City of Brawley
Non-Motorized Transportation Plan

May 2013

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City of Brawley

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This is a project of the City of Brawley with funding provided by the Southern California Association of Governments' (SCAG) Compass Blueprint Demonstration Project Program. Compass Blueprint assists Southern California cities and other organizations in evaluating planning options and stimulating development consistent with the region's goals.

The preparation of this report was funded part through grants from the United States Department of Transportation (USDOT)—Federal Highway Administration and Federal Transit Administration, in accordance with the Metropolitan Planning Program, Section 104(f) of Title 23 of the U.S. Code.

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Chapter 1. Introduction

The City of Brawley's Non-Motorized Transportation Plan is intended to serve as the guiding document for the development of a comprehensive bicycle and pedestrian network and supporting programs. The development of the Brawley Non-Motorized Transportation Plan (NMTP) will result in updating the existing 2002 Bicycle Master Plan (BMP) and developing a new component to improve the pedestrian environment in the city. The purpose of this NMTP is to develop a recommended bicycle and pedestrian network, improve safety for bicyclists and pedestrians, improve multi-modal connections, and promote bicycling and walking as an important public health issue through education and encouragement.

1.1 Setting

Brawley is located in the center of the Imperial Valley, 30 miles north of Mexico's border and 126 miles east of San Diego. The City of Brawley is the third largest city in Imperial County, covering 7.68 square miles, with a 2010 population of 24,953 people[1]. State Routes 111, 86, and 78 serve the area, as well as the Union Pacific Railroad which runs from north-south in the city. Brawley's flat terrain makes it an ideal location to encourage bicycling and walking for transportation and recreational purposes.

1.2 Benefits of Bicycling and Walking

Bicycling and walking are low-cost and healthy transportation options that provide economic and livability benefits to communities. When residents and visitors bicycle or walk for a trip, it alleviates congestion, minimizes greenhouse gas emissions, and helps extend and improve the quality of people's lives. Below is a brief overview of the benefits of greater investments in walking and bicycling.

Environmental Benefits

Due to emissions from "cold starts" (i.e., when a car hasn't been driven in a few hours and the engine is cool), a one-mile automobile trip emits up to 70 percent as much pollution as a 10-mile excursion. This means that when people decide to bicycle or walk even just for very short trips, they are still significantly reducing their environmental footprint.[2] Decreasing greenhouse gas emissions will help the region meet targets in new laws Assembly Bill 32, Senate Bill 375 and the Sustainable Communities Strategy. In addition to meeting these targets, this Plan implements the policies of the 2012 Regional Transportation Plan and Sustainable Communities Strategy. From reducing local levels of harmful pollutants that cause asthma and other respiratory illnesses to addressing global climate change, higher rates of bicycling and walking provide tangible, significant air quality benefits.

Bicycling and walking also do not pollute water as driving an automobile does. Cars leak oil, petroleum products and other toxins onto road surfaces that eventually make their way to storm drains, creeks, and large bodies of water. This "non-point source" pollution is a major threat to urban aquatic habits, contaminates drinking water, and can cause major illness. Some toxins and metals accumulate in sea life and cause medical problems to people when eaten. Others

[1] *2010 US Census*
[2] *Bay Area Air Quality Management District. (2007). Source Inventory of Greenhouse Gas Emissions.*

cause explosive growth of algae, which depletes water of oxygen, killing fish and aquatic life.[3] Every bicycle and walking trip is one less opportunity for these toxins to enter the environment, which on a large scale can make the difference in the health of local water ways and aquatic systems.

Walkable, bikeable downtowns attract residents and visitors to spend money at local businesses while reducing household transportation costs when families can own fewer automobiles and reduce their driving trips.

Economic Benefits to Cities

Multiple studies have shown that walkable, bikeable neighborhoods are more livable and attractive, helping increase home values[4] and retain a more talented workforce that result in higher property tax revenues and business competitiveness. Similarly, bike lanes can improve retail business directly by drawing customers and indirectly by supporting the regional economy. Patrons who walk and bike to local stores have been found to spend more money to visit local businesses than patrons who drive.[5]

The League of American Bicyclists reports that bicycling makes up $133 billion of the US economy, funding 1.1 million jobs.[6] The League also estimates bicycle-related trips generate another $47 billion in tourism activity. Many communities have enjoyed a high return on their investment in bicycling. For example, the Outer Banks of North Carolina spent $6.7 million to improve local bicycle facilities, and reaped a reported benefit of $60 million of annual economic activity associated with bicycling.[7]

Benefits to Households and Individuals

Walking and biking are not just forms of travel, they are important forms of exercise. Many public health experts associate the rising and widespread incidence of obesity with automobile-dominant development patterns and lifestyles that limit such daily forms of physical activity.[8] This association is perhaps most apparent, and acute, with respect to children and school travel. After decades of declining rates of walking and biking – from roughly half of all non-high school students in 1968 to just 14 percent in 2009 - obesity among youth has become an epidemic. [9] In California, one in three kids age 9-17 are now at risk of becoming or are already overweight.[10]

For children, the Center for Disease Control and Prevention recommends 60 minutes of daily aerobic exercise. The CDC recommends 75 to 150 minutes of vigorous exercise, in combination with muscle strengthening exercises, for adults on a weekly basis. For many adults and children, walking or biking to work or school is a viable - if not the only – option for achieving these recommended exercise regimens.

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[3] *City and County of Honolulu Department of Environmental Services*
[4] *Cortright, Joe for CEOs for Cities. (2009). Walking the Walk: How Walkability Raises Home Values in US Cities.*
[5] *The Clean Air Partnership. (2009). Bike Lanes, On-Street Parking and Business: A Study of Bloor Street in Toronto's Annex Neighborhood.*
[6] *Flusche, Darren for the League of American Bicyclists. (2009). The Economic Benefits of Bicycle Infrastructure Investments.*
[7] *N.C. Department of Transportation, Division of Bicycle and Pedestrian Transportation. (No Date). The Economic Impact of Investments in Bicycle Facilities.* atfiles.org/files/pdf/NCbikeinvest.pdf
[8] *October 27, 1999 issue of the JAMA*
[9] *United States Department of Transportation, National Household Travel Survey*
[10] *The California Endowment. (No Date). Fighting California's Childhood Obesity Epidemic.* http://www.calendow.org/article.aspx?id=348

Pedestrian and bicycle infrastructure also provides transportation choices to those who cannot or do not drive, including people with disabilities, youth, seniors, and people with limited incomes. Families that can replace some of their driving trips with walking or bicycling trips spend a lower proportion of their income on transportation,[11] freeing additional income for local goods and services. Pedestrians with mobility, vision, or hearing impairments particularly depend on high-quality, well-maintained infrastructure as a basis for travel, from audible signals and curb ramps that indicate safe crossings to separated bike lanes that discourage bicyclists from riding on the sidewalk. For others who cannot afford to live near employment centers or who work away from transit, bicycling may provide the only affordable and reliable means of commuting.

[11] *Center for Neighborhood Technology. (2005). Driven to Spend: Pumping Dollars out of Our Households and Communities.*

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Chapter 2. Objectives, Key Strategies, and Guiding Principles

2.1 Goals and Objectives

The infrastructure improvements and programs recommended in the NMTP will be shaped by goals and objectives developed by City staff, public input, and existing plans' regional policies and visions. This section introduces the goals of the Plan as well as the objectives for their implementation. These goals and objectives are listed below in Table 2-1.

Table 2-1: Goals and Objectives

Objective	Description
Goal 1: Develop a comprehensive, rational, and equitable bikeway and walkway system connecting residential neighborhoods with parks, schools, Central Business District, transit, and existing and future employment.	
1.1	Provide bicycle and pedestrian access to major employment and retail centers, schools, parks, the Central Business District, and other destinations.
1.2	Plan, design, and construct roadways that include facilities for bicyclists and where feasible, Class I shared-use paths for pedestrians, bicyclists, and disabled persons.
1.3	When developing new schools, parks, residential communities, and retail/employment centers, include bicycle and pedestrian facilities that expand the bicycle and pedestrian network or connect to proposed or existing routes.
1.4	Reduce vehicle fuel consumption and the number of vehicular miles traveled by increasing non-motorized transportation trips.
1.5	Increase the number of transit facilities with bicycle and pedestrian facilities, which should include bicycle parking, bikeways and walkways connecting to bus stops and stations, and installation of bicycle racks on busses.
1.6	Integrate bicycle facilities as part of the design and construction of new roadways and upgrades or resurfacing of existing roadways.
1.7	Establish a bicycle network that offers opportunities for walking and cycling for all ages and abilities.
1.8	Maintain the bicycle and pedestrian network by establishing a regular maintenance program.
1.9	Pursue grant-funding programs for implementing the bikeway and walkway network.
1.10	Assign a staff person or appoint a committee to coordinate and implement and maintain the bikeway and walkway system.
1.11	Cooperatively pursue joint multi-agency funding applications for implementation that will expand the bicycle and pedestrian network.
1.12	Encourage retrofit installation of sidewalks in industrial, commercial, and residential districts and require sidewalks for new developments.
Goal 2: Create a safe bicycle and pedestrian environment	
2.1	Implement projects that improve the safety of bicyclists and pedestrians at key destinations.

Objective	Description
2.2.	Support traffic enforcement activities that increase pedestrian and bicyclist safety.
2.3	Evaluate impacts on bicyclists and pedestrians when designing new or reconfiguring streets.
Goal 3: Develop school and commuter bikeways and walkways that are easily recognized and accessible from residential areas	
3.1	Develop educational programs that promote the safe and efficient travel of cyclists and pedestrians.
3.2	Establish a regular education program that targets schools and adults to inform and educate about safety techniques for cyclists, pedestrians, and drivers.
3.3	Develop maps and wayfinding signage and striping to assist navigating the bikeways and walkways.
Goal 4: Improve bicycle and pedestrian amenities	
4.1	Provide bicycle storage facilities and/or bicycle racks for new parks, retail, and employment centers.
4.2	Provide amenities such as benches, shade features, pedestrian-scale lighting, and water fountains.
4.3	Develop guidelines and/or standards to require bicycle parking with new commercial and industrial development and all new schools and civic buildings.

2.2 Relationship to Other Plans

City of Brawley Plans and Policies

2.2.1 General Plan 2030 (2008)

Brawley's General Plan provides goals, objectives, and policies related to bicycling and walking in its Land Use, Infrastructure, Open Space/Recreation, and Resource Management Elements, which are discussed below.

Land Use Element

Two policies in Brawley's Land Use Element pertain to bicycling and walking. These are shown in Table 2-2**.** Both policies aim to create a more aesthetically pleasing city through bicycle and pedestrian improvements.

Table 2-2: Non-Motorized Transportation Goals and Policies in the Land Use Element

Policy Number	Description
LUE Goal 3: Revitalization of Aging Commercial, Industrial, and Residential Uses and Properties	
LUE Policy 3.1.8	Re-establish the Brawley Central Business District as a major regional shopping, marketing, and office/commercial area for north Imperial County, while maintaining and encouraging a pedestrian friendly downtown "village" environment.
LUE Goal 4: Improved City-Wide Urban Design	
LUE Policy 4.1.1	Develop citywide visual and circulation linkages through strengthened landscaping, pedestrian lighting, bicycle trails (where feasible) and public identity graphics along major street corridors. Establish gateways throughout the city that identify and highlight Brawley's unique character.

The Land Use Element also denotes the Civic Center/District I portion of the Downtown Brawley Overlay Area as the heart of the city. This desired to have a walkable, pedestrian-scale village atmosphere.

Infrastructure Element

The Infrastructure Element of the Brawley General Plan identifies a series of goals and policies that affect non-motorized transportation. These are shown in Table 2-3. These policies promote non-motorized transportation by encouraging safety, accessibility, and connectivity.

Table 2-3: Non-Motorized Transportation Goals and Policies in the Infrastructure Element

Policy Number	Description
IE Goal 1: Provide for Adequate and Safe Local Thoroughfares and Transportation Routes	
IE Policy 1.1.12	Minimize pedestrian and vehicular conflicts through street design and well-marked pedestrian crossings.
IE Goal 4: Encourage Transportation System Management and Transportation Demand Management	
IE Policy 4.1.6	Encourage employers to reduce vehicular trips by offering employee incentives.
IE Goal 5: Provide Alternatives to the use of Motorized Vehicles	
IE Policy 5.2.1	Promote the safety of pedestrians and bicyclists by adhering to uniform standards and practices, including designation of bicycle lanes, proper signage, and adequate sidewalks, bicycle lanes, and off-road bicycle trails.
IE Policy 5.2.2	Maintain existing pedestrian facilities and require new development to provide pedestrian walkways between developments, schools and public facilities.
IE Policy 5.2.3	Ensure accessibility of pedestrian facilities to the elderly and disabled.
IE Policy 5.2.4	Support and coordinate the development and maintenance of regional bikeways in conjunction with the County of Imperial.
IE Policy 5.2.5	Develop programs that encourage the safe utilization of easements and/or right-of-ways along flood control channels, public utility right-of-ways, and street right-of-ways wherever possible for the use of bicycles and/or pedestrian/equestrian trails.
IE Policy 5.2.6	Encourage retrofit installation of sidewalks in existing industrial districts and require sidewalks for new industrial areas.
IE Policy 5.2.7	Support and coordinate the development and maintenance of bikeways and trails in conjunction with the master plans of the appropriate agencies.
IE Policy 5.2.8	Encourage safe biking by supporting safety clinics/courses sponsored by various local and state agencies.
IE Policy 5.2.9	Provide for a non-vehicular circulation system that encourages bicycle transportation and pedestrian circulation.
IE Goal 6: Promote Reduction in Air Pollution from Mobile Sources	
IE Policy 6.1.3	Identify and develop non-motorized transportation corridors (e.g., bicycling & walking trails).

The Infrastructure Element notes that Brawley's existing bikeway network is fragmented and lacks connections to key destinations. Imperial County has a policy that bike lanes be planned into appropriate Prime, Major, and Secondary Arterial streets, as defined by the County General Plan. As the County plans and constructs such bike lanes, the City of Brawley will incorporate bike lanes into city streets to connect to planned and constructed County bike lanes.

Pedestrian circulation primarily consists of adequate sidewalks adjacent to city streets. The Infrastructure Element states that the City will continue to incorporate sidewalks into the design of new streets, and will identify and improve streets with pedestrian safety hazards. New development projects will be required to provide pedestrian linkage between schools, parks, neighborhood commercial centers, and other public facilities.

The Infrastructure Element also has an implementation program that outlines how to put the identified policies into action. There is one non-motorized program, which is displayed in Table 2-4**.** This program has seven implementation strategies, including requiring the provision of facilities, connections, and additional plans.

Table 2-4: Non-Motorized Transportation Implementation Programs in the Infrastructure Element

Program Number	Description
IMP-IE Goal 5: Provide Alternatives to the Use of Motorized Vehicles	
IMP-IE Program 5.3	Provide uniform standards and practices for the safety of pedestrians and bicyclists by providing adequate sidewalks, bicycle lanes, and off-road trails. Require dedication and improvement of these facilities where deemed necessary to meet public needs arising as a result of development
	Provide pedestrian ramps at intersections to accommodate wheelchairs, strollers, bicycles, and other wheeled vehicles. Include pedestrian ramps in all new street facilities. Where pedestrian ramps do not currently exist, construct such facilities in concert with the construction of other street improvements, (e.g., street widening, new traffic signals, new drainage facilities)
	Require new development to provide pedestrian walkways between schools, parks, neighborhood commercial centers, and public facilities
	Encourage pedestrian links between individual parking lots for existing and planned commercial areas
	Consider using right-of-ways along flood control channels, irrigation canals, utility lines, and streets for pedestrian, bicycle, and equestrian trails
	Prepare and implement a bicycle trail plan that links to the Open Space designated in the Brawley Land Use Plan and planned and established County bicycle trails
	Encourage safe biking by supporting safety clinics in coordination with Brawley Unified School District

Open Space/Recreation Element

The Open Space/Recreation Element has one policy related to non-motorized transportation program, shown in Table 2-5. The City will provide trails for bicyclists, pedestrians, and equestrian uses in natural areas and future parks to enhance the recreational opportunities available in Brawley. The Element also includes one implementation program, described in Table 2-6. This program recommends bicycle and pedestrian facilities in active and passive open space, as well as providing recreational opportunities in railroad rights-of-way.

Table 2-5: Non-Motorized Transportation Goals and Policies in the Open Space/Recreation Element

Policy/Program Number	Description
OCRE Goal 4: Maintain and Improve an Adequate Quantity, Quality, Type, and Distribution of Parks and Recreational Facilities throughout the city	
OSRE Policy 4.1.12	Establish a pedestrian and bicycle trail that links the City's parks and recreational facilities.

Table 2-6: Non-Motorized Transportation Implementation Programs in the Open Space/Recreation Element

Program Number	Description
IMP-IE Goal 5: Provide Alternatives to the Use of Motorized Vehicles	
IMP-OSRE Program 4.2	The City's parklands, landscaped medians and parkways in City streets, bicycle and pedestrian trail systems, and active and passive open space
	An assessment of the open space and recreational opportunities offered by abandoned road and railroad rights-of-way, and similar environmentally impacted or unused linear open space

Resource Management Element

The Resource Management Element of the Brawley General Plan identifies several goals and policies that affect non-motorized transportation. These are shown in Table 2-7. To reduce impacts on the environment, this Element recommends placing services so that they can be easily accessed by non-motorized transportation and providing biking and walking facilities to facilitate using these modes.

Table 2-7: Non-Motorized Transportation Goals and Policies in the Resource Management Element

Policy Number	Description
RME Goal 1: Reduction of Air Pollution	
RME Policy 1.1.3	Locate multiple family developments close to commercial areas to encourage pedestrian travel rather than vehicular travel.
RME Policy 1.1.5	Provide commercial areas that are conducive to pedestrian and bicyclist circulation.
RME Policy 1.1.7	Create the maximum possible opportunities for bicycles as an alternative transportation mode and recreational use.
RME Policy 1.2.6	Encourage non-motorized transportation through the provision of bicycle and pedestrian pathways.
RME Goal 2: Conservation and Protection of Unique and Natural Features	
RME Policy 2.2.14	Design an integrated open space system in the city that includes landscaped medians and parkways in City streets, the City's park system, bicycle and pedestrian trail systems, and active and passive open space with consideration given to developing guidelines to integrate the system with private open space.

2.2.2 Bicycle Master Plan (2002)

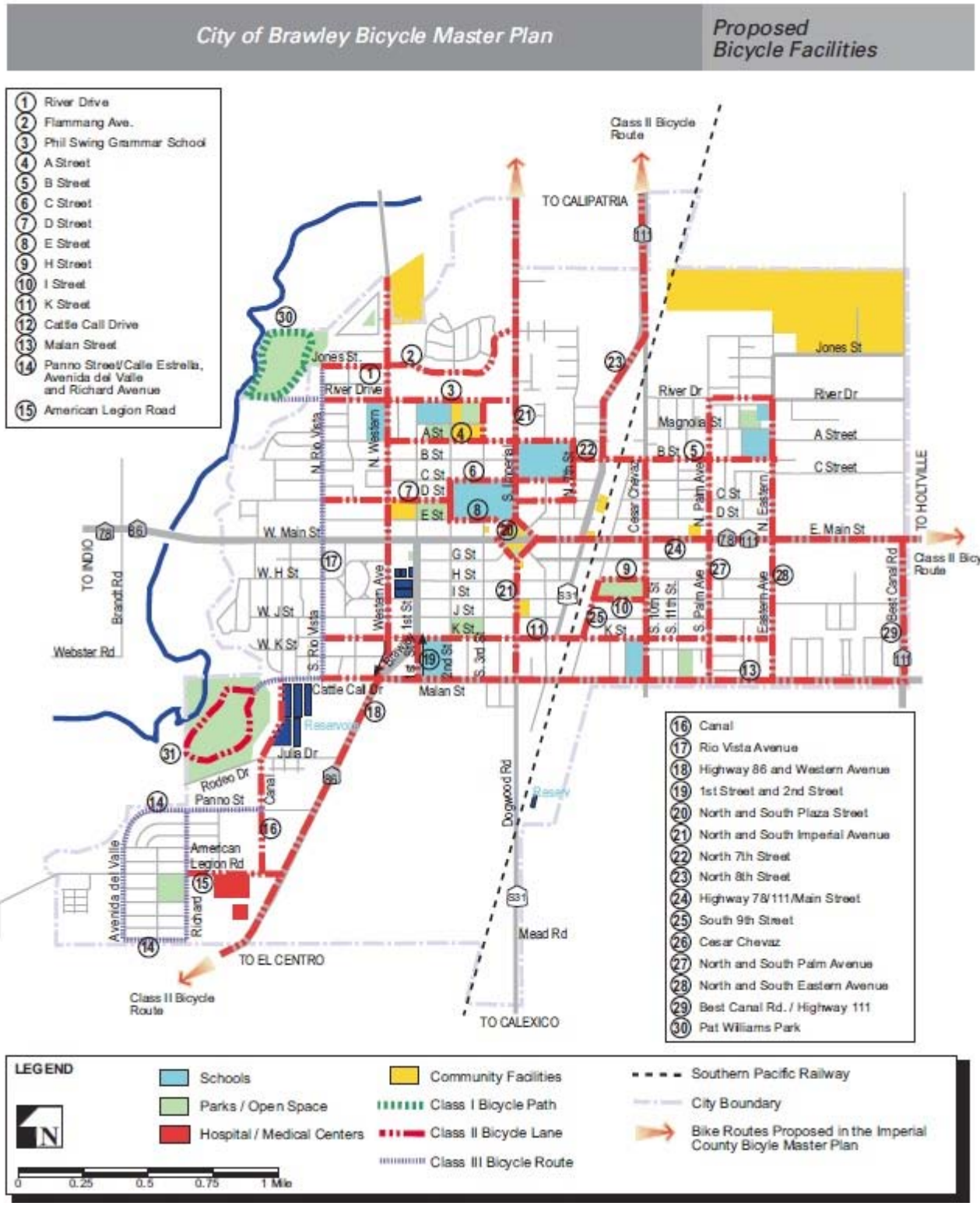
The City of Brawley adopted its previous Bicycle Master Plan in 2002. The primary purpose of the Bicycle Master Plan was to increase bicycling activities to provide health benefits, improve air quality, and reduce traffic. Table 2-8 displays the key goals and objectives from the 2002 Plan to improve bicycling in Brawley.

Table 2-8: Bicycle Master Plan Key Goals and Objectives

Number	Description
Key Goals	
1	A comprehensive, rational and equitable bikeway system connecting residential neighborhoods with parks, schools, city hall, and existing and future employment.
2	School and commuter bikeways that are easily recognized and accessible from residential areas.
3	Bicycle storage facilities and/or bicycle racks for new parks, retail, and employment centers.
4	Bikeways integrated with roadway improvements and/or new construction projects based on the recommended bikeway network.
Key Objectives	
1	Plan, design, and construct roadways that include facilities for bicyclists.
2	Encourage cycling by planning accordingly when developing new schools, parks, and residential communities.
3	Integrate bicycle facilities as part of the design and construction of new roadways and upgrade of existing roadways.
4	Establish a bicycle network that offers facilities for all ages and physical abilities.
5	Encourage educational programs that promote the safe and efficient travel of cyclists.
6	Provide for bicycle access to employment, commercial, and other transportation and travel destinations.
7	Improve the existing bikeway network by restriping existing bicycle lanes that are consistent with the recommended routes.
8	Remove bicycle lanes along roadways that are in conflict with on-street parking and requires unsafe maneuvering around parked vehicles.
9	Develop guidelines and/or standards for bicycle parking with new commercial and industrial development.
10	Pursue grant funding programs for implementing the bikeway network.
11	Identify a key contact person who coordinates and implements the bikeway system.

The Plan recommends implementation of a 24.21 mile system of bikeways to connect with schools, parks, and the city center. It also recommends that the City of Brawley review bicycle facilities every four years. The recommended bikeway network includes Class I bicycle paths, Class II bicycle lanes, and Class III bicycle routes and is shown in Figure 2-1. Class I bicycle paths are off-street facilities that do not permit motorized traffic. Class II bike lanes are travel lanes for exclusive use by bicyclists within the roadway right-of-way. Class III bike routes are signed shared roadways between bicyclists and motorists, usually located on streets with low vehicle volumes and speeds.

Figure 2-1: 2002 Bicycle Master Plan



The 2002 BMP recommends bicycle parking for new commercial and industrial development by requiring 5 percent of the automobile parking requirement of over 15 spaces be designated for bicycles. The Plan also recommends locating bicycle racks at each school and at shopping areas in excess of 50,000 square feet or where there is high bicycling demand. Bicycle storage lockers may be considered at transit stations or major employment locations where the lockers are internal and are maintained by the employer.

Brawley's Bicycle Master Plan also proposes the City implement a reoccurring bicycle safety program at schools and create a public awareness campaign. This could include:

- Distributing bikeway maps with safety tips
- Putting bicycle safety messages on bus billboards, bus benches, Parks and Recreation brochures, local street maps, bumper stickers, school bulletin boards, radio shows, traffic signs, library bulletin boards, and trail kiosks
- Promoting annual "Bike-to-Work" Week

2.2.3 City of Brawley Pedestrian Safety Assessment (2011)

The Technology Transfer Program (Tech Transfer) at the University of California, Berkeley completed the City of Brawley's Pedestrian Safety Assessment through funding from the California Office of Traffic Safety. The goal of the study was to enhance walkability and accessibility for all pedestrians.

The study identified the following enhancement areas the City should consider to improve the pedestrian environment:

- Develop a Safe Routes to School program and pursue grant funding
- Develop a Pedestrian Safety Program and conduct walking audits
- Implement design policies and development standards, such as a streetscape master plan and form-based zoning
- Inventory pedestrian traffic devices and crosswalks, and make improvements where necessary
- Implement pedestrian-oriented speed limits and conduct speed surveys
- Develop pedestrian-oriented traffic signals and stop-sign warrants
- Implement transportation demand management (TDM) programs and policies, and hire a TDM coordinator
- Seek public input on pedestrian issues online and in person
- Indentify and reduce crossing barriers
- Define opportunities for mixed-uses and redevelopment
- Develop a pedestrian master plan
- Coordinate with health agencies for funding and data
- Install Leading Pedestrian Intervals (LPIs)
- Adopt street tree, bicycle parking, newspaper rack, and street furniture requirements

The study also identified the following opportunity areas:

- Adopt a crosswalk installation, removal, and enhancement policy
- Implement an Americans with Disabilities Act (ADA) improvements and transition plan
- Conduct a sidewalk inventory
- Develop a pedestrian collision report to identify areas of improvement

- Conduct regular bicycle and pedestrian counts
- Establish a non-motorized advisory committee and hire a bicycle/pedestrian coordinator
- Develop a complete streets policy
- Create walking route maps and provide wayfinding signage
- Implement sustained pedestrian enforcement
- Develop pedestrian safety education and neighborhood traffic management programs

2.2.4 City of Brawley Downtown Specific Plan (2010)

The Brawley Downtown Specific Plan is intended to guide future development patterns within approximately 110 acres of land in Downtown Brawley into a more cohesive Central Business District around Plaza Park and along Main Street. Goals of the Plan that relate to non-motorized transportation are as follows:

- Increase connectivity and options for pedestrians and bicyclists
- Provide high quality civic spaces for recreation, gathering, and cultural events

Bike lanes are proposed along Main Street to connect with existing bike lanes on Imperial Avenue. There is also a proposed bike trail between 8th Street and 9th Street, as well as a proposed bike route network throughout the downtown. Pedestrian improvements listed in the Plan include:

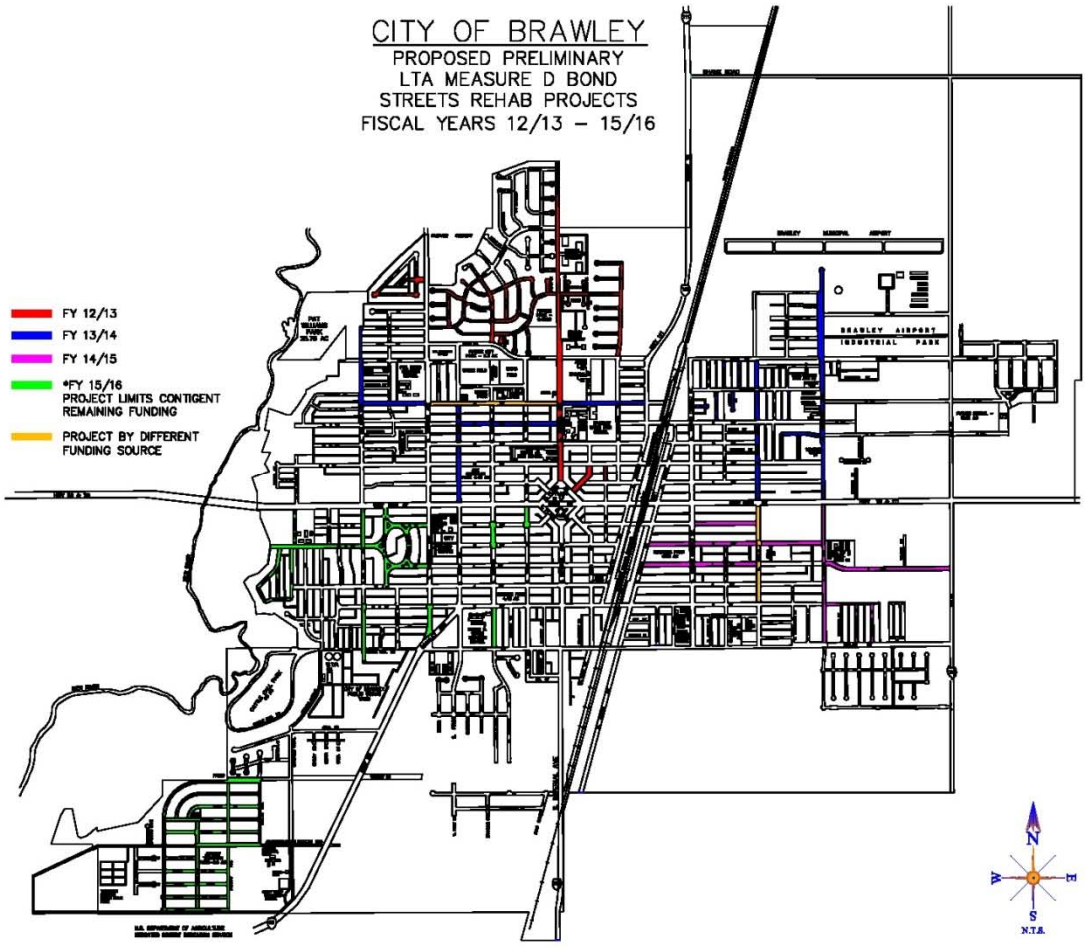
- Directionary signs
- Illuminated alleys
- Bulbouts
- Paseos
- Sidewalks
- Streetscape improvemnts
- Walkways

This Plan uses the proposed facilities in the Downtown Specific Plan in its recommendations for the bicycle and pedestrian networks.

