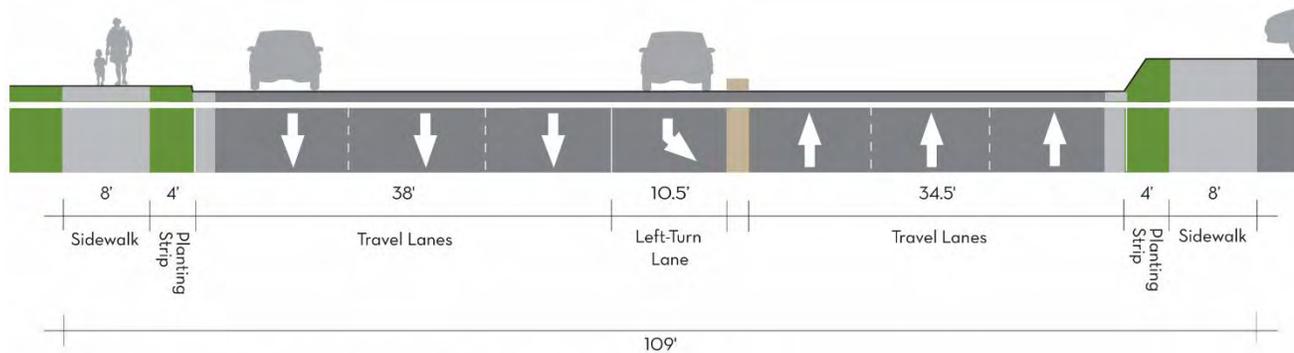
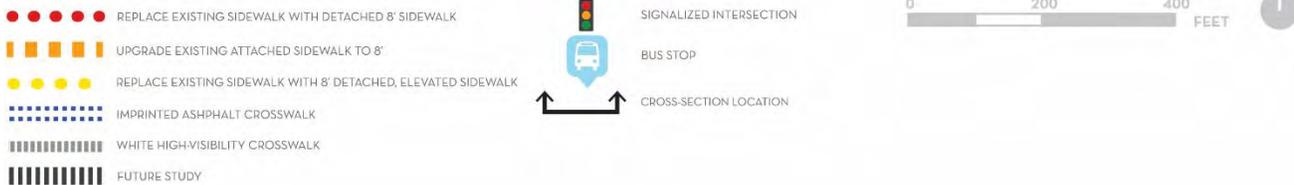
CITY OF CITRUS HEIGHTS PEDESTRIAN MASTER PLAN

Figure 5-8: Focus Area Plan – Auburn 2

# GREENBACK 1



## PLAN VIEW

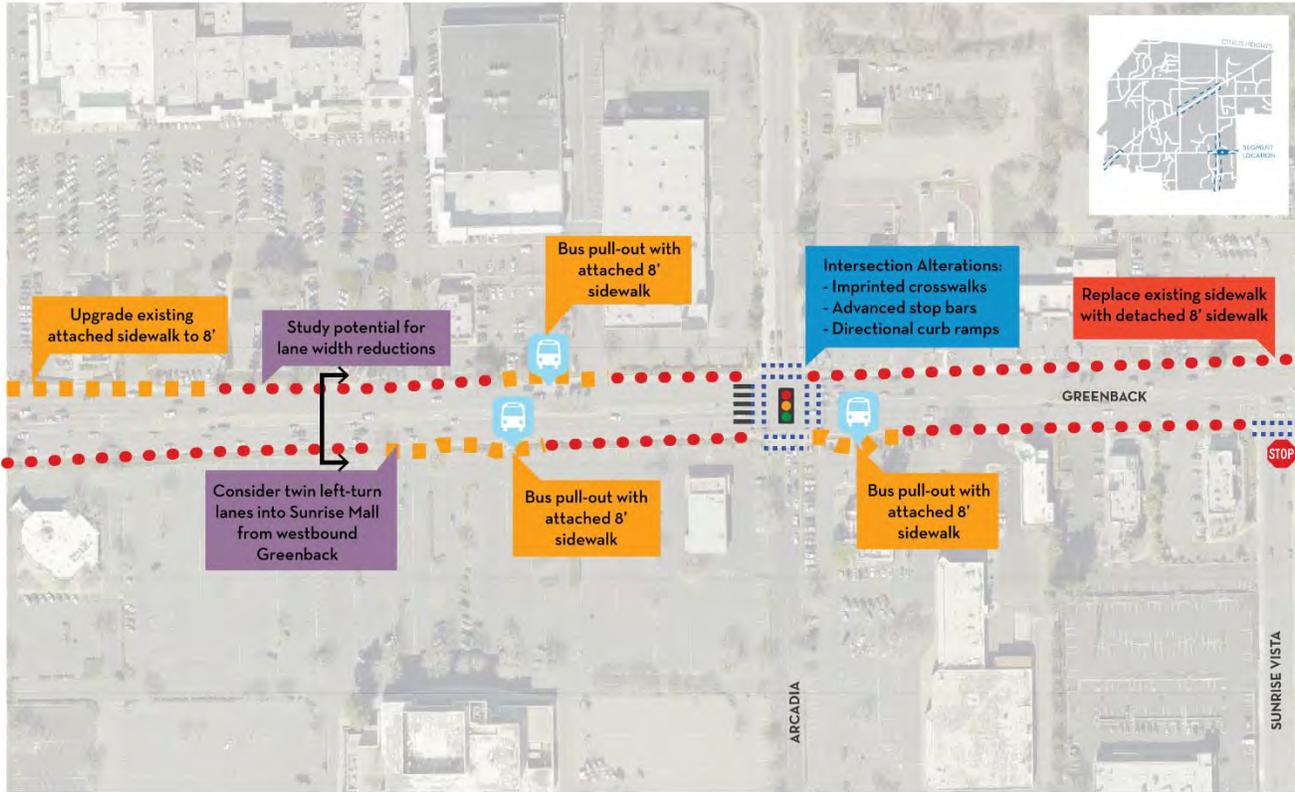


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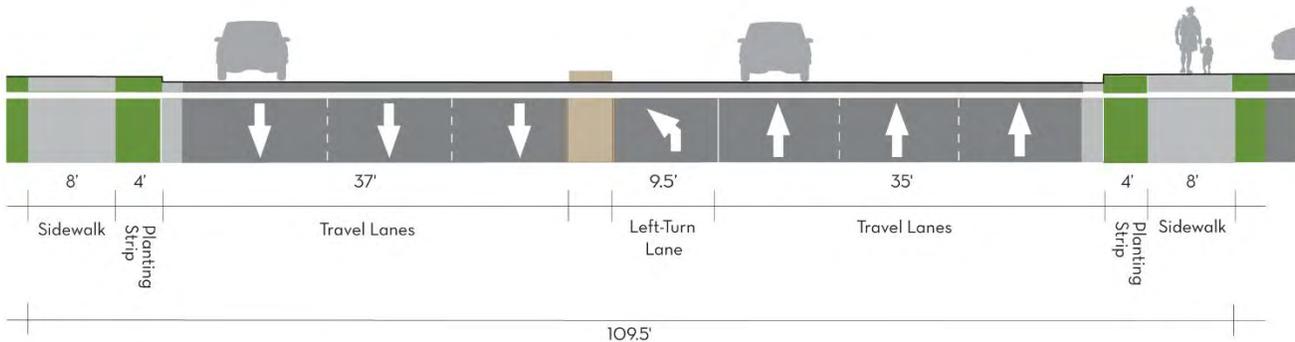
CITY OF CITRUS HEIGHTS PEDESTRIAN MASTER PLAN

Figure 5-9: Focus Area Plan – Greenback 1

# GREENBACK 2



## PLAN VIEW

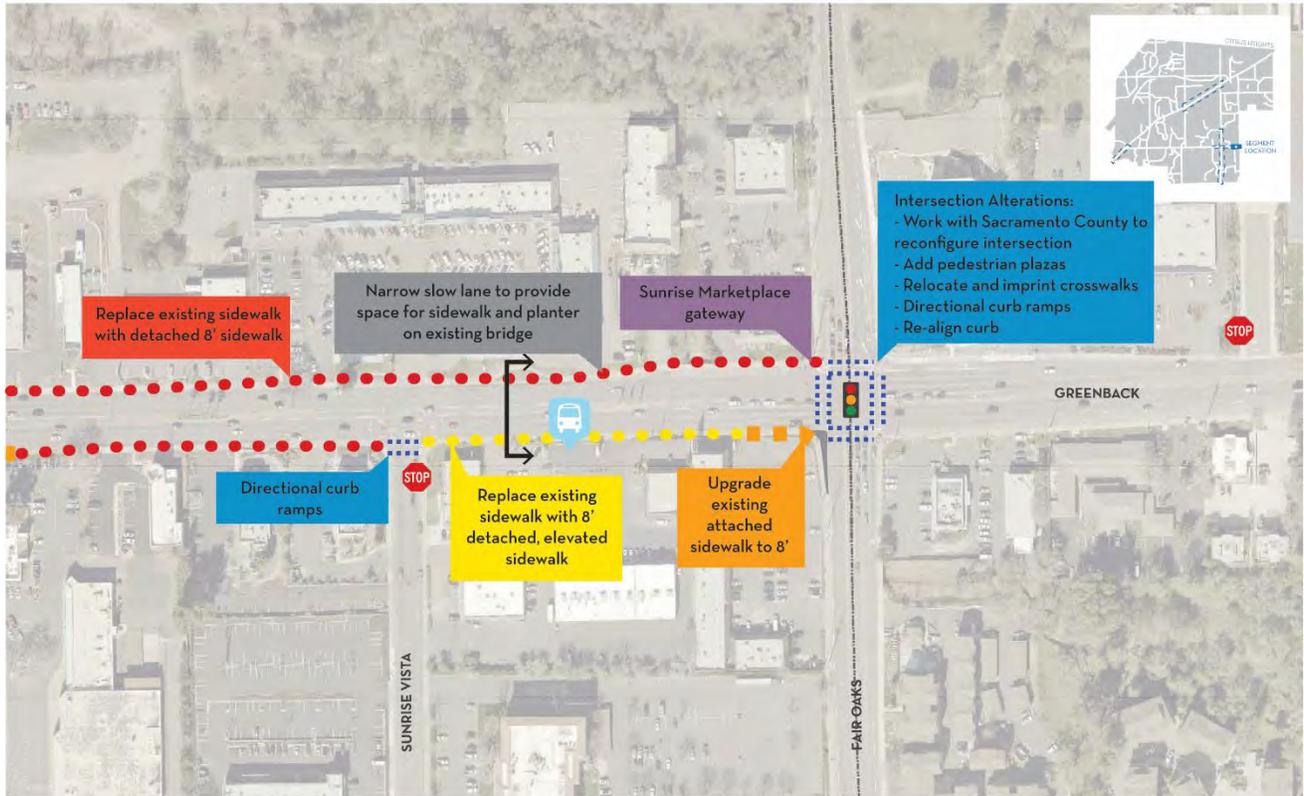


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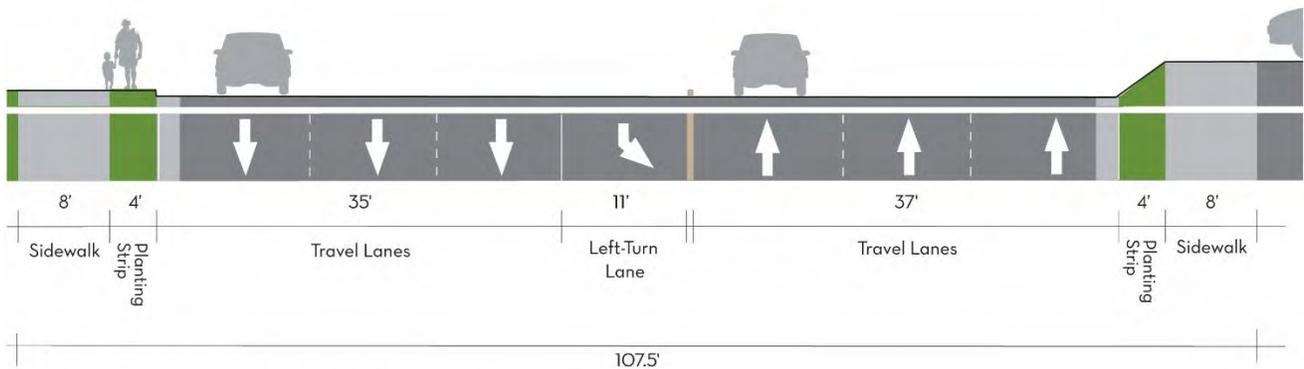
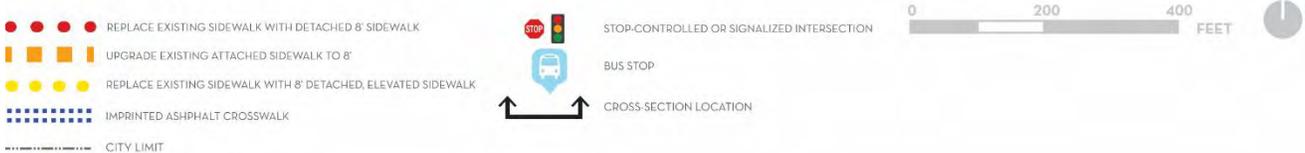
CITY OF CITRUS HEIGHTS PEDESTRIAN MASTER PLAN

Figure 5-10: Focus Area Plan – Greenback 2

# GREENBACK 3



## PLAN VIEW

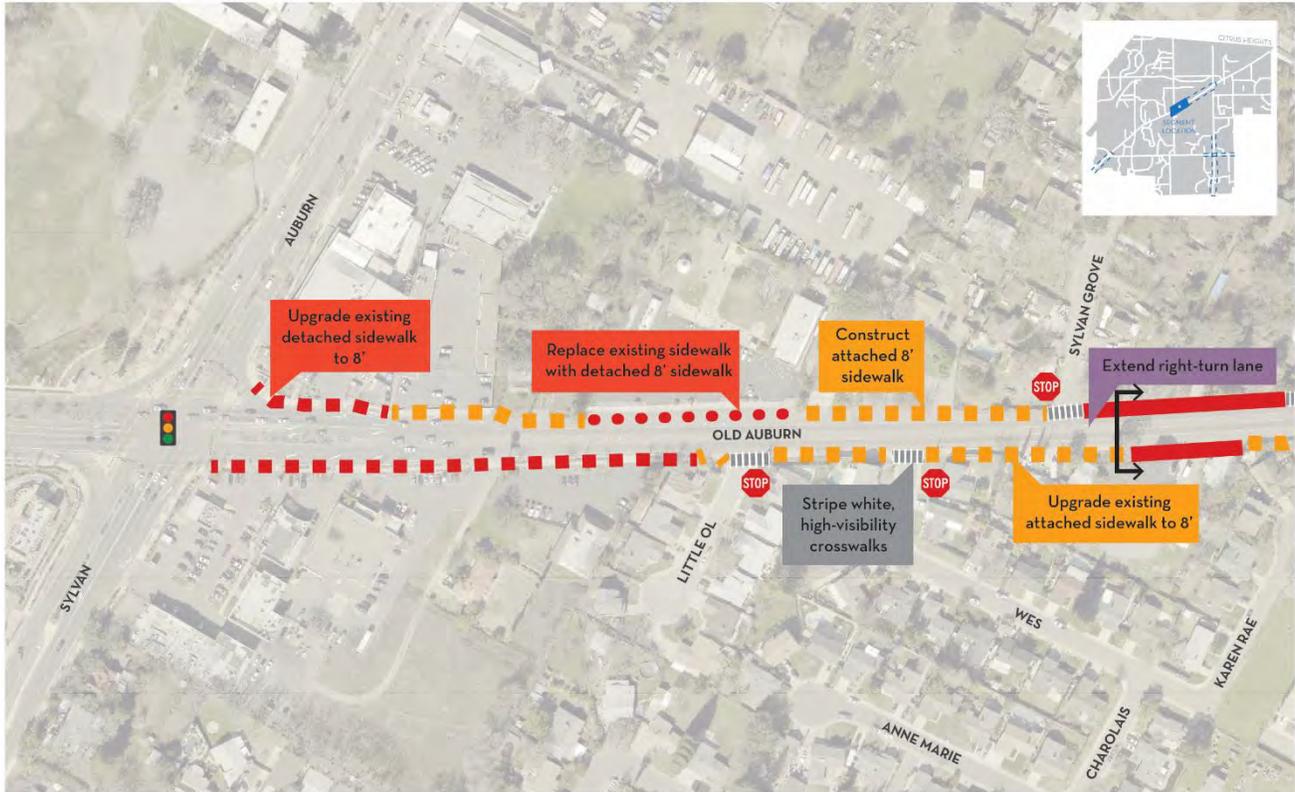


## CROSS SECTION - PROPOSED

CITY OF CITRUS HEIGHTS PEDESTRIAN MASTER PLAN

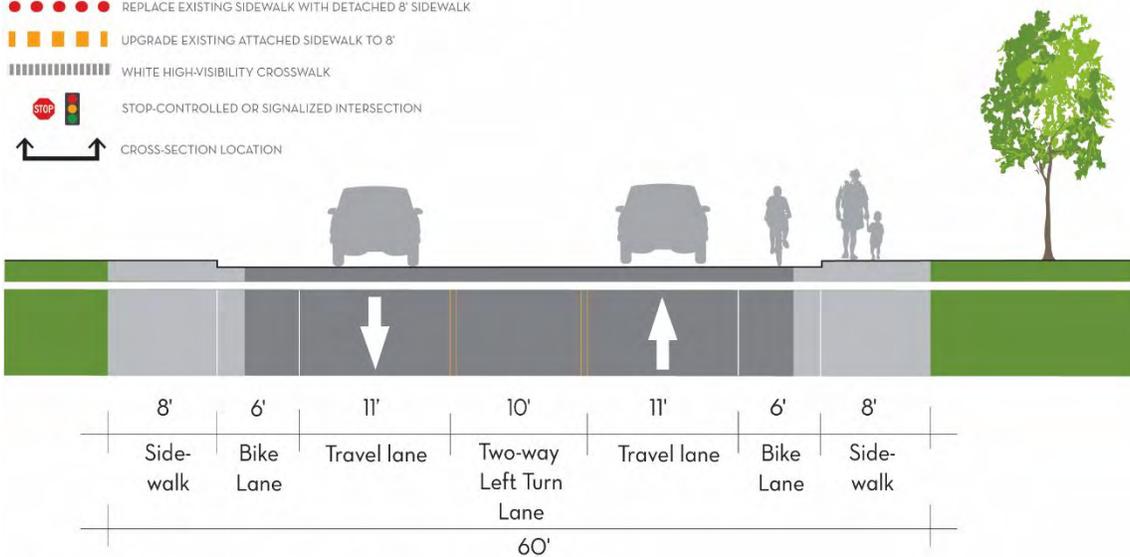
Figure 5-11: Focus Area Plan – Greenback 3

# OLD AUBURN 1



## PLAN VIEW

- CONSTRUCT DETACHED 8' SIDEWALK
- UPGRADE EXISTING DETACHED SIDEWALK TO 8'
- REPLACE EXISTING SIDEWALK WITH DETACHED 8' SIDEWALK
- UPGRADE EXISTING ATTACHED SIDEWALK TO 8'
- WHITE HIGH-VISIBILITY CROSSWALK
- STOP-CONTROLLED OR SIGNALIZED INTERSECTION
- CROSS-SECTION LOCATION

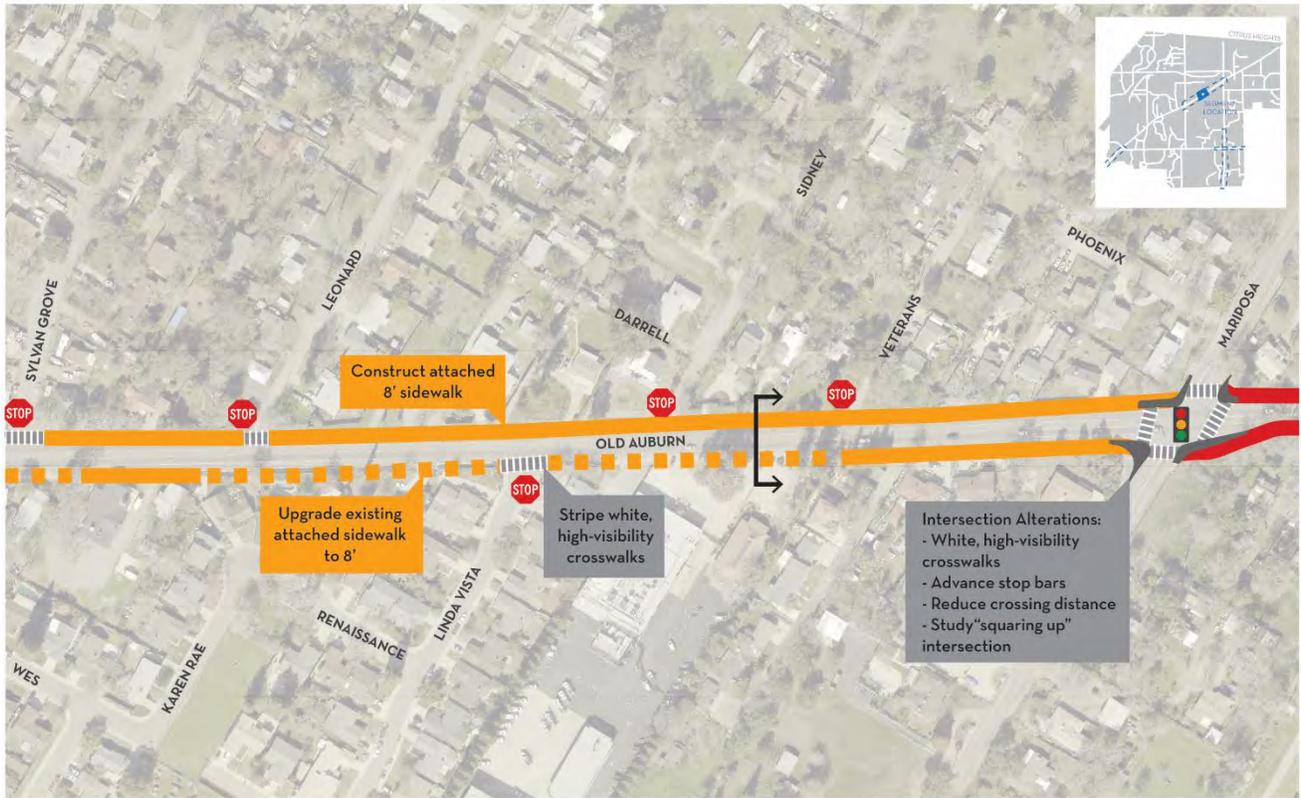


## CROSS SECTION - PROPOSED

CITY OF CITRUS HEIGHTS PEDESTRIAN MASTER PLAN

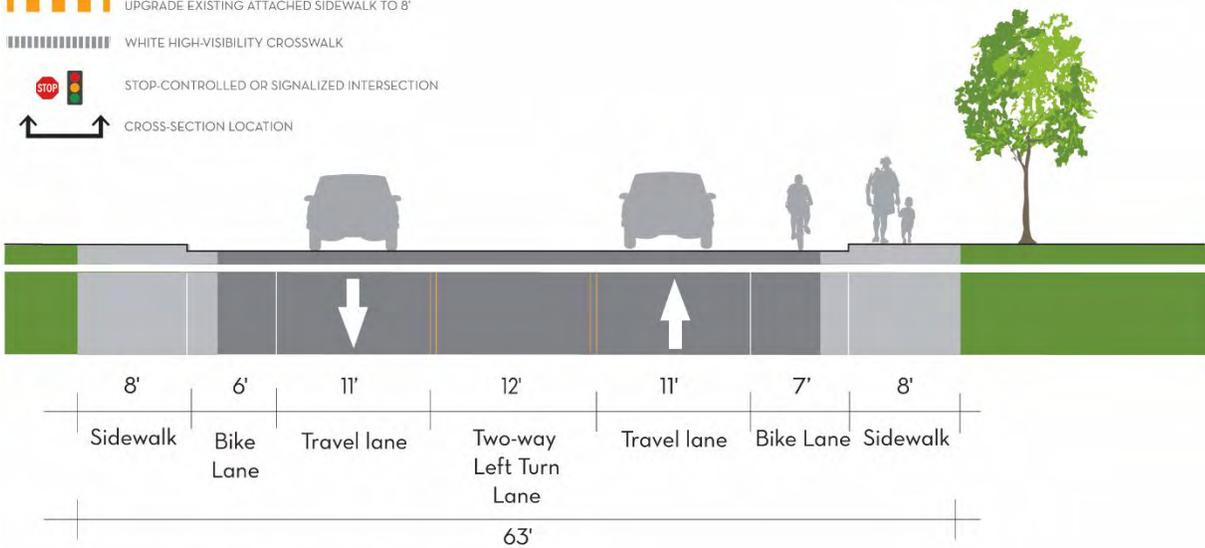
Figure 5-12: Focus Area Plan – Old Auburn 1

# OLD AUBURN 2



## PLAN VIEW

- CONSTRUCT DETACHED 8' SIDEWALK
- CONSTRUCT ATTACHED 8' SIDEWALK
- UPGRADE EXISTING ATTACHED SIDEWALK TO 8'
- WHITE HIGH-VISIBILITY CROSSWALK
- STOP-CONTROLLED OR SIGNALIZED INTERSECTION
- CROSS-SECTION LOCATION

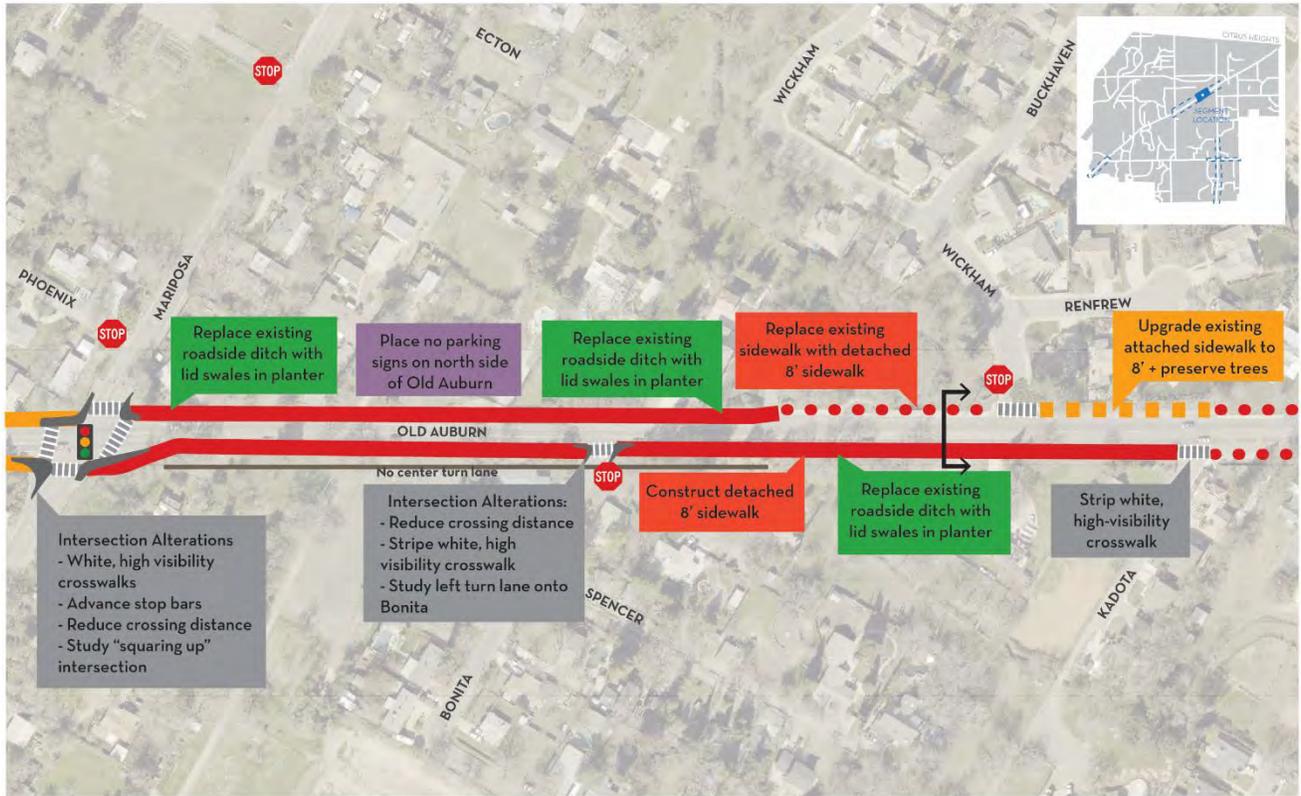


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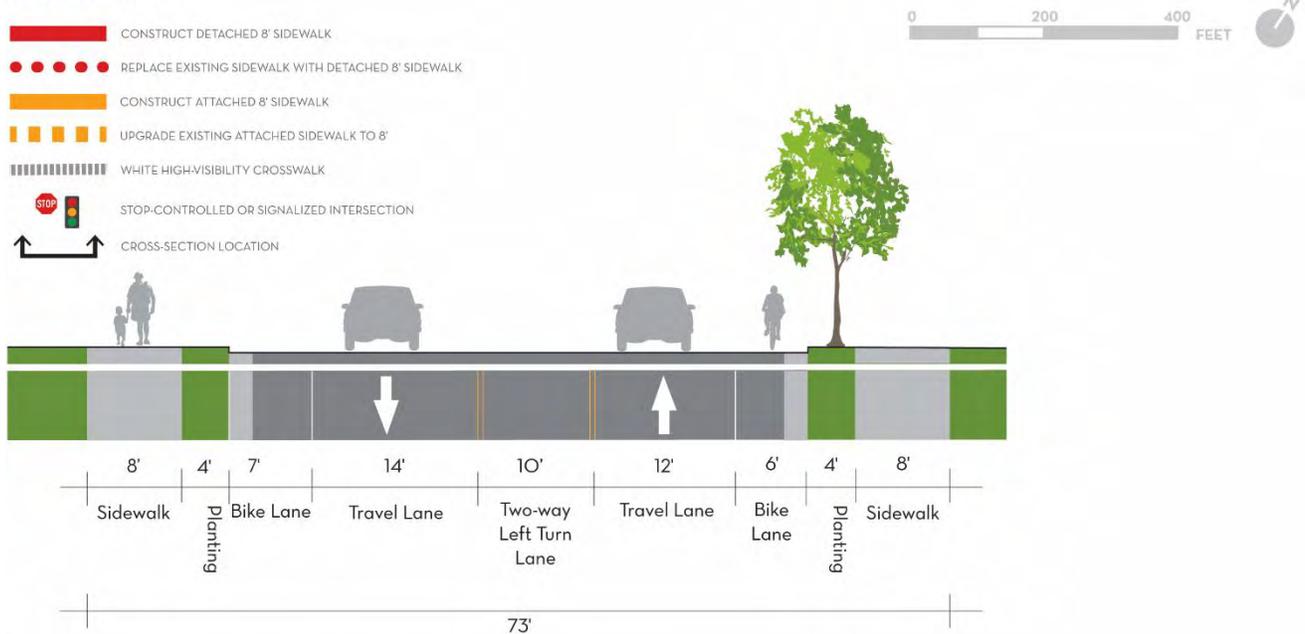
CITY OF CITRUS HEIGHTS PEDESTRIAN MASTER PLAN

Figure 5-13: Focus Area Plan – Old Auburn 2

# OLD AUBURN 3



## PLAN VIEW

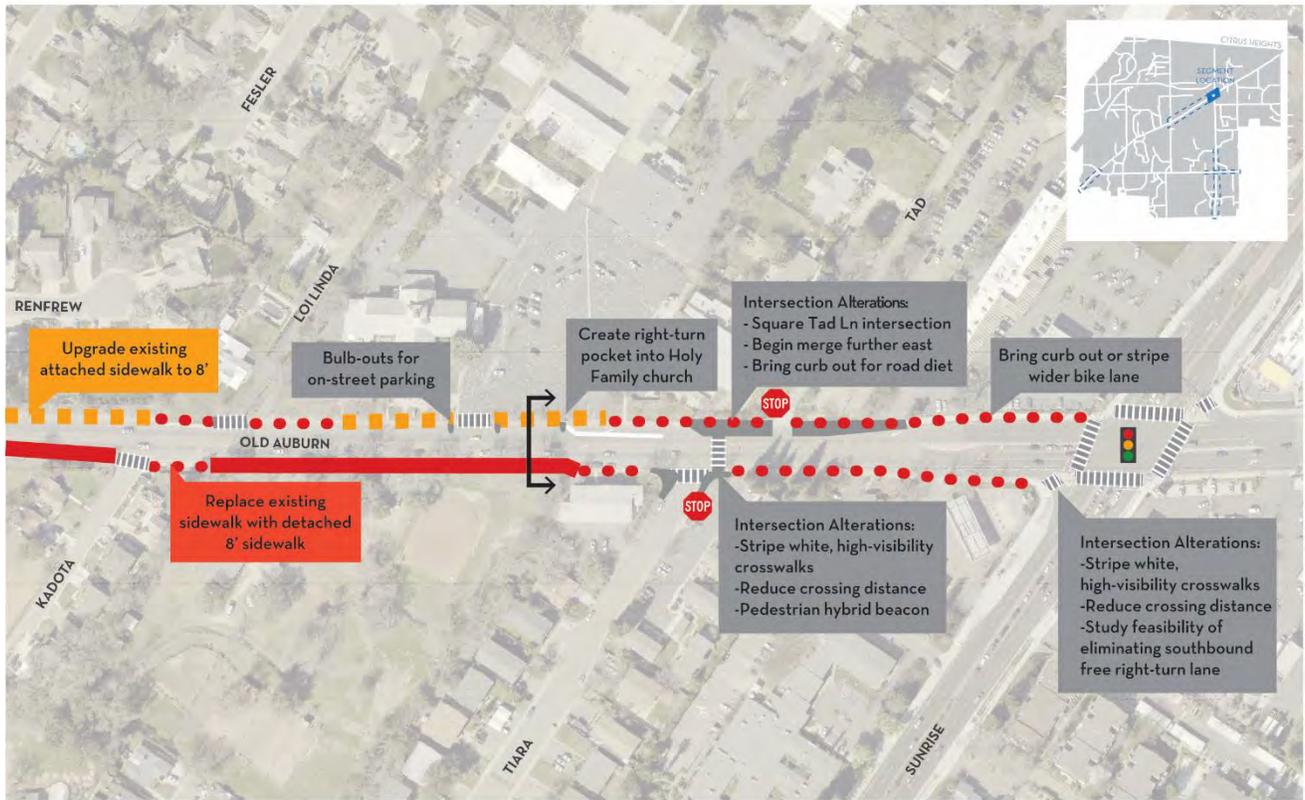


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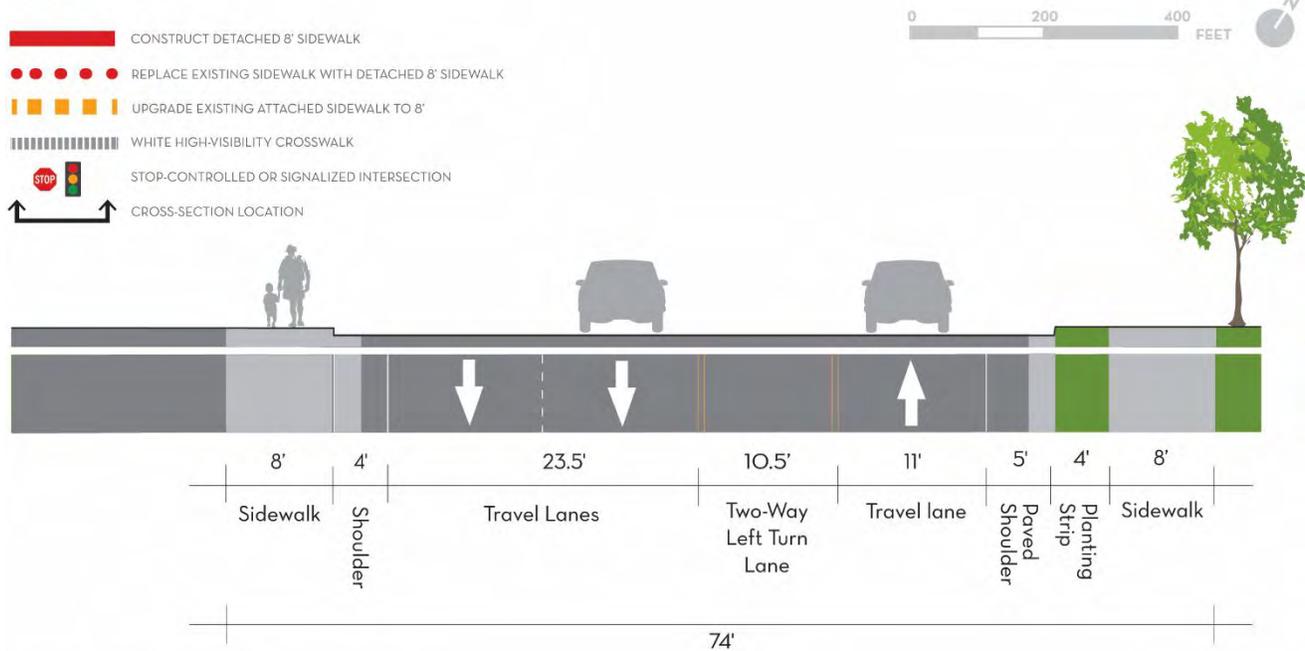
CITY OF CITRUS HEIGHTS PEDESTRIAN MASTER PLAN