2.2.5 Proposed Streets Rehabilitation Projects (FY 12/13 – 15/16)

Rehabilitation projects for the fiscal years 12/13 through 15/16 are shown in Figure 2-2. Projects are located throughout the city and are located on all types of roadways. Recommendations identified in the Brawley Non-Motorized Transportation Plan that coincide with planned street improvement projects should be combined when possible to conserve funds.

Figure 2-2: Proposed Street Rehabilitation Projects



2.3 Regional Plans and Policies

2.3.1 Imperial County Bicycle Master Plan (2012)

In January 2012, Imperial County adopted its Bicycle Master Plan, which aims to achieve the following three overarching goals:

- To promote bicycling as a viable travel choice
- To provide a safe and comprehensive regional connected bikeway network
- Environmental quality, public health, recreation and mobility benefits for the County through increased bicycling

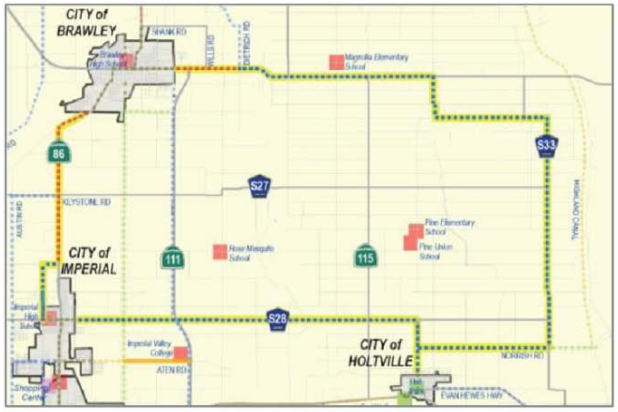
The Plan recommends an extensive bicycle network throughout the unincorporated areas of the County, including approximately 270 miles of on-street bikeways (bike lanes and routes), 64 miles of off-street bike paths, and 103 miles of routes along shoulders of state highways. Proposed facilities are part of a larger Imperial Valley Bikeway system comprised of 12 bicycle routes in order to break down the network into shorter and more utilitarian routes. Three of these routes intersect with Brawley city limits and a fourth runs just west of the city, shown in Figure 2-3. Bicycle facilities that provide direct connections with Brawley and are also listed in Table 2-9.

Table 2-9: County-Proposed Bikeways Adjacent to Brawley

Bikeway Type	Street
Highway Shoulder	State Route 86
Highway Shoulder	State Route 111 (north of Brawley)
Bike Lanes	State Route 111 (south of Brawley)
Highway Shoulder	State Route 33
Bike Route	Dogwood Road
Bike Route	Meads Road

Figure 2-3: Proposed Routes Adjacent to Brawley

Route 4



Route 6

Route 11

Route 8

The Plan also recommends a series of education, encouragement, enforcement, and evaluation strategies. These include but are not limited to Safe Routes to School programs, Share the Road education campaigns, targeted enforcement, and creating a County bicycle coordinator position.

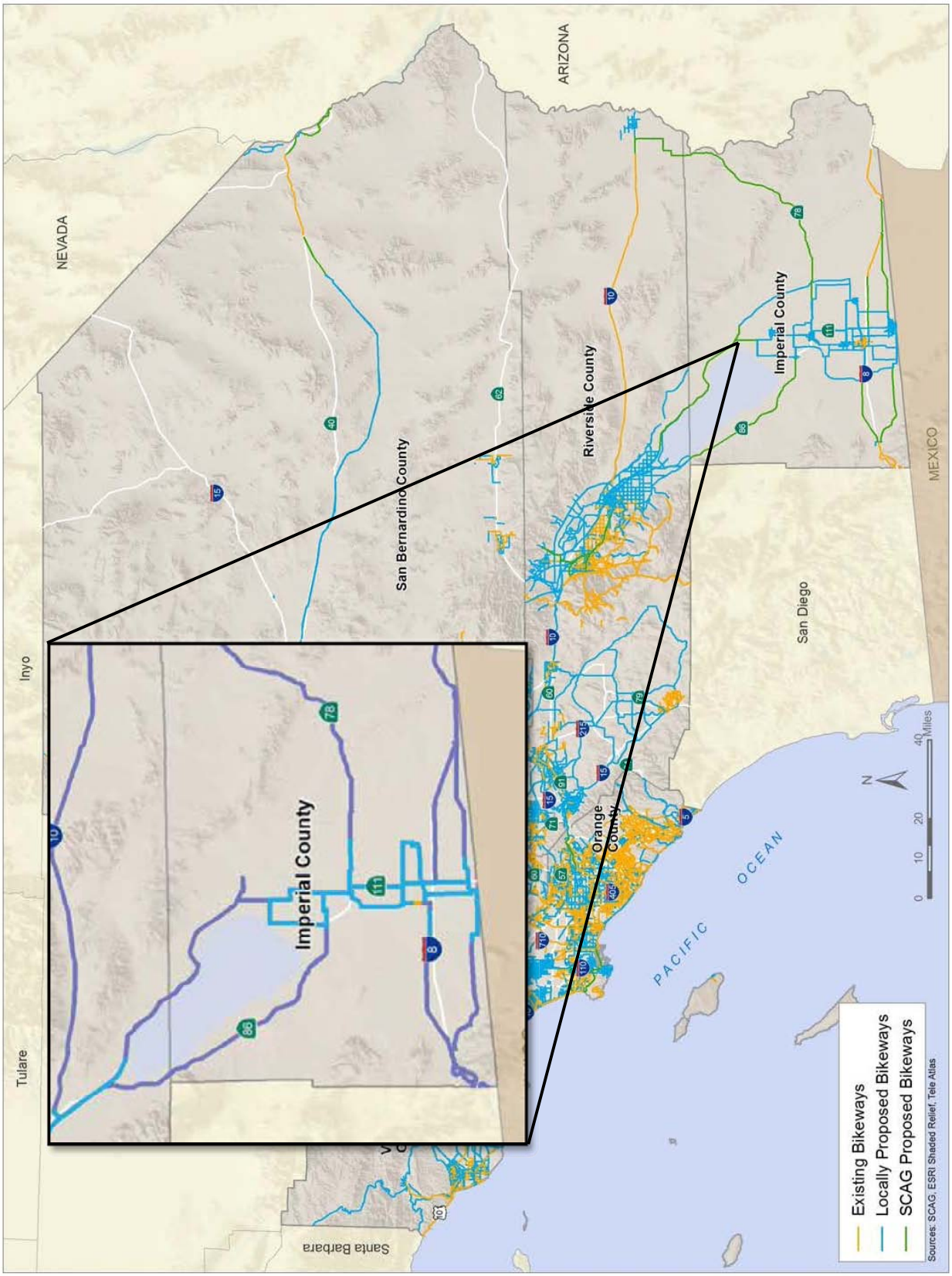
2.3.2 Southern California Association of Governments (SCAG) Regional Transportation Plan (2012)

SCAG adopted its Regional Transportation Plan (RTP) in April 2012 with the goal of increasing mobility for those who live in and visit Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura Counties. The Plan recommends increasing regional bikeway mileage from 4,315 to 10,122 miles, as well as retrofitting sidewalks to comply with the ADA and implementing safety improvements. SCAG estimates that active transportation improvements recommended will cost approximately $6.7 billion.

In addition to bikeways that Imperial County had proposed at the time of development of the RTP, SCAG also recommends key bikeways to connect the region and facilitate bicycle travel. SCAG-proposed bikeways are displayed in Figure 2-4. These bicycle facilities connect with locally proposed bikeways that intersect with the city of Brawley.

Policies included in the RTP that address walking and biking in the region include addressing bicyclist and pedestrian safety, increasing bicycle and pedestrian mode share, encouraging local active transportation plans, and improving air quality.

Figure 2-4: SCAG Proposed Bikeways



2.4 State Plans and Policies

2.4.1 Bicycle Transportation Act

The California Bicycle Transportation Account (1994) is perhaps one of the most important pieces of bicycle-related legislation and requires all cities and counties to have an adopted bicycle master plan in order to be eligible to apply for Bicycle Transportation Account (BTA) funding. Table 2-10 identifies the requirements for BTA funding.

Table 2-10: BTA Requirements

Letter	Requirement
a)	The estimated number of existing bicycle commuters in the plan area and the estimated increase in the number of bicycle commuters resulting from implementation of the plan.
b)	A map and description of existing and proposed land use and settlement patterns which shall include, but not be limited to, locations of residential neighborhoods, schools, shopping centers, public buildings, and major employment centers.
c)	A map and description of existing and proposed bikeways.
d)	A map and description of existing and proposed end-of-trip bicycle parking facilities. These shall include, but not be limited to, parking at schools, shopping centers, public buildings, and major employment centers.
e)	A map and description of existing and proposed bicycle transport and parking facilities for connections with and use of other transportation modes. These shall include, but not be limited to, parking facilities at transit stops, rail and transit terminals, ferry docks and landings, park and ride lots, and provisions for transporting bicyclists and bicycles on transit or rail vehicles or ferry vessels.
f)	A map and description of existing and proposed facilities for changing and storing clothes and equipment. These shall include, but not be limited to, locker, restroom, and shower facilities near bicycle parking facilities.
g)	A description of bicycle safety and education programs conducted in the area included within the plan, efforts by the law enforcement agency having primary traffic law enforcement responsibility in the area to enforce provisions of the Vehicle Code pertaining to bicycle operation, and the resulting effect on accidents involving bicyclists.
h)	A description of the extent of citizen and community involvement in development of the plan, including, but not limited to, letters of support.
i)	A description of how the bicycle transportation plan has been coordinated and is consistent with other local or regional transportation, air quality, or energy conservation plans, including, but not limited to, programs that provide incentives for bicycle commuting.
j)	A description of the projects proposed in the plan and a listing of their priorities for implementation.
k)	A description of past expenditures for bicycle facilities and future financial needs for projects that improve safety and convenience for bicycle commuters in the plan area.

The Bicycle Transportation Act was recently discontinued, as there will most likely be a realignment of the programs. As outlined in Governor Jerry Brown's FY 2013-2014 budget, the following programs will become one umbrella program tentatively called the Active Transportation Program: BTA, Safe Routes to School (State and Federal), Environmental Enhancement Programs, and Recreational Trails Program.

2.4.2 California Government Code §65302 (Complete Streets)

California Assembly Bill (AB) 1358, also known as the Complete Streets Bill, amended the California Government Code §65302 to require that all major revisions to a city or county's Circulation Element include provisions for the accommodation of all roadway users including bicyclists and pedestrians. Accommodations include bikeways, sidewalks, crosswalks, and curb extensions. The Government Code §65302 reads:

(2) (A) Commencing January 1, 2011, upon any substantive revisions of the Circulation Element, the legislative body shall modify the Circulation Element to plan for a balanced, multimodal transportation network that meets the needs of all users of streets, roads, and highways for safe and convenient travel in a manner that is suitable to the rural, suburban, or urban context of the general plan.

(B) For purposes of this paragraph, 'users of streets, roads, and highways' means bicyclists, children, persons with disabilities, motorists, movers of commercial goods, pedestrians, users of public transportation, and seniors.

2.4.3 Deputy Directive 64 & Traffic Operations Policy Directive 09-06

The California Department of Transportation (Caltrans) adopted two policies in recent years that are relevant to bicycle planning initiatives, such as the Brawley Non-Motorized Transportation Plan. Similar to AB 1358, Deputy Directive 64 (DD-64-R1) sets forth that Caltrans address the "safety and mobility needs of bicyclists, pedestrians, and transit users in all projects, regardless of funding."

In a more specific application of complete streets goals, Traffic Operations Policy Directive 09-06 presents bicycle detection requirements. For example, 09-06 requires that new and modified signal detectors provide bicyclist detection if they are to remain in operation. Further, the standard states that new and modified bicycle path approaches to signalized intersections provide bicyclist detection or a bicyclist pushbutton if detection is required.

2.4.4 California SB 375 – Sustainable Communities (2008)

Senate Bill (SB) 375 is intended to compliment Assembly Bill (AB) 32: The Global Warming Solutions Act of 2006 and encourage local governments to reduce emissions through improved planning. Under SB 375, the California Air Resources Board (CARB) is required to establish targets for 2020 and 2035 for each region covered by one of the State's 18 metropolitan planning organizations (MPOs). Each of California's MPOs will then prepare a Sustainable Communities Strategy (SCS) that demonstrates how the region will meet its greenhouse gas (GHG) reduction target through integrated land use, housing, and transportation planning. One way to help meet the emissions targets is to increase the bicycle mode share by substituting bicycle or walking trips for automobile trips. Brawley's efforts to encourage non-motorized transportation will contribute to the regional attainment of these targets.

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Chapter 3. Existing Conditions

This section provides an overview of the existing bicycle and pedestrian networks in Brawley. The first section looks at the existing bicycle facilities that are present in the city, as well as existing gaps in the network. The second section describes pedestrian facilities that are crucial components of the network, and their presence or absence in the city.

The existing bicycle network in Brawley consists of Class II lanes.

3.1 Existing Bicycle Conditions

3.1.1 Existing Bicycle Facilities

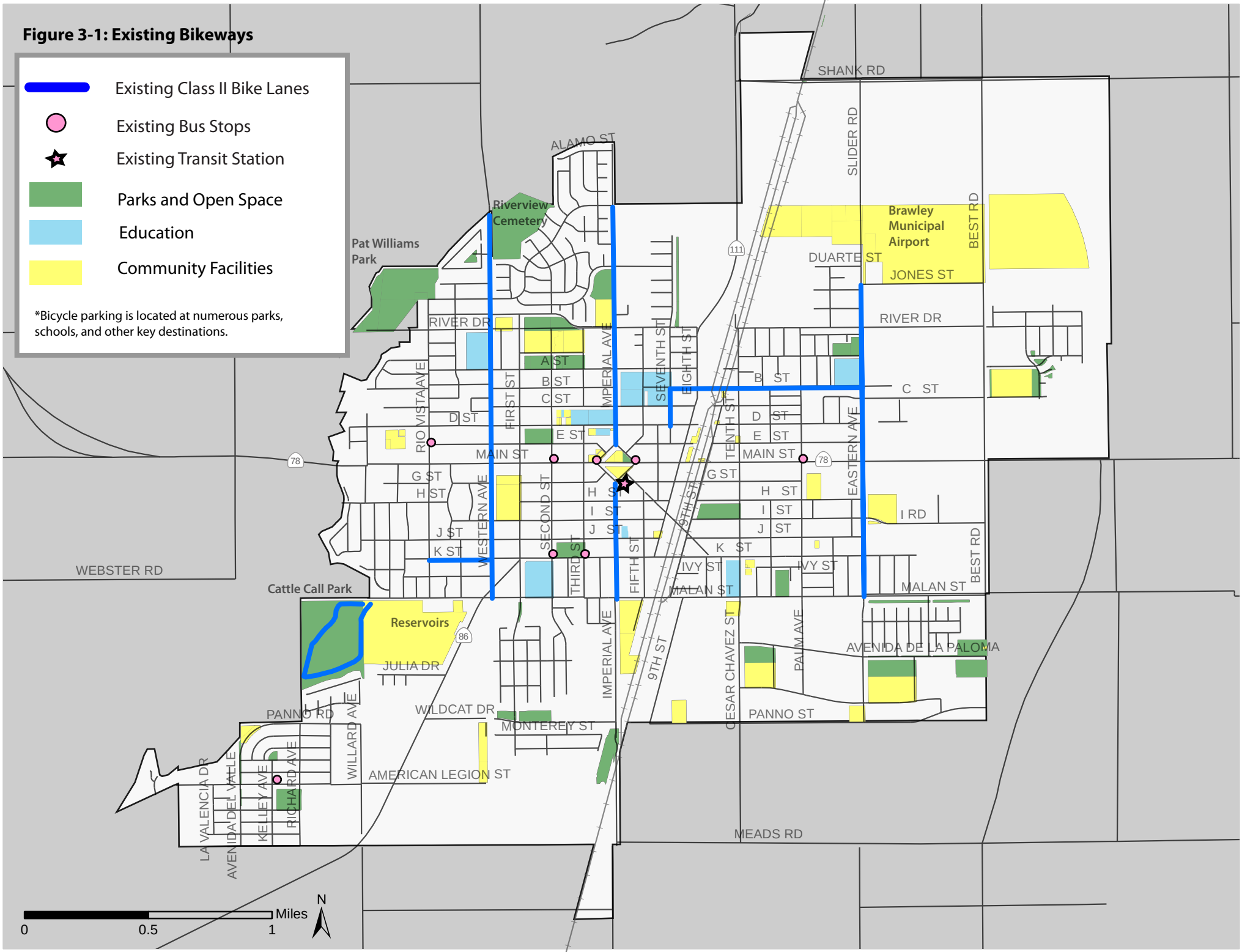
The California Department of Transportation's general bikeway guidelines are located in Appendix A.

The existing bicycle network in Brawley consists of 7.6 miles of Class II bike lanes. Table 3-1 and Figure 3-1 display the existing network of bike lanes. The current network includes lanes on Imperial Avenue, Eastern Avenue, and Western Avenue that serve as north-south corridors. There are currently no complete east-west corridors for bicycles to travel on. The lane in Cattle Call Park serves residents for mainly recreational purposes. It is not connected to the rest of the network, and many residents drive to and from this park lane.

Table 3-1: Existing Bike Lanes

Street	From	To	Mileage
North Imperial Avenue	Jones Street	North Plaza Street	1.0
South Imperial Avenue	South Plaza Street	Malan Street	0.5
B Street	Seventh Street	Eastern Avenue	0.8
Eastern Avenue	River Drive	K Street	2.3
Western Avenue	North City Boundary	Malan Street	1.6
Seventh Street	B Street	D Street	0.2
Cattle Call Park Lane	Cattle Call Park Loop Road	Cattle Call Park Loop Road	0.9
K Street	Rio Vista Avenue	Western Avenue	0.3
Total			***7.6***

Figure 3-1: Existing Bikeways



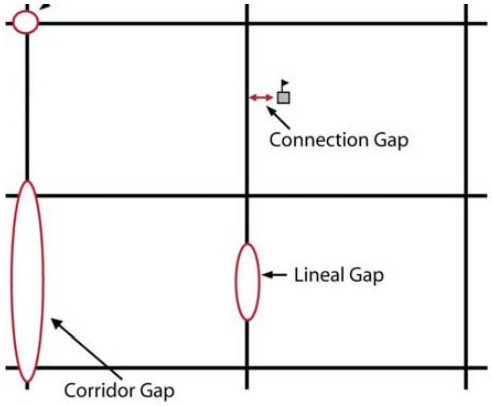
3.1.2 Bikeway Gaps

Bikeway gaps exist in various forms, ranging from short "missing links" on a specific street or path corridor to larger geographic areas with few or no bicycle facilities at all.

Spot Gaps

Spot gaps refer to point-specific locations lacking dedicated bicycle facilities or other treatments to accommodate safer and comfortable bicycle travel. Spot gaps primarily include intersections and other vehicle/bicycle conflict areas posing challenges for riders. Examples include bike lanes on a major street "dropping" to make way for right turn lanes at intersections, or a lack of intersection crossing treatments for bicyclists on a route or path as they approach a major street.

Figure 3-2: Bikeway Gap Types



Connection Gaps

Connection gaps are missing segments (less than ½ mile) on a clearly defined and otherwise well-connected bikeway. Major barriers standing between bicyclist destinations and clearly defined routes also represent connection gaps. Examples include bike lanes on a major street "dropping" for several blocks to make way for on street-parking; a discontinuous off-street path; or a freeway standing between a major bicycle route and a school.

Lineal Gaps

Similar to connection gaps, lineal gaps are ½ to one-mile long missing link segments on a clearly defined and otherwise well-connected bikeway.

Corridor Gaps

On clearly defined and otherwise well-connected bikeways, corridor gaps are missing links longer than one mile. These gaps will sometimes encompass an entire street corridor where bicycle facilities are desired but do not currently exist.

System Gaps

Larger geographic areas (e.g., a neighborhood or business district) where few or no bikeways exist would be identified as system gaps. System gaps exist in areas where a minimum of two intersecting bikeways would be required to achieve the target network density.

Brawley has in its bikeway network all five types of gaps, which are identified in Table 3-2 and shown on Figure 3-3. Where there are existing bike lanes, there are spot gaps at intersections. Bikeways often drop to create the capacity for turn pockets. On South Imperial Avenue the northbound bike lane drops for a stretch of parallel parking and picks up again once the parking has terminated.

The most common type of gaps in Brawley are connection gaps where the city lacks short bicycle connections between existing or funding facilities. These gaps are located throughout the city. Lineal gaps, similar to connection gaps, occur

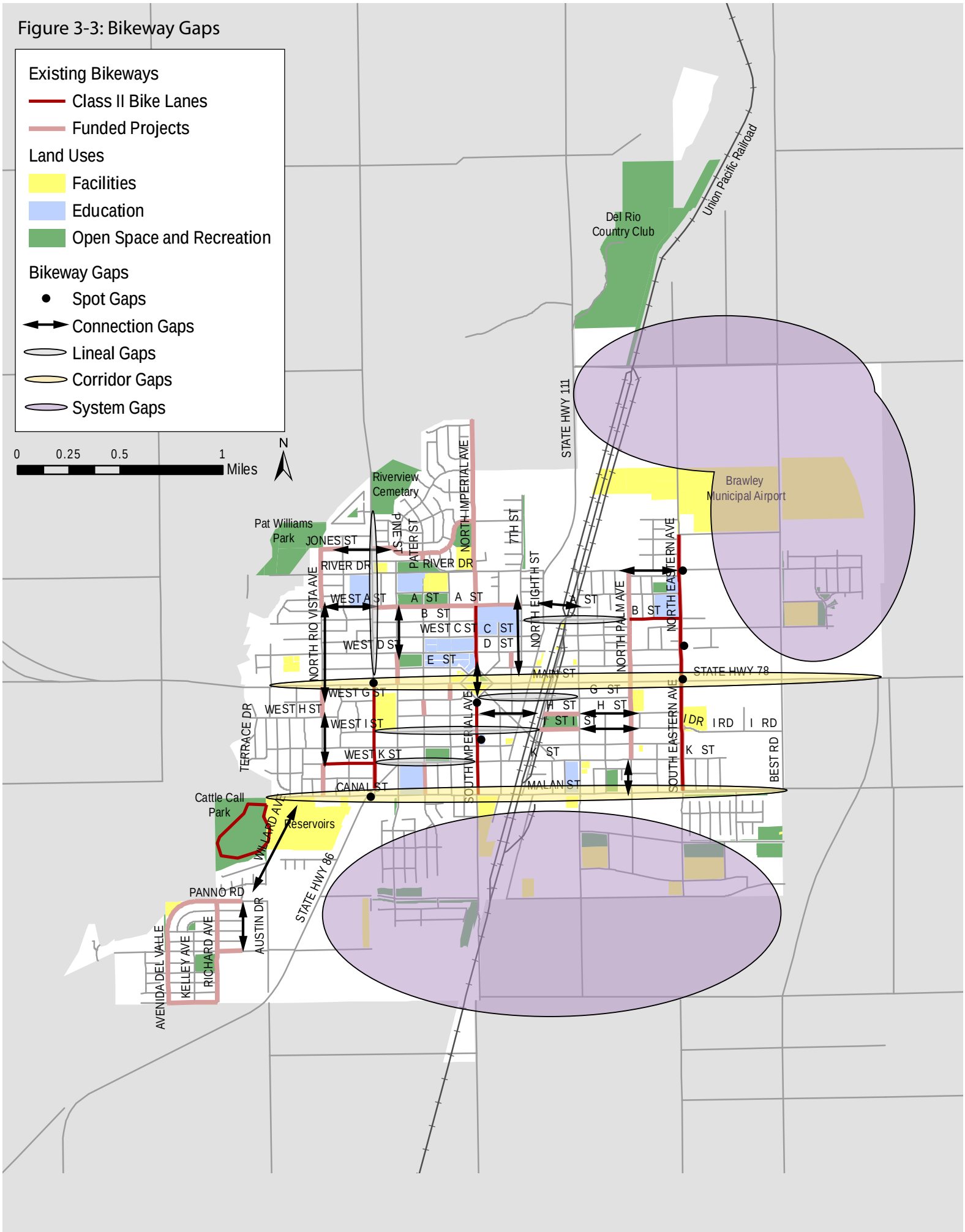
where there are missing links between existing and funded bikeways. There are corridor gaps on arterial roads, including Main Street and Malan Street, as these streets lack bikeways throughout the extents of the City.

There are two major system gaps in the City in the northeastern and southern portions. The northeastern area of Brawley contains the Brawley Municipal Airport. The lack of bicycle connections in this part creates challenges for commuters and travelers looking for alternative transportation options to access the airport. The southern portion of Brawley, located south of Main Street, also lacks bicycle facilities. This zone is just east of Cattle Call Park, making it difficult to access.

Table 3-2: Bikeway Gap Locations

Gap Location	From	To	Intersection
Spot Gaps			
--	--	--	North Eastern Avenue/River Drive
--	--	--	North Eastern Avenue/ Welcome Street
--	--	--	North Eastern Drive/ Main Street
--	--	--	South Imperial Avenue/G Street
--	--	--	South Imperial Avenue/North of K Street
--	--	--	Western Avenue/ Main Street
--	--	--	Western Avenue/ Malan Street
Connection Gaps			
1st Street	A Street	E Street	--
7th Street	A Street	Main Street	--
A Street	North Eighth Street	Cesar Chavez Street	--
H Street	South Imperial Avenue	UPRR Railroad Tracks	--
H Street	Cesar Chavez Street	North Palm Avenue	--
I Street	Cesar Chavez Street	North Palm Avenue	--
Evelyn Street	Panno Road	Legion Road	--
Jones Street	North El Cerrito Drive	Pine Street	--
North Palm Avenue	West K Street	Malan Street	--
North Rio Vista Avenue	West A Street	Main Street	--
North Rio Vista Avenue	West H Street	West K Street	--
River Driver	North Palm Avenue	North Eastern Avenue	--
West A Street	North Rio Vista Avenue	Western Avenue	--
Willard Avenue	Malan Street	Panno Road	--
Lineal Gaps			
B Street	7th Street	North Palm Avenue	--
G Street	South Imperial Avenue	Cesar Chavez Street	--
I Street	Western Avenue	UPRR Railroad Tracks	--
K Street	Western Avenue	South Imperial Avenue	--
Western Avenue	Park View Drive	Main Street	--
Corridor Gaps			
Main Street	North Las Flores Drive	East City Limits	--
Malan Street	West City Limits	Best Road	--
System Gaps			
Northeastern Brawley	--	--	--
Southern Brawley	--	--	--

Figure 3-3: Bikeway Gaps



3.2 Existing Pedestrian Conditions

This section describes pedestrian facilities and walkability conditions in Brawley. To determine the most current pedestrian walkability conditions, a review of background documents and data, input from City staff, input from the public during outreach, and field observations were used. Field observations were focused on key areas such as the Central Business District, near parks, schools, transit stops, high collision areas, and key pedestrian routes. City staff requested the following key pedestrian routes be evaluated:

- A Street between Rio Vista Avenue and Old State Route 111 (8th Street)
- B Street between Old State Route 111 (8th Street) and Eastern Avenue
- Main Street between Rio Vista Avenue and Eastern Avenue
- K Street between Rio Vista Avenue and Eastern Avenue
- Western Avenue between Jones Street and K Street
- Imperial Avenue between River Drive and K Street
- Eastern Avenue between River Drive and Malan Street

Design guidelines for pedestrian facilities are located in Appendix A.

3.2.1 Sidewalks

Sidewalks provide safe connectivity for pedestrians. Many locations in Brawley have sidewalks that are non-existent or discontinuous and end abruptly, creating gaps for pedestrian flow. Many roadways close to schools and parks have gaps that may prevent residents from accessing them safely and efficiently.

Below is an example of discontinuous sidewalks at Hawthorne Park. These segments include the South side of E Street just east of 1st Street, and East and West side of 1st Street south of D Street, which were noted during field observations. Pedestrians trying to access the park must walk on the dirt or grass in multiple locations. The photos below illustrate the discontinuous sidewalks at this intersection.

Northwest corner of the intersection of 1st Street and E Street, next to Hawthorne Park

Southwest corner of the intersection of 1st Street and E Street

The following is a brief summary, but not complete inventory, of other key locations noted in field observations where discontinuous sidewalks create barriers to efficient and continuous pedestrian movement:

- South side of Main Street between South Rio Vista Avenue and South El Cerrito Drive

- South side of Main Street between the railroad tracks and South 9th Street
- West side of Old State Route 111 (8th Street)
- East side of Old State Route 111 (8th Street) north of E Street
- North and South side of Main Street east of Eastern Avenue
- East and West side of South Western Avenue south of Main Street
- State Highway 86/Brawley Avenue from K Street to Julia Drive
- East side of 11th Street north of K Street
- B Street from Old State Route 111 (8th Street) to 9th Street

3.2.2 Pedestrian Crossings

When discussing pedestrian safety, roadway crossings are locations of highest concern because they are where the pedestrian environment interfaces with the motor vehicular environment and thus where conflicts are most likely to occur. Pedestrian exposure to traffic at intersections can affect safety particularly for older persons and children who may not be able to cross streets quickly or be seen by on-coming traffic. Signing, striping, and/or signalization separate these two modes, along with state and local laws that require motorists to yield for pedestrians. which are particularly important at schools and in Downtown, where there are higher volumes of pedestrians.

The intersection of 1st Street and A Street lack crosswalks.

Pedestrian push button at the intersection of Brawley Avenue and Malan Street.

In Brawley, unmarked crosswalks are common. The State of California defines "crosswalk" as any crossing point where two roadways intersect. Unless specifically prohibited, pedestrians may cross roadways at every intersection whether or not is marked. At unmarked crossings, motorists may not be aware that a pedestrian is crossing that intersection. The majority of crosswalks that are marked in Brawley are "standard" parallel transverse stripes or the "ladder" striping. Despite the presence of these marked crosswalks, many are faded and not highly visible to motorists.

For example, the intersection of 1st Street and A Street lacks crosswalks, which was noted in field observations. A Street is approximately 50 feet wide curb-to-curb with long distances without stop signs. The lack of clear pedestrian crossings is a concern since the following four schools are located less than one quarter of a mile away: Phil Swing Elementary School, Desert Valley Continuing Schools, Western Baptist Christian School, and Renaissance School.

Some locations in Brawley have signalized intersections with pedestrian push buttons. For example, the intersections of Brawley Avenue and K Street, and Brawley Avenue and Malan Street both have pedestrian push buttons. Brawley

Avenue is a major arterial in the city, and K Street and Malan Street are both highly traveled roads as well. These two intersections have high volumes of traffic and long crossing distances.

3.2.3 Curb Ramps

Curb ramps are transitions between the sidewalk and legal roadway crossings that provide a smooth grade change for pedestrians, particularly for those with disabilities and other wheeled devices. An intersection corner may contain one or two curb ramps depending on the location of signal poles, traffic controller devices, and other complicating factors. ADA guidelines state that curb ramps must be 'readily accessible to and useable by' persons with disabilities. Many of the intersections in Brawley lack curb ramps. Of the existing curb ramps, many are in disrepair and require maintenance.

Left: A curb ramp overgrown with grass requires maintenance to serve pedestrians. Right: Some intersections lack curb ramps. This is an example of a crosswalk with a standard crosswalk marking and no curb ramp.

3.2.4 Pedestrian "Support Facilities"

Pedestrian support facilities such as shade, trees, and wayfinding are important components of the pedestrian realm. Brawley has some amenities such as wayfinding at Cattle Call Park. There are also shade features along Main Street, including transit stop shelters and storefront awnings. Wayfinding signage benefits roadway users of all modes of transportation. This is particularly helpful for bicyclists and pedestrians, guiding them on the most efficient routes to get to their destinations. The goal of providing such amenities is to improve urban design and ensure that the roadways are accessible by multimodal forms of transportation.

Wayfinding signage at Cattle Call Park designates pedestrian routes.

3.2.5 Linear Barriers

There are five significant linear barriers that are challenging for pedestrians to cross, displayed in Figure 3-4. State Routes 78, 86, and 111 are thoroughfares that are challenging for pedestrians due to high traffic volumes and speeds. The railroad tracks create a barrier restricting east/west pedestrian movement in the city due to limited number of crossing locations serving pedestrians. The New River to the west of the city creates a barrier restricting pedestrian movement on the outskirts of the city.

3.2.6 Pedestrian Network Deficiencies

Brawley's pedestrian network has deficiencies discussed in this section due to discontinuous sidewalks, lack of adequate facilities at intersections, and linear barriers. These deficiencies were noted during field work, displayed in Table 3-3 and Figure 3-4.

Table 3-3: Pedestrian Network Gaps

Map Reference Number	Location	Deficiencies
1	Western Avenue from A Street to River Drive	Lacks sidewalks and pedestrian curb ramps on easterly side. Unmaintained alley/frontage Road (gravel, dirt, leaves, etc.)
2	A Street and 1st Street	Faded stop lines on 1st Street. Lack of clear pedestrian crossings in vicinity of four schools.
3	1st Street and E Street	Lacks clear separation/buffer between the athletic field play areas and motorist traffic. No sidewalks are provided along the athletic field. No painted stop lines on the eastbound and westbound stop-controlled approach at the intersection.
4	Main Street from Rio Vista Avenue to Western Avenue	Numerous driveways on north side of Main Street, closely spaced palm trees create slight distance limitations. Main Street generally lacks mid-block crossings.
5	Brawley Avenue from Wildcat Drive to K Street	Lacks sidewalks, open drainage channel, obstructions to pedestrian travel. Crosswalks are faded.
6	B Street from 8th Street to 9th Street, railroad crossing	Difficult sidewalk conditions (dirt & gravel), trash, and over exposure to sun.
7	Main Street from railroad tracks to 9th Street	Lacks sidewalks on the south side of Main Street.
8	11th Street and K Street	Poor sidewalk conditions on the east side of 11th Street north of K Street (large cracks and uneven surfaces).
9	Rio Vista and E Street	Lacks safe crosswalks to transit stop.
10	Meserve Park	Lacks sidewalks on surrounding streets (J Street, 2nd Street, 3rd Street).
11	Central Business District	High-volume area with many pedestrians jaywalking in between blocks.
12	Legion Road between Evelyn Avenue and Williams Avenue	Legion Road next to Pioneer Hospital has a faded mid-block crosswalk, and no crosswalks exist at either intersection.
13	Oakely Elementary School	Intersections at the corners of the school property have faded crosswalks.

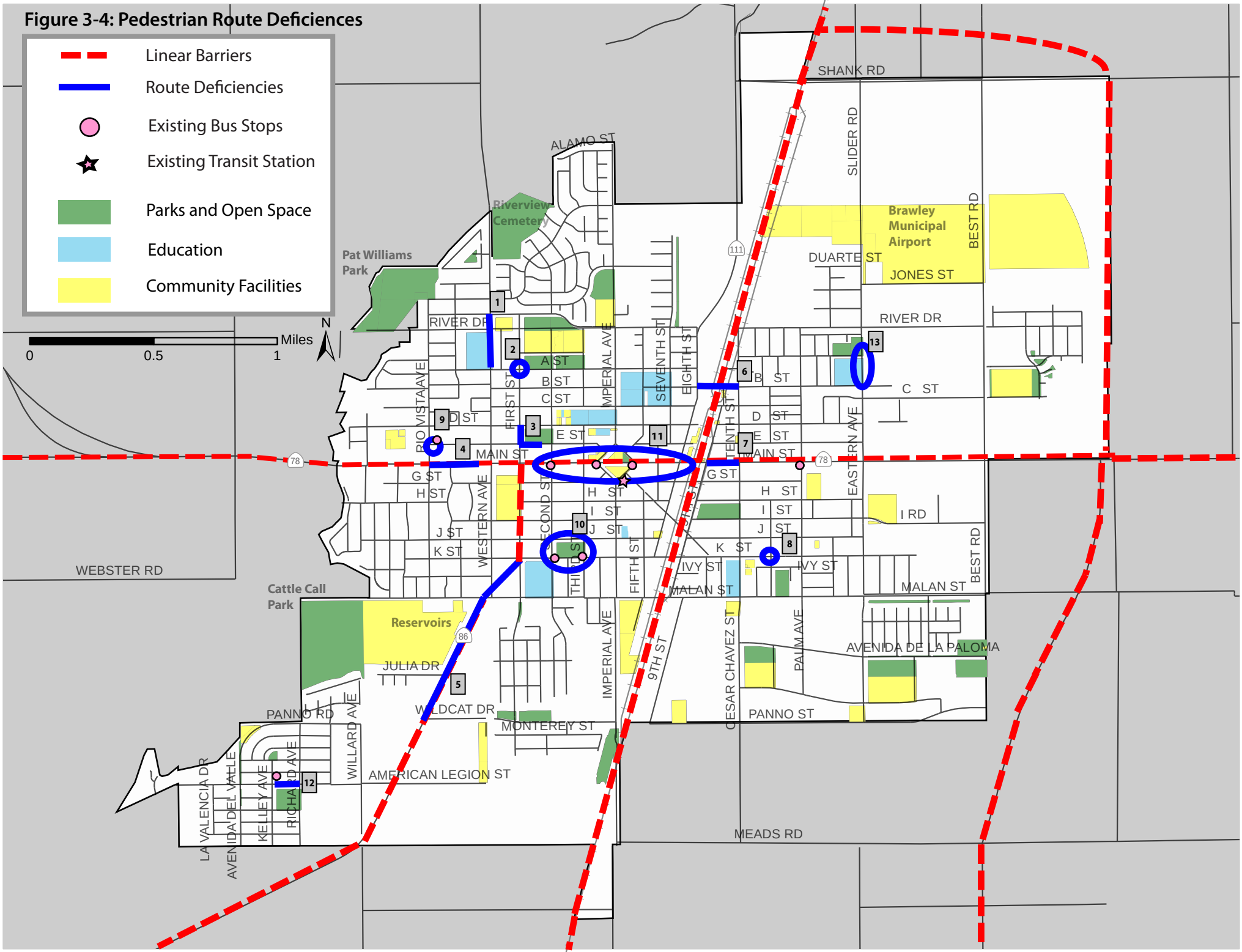


Figure 3-4: Pedestrian Route Deficiences
Linear Barriers
Route Deficiencies
Existing Bus Stops
Existing Transit Station
Parks and Open Space
Education
Community Facilities
N
Miles
0
0.5
1
SHANK RD
ALAMO ST
Riverview Cemetery
Pat Williams Park
Brawley Municipal Airport
DUARTE ST
JONES ST
SLIDER RD
BEST RD
RIVER DR
A ST
B ST
C ST
D ST
E ST
MAIN ST
G ST
H ST
I ST
J ST
K ST
IVY ST
MALAN ST
I RD
AVENIDA DE LA PALOMA
PANNO ST
PANNO RD
MEADS RD
WEBSTER RD
JULIA DR
WILDCAT DR
MONTEREY ST
AMERICAN LEGION ST
Cattle Call Park
Reservoirs
RIO VISTA AVE
FIRST ST
SECOND ST
THIRD ST
FIFTH ST
SEVENTH ST
EIGHTH ST
NINTH ST
TENTH ST
EASTERN AVE
WESTERN AVE
IMPERIAL AVE
9TH ST
CESAR CHAVEZ ST
PALM AVE
WILLARD AVE
KELLEY AVE
LA VALENCIA DR
AVENIDA DEL VALLE
78
86
111
1
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3
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13

3.3 Existing Programs

To shift people to bicycling and walking from other modes, a community must consider not just infrastructure improvements but also programs that support and encourage the choice to bike or walk. Many programs can be categorized by Education, Encouragement, Enforcement, and Evaluation. These are commonly used to structure Safe Routes to Schools programs and are considered in the League of American Bicyclists' Bicycle Friendly Community application.

Rides and Races

The Imperial Valley is host to several bicycle clubs, including Imperial Valley Velo Club. In 2012, the Imperial Valley Velo Club hosted the 7th annual Imperial Valley Classic Bike Race at the Brawley Cattle Call Rodeo Arena to raise money for the Cancer Resource Center of the Desert and the Family Treehouse in Imperial. The criterium included a Health Fair, a bicycle rodeo, two jumpers for children, a 5K run, and a kid's bike race. The club has plans to begin a youth cycling program.

Holiday Brawley Bike Drive

Three private organizations (not affiliated with the City) partnered to conduct a holiday bike drive in Brawley in 2011. Las Chabelas Restaurant, the Brawley Elks Lodge #1420, and Los Camperos worked in conjunction with the Imperial County Children and Family Services to donate bicycles and helmets to foster children throughout the County.

Brawley Police Department

The City of Brawley's Police Department routinely enforces bicycle-related infractions for improper lighting and other inadequate safety equipment. At local events, the Police Department has conducted bicycle rodeos, which are bicycle safety courses for children.

The Police Department also manages a bicycle licensing program. The fee for a new or replacement bicycle license is five dollars. Bicycle licenses help the Police Department return stolen bicycles and identify victims of collisions.

Suggested Routes to School

The City has a series of suggested pedestrian routes to school maps for the following four elementary schools:

- Oakley Elementary School
- Hidalgo Elementary School
- Witter Elementary School
- Phil Swing Elementary School

Maps display walking routes for children and parents wishing to access the schools. Information is presented in both English and Spanish. These maps are located in Appendix B.

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Chapter 4. Needs Analysis

4.1 Types of Cyclists

The skill level of the bicyclist affects his/her expected reaction time and behavior. As such, there are several systems of classification currently in use within the bicycle planning and engineering professions. These classifications can be helpful in understanding the characteristics and infrastructure preferences of different bicyclists. However, it should be noted that these classifications may change in type or proportion over time as infrastructure and culture evolve. An instructional course can rapidly change a less-confident bicyclist into one that can comfortably and safely share the roadway with vehicular traffic. Bicycle infrastructure should be planned and designed to accommodate as many user types as possible. Separate or parallel facilities should be considered to provide a comfortable experience for the greatest number of bicyclists.

A classification system that is used in the 2012 AASTHO *Guide for the Development of Bicycle Facilities* looks at comfort level, physical ability, and trip purpose. This system provides a way to determine approximate level of comfort on the road and preferences for facility types.

4.1.1 Trip Purpose

Utilitarian or nondiscretionary trips are trips that are made for daily activity including commuting to work or school, work-related trips that are not commuting, shopping and errands, and taking children to school. Common characteristics of utilitarian trips include:

- Directness of route and connected, continuous facilities
- Trips generally travel from residential neighborhoods to schools, shopping, or work areas and back
- Trips are generally 1-10 miles in length
- Short-term and long-term bicycle parking is needed at stores, transit stations, schools, and workplaces
- Flat topography is desired
- Individuals often ride alone
- The bicycle is the primary transportation mode for the trip; riders may transfer to transit, and may not have access to a car
- Some trips occur during morning and evening commute hours (commute to work and school), but generally may occur at any hour of the day

School-aged children may use bicycles as a means of transportation to and from school, a type of utilitarian trip that calls for careful attention. The age range of children means that there is a significant difference in sizes and abilities. An indication of size and ability is the type of school that they are traveling to and from (e.g. elementary, middle, or high school). The types of roadways near schools that have bicycle facilities are also important information while considering the accessibility to schools. Bicycle safety and awareness programs may help children obtain a better understanding of safe bicycle routes and rules of the road.

Recreation and discretionary trips are made for exercise and leisure. Riders of all age groups, abilities, and comfort levels can be recreational riders. Recreation and discretionary trips can range from short- to long-distance trips, and do

not serve as a trip for the purpose of reaching a destination. Some riders will only use bicycles for recreation and discretionary trips, while others may advance their skill and comfort levels to include utilitarian trips. Common characteristics of recreational trips include:

- Directness of route is not as important as visual interest, shade, and protection from wind
- Loop trips may be preferred to backtracking, start and end points are often the same
- Trips may range from less than one mile to over 50 miles
- Short-term bicycle parking is needed at recreational sites, parks, trailheads, and other recreational activity centers
- Varied topography may be desired, depending on the fitness and skill level of the bicyclist
- Individuals may be riding in a group
- Individuals may drive vehicles, with their bicycles in tow, to the starting point of a ride
- Trips usually occur on the weekend or on weekdays before morning commuting hours or after evening commuting hours

Bicycle networks should be designed to accommodate the range of trip purposes that they are used for each day.

4.1.2 Level of User Skill and Comfort

Rider Age

Age may play a role in the comfort and skill level of riders. Adults, in comparison to children, are generally more able to start and stop quickly, be more visible to motorists, and have greater awareness of potential conflicts on roadways. Seniors are a special type of adult that may ride at a slower pace and have slower reactions to conflicts.

Children are generally slower in recognizing and responding to changes on the roadway, thus making them more vulnerable to conflicts with motorists. They have a relatively narrow field of vision, and may assume that motorists are able to see them if they can see the vehicle. Children also have difficulties accurately judging the speed and distance of vehicles approaching them, judging risks, and concentrating on more than one thing at a time. Since children do not drive vehicles, they have less experience with the rules of the road.

Experienced and Confident

Experienced and confident riders are comfortable using most types of bicycle facilities, including roads without any special treatments for bicyclists. This group also includes those riding for utilitarian and recreational purposes. These riders are confident in their abilities to reach their destination safely. Also included in this group are commuters, long-distance road bicyclists, racers, and those who often participating in organized rides by bicycle clubs. General characteristics of experienced and confident bicyclists include:

- Most are comfortable riding with vehicles on streets, and are able to navigate like a vehicle
- While comfortable on most streets, some prefer on-street bike lanes, paved shoulders, or shared-use paths when they are available
- Some prefer a more direct route
- Riding with the flow of traffic on the streets and avoiding sidewalk riding

- May ride at speeds up to 25 miles per hour on level grades, and 45 miles per hour on steep descents
- May cycle for longer distances

Casual and Less Confident

Interested but concerned bicyclists represent the majority of the population. This group likely rode a bike during childhood and may own a bicycle now, but may not ride for transportation purposes. This group typically enjoys bicycling and may occasionally ride for recreation (e.g., during summer months or on a shared-use path), but may hold concerns about riding on major streets with higher vehicle speeds and volumes, especially if few or no accommodations are made to separate motor vehicle traffic from bicycle traffic. Riding on residential streets is a possibility, but these riders would not likely consider bicycling for transportation if much of the trip requires riding on or across major streets in the absence of formalized bicycle infrastructure accommodations. General characteristics of casual and less confident bicyclists include:

- Prefer shared-use paths, bicycle boulevards, or bike lanes along low-volume, low-speed streets
- May have difficulty gauging traffic and may be unfamiliar with the rules of the road. They may want to bike across intersections.
- May use less direct routes to avoid arterials with heavy traffic
- If no on-street facility is available, may ride on sidewalks
- May ride at speeds from 8 to 12 miles per hour
- A typical trip distance is 1 to 5 miles

4.2 Pedestrian Users

People walk for various reasons, including traveling to work, transit or other multi-modal facilities, to school, for recreation and entertainment, for health and exercise, shopping, social events, personal errands, or appointments. Pedestrian needs vary, often depending on trip purpose. For instance, a commuter may desire a well-connected direct route with efficient signal timing, while a recreational pedestrian may place greater importance on surrounding aesthetics. However, all pedestrians share some common needs including safety, connectivity, and accessibility (including accessibility for persons with disabilities).

Certain populations are more likely to depend on pedestrian infrastructure. Children traveling to and from school often have higher walking rates, though this trend has been declining in recent years as more parents drive their children to school. University students also typically have higher walking rates since many students do not own vehicles. Mobility-impaired pedestrian may lack motorized transportation options and may consequently depend on transit and pedestrian-focused aspects of the transportation network. Senior citizens may also lack access to vehicles or the ability to drive, thereby relying heavily on transit and pedestrian mobility options.

4.2.1 Needs of Pedestrians with Disabilities

To adequately plan for pedestrians with disabilities, each disability and its corresponding limitations must be considered. It is important to also be aware of how planning for people with one disability may affect users with other impairments. For instance, curb cuts and smooth transitions to the street assist people in wheelchairs, but may present challenges for sight-impaired pedestrians attempting to locate the sidewalk/street transition point. The sections below describe the various disabilities that must be taken into account.

People with mobility impairments range from those who use wheelchairs, crutches, canes, orthotics, and prosthetic devices, to those who use no such devices but face constraints when walking longer distances, on non-level surfaces, or on steep grades. Wheelchair and scooter users are most affected by:

- Uneven surfaces that hinder movement
- Rough surfaces that make rolling difficult and can cause pain, especially for people with back injuries
- Steep uphill slopes that can make movement slow
- Steep downhill slopes that can cause loss of control
- Cross slopes that can tip a wheeled device over
- Narrow sidewalks that impede the ability of users to turn or to cross paths with others
- Devices that are hard to reach, such as doors or push buttons for walk signals

Walking-aid users are most affected by:

- Steep uphill slopes that can make movement slow or impossible
- Steep downhill slopes that are difficult to negotiate
- Cross slopes that can cause the pedestrian to lose stability
- Uneven surfaces that can cause someone to trip or lose balance
- Long distances between pedestrian origins and destinations
- Situations that require fast reaction time

People with sensory impairments include those who are partially or fully blind or deaf. They also include persons with poor perceptions of touch or balance, as well as those who are color-blind. Visually-impaired people face the following difficulties:

- Limited or no perception of the path ahead
- Limited or no information about their surroundings, especially in a new place
- Changing environments in which they rely on memory
- Lack of non-visual information
- Inability to react quickly
- Unpredictable situations, such as complex intersections
- Inability to distinguish the edge of the sidewalk from the street
- Compromised ability to detect the proper time to cross a street
- Compromised ability to cross a street along the correct path
- Need for more time to cross the street compared with able-bodied pedestrians

Hearing-impaired pedestrians rely on visual information, which is often adequate. Their primary mobility difficulties include the inability to hear approaching vehicles and detect the time of their arrival. This is especially an issue in locations with limited sight distances, such as curved street segments, or overgrown vegetation impeding sight lines.

People with cognitive impairments encounter difficulties in thinking, learning, responding, and performing coordinated motor skills. Cognitive disabilities can cause some pedestrians to become lost or experience difficulty finding their way. They may also not understand standard street signage, and may be unable to read and benefit from signs with symbols and colors.

4.2.2 Children and Older Adults

Children and many older adults do not fall under specific categories for disabilities, but must be considered when developing the pedestrian system. Children are less mentally and physically developed than adults, and often exhibit the following characteristics:

- Less peripheral vision
- Less ability to judge speed and distance
- Difficulty locating sounds
- Read less than adults or not at all (and may not understand street signs)
- Sometimes act impulsively or unpredictably
- Lack familiarity with traffic
- Experience difficulty carrying packages

Older adults often exhibit degrading sensory or physical capabilities. This can cause them to:

- Gradually lose vision, especially at night
- Have decreased ability to hear sounds and detect their origin
- Have less endurance; have less strength to ascend hills on foot
- Have less balance, especially on uneven or sloped sidewalks
- React slowly to dangerous situations
- Walk slowly

4.3 Public Outreach

4.3.1 Workshops

Two public workshops were held to inform the public about the NMTP and gather input. This section is a summary of these two workshops.

The first workshop was held on September 13, 2012 at the Rock Coffee Shop and Café. Approximately 20 members of the City Staff and public attended. After a brief introductory presentation, attendees either chose to remain and participate in the open house activities or join a walking or biking tour.

During the workshop held at Cattle Call Park during the Chili Cook-Off, children drew pictures about walking and biking.

On the walking tour, participants noted that throughout the city there are disconnected sidewalks, sidewalks in disrepair, and a lack of sidewalks in some areas. The general feeling of participants is that it is not safe or appealing to pedestrians. Participants made the following observations during the walk:

- There are no audible crosswalk signals
- Cattle Call Park is a recreational destination; people drive to it, walk around, and then drive home
- There is no culture of walking in the city
- Kids frequently walk around the city

- Rio Vista Avenue lacks sidewalks and lights
- Bicycling is less safe than walking
- Loose dogs, or ones that are barking or jumping over fences, are not good for the walking environment
- There is a lack of lighting that contributes to less walking

On the biking tour, approximately ten participants identified key issues in the city. These include the following:

- East-to-west alternative routes are needed. K Street, Malan Street, B Street, and C Streets are suggested
- Access to Cattle Call Park is needed, as many people currently drive there
- Streets are wide enough to accommodate bike lanes
- "Neighborhood Green Streets" would be a welcome facility
- There is a lot of wrong-way riding and a lack of stopping at stop signs
- There is a lack of bike parking at key destinations.
- Many areas of the roadways have pavement that is in disrepair, as well as faded bike lanes.
- There is very little signage and wayfinding.

Attendees who visited the Bike/Walk Booth gave their input on walking and biking in Brawley.

Participants also gave their input at the open house stations at the workshop location. They expressed interest in education and information programs, particularly for children. Participants noted that they would prefer Class I shared-use paths to bike lanes and routes, and would like to see secure bicycle parking.

The second workshop was held on November 2, 2012 at the Brawley Chili Cook-Off, with an estimated 100 adults and 8 children in attendance. A "Bike/Walk Booth" was set up at the Chili Cook-Off with boards displaying concepts for the draft of this Plan, as well as a summary of public input from the community survey. A few important aspects of the Plan that people liked most are the park paths, bike lanes, and signage for bike routes. Suggestions that attendees made included the need to educate the community to stop when pedestrians are crossing, increase lighting, put bike paths through proposed parks, and educate the public on how motorists and bicyclists should properly interact on the roadways.

4.3.2 Survey

A public survey was conducted online and in paper form, which was available during the two workshops as well as sent with residents' water bills. As of December 2012, a total of 330 people have filled out the survey. This section summarizes the results of the survey. A copy of the survey is located in Appendix C.

As shown in Figure 4-1, most respondents commute by driving alone (84 percent). Only 2 percent of respondents bike for commuting, and 1 percent walk. Figure 4-2 and Figure 4-3 display the reasons that people walk or ride a bicycle, which are mainly for exercise and recreation purposes.

Figure 4-1: Primary mode of commuting

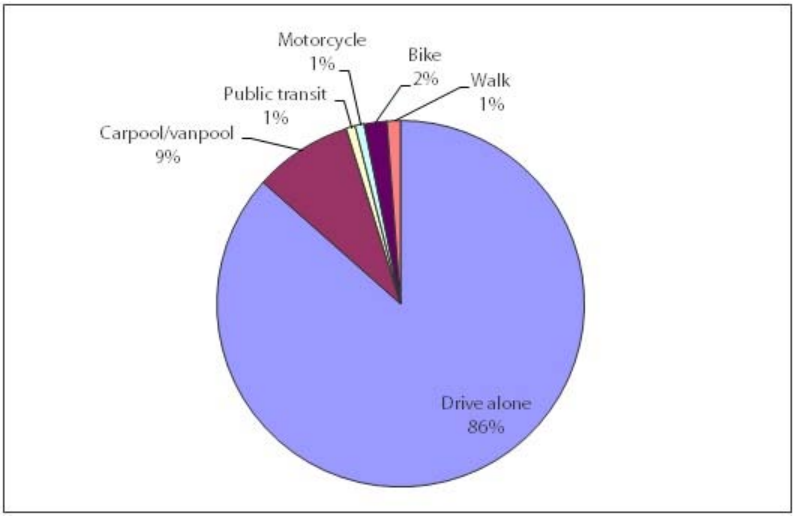


Figure 4-2: Reasons for riding a bicycle

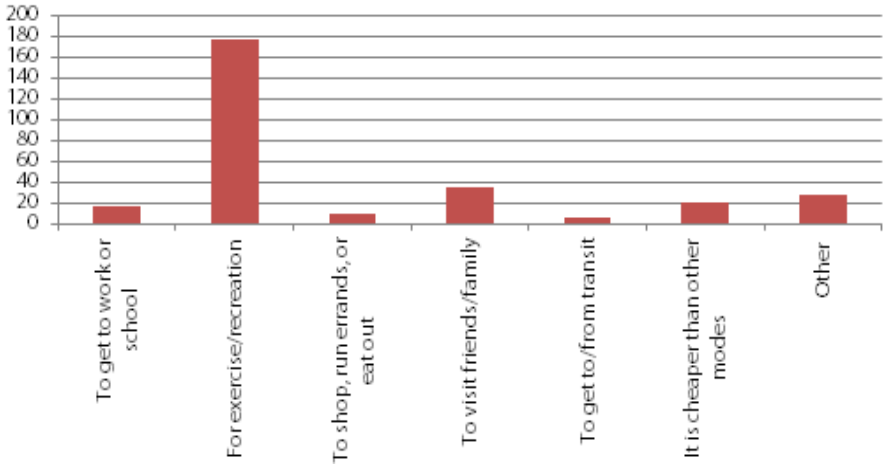
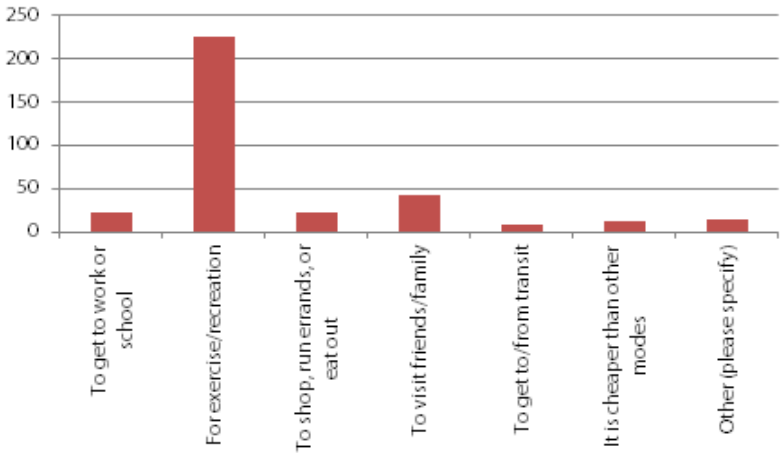


Figure 4-3: Reasons for walking



Barriers to Bicycling

Respondents were asked in the survey to give the reasons that they do not ride a bicycle. The top reasons for not bicycling were lack of off-street paths, on-street lanes and routes, lack of safety, and not having enough time or having destinations that are too far away. Weather was not an option in this question, and many people used the "other" to state that the hot climate is a reason for not bicycling.

The most important issues for respondents that affect their decision to ride a bicycle are the behavior of motorists, the conditions of the roadways and bikeways, lack of street lighting, and traffic volumes/speeds.

Barriers to Walking

The top reasons for not walking more often were not having enough time, lack of safety, and destinations being too far away. As with bicycling, many respondents who wrote "other" specified that the weather is a popular reason for not walking in Brawley.

The most important issues that respondents cited for not walking are the lack of street lighting, presence of sidewalks, perceived safety, and weather.

Interest in Programs

When asked to rank interest in non-motorized programs, respondents expressed the most interest in programs that teach riding and skills and safety to children, Safe Routes to School programs for children, and public awareness campaigns. The results of this question showed that respondents are the least interested in riding skills and safety courses for adults. This may show that people either feel that they know how to safely bicycle, or that they are more interested in their children bicycling rather than themselves.

Specific Requests

Respondents were able to give feedback about locations that they would most like to see improvements to the bicycle and pedestrian network. The most popular responses are listed below.

- WalMart area
- Shopping centers
- Schools
- Parks (Cattle Call, Pat Williams)
- Library
- Post Office
- Hospital
- Connections to surrounding cities
- Malan Street
- Rio Vista Avenue
- Warne Field
- Legion Road
- Connections to residential developments in the southern part of the city

Respondents also used this section to make note of the need for amenities such as bike parking, lighting, trash cans, seating, trees and shade, and water fountains. Bike parking and better lighting are the most popular amenities that were brought up many times during the survey as well as the workshops.

4.4 Travel Demand

United States Census American Community Survey data for commuting to work provides an estimate of current usage of the bicycle system in Brawley. Table 4-1 provides means of transportation to work data for the City of Brawley, Imperial County, the state of California, and the United States. The majority of Brawley residents drive alone to work (81.5 percent), which is higher than the other jurisdictions. The number of people who bike to work in Brawley is 0.7 percent, and while this is higher than Imperial County and the US, it is lower than California. The city has a higher percentage of walking commuters than the other jurisdictions (2.6 percent). This data is important to the analysis of how much residents use the current bicycle and pedestrian systems.

Table 4-1: Means of Transportation to Work

Means of Commuting	Brawley	Imperial County	California	United States
Drive alone	81.5%	78.9%	73.1%	76.4%
Carpool	9.1%	11.3%	11.4%	9.7%
Transit	2.2%	1.0%	5.1%	7.6%
Walk	2.6%	2.7%	2.8%	2.8%
Bike	0.7%	0.3%	0.9%	0.5%
Taxi, motorcycle, other	0.9%	1.2%	1.3%	1.2%
Work at home	3.7%	4.3%	0.5%	4.1%

It should be noted that American Community Survey data may underestimate the true numbers of commuting patterns. These numbers reflect a sample population of workers ages 16 and over. Trips that are not taken into account in this data include trips to school, for errands, or other trips that are not for the purpose of commuting to work.