Figure 5-14: Focus Area Plan – Old Auburn 3

# OLD AUBURN 4



## PLAN VIEW

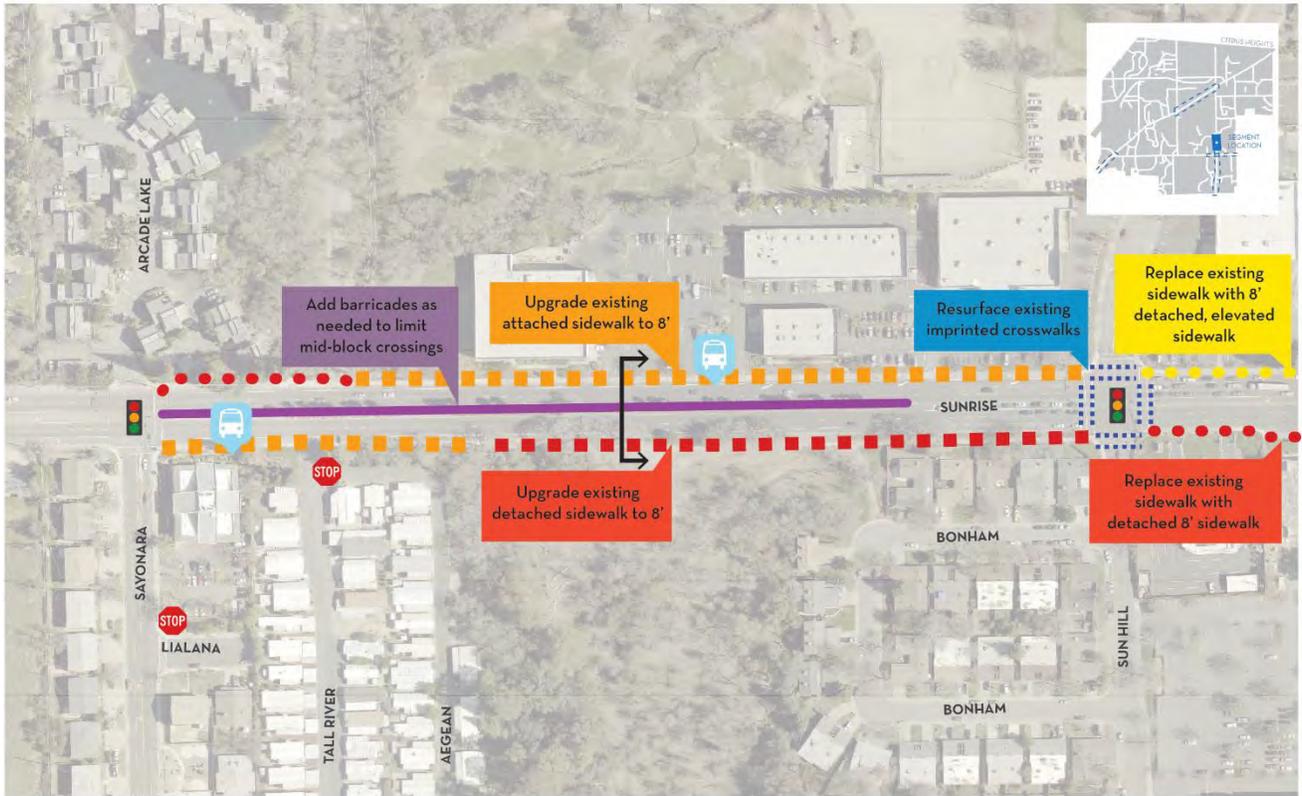


## CROSS SECTION - PROPOSED

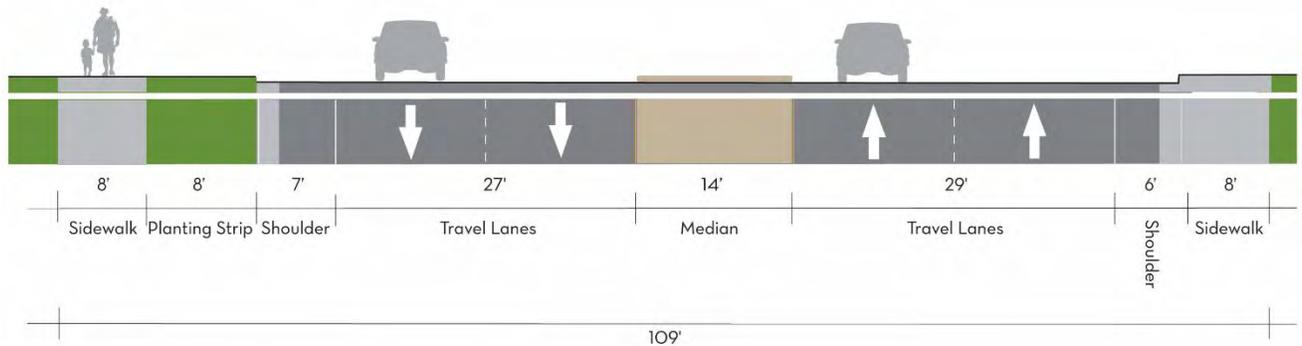
CITY OF CITRUS HEIGHTS PEDESTRIAN MASTER PLAN

Figure 5-15: Focus Area Plan – Old Auburn 4

# SUNRISE 1



## PLAN VIEW

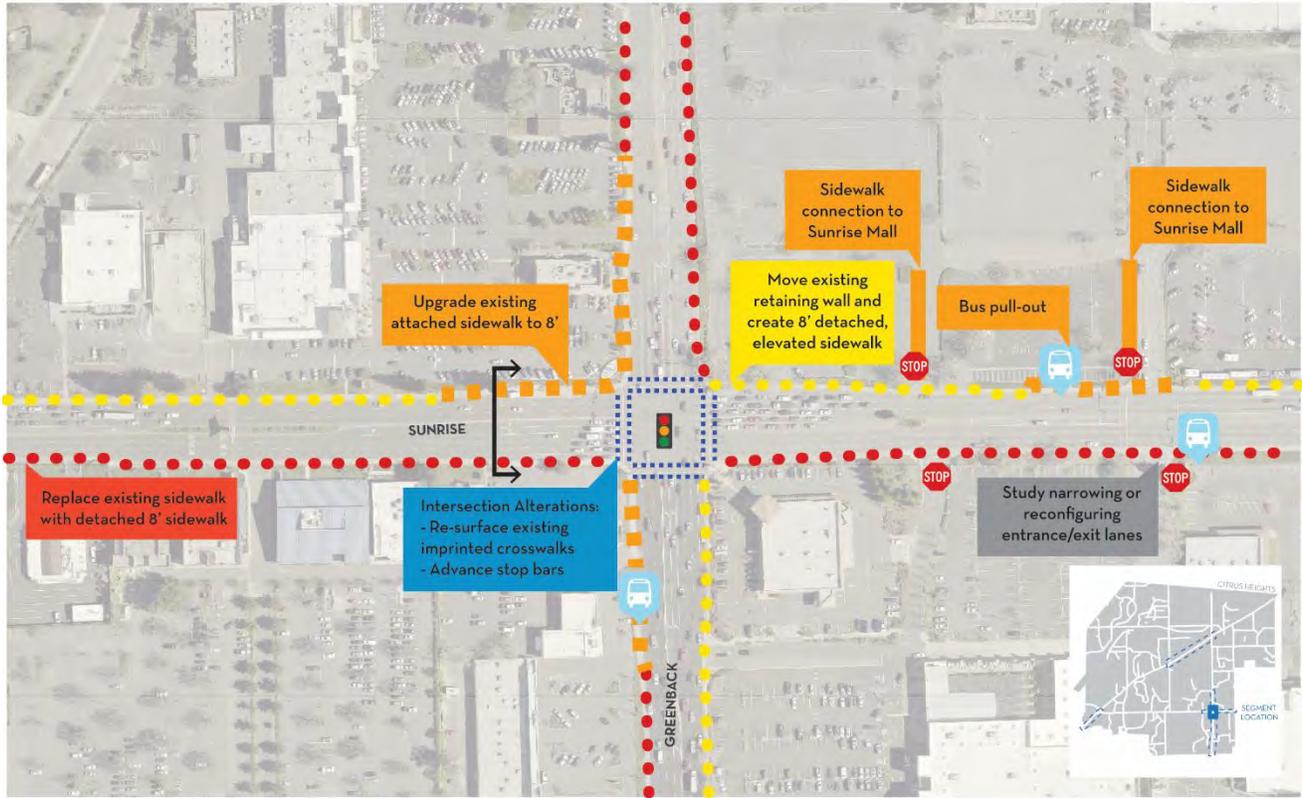


## CROSS SECTION - PROPOSED

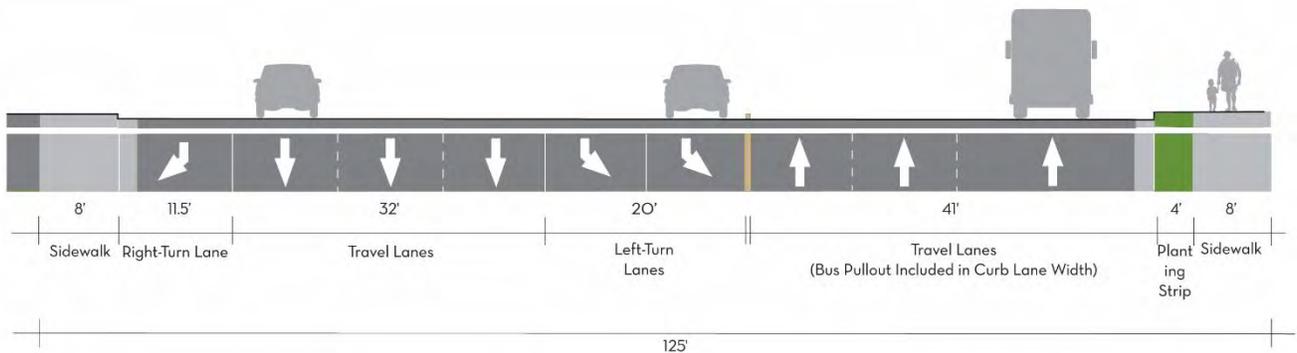
CITY OF CITRUS HEIGHTS PEDESTRIAN MASTER PLAN

Figure 5-16: Focus Area Plan – Sunrise 1

# SUNRISE 2



## PLAN VIEW

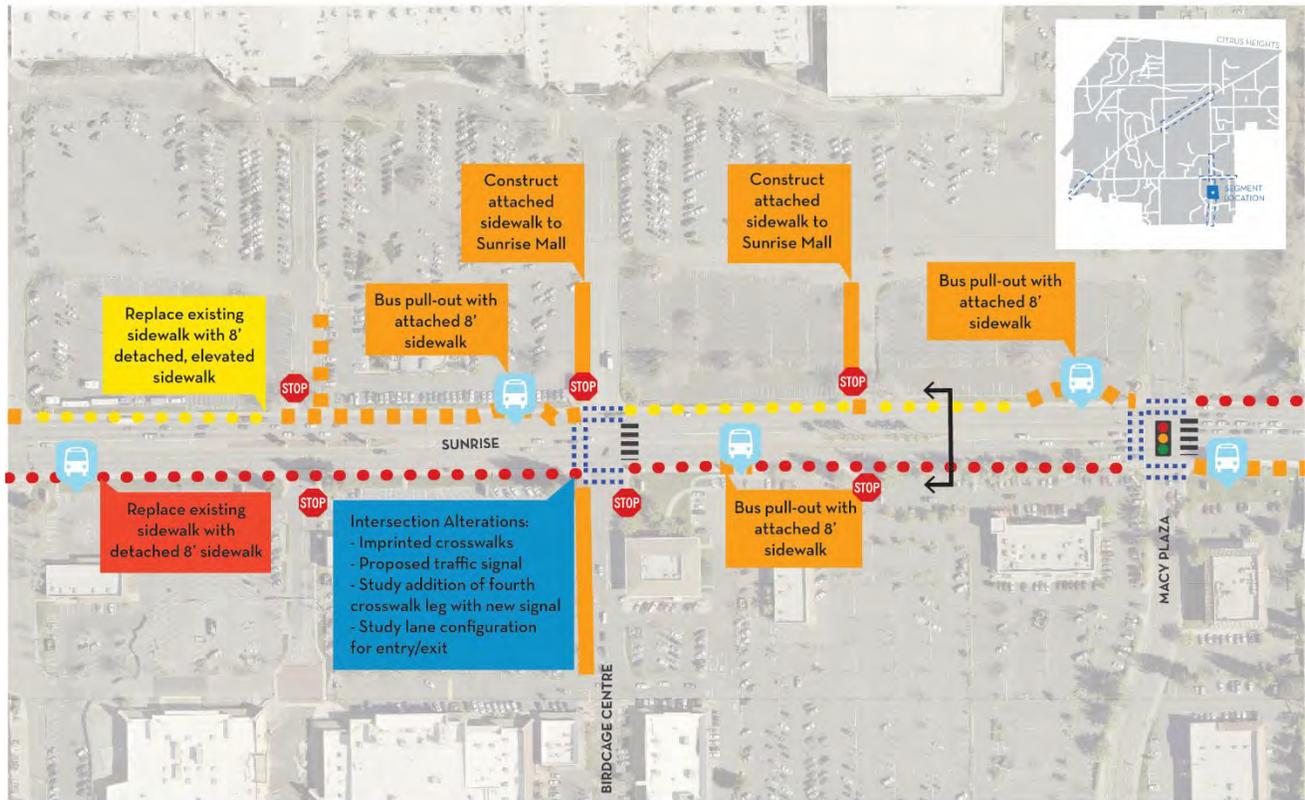


## CROSS SECTION - PROPOSED

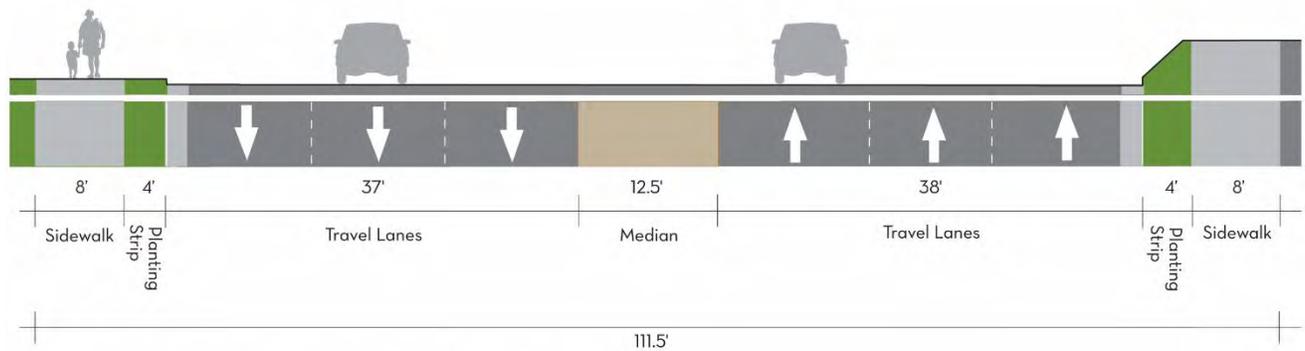
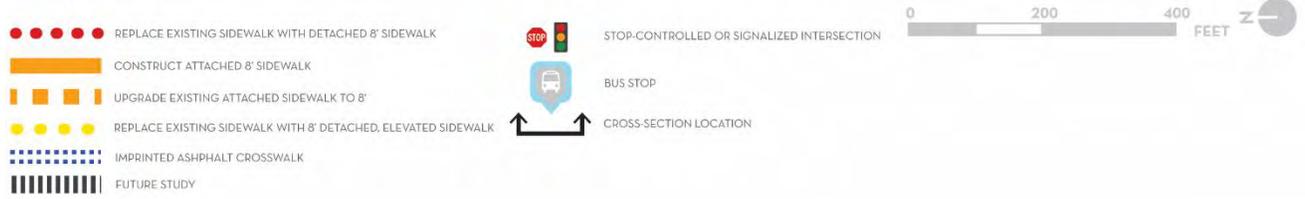
CITY OF CITRUS HEIGHTS PEDESTRIAN MASTER PLAN

Figure 5-17: Focus Area Plan – Sunrise 2

# SUNRISE 3



## PLAN VIEW

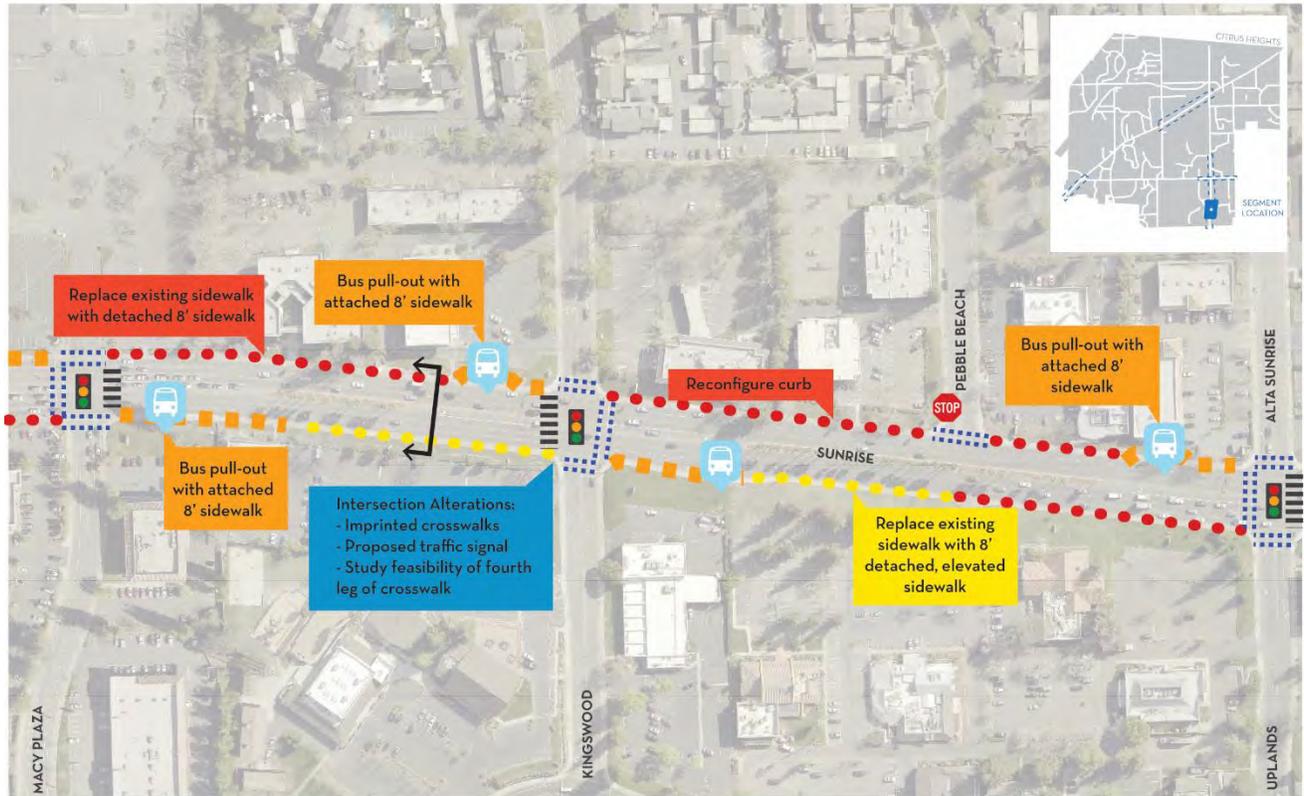


## CROSS SECTION - PROPOSED

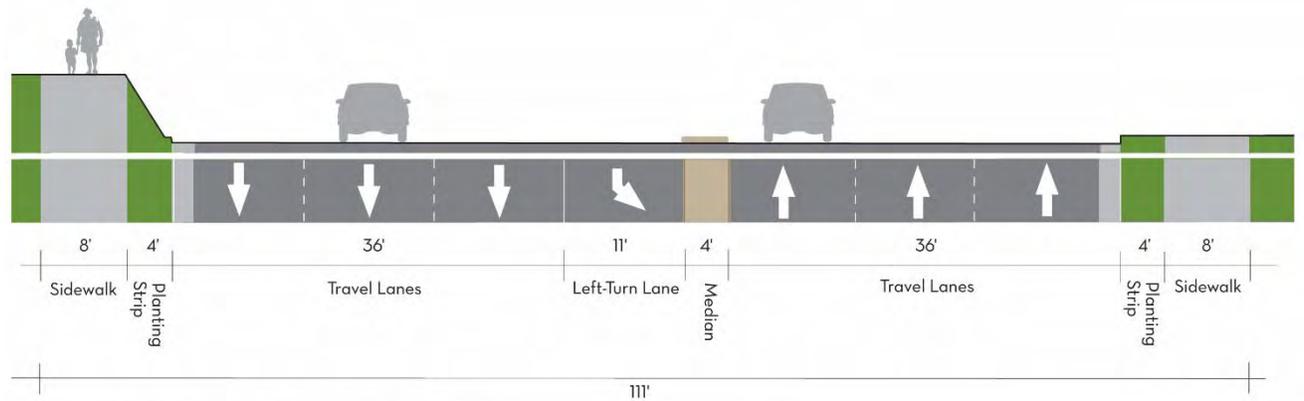
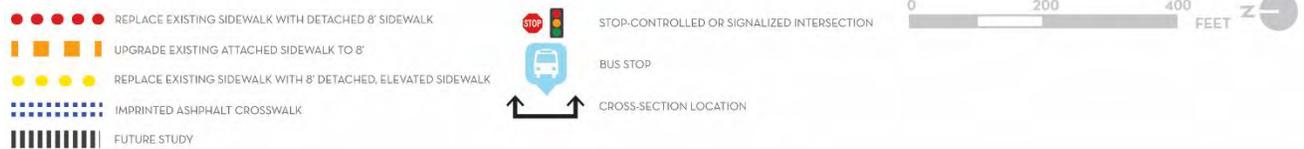
CITY OF CITRUS HEIGHTS PEDESTRIAN MASTER PLAN