4.4.1 Non-Motorized Commuting Estimates

Table 4-2 displays current bicycling, walking, and transit-riding trends in Brawley using US Census data and other sources that are listed with each statistic. The statistics in this table are used in this section to estimate the current walking and bicycling trends and air quality benefits

Table 4-2: Existing Commuting

Variable	Figure	Source
Existing study area population	25,018	2009-2011 American Community Survey, 3-Year Estimates
Existing employed population	8,364	2009-2011 American Community Survey, 3-Year Estimates
Existing work-at-home mode share	3.7%	2009-2011 American Community Survey, 3-Year Estimates
Existing transit-to-work mode share	2.2%	2009-2011 American Community Survey, 3-Year Estimates
Existing school children, ages 5-14 (grades K-8)	4,150	2009-2011 American Community Survey, 3-Year Estimates
Existing number of college students in study area, ages 18-24	1,571	2009-2011 American Community Survey, 3-Year Estimates

Bicycle Commuting Estimates

Table 4-3 displays an estimate of current bicycling trends in Brawley using statistics from Table 4-2, US Census Data and other sources that are listed with each statistic. Table 4-4 presents the associated air quality benefits from bicycling.

Table 4-3: Existing Bicycle Demand

Variable	Bicycle	Source
Existing bike-to-work mode share	0.7%	2009-2011 American Community Survey, 3-Year Estimates
Existing number of bike-to-work commuters	59	Employed persons multiplied by bike-to-work mode share
Existing number of work-at-home bike commuters	155	Assumes 50% of population working at home makes at least one daily bicycle trip
Existing transit bicycle commuters	46	Employed persons multiplied by transit mode share. Assumes 25% of transit riders access transit by bicycle
Existing school children bicycling mode share	2.0%	National Safe Routes to School surveys, 2003.
Existing school children bike commuters	83	School children population multiplied by school children bike mode share
Existing estimated college bicycling mode share	10.0%	Review of bicycle commute share in seven university communities (source: National Bicycling & Walking Study, FHWA, Case Study No. 1, 1995).
Existing college bike commuters	157	College student population multiplied by college student bicycling mode share
Existing total number of bike commuters	499	Total bike-to-work, school, college and utilitarian bike trips. Does not include recreation.
Total daily bicycling trips	**999**	**Total bicycle commuters x 2 (for round trips)**

Table 4-4: Existing Air Quality Impact

Variable	Figure	Source
Current Estimated VMT Reductions		
Reduced Vehicle Trips per Weekday	314	Assumes 73% of bicycle trips replace vehicle trips for adults/college students and 53% for school children
Reduced Vehicle Trips per Year	82,050	Reduced number of weekday vehicle trips multiplied by 261 (weekdays in a year)
Reduced Vehicle Miles per Weekday	2,207	Assumes average round trip travel length of 8 miles for adults/college students and 1 mile for schoolchildren
Reduced Vehicle Miles per Year	576,032	Reduced number of weekday vehicle miles multiplied by 261 (weekdays in a year)
Current Air Quality Benefits		
Reduced Hydrocarbons (pounds/weekday)	7	Daily mileage reduction multiplied by 1.36 grams per reduced mile
Reduced PM10 (pounds/weekday)	0	Daily mileage reduction multiplied by 0.0052 grams per reduced mile
Reduced PM2.5 (pounds/weekday)	0	Daily mileage reduction multiplied by 0.0049 grams per reduced mile
Reduced NOX (pounds/weekday)	5	Daily mileage reduction multiplied by 0.95 grams per reduced mile
Reduced CO (pounds/weekday)	60	Daily mileage reduction multiplied by 12.4 grams per reduced mile

Reduced C02 (pounds/weekday)	1,795	Daily mileage reduction multiplied by 369 grams per reduced mile
Reduced Hydrocarbons (pounds/year)	1,727	Yearly mileage reduction multiplied by 1.36 grams per reduced mile
Reduced PM10 (pounds/year)	7	Yearly mileage reduction multiplied by 0.0052 grams per reduced mile
Reduced PM2.5 (pounds/year)	6	Yearly mileage reduction multiplied by 0.0049 grams per reduced mile
Reduced NOX (pounds/year)	1,206	Yearly mileage reduction multiplied by 0.95 grams per reduced mile
Reduced CO (pounds/year)	15,747	Yearly mileage reduction multiplied by 12.4 grams per reduced mile
Reduced C02 (pounds/year)	468,606	Yearly mileage reduction multiplied by 369 grams per reduced mile

Source: Emissions rates from EPA report 420-F-05-022 "Emission Facts: Average Annual Emissions and Fuel Consumption for Gasoline-Fueled Passenger Cars and Light Trucks." 2005.)

Table 4-5 displays projected year 2030 bicycling activity within Brawley using data from the California Department of Finance population and school enrollment projections. The projection contains the assumption that bicycle mode share will double by 2030, due in part to bicycle network implementation. Table 4-6 displays the projected air quality benefit forecasts for the year 2030. The air quality projections for 2030 use the same calculations as the current estimates.

Table 4-5: Projected Year 2030 Bicycling Demand

Variable	Figure	Source
Future study area population	49,036	Estimated based on CA Department of Finance Projections
Future employed population	10,870	Estimated based on CA Department of Finance Projections
Future bike-to-work mode share	1.4%	Assumes bicycle mode share will double
Future number of bike-to-work commuters	152	Employed persons multiplied by bike-to-work mode share
Future work-at-home mode share	6.8%	Assumes work-at-home mode share will continue to grow at the same rate as between 2000 and 2011
Future number of work-at-home bike commuters	369	Assumes 50% of population working at home makes at least one daily bicycle trip
Future transit-to-work mode share	5.5%	Assumes transit-to-work mode share will continue to grow at the same rate as between 2000 and 2011
Future transit bicycle commuters	150	Employed persons multiplied by transit mode share. Assumes 25% of transit riders access transit by bicycle
Future school children, ages 6-14 (grades K-8)	5,393	Estimated based on CA Department of Finance Projections
Future school children bicycling mode share	4.0%	Assumes mode share will double
Future school children bike commuters	216	School children population multiplied by school children bicycling mode share
Future number of college students in study area	2,042	Estimated based on CA Department of Finance Projections
Future estimated college bicycling mode share	15.0%	Assumes 2% increase
Future college bike commuters	306	College student population multiplied by college student bicycling mode share
Future total number of bicycle commuters	1,193	Total bike-to-work, school, college and utilitarian biking trips. Does not include recreation.
Future total daily biking trips	**2,387**	**Total bike commuters x 2 (for round trips)**

Table 4-6: Projected Year 2030 Air Quality Impact

Variable	Figure	Source
Future Vehicle Trips and Miles Reduction		
Reduced Vehicle Trips per Weekday	718	Assumes 73% of biking trips replace vehicle trips for adults/college students and 53% for school children
Reduced Vehicle Trips per Year	187,472	Reduced number of weekday vehicle trips multiplied by 261 (weekdays in a year)
Reduced Vehicle Miles per Weekday	4,946	Assumes average round trip travel length of 8 miles for adults/college students and 1 mile for schoolchildren
Reduced Vehicle Miles per Year	1,290,880	Reduced number of weekday vehicle miles multiplied by 261 (weekdays in a year)
Future Air Quality Benefits		
Reduced Hydrocarbons (pounds/weekday)	15	Daily mileage reduction multiplied by 1.36 grams per reduced mile
Reduced PM10 (pounds/weekday)	0	Daily mileage reduction multiplied by 0.0052 grams per reduced mile
Reduced PM2.5 (pounds/weekday)	0	Daily mileage reduction multiplied by 0.0049 grams per reduced mile
Reduced NOX (pounds/weekday)	10	Daily mileage reduction multiplied by 0.95 grams per reduced mile
Reduced CO (pounds/weekday)	135	Daily mileage reduction multiplied by 12.4 grams per reduced mile
Reduced C02 (pounds/weekday)	4,024	Daily mileage reduction multiplied by 369 grams per reduced mile
Reduced Hydrocarbons (pounds/year)	3,870	Yearly mileage reduction multiplied by 1.36 grams per reduced mile
Reduced PM10 (pounds/year)	15	Yearly mileage reduction multiplied by 0.0052 grams per reduced mile
Reduced PM2.5 (pounds/year)	14	Yearly mileage reduction multiplied by 0.0049 grams per reduced mile
Reduced NOX (pounds/year)	2,704	Yearly mileage reduction multiplied by 0.95 grams per reduced mile
Reduced CO (pounds/year)	35,289	Yearly mileage reduction multiplied by 12.4 grams per reduced mile
Reduced C02 (pounds/year)	1,050,138	Yearly mileage reduction multiplied by 369 grams per reduced mile

Source: Emissions rates from EPA report 420-F-05-022 "Emission Facts: Average Annual Emissions and Fuel Consumption for Gasoline-Fueled Passenger Cars and Light Trucks." 2005.)

Walking Commuting Estimates

Table 4-7 displays an estimate of currently walking trends in Brawley using statistics from Table 4-2, US Census Data and other sources that are listed with each statistic.

Table 4-8 presents the associated air quality benefits from walking.

Table 4-7: Existing Walking Demand

Variable	Figure	Source
Existing walk-to-work mode share	2.6%	2009-2011 American Community Survey, 3-Year Estimates
Existing number of walk-to-work commuters	217	Employed persons multiplied by walk-to-work mode share
Existing number of work-at-home walk commuters	155	Assumes 50% of population working at home makes at least one daily walking trip
Existing transit pedestrian commuters	138	Employed persons multiplied by transit mode share. Assumes 75% of transit riders access transit by foot
Existing school children walking mode share	11.0%	National Safe Routes to School surveys, 2003.
Existing school children walk commuters	457	School children population multiplied by school children walking mode share

Existing estimated college walking mode share	60.0%	Review of walking commute share in seven university communities (source: National Bicycling & Walking Study, FHWA, Case Study No. 1, 1995).
Existing college walking commuters	943	College student population multiplied by college student walking mode share
Existing total number of walk commuters	1,909	Total walk-to-work, school, college and utilitarian walking trips. Does not include recreation.
Total daily walking trips	**3,819**	**Total walk commuters x 2 (for round trips)**

Table 4-8: Existing Air Quality Impact

Variable	Figure	Source
Existing Vehicle Trips and Miles Reduction		
Reduced Vehicle Trips per Weekday	1,302	Assumes 73% of walking trips replace vehicle trips for adults/college students and 53% for school children
Reduced Vehicle Trips per Year	339,950	Reduced number of weekday vehicle trips multiplied by 261 (weekdays in a year)
Reduced Vehicle Miles per Weekday	1,394	Assumes average round trip travel length of 1.2 miles for adults/college students and 0.5 mile for schoolchildren
Reduced Vehicle Miles per Year	363,737	Reduced number of weekday vehicle miles multiplied by 261 (weekdays in a year)
Existing Air Quality Benefits		
Reduced Hydrocarbons (pounds/weekday)	4	Daily mileage reduction multiplied by 1.36 grams per reduced mile
Reduced PM10 (pounds/weekday)	0	Daily mileage reduction multiplied by 0.0052 grams per reduced mile
Reduced PM2.5 (pounds/weekday)	0	Daily mileage reduction multiplied by 0.0049 grams per reduced mile
Reduced NOX (pounds/weekday)	3	Daily mileage reduction multiplied by 0.95 grams per reduced mile
Reduced CO (pounds/weekday)	38	Daily mileage reduction multiplied by 12.4 grams per reduced mile
Reduced C02 (pounds/weekday)	1,134	Daily mileage reduction multiplied by 369 grams per reduced mile
Reduced Hydrocarbons (pounds/year)	1,091	Yearly mileage reduction multiplied by 1.36 grams per reduced mile
Reduced PM10 (pounds/year)	4	Yearly mileage reduction multiplied by 0.0052 grams per reduced mile
Reduced PM2.5 (pounds/year)	4	Yearly mileage reduction multiplied by 0.0049 grams per reduced mile
Reduced NOX (pounds/year)	762	Yearly mileage reduction multiplied by 0.95 grams per reduced mile
Reduced CO (pounds/year)	9,944	Yearly mileage reduction multiplied by 12.4 grams per reduced mile
Reduced C02 (pounds/year)	295,902	Yearly mileage reduction multiplied by 369 grams per reduced mile

Table 4-9 displays projected year 2030 walking activity within Brawley using data from the California Department of Finance population and school enrollment projections. The projection contains the assumption that walking mode share will double by 2030, due in part to pedestrian network improvements.

Table 4-10 displays the projected air quality benefit forecasts for the year 2030. The air quality projections for 2030 use the same calculations as the current estimates.

Table 4-9: Projected 2030 Walking Demand

Variable	Figure	Source
Future study area population	49,036	Estimated based on CA Department of Finance Projections
Future employed population	10,870	Estimated based on CA Department of Finance Projections
Future walk-to-work mode share	5.2%	Assumes walking mode share will double
Future number of walk-to-work commuters	565	Employed persons multiplied by walk-to-work mode share
Future work-at-home mode share	6.8%	Assumes work-at-home mode share will continue to grow at the same rate as between 2000 and 2011
Future number of work-at-home walk commuters	370	Assumes 50% of population working at home makes at least one daily walking trip
Future transit-to-work mode share	5.2%	Assumes transit-to-work more share will continue to grow at the same rate as between 2000 and 2011
Future transit pedestrian commuters	424	Employed persons multiplied by transit mode share. Assumes 75% of transit riders access transit by foot
Future school children, ages 6-14 (grades K-8)	5,393	Estimated based on CA Department of Finance Projections
Future school children walking mode share	4.4%	Assumes mode share will double
Future school children walk commuters	237	School children population multiplied by school children walking mode share
Future number of college students in study area	2,042	Estimated based on CA Department of Finance Projections
Future estimated college walking mode share	90.0%	Assumes 50% increase
Future college walking commuters	1,838	College student population multiplied by college student walking mode share
Future total number of walk commuters	3,434	Total walk-to-work, school, college and utilitarian walking trips. Does not include recreation.
Future total daily walking trips	**6,868**	**Total walk commuters x 2 (for round trips)**

Table 4-10: Projected 2030 Air Quality Impact

Variable	Figure	Source
Future Vehicle Trips and Miles Reduction		
Reduced Vehicle Trips per Weekday	2,459	Assumes 73% of walking trips replace vehicle trips for adults/college students and 53% for school children
Reduced Vehicle Trips per Year	641,865	Reduced number of weekday vehicle trips multiplied by 261 (weekdays in a year)
Reduced Vehicle Miles per Weekday	2,863	Assumes average round trip travel length of 1.2 miles for adults/college students and 0.5 mile for schoolchildren
Reduced Vehicle Miles per Year	747,260	Reduced number of weekday vehicle miles multiplied by 261 (weekdays in a year)
Future Air Quality Benefits		
Reduced Hydrocarbons (pounds/weekday)	9	Daily mileage reduction multiplied by 1.36 grams per reduced mile
Reduced PM10 (pounds/weekday)	0	Daily mileage reduction multiplied by 0.0052 grams per reduced mile
Reduced PM2.5 (pounds/weekday)	0	Daily mileage reduction multiplied by 0.0049 grams per reduced mile
Reduced NOX (pounds/weekday)	6	Daily mileage reduction multiplied by 0.95 grams per reduced mile
Reduced CO (pounds/weekday)	78	Daily mileage reduction multiplied by 12.4 grams per reduced mile
Reduced C02 (pounds/weekday)	2,329	Daily mileage reduction multiplied by 369 grams per reduced mile
Reduced Hydrocarbons (pounds/year)	2,240	Yearly mileage reduction multiplied by 1.36 grams per reduced mile

Reduced PM10 (pounds/year)	9	Yearly mileage reduction multiplied by 0.0052 grams per reduced mile
Reduced PM2.5 (pounds/year)	8	Yearly mileage reduction multiplied by 0.0049 grams per reduced mile
Reduced NOX (pounds/year)	1,565	Yearly mileage reduction multiplied by 0.95 grams per reduced mile
Reduced CO (pounds/year)	20,428	Yearly mileage reduction multiplied by 12.4 grams per reduced mile
Reduced C02 (pounds/year)	607,900	Yearly mileage reduction multiplied by 369 grams per reduced mile

Source: Emissions rates from EPA report 420-F-05-022 "Emission Facts: Average Annual Emissions and Fuel Consumption for Gasoline-Fueled Passenger Cars and Light Trucks." 2005.

4.5 Bicycle and Pedestrian Counts

To fully comprehend existing conditions in Brawley, it is important to understand the number of non-motorized users and the patterns in which they interact with the existing roadway network. To do so, a comprehensive count of bicyclists and pedestrians at seven locations was performed during October 2012.

The effort included:

- Careful identification of count locations
- A bicycle count form
- A pedestrian count form
- A methodology memorandum to guide City staff and volunteer counts
- Three counts at each location[12]
- Data synthesis and analysis

Bicycle and pedestrian counting is important for several reasons. The US Census reports that the Brawley bicycle commute mode share is less than 1 percent and pedestrian commute mode share is less than 3 percent. While this information can be useful for comparative analysis, the data is very limited. The Census measures commute to work trips only, which account for less than 15 percent of all trips taken in the US. By conducting its own bicycle and pedestrian counts, Brawley can account for non-commute walking and bicycling trips, as well as better understand where bicycling and walking is occurring. Counts are also helpful to analyze existing bikeway/walkway facility use and where future facilities may be justified.

4.5.1 Process

Bicycle and pedestrian counts were conducted at the following seven locations in the city:

- Willard Avenue and Cattle Call Drive
- A Street and 1st Street
- Plaza Street and 3rd Street
- Imperial Avenue and K Street
- Eastern Avenue and B Street
- State Route 78 and Eastern Avenue
- Eastern Avenue and K Street

[12] Missing weekend count data for Imperial Avenue and K Street, Eastern Avenue and B Street, and Eastern Avenue and K Street.

Weekday and weekend tallies were conducted on Thursday October 25th, 2012 from 7-9 AM and 5-7 PM, and Saturday October 27th, 2012 from 12-2 PM. The count times and overall guidelines were developed in conjunction with the National Bicycle and Pedestrian Documentation Project (NBPDP), a joint collaboration between Alta Planning + Design and the Institute of Transportation Engineers. Location number one was originally Rio Vista Avenue and Cattle Call Drive, yet this was changed to Willard Avenue and Cattle Call Drive due to lack of activity at Rio Vista Avenue.

The counters conducted screen line counts to identify the number of bicyclists and pedestrians passing through each location. Screen line counts are primarily used to identify general trends in volumes and other factors that influence walking and bicycling. During screen line counts, one volunteer identifies the number of bicyclists and pedestrians that pass through a single, imaginary line running across the street, thereby capturing all cyclists and pedestrians traveling in either direction along a single corridor. A person who passes by a point more than once is counted each time they pass by the point. Counters recorded the following variables in addition to the number of people passing by:

- Gender
- Observed trip purpose (Is this trip for recreation or transportation?)
- Helmet use
- Sidewalk riding
- Wrong way riding
- Any additional information that the counters think are useful to note (i.e. jaywalking)

4.5.2 Results

Maps of the counts results are displayed in Figure 4-9, Figure 4-10, and Figure 4-10. Tables of the counts results are located in Appendix D.

Highest Count Locations

Figure 4-4 to Figure 4-8 present the relative amount of bicyclists and pedestrians at each of the count locations. The three locations with the highest number of bicyclists and pedestrians are shown in Table 4-11.

Table 4-11: Highest Count Locations

Location	Number of Bicyclists and Pedestrians
Eastern Avenue and B Street	367
A Street and 1st Street	280
Main Street and 3rd Street	223

The intersection of Eastern Avenue and B Street had the highest number of bicyclists and pedestrians (367), and is likely a popular place for bicyclists and pedestrians because of its location next to Oakley Elementary School and Alyce Gereaux Park, as well as the existing bike lane on Eastern Avenue. The intersection of A Street and 1st Street had a total of 280 bicyclists and pedestrians, and is located close to Phil Swing Elementary School, Warner Park, Warne Field, and the Brawley Parks and Recreation Department.

Bicycle vs. Pedestrian Activity

The results of the bicycle and pedestrian counts are presented in Table 4-12 and Table 4-13. There was a total of 251 bicyclists and 903 pedestrians observed during the count period. This data reveals that the share of bicycle activity is significantly lower than pedestrian activity. The only time and location where more bicyclists than pedestrians were observed was Highway 78 and Eastern Avenue during the weekday peak period from 5-7 PM.

Table 4-12: Bicyclists by Day and Time

Characteristic	Total Count
Total Bicyclists Combined	251
Total Bicyclists Weekday (morning)	65
Total Bicyclists Weekday (evening)	149
Total Bicyclists Weekend Day	37

Table 4-13: Pedestrians by Day and Time

Characteristic	Total Count
Total Pedestrians Combined	903
Total Pedestrians Weekday (morning)	345
Total Pedestrians Weekday (afternoon)	454
Total Pedestrians Weekend Day	104

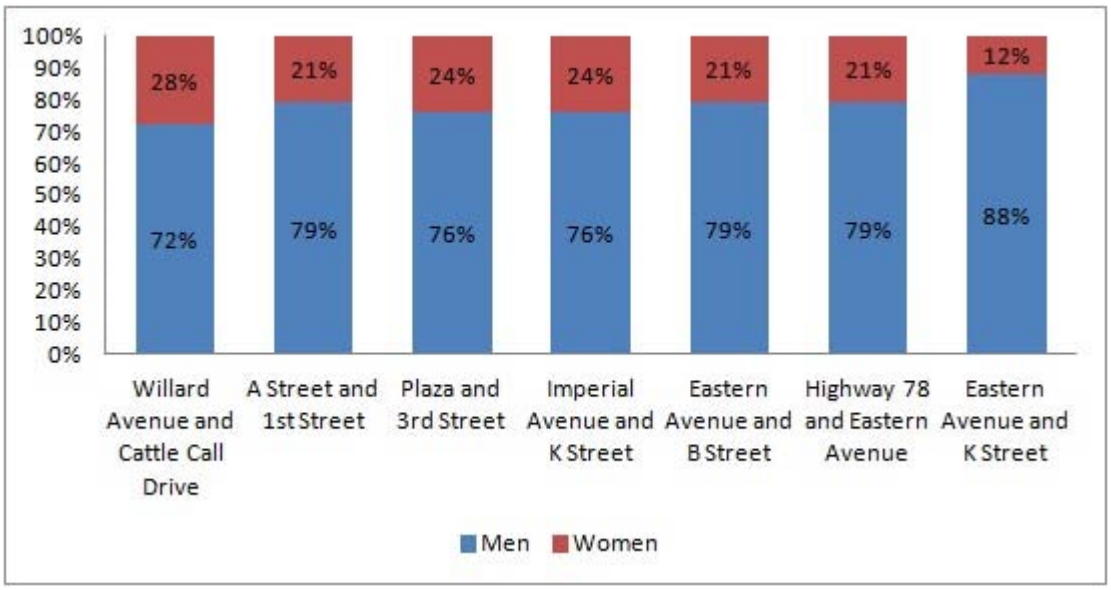
Transportation Purpose

Approximately 45 percent of the observed bicyclists and pedestrians were traveling for transportation and 55 percent for recreation. The results of the survey described previously showed that the main reason for walking or biking is for exercise and recreation purposes.

Gender Split

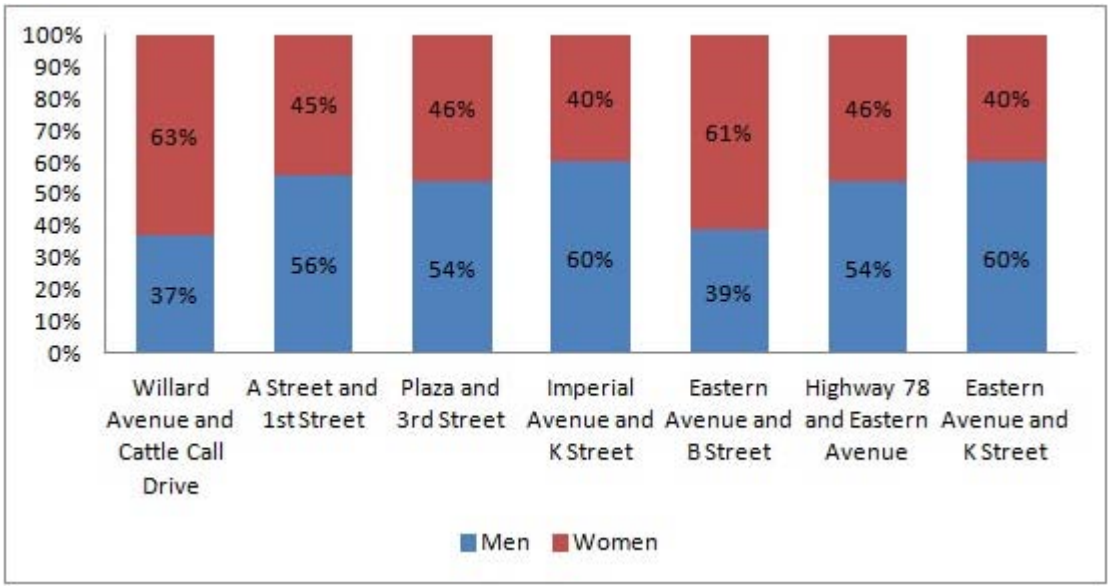
Approximately 78 percent of observed bicyclists were male as compared to only 22 percent female. Figure 4-4 displays the percentage of male and female riders at each location. The location with the highest percentage of females (28 percent) was Rio Vista Avenue and Cattle Call Drive. The location with the highest percentage of males (88 percent) was Eastern Avenue and K Street.

Figure 4-4: Bicyclist Counts by Gender



Approximately 48 percent of observed pedestrians were male and 52 percent female. Figure 4-5 displays the percentage of male and female pedestrians observed at each count location. The locations with the highest percentage of male pedestrians (60 percent) were Imperial Avenue and K Street and Eastern Avenue and K Street.

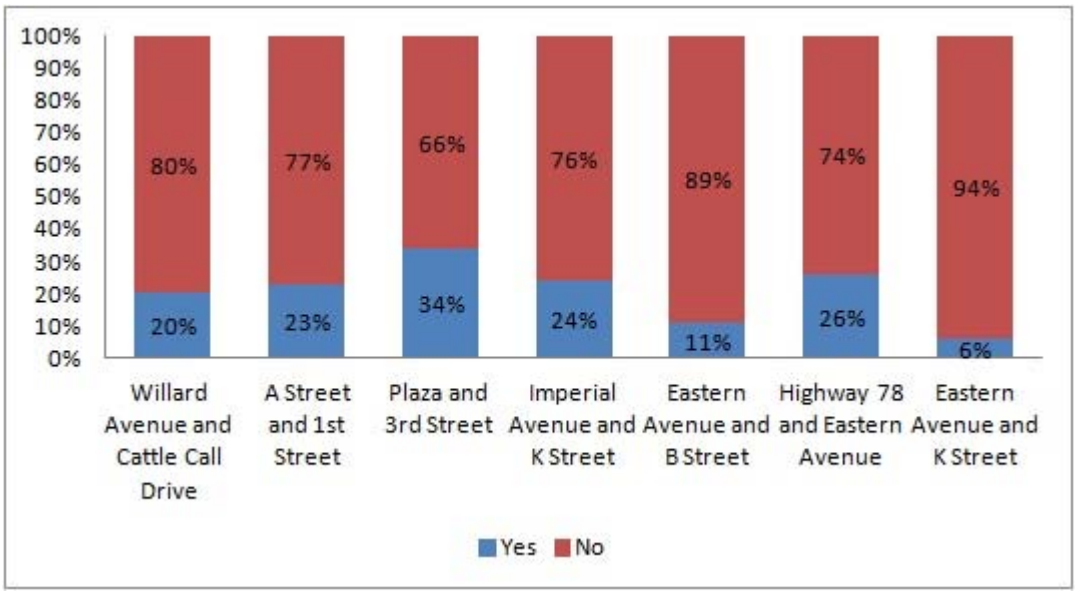
Figure 4-5: Pedestrian Counts by Gender



Helmet Use

Under California law, anyone under the age of 18 must wear a helmet while riding a bicycle on a street or bikeway, though wearing a helmet is an important safety precaution for bicyclists. Approximately 22 percent of observed bicyclists did not wear a helmet while riding. Figure 4-6 displays the percentages of helmet use at each count location. The location with the most bicyclists wearing helmets was Plaza and 3rd Street.

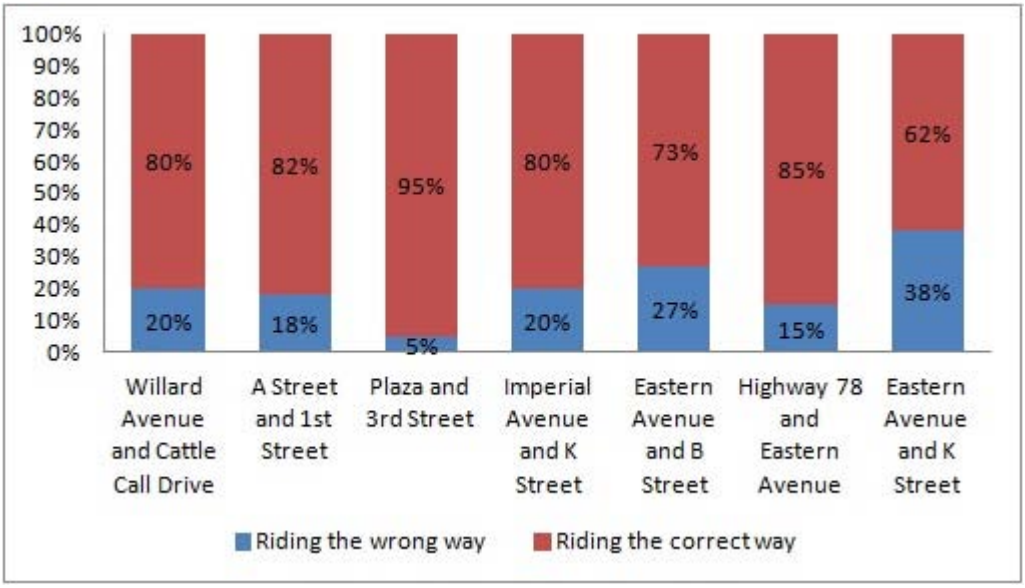
Figure 4-6: Helmet Use



Wrong Way Riding and Sidewalk Riding

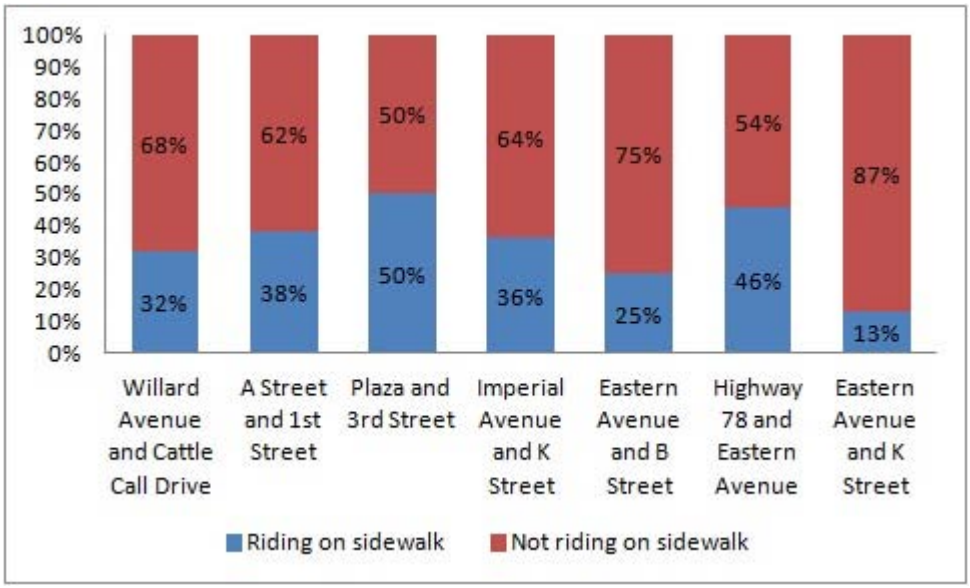
Bicycles traveling on the wrong side of the road are a common cause of bicycle crashes. California law says that bicyclists must travel in the same direction as cars. Laws concerning sidewalk riding vary from city to city. In Brawley, bicyclists are not allowed to ride a bicycle upon a sidewalk within the Central Business District. Approximately 18 percent of observed bicyclists were riding the wrong way. Figure 4-7 displays the percentage of wrong way riders at each count location. The locations with the most observed wrong way riders was Eastern Avenue and K Street (38 percent) and Eastern Avenue and B Street (27 percent). Eastern Avenue has an existing bike lane, and this may indicate that despite the presence of bike lanes, bicyclists are unaware of how to properly use them and/or they are faded and in need of re-striping.

Figure 4-7: Wrong Way Riding



Approximately 37 percent of bicyclists ride on the sidewalks. Figure 4-8 below presents the percentages of sidewalk riders at each count location. The location at Plaza and 3rd Street is within the Central Business District, which had the highest percentage of riders on the sidewalk (50 percent). The location with the second highest percentage of sidewalk riders (46 percent) was Highway 78 and Eastern Avenue, also close to the Central Business District. The high percentage of sidewalk riders may reflect perceived safety issues of riding on high-volume roads. Two of the locations on Eastern Avenue (the intersections with K Street and B Street) had the lowest percentage of sidewalk riders. Although Eastern Avenue had a high percentage of wrong way riders, the low percentage of sidewalk riders may indicate that they feel safe using the bike lanes.

Figure 4-8: Sidewalk Riding



Jaywalking

Under California state law, a pedestrian may generally cross a roadway anywhere along the road without jaywalking, unless it is between two adjacent intersections that are both controlled by traffic control signal devices. Local jurisdictions may have their own laws about jaywalking as well. In Brawley, pedestrians must not cross a roadway other than by a crosswalk in the Central Business District.

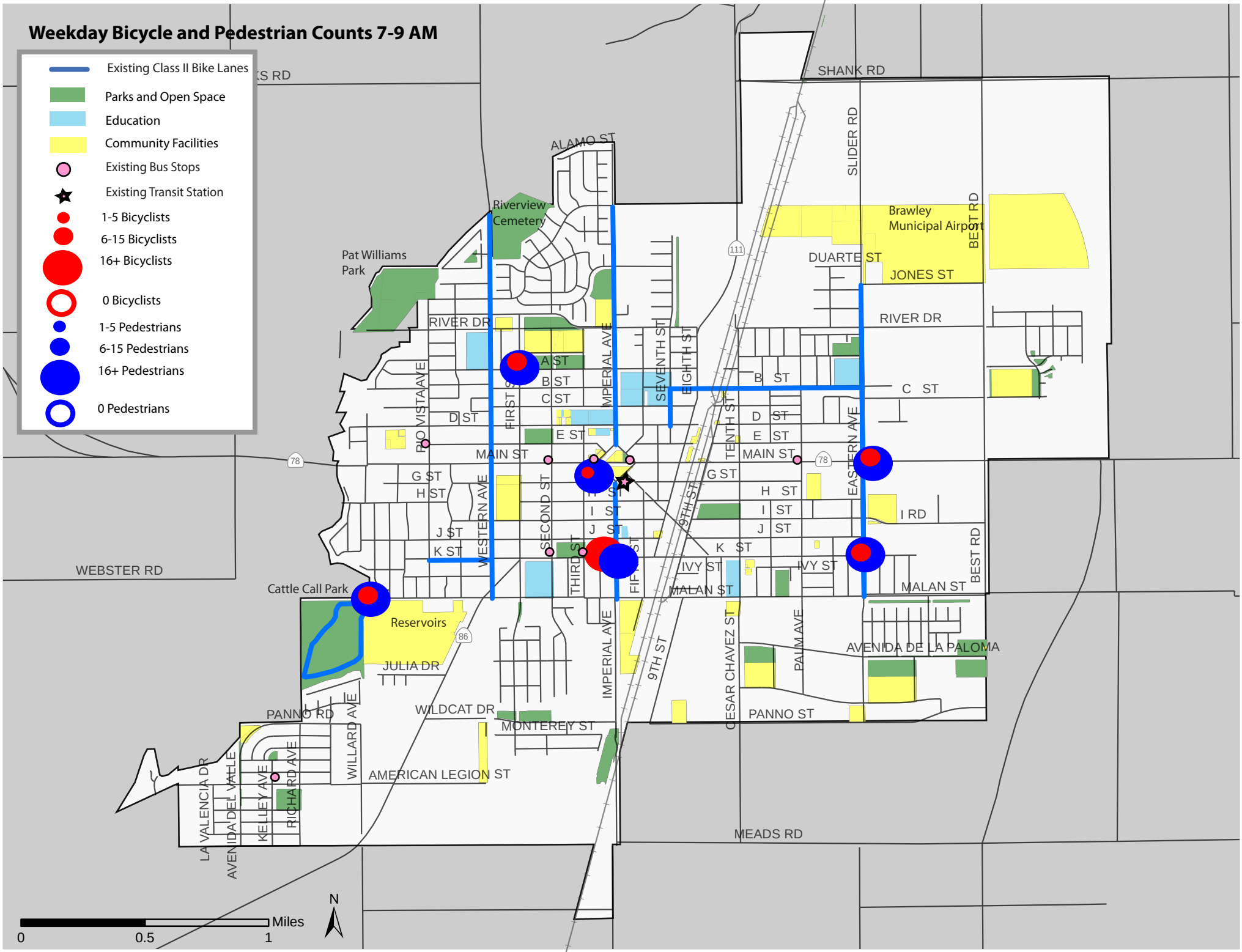
In the count instructions, counters were asked to make additional notes about other observations they made such as jaywalking. Three locations were noted for jaywalking: Willard Avenue and Cattle Call Drive, A Street and 1st Street, and Main Street and 3rd Street. These three locations had high percentages of pedestrians, indicating that pedestrians at these locations may not feel that the intersections have adequate crossings.

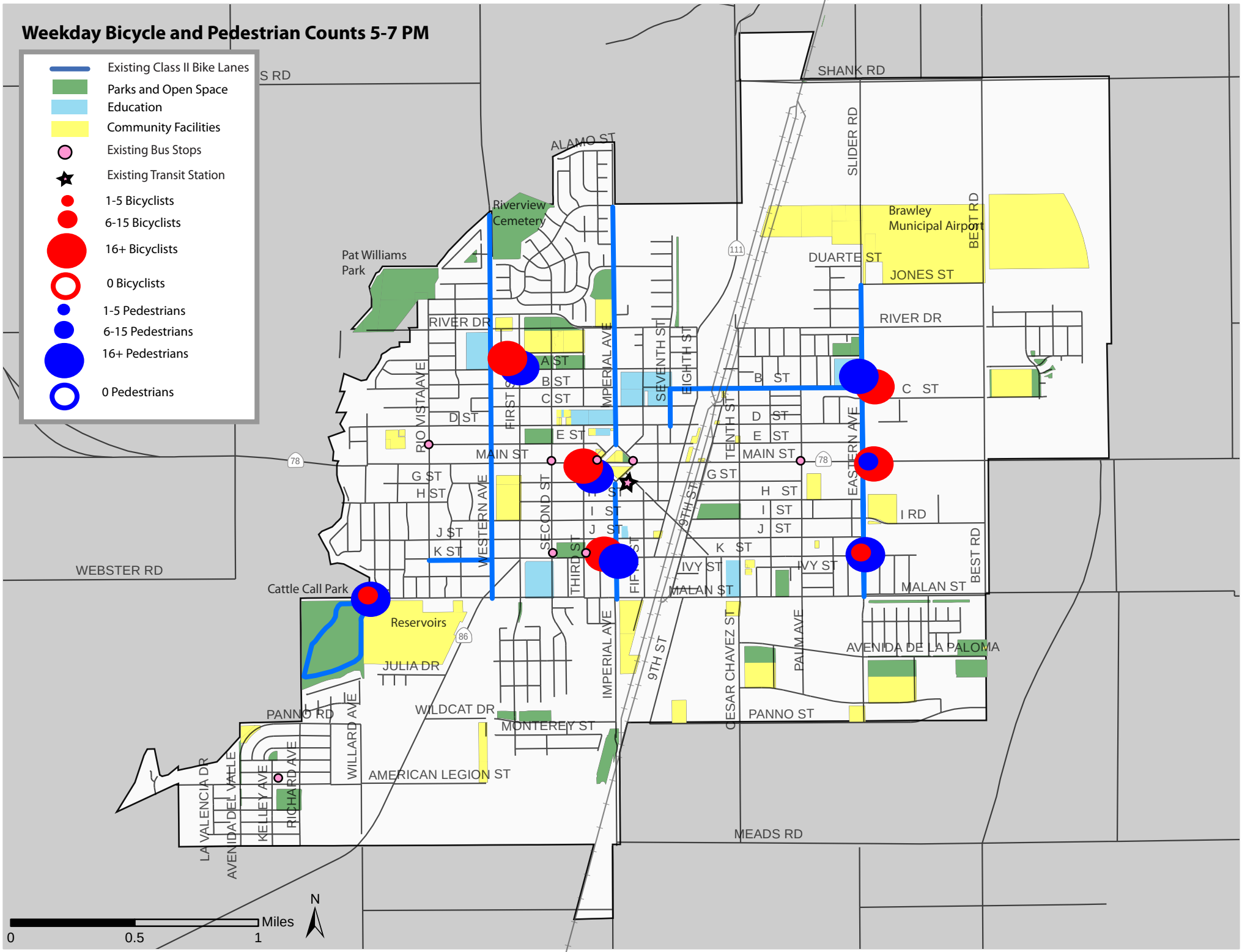
Conclusion

The results of bicycle and pedestrian counts performed at the seven given locations offer valuable insight into both the magnitude and nature of non-motorized activity in Brawley. Key findings include:

- Cities known for being bicycle-friendly have higher proportions of female bicyclists, thus it is likely that as Brawley implements more mileage of bikeways it will also experience more female riders.

- Education, encouragement, and awareness programs may be beneficial to Brawley. Due to the large amount of people who do not wear helmets, safety-related education programs and bike skills trainings teach safe behavior such as wearing helmets, and rules of the road regarding sidewalk riding, wrong way riding, and pedestrian jaywalking.
- Pedestrian improvements may aid in preventing pedestrians from jaywalking. Mid-block crossings can provide pedestrians with safe and legal alternatives to jaywalking.
- Due to the stricter laws for bicycles and pedestrians in the Central Business District, signage indicating the laws for jaywalking and riding on sidewalks may increase awareness and compliance.


Weekday Bicycle and Pedestrian Counts 7-9 AM
Existing Class II Bike Lanes
Parks and Open Space
Education
Community Facilities
Existing Bus Stops
Existing Transit Station
1-5 Bicyclists
6-15 Bicyclists
16+ Bicyclists
0 Bicyclists
1-5 Pedestrians
6-15 Pedestrians
16+ Pedestrians
0 Pedestrians
SHANK RD
ALAMO ST
SLIDER RD
BEST RD
Riverview Cemetery
Brawley Municipal Airport
Pat Williams Park
DUARTE ST
JONES ST
RIVER DR
RIO VISTA AVE
FIRST ST
IMPERIAL AVE
SEVENTH ST
EIGHTH ST
TENTH ST
EASTERN AVE
A ST
B ST
C ST
D ST
E ST
MAIN ST
G ST
H ST
I ST
J ST
K ST
WESTERN AVE
SECOND ST
THIRD ST
9TH ST
I RD
IVY ST
MALAN ST
WEBSTER RD
Cattle Call Park
Reservoirs
JULIA DR
AVENIDA DE LA PALOMA
CESAR CHAVEZ ST
PALM AVE
PANNO RD
PANNO ST
WILDCAT DR
MONTEREY ST
WILLARD AVE
AMERICAN LEGION ST
LA VALENCIA DR
AVENIDA DEL VALLE
KELLEY AVE
RICHARD AVE
MEADS RD
78
86
111
N
Miles
0
0.5
1


Weekday Bicycle and Pedestrian Counts 5-7 PM
Existing Class II Bike Lanes
Parks and Open Space
Education
Community Facilities
Existing Bus Stops
Existing Transit Station
1-5 Bicyclists
6-15 Bicyclists
16+ Bicyclists
0 Bicyclists
1-5 Pedestrians
6-15 Pedestrians
16+ Pedestrians
0 Pedestrians
S RD
SHANK RD
ALAMO ST
SLIDER RD
Riverview Cemetery
Brawley Municipal Airport
BEST RD
Pat Williams Park
DUARTE ST
JONES ST
111
RIVER DR
RIO VISTA AVE
IMPERIAL AVE
SEVENTH ST
EIGHTH ST
A ST
B ST
C ST
D ST
E ST
FIRST ST
TENTH ST
EASTERN AVE
78
MAIN ST
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I ST
J ST
K ST
WESTERN AVE
SECOND ST
THIRD ST
9TH ST
I RD
IVY ST
MALAN ST
WEBSTER RD
Cattle Call Park
Reservoirs
86
JULIA DR
AVENIDA DE LA PALOMA
CESAR CHAVEZ ST
PALM AVE
PANNO RD
PANNO ST
WILDCAT DR
MONTEREY ST
WILLARD AVE
AMERICAN LEGION ST
LA VALENCIA DR
AVENIDA DEL VALLE
KELLEY AVE
RICHARD AVE
MEADS RD
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Miles
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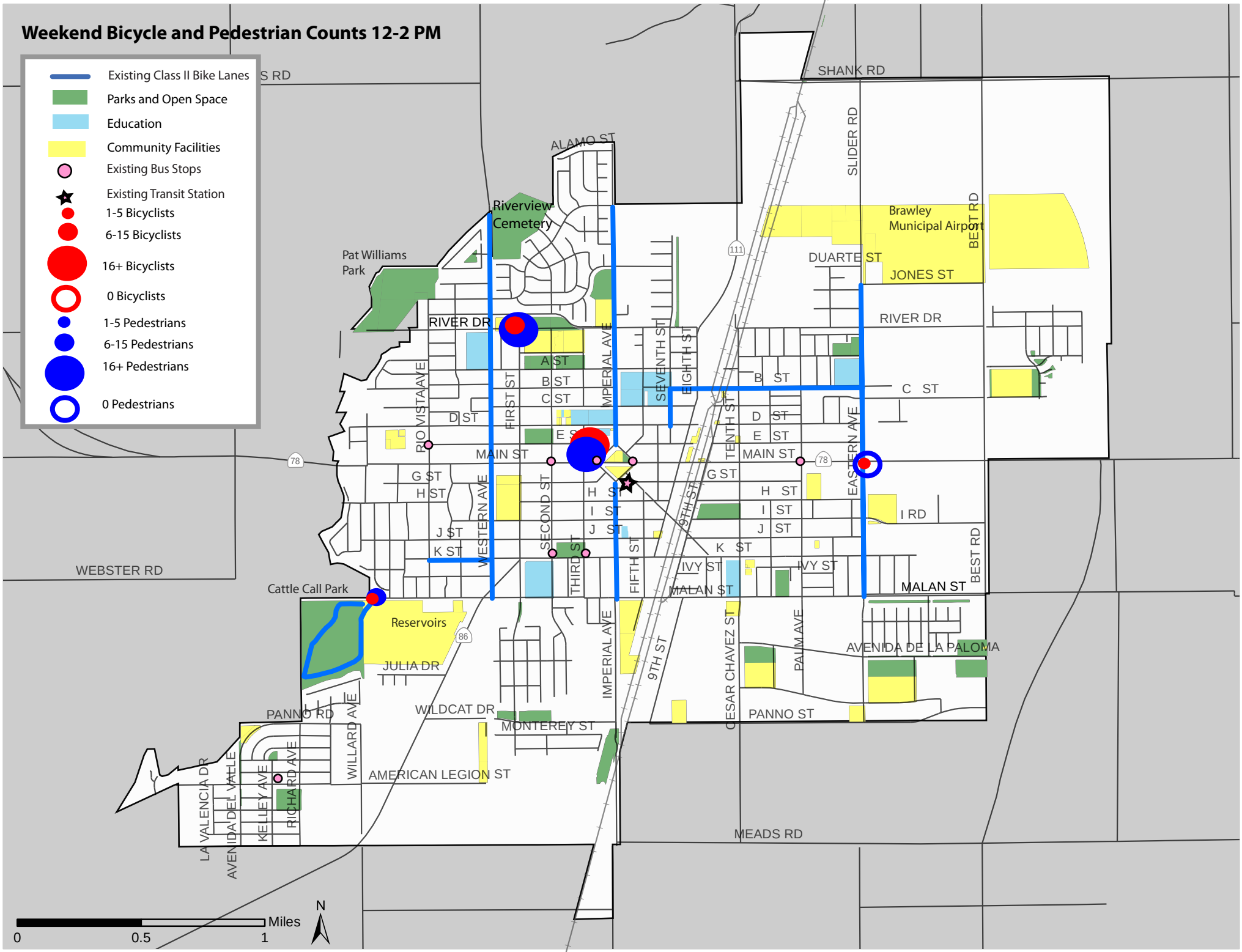
0.5
1


Weekend Bicycle and Pedestrian Counts 12-2 PM
Existing Class II Bike Lanes
Parks and Open Space
Education
Community Facilities
Existing Bus Stops
Existing Transit Station
1-5 Bicyclists
6-15 Bicyclists
16+ Bicyclists
0 Bicyclists
1-5 Pedestrians
6-15 Pedestrians
16+ Pedestrians
0 Pedestrians
SHANK RD
ALAMO ST
SLIDER RD
BEST RD
Riverview Cemetery
Brawley Municipal Airport
Pat Williams Park
DUARTE ST
JONES ST
RIVER DR
RIO VISTA AVE
FIRST ST
IMPERIAL AVE
SEVENTH ST
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WESTERN AVE
SECOND ST
THIRD ST
FIFTH ST
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EASTERN AVE
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IVY ST
MALAN ST
WEBSTER RD
Cattle Call Park
Reservoirs
JULIA DR
CESAR CHAVEZ ST
PALM AVE
AVENIDA DE LA PALOMA
PANNO RD
PANNO ST
WILDCAT DR
MONTEREY ST
WILLARD AVE
AMERICAN LEGION ST
KELLEY AVE
RICHARD AVE
LA VALENCIA DR
AVENIDA DEL VALLE
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1

4.6 Collision Documentation and Assessment

Analysis of bicycle and pedestrian collision data provides the City with a basis for infrastructure and programmatic recommendations that can improve safety of bicyclists and pedestrians. Collision data comes from the Statewide Integrated Traffic Records System (SWITRS). Because SWITRS is a repository for all police departments to submit traffic records, data is sometimes incomplete due to varying reporting methods. While collision data is sometimes incomplete and does not capture the safety performance of trails nor the frequency of "near misses," it does provide a general sense of the safety issues facing bicyclists and pedestrians in Brawley.

Annual Collision Totals

Table 4-14 summarizes reported pedestrian-involved and bicycle-involved collision data in the city of Brawley for the most recent five years (2007-2011). Figure 4-12 and Figure 4-13 illustrate the locations and frequencies of these collisions.

Table 4-14: Bicycle and Pedestrian Collisions by Year

Year	Pedestrian			Bicycle			Total		
	Injuries	Fatalities	Collisions	Injuries	Fatalities	Collisions	Injuries	Fatalities	Collisions
2007	5	0	7	5	0	6	10	0	13
2008	7	1	8	2	0	1	9	1	9
2009	5	0	5	0	1	2	5	1	7
2010	4	0	4	4	0	6	8	0	10
2011	3	0	3	2	0	2	5	0	5
Total	***24***	***1***	***27***	***13***	***1***	***17***	***37***	***2***	***44***

Figure 4-12: Bike and Pedestrian Collisions 2007-2011

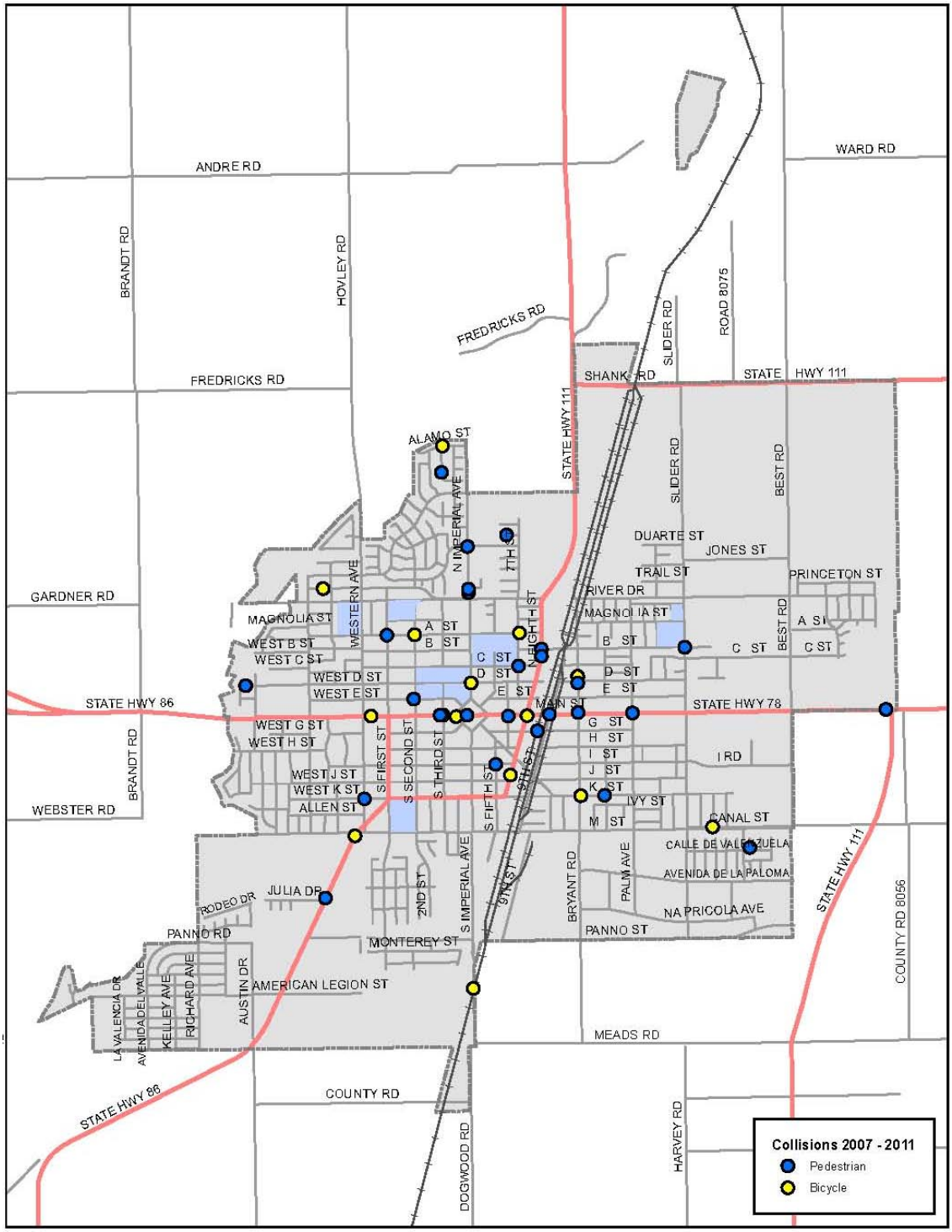
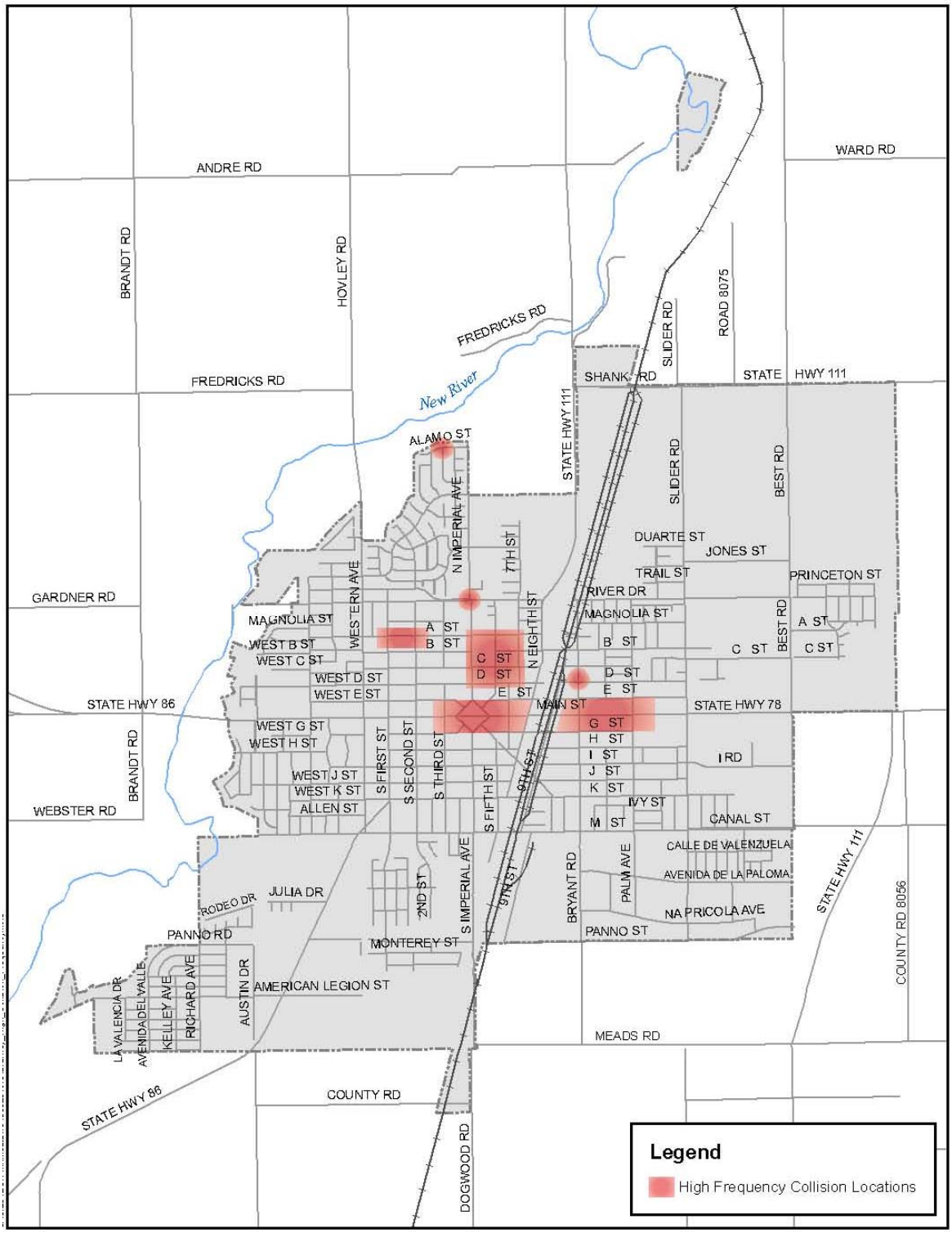


Figure 4-13: High Collision Frequency Locations 2007-2011



Trends in Bicycle and Pedestrian Collisions

As shown in Table 4-14, from 2007 through 2011, a total of 44 collisions involving pedestrians or bicyclists have been reported in Brawley which include a total of 27 pedestrian-involved collisions and 17 bicyclist collisions. The total number of collisions per year ranged from 5 to 13 collisions.

As also shown in Table 4-14**,** the total of 44 reported pedestrian or bicycle-involved collisions from 2007 through 2011 have resulted in a total of 37 injuries and 2 fatalities which occurred in 2008 and 2009. The sporadic nature of the annual totals of collisions indicates no clear trend in either pedestrian or bicycle collisions.

Party at Fault

The most frequent factor for pedestrian collisions was violation of pedestrian right-of-way (12) with the motorist at fault in most incidents (9). The second most frequent factor was pedestrian violation with pedestrians at fault (9). Safety and education programs can help address these issues as well as consideration of engineering improvements to improve pedestrian crossings.

The most frequent factor for bicycle collisions was bicyclists operating on the wrong side of the road (6), and bicyclists violating automobile right-of-way (5). Safety and education programs for bicyclists can help address these frequent factors in collisions.

High Frequency Collision Locations

As shown in Figure 4-13 and Table 4-15, seven generalized areas account for approximately 57 percent of the total pedestrian or bicycle-involved collisions within the city of Brawley. Main Street accounts for approximately 25 percent of collisions per year. Collisions were also clustered in close proximity to schools and parks, where walking and cycling activity occurs frequently.

Table 4-15: Locations of High Frequency Pedestrian and Bicycle Collisions

Collision Locations	Pedestrian		Bicycle		Total	
	Collisions	Percent of Pedestrian Collisions	Collisions	Percent of Bike Collisions	Total Collisions	Percent of Total Collisions
State Route 78 east of Railroad Crossing	3	11%	0	0%	3	7%
State Route 78 between 3rd St and State Route 111	4	15%	4	24%	8	18%
In proximity to Brawley Union High School	3	11%	2	12%	5	11%
In proximity to Warne Park	1	4%	2	12%	3	7%
Cesar Chavez Blvd/D St	1	4$	1	6%	2	5%
Imperial Ave/River Dr	2	7%	0	0%	2	5%
Pecan St/Alamo St	1	4%	1	6%	2	5%
Subtotal	**15**	**56%**	**10**	**60%**	**25**	**57%**
All other locations	12	44%	7	41%	19	43%
Total	**27**	**100%**	**17**	**100%**	**44**	**100%**

Chapter 5. Recommended Improvements

This chapter presents an overview of recommendations for bicycles and pedestrians, site specific facilities, and well as programmatic recommendations. The first section summarizes the recommended bikeway network by class, including a review of the changes from the 2002 Bicycle Master Plan. The second section describes priority pedestrian treatments and recommendations for priority areas. The third section presents traffic calming recommendations for priority areas in the City. The fourth section of this chapter discusses recommended education, enforcement, and encouragement programs for Brawley.