Figure 5-18: Focus Area Plan – Sunrise 3

# SUNRISE 4



## PLAN VIEW

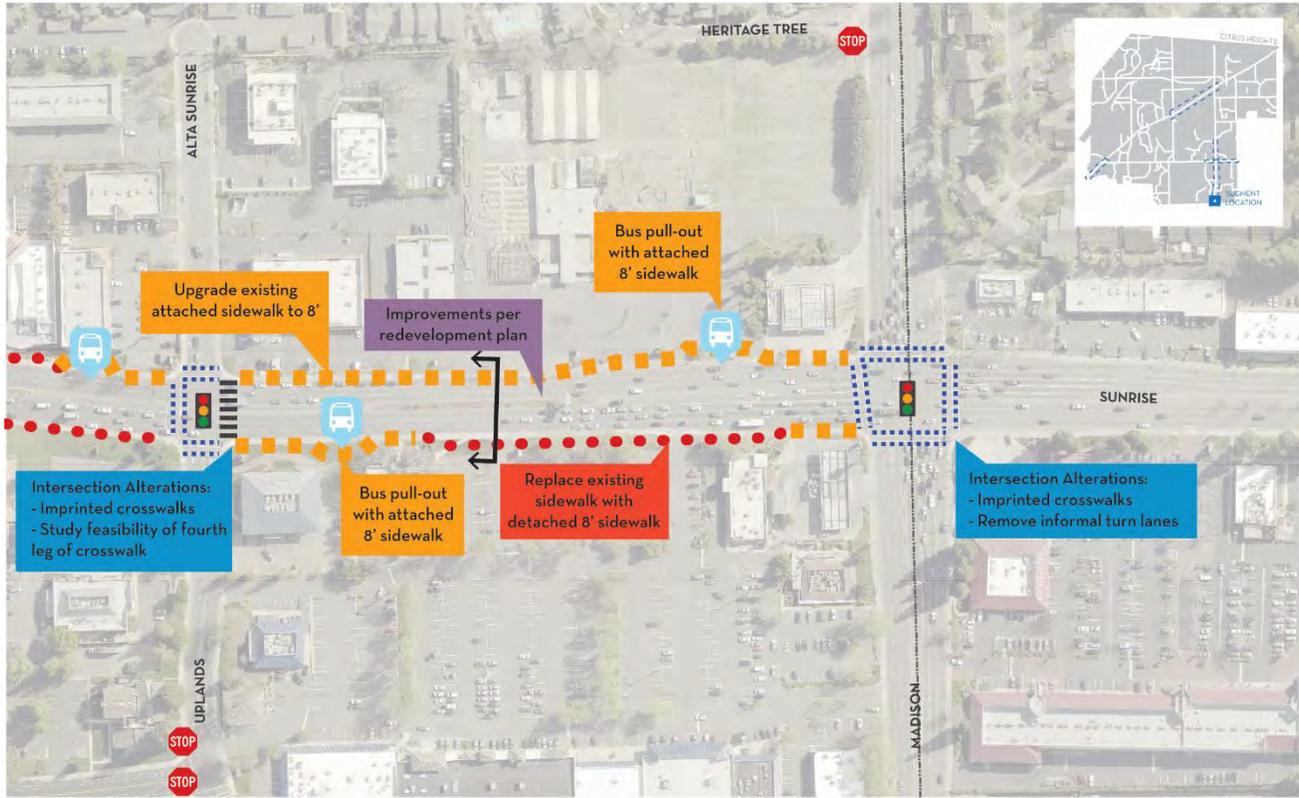


## CROSS SECTION - PROPOSED

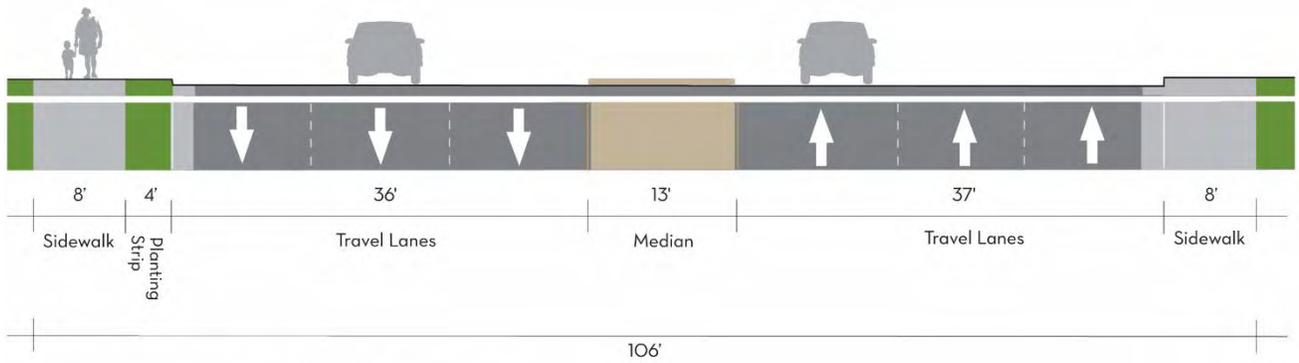
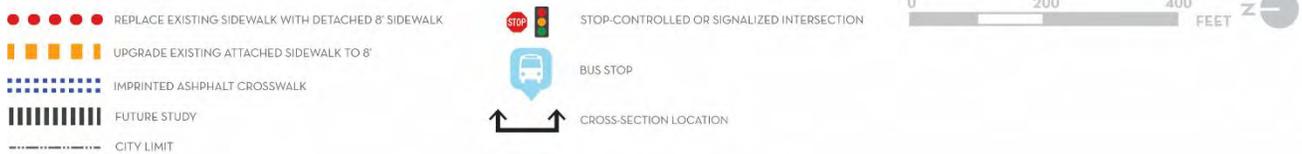
CITY OF CITRUS HEIGHTS PEDESTRIAN MASTER PLAN

Figure 5-19: Focus Area Plan – Sunrise 4

# SUNRISE 5



## PLAN VIEW



## CROSS SECTION - PROPOSED

CITY OF CITRUS HEIGHTS PEDESTRIAN MASTER PLAN

Figure 5-20: Focus Area Plan – Sunrise 5

### Interstate 80 Overcrossing Study

The City is currently conducting a feasibility study evaluating the feasibility of constructing an improved bicycle and pedestrian overpass over Interstate 80. The study is focusing on improving the existing Antelope Road overpass with pedestrian and bicycle enhancements to aid these users in crossing the barrier created by I-80.

**Recommendation**

The City should adopt the feasibility study identifying a preferred crossing design over Interstate 80, and move forward with implementation of the preferred design as soon as funding becomes available.

### Paths

Class I Multi-Use Paths provide for pedestrian and bicycle travel on a paved right of way completely separated from streets. These facilities are popular recreational corridors.

**Recommendations**

This Plan recommends implementing the Creek Corridor Trail Project segments as directed by the City Council in March 2014. These paths include those along the Sacramento Municipal Utilities District (SMUD) Corridor and Arcade Creek east of Sylvan Library and west of Wachtel Way. These priority 1 paths are presented in **Table 5-2** below and shown in **Figure 5-5**.

Table 5-2: Priority 1 Paths

LOCATION	CROSS STREET A	CROSS STREET B	LENGTH (FT)
Arcade Creek A03	Tempo Park Existing Trail	Sunrise Boulevard	1530
Arcade Creek A05	Sayonara Drive	Mariposa Avenue	2450
Arcade Creek A06	Mariposa Avenue	Sylvan Road	2430
Arcade Creek A07	Sylvan Road	Stock Ranch Path	1620
Arcade Creek A08	Stock Ranch Path	Crossroads Circle East Bridge	1620
Arcade Creek A09	Crossroads Circle East Bridge	Crosswoods Circle West Bridge	1900
Arcade Creek A10	Crosswood Park West Bridge	Crosswood Park West Boundary	760
SMUD Corridor S01	Wachtel Way	City Parcel, West Boundary	1250
SMUD Corridor S02	City Parcel, West Boundary	Oak Avenue	3250
SMUD Corridor S03	Oak Avenue	Streng Avenue	1390

## Sidewalk Repair, Curb Ramps and Accessibility Improvements

In 2011, the City developed an Americans with Disabilities (ADA) Transition Plan. This Plan includes a prioritization scheme for removing barriers to accessibility.

### ***Recommendations***

This Plan recommends the City continue its effort to implement the recommendations in the ADA Transition Plan.

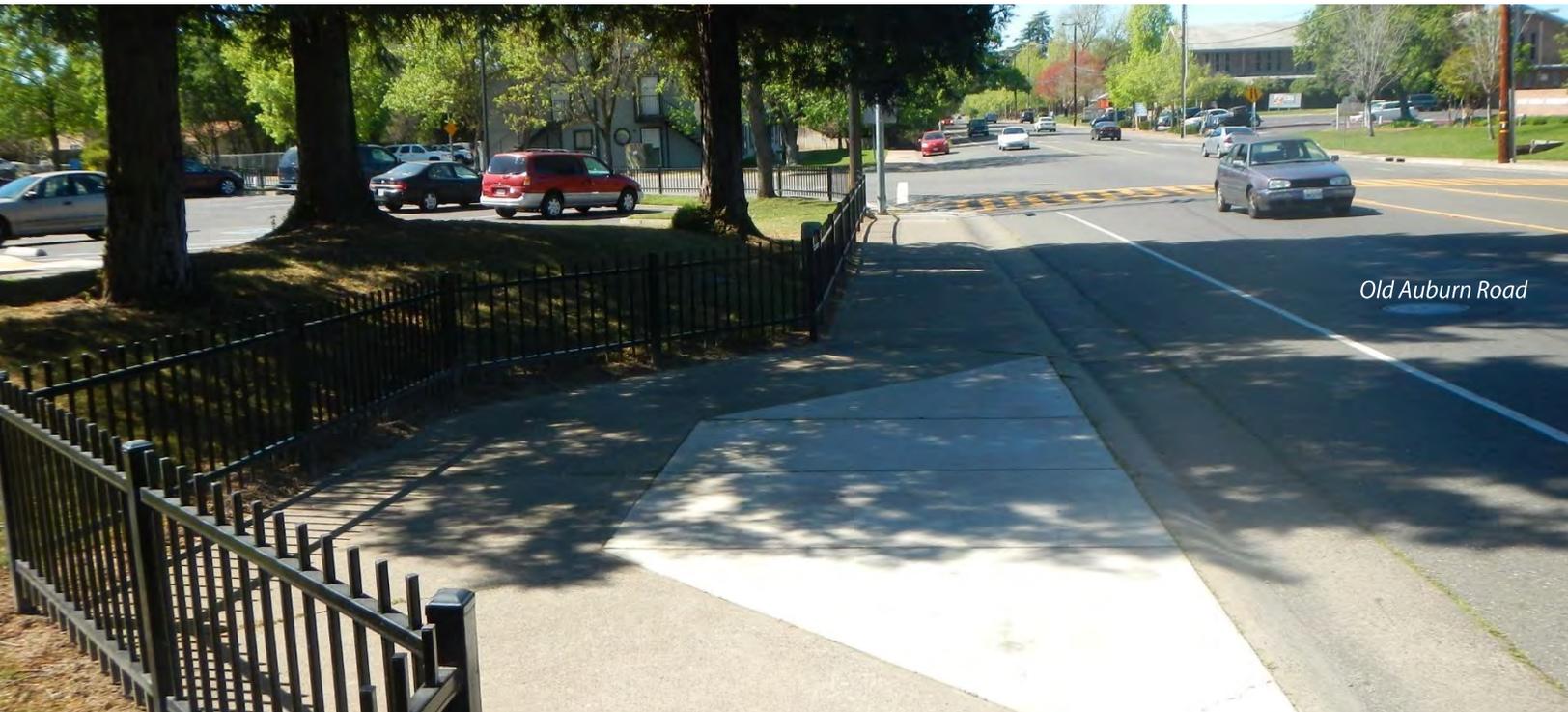
## Lighting at Intersections

Lighting at intersections is an important design factor when considering pedestrian visibility and safety and is a community concern.

The Caltrans Traffic Manual offers lighting standards for State Highways and local jurisdictions can adopt their own standards for local roadways, as Los Angeles has done. The Federal Highway Administration also provides guidance.

### ***Recommendations***

This Plan recommends the City develop intersection lighting standards.



## High Visibility Crosswalk Upgrades

There are a number of different marked crosswalk types, including continental and ladder. These are considered high visibility crosswalks because they are more noticeable to drivers. High visibility crosswalks are typically applied:

- ◆ Roadways with higher speeds and volumes
- ◆ High existing or anticipated walking demand
- ◆ Uncontrolled crossings
- ◆ High numbers of pedestrian related collision areas

The City typically uses standard transverse crosswalks, with the exception of school areas where ladder style crosswalks are used.

### **Recommendations**

This Plan recommends the City adopt a single high visibility crosswalk design. This Plan recommends the ladder crosswalk (**Figure 5-21**) as the standard.

This Plan also recommends the priority 1 locations listed in **Table 5-3** be upgrade to high visibility. These locations were identified by meeting the following criteria:

- ◆ Along or crosses an arterial with transit enhancements, arterial or collector roadway as identified in the City's General Plan
- ◆ Provides direct connection to a recreation area such as a park
- ◆ Provides connection to a school

For a complete list of projects, see **Appendix E**. Crosswalk upgrades are shown on **Figure 5-22**.

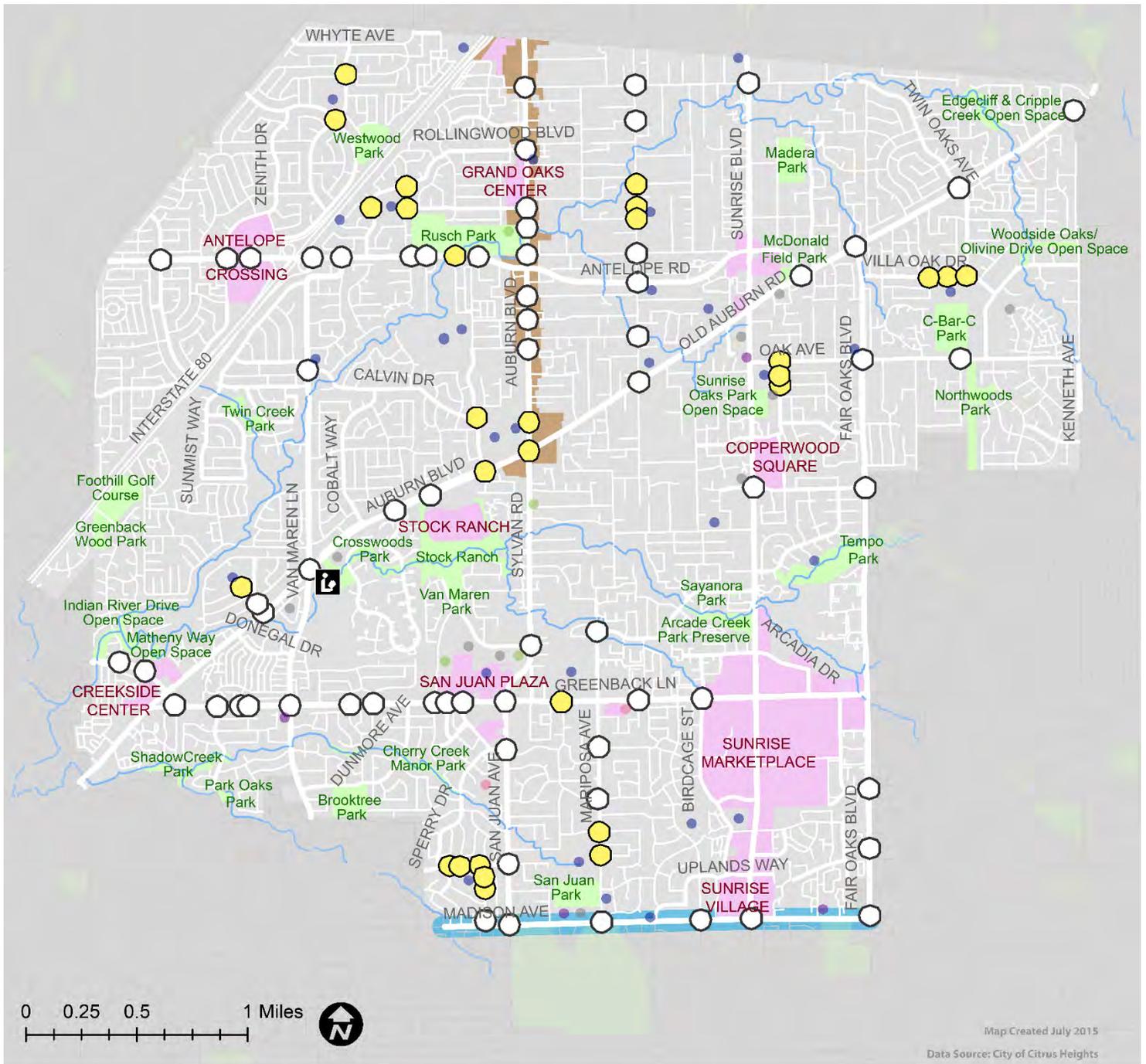


Figure 5-21: Ladder Crosswalk Markings

Table 5-3: Priority 1 High Visibility Crosswalk Upgrades

LOCATION	CROSS STREET	LEGS	TYPE	COMPLETE STREET PROJECT <sup>2</sup>
Antelope Road	Lichen Drive	2	Ladder	
Antelope Road	Sayabrook Drive	4	Ladder	
Auburn Boulevard	Auburn Oaks/Twin Oaks Avenue	3	Ladder	Yes
Auburn Boulevard	Carriage Drive/Chivalry Way	3	School Ladder	
Auburn Boulevard	Rollingwood Boulevard	2	Ladder	Yes
Auburn Boulevard	Watson Way	1	Ladder	Yes
Fair Oaks Boulevard	Oak Avenue	4	Ladder	
Fair Oaks Boulevard	Treecrest Avenue	4	Ladder	
Greenback Lane	Birdcage Street	3	Ladder	
Greenback Lane	Parkoaks Drive	4	Ladder	
Greenback Lane	Indian River Drive	4	Ladder	
Madison Avenue	Primrose Drive	3	Ladder	
Mariposa Avenue	Madison Avenue	2	Ladder	
Mariposa Avenue	Antelope Road	4	Ladder	
Mariposa Avenue	Poppy Way	3	School Ladder	
Mariposa Avenue	Between Barca Lane and Poppy Way	1	School Ladder	
Mariposa Avenue	Old Auburn Road	4	Ladder	
Oak Avenue	Canelo Hills Drive	1	School Ladder	
Oak Avenue	Melva Street	3	Ladder	
San Juan Avenue	Chesline Drive/Willowcreek Drive	3	Ladder	
Sunrise Boulevard	Woodmore Oaks Drive/Locher Way	3	Ladder	Yes
Twin Oaks Avenue	Sunrise Boulevard	3	Ladder	Yes
Twin Oaks Avenue	Mariposa Avenue	4	Ladder	
Van Maren Lane	Calvin Drive	1	Ladder	

<sup>2</sup> Project is part of an ongoing complete streets project



**RECOMMENDATIONS**

-  High Visibility Crosswalks
-  High Visibility Yellow Crosswalks
-  Projects Require County Coordination

**ATTRACTORS**

-  Senior Living Facilities
-  Healthcare Facilities
-  Community Centers and Gardens
-  Schools
-  Libraries
-  Auburn Blvd Plan Area
-  Public Services
-  Shopping Centers
-  Parks/Open Space

Figure 5-22: High-Visibility Crosswalk Upgrades

## New Crosswalks at Controlled Intersections

There are a number of controlled intersections (stop signs or traffic signals) where marked crossings are not present. While every intersection may not need a marked crossing, providing a crosswalk can improve pedestrian visibility.