5.1 Proposed Bicycle Network

The City of Brawley recognizes the importance of developing a well-connected bikeway network providing safe and convenient connections for a broad spectrum of users. This section discusses recommendations for the City of Brawley bikeway network displayed in Figure 5-1. The following elements guided development of the network:

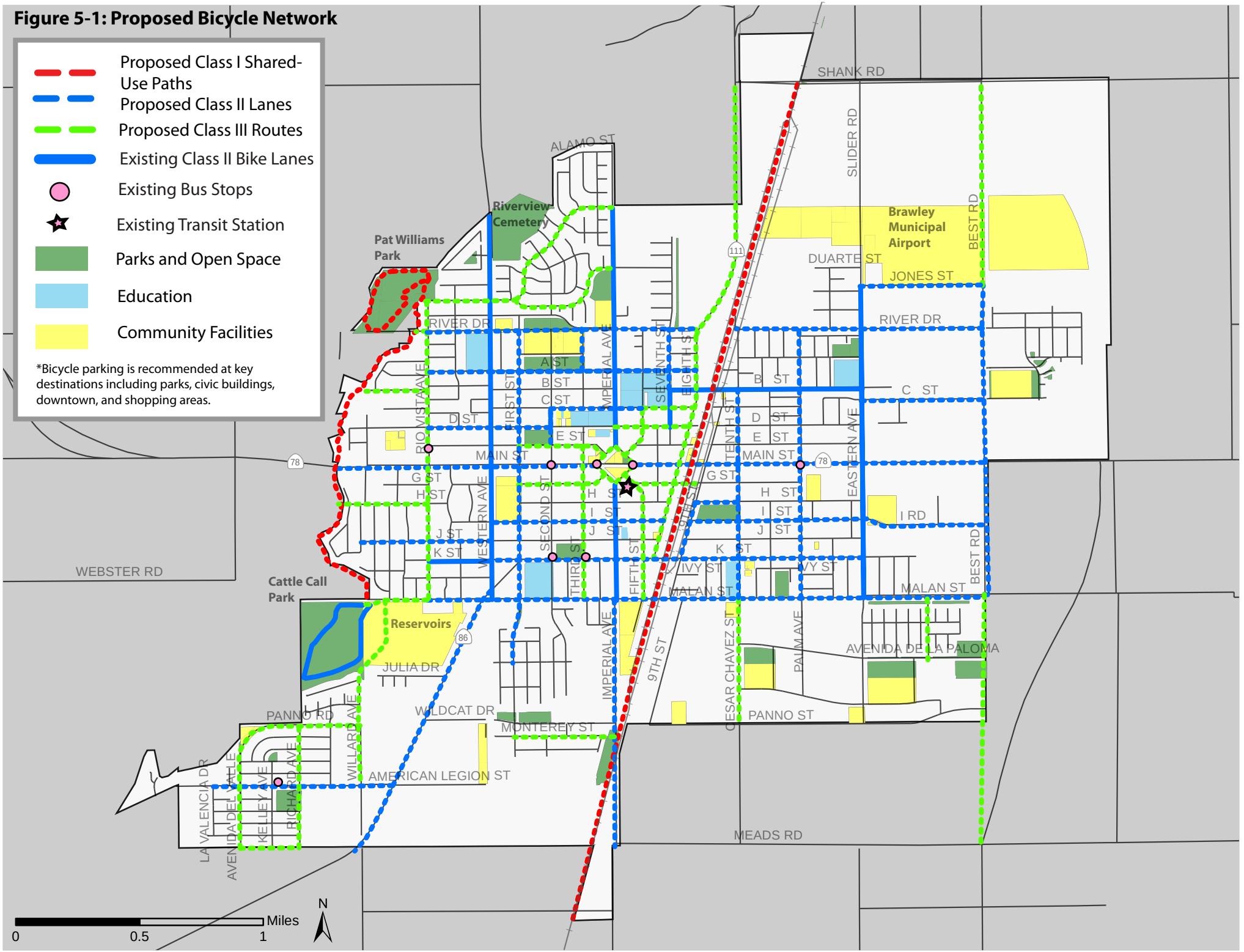
- The Plan's goals, policies, and prioritization criteria (described in Chapter 6 of this document)
- A Walkability Analysis formed from field work and review of available data
- Review of background documents, plans and studies
- Input received from Brawley residents through the project's workshops and survey
- Data from bicycle and pedestrian counts
- Input received from City staff

Table 5-1 summarizes the bicycle network recommendations in this Plan. The proposed network emphasizes connectivity to schools, activity centers, and residential areas. The network builds upon the 2002 Bicycle Master Plan, incorporating the 2010 Downtown Specific Plan and the 2011 Pedestrian Safety Assessment, and addressing current gaps in the network. All proposed bikeways in this Plan are consistent with the California Department of Transportation design guidelines displayed in Appendix A.

Table 5-1: Recommended Bikeway Network Class Mileage Totals

Facility Type	Total Route Miles
Class I Multi-Use Path	6
Class II Bike Lane	22.5
Class III Shared Lane	17.5
Total	**46**

Figure 5-1: Proposed Bicycle Network



5.1.1 Class I Trails/Shared-Use Paths

A Class I Trail/Shared-Use Path is a paved facility separate from streets or highways. The 2013 NMTP maintains proposed Class I paths from previous plans and provides one additional project connecting Cattle Call Park and Pat Williams Park. Table 5-2 shows the proposed Class I paths proposed in the NMTP.

The 2010 Downtown Specific Plan proposed a bike trail adjacent to the Union Pacific Railway, parallel to Ninth Street. The 2013 NMTP upholds this proposal, while extending the path to the north and south city boundaries. This railway is considered a barrier within the city, separating each side by a stretch of land that is not friendly for bicyclists and pedestrians. This area presents an opportunity to create connectivity for bicyclists and pedestrians from the north to south city boundaries, as well as across the railway. This area has ample room for a Class I shared-use path that can attract bicyclists and pedestrians of all comfort levels, for both transportation and recreation.

Connectivity to and between the city's parks is a concept that is important to community members. The 2002 BMP proposed a path around Pat Williams Park, located in the northwest corner of Brawley.

The NMTP includes a project for a path connecting Cattle Call Park to Pat Williams Park. Many members of the public expressed their desire for a shared-use path connecting these two important parks. This path would be approximately 1.5 miles along the western boundary of Brawley. In order to properly utilize the park paths, it is important that the road network includes connections to the park paths as well as the Park Connector. In this Plan, five bicycle facilities are proposed for access to the paths in Cattle Call Park, Pat Williams Park, and the Park Connector. These linkages are discussed later in this chapter.

Table 5-2: Proposed Class I Paths

Name	From	To	Length (miles)
Railroad Path	North City Boundary	South City Boundary	3.5
Pat Williams Park	Pat Williams Park Loop	----	1
Park Connector	Cattle Call Park	Pat Williams Park	1.5
Total Multi-Use Trails			**6**

5.1.2 Class II Bike Lanes

Many bicyclists may prefer bike lanes to shared lanes due to their more direct routing and separation from automobile traffic. The city currently has only lanes existing in the network. Input from community members illustrates the need for separated lanes. The NMTP upholds the emphasis on bike lanes, proposing 22 miles of bike lanes in Brawley. This mileage includes those proposed in the BMP. The proposed Class II bike lanes are listed in Table 5-3.

Table 5-3: Proposed Class II Bike Lanes

Name	From	To	Length (miles)
A Street	Rio Vista Avenue	Eighth Street	2.0
American Legion Road	State Route 86	La Valencia Drive	0.7
Best Road	State Route 78/ Main Street	Malan Street	1.8
C Street	Second Street	Fifth Street	0.4
C Street	Eastern Avenue	Best Road	0.5
D Street	Rio Vista Avenue	Third Street	0.5
First Street	River Drive	Julia Drive	1.4
H Street	Ninth Street	Tenth Street	0.2
State Route 86	K Street	South City Boundary	1.2
I Street	Western Avenue	Eighth Street	0.7
I Street	Ninth Street	Best Road	1.0
Imperial Avenue	Malan Street	Dogwood Road	1.0
Jones Street	Eastern Avenue	Best Road	0.5
K Street	Western Avenue	Eastern Avenue	1.0
Main Street	Western Avenue	West corner of Plaza	1.0
Main Street	South Plaza	Eastern Avenue	1.5
Malan Street	Rio Vista Avenue	Best Road	2.5
Ninth Street	G Street	K Street	0.2
Palm Avenue	River Drive	Malan Street	1.1
River Drive	Tenth Street	Best Road	1.0
River Drive	Rio Vista Avenue	Seventh Street	1.0
Second Street	C Street	D Street	0.2
Tenth Street	B Street	Malan Street	0.9
Third Street	River Drive	A Street	0.2
Total Bike Lanes			**22.5**

5.1.3 Class III Bike Routes

Class III routes are cost-efficient and easily implementable, therefore the proposed network includes the routes in Table 5-4 to create a more connected network. The 2010 Downtown Specific Plan included a network of Class III routes in the downtown area of Brawley, in addition to the recommendations from the 2002 BMP. Class III facilities are also proposed for connecting to residential communities in the southern area of the city.

Table 5-4: Proposed Class III Bike Routes

Name	From	To	Length (miles)
Avenida de Colimbo	Malan Street	Avenida de la Paloma	0.3
Avenida Del Valle/Panno Road	American Legion Road	Calle Estrella	0.3
B Street	Park Path	Rio Vista Avenue	0.3
Best Road	Jones Street	Old State Route 111	0.8
Best Road	Malan Street	Meads Road	1.0
C Street	Fifth Street	Eighth Street	0.2
Calle Estrella	Avenida Del Valle	Richard Avenue	0.2
Cattle Call Drive	Cattle Call Park	Rio Vista Avenue	0.3
D Street	Imperial Avenue	Seventh Street	0.3
E Street	Rio Vista Avenue	North Plaza Street	0.5
Eighth Street	River Drive	K Street	1.0
Fifth Street	C Street	North Plaza Street	0.2
Flammang Avenue	Rio Vista Avenue	Imperial Avenue	0.5
G Street	First Street	South Plaza Street	0.4
G Street	Fifth Street	Ninth Street	0.3
H Street	Rio Vista Avenue	Park Connector Path	0.4
Jones Street	Rio Vista Avenue	Flammang Avenue	0.4
Jones Street	Flammang Avenue	Imperial Avenue	0.6
Keystone Road	South Plaza Street	K Street	0.5
Monterey Street	First Street	Dogwood Road	0.4
North Plaza Street	Main Street	Main Street	0.2
Panno Road	Willard Avenue	American Legion Road	0.7
Richard Avenue	Panno Road	Calle Estrella	0.5
Rio Vista Avenue	Jones Street	Cattle Call Drive	1.2
River Drive	Rio Vista Avenue	Pat Williams Park	0.1
South Plaza Street	Main Street	Main Street	0.2
Old State Route 111	Eighth Street	Shank Road	1.1
Tenth Street	B Street	Malan Street	0.5
Third Street	Main Street	Malan Street	0.6
Willard Avenue	Cattle Call Drive	American Legion Road	0.8
Total Bike Routes			**17.5**

5.1.4 Relationship of Recommended Bikeway Network to 2002 Bicycle Master Plan

The following list of projects reflects the projects from the 2002 Bicycle Master Plan (BMP), as well as revisions and additions that are proposed in the 2013 Nonmotorized Transportation Plan. Since the 2002 BMP, Class II bike lanes have been implemented on Imperial Avenue, Seventh Street, B Street, K Street (Rio Vista to Western) and Eastern Avenue. Other routes may have been added or revised based on a review of current opportunities and constraints.

Table 5-5: Summary of Changes to Recommended Bikeway Network

Corridor/Bikeway	2002 BMP	2013 NMTP
Main Street	Class II from Plaza Street to Best Road	Extend Class II west of Plaza Street to the City border
Park Connector Path	None	Class I path from Cattle Call Park to Pat Williams Park
American Legion Road	Proposed Class II from State Route 86 to Richard Avenue	Extend Class II to La Valencia Drive
H Street	Proposed Class II from Ninth Street to Tenth Street	Rio Vista Avenue to Park Connector Path
B Street	Proposed Class II from State Route 111 to Eastern Avenue	Added Class III from Rio Vista Avenue to the Park Connector Path
First Street	Class II from K Street to Malan Street	Extend south of Malan Street to Julia Drive
Imperial Avenue	Proposed Class II from North Plaza Street to City Border and South Plaza Street to Malan Avenue	Extend existing south of Malan to Meads Road
Monterey Street	None	Imperial Avenue to First Street
Cesar Chavez/Tenth Street	Proposed Class II from B Street to Malan Street	Class III extension south of Malan Street to Panno Street
A Street	Proposed Class II from Western Avenue to Imperial Avenue	Extend Class II west to Rio Vista Avenue and east to Eighth Street
Flammang Avenue	Proposed Class II	Change to Class III
I Street	Proposed Class II Ninth Street to Tenth Street	Extend east to Best Road
J Street	None	Class III Western Avenue to Terrace Circle
River Drive	Proposed Class II Palm Avenue to Eastern Avenue	Extend west to Tenth Street and east to Best Road
River Drive	Proposed Class II Rio Vista Avenue to Imperial Avenue	Extent east to Seventh St
Best Road	Proposed Class II from Main Street/ State Route 78 to Malan Street	Extend Class II north from Main Street/ State Route 78 to Jones Street, Class III from Jones Street to State Route 111, Class III south of Malan Street to Meads Road
Avenida de Colimbo	None	Class III from Malan Street to Avenida de la Paloma

Corridor/Bikeway	2002 BMP	2013 NMTP
C Street	Proposed Class II from Second Street to Seventh Street	Add Class III from Eastern Avenue to Best Road, Class III from Fifth Street to Eighth Street
Third Street	Proposed Class II from A Street to River Drive	Extend south of A Street to C Street
E Street	Proposed Class II from North Plaza Street to Second Street	Change to Class III and extend to First Street
Jones Street	None	Class II on Jones Street from Eastern Avenue to Best Rd
Fifth Street	None	Class III from South Plaza Street to K Street, and North Plaza Street to C Street
G Street	None	Class III from First Street to South Plaza Street
Third Street	None	Class III E Street to Malan Street
D Street	Proposed Class II Rio Vista to Second Street, and Imperial Avenue to Seventh Street	Change segment to Class III from Imperial Avenue to Eighth Street
Main Street	Proposed Class II from Plaza to Best Road	Extend west to city boundary
Railroad Path	None	Class I shared-use path from the north city boundary to the south city boundary

5.1.5 Signal Detection for Bicyclists

Bicycle detection at actuated traffic signals permits bicyclists to trigger a green light, even when no motor vehicle is present. California Assembly Bill 1581 requires all new and replacement actuated traffic signals[13] to detect bicyclists and to provide sufficient time for a bicyclist to clear an intersection from a standing start. Caltrans Policy Directive 09-06 clarifies the requirements and permits any type of detection technology. The most common technologies are in-pavement loop detectors and video detection, both of which are used by the City. More recently, microwave detection has been used to detect and differentiate between bicyclists and motor vehicles.

The 2002 BMP recommended that loop detectors should be provided at signalized intersections with bikeways as part of roadway expansion or reconstruction projects where bikeways are identified in the Plan. This Plan expands this recommendation to include other recent technologies such as video detection and microwave detection.

5.1.6 Bicycle Parking

Lack of secure and convenient bicycle parking can deter bicycle travel. Bicyclists need parking options providing security against theft, vandalism and weather. Convenient, secure and free bicycle parking is also critically important for populations dependent on bicycling for transportation and who need to park bicycles overnight.

Like automobile parking, bicycle parking is most effective when located close to trip destinations, is highly-visible and provides convenient access. Bicycle parking serves an additional purpose of keeping public spaces orderly and clear of

[13] *Actuated traffic signals stay red until the signal detects a car or bicyclist that is waiting for the light to turn green.*

haphazardly parked bicycles. Where quality bicycle parking facilities are not provided, determined riders will lock their bicycles to street signs, utility poles or trees. This may interfere with pedestrian movements, damage street furniture and trees, or provide a false sense of security to cyclists locking to unsecured objects. Conveniently located bicycle parking facilities provided in adequate quantities and quality will help reduce bicycle theft and minimize inappropriate parking, providing benefits to cyclists, pedestrians and motorists.

Inverted U-Rack

Bike corrals use one vehicle parking space for high-capacity bike parking.

Bicycle parking can be broadly defined as either short-term or long-term parking:

- **Short-term parking** is meant to accommodate short-term visitors, customers, delivery persons and others expected to depart within two hours. Short-term parking is typically provided by bicycle racks.

- **Long-term parking** is necessary for those expecting to leave their bike unattended for several hours or more. This parking should be provided in a secure, weather-protected manner and location. Where security is not a major issue, a cluster of bicycle racks may be sufficient, with optional shade coverage to provide protection from the weather. Where theft is a potential problem, long-term parking should be accommodated either by fully-enclosed bicycle lockers, or by attended bicycle racks.

Inverted U-racks (photo on top left) offer a basic, simple and secure design for placement on sidewalks or areas where space is limited. For sidewalk installation, U-racks are mounted parallel to the curb; bicycles are then locked parallel to the rack (with two bikes parked in opposing directions) providing an efficient use of space.

Another option for bicycle parking is to convert a specific number of on-street vehicle parking spaces into a high-capacity "bike corral" (photo on bottom left). One on-street parking space typically has capacity for up to ten bicycles.

These racks also maximize sidewalk space, improve visibility for storefronts, and creating additional activity nodes and drawing attention to store fronts. This type of bicycle parking facility would benefit Downtown Brawley by creating convenient parking for many bicycles and enhancing the visual landscape of the area.

The 2002 BMP recommended that bicycle parking be located at schools, employment centers, and parks. This Plan supports the 2002 BMP recommendations and also recommends that the City consider adopting a Bicycle Parking Ordinance, requiring short- and long-term bicycle parking in the city with new development.

5.1.7 Trip-End Facilities

The presence and quality of trip-end facilities (e.g., showers, lockers, and changing facilities) can greatly influence a person's decision to complete a trip via bicycle. These facilities enable cyclists to change into work attire (especially after riding in wet or hot conditions). This Plan recommends that the City work with and encourage major employers to improve existing trip-end facilities and/or develop new facilities, as well as encourage developers to include trip-end facilities with new development.

The City should first work with major employers to inventory and assess existing trip-end facilities, followed by identification of locations where new or upgraded facilities are needed. New facilities could be sited at major employment sites, at gyms, and other centrally-located areas. Upgrading development requirements for new major employment sites (to include trip-end facilities) represents a longer-term implementation strategy.

5.1.8 Wayfinding Signage

Placing signs along the bikeway network indicating to bicyclists their direction of travel, location of destinations, and the riding time/distance to those destinations will increase users' comfort and accessibility to the bicycle system. Wayfinding signs also visually cue motorists that they are driving along a bicycle route and should use caution.

Signs are typically placed at key locations leading to and along bicycle routes, including at junctions of multiple routes. Signage can serve both wayfinding and safety purposes including:

- Helping to familiarize users with the bikeway system
- Helping users identify the best routes to destinations
- Helping to address misperceptions about time and distance
- Helping overcome a "barrier to entry" for people who do not bicycle often (e.g., "interested but concerned" cyclists)

It is recommended that the City create a Bicycle Wayfinding Signage Plan in order to establish guidance for wayfinding along bikeways and key pedestrian corridors. A community-wide Signage Plan would identify:

- Sign locations along key bicycle corridors
- Sign type (e.g., size, typeface, font size, design features)
- Destinations to be listed on each sign
- Destination hierarchy (to assist with prioritizing information to be included on each sign)
- Approximate distance and "riding time" to each destination

5.2 Proposed Pedestrian Network

This section describes the pedestrian improvements proposed in this Plan. The City of Brawley recognizes the importance of developing a well-connected pedestrian network providing safe and convenient connections for a broad spectrum of users. This section describes the proposed pedestrian network, illustrated on Figure 5-2 and listed in Table 5-6 and Table 5-7. The following elements guided development of the proposed network:

- The Plan's goals, policies and evaluation criteria (developed earlier in this planning process)
- Review of the existing conditions in the city on key pedestrian routes, around schools, parks, and transit
- The pedestrian needs analysis (including field work and review of available data)

- Review of background documents, plans and studies
- Input received from the City staff
- Community input from the public input process (two workshops and a survey)

This Plan supports the recommendations made in the Downtown Specific Plan, and Safe Routes to School grant application. The Pedestrian Safety Assessment conducted in 2011 used the Downtown Specific Plan recommended locations as guidelines for specific facilities recommendations. Many of the specific types of improvements for Downtown Brawley and Brawley Union High School are recommended in this Plan. The maps from the DTSP, SR2S grant application, and Pedestrian Safety Assessment are located in Appendix E.

5.2.1 Sidewalk Infill

Sidewalk gaps are areas in Brawley where there is pedestrian demand but no walkway, or the walkway ends abruptly, resulting in a discontinuous network. Areas without walkways may force pedestrians to walk along the edge of the roadway or may cause pedestrians to cross at undesignated crossing locations. Sidewalk gaps exist along several roadway corridors in Brawley, diminishing system connectivity, impacting user comfort and creating potential safety issues. Sidewalks can fall into disrepair due to age, tree roots, and other factors. Constructing and repairing sidewalks can help improve the health and mobility of residents, and is an essential element of a connected pedestrian network.

This plan proposes 37 sidewalk infill projects located around schools and other areas identified during field work and in previous plans. A list of these projects can be found in Table 5-6.

The City should also consider filling gaps within one quarter of a mile of parks and transit stops. The City can also work with residents who would like to request particular areas where they would like to see sidewalk infill.

5.2.2 Intersection Improvements

There are a variety of engineering improvements that can improve the pedestrian walking experience and safety when crossing signalized and unsignalized intersections. These improvements help alert motorists of the presence of pedestrians, and help pedestrians know where they should cross streets at intersections.

Many of these locations are within Downtown Brawley, as it has a high volume of pedestrians and pedestrian collisions. Numerous types of treatments are recommended based on what is needed at a particular intersection to create safe places for pedestrians to cross the roadways. The proposed intersection improvements in this Plan are located in Table 5-7.

High Visibility Crosswalk Markings

Crosswalks at signalized intersections help alert motorists of the presence of pedestrians. There are a variety of different striping styles, but in Brawley there are generally two main marking styles for pedestrian crosswalks: the standard transverse style, consisting of two parallel lines; and the ladder style consisting of two parallel lines with perpendicular ladder bars striped across the width of the crosswalk. Ladder style crosswalks are used in locations where heightened visibility is important, such as around school areas.

As a citywide policy, high-visibility crosswalks should be installed at signalized intersections where pedestrian crossing is permitted, as well as major intersections with high pedestrian activity. This Plan recommends high-visibility crosswalk markings in Downtown Brawley where there are unsignalized crossings. High visibility

crosswalks are also recommended at other unsignalized locations on arterial streets near schools, parks, and transit stops.

Countdown Signals

Countdown signals are similar to standard pedestrian crossing signals but they display the amount of time remaining for pedestrians to cross a street. Benefits of countdown signals include offering the most information possible to pedestrians, and increasing pedestrians' feeling of safety.

As a first priority, the City should install countdown signals at signalized intersections near government buildings, the Pioneer Hospital, and in Downtown Brawley. The City should then consider installing countdown signals at other high- volume traffic intersections as well.

Signal Timing

Signal timing is the amount of time that each signal is allotted for vehicles to pass through an intersection, or pedestrians crossing the street. Per the California Manual on Traffic Control Devices (MUTCD), standard traffic engineering design assumes that pedestrians travel at 4.0 feet per second. This calculation is used to determine the amount of time for the pedestrian clearance interval. For slower pedestrians, such as the elderly and children, this assumed walking speed may result in them not being able to fully cross the street before the light changes. By adjusting signal timing to a slower walking rate, slower pedestrians have more time to cross the street.

The City should consider adjusting signal timing at arterial and collector signalized intersections within 1/4 mile of elementary schools and Downtown to allow for a pedestrian pace of 3.0 feet per second. This slower walking speed is consistent with California MUTCD recommendations for walking rates for slower pedestrians.

Audible Signals

Audible signs provide a cue to visually-impaired pedestrians that there is a "Walk" signal. Activated by a push button, audible signals emit a chirping sound or the name of the street to be crossed. The California MUTCD states that 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 volumes or high turn-on-red volumes
- The complexity of traffic signal phasing
- The complexity of intersection geometry

The City should consider installing audible signals at signalized intersections in areas with high pedestrian volumes.

Curb Extensions

Curb extensions, also known as "bulbouts" to describe their shape, are engineering improvements intended to reduce pedestrian crossing distance and increase visibility at intersections. In addition to shortening the crossing distance, curb extensions increase pedestrian visibility by allowing pedestrians to safely step out to where they can see the street, also making pedestrians more visible to oncoming motorists. Curb extensions can help improve safety by visually narrowing the roadway, cueing drivers to reduce speeds.

Despite their advantages, curb extensions can require major re-engineering of streets, can be extremely costly, and are not appropriate for all situations. As a first priority, the City should install curb extensions in Downtown Brawley and around schools.

Flashing Beacons

Where the visibility of pedestrians in a crosswalk may be poor, or where warranted by other safety considerations, yellow flashing beacons can be installed to alert motorists to expect pedestrians in a crosswalk. The City should install flashing beacons at unsignalized crosswalks that are in high priority areas with a high volume of pedestrians, such as near schools and Downtown.

Pedestrian Refuge Islands

Pedestrian Refuge Islands are raised islands in the middle of the roadway that create a protected space where people may safely pause and wait while crossing a street. Pedestrian Refuge Islands should be considered in the following locations:

- Along streets with high pedestrian activity
- Where crossing distances are long (60 feet or greater)
- Near and within retail areas, civic and institutional uses, schools, senior housing, and senior centers
- At unsignalized intersections serving a large number of pedestrian trips

Curb Ramp Improvements

Perpendicular curb ramps are designed so there are two ramps at intersection corners. Perpendicular ramps allow pedestrians and people in wheelchairs to access the sidewalk perpendicular to stopped traffic and to enter into the crosswalk directly in their line of travel. Perpendicular ramps are not required by ADA or any other standard. However, perpendicular ramps are the preferred curb ramp style from a pedestrian standpoint since they provide the most direct access into the crosswalk. Perpendicular ramps require more space to install than a single diagonal ramp, are more costly, and sometimes cannot be implemented due to utilities or other obstructions at corners.

Truncated domes provide a cue to visually-impaired pedestrians that they are entering a street or intersection. Since 2002, ADA Guidelines have called for truncated domes on curb ramps. Truncated domes are a visible improvement, and they are relatively inexpensive to install.

This Plan recommends that the City installs curb ramps at every corner. In high demand areas, perpendicular ramps and truncated domes should be installed where they do not already exist.

5.2.3 Shared-Use Paths

The shared-use paths previously discussed for the proposed bicycle network will also benefit pedestrians. These facilities are useful for recreation or utilitarian trips, and can be paved or soft-surface. The shared-use paths identified in this plan will provide the community with access between Cattle Call Park and Pat Williams Park, through Pat Williams Park, and along the railroad from the southern city boundary to the northern city boundary.

5.2.4 Streetscape Enhancements

Streetscape enhancements represent a key ingredient in creating an attractive and inviting pedestrian environment. Streetscape treatments help establish neighborhood identity, activate public spaces, and create a "sense of arrival" in the form of gateway features. Such treatments can create streets that not only facilitate movement, but also serve as destinations unto themselves. Sample treatments may include street trees, ornamental lighting, street furniture, outdoor dining, awnings on building facades, and public art. Community members expressed desire for lighting, shade trees and benches during public workshops and in the community survey.

Lighting that is pedestrian-scale, rather than vehicle-scale, will provide pedestrians with a sense of comfort and safety. These lights may be decorative and add character to the roadways. Street furniture such as benches and water fountains are recommended in Brawley to provide pedestrians with places to rest. The hot climate was cited as a major reason for people not walking and bicycling, therefore adding street furniture to the roadways may encourage more people to do so.

The Downtown Specific Plan proposes gateways around Downtown Brawley that include aesthetically pleasing landscaping, lighting, and signage. Implementing the DTSP gateways is recommended in this Plan in order to enhance the character of Downtown Brawley. Pedestrian-scale lighting should be implemented on key corridors listed in Section 3.2. These corridors are heavily traveled by all modes of transportation, and this Plan used them as focus areas for bicycle and pedestrian facilities.

5.2.5 Safe Routes to School

Community members expressed the need for improvements around schools at workshops and in the survey. Pedestrian improvements at these schools could benefit school-aged children walking to and from school, as well as enhance the pedestrian experience for all pedestrians in the area. This Plan recommends that these projects around school are high priorities to the City when implementing pedestrian facilities.

A Suggested Routes to School document illustrates proposed improvements to Phil Swing Elementary School, Barbara Worth Junior High School, Witter Elementary School, J.W. Oakley Elementary School, and Miguel Hidalgo Elementary School. The maps in this document are located in Appendix B. Federal and State Safe Routes to School (SRTS) funds are available for these improvements. The City received approval for a Safe Routes to School grant application. The application used the Suggested Routes to School maps to recommend infill of sidewalk gaps, construction of curb ramps, installation of in-pavement markings, and upgrades to existing painted crosswalks. As previously mentioned, this program may soon fall under an umbrella program, the Active Transportation Program, with multiple others.