### **Recommendations**

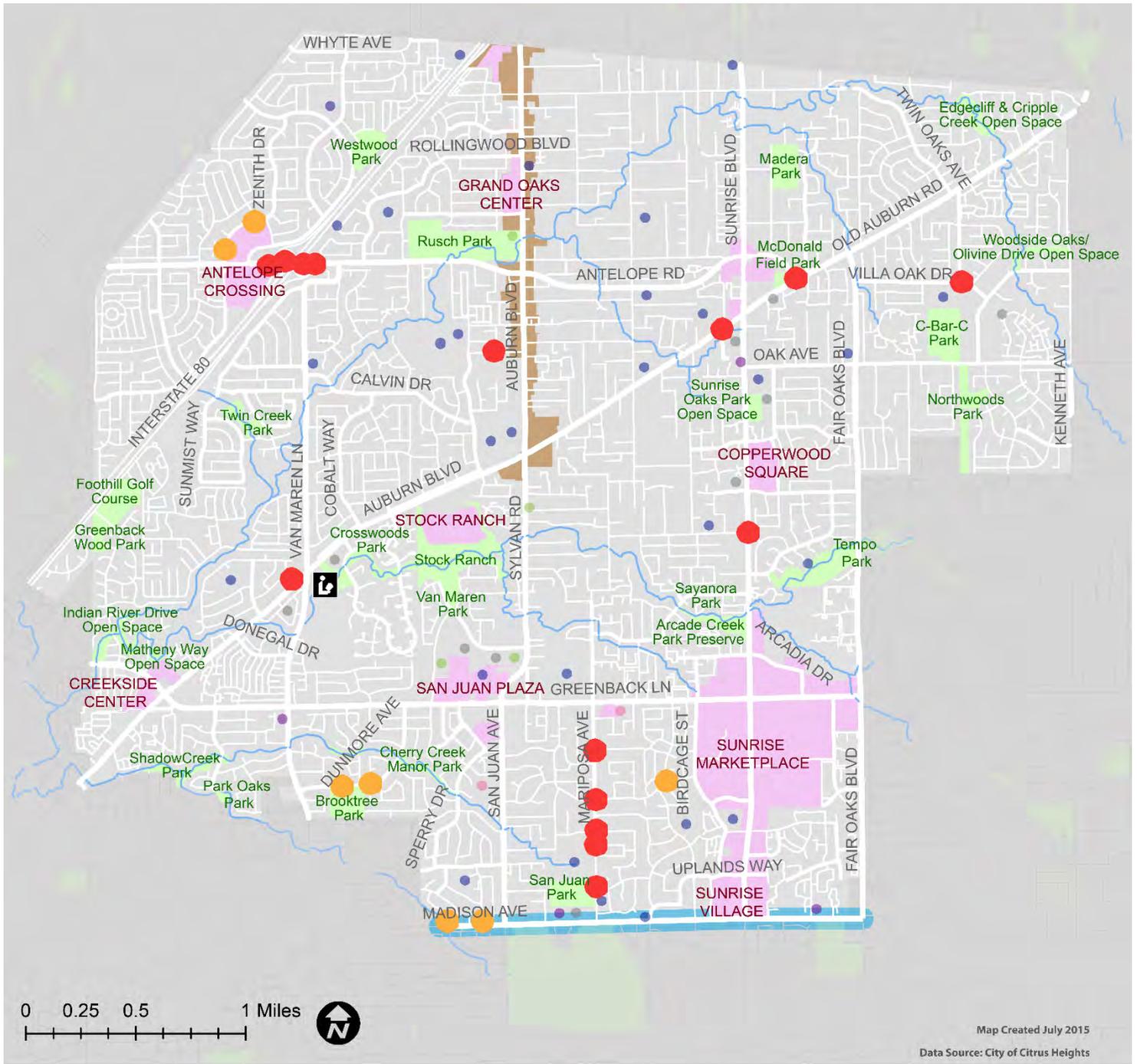
This Plan recommends installation of marked crosswalks at the priority 1 locations listed in **Table 5-4** and shown in **Figure 5-23**. These locations were identified by meeting the following criteria:

- ◆ Along or crosses an arterial with transit enhancements, arterial or major collector roadway as identified in the City’s General Plan
- ◆ Provides direct connection to a recreation area such as a park
- ◆ Provides connection to a school

For a complete list of projects, see **Appendix E**.

Table 5-4: Priority 1 New Crosswalks at Controlled Intersections

LOCATION	CROSS STREET	LEGS	TYPE	COMPLETE STREET PROJECT
Mariposa Avenue	Pleides Avenue	1	High visibility crosswalk	



**RECOMMENDATIONS**

- Transverse Crosswalks
- High Visibility Crosswalks
- Projects Require County Coordination

**ATTRACTORS**

- Senior Living Facilities
- Healthcare Facilities
- Community Centers and Gardens
- Schools
- Public Services
- Shopping Centers
- Parks/Open Space
- Auburn Blvd Plan Area
- L Libraries

Figure 5-23: New Crosswalks at Controlled Intersections

### Pedestrian Signal Heads: Countdown Head and Audible Signals

Pedestrian signal countdown heads communicate to pedestrians the remaining time to cross an intersection.

Audible signals emit sounds to guide visually impaired pedestrians by indicating when to cross. Different audible signals are usually used to also indicate crossing direction. Sounds are activated by the pedestrian push button. Installation of audible signals should be based on an engineering study that considers:

- ◆ Potential demand for accessible pedestrian signals
- ◆ A request for accessible pedestrian signals
- ◆ Traffic volumes during times when pedestrians might be present; including periods of low traffic volume or high right turn-on red volumes
- ◆ The complexity of traffic signal phasing (such as split phases, protected turn phases, leading pedestrian intervals, and exclusive pedestrian phases)
- ◆ The complexity of intersection geometry

**Recommendation**

The City is currently working to replace existing pedestrian signal heads with countdown heads and audible signals. It is recommended the City ensure this project is completed by the end of 2016.



Figure 5-24: Pedestrian Countdown Signal Head

### Pedestrian Friendly Signal Timing

Traffic signal timing is the amount of time each phase of a signal is allotted for vehicles, bicycles, and pedestrians to cross. The 2014 California Manual on Uniform Traffic Control Devices (CA MUTCD) Section 4E.06 requires sufficient time for a pedestrian walking 3.5 feet per second to cross.

**Recommendation**

The City is currently working to update crossing time for pedestrians to meet the 3.5 feet per second crossing requirement. It is recommended the City ensure this project is completed by the end of 2016.



Figure 5-25: Pedestrian Friendly Signal Timing

### Advance Stop Bars

Advance stop bars increase pedestrian visibility by stopping motor vehicles in advance of marked crosswalks at stop controlled or signalized intersections. **Figure 5-26** illustrates an advance stop bar. Advance stop bars help prevent vehicle encroachment into a crosswalk and allows drivers to better see pedestrians, particularly where there are more than two lanes of travel in each direction.

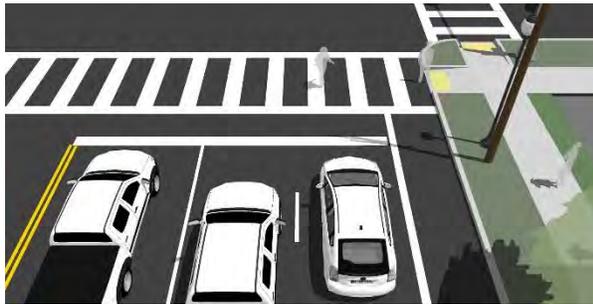


Figure 5-26: Advance Stop Bar

#### **Recommendations**

This Plan recommends the City install advance stop bars at all recommended High Visibility Crosswalk Upgrades and New Crosswalks at Controlled Intersections described in the previous sections.

### Advance Yield Lines at Uncontrolled Crossings

Advance yield lines indicate the point where vehicles should yield at uncontrolled locations. **Figure 5-27** illustrates the yield line. Yield lines should be accompanied by “Yield Here” sign. These markings are most effective in midblock locations, where there is no intersection.

As with advance stop bars, yield lines help prevent vehicle encroachment into the crosswalk and allow drivers to better see pedestrians, particularly where there are more than two lanes of travel in each direction.



Figure 5-27: Advance Yield Lines

#### **Recommendations**

This Plan recommends installation of advance yield lines at all uncontrolled marked crossings.

## Speed Bump Restriping

Caltrans standard speed bump striping, shown in **Figure 5-28**, communicates to drivers to slow down because of the speed bump. Many speed bumps within the City do not meet current standards

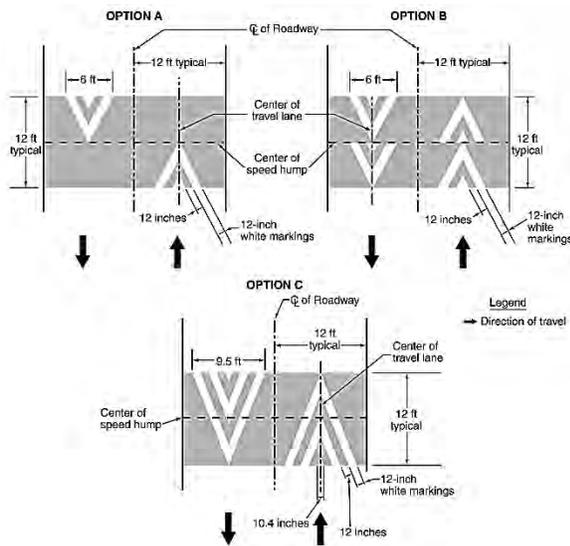


Figure 5-28: Speed Bump Striping

### Recommendations

This Plan recommends the speed bumps in the City be restriped to current standards. There are no priority 1 recommendations for speed bump restriping; for a complete list of projects, see **Appendix E**

## Projects and Studies

The infrastructure recommendations and focus area plans presented earlier in this chapter will improve the walking environment, however there are a number of improvements which will need additional study before specific improvements can be defined.

### New Marked Crossings at Controlled Intersections Studies

A number of signalized intersections within the City do not have marked crossings on all intersection legs. This is likely due to conflict with signal coordination, however direct access to walking destination along one crosswalk rather than three reduces the pedestrian exposure and thereby improves walking safety.

### Recommendation

This Plan recommends the City conduct traffic studies to determine the feasibility of crosswalk installation at the priority 1 locations listed in **Table 5-5**. All recommendations are shown in **Figure 5-29**.

For a complete list of projects, see **Appendix E**.

Table 5-5: Priority 1 New Marked Crossings at Controlled Intersection Studies

LOCATION	CROSS STREET
Auburn Boulevard	Carriage Drive
Auburn Boulevard	Twin Oaks Avenue
Greenback Lane	Birdcage Street
San Juan Avenue	Willowcreek Drive
Sunrise Boulevard	Twin Oaks Avenue
Sunrise Boulevard	Uplands Way

## New Marked Crossings at Uncontrolled Locations Studies

The City’s street network includes corridors with long distances between marked and controlled crossings for pedestrians. This may discourage walking or may result in pedestrians crossing at unmarked and uncontrolled locations.

### **Recommendation**

This Plan recommends the City conduct studies to determine the feasibility of new marked pedestrian crossings at the priority 1 locations listed in **Table 5-6**. All recommendations are shown in **Figure 5-29**.

These crossings would likely be signalized or have enhanced treatments to provide safer crossings.

For a complete list of projects, see **Appendix E**

Table 5-6: Priority 1 New Marked Crossings at Uncontrolled Location Studies

LOCATION	CROSS STREET
Sylvan Road	Arcade Creek Trail

## Lead Pedestrian Interval Study

Lead pedestrian intervals (LPIs) provide a pedestrian phase two to four seconds in advance of a green light in the same direction. LPIs increase pedestrian visibility by permitting pedestrians to enter the crosswalk and motorist sight lines before motorists enter the intersection.

LPIs may improve pedestrian safety where motorists frequently make right turns, and should be studied for implementation where there is a history of pedestrian collisions.

Based on an analysis of collision data at key intersections, right turning vehicles were frequently at fault and the pedestrian-involved collisions commonly occurred within marked crosswalks at the signalized intersections. This suggests enhancements to the crosswalks’ visibility and signal operations, including LPIs and restrictions on right turns on red, could serve to reduce the frequency of those collisions.

### **Recommendation**

This Plan recommends the City conduct lead pedestrian interval studies and restrictions on right turns on red at the priority 1 intersections listed in **Table 5-7**.

Table 5-7: Priority 1 LPI Study Intersections

LOCATION	CROSS STREET
Auburn Blvd	Sylvan Rd
Auburn Blvd	Van Maren Ln
Greenback Ln	Auburn Blvd
Greenback Ln	Brookhaven Way
Greenback Ln	San Juan Ave
Greenback Ln	Sunrise Blvd

### Study Areas of Traffic Concern

On neighborhood streets where residents noted concerns about vehicle speeds, a more detailed review of conditions may result in an increase in pedestrian comfort.

**Recommendation**

This Plan recommends the City study the areas of traffic concern along the priority 1 corridors listed in **Table 5-8**. All recommendations are shown in **Figure 5-29**. For a complete list of projects, see **Appendix E**

Table 5-8: Priority 1 Areas of Traffic Concern

LOCATION	CROSS STREET A	CROSS STREET B
Bonita Way/ Sungarden Drive	Old Auburn Road	Sunrise Boulevard
Oak Avenue	Sunrise Boulevard	Wachtel Way/ Kenneth Avenue
Old Auburn Road	Sylvan Road	Sunrise Boulevard
Outlook Drive	Roseville Drive	Yardgate Way
Van Maren Lane	Auburn Boulevard	Antelope Road

### Complete Streets Projects

The City of Citrus Heights is currently working on a number of complete streets projects intended to improve walking and bicycling conditions on the following corridors:

- ◆ **Auburn Boulevard:** Sylvan Corners to City Limits
- ◆ **Sunrise Boulevard:** City limits (north) to Greenback Lane
- ◆ **Antelope Road:** I-80 to Auburn Boulevard

These are key projects to improve safety and mobility.

**Recommendation**

The City expects these Complete Streets projects to be completed by 2020. This Plan recommends the City ensure they are completed on schedule.



**RECOMMENDATIONS**

- Crossing Study (Controlled)
- Crossing Study (Uncontrolled)
- ▬ Areas of Traffic Concern

**ATTRACTORS**

- Senior Living Facilities
- Healthcare Facilities
- Community Centers and Gardens
- Schools
- Public Services
- Shopping Centers
- Parks/Open Space
- Auburn Blvd Plan Area
- i Libraries

Figure 5-29: Projects and Studies



## Chapter 6: Programs

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*Programs support engineering improvements by addressing behavior.*

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The following chapter presents recommended pedestrian related program recommendations. The recommendations are organized in four E's:

- ◆ **Education** programs are designed to improve safety and awareness. They can include programs that teach students how to safely cross the street or teach drivers to expect pedestrians. They may also include brochures, posters, or other information that targets pedestrians or drivers.
- ◆ **Encouragement** programs provide incentives and support to help people leave their car at home and try walking instead.
- ◆ **Enforcement** programs enforce legal and respectful walking, bicycling, and driving. They include a variety of tactics, ranging from police enforcement to neighborhood signage campaigns.
- ◆ **Evaluation** programs are an important component of any investment. They help measure success at meeting the goals of this plan and to identify adjustments that may be necessary.

## Education

Education programs are important for teaching safety rules and laws as well as increasing awareness regarding walking opportunities and existing facilities. Education programs may need to be designed to reach groups at varying levels of knowledge and there may be many different audiences: pre-school age children, elementary school students, teenage and college students, workers and commuters, families, retirees, the elderly, new immigrants and non-English speakers.

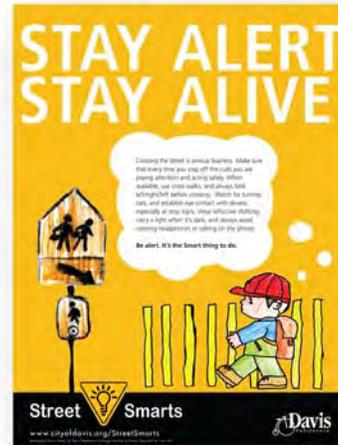
### Traffic Safety Campaign

On a citywide scale, the City could start a StreetSmarts media campaign, similar to those in San Jose, Marin County, Davis and other California cities. Developed by the City of San Jose, StreetSmarts uses print media, radio spots and television spots to educate people about safe driving, bicycling, skateboarding, and walking behavior. More information about StreetSmarts can be found at [www.getstreetsmarts.org](http://www.getstreetsmarts.org).

Local resources for conducting a StreetSmarts campaign can be maximized by assembling a group of local experts, law enforcement officers, businesspeople, civic leaders and dedicated community volunteers. These allies could assist with a successful safety campaign goals based on the local concerns and issues. It may be necessary to develop creative strategies for successful media placement in order to achieve campaign goals.

#### **Recommendation**

This Plan recommends the City consider implementation of a traffic safety program such as StreetSmarts.



*Davis, CA Street Smarts Campaign Posters*

## Traffic Safety Assemblies

The Citrus Heights Police Department offers traffic safety assemblies at a few schools in the community and ones that are open to all community members.

### **Recommendation**

This Plan recommends the City Police Department continue to offer these traffic safety assemblies.

## Pedestrian Resource Website

A valuable local low-cost tool can be the creation of a Pedestrian Resource Center on the City's website. The site can include a variety of resources and information about walking for all ages and levels of expertise. Topics can include safety issues, important laws and policies, how to incorporate walking into trips to work or school, places to walk, and events.

There are a number of free resources available to support local agencies in their efforts to increase walking in their communities and may be considered as links on a resource website. These sites provide on-going information about model programs as well as free webinars on a range of issues:

- ◆ Pedestrian and Bicycling Information Center  
[www.walkinginfo.org](http://www.walkinginfo.org)
- ◆ Safe Routes National Partnership  
[www.saferoutespartnership.org](http://www.saferoutespartnership.org)
- ◆ Federal Highway Pedestrian & Bicycle Safety  
[http://safety.fhwa.dot.gov/ped\\_bike](http://safety.fhwa.dot.gov/ped_bike)
- ◆ Association of Pedestrian and Bicycling Professionals  
[www.apbp.org](http://www.apbp.org)
- ◆ American Public Health Association  
[www.apha.org](http://www.apha.org)

### **Recommendation**

This Plan recommends the City create a Pedestrian Resource Center page on the City's website.

## City Walking Map

City Walking Maps can help to make pedestrians more aware of existing opportunities and facilities for walking within Citrus Heights. There are a number of Citrus Heights walking groups that have walking maps.

### **Recommendation**

The Plan recommends the City work with walking groups to gather and provide the walking maps on the recommended Pedestrian Resource Website.

## Suggested Routes to School Maps

Suggested Routes to School maps help parents and students choose a path to walk to school by identifying locations where sidewalks, crosswalks, and other pedestrian amenities create a safe and comfortable walking environment.

Suggested Routes to School maps have been developed for Carriage Drive Elementary and Kingswood K-8.

### **Recommendation**

The Plan recommends the City encourage San Juan Unified School district to develop Suggested Routes to School maps for all schools in the City of Citrus Heights.

## Classroom Lessons

In-class lessons on pedestrian safety are tailored to the appropriate grade level. Lessons can include basic traffic safety, rules of the road, how to cross streets safely, and more.

Classroom lessons have been offered at eleven schools in the San Juan Unified School District, but the frequency of these lessons is dependent on available funding.

### **Recommendation**

The Plan recommends the City encourage and work with San Juan Unified School district to offer classroom lessons at all schools on a regular basis.



*Students learning pedestrian safety*

## School Yard Lessons

Building on the material learned in classroom lessons, schoolyard pedestrian lessons take students through a course designed to simulate street conditions in their community, giving them the opportunity to practice skills like crossing the street.

Schoolyard lessons have been offered at Lichen K-8, Skycrest Elementary, Kingswood Elementary, and Arlington Heights Elementary. The frequency of these lessons is dependent on available grant funding.