5.2.6 Safe Routes to Transit

Brawley is currently served by Imperial Valley Transit routes 50, 200, 600 and 550 (service only by request). Many transit users begin and end their trip on foot, therefore pedestrian access to transit is a critical component of a successful transit system. The City of Brawley should work with Imperial Valley Transit to enhance the transit stop environment for existing and future stops and stations. This Plan should be updated accordingly as stops and stations are added. Key components include:

- Convenient and direct pedestrian links to transit stops
- Paved landing pad to safely accommodate wheelchair boardings

- Covered passenger shelters
- Seating areas
- Posted system map, route map and schedule (additional options include real-time information display of upcoming bus arrivals)
- Lighting
- Trash receptacles

Figure 5-2: Pedestrian Improvement Locations

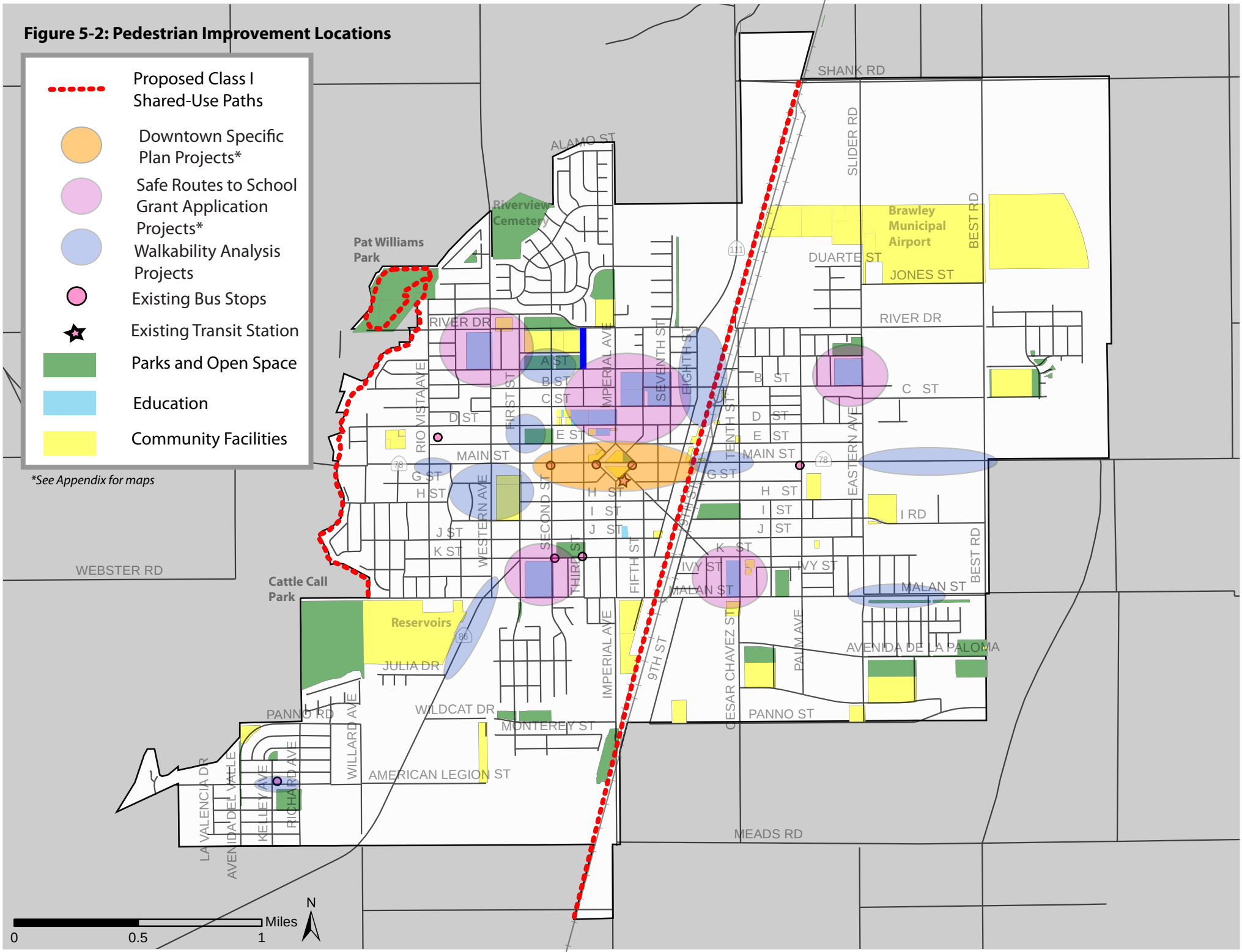


Table 5-6: Sidewalk Infill Projects

Street	From	To	Source	Length (feet)
G Street	1st Street	2nd Street	SR2S Grant Application	400
J Street	2nd Street	3rd Street	SR2S Grant Application	600
K Street	2nd Street	Imperial Avenue	SR2S Grant Application	100
Malan Street	Garrett Street	Imperial Avenue	SR2S Grant Application	275
2nd Street	Malan Street	G Street	SR2S Grant Application	850
3rd Street	Malan Street	Main Street	SR2S Grant Application	550
Gilmour Street	Malan Street	K Street	SR2S Grant Application	100
Imperial Avenue	K Street	J Street	SR2S Grant Application	100
Malan Street	Vine Avenue	Cesar Chavez Street	SR2S Grant Application	350
El Cerrito Drive	Driftwood Drive	A Street	SR2S Grant Application	450
B Street	Rio Vista Avenue	Western Avenue	SR2S Grant Application	250
Magnolia Street	13th Street	Eastern Avenue	SR2S Grant Application	650
Adler Street	Palm Avenue	Eastern Avenue	SR2S Grant Application	850
13th Street	Magnolia Street	Adler Street	SR2S Grant Application	400
N. Palm Drive	Magnolia Street	Adler Street	SR2S Grant Application	150
Eastern Avenue	River Drive	Jones Street	SR2S Grant Application	700
River Drive	Eastern Avenue	Collegrove Avenue	SR2S Grant Application	150
C Street	Imperial Avenue	5th Street	SR2S Grant Application	500
5th Street	D Street	C Street	SR2S Grant Application	150
Imperial Avenue	Reina Court	River Drive	SR2S Grant Application	400
5th Street	A Street	River Drive	SR2S Grant Application	450
2nd Street	C Street	B Street	SR2S Grant Application	150
C Street	5th Street	8th Street	SR2S Grant Application	600
B Street	7th Street	8th Street	SR2S Grant Application	450
7th Street	Magnolia Street	Adler Street	SR2S Grant Application	400

Street	From	To	Source	Length (feet)
B Street	8th Street	9th Street	SR2S Grant Application	950
Brawley Avenue (State Route 86)	Julia Drive	Malan Street	Walkability Analysis	2,000
Main Street	Rio Vista Avenue	South El Cerrito Drive	Walkability Analysis	1,000
E Street	1st Street	2nd Street	Walkability Analysis	600
8th Street	E Street	River Drive	Walkability Analysis	1,300
Main Street	Eastern Avenue	Best Road	Walkability Analysis	2,500
1st Street	D Street	E Street	Walkability Analysis	350
Western Avenue	Main Street	I Street	Walkability Analysis	2,000
11th Street	K Street	J Street	Walkability Analysis	150
Western Avenue	River Drive	A Street	Walkability Analysis	800
1st Street	Main Street	E Street	Walkability Analysis	280
Malan Street	Eastern Avenue	13th Street	Walkability Analysis	600

Table 5-7: Intersection Improvements

Intersection(s)	Improvements	Source
Brawley Avenue and K Street	High visibility crosswalks (4)	SR2S Grant Application
1st Street from J Street to I Street	High visibility crosswalks (4)	SR2S Grant Application
Malan Street from 1st Street to 2nd Street	Curb ramp (1) High visibility crosswalks (7) Pedestrian beacons (4) Driver feedback signs (2)	SR2S Grant Application
2nd Street from J Street to H Street	High visibility crosswalks (6)	SR2S Grant Application
3rd Street from J Street to H Street	High visibility crosswalks (6)	SR2S Grant Application
K Street from 2nd Street to 3rd Street	Curb ramps (5) High visibility crosswalks (7) Pedestrian beacons (4)	SR2S Grant Application
K Street from Stanley Place to Vine Avenue	High visibility crosswalks (2)	SR2S Grant Application
Cesar Chavez Street from K Street to I Street	High visibility crosswalks (2) Pedestrian beacons (4) Curb ramp (1)	SR2S Grant Application
11th Street from K Street to J Street	High visibility crosswalks (4) Yield lines (4)	SR2S Grant Application
Leonard Street from Cesar Chavez Street to 11th Street	Curb ramps (3)	SR2S Grant Application
Malan Street from Stanley Place to Guadalupe Park	Curb ramp (3) Driver feedback signs (2) Pedestrian beacons (4)	SR2S Grant Application
El Cerrito Drive from Magnolia Drive to Adler Street	High visibility crosswalks (2)	SR2S Grant Application
El Cerrito Drive from River Drive to Duarte Street	High visibility crosswalks (7) Pedestrian beacons (2)	SR2S Grant Application
B Street from El Cerrito Drive to Western Avenue	High visibility crosswalks (2) Curb ramps (4)	SR2S Grant Application
A Street from El Cerrito Drive to 1st Street	High visibility crosswalks (11) Pedestrian beacons (4) Curb ramp (1) Yield lines (6)	SR2S Grant Application
Western Avenue from River Drive to Duarte Street	High visibility crosswalks (6) Pedestrian beacons (2)	SR2S Grant Application
River Drive from Collegrove Avenue to Eastern Avenue	Curb ramp (1) High visibility crosswalk (1)	SR2S Grant Application
Adler Street and Eastern Avenue	High visibility crosswalk (1)	SR2S Grant Application

Intersection(s)	Improvements	Source
Magnolia Street from North Palm Drive to Eastern Avenue	High visibility crosswalks (5) Curb ramps (2)	SR2S Grant Application
B Street from Palm Avenue to 13th Street	High visibility crosswalks (5)	SR2S Grant Application
B Street from J.W. Oakley Elementary School to Eastern Avenue	Curb ramps (2) Illuminated crosswalk (1) High visibility crosswalks (4) Pedestrian beacons (4) Yield lines (4)	SR2S Grant Application
Western Avenue from B Street to River Way	High visibility crosswalks (7)	SR2S Grant Application
A Street and Sunset Drive	High visibility crosswalk (1)	SR2S Grant Application
A Street from 2nd Street to 3rd Street	High visibility crosswalks (7) Pedestrian beacons (6)	SR2S Grant Application
B Street from 2nd Street to 3rd Street	High visibility crosswalks (4) Yield lines (4)	SR2S Grant Application
C Street from 2nd Street to 3rd Street	High visibility crosswalks (5) Curb ramps (2)	SR2S Grant Application
D Street from 2nd Street to Imperial Avenue	High visibility crosswalks (4) Pedestrian beacons (3)	SR2S Grant Application
E Street from 2nd Street to 3rd Street	High visibility crosswalks (2) Yield lines (4)	SR2S Grant Application
5th Street from A Street to River Drive	Curb ramps (4) Driver feedback signs (2)	SR2S Grant Application
Imperial Avenue and A Street	High visibility crosswalks (4) Pedestrian refuge islands (4) Stop lines (4)	Pedestrian Safety Assessment
B Street and Imperial Avenue	High visibility crosswalks (3) Pedestrian refuge island (1) Yield lines (2) Pedestrian beacons (2)	Pedestrian Safety Assessment
Imperial Avenue and C Street	High visibility crosswalks (4) Pedestrian refuge islands (4) Stop lines (4)	Pedestrian Safety Assessment
C Street and 7th Street	High visibility crosswalks (4) Pedestrian refuge islands (4) Stop lines (4)	Pedestrian Safety Assessment
A Street and 7th Street	High visibility crosswalks (4) Pedestrian refuge islands (4) Stop lines (4)	Pedestrian Safety Assessment
A Street between Imperial Avenue and 5th Street	High visibility crosswalk (1) Curb ramps (2) Yield lines (2) Pedestrian signage (2)	Pedestrian Safety Assessment

Intersection(s)	Improvements	Source
A Street between 5th Street and 7th Street	High visibility crosswalk (1) Curb ramps (2) Yield lines (2) Pedestrian signage (2)	Pedestrian Safety Assessment
A Street and 5th Street	High visibility crosswalks (3) Pedestrian refuge island (1) Yield lines (2) Pedestrian beacons (2)	Pedestrian Safety Assessment
5th Street and C Street	High visibility crosswalks (3) Pedestrian refuge island (1) Yield lines (2) Pedestrian beacons (2)	Pedestrian Safety Assessment
C Street between Imperial Avenue and 5th Street	High visibility crosswalk (1) Curb ramps (2) Yield lines (2) Pedestrian signage (2)	Pedestrian Safety Assessment
C Street between 5th Street and 7th Street	High visibility crosswalk (1) Curb ramps (2) Yield lines (2) Pedestrian signage (2)	Pedestrian Safety Assessment
7th Street and B Street	Curb ramp (1)	SR2S Grant Application
5th Street from Magnolia Street to Adler Street	Curb ramps (6)	SR2S Grant Application
Main Street and 1st Street	High visibility crosswalks (4)	Downtown Specific Plan & Pedestrian Safety Assessment
Main Street and 2nd Street	Curb extensions (2) High visibility crosswalks (4) Pedestrian refuge island (1) Yield lines (2)	Downtown Specific Plan & Pedestrian Safety Assessment
Main Street and 3rd Street	High visibility crosswalks (4)	Downtown Specific Plan & Pedestrian Safety Assessment
Main Street and Plaza Streets (west)	Curb extensions (2) Pedestrian refuge island (!) High visibility crosswalks (2) Pedestrian beacons (2)	Downtown Specific Plan & Pedestrian Safety Assessment
Main Street between Plaza Streets	Illuminated crosswalk (1)	Downtown Specific Plan & Pedestrian Safety Assessment
Main Street and Plaza Streets (east)	Curb extensions (4) High visibility crosswalks (2) Pedestrian beacons (2)	Downtown Specific Plan & Pedestrian Safety Assessment
North Plaza Street between Main Street and Imperial Avenue (west)	High visibility crosswalks (6) Curb extensions (2) Yield line (1)	Downtown Specific Plan & Pedestrian Safety Assessment

Intersection(s)	Improvements	Source
South Plaza Street between Main Street and Imperial Avenue (east)	High visibility crosswalks (6) Curb extensions (2) Yield line (1)	Downtown Specific Plan & Pedestrian Safety Assessment
South Plaza Street between Main Street and Imperial Avenue (west)	High visibility crosswalks (6) Curb extensions (2) Yield line (1)	Downtown Specific Plan & Pedestrian Safety Assessment
South Plaza Street between Main Street and Imperial Avenue (east)	High visibility crosswalks (6) Curb extensions (2) Yield line (1)	Downtown Specific Plan & Pedestrian Safety Assessment
G Street and 3rd Street	High visibility crosswalks (2)	Downtown Specific Plan & Pedestrian Safety Assessment
Main Street between Plaza Streets and 6th Street	High visibility crosswalks (1) Pedestrian beacons (2) Yield lines (2)	Downtown Specific Plan & Pedestrian Safety Assessment
Main Street and 6th Street	High visibility crosswalks (4) Pedestrian push buttons (8) Pedestrian countdown signals (8)	Downtown Specific Plan & Pedestrian Safety Assessment
Main Street between 6th Street and 8th Street	High visibility crosswalk (1) Curb ramps (2)	Downtown Specific Plan & Pedestrian Safety Assessment
Main Street and 8th Street	High visibility crosswalks (4) Curb extension (1) Pedestrian refuge islands (2)	Downtown Specific Plan & Pedestrian Safety Assessment
Main Street and 9th Street	High visibility crosswalks (4)	Downtown Specific Plan & Pedestrian Safety Assessment
Main Street and Cesar Chavez Street	High visibility crosswalks (4)	Downtown Specific Plan & Pedestrian Safety Assessment
G Street from 5th Street to Cesar Chavez Street	High visibility crosswalks (18) Curb ramps (3)	Downtown Specific Plan & Pedestrian Safety Assessment
8th Street between Main Street and G Street	High visibility crosswalk (1) Curb ramps (1)	Downtown Specific Plan & Pedestrian Safety Assessment
E Street from 6th Street to 8th Street	High visibility crosswalks (10) Curb ramps (2)	Downtown Specific Plan & Pedestrian Safety Assessment
E Street and 5th Street	High visibility crosswalks (3) Curb ramps (2) Pedestrian beacons (3) Yield lines (3)	Downtown Specific Plan & Pedestrian Safety Assessment
5th Street between Plaza Street and G Street	High visibility crosswalk (1) Curb ramps (3) Illuminated crosswalk (1)	Downtown Specific Plan & Pedestrian Safety Assessment

Intersection(s)	Improvements	Source
A Street and 1st Street	High visibility crosswalks (4) Curb extensions (4) Stop lines (2) Pedestrian beacons (2) Pedestrian signage (4)	Walkability Analysis
Main Street between El Cerrito Drive and Western Avenue	High visibility crosswalk (1) Curb extensions (2) Pedestrian signage (2) Curb ramps (2)	Walkability Analysis
1st and E Street	Stop lines (4) High visibility crosswalks (4) Fencing (15 feet)	Walkability Analysis
8th Street and B street	Stop lines (2) High visibility crosswalks (4) Curb ramps (4)	Walkability Analysis
11th Street and K Street	High visibility crosswalks (4) Curb extensions (4) Pedestrian signage (4)	Walkability Analysis
Legion Road at Pioneer Hospital	High visibility crosswalk (1) Pedestrian beacons (2) Yield lines (2)	Walkability Analysis
Main Street and 9th Street	High visibility crosswalk (1) Yield lines (2) Pedestrian beacon (1)	Walkability Analysis
Malan Street and Avenida de la Colimbo	High visibility crosswalks (4) Curb ramps (4)	Walkability Analysis
Rio Vista Avenue and E Street	High visibility crosswalks (2) Yield lines (2) Flashing beacons (2)	Walkability Analysis

5.3 Traffic Calming Recommendations

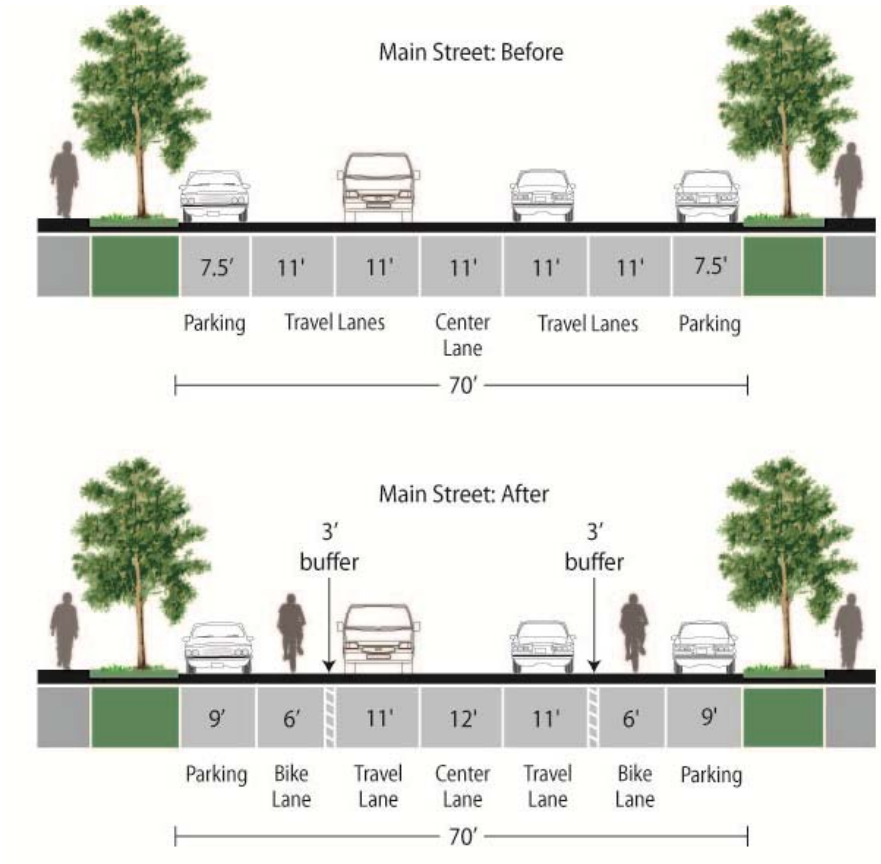
Traffic calming is an important aspect of creating safer streets in Brawley. This Plan proposes three traffic calming recommendations that will complement the recommended bicycle and pedestrian improvements and make Brawley a safer place for non-motorized transportation.

Main Street Road Diet

Main Street is a major hub of activity in Brawley. This includes the downtown area, the plaza with government buildings, and a transit station on South Plaza Street. This street has also had many collisions within the past three years, making it an ideal place for traffic calming. Community members requested improvements on this road. The City has recently acquired ownership of this corridor from 1st Street east from Caltrans. This road diet would be from 1st Street to Slider Road. Figure 5-3 depicts a typical cross section and road diet. Improvements include the following:

- High visibility ladder crosswalks
- Bicycle lanes: remove one vehicle lane on both sides of the road. This would create room for a six foot bicycle lane on both sides, with buffers on the left and right, providing bicyclists with safety from vehicles to their left and parked cars on their right

Figure 5-3: Main Street Road Diet Cross Section



State Route 86

State Route 86 has experienced multiple bicycle and pedestrian collisions within the past three years. Traffic calming measures that can be done to this corridor include the following:

- Re-stripe or install high visibility crosswalks
- Small, raised median islands in center turn lanes

This corridor is currently owned by Caltrans, therefore close coordination between the City and Caltrans is necessary to make any modifications to State Route 86. The City of Brawley and Caltrans are currently working to transfer ownership of this corridor from Caltrans to the City. When this transfer of ownership is complete, the City will have greater flexibility in modifying the roadway.

K Street

K Street is an important east-west corridor in Brawley. This corridor has experienced multiple bicycle and pedestrian collisions within the past three years. It is also a corridor that was mentioned multiple times by community input. This Plan recommends that the City considers the following improvements to K Street:

- High visibility crosswalks
- Flashing pedestrian beacons at unsignalized crosswalks
- Install sidewalks across the railroad from 8th Street to 9th Street

5.4 Recommended Programs

5.4.1 Education

Education programs enable bicyclists, pedestrians, and motorists to understand how to travel safely in the roadway environment according to the law. Education programs are available in an array of mediums, from long-term courses with detailed instruction to single sessions focusing on a specific topic.

Children's Bicycle Safety Clinics

Children's bicycle safety clinics are individual events that help students develop basic bicycling techniques and safety skills through the use of a bicycle safety course. The clinics use playgrounds or parking lots set-up with stop signs, traffic cones, and other props to simulate the roadway environment. Students receive instruction on how to maneuver, observe stop signs, and look for on-coming traffic before proceeding through intersections. Children's bicycle safety clinics also provide an opportunity for instructors to ensure children's helmets and bicycles are appropriately sized. Events can include free or low cost helmet distribution and bike safety checks.

The City should work with elementary and middle schools, trained adult volunteers, local police, and the fire department to administer children's bicycle safety clinics. The clinics can be stand-alone events or can be incorporated into health fairs, back-to-school events, and Walk and Bike to School days.

Public Awareness Campaigns

Bicyclists and pedestrians often come into conflict with other modes of transportation because the general public is not expecting to see them on the road. A public awareness campaign can increase visibility of bicyclists and pedestrians, and highlight their rights and responsibilities to all road users. New York City, for example, has a "Look"

campaign that uses various media formats to remind residents to look for bicyclists.[14] A similar campaign in Brawley that educates the public on the presence of bicyclists and pedestrians can reduce potential conflicts and create a more bicycle- and pedestrian-friendly city. The campaign should be conducted using a wide range of media to reach a diverse population.

Biking and Walking Map/Guide

One of the most effective ways of making people aware of bicycling and walking as a transportation alternative is to distribute maps and guides to show that the infrastructure exists. A map can also demonstrate the ease in accessing different parts of the community by biking and walking, and highlight unique areas, shopping districts, or recreational areas. Brawley could develop a city-wide map, which could be available on paper and/or online. The City could distribute the maps and guides to residents by mail to reach a broader population.

Schools may create specialized biking and walking maps to direct students to walk and bicycle along the safest routes to school, such as those already identified in the Suggested Routes to School maps. These specialized maps may include arrows to indicate the routes and show stop signs, signals, crosswalks, sidewalks, trails, overcrossings, and crossing guard locations surrounding the school. The maps could focus on the attendance boundary of a particular school. Routes should take advantage of low volume residential streets and off-street facilities such as bike paths, sidewalks, and pedestrian bridges.

Informational Website

A common statement from bicyclists and pedestrians is that they are unfamiliar with the rules and regulations regarding non-motorized transportation, as well as the locations of effective bikeways, walkways, and support facilities. The City of Brawley should host a webpage through its website dedicated to bicycling and walking issues. The webpage can include general bicycle- and pedestrian-related California Vehicle Code regulations, Municipal Code ordinances, excerpts from this Bicycle and Pedestrian Master Plan, news about upcoming events, and other relevant topics. The City could also work with local advocacy groups to post information on their websites.

Wrong Way Riding Campaign/Program

As noted in the collision analysis, most of the collisions when the bicyclist was at fault were due to wrong way riding. The City of Brawley's Police Department should develop a campaign to increase enforcement of bicyclists riding the wrong way and educate bicyclists as to why it is dangerous. This campaign could include installing signage similar to that in the City of Los Angeles on Jefferson Boulevard near USC, which says "Wrong Way" and has a bicycle graphic. These signs are posted on the back of poles so that bicyclists riding the wrong way are informed that this is not proper bicycling.

5.4.2 Encouragement

Encouragement programs focus on encouraging people to bicycle more frequently by providing incentives, recognition, or services that make bicycling and walking more convenient and viable transportation modes.

[14] http://www.nyc.gov/html/look/html/about/what_we_do_text.shtml

Safe Routes to School

Encouraging children to walk and bicycle to school can improve health and can reduce congestion, traffic dangers, and air pollution caused by parents driving children to school. Safe Routes to School (SR2S) programs use the "5 Es" approach using Engineering, Education, Enforcement, Encouragement, and Evaluation strategies to improve safety and encourage children walking and biking to school. The programs are usually run by a coalition of city government, school and school district officials, teachers, parents, students, and neighborhood volunteers.

The City of Brawley should initiate a SR2S program as part of the implementation of this Plan. Since some proposed facilities are located adjacent to schools, the City may have increased funding opportunities for installation.

Commuter Incentive Programs

A Commuter Incentive Program encourages people to commute by non-motorized transportation and to make the general public aware that bicycling and walking are practical modes of transportation. San Luis Obispo (SLO) Regional Rideshare, for example, organizes the "Commute for Cash Challenge" every October as part of "Rideshare Month" in which commuters log the miles that they commute using alternative transportation for a chance to win prizes.[15] This program could serve as a starting point for a more permanent commuter incentive program during the rest of the year.

As part of a commuter incentive program, the City could also set up a commuter matching program to address residents' concerns about safety while biking and walking. This could be an online message board or an interactive mapping exercise to help put interested residents in contact with one another.

5.4.3 Enforcement

Motorists, pedestrians and bicyclists alike are sometimes unaware of each other's rights as they travel city streets. Enforcement programs target unsafe bicyclist, pedestrian, and motorist behaviors and enforce laws that reduce collisions and conflicts. Enforcement fosters mutual respect between roadway users and improves safety. These programs generally require coordination between law enforcement, transportation agencies, and bicycling/walking organizations. Educating the public through enforcement policies will supplement the physical improvements made in Brawley.

Speed Radar Trailer/Speed Feedback Signs

Speed radar trailers can help reduce traffic speeds and enforce speed limits in areas with speeding problems. Police set up an unmanned trailer that displays the speed of approaching motorists along with speed limit sign. Speed trailers may be effective on busier arterial roads without bikeway facilities or near schools with reported speeding.

Speed trailers work as both an educational and enforcement tool. By itself, the unmanned trailer educates motorists about their current speed in relation to the speed limit. Speed trailers can transport easily to streets where local residents complain about speeding problems.

The Brawley Police Department should station officers near the trailer to issue speeding citations when speeding continues to occur. It is recommended that City staff provide the management role for this program, working with the

[15] http://www.rideshare.org/RideshareMonth2012/win.aspx

public to determine which locations are in most need. This program can be administered randomly, cyclically, or as demand necessitates because of the speed trailers' portability.

Targeted Bicycling/Walking Enforcement

Traffic enforcement agencies enforce laws pertaining to bicyclists and pedestrians as part of their responsible normal operations. Directed enforcement is one way to publicize non-motorized transportation laws in a highly visible and public manner. Examples of directed enforcement actions that the Brawley Police Department could undertake include intersection patrols, handing out informational sheets to motorists, bicyclists and pedestrians; and enforcing speed limits and right-of-way.

Targeted Driving Enforcement

Much like directed enforcement for bicyclists, police departments can target enforcement of motorists for bicycle- and pedestrian-related violations. Common actions of drivers that create potential conflicts with bicyclists and pedestrians include parking in bike lanes, not sharing the road, and not yielding to people crossing the street. Directing enforcement at these actions can create a safer non-motorized transportation environment in Brawley and address residents' concerns about motorist behavior as noted in the online survey.

Bicycle Patrol Units

On-bike officers are an excellent tool for community and neighborhood policing because they are more accessible to the public and able to mobilize in areas where patrol cars cannot (e.g., overcrossings and paths). Bike officers undergo special training in bicycle safety and bicycle-related traffic laws and are therefore especially equipped to enforce laws pertaining to bicycling. Bicycle officers help educate bicyclists and motorists through enforcement and also serve as excellent outreach personnel to the public at parades, street fairs, and other gatherings.

5.4.4 Evaluation

In order to track the progress of the Brawley Bicycle and Pedestrian Master Plan, it is critical that the City monitor and evaluate changes in bicycling.

Annual Counts and Surveys

Partnering with local advocacy groups and volunteers to conduct annual bicycle and pedestrian counts is a mechanism for tracking trends in non-motorized transportation over time and for evaluating the impact of projects, policies, and programs from this Plan. Ongoing count data will enable the City to analyze changes in bicycling and walking activity and to evaluate the impact of new infrastructure. The City should at minimum conduct counts at the same locations used as part of this Plan.

Annual surveys measure "attitudes" about bicycling and walking. These surveys could be conducted either as online surveys or intercept surveys. Surveys determine if bicyclists, pedestrians, and other community members are reacting positively or negatively to new facilities and programs implemented.

Dedicated Staff Time

A number of jurisdictions around the country staff a part- or full-time position to coordinate non-motorized transportation activities. Agencies with such a position usually experience greater success in plan implementation.

The City of Brawley should incorporate the responsibility of non-motorized transportation planning into an existing staff position to assist with the current planning and safety efforts, implementation of this Plan, and pursuing grant funding opportunities. In addition to supporting existing programs, potential job duties for this staff position are listed below:

- Monitoring facility planning, design, and construction that may impact bicycling and walking
- Coordinating the implementation of the recommended projects and programs listed in this Plan
- Identifying new projects and programs that would improve the city's bicycling and walking environments and improve safety for bicyclists, pedestrians, and motorists
- Coordinating evaluation of projects and programs, such as counts
- Coordination of projects with neighboring jurisdictions
- Pursuing funding sources for project and program implementation

Non-Motorized Transportation Report Card

A non-motorized transportation report card will provide an annual snapshot of relevant bicycling metrics to track the efforts of the NMTP. Results from bicycle/pedestrian counts and user surveys, updates collision data, and recently completed improvement projects and new bikeway facility miles should be included in the report card. The report card should compare the changes and accomplishments from year to year, which will help focus the following year's improvements and goals.

Maintenance Program

Bicycle and pedestrian facilities experience wear-and-tear issues similar to roadways for automobiles. Sidewalks can become cracked from tree routes and bikeways can become uneven from worn pavement. These issues create safety hazards for non-motorized transportation users. Establishing a maintenance program to help repair bicycle and pedestrian facilities will improve safety. This program can include a website or phone number for the public to report areas in need of maintenance, as well as regular schedule for repairing facilities.

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Chapter 6. Implementation

This section outlines the prioritization methodology for bicycle and pedestrian recommendations in Brawley. The purpose of the ranking process is to create a prioritized list of projects for implementation. The project lists and rankings are flexible concepts that serve as guidelines to the implementation process. The list may change over time due to changing bicycling and walking patterns, implementation opportunities and constraints, and the development of other transportation system facilities.

6.1 Bicycle Project Prioritization

This section presents the criteria used for evaluating bicycle system projects proposed in this Plan. Evaluation criteria are important for providing the City a clearly-defined implementation "roadmap," especially in a climate where limited financial resources require establishment of implementation priorities.