### **Recommendation**

The Plan recommends the City encourage and work with San Juan Unified School district to offer school yard lessons at all schools on a regular basis.

## Encouragement

Everyone from young children to elderly residents can be encouraged to increase their rates of walking or to try walking instead of driving for short trips.

### Safe Routes to School Program

The San Juan Unified School District has a Safe Routes to School (SRTS) program, administered by a Safe Routes to School Coordinator.

A SRTS program can be an effective way to increase the number of students walking to and from local schools. SRTS programs generally try to increase rate of walking by funding infrastructure projects that remove the barriers that currently prevent students from doing so and adding encouragement and education programs to support these efforts. SRTS programs are usually run by a coalition of city government, school and school district officials, teachers, parents, students, and neighbors.

#### **Recommendation**

This Plan recommends the City support San Juan Unified School District in its SRTS efforts.

### International Walk to School Day

On International Walk to School Day in October, students and families around the world are encouraged to try walking to school for one day. Schools often have additional programming on this day, including small prizes or rewards for students who walk, or contests between classrooms based on the number of students who walk.

#### **Recommendation**

This Plan recommends the City support San Juan Unified School District in its International Walk to School Day efforts.

### Walk + Bike Days

Throughout the year, walk + bike days build on the enthusiasm generated by International Walk to School day. San Juan Unified Schools can choose to participate in this activity a few times each year, monthly, or even weekly with programs like "Walking Wednesdays."

At least eleven schools in Citrus Heights offer Walk + Bike Days, although the frequency is dependent on funding and availability of parent champions. The schools offer incentives to students to encourage them to participate in Walk + Bike Days.

#### **Recommendation**

This Plan recommends the City support San Juan Unified School District in its Walk + Bike Days efforts.

## Safe Routes for Seniors Program

Citrus Heights has a larger percentage of residents over 65 years of age compared to Sacramento County. Seniors have a clear need for safe pedestrian environments that are designed with consideration of their rates of movement, sight, and reaction time. Opportunities exist to create programs for seniors that encourage them to start or increase their walking.

An example of a successful program is City of Sacramento Parks and Recreation Department 50+ Wellness Program that encourages walking for health. It includes the Neighborhood Walk program which organizes walking groups in locations where the participants live, removing the need for transportation to and from the activity and strengthening community. The concept of walking in a group also encourages older residents who might otherwise not walk either because of safety concerns or lack of motivation.

Sample Programs include:

- ◆ City of Seattle Sound Steps Program: [http://www.seattle.gov/parks/seniors/sound\\_steps.htm](http://www.seattle.gov/parks/seniors/sound_steps.htm)
- ◆ City of Sacramento Parks and Recreation Department 50+ Wellness Program: <http://portal.cityofsacramento.org/ParksandRec/Recreation/older-adult-services/Programs/50-plus>
- ◆ New York City DOT Safe Streets for Seniors Program: [www.nyc.gov/html/dot/html/sidewalks/safe\\_seniors.shtml](http://www.nyc.gov/html/dot/html/sidewalks/safe_seniors.shtml)

### **Recommendation**

This Plan recommends the City develop a Safe Routes for Seniors Program.

## Walkable Community Events

The City of Citrus Heights is very community focused and community events are held throughout the year. Events include:

- ◆ Community Campout
- ◆ Craft Brewfest and Wine Tasting
- ◆ Creek Week
- ◆ Farmers Market at Sunrise Mall
- ◆ Food Truck Mania
- ◆ Pet-A-Palooza
- ◆ Red White and Blue Parade

### **Recommendation**

This Plan recommends the City work with the sponsors to support and encourage walking to these events.

## Active Transportation Committee

The City does not currently have a Pedestrian Advisory Committee (PAC) or other active transportation committee. Such committees are typically composed of community members that advise the local government on pedestrian issues on an ongoing basis.

### **Recommendation**

The City should consider forming an Active Transportation Committee when demand warrants. The committee would be made up of local residents representing a range of pedestrian interests and experiences and could meet monthly at a public facility. The charges of the committee may include some or all of the following:

- ◆ Review and provide citizen input on capital project planning and design as it affects walking
- ◆ Provide a formal liaison between local government, staff, and the public
- ◆ Develop and monitor goals and benchmarks related to walking
- ◆ Promote walking, including safety and education

## Enforcement

Enforcement programs enforce legal and respectful use of the transportation network. The pedestrian safety analysis and community identified needs indicate enforcement programs will help educate both motorists and pedestrians about the rules and responsibilities of the road.

### Traffic Enforcement

The Citrus Heights Police Department is responsible for enforcing the California Vehicle Code. This includes ticketing for red light violations, jaywalking, and other activities that potentially impact pedestrian safety.

#### **Recommendation**

This Plan recommends the City continue its traffic enforcement programs.

### Targeted Police Enforcement

Targeted enforcement consists of focused efforts of police officers to enforce traffic laws in specific locations with a history of traffic violations. Enforcement campaigns designed to increase yielding behavior can produce a marked and sustained improvements in driver behavior depending on the length of the campaign.

Partnering with the Police Department on targeting drivers that fail to yield to pedestrians can help to raise awareness of the law.

#### **Recommendation**

This Plan recommends that the City coordinate with the Police Department to conduct targeted enforcement at locations known for noncompliance with traffic laws and at high conflict or high pedestrian collision areas.

## Speed Feedback Signs

Higher speed traffic discourages walking, making pedestrians feel uncomfortable. At higher speeds, motorists are less likely to see and react to a pedestrian, and even less likely to actually stop in time to avoid a crash. Higher speed crashes are also much more lethal to pedestrians. Speed feedback signs display the speed of passing motor vehicles, with the intent that motorists will slow down if they are made aware of their speed.

#### **Recommendation**

This Plan recommends the Police Department and Public Works continue to operate mobile speed feedback signs.

## Evaluation

Evaluation programs help the City measure how well it is meeting the goals of this Plan and the General Plan and evaluation is a key component of any engineering or programmatic investment. It is also a useful way to communicate success with elected officials as well as local residents.

### **Pedestrian Survey Program**

Evaluation programs measure and evaluate the impact of projects, policies, and programs. Data collected through these efforts can serve as a baseline each year and would be a key part of an annual performance report. Typical evaluation programs range from a simple year over year comparison of US Census Journey to Work data to pedestrian counts and community surveys. Pedestrian community surveys act as methods to evaluate not only the impacts of specific pedestrian improvement projects but can also function as way to measure progress towards City goals such as increased pedestrian travel for trips one mile or less.

#### ***Recommendation***

This Plan recommends a pedestrian related community survey regarding the walking environment in Citrus Heights be conducted at intervals no greater than five years.

# Chapter 7: Setting the Course

## Implementation

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*Implementing the projects identified in this Plan will require community and political support and significant funding. This Chapter presents a strategy towards realizing this Plan's Vision.*

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This Pedestrian Master Plan includes projects and programs intended to create a more walkable and vibrant Citrus Heights; however, implementation will take time and funding. This Chapter lays out the City's strategy towards implementation and includes the following sections:

**Project evaluation strategy** is intended to measure how well a project meets this Plan's goals and objectives.

**Cost estimate assumptions** presents the unit costs used to determine the overall project cost.

**Priority projects and programs** presents the projects and programs intended for near-term implementation.

**Funding** presents potential funding sources the City may seek to implement the recommendations in this Plan.

## Project Evaluation Strategy

The intent of evaluating projects is to create a prioritized list of projects for implementation. As projects are implemented, lower ranked projects move up the list. The project list and individual projects to be included in this Plan are flexible concepts that serve as a guideline. The high-priority project list, and perhaps the overall project list, may change over time as a result of changing walking patterns, land use patterns, implementation constraints and opportunities and the development of other transportation improvements.

Table 7-1: Project Evaluation Criteria

CRITERIA	DESCRIPTION	POINTS POSSIBLE
<b>Safety and Accessibility</b>	<i>This evaluation is based on available most recent five years of collision data identifying corridors with high incidents of pedestrian related collisions within a quarter mile buffer of the proposed improvement.</i> <ul style="list-style-type: none"> <li>◆ Projects are scored on a scaled ranking from zero to ten with locations with the most collisions receiving the maximum score.</li> </ul>	20
	<i>This evaluation is based on the ADA Transition Plan identifying corridors with high need for accessibility improvements.</i> <ul style="list-style-type: none"> <li>◆ Projects are scored on a scaled ranking from zero to ten with locations with the most ADA Transition Plan identified improvements receiving the maximum score.</li> </ul>	
<b>Pedestrian Priority Corridor Network</b>	<i>This evaluation is based on the Pedestrian Priority Local Corridor Network described in Chapter 5.</i> <ul style="list-style-type: none"> <li>◆ Projects on the Pedestrian Priority Local Corridor Network receive 20 points.</li> <li>◆ Projects not on the network receive zero points.</li> </ul>	20
<b>Community Identified Improvement</b>	<i>This evaluation is based on input received from the community through the Community Workshop, survey, and comments submitted through the project website.</i> <ul style="list-style-type: none"> <li>◆ Projects in a community identified challenge area receive 20 points.</li> <li>◆ Projects that are not in a community identified challenge area receive zero points.</li> </ul>	20
<b>Gap Closure</b>	<i>This evaluation is based on sidewalk inventory data.</i> <ul style="list-style-type: none"> <li>◆ Projects that close identified gaps receive 10 points.</li> <li>◆ Project that do not close identified gaps receive zero points.</li> </ul>	10
<b>Youth and Seniors</b>	<i>This evaluation is based on school and senior facility data identified Chapter 3: Citrus Heights NOW.</i> <ul style="list-style-type: none"> <li>◆ Projects that directly connect to schools or senior facilities receive 10 points.</li> <li>◆ Projects that do not connect to schools or senior facilities receive zero points.</li> </ul>	10
<b>Community Attractors and Transit Access</b>	<i>This evaluation is based on attractors data identified in Chapter 3: Citrus Heights NOW Figure 2-5 (transit, health care facilities, community centers and gardens, top private employers, public services, shopping centers, parks and libraries).</i> <ul style="list-style-type: none"> <li>◆ Projects that directly connect to community attractors receive 10 points.</li> <li>◆ Projects that do not connect to community attractors receive zero points.</li> </ul>	10
<b>Feasibility</b>	<i>This evaluation is based on known factors regarding project implementation, required approvals, and estimated public right-of-way.</i> <ul style="list-style-type: none"> <li>◆ Projects that can be implemented within a one-to-five-year time frame, that do not require outside agency approval, will receive 10 points.</li> <li>◆ Projects that cannot be implemented within a one-to-five year time frame will receive zero points.</li> </ul>	10
<b>Total possible points</b>		<b>100</b>

## Cost Estimate Assumptions

**Table 7-2** presents the planning level cost assumptions used to determine project cost estimates. Unit costs are typical or average costs informed by Alta Planning + Design's experience working with California communities. While they reflect typical costs, unit costs do not consider project-specific factors such as intensive grading, landscaping, or other location-specific factors that may increase actual costs. For some segments, project costs may be significantly greater. Unit cost assumptions for Class I shared-use paths were not developed as part of this plan. All Class I projects included in this plan were identified in the Creek Corridor Trail Feasibility Study, which included detailed cost estimates for each project.

Table 7-2: Unit Cost Assumptions

ITEM	UNIT	COST ESTIMATE
High Visibility Crosswalk (assume 10' x 60') with advance stop bar	EA	\$2,800
High Visibility Crosswalk - School Zone (assume 10' x 60') with advance stop bar	EA	\$2,800
Transverse Crosswalk (assume 10' x 60') with advance stop bar	EA	\$1,200
Sidewalk, Curb, Gutter	LF	\$110
DG walkway - 6 ft	LF	\$30
Restripe Speed Bump	EA	\$900
Study Areas of Traffic Concern	EA	\$20,000
Crosswalk Study	EA	\$10,000

## Plan Project Cost Estimates

**Table 7-3** presents the total estimated costs for this Plan's projects by project type. The total cost estimate for all projects presented in this Plan is approximately \$64 million. A significant amount of the projects costs are walkways, the Focus Area Plans, and the paths.

Table 7-3: Cost Estimate Summary by Project Type

PROJECT TYPE	QUANTITY	COST ESTIMATE
Crosswalk: High Visibility Upgrade	94	\$635,600
Focus Area Plans	4	\$20,437,000
New Crosswalk	18	\$72,000
New Marked Crossings at Controlled Intersection Studies	10	\$100,000
New Marked Crossings at Uncontrolled Intersection Studies	4	\$40,000
Path	12	\$18,979,000
Sidewalk/Walkway	344	\$24,172,500
Speed Bump Restriping	28	\$25,200
Study Areas of Traffic Concern	7	\$140,000
<b>Grand Total</b>	<b>521</b>	<b>\$64,601,300</b>

Crosswalk and traffic calming studies may include collection and analysis of additional data including traffic volumes, traffic speeds, bicycle and pedestrian volumes, signal delays for various user types, or in-depth analysis of collision data. These studies are intended to evaluate the need for crosswalk markings or traffic calming treatments, and to identify which improvements are likely to have the greatest benefit given the unique context of each location.

**Table 7-4** presents the total estimates costs for this Plan’s project by implementation priority.

Table 7-4: Cost Estimate Summary by Priority

PRIORITY	QUANTITY	COST ESTIMATE
1	113	\$35,187,400
2	136	\$17,311,400
3	272	\$12,102,500
<b>Grand Total</b>		
	<b>521</b>	<b>\$64,601,300</b>

## Priority Projects and Programs

This Plan presents priority projects organized by Local and Collector Streets, Arterial Streets, and Priority Programs. Infrastructure projects are organized by street type to best address community identified needs for walking within neighborhoods and to local parks as well as recognizing safety, transit and regional needs on the arterial street network.

Projects will be implemented based on a number of factors, including staff local knowledge, funding opportunities, community feedback, and other criteria. The prioritization is a guideline intended to provide a framework to the City.

### Priority Projects: Local Streets

Based on overall project score and City implementation capacity, projects on local streets that have an overall score of 55 or higher or are simple striping projects are considered priority projects intended for near-term implementation within 1-5 years.

The priority projects are summarized in **Table 7-5** and presented in detail in **Table 7-6**. These projects are the highest scoring projects. As discussed earlier, a set of evaluation criteria was developed to measure how strongly a project meets this Plan’s goals.

Table 7-5: Priority 1 Projects on Local Streets by Type Summary

PROJECT TYPE	QUANTITY	COST ESTIMATE
Sidewalk/Walkway	12	\$676,500
Study Areas of Traffic Concern	1	\$20,000
<b>Grand Total</b>		
	<b>13</b>	<b>\$696,500</b>

Table 7-6: Priority 1 Projects on Local Streets

IMPROVEMENT	LOCATION	CROSS STREET A	CROSS STREET B	TYPE/SIDE OF STREET	LEGS / LENGTH	COST
Sidewalk/Walkway	Baird Way	Holly Drive	East Of Auburn Boulevard	N	1050	\$115,500
Sidewalk/Walkway	Baird Way	Holly Drive	East Of Auburn Boulevard	S	1010	\$111,100
Study Areas of Traffic Concern	Bonita Way/Sungarden Drive	Old Auburn Road	Sunrise Boulevard	Study	3880	\$20,000
Sidewalk/Walkway	Farmgate Way	Mariposa Avenue	West Of Our Way	N	200	\$22,000
Sidewalk/Walkway	Highland Avenue	Deerfield Drive	West Of Locher Way	N	80	\$8,800
Sidewalk/Walkway	Highland Avenue	East Of Locher Way	West Of Sunrise Boulevard	N	130	\$14,300
Sidewalk/Walkway	Highland Avenue	Locher Way	East Of Deerfield Drive	N	150	\$16,500
Sidewalk/Walkway	Highland Avenue	Mariposa Avenue	Beam Drive	N	1000	\$110,000
Sidewalk/Walkway	Highland Avenue	Mariposa Avenue	West Of Rinconada Drive	S	600	\$66,000
Sidewalk/Walkway	Highland Avenue	Rosa Vista Lane	Larkspur Avenue	N	920	\$101,200
Sidewalk/Walkway	Highland Avenue	Sunrise Boulevard	Locher Way	S	590	\$64,900
Sidewalk/Walkway	Pleides Avenue	Mariposa Avenue	Celestial Way	N	210	\$23,100
Sidewalk/Walkway	Pleides Avenue	Mariposa Avenue	Celestial Way	S	210	\$23,100

## Priority Projects: Collector Streets

Based on overall project score and City implementation capacity, projects on collector streets that have an overall score of 55 or higher or are simple striping projects are considered priority projects intended for near-term implementation within 1-5 years.

The priority projects are summarized in **Table 7-7** and presented in detail in **Table 7-8**. These projects are the highest scoring projects. As discussed earlier, a set of evaluation criteria was developed to measure how strongly a project meets this Plan's goals.

Table 7-7: Priority 1 Projects on Collector Streets by Type Summary

PROJECT TYPE	QUANTITY	COST ESTIMATE
New Crosswalk	1	\$2,800
Sidewalk/Walkway	45	\$4,697,000
Crosswalk: High Visibility Upgrade	10	\$72,800
Study Areas of Traffic Concern	2	\$40,000
<b>Grand Total</b>	<b>58</b>	<b>\$4,812,600</b>

Table 7-8: Priority 1 Projects on Collector Streets

IMPROVEMENT	LOCATION	CROSS STREET A	CROSS STREET B	TYPE/SIDE OF STREET	LEGS / LENGTH	COST
Crosswalk: High Visibility Upgrade	Mariposa Avenue	Antelope Road		Upgrade	4	\$11,200
Sidewalk/Walkway	Mariposa Avenue	Antelope Road	Heredia Drive	W	780	\$85,800
Sidewalk/Walkway	Mariposa Avenue	Antelope Road	Old Auburn Road	W	2160	\$237,600
Sidewalk/Walkway	Mariposa Avenue	Barca Lane	Cina Way	W	670	\$73,700
Crosswalk: High Visibility Upgrade	Mariposa Avenue	Between Barca Lane and Poppy Way		School Upgrade	1	\$2,800
Sidewalk/Walkway	Mariposa Avenue	Cina Way	Watson Way	W	700	\$77,000
Sidewalk/Walkway	Mariposa Avenue	Cook Avenue	Old Auburn Road	E	1010	\$111,100
Sidewalk/Walkway	Mariposa Avenue	Farmgate Way	Eastgate Avenue	E	690	\$75,900
Sidewalk/Walkway	Mariposa Avenue	Loleta Avenue	Barca Lane	W	170	\$18,700
Sidewalk/Walkway	Mariposa Avenue	Maddie Mae Lane	Bullock Lane	S/E	2860	\$314,600
Crosswalk: High Visibility Upgrade	Mariposa Avenue	Madison Avenue		Upgrade	2	\$5,600
Sidewalk/Walkway	Mariposa Avenue	Madison Avenue	Capricorn Drive	W	230	\$25,300
Sidewalk/Walkway	Mariposa Avenue	Mariposa Glen Way	Trilby Court	N	330	\$36,300
Sidewalk/Walkway	Mariposa Avenue	Nelson Lane	Rosa Vista Avenue	W	330	\$36,300
Sidewalk/Walkway	Mariposa Avenue	North Of Pleides Avenue	South Of Northeast Circle	W	120	\$13,200
Sidewalk/Walkway	Mariposa Avenue	Northeast Circle	Madison Avenue	E	1430	\$157,300
Sidewalk/Walkway	Mariposa Avenue	Northeast Circle	North Of Pleides Avenue	W	300	\$33,000
Sidewalk/Walkway	Mariposa Avenue	Northeast Circle	South Of Northeast Circle	E	70	\$7,700

IMPROVEMENT	LOCATION	CROSS STREET A	CROSS STREET B	TYPE/SIDE OF STREET	LEGS / LENGTH	COST
Sidewalk/Walkway	Mariposa Avenue	Northridge Drive	Farmgate Way	E	1170	\$128,700
Sidewalk/Walkway	Mariposa Avenue	Oak Grove Avenue	Jessie Avenue	W	170	\$18,700
Sidewalk/Walkway	Mariposa Avenue	Oak Grove Avenue	Loleta Avenue	E	1460	\$160,600
Crosswalk: High Visibility Upgrade	Mariposa Avenue	Old Auburn Road		Upgrade	4	\$11,200
Sidewalk/Walkway	Mariposa Avenue	Old Auburn Road	Dennis Way	W	1450	\$159,500
Sidewalk/Walkway	Mariposa Avenue	Old Auburn Road	Rosa Vista	E	2180	\$239,800
Sidewalk/Walkway	Mariposa Avenue	Peter Ray Court	Bullock Lane	W	350	\$38,500
New Crosswalk	Mariposa Avenue	Pleides Avenue		High visibility crosswalk	1	\$2,800
Crosswalk: High Visibility Upgrade	Mariposa Avenue	Poppy Way		School Upgrade	3	\$8,400
Sidewalk/Walkway	Mariposa Avenue	Prince Street	Karen Anne Lane	W	870	\$95,700
Sidewalk/Walkway	Mariposa Avenue	Prince Street	Maddie Mae	N	580	\$63,800
Sidewalk/Walkway	Mariposa Avenue	Reno Lane	Antelope Road	W	300	\$33,000
Sidewalk/Walkway	Mariposa Avenue	Roberts Drive	South Of Twin Oaks Avenue	E	130	\$14,300
Sidewalk/Walkway	Mariposa Avenue	Scribner Avenue	Loleta Avenue	W	70	\$7,700
Sidewalk/Walkway	Mariposa Avenue	South Of Twin Oaks Avenue	City Limit	E	1070	\$117,700
Sidewalk/Walkway	Mariposa Avenue	Sylvan Valley Way	Peter Ray Court	W	870	\$95,700
Sidewalk/Walkway	Mariposa Avenue	Trilby Court	Chula Vista Drive	W	1490	\$163,900
Sidewalk/Walkway	Mariposa Avenue	Twin Oaks Avenue	City Limit	W	860	\$94,600
Sidewalk/Walkway	Mariposa Avenue	Twin Oaks Avenue	Roberts Drive	W	340	\$37,400
Sidewalk/Walkway	Mariposa Avenue	Walnut Drive	Scribner Avenue	W	660	\$72,600
Crosswalk: High Visibility Upgrade	Oak Avenue	Canelo Hills Drive		School Upgrade	1	\$2,800
Sidewalk/Walkway	Oak Avenue	Cross Drive	Streng Avenue	S	260	\$28,600
Sidewalk/Walkway	Oak Avenue	Fair Oaks Boulevard	Cross Drive	S	1180	\$129,800
Sidewalk/Walkway	Oak Avenue	Fair Oaks Boulevard	Fox Meadow Lane	N	1020	\$112,200
Crosswalk: High Visibility Upgrade	Oak Avenue	Melva Street		Upgrade	3	\$8,400
Sidewalk/Walkway	Oak Avenue	Melva Street	Olivine Avenue	N	400	\$44,000
Sidewalk/Walkway	Oak Avenue	Olivine Avenue	Old Ranch Road	N	410	\$45,100
Sidewalk/Walkway	Oak Avenue	Streng Drive	Melva Street	S	680	\$74,800
Sidewalk/Walkway	Oak Avenue	Sunrise Boulevard	Canelo Hills Drive	N	650	\$71,500
Study Areas of Traffic Concern	Oak Avenue	Sunrise Boulevard	Wachtel Way/ Kenneth Avenue	Study	5180	\$20,000
Sidewalk/Walkway	Oak Avenue	Wesley Lane	Fair Oaks Boulevard	N	1450	\$159,500
Sidewalk/Walkway	Twin Oaks Avenue	Auburn Boulevard	Mariposa Avenue	S	1970	\$216,700
Sidewalk/Walkway	Twin Oaks Avenue	Auburn Boulevard	Sunrise Boulevard	N	5380	\$591,800

IMPROVEMENT	LOCATION	CROSS STREET A	CROSS STREET B	TYPE/SIDE OF STREET	LEGS / LENGTH	COST
Sidewalk/Walkway	Twin Oaks Avenue	Lee Drive	Sunrise Boulevard	S	1900	\$209,000
Crosswalk: High Visibility Upgrade	Twin Oaks Avenue	Mariposa Avenue		Upgrade	4	\$11,200
Sidewalk/Walkway	Twin Oaks Avenue	Mariposa Avenue	Lee Drive	S	590	\$64,900
Crosswalk: High Visibility Upgrade	Twin Oaks Avenue	Sunrise Boulevard		Upgrade	3	\$8,400
Study Areas of Traffic Concern	Van Maren Lane	Auburn Boulevard	Antelope Road	Study	8130	\$20,000
Crosswalk: High Visibility Upgrade	Van Maren Lane	Calvin Drive		Upgrade	1	\$2,800
Sidewalk/Walkway	Van Maren Lane	Misty Creek Drive	Skylane Drive	E	940	\$103,400

## Priority Projects: Arterial Streets

Based on overall project score and City implementation capacity, projects on arterial streets that have an overall score of 55 or higher or are simple striping projects are considered priority projects intended for near-term implementation within 1-5 years.

The priority projects are summarized in **Table 7-9** and presented in detail in **Table 7-10**. These projects are the highest scoring projects. As discussed earlier, a set of evaluation criteria was developed to measure how strongly a project meets this Plan's goals.

Table 7-9: Priority 1 Projects on Arterial Streets by Type Summary

PROJECT TYPE	QUANTITY	COST ESTIMATE
Focus Area Plans	2	\$14,135,800
New Marked Crossings at Controlled Intersection Studies	6	\$60,000
New Marked Crossings at Uncontrolled Intersection Studies	1	\$10,000
Sidewalk/Walkway	8	\$353,100
Crosswalk: High Visibility Upgrade	14	\$120,400
Study Areas of Traffic Concern	1	\$20,000
<b>Grand Total</b>	<b>32</b>	<b>\$14,699,300</b>

Table 7-10: Priority 1 Projects on Arterial Streets

IMPROVEMENT	LOCATION	CROSS STREET A	CROSS STREET B	TYPE/SIDE OF STREET	LEGS / LENGTH	COST
Crosswalk: High Visibility Upgrade	Antelope Road	Lichen Drive		Upgrade	2	\$5,600
Sidewalk/Walkway	Antelope Road	Roswood Drive	Amsterdam Avenue	N	100	\$11,000
Crosswalk: High Visibility Upgrade	Antelope Road	Saybrook Drive		Upgrade	4	\$11,200
Crosswalk: High Visibility Upgrade	Auburn Boulevard	Auburn Oaks/Twin Oaks Avenue		Upgrade	3	\$8,400
New Marked Crossings at Controlled Intersection Studies	Auburn Boulevard	Carriage Drive		Study		\$10,000
Crosswalk: High Visibility Upgrade	Auburn Boulevard	Carriage Drive/Chivalry Way		School Upgrade	3	\$8,400
Sidewalk/Walkway	Auburn Boulevard	North Of Greenback Lane	South Of Creekbed Lane	N	210	\$23,100
Crosswalk: High Visibility Upgrade	Auburn Boulevard	Rollingwood Boulevard		Upgrade	2	\$5,600
New Marked Crossings at Controlled Intersection Studies	Auburn Boulevard	Twin Oaks Avenue		Study		\$10,000
Crosswalk: High Visibility Upgrade	Auburn Boulevard	Watson Way		Upgrade	1	\$2,800
Crosswalk: High Visibility Upgrade	Fair Oaks Boulevard	Oak Avenue		Upgrade	4	\$11,200

IMPROVEMENT	LOCATION	CROSS STREET A	CROSS STREET B	TYPE/SIDE OF STREET	LEGS / LENGTH	COST
Crosswalk: High Visibility Upgrade	Fair Oaks Boulevard	Trecrest Avenue		Upgrade	4	\$11,200
Crosswalk: High Visibility Upgrade	Greenback Lane	Birdcage Street		Upgrade	3	\$8,400
New Marked Crossings at Controlled Intersection Studies	Greenback Lane	Birdcage Street		Study		\$10,000
Crosswalk: High Visibility Upgrade	Greenback Lane	Indian River Drive		Upgrade	4	\$11,200
Crosswalk: High Visibility Upgrade	Greenback Lane	Parkoaks Drive		Upgrade	4	\$11,200
Crosswalk: High Visibility Upgrade	Madison Avenue	Primrose Drive		Upgrade	3	\$8,400
Focus Area Plans	Old Auburn Road	Auburn Boulevard/Sylvan Road	Sunrise Boulevard			\$8,163,600
Sidewalk/Walkway	Old Auburn Road	Sunrise Boulevard	Soquel Way	N	610	\$67,100
Study Areas of Traffic Concern	Old Auburn Road	Sylvan Road	Sunrise Boulevard	Study	6240	\$20,000
Crosswalk: High Visibility Upgrade	San Juan Avenue	Chesline Drive/Willowcreek Drive		Upgrade	3	\$8,400
New Marked Crossings at Controlled Intersection Studies	San Juan Avenue	Willowcreek Drive		Study		\$10,000
Sidewalk/Walkway	Sunrise Boulevard	Mclin Way	South Of Michigan Drive	W	200	\$22,000
Sidewalk/Walkway	Sunrise Boulevard	Michigan Drive	South Of Vista Ridge Drive	W	490	\$53,900
Sidewalk/Walkway	Sunrise Boulevard	North Of Highland Avenue	South Of Woodmore Oaks Drive	W	460	\$50,600
Focus Area Plans	Sunrise Boulevard	Sayonara Drive	Madison Avenue			\$5,972,200
New Marked Crossings at Controlled Intersection Studies	Sunrise Boulevard	Twin Oaks Avenue		Study		\$10,000
Sidewalk/Walkway	Sunrise Boulevard	Twin Oaks Avenue	City Limit	W	570	\$62,700
Sidewalk/Walkway	Sunrise Boulevard	Twin Oaks Avenue	City Limit	E	570	\$62,700
New Marked Crossings at Controlled Intersection Studies	Sunrise Boulevard	Uplands Way		Study		\$10,000
Crosswalk: High Visibility Upgrade	Sunrise Boulevard	Woodmore Oaks Drive/Locher Way		Upgrade	3	\$8,400
New Marked Crossings at Uncontrolled Intersection Studies	Sylvan Road	Arcade Creek Trail		Study		\$10,000

## Priority Projects: Paths

Based on overall project score and City implementation capacity, and Council direction path projects are intended for implementation within 10-15 years.

The priority projects are summarized in **Table 7-11** and presented in detail in Table 7-12. The City Council reviewed and accepted the Creek Corridor Trail Project in 2014, including trail prioritization. The City Council directed staff to incorporate only the Priority 1 Trail segments into the Pedestrian Master Plan and these are presented below.

Table 7-11: Priority 1 Paths Summary

PROJECT TYPE	QUANTITY	COST ESTIMATE
Path	10	\$14,979,000
<b>Grand Total</b>		<b>10</b>
		<b>\$14,979,000</b>

Table 7-12: Priority 1 Paths

IMPROVEMENT	LOCATION	CROSS STREET A	CROSS STREET B	LENGTH	COST
Path	Arcade Creek A03	Tempo Park Existing Trail	Sunrise Boulevard	1530	\$1,165,000
Path	Arcade Creek A05	Sayonara Drive	Mariposa Avenue	2450	\$2,989,000
Path	Arcade Creek A06	Mariposa Avenue	Sylvan Road	2430	\$2,203,000
Path	Arcade Creek A07	Sylvan Road	Stock Ranch Path	1620	\$959,000
Path	Arcade Creek A08	Stock Ranch Path	Crossroads Circle East Bridge	1620	\$686,000
Path	Arcade Creek A09	Crossroads Circle East Bridge	Crosswoods Circle West Bridge	1900	\$1,596,000
Path	Arcade Creek A10	Crosswood Park West Bridge	Crosswood Park West Boundary	760	\$376,000
Path	SMUD Corridor S01	Wachtel Way	City Parcel, West Boundary	1250	\$364,000
Path	SMUD Corridor S02	City Parcel, West Boundary	Oak Avenue	3250	\$3,250,000
Path	SMUD Corridor S03	Oak Avenue	Streng Avenue	1390	\$1,391,000

## Priority Programs

In addition to the physical projects and studies, priority recommendations also include programs. These projects cannot be evaluated using the same strategy or criteria as engineering projects. Based on their importance in supporting the pedestrian network infrastructure improvements, the following studies and programs are included in the priority, near-term project list:

- ◆ Traffic Safety Campaign
- ◆ Traffic Safety Assemblies (SRTS)
- ◆ Pedestrian Resource Website
- ◆ Suggested Routes to School Maps (SRTS)
- ◆ School Yard Lessons (SRTS)
- ◆ Safe Routes for Seniors Program
- ◆ Walkable Community Events
- ◆ Speed Feedback Signs
- ◆ Bi-Annual Pedestrian Survey Program

## Potential Funding Sources

### Federal Sources

#### **MOVING AHEAD FOR PROGRESS IN THE TWENTY-FIRST CENTURY (MAP-21)**

The largest source of federal funding for pedestrians is the US DOT's Federal-Aid Highway Program, which Congress has reauthorized roughly every six years since the passage of the Federal-Aid Road Act of 1916. The latest act, Moving Ahead for Progress in the Twenty-First Century (MAP-21) was enacted in July 2012 as Public Law 112-141. The Act replaces the Safe, Accountable, Flexible, Efficient Transportation Equity Act – a Legacy for Users (SAFETEA-LU), which was valid from August 2005 - June 2012. SAFETEA-LU contained dedicated programs including Transportation Enhancements, Safe Routes to School, and Recreational Trails, which were all commonly tapped sources of funding to make non-motorized improvements nationwide. MAP-21 combines these programs into a single source called 'Transportation Alternatives' programs (TAP). More information on TAP, including eligible activities, can be found below and at: <http://www.fhwa.dot.gov/map21/guidance/guidetap.cfm>

MAP-21 authorizes funding for federal surface transportation programs including highways and transit for the 27 month period between July 2012 and September 2014. Currently (Summer 2015), the program is working under extensions. It is not possible to guarantee the continued availability of any listed MAP-21 programs, or to predict their future funding levels or policy guidance. Nevertheless, many of these programs have been included in some form since the passage of the Intermodal Surface Transportation Efficiency Act (ISTEA) in 1991, and thus may continue to provide capital for active transportation projects and programs.

In California (see Section 7.2.1 Active Transportation Program), federal monies are administered through the California Department of Transportation (Caltrans) and Metropolitan Planning Organizations (MPOs). Most, but not all, of these programs are oriented toward transportation versus recreation, with an emphasis on reducing auto trips and providing inter-modal connections. Federal funding is intended for capital improvements and safety and education programs, and projects must relate to the surface transportation system.

There are a number of programs identified within MAP-21 that are applicable to pedestrian projects. These programs are discussed below.

More information: <http://www.fhwa.dot.gov/map21/summaryinfo.cfm>

#### **Transportation Alternatives**

Transportation Alternatives (TA) is a new funding source under MAP-21 that consolidates three formerly separate programs under SAFETEA-LU: Transportation Enhancements (TE), Safe Routes to School (SR2S), and the Recreational Trails Program (RTP). These funds may be used for a variety of pedestrian and streetscape projects including sidewalks, multi-use paths, and rail-trails. TA funds may also be used for selected education and encouragement programming such as Safe Routes to School, despite the fact that TA does not provide a guaranteed set-aside for this activity as SAFETEA-LU did. MAP-21 provides \$85 million nationally for the RTP.

Complete eligibilities for TA include:

1. **Transportation Alternatives** as defined by Section 1103 (a)(29). This category includes the construction, planning, and design of a range of pedestrian infrastructure including "on-road and off-road trail facilities for pedestrians, bicyclists, and other active forms of transportation, including sidewalks, bicycle infrastructure, pedestrian and bicycle signals, traffic calming techniques, lighting and other safety-related infrastructure, and transportation projects to achieve compliance with the

Americans with Disabilities Act of 1990.” Infrastructure projects and systems that provide “Safe Routes for Non-Drivers” is a new eligible activity.

For the complete list of eligible activities, visit:

[http://www.fhwa.dot.gov/environment/transportation\\_enhancements/legislation/map21.cfm](http://www.fhwa.dot.gov/environment/transportation_enhancements/legislation/map21.cfm)

2. **Recreational Trails.** TA funds may be used to develop and maintain recreational trails and trail-related facilities for both active and motorized recreational trail uses. Examples of trail uses include hiking, in-line skating, equestrian use, and other active and motorized uses. These funds are available for both paved and unpaved trails, but may not be used to improve roads for general passenger vehicle use or to provide shoulders or sidewalks along roads.

Recreational Trails Program funds may be used for:

- ◆ Maintenance and restoration of existing trails
- ◆ Purchase and lease of trail construction and maintenance equipment
- ◆ Construction of new trails, including unpaved trails
- ◆ Acquisition or easements of property for trails
- ◆ State administrative costs related to this program (limited to seven percent of a state’s funds)
- ◆ Operation of educational programs to promote safety and environmental protection related to trails (limited to five percent of a state’s funds)

Under MAP-21, dedicated funding for the RTP continues at FY 2009 levels – roughly \$85 million annually. California will receive \$5,756,189 in RTP funds per year through FY2014.

More information: [http://www.fhwa.dot.gov/environment/recreational\\_trails/funding/apportionments\\_obligations/recfunds\\_2009.cfm](http://www.fhwa.dot.gov/environment/recreational_trails/funding/apportionments_obligations/recfunds_2009.cfm)

3. **Safe Routes to School.** There are two separate Safe Routes to School Programs administered by Caltrans. There is the Federal program referred to as SRTS, and the state-legislated program referred to as SR2S. Both programs are intended to achieve the same basic goal of increasing the number of children walking and bicycling to school by making it safer for them to do so. All projects must be within two miles of primary or middle schools (K-8).

The Safe Routes to School Program funds non-motorized facilities in conjunction with improving access to schools through the Caltrans Safe Routes to School Coordinator.

More information: <http://www.dot.ca.gov/hq/LocalPrograms/saferoutes/saferoutes.htm>

Eligible projects may include:

- ◆ **Engineering improvements.** These physical improvements are designed to reduce potential bicycle and pedestrian conflicts with motor vehicles. Physical improvements may also reduce motor vehicle traffic volumes around schools, establish safer and more accessible crossings, or construct walkways or trails. Eligible improvements include sidewalk improvements, traffic calming/speed reduction, and pedestrian crossing improvements.
- ◆ **Education and Encouragement Efforts.** These programs are designed to teach children safe walking skills while educating them about the health benefits and environmental impacts. Projects and programs may include creation, distribution and implementation of educational materials; safety based field trips; interactive pedestrian safety video games; and promotional events and activities (e.g., assemblies, walking school buses).
- ◆ **Enforcement Efforts.** These programs aim to ensure that traffic laws near schools are obeyed. Law enforcement activities apply to cyclists, pedestrians and motor vehicles alike.

Projects may include development of a crossing guard program, enforcement equipment, photo enforcement, and pedestrian sting operations.

4. **Planning, designing, or constructing roadways within the right-of-way of former Interstate routes or divided highways.** At the time of writing, detailed guidance from the Federal Highway Administration on this new eligible activity was not available.

Average annual funds available through TA over the life of MAP-21 equal \$814 million nationally, which is based on a 2 percent set-aside of total MAP-21 authorizations. The 2 percent set-aside for TA funds in California will be about \$71,000,000 for the next two fiscal cycles. State DOTs may elect to transfer up to 50 percent of TA funds to other highway programs, so the amount listed above represents the maximum potential funding.

TA funds are typically allocated through MPOs and require a 20 percent local match.

#### **SURFACE TRANSPORTATION PROGRAM (STP)**

The Surface Transportation Program (STP) provides states with flexible funds which may be used for a variety of highway, road, bridge, and transit projects. A wide variety of pedestrian improvements are eligible, including trails, sidewalks, crosswalks, pedestrian signals, and other ancillary facilities. Modification of sidewalks to comply with the requirements of the Americans with Disabilities Act (ADA) is also an eligible activity. Unlike most highway projects, STP-funded pedestrian facilities may be located on local and collector roads which are not part of the Federal-aid Highway System. Fifty percent of each state's STP funds are suballocated geographically by population. These funds are funneled through Caltrans to the MPOs in the state. The remaining 50 percent may be spent in any area of the state.

#### **HIGHWAY SAFETY IMPROVEMENT PROGRAM (HSIP)**

MAP-21 doubles the amount of funding available through the Highway Safety Improvement Program (HSIP) relative to SAFETEA-LU. HSIP provides \$2.4 billion nationally for projects and programs that help communities achieve significant reductions in traffic fatalities and serious injuries on all public roads, bikeways, and walkways. MAP-21 preserves the Railway-Highway Crossings Program within HSIP but discontinues the High-Risk Rural roads set-aside unless safety statistics demonstrate that fatalities are increasing on these roads. HSIP is a data-driven funding program, and eligible projects must be identified through analysis of crash experience, crash potential, crash rate, or other similar metrics. Infrastructure and non-infrastructure projects are eligible for HSIP funds. Pedestrian safety improvements, enforcement activities, traffic calming projects, and crossing treatments for active transportation users in school zones are examples of eligible projects. All HSIP projects must be consistent with the state's Strategic Highway Safety Plan.

*Last updated in 2006, the California SHSP is located here:*

[http://www.dot.ca.gov/hq/traffops/survey/SHSP/SHSP\\_Final\\_Draft\\_Print\\_Version.pdf](http://www.dot.ca.gov/hq/traffops/survey/SHSP/SHSP_Final_Draft_Print_Version.pdf)

### **PILOT TRANSIT-ORIENTED DEVELOPMENT PLANNING**

MAP-21 establishes a new pilot program to promote planning for Transit-Oriented Development. At the time of writing the details of this program are not fully clear, although the bill text states that the Secretary of Transportation may make grants available for the planning of projects that seek to “facilitate multimodal connectivity and accessibility,” and “increase access to transit hubs for pedestrian and bicycle traffic.”

### **CONGESTION MITIGATION AND AIR QUALITY IMPROVEMENT PROGRAM (CMAQ)**

The Congestion Mitigation and Air Quality Improvement Program (CMAQ) provides funding for projects and programs in air quality nonattainment and maintenance areas for ozone, carbon monoxide, and particulate matter which reduce transportation related emissions. These federal dollars can be used to build pedestrian facilities that reduce travel by automobile. Purely recreational facilities generally are not eligible.

To be funded under this program, projects and programs must come from a transportation plan (or State (STIP) or Regional (RTIP) Transportation Improvement Program) that conforms to the SIP and must be consistent with the conformity provisions of Section 176 of the Clean Air Act.

CMAQ funding is administered through SACOG on the local level. These funds are eligible for transportation projects that contribute to the attainment or maintenance of National Ambient Air Quality Standards in non-attainment or air-quality maintenance areas. Examples of eligible projects include enhancements to existing transit services, rideshare and vanpool programs, projects that encourage pedestrian transportation options, traffic light synchronization projects that improve air quality, grade separation projects, and construction of high-occupancy vehicle (HOV) lanes.

### **PARTNERSHIP FOR SUSTAINABLE COMMUNITIES**

Founded in 2009, the Partnership for Sustainable Communities is a joint project of the Environmental Protection Agency (EPA), the U.S. Department of Housing and Urban Development (HUD), and the U.S. Department of Transportation (USDOT). The partnership aims to “improve access to affordable housing, more transportation options, and lower transportation costs while protecting the environment in communities nationwide.” The Partnership is based on five Livability Principles, one of which explicitly addresses the need for pedestrian infrastructure (“Provide more transportation choices: Develop safe, reliable, and economical transportation choices to decrease household transportation costs, reduce our nation’s dependence on foreign oil, improve air quality, reduce greenhouse gas emissions, and promote public health”).

The Partnership is not a formal agency with a regular annual grant program. Nevertheless, it is an important effort that has already led to some new grant opportunities (including the TIGER grants). Citrus Heights should track Partnership communications and be prepared to respond proactively to announcements of new grant programs.

*More information:* <http://www.epa.gov/smartgrowth/partnership/>

### **COMMUNITY TRANSFORMATION GRANTS**

Community Transformation Grants administered through the Center for Disease Control support community-level efforts to reduce chronic diseases such as heart disease, cancer, stroke, and diabetes. Active transportation infrastructure and programs that promote healthy lifestyles are a good fit for this program, particularly if the benefits of such improvements accrue to population groups experiencing the greatest burden of chronic disease.

*More information:* <http://www.cdc.gov/communitytransformation/>

## State Sources

### **ACTIVE TRANSPORTATION PROGRAM (ATP)**

In 2013, Governor Brown signed legislation creating the Active Transportation Program (ATP). This program is a consolidation of the Federal Transportation Alternatives Program (TAP), California's Bicycle Transportation Account (BTA), and Federal and California Safe Routes to School (SRTS) programs.

The ATP program is administered by Caltrans Division of Local Assistance, Office of Active Transportation and Special Programs.

The ATP program goals include:

- ◆ Increase the proportion of trips accomplished by biking and walking,
- ◆ Increase safety and mobility for nonmotorized users,
- ◆ Advance the active transportation efforts of regional agencies to achieve greenhouse gas reduction goals,
- ◆ Enhance public health,
- ◆ Ensure that disadvantaged communities fully share in the benefits of the program, and
- ◆ Provide a broad spectrum of projects to benefit many types of active transportation users.

The California Transportation Commission ATP Guidelines are available here:

[http://www.catc.ca.gov/meetings/agenda/2014Agenda/2014\\_03/03\\_4.12.pdf](http://www.catc.ca.gov/meetings/agenda/2014Agenda/2014_03/03_4.12.pdf)

Eligible pedestrian and Safe Routes to School projects include:

- ◆ Infrastructure Projects: Capital improvements that will further program goals. This category typically includes planning, design, and construction.
- ◆ Non-Infrastructure Projects: Education, encouragement, enforcement, and planning activities that further program goals. The focus of this category is on pilot and start-up projects that can demonstrate funding for ongoing efforts.
- ◆ Infrastructure projects with non-infrastructure components

The minimum request for non-SRTS projects is \$250,000. There is no minimum for SRTS projects.

*More information:* <http://www.dot.ca.gov/hq/LocalPrograms/atp/>

### **OFFICE OF TRAFFIC SAFETY (OTS) GRANTS**

Office of Traffic Safety Grants are supported by Federal funding under the National Highway Safety Act and SAFETEA-LU. In California, the grants are administered by the Office of Traffic Safety.

Grants are used to establish new traffic safety programs, expand ongoing programs or address deficiencies in current programs. Eligible grantees are governmental agencies, state colleges, state universities, local city and county government agencies, school districts, fire departments, and public emergency services providers. Grant funding cannot replace existing program expenditures, nor can traffic safety funds be used for program maintenance, research, rehabilitation, or construction. Grants are awarded on a competitive basis, and priority is given to agencies with the greatest need. Evaluation criteria to assess need include potential traffic safety impact, collision statistics and rankings, seriousness of problems, and performance on previous OTS grants.

The California application deadline is January of each year. There is no maximum cap to the amount requested, but all items in the proposal must be justified to meet the objectives of the proposal.

*More information:* <http://www.ots.ca.gov/>

## Regional & Local Sources

### **SACOG REGIONAL PEDESTRIAN FUNDING**

The purpose of this funding program is to provide facilities for walking and biking within the cities and towns of the Sacramento region, and to provide connections between communities. Having more people walk for transportation is critical to successfully meeting state air quality conformity and greenhouse gas reduction goals. Further, the efficiency of a truly multimodal transportation system is a key component of achieving the goals set forth by the regional Blueprint and MTP/SCS.

In order to help implement the MTP/SCS, SACOG invests in pedestrian facilities through the biannual Bicycle & Pedestrian Funding Program, adopted by the SACOG Board of Directors in September 2003. The Funding Program encourages locally-determined developments consistent with Blueprint principles, MTP/SCS policies and strategies, and local circulation plans that prioritize walking, bicycling and transit use as primary transportation considerations.

*More information:* [http://www.sacog.org/regionalfunding/fundingprograms\\_bikeped-overview.cfm](http://www.sacog.org/regionalfunding/fundingprograms_bikeped-overview.cfm)

### **REGIONAL ACTIVE TRANSPORTATION PROGRAM**

The Regional ATP targets projects that increase walking, improve safety, and benefit disadvantaged communities. The Active Transportation Program (ATP) was created to fund bicycle and pedestrian infrastructure and non-infrastructure projects. The ATP combines many federal and state funding streams previously used for pedestrian, safety, and other related purposes into one funding stream with broad eligibilities.

*More information:* <http://www.sacog.org/regionalfunding/activetransportation.cfm>

### **SACOG COMMUNITY DESIGN**

The Community Design Funding Program is intended to provide financial assistance to local government agencies that seek to implement physical development that is consistent with SACOG's Blueprint Principles. Approximately every two years, SACOG accepts applications for projects from cities, counties, transit districts and air districts from Sacramento, Sutter, Yolo and Yuba Counties. The Blueprint Principles are:

- ◆ Transportation Choices
- ◆ Housing Diversity
- ◆ Compact Development
- ◆ Use of Existing Assets
- ◆ Mixed Land Uses
- ◆ Quality Design
- ◆ Natural Resource Conservation

More information about these principles and the Blueprint project can be found at <http://www.sacregionblueprint.org/>

*More information:* <http://www.sacog.org/regionalfunding/communitydesign.cfm>

### **PROPERTY TAX REVENUES**

The City of Citrus Heights is scheduled to begin receiving property tax in fiscal year 2022/2023. In alignment with City Council's goal to invest in and improve the neighborhoods in the community, the City Council may allocate funds towards pedestrian improvements like those included in this plan.

### **DEVELOPER IMPACT FEES**

As a condition for development approval, municipalities can require developers to provide certain infrastructure improvements, which can include pedestrian projects. The Citrus Heights General Plan recommends the city adopt a multi-modal impact fee that could streamline the financing of these improvements.

The type of facility that should be required to be built by developers should reflect the greatest need for the particular project and its local area. Legal challenges to these types of fees have resulted in the requirement to illustrate a clear nexus between the particular project and the mandated improvement and cost.

### **NEW CONSTRUCTION**

Future road widening and construction projects are one means of providing sidewalks and other pedestrian facilities. To ensure that roadway construction projects provide pedestrian facilities where needed, it is important that the review process includes input pertaining to consistency with the proposed system. In addition, California's 2008 Complete Streets Act and Caltrans's Deputy Directive 64 require that the needs of all roadway users be considered during "all phases of state highway projects, from planning to construction to maintenance and repair."

*More information:* [http://www.dot.ca.gov/hq/tpp/offices/ocp/complete\\_streets.html](http://www.dot.ca.gov/hq/tpp/offices/ocp/complete_streets.html)

### **RESTORATION**

Cable TV and telephone companies sometimes need new cable routes within public rights of way. Recently, this has most commonly occurred during expansion of fiber optic networks. Since these projects require a significant amount of advance planning and disruption of curb lanes, it may be possible to request reimbursement for affected pedestrian facilities to mitigate construction impacts. In cases where cable routes cross undeveloped areas, it may be possible to provide for new pedestrian facilities following completion of the cable trenching, such as sharing the use of maintenance roads.

### **BANK OF AMERICA CHARITABLE FOUNDATION, INC.**

The Bank of America Charitable Foundation is one of the largest in the nation. The primary grants program is called Neighborhood Excellence, which seeks to identify critical issues in local communities. Another program that applies to greenways is the Community Development Programs, and specifically the Program Related Investments. This program targets low and moderate income communities and serves to encourage entrepreneurial business development.

*More information:* <http://www.bankofamerica.com/foundation>

### **ROBERT WOOD JOHNSON FOUNDATION**

The Robert Wood Johnson Foundation was established as a national philanthropy in 1972 and today it is the largest U.S. foundation devoted to improving the health and health care of all Americans. Grant making is concentrated in four areas:

- ◆ To assure that all Americans have access to basic health care at a reasonable cost
- ◆ To improve care and support for people with chronic health conditions
- ◆ To promote healthy communities and lifestyles
- ◆ To reduce the personal, social and economic harm caused by substance abuse: tobacco, alcohol, and illicit drugs

More information: <http://www.rwjf.org/applications/>

### **COMMUNITY ACTION FOR A RENEWED ENVIRONMENT (CARE)**

CARE is a competitive grant program that offers an innovative way for a community to organize and take action to re-duce toxic pollution in its local environment. Through CARE, a community creates a partnership that implements solutions to reduce releases of toxic pollutants and minimize people's exposure to them. By providing financial and technical assistance, EPA helps CARE communities get on the path to a renewed environment. Transportation and "smart-growth" types of projects are eligible. Grants range between \$90,000 and \$275,000.

More information: <http://www.epa.gov/care/>

### **CORPORATE DONATIONS**

Corporate donations are often received in the form of liquid investments (i.e. cash, stock, bonds) and in the form of land. Employers recognize that creating places to walk is one way to build community and attract a quality work force. Municipalities typically create funds to facilitate and simplify a transaction from a corporation's donation to the given municipality. Donations are mainly received when a widely supported capital improvement program is implemented. Such donations can improve capital budgets and/or projects.

### **OTHER SOURCES**

Additional local sales taxes, fees or permits may be implemented as new funding sources for pedestrian projects. However, any of these potential sources would require a local election. Volunteer programs may be developed to substantially reduce the cost of implementing some routes, particularly multi use paths. For example, a local college design class may use such a multi-use route as a student project, working with a local landscape architectural or engineering firm. Work parties could be formed to help clear the right of way for the route. A local construction company may donate or discount services beyond what the volunteers can do. A challenge grant program with local businesses may be a good source of local funding, in which the businesses can "adopt" a route or segment of one to help construct and maintain it.



Joy mot...



**Love walking? We do too!**  
Walking is a healthy and fun way to get around town. It's also a great way to enjoy the outdoors and see the sights. We've marked walking-friendly routes on this map to help you get started. For more information, visit [www.ci.marysville.or.us](#)

**Walking-Friendly Routes**  
Walking-friendly routes are streets that have sidewalks, crosswalks, and other features that make walking safe and comfortable. These routes are highlighted in green on this map.

**Walking-Friendly Features**  
Walking-friendly features include sidewalks, crosswalks, streetlights, and other features that make walking safe and comfortable. These features are highlighted in green on this map.

**Love walking? We do too!**  
Walking is a healthy and fun way to get around town. It's also a great way to enjoy the outdoors and see the sights. We've marked walking-friendly routes on this map to help you get started. For more information, visit [www.ci.marysville.or.us](#)

## Chapter 8: Monitoring, Maintenance and Security

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*Maintaining a walkable community will support a vibrant Citrus Heights.*

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This Pedestrian Master Plan includes projects and programs intended to create a more walkable and vibrant Citrus Heights and ensuring these facilities are well maintained and secure will be an important consideration. This Chapter outlines recommendations for monitoring and maintaining the projects as well as designing for safety.



## Monitoring

Monitoring the quality of Citrus Heights' pedestrian environment will help ensure it remains a walkable community and can reduce maintenance costs in the long-term.

A successful monitoring program consists of:

### 1. Reporting Tools

The City currently has a *RequestTracker*, a tool available on the City website that residents can submit concerns.

The City also has a *Citrus Heights Mobile App* where residents can also submit concerns.

The City should continue to market these tools to the community.

### 2. Regular Inspections

Regular inspections of the physical environment is another way for the City to ensure a maintained environment.

The City should develop a regular inspection schedule of the walking environment and train staff about what to look for.

Inspection records should be routed to the appropriate City staff.

### 3. Action Determination

The most effective course of action to remedy the issue should be determined.

The appropriate department manager should determine the appropriate course of action to address the report or observed issue.

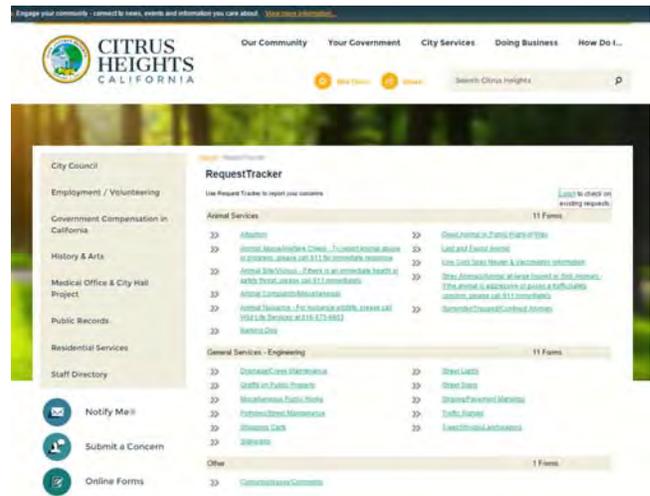
### 4. Schedule Repair

Some issues may be addressed with upcoming funding, as part of a larger project, or as part of regular maintenance.

The City should appropriately schedule the repair as soon as feasible.

### 5. Complete Repair

Once the repair has been made, the City should ensure records be updated.



*RequestTracker*



*Mobile App*

## Maintenance

Maintaining the walking environment once it has been implemented preserves the investment and helps support a high quality of life for Citrus Heights residents. Maintenance costs are a concern for most Cities because there are grants to build projects but not to maintain them.

### Setting Priorities

A detailed and systematic Maintenance Management System will help set priorities, though staff may be doing this effectively already. Sound overall advice on setting trail maintenance priorities is provided in the U.S. Forest Service, *Trail Construction and Maintenance Notebook*, 2004 Edition (this edition is more specific on this topic than the updated 2007 edition. Though directed at backcountry trails, it is valid for pedestrian settings):

*High-quality and timely maintenance will greatly extend the useful life of walking facilities.*

*Even though you know the proper maintenance specifications, sometimes there is too much work for the time you have to spend. How do you decide what to do?*

*Since it is a given that there will always be more work to do than people to do it, it's important to*

- ◆ *Monitor your conditions closely.*
- ◆ *Decide what can be accomplished as basic maintenance.*
- ◆ *Determine what can be deferred.*
- ◆ *Identify what area will need major work.*

*Setting priorities is critically important if maintenance dollars are going to be spent keeping facilities in the best possible condition.*

*The first priority is to correct truly unsafe situations. The second priority is to correct things causing significant damage. The third priority is to restore the facility to the planned design standard.*

*Whatever the priority, doing maintenance when the need is first noticed will help prevent more severe and costly damage later.*

## Maintenance Frequencies

**Table 8-1** presents typical maintenance frequencies and costs.

Table 8-1: Maintenance Cost Assumptions

ACTIVITY	FREQUENCY		COST ESTIMATE
Crosswalk restriping	Arterials: 5-7 years Minor streets: 10 years	EA	\$2,800
Sidewalk and curb ramp repair	As needed		TBD
Path repair, maintenance	Annual	Mile	\$4,000
Tree trimming	Every year		TBD
Sign repair	As needed	EA	\$300

## Security

Security should be carefully considered when designing new walking facilities. Proper design can reduce ongoing maintenance costs and improve the safety and security.

The following design elements should be considered into planning and design of walking facilities.

- ◆ New facilities should have high visibility and provide “eyes on the street” security.
- ◆ Manage vegetation so users can be seen from adjacent areas.
- ◆ Provide lighting strategically and as necessary for safety and security.

Additional security resources may be found through an understanding of Crime Prevention Through Environmental Design (CPTED) principles. The National Crime Prevention Council published helpful a CPTED resource guide and is available at the Center for Problem Oriented Policing (POP): <http://www.popcenter.org/tools/cpted/PDFs/NCPC.pdf>