Using the project goals and objectives as guidance, the Project Team developed criteria to evaluate specific projects against one another, and to ultimately prioritize recommendations to best meet Brawley's existing and future system needs. The descriptions discuss each criterion's intent and how a particular project would derive a higher "rating."

6.1.1 Prioritization Factors

Gap Closure

Gaps in the bicycle network come in a variety of forms, ranging from a "missing link" on a roadway to larger geographic areas without bicycle facilities. Gaps in the bikeway network discourage bicycle use because they limit access to key destinations and land uses. Facilities that fill a gap in the existing and proposed bicycle network are of high priority.

Connectivity to Existing Facilities

Proposed bikeways that connect to existing bicycle facilities in Brawley increase the convenience of bicycle commuting. Proposed facilities that fit this criterion are of high importance to the City.

Connectivity to Planned Facilities

Connecting the regional bicycle network to the existing and proposed facilities within the city is very important to enhance bicycle travel. The City's proposed bikeways will eventually become existing bicycle facilities and thus facilities that link to them will enhance future connectivity.

Connectivity to Activity Centers

Activity centers include major commuter destinations, like commercial and employment centers, and outdoor recreational facilities. These locations generate many trips which could be made by bicycle if the proper facilities were available. Bicycle facilities on roadways that connect to activity centers are of priority to the City.

Connectivity to Schools

Since most school-aged children are not old enough to obtain a drivers license, many students commute by bicycling. Providing proper bicycle facilities and access to schools can give children a safer commute.

Safety

Bicycle facilities have the potential to increase safety by reducing the potential conflicts between bicyclists and motorists, which often result in collisions. Proposed facilities that are located on roadways with past bicycle-automobile collisions are important to the City.

Public Input

The City of Brawley solicited public input through community workshops and an online survey. Facilities that community members identified as desirable for future bicycle facilities are of priority to the network because they address the needs of the public.

Project Cost

Projects that are less expensive do not require as much funding as other projects and are therefore easier to implement. Projects that cost less are of higher priority to the City.

6.1.2 Project Ranking

Table 6-1 shows how the criteria described in the previous section translate into weights for project prioritization and ranking. Weights are based on direct, secondary, or no service at all. Direct service means that a facility intersects with a facility/destination, whereas secondary access occurs when the primary facility runs in close proximity to an existing facility/destination. Table 6-2 presents the list of projects prioritized, the project cost estimate, and total project score.

Table 6-1: Proposed Facilities Ranking Criteria

Criteria	Score	Multiplier	Total	Description
Gap Closure	2	3	6	Fills a network gap between two existing facilities
	1		3	Fills a network gap between an existing facility and a proposed facility
	0		0	Does not directly or indirectly fill a network gap
Connectivity: Existing	2	3	6	Provides direct access to an existing bicycle facility
	1		3	Provides secondary connectivity to an existing bicycle facility
	0		0	Does not directly or indirectly access an existing bicycle facility
Connectivity: Planned	2	3	6	Provides direct access to a proposed bicycle facility
	1		3	Provides secondary access to a proposed bicycle facility
	0		0	Does not provide access to a proposed bicycle facility
Connectivity: Activity Centers	2	3	6	Provides direct access to a major trip-generating destination
	1		3	Provides secondary connectivity to a major trip-generating destination
	0		0	Does not directly or indirectly access an Activity Center
Connectivity to Schools	2	2	4	Provides direct access to an educational facility (within ¼ mile).
	1		2	Provides secondary access to an educational facility (within ½ mile)
	0		0	No direct access to an educational facility
Safety	2	1	2	Bicycle facility on a roadway that experienced 2 or more bicycle collisions between 2007-2011
	1		1	Bicycle facility on a roadway that experienced 1 bicycle collisions between 2007-2011
	0		0	Bicycle facility on a roadway that did not experience any bicycle collisions between 2007-2011
Public Input	2	1	2	Roadway was identified by the public as desirable for a future facility multiple times
	1		1	Roadway was identified by the public as desirable for a future facility once
	0		0	Roadway was not identified by the public as desirable for a future facility
Project Cost	4	1	4	Project cost up to $30,000
	3		3	Project cost $30,000-$100,000
	2		2	Project cost $100,000-$300,000
	1		1	Project cost $300,000-$1,000,000
	0		0	Project cost $1,000,000+
36				**Maximum Potential Score**

Table 6-2: Proposed Bicycle Facilities by Rank

Name	To	From	Class	Mileage	Project Cost Estimate	Final Score
K Street	Western Avenue	Eastern Avenue	2	1.5	$60,000	35
A Street	Rio Vista Avenue	Eighth Street	2	1.9	$77,000	34
Malan Street	Rio Vista Avenue	Best Road	2	2.3	$90,000	34
River Drive	Rio Vista Avenue	Seventh Street	2	1.0	$39,000	34
North Plaza Street	Main Street	Main Street	3	0.2	$5,500	34
South Plaza Street	Main Street	Main Street	3	0.2	$5,500	34
Main Street	Western Avenue	South Plaza Street	2	1.0	$41,500	32
Tenth Street	B Street	Malan Street	2	0.9	$34,000	32
C Street	Second Street	Fifth Street	2	0.4	$14,500	31
D Street	Rio Vista Avenue	Third Street	2	0.5	$20,000	31
C Street	Fifth Street	Eighth Street	3	0.2	$5,500	31
D Street	Imperial Avenue	Seventh Street	3	0.3	$7,500	31
Main Street	South Plaza Street	Eastern Avenue	2	1.5	$56,500	30
C Street	Eastern Avenue	Best Road	2	0.5	$19,500	30
Seventh Street	River Drive	B Street	2	0.2	$9,500	30
State Route 86	K Street	City Boundary South	2	1.2	$47,500	29
Cattle Call Drive	Cattle Call Park	Rio Vista Avenue	3	0.3	$6,500	29
Eighth Street	River Drive	K Street	3	1.0	$24,000	28
Jones Street	Rio Vista Avenue	Western Avenue	3	0.3	$6,500	28
Flammang Ave	Rio Vista Avenue	Imperial Avenue	3	0.5	$12,500	27
Third Street	Main Street	Malan Street	3	0.6	$15,500	27
I Street	Western Avenue	Eighth Street	2	0.7	$27,500	27
Palm Avenue	River Drive	Malan Street	2	1.1	$43,500	27
State Route 111 (Old)	Eighth Street	Shank Road	3	1	$26,500	27
E Street	Rio Vista Avenue	North Plaza Street	3	0.5	$9,000	26
Railroad Path	City Boundary North	City Boundary South/County Road	1	3.5	$2,803,500	26
River Drive	Tenth Street	Best Road	2	1	$39,500	25
Rio Vista Avenue	Jones Street	Cattle Call Drive	3	1.2	$30,000	25
Park Connector	Pat Williams Park	Cattle Call Park	1	1.5	$1,314,000	25
I Drive	Ninth Street	Best Road	2	1	$39,500	24
Fifth Street	C Street	North Plaza Street	3	0.2	$5,500	23
River Drive	Rio Vista Avenue	Ted Williams Park Trail	3	0.1	$1,000	22
Imperial Avenue	Malan Street	Dogwood Road	2	1	$40,000	22

Name	To	From	Class	Mileage	Project Cost Estimate	Final Score
G Street	Fifth Street	Ninth Street	3	0.3	$6,500	22
Jones Street	Flammang Avenue	Imperial Avenue	3	0.6	$15,000	22
Fifth Street	South Plaza Street	K Street	3	0.5	$13,500	22
First Street	River Drive	Julia Drive	2	1.4	$54,000	21
Second Street	C Street	D Street	2	0.2	$9,000	21
Willard Avenue	Cattle Call Drive	American Legion Street	3	0.8	$19,500	21
Jones Street	Eastern Avenue	Best Road	2	0.8	$19,500	21
G Street	First Street	South Plaza Street	3	0.4	$9,000	21
Third Street	River Drive	A Street	2	0.2	$6,500	20
Tenth Street	Malan Street	Panno Road	3	0.5	$13,000	18
Best Road	State Route 78	Malan Street	2	1.8	$71,500	18
J Street	Terrace Circle	Western Avenue	2	0.5	$21,500	18
American Legion Road	State Route 86	La Valencia Drive	2	0.7	$29,000	17
Pat Williams Park Path	Pat Williams Park	Pat Williams Park	1	1	$672,000	17
Ninth Street	G Street	K Street	2	0.2	$9,500	16
Best Road	Jones Street	State Route 111 (Old)	3	0.8	$20,500	16
Best Road	Malan Street	Meads Road	3	1	$25,500	16
Avenida de Colimbo	Malan Street	Avenida de la Paloma	3	0.3	$6,000	15
Panno Road	Willard Avenue	American Legion Road	3	0.7	$17,000	15
Richard Avenue	Panno Road	Calle Estrella	3	0.5	$12,500	15
H Street	Ninth Street	Tenth Street	2	0.2	$7,000	15
B Street	Park Path	Rio Vista Avenue	3	0.3	$6,000	13
H Street	Park Path	Rio Vista Avenue	3	0.4	$9,000	13
Monterey Street	Dogwood Road	First Street	3	0.4	$10,000	12
Avenida Del Valle/Panno Road	American Legion Road	Calle Estrella	3	0.3	$6,500	10
Calle Estrella	Avenida Del Valle	Richard Avenue	3	0.2	$6,000	10
Total				***46***	***$6,137,000***	

6.2 Pedestrian Project Prioritization

A total of 111 pedestrian projects are recommended in this Plan. As a preliminary step in the prioritization process, the Project Team identified a subset of priority enhancements using safety as a primary criterion. This subset generally consists of projects along corridors exhibiting characteristics that could adversely impact pedestrian comfort and safety (e.g., higher vehicle volumes and speeds, and/or pedestrian conflicts with other transportation modes). Subsequently targeted for nearer-term implementation, these approximately 45 projects were then screened against the evaluation criteria (displayed in Table 6-3) to provide more specific phasing guidance. The evaluation results are presented in Table 6-4 and in Table 6-5. The remaining 45 projects with a "final score" are targeted for nearer-term implementation, while remaining projects are targeted for longer-term implementation.

Table 6-3: Pedestrian Project Criteria

Criteria	Score	Multiplier	Total	Description
Connectivity to Activity Centers	2	3	6	Provides direct access to a major trip-generating destination.
	1		3	Provides secondary connectivity to a major trip-generating destination.
	0		0	Does not directly or indirectly access an activity center.
Connectivity to Schools	2	3	6	Provides direct access to an educational facility (within ¼ mile).
	1		3	Provides secondary access to an educational facility (within ½ mile)
	0		0	Does not provide direct or secondary access to an educational facility.
Connectivity to Transit	2	3	6	Provides direct access to a transit stop (within ¼ mile).
	1		3	Provides direct access to a transit stop (within ½ mile).
	0		0	Does not provide direct or secondary access to a transit stop.
Safety	2	2	4	Project has had 2 or more pedestrian related collisions within 1/8 mile buffer of the improvement from 2007 to 2011.
	1		2	Project has had 1 pedestrian related collision within an eighth mile buffer of the improvement from 2007 to 2011.
	0		0	Project has not had any pedestrian related collisions between 2007 and 2011.
Public Input	2	2	4	Project location was identified by the public as desirable for improvements multiple times.
	1		2	Project location was identified by the public as desirable for improvements once.
	0		0	Project location was not identified by the public as a desirable place for improvements.
Project Cost	3	1	3	Project cost $0-$50,000
	2		2	Project cost $50,001-$100,000
	1		1	Project cost $100,001-$200,000
	0		0	Project cost $200,001+
Roadway Type	1	1	1	Project is on an arterial roadway.
	0		0	Project is on a collector roadway.
30				**Maximum Potential Score**

Table 6-4: Sidewalk Infill Projects by Rank

Street	From	To	Source	Length (feet)	Project Cost Estimate	Final Score
8th Street	E Street	River Drive	Walkability Analysis	1,300	$117,000	28
Malan Street	Garrett Street	Imperial Avenue	SR2S Grant Application	275	$24,750	26
Brawley Avenue (State Route 86)	Julia Drive	Malan Street	Walkability Analysis	2,000	$180,000	25
Imperial Avenue	K Street	J Street	SR2S Grant Application	100	$9,000	22
Imperial Avenue	Reina Court	River Drive	SR2S Grant Application	400	$36,000	22
Western Avenue	Main Street	I Street	Walkability Analysis	2,000	$180,000	21
Malan Street	Vine Avenue	Cesar Chavez Street	SR2S Grant Application	350	$31,500	20
Eastern Avenue	River Drive	Jones Street	SR2S Grant Application	700	$63,000	19
River Drive	Eastern Avenue	Collegrove Avenue	SR2S Grant Application	150	$13,500	19
Western Avenue	River Drive	A Street	Walkability Analysis	800	$72,000	19
Malan Street	Eastern Avenue	13th Street	Walkability Analysis	600	$54,000	16
Main Street	Eastern Avenue	Best Road	Walkability Analysis	2,500	$225,000	15
Main Street	Rio Vista Avenue	South El Cerrito Drive	Walkability Analysis	1,000	$90,000	12
G Street	1st Street	2nd Street	SR2S Grant Application	400	$36,000	N/A*
J Street	2nd Street	3rd Street	SR2S Grant Application	600	$54,000	N/A*
K Street	2nd Street	Imperial Avenue	SR2S Grant Application	100	$9,000	N/A*
2nd Street	Malan Street	G Street	SR2S Grant Application	850	$76,500	N/A*
3rd Street	Malan Street	Main Street	SR2S Grant Application	550	$49,500	N/A*
Gilmour Street	Malan Street	K Street	SR2S Grant Application	100	$9,000	N/A*
El Cerrito Drive	Driftwood Drive	A Street	SR2S Grant Application	450	$40,500	N/A*
B Street	Rio Vista Avenue	Western Avenue	SR2S Grant Application	250	$22,500	N/A*
Magnolia Street	13th Street	Eastern Avenue	SR2S Grant Application	650	$58,500	N/A*
Adler Street	Palm Avenue	Eastern Avenue	SR2S Grant Application	850	$76,500	N/A*
13th Street	Magnolia Street	Adler Street	SR2S Grant Application	400	$36,000	N/A*

N. Palm Drive	Magnolia Street	Adler Street	SR2S Grant Application	150	$13,500	N/A*
C Street	Imperial Avenue	5th Street	SR2S Grant Application	500	$45,000	N/A*
5th Street	D Street	C Street	SR2S Grant Application	150	$13,500	N/A*
5th Street	A Street	River Drive	SR2S Grant Application	450	$40,500	N/A*
2nd Street	C Street	B Street	SR2S Grant Application	150	$13,500	N/A*
C Street	5th Street	8th Street	SR2S Grant Application	600	$54,000	N/A*
B Street	7th Street	8th Street	SR2S Grant Application	450	$40,500	N/A*
7th Street	Magnolia Street	Adler Street	SR2S Grant Application	400	$36,000	N/A*
B Street	8th Street	9th Street	SR2S Grant Application	950	$85,500	N/A*
E Street	1st Street	2nd Street	Walkability Analysis	600	$54,000	N/A*
1st Street	D Street	E Street	Walkability Analysis	350	$31,500	N/A*
11th Street	K Street	J Street	Walkability Analysis	150	$13,500	N/A*
1st Street	Main Street	E Street	Walkability Analysis	275	$25,000	N/A*
Total				***12,175***	***$2,029,750***	

**N/A= these projects are targeted for longer-term implementation, per the discussion at the introduction of Section 6.2.*

Table 6-5: Crossing Improvement Projects by Rank

Intersection(s)	Improvements	Source	Project Cost Estimate	Final Score
Main Street and 3rd Street	High visibility crosswalks (4)	Downtown Specific Plan & Pedestrian Safety Assessment	$5,000	30
Main Street and 1st Street	High visibility crosswalks (4)	Downtown Specific Plan & Pedestrian Safety Assessment	$5,000	28
Main Street and Plaza Streets (east)	Curb extensions (4), High visibility crosswalks (2), Pedestrian beacons (2)	Downtown Specific Plan & Pedestrian Safety Assessment	$222,500	27
Main Street and 6th Street	High visibility crosswalks (4), Pedestrian push buttons (8), Pedestrian countdown signals (8)	Downtown Specific Plan & Pedestrian Safety Assessment	$17,500	27
Brawley Avenue and K Street	High visibility crosswalks (4)	SR2S Grant Application	$5,000	26
Imperial Avenue and A Street	High visibility crosswalks (4), Pedestrian refuge islands (4), Stop lines (4)	Pedestrian Safety Assessment	$125,000	26
Main Street and 2nd Street	Curb extensions (2), High visibility crosswalks (4), Pedestrian refuge island (1), Yield lines (2)	Downtown Specific Plan & Pedestrian Safety Assessment	$135,000	26
Main Street between Plaza Streets	Illuminated crosswalk (1)	Downtown Specific Plan & Pedestrian Safety Assessment	$127,500	26
Main Street between Plaza Streets and 6th Street	High visibility crosswalks (1), Pedestrian beacons (2), Yield lines (2)	Downtown Specific Plan & Pedestrian Safety Assessment	$21,000	26
North Plaza Street between Main Street and Imperial Avenue (west)	High visibility crosswalks (6), Curb extensions (2), Yield line (1)	Downtown Specific Plan & Pedestrian Safety Assessment	$107,000	25
South Plaza Street between Main Street and Imperial Avenue (east)	High visibility crosswalks (6), Curb extensions (2), Yield line (1)	Downtown Specific Plan & Pedestrian Safety Assessment	$107,000	25
South Plaza Street between Main Street and Imperial Avenue (west)	High visibility crosswalks (6), Curb extensions (2), Yield line (1)	Downtown Specific Plan & Pedestrian Safety Assessment	$107,000	25
South Plaza Street between Main Street and Imperial Avenue (east)	High visibility crosswalks (6), Curb extensions (2), Yield line (1)	Downtown Specific Plan & Pedestrian Safety Assessment	$107,000	25
Main Street between 6th Street and 8th Street	High visibility crosswalk (1), Curb ramps (2)	Downtown Specific Plan & Pedestrian Safety Assessment	$21,000	25

Intersection(s)	Improvements	Source	Project Cost Estimate	Final Score
Main Street and 9th Street	High visibility crosswalk (1), Yield lines (2), Pedestrian beacon (1)	Walkability Analysis	$12,500	25
Main Street and Plaza Streets (west)	Curb extensions (2), Pedestrian refuge island (1), High visibility crosswalks (2), Pedestrian beacons (2)	Downtown Specific Plan & Pedestrian Safety Assessment	$152,500	24
1st Street from J Street to I Street	High visibility crosswalks (4)	SR2S Grant Application	$5,000	23
Malan Street from 1st Street to 2nd Street	Curb ramp (1), High visibility crosswalks (7), Pedestrian beacons (4), Driver feedback signs (2)	SR2S Grant Application	$700,000	23
Cesar Chavez Street from K Street to I Street	High visibility crosswalks (2), Pedestrian beacons (4), Curb ramp (1)	SR2S Grant Application	$54,500	23
Main Street and 8th Street	High visibility crosswalks (4), Curb extension (1), Pedestrian refuge islands (2)	Downtown Specific Plan & Pedestrian Safety Assessment	$115,000	23
8th Street between Main Street and G Street	High visibility crosswalk (1), Curb ramps (1)	Downtown Specific Plan & Pedestrian Safety Assessment	$21,000	23
8th Street and B street	Stop lines (2), High visibility crosswalks (4), Curb ramps (4)	Walkability Analysis	$25,000	23
Western Avenue from B Street to River Way	High visibility crosswalks (7)	SR2S Grant Application	$8,500	22
Malan Street from Stanley Place to Guadalupe Park	Curb ramp (3), Driver feedback signs (2), Pedestrian beacons (4)	SR2S Grant Application	$65,000	21
Main Street and Cesar Chavez Street	High visibility crosswalks (4)	Downtown Specific Plan & Pedestrian Safety Assessment	$5,000	20
Western Avenue from River Drive to Duarte Street	High visibility crosswalks (6), Pedestrian beacons (2)	SR2S Grant Application	$27,000	19
River Drive from Collegrove Avenue to Eastern Avenue	Curb ramp (1), High visibility crosswalk (1)	SR2S Grant Application	$6,000	19
Legion Road at Pioneer Hospital	High visibility crosswalk (1), Pedestrian beacons (2), Yield lines (2)	Walkability Analysis	$25,000	19
Main Street between El Cerrito Drive and Western Avenue	High visibility crosswalk (1), Curb extensions (2), Pedestrian signage (2), Curb ramps (2)	Walkability Analysis	$111,500	17

Intersection(s)	Improvements	Source	Project Cost Estimate	Final Score
Malan Street and Avenida de la Colimbo	High visibility crosswalks (4), Curb ramps (4)	Walkability Analysis	$25,000	N/A*
11th Street and K Street	High visibility crosswalks (4), Curb extensions (4), Pedestrian signage (4)	Walkability Analysis	$205,500	N/A*
11th Street from K Street to J Street	High visibility crosswalks (4), Yield lines (4)	SR2S Grant Application	$5,500	N/A*
1st and E Street	Stop lines (4), High visibility crosswalks (4), Fencing (15 feet)	Walkability Analysis	$16,000	N/A*
2nd Street from J Street to H Street	High visibility crosswalks (6)	SR2S Grant Application	$7,500	N/A*
3rd Street from J Street to H Street	High visibility crosswalks (6)	SR2S Grant Application	$7,500	N/A*
5th Street from Magnolia Street to Adler Street	Curb ramps (6)	SR2S Grant Application	$30,000	N/A*
5th Street between Plaza Street and G Street	High visibility crosswalk (1), Curb ramps (3), Illuminated crosswalk (1)	Downtown Specific Plan & Pedestrian Safety Assessment	$91,000	N/A*
5th Street from A Street to River Drive	Curb ramps (4), Driver feedback signs (2)	SR2S Grant Application	$40,000	N/A*
7th Street and B Street	Curb ramp (1)	SR2S Grant Application	$5,000	N/A*
A Street and 1st Street	High visibility crosswalks (4), Curb extensions (4), Stop lines (2), Pedestrian beacons (2), Pedestrian signage (4)	Walkability Analysis	$222,000	N/A*
A Street and 5th Street	High visibility crosswalks (3), Pedestrian refuge island (1), Yield lines (2), Pedestrian beacons (2)	Pedestrian Safety Assessment	$53,000	N/A*
A Street and 7th Street	High visibility crosswalks (4), Pedestrian refuge islands (4), Stop lines (4)	Pedestrian Safety Assessment	$125,000	N/A*
A Street and Sunset Drive	High visibility crosswalk (1)	SR2S Grant Application	$1,500	N/A*
A Street between 5th Street and 7th Street	High visibility crosswalk (1), Curb ramps (2), Yield lines (2), Pedestrian signage (2)	Pedestrian Safety Assessment	$11,500	N/A*
A Street between Imperial Avenue and 5th Street	High visibility crosswalk (1), Curb ramps (2), Yield lines (2), Pedestrian signage (2)	Pedestrian Safety Assessment	$11,500	N/A*

Intersection(s)	Improvements	Source	Project Cost Estimate	Final Score
A Street from 2nd Street to 3rd Street	High visibility crosswalks (7), Pedestrian beacons (6)	SR2S Grant Application	$68,500	N/A*
A Street from El Cerrito Drive to 1st Street	High visibility crosswalks (11), Pedestrian beacons (4), Curb ramp (1), Yield lines (6)	SR2S Grant Application	$59,000	N/A*
Adler Street and Eastern Avenue	High visibility crosswalk (1)	SR2S Grant Application	$1,500	N/A*
B Street and Imperial Avenue	High visibility crosswalks (3), Pedestrian refuge island (1), Yield lines (2), Pedestrian beacons (2)	Pedestrian Safety Assessment	$54,000	N/A*
B Street from 2nd Street to 3rd Street	High visibility crosswalks (4), Yield lines (4)	SR2S Grant Application	$6,000	N/A*
B Street from El Cerrito Drive to Western Avenue	High visibility crosswalks (2), Curb ramps (4)	SR2S Grant Application	$27,500	N/A*
B Street from J.W. Oakley Elementary School to Eastern Avenue	Curb ramps (2), Illuminated crosswalk (1), High visibility crosswalks (4), Pedestrian beacons (4), Yield lines (4)	SR2S Grant Application	$127,000	N/A*
B Street from Palm Avenue to 13th Street	High visibility crosswalks (5)	SR2S Grant Application	$6,000	N/A*
C Street and 7th Street	High visibility crosswalks (4), Pedestrian refuge islands (4), Stop lines (4)	Pedestrian Safety Assessment	$125,000	N/A*
C Street and Imperial Avenue	High visibility crosswalks (4), Pedestrian refuge islands (4), Stop lines (4)	Pedestrian Safety Assessment	$125,000	N/A*
C Street between 5th Street and 7th Street	High visibility crosswalk (1), Curb ramps (2), Yield lines (2), Pedestrian signage (2)	Pedestrian Safety Assessment	$11,500	N/A*
C Street between Imperial Avenue and 5th Street	High visibility crosswalk (1), Curb ramps (2), Yield lines (2), Pedestrian signage (2)	Pedestrian Safety Assessment	$11,500	N/A*
C Street from 2nd Street to 3rd Street	High visibility crosswalks (5), Curb ramps (2)	SR2S Grant Application	$16,000	N/A*
D Street from 2nd Street to Imperial Avenue	High visibility crosswalks (4), Pedestrian beacons (3)	SR2S Grant Application	$35,000	N/A*
E Street and 5th Street	High visibility crosswalks (3), Curb ramps (2) Pedestrian beacons (3), Yield lines (3)	Downtown Specific Plan & Pedestrian Safety Assessment	$44,000	N/A*
E Street from 2nd Street to 3rd Street	High visibility crosswalks (2), Yield lines (4)	SR2S Grant Application	$3,000	N/A*

Intersection(s)	Improvements	Source	Project Cost Estimate	Final Score
E Street from 6th Street to 8th Street	High visibility crosswalks (10), Curb ramps (2)	Downtown Specific Plan & Pedestrian Safety Assessment	$22,000	N/A*
El Cerrito Drive from Magnolia Drive to Adler Street	High visibility crosswalks (2)	SR2S Grant Application	$2,500	N/A*
El Cerrito Drive from River Drive to Duarte Street	High visibility crosswalks (7), Pedestrian beacons (2)	SR2S Grant Application	$28,500	N/A*
G Street and 3rd Street	High visibility crosswalks (2)	Downtown Specific Plan & Pedestrian Safety Assessment	$2,500	N/A*
G Street from 5th Street to Cesar Chavez Street	High visibility crosswalks (18), Curb ramps (3)	Downtown Specific Plan & Pedestrian Safety Assessment	$36,500	N/A*
K Street from 2nd Street to 3rd Street	Curb ramps (5), High visibility crosswalks (7), Pedestrian beacons (4)	SR2S Grant Application	$73,500	N/A*
K Street from Stanley Place to Vine Avenue	High visibility crosswalks (2)	SR2S Grant Application	$2,500	N/A*
Leonard Street from Cesar Chavez Street to 11th Street	Curb ramps (3)	SR2S Grant Application	$15,000	N/A*
Magnolia Street from North Palm Drive to Eastern Avenue	High visibility crosswalks (5), Curb ramps (2),	SR2S Grant Application	$16,000	N/A*
Main Street and 6th Street	High visibility crosswalks (4), Pedestrian push buttons (8), Pedestrian countdown signals (8)	Downtown Specific Plan & Pedestrian Safety Assessment	$17,500	N/A*
Main Street and 9th Street	High visibility crosswalks (4)	Downtown Specific Plan & Pedestrian Safety Assessment	$5,000	N/A*
Main Street between Plaza Streets and 6th Street	High visibility crosswalks (1), Pedestrian beacons (2), Yield lines (2)	Downtown Specific Plan & Pedestrian Safety Assessment	$21,000	N/A*
Malan Street and Avenida de la Colimbo	High visibility crosswalks (4), Curb ramps (4)	Walkability Analysis	$25,000	N/A*
Rio Vista Avenue and E Street	High visibility crosswalks (2), Yield lines (2), Flashing beacons (2)	Walkability Analysis	$23,000	N/A*
Total			***$4,034,000***	

**N/A= these projects are targeted for longer-term implementation, per the discussion at the introduction of Section 6.2*

6.3 Project Sheets

The following project sheets illustrate three sample bicycle and pedestrian projects chosen from field work, background documents as well as City staff and community input. The project sheets provide conceptual design detail to provide additional implementation guidance. Further analysis and engineering may be necessary prior to project implementation.

Bicycle Projects

- Class II bike lane on A Street from Rio Vista Avenue to 8th Street
- Class II bike lane on K Street from Western Avenue to Eastern Avenue
- Class II bike lane on Cesar Chavez/10th Street from B Street to Malan Street

Pedestrian Projects

- Crosswalks and curb extensions at the intersection of A Street and 1st Street
- Rehabilitate or construct sidewalks at the intersection of 1st Street and E Street
- Designated crosswalk where Main Street crosses the railroad tracks to 9th Street

Bicycle Project #1: A Street (Rio Vista Avenue to 8th Street)

Project Site

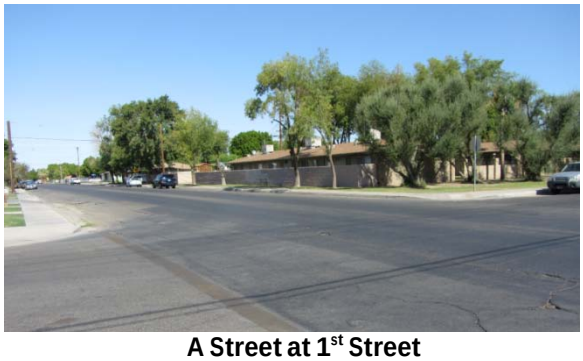
A Street between Rio Vista Avenue and 8th Street is an east-west local collector roadway in the northwestern portion of Brawley. It has a curb-to-curb width of approximately 48 feet and on-street parallel parking that serves adjacent residences. In addition to single family residences, A Street provides access to the Brawley Union High School at Imperial Avenue, Warner Park at 2nd Street, and the Brawley Swimming Pool between 2nd Street and 3rd Street. A Street provides secondary access to Desert Valley Continuing School on 1st Street just north of A Street.

There is one travel lane in each direction, which are not delineated by a center line. Few intersections along this segment of A Street are controlled either by stop signs or traffic signals. This segment of A Street ends to the east at the Union Pacific Railroad tracks.

Project Challenges

A Street has no existing bikeways. Bicyclists, including children commuting to Brawley Union High School, must share travel lanes with motorists as there is no separation between modes. Minimal traffic control at intersections has the potential to increase motor vehicle speeds and thus create a challenging bicycling environment. Though A Street provides primary and secondary access to key destinations in Brawley, there is a lack of wayfinding to direct bicyclists to these locations and to other existing bikeways.

Photos



A Street at 1st Street

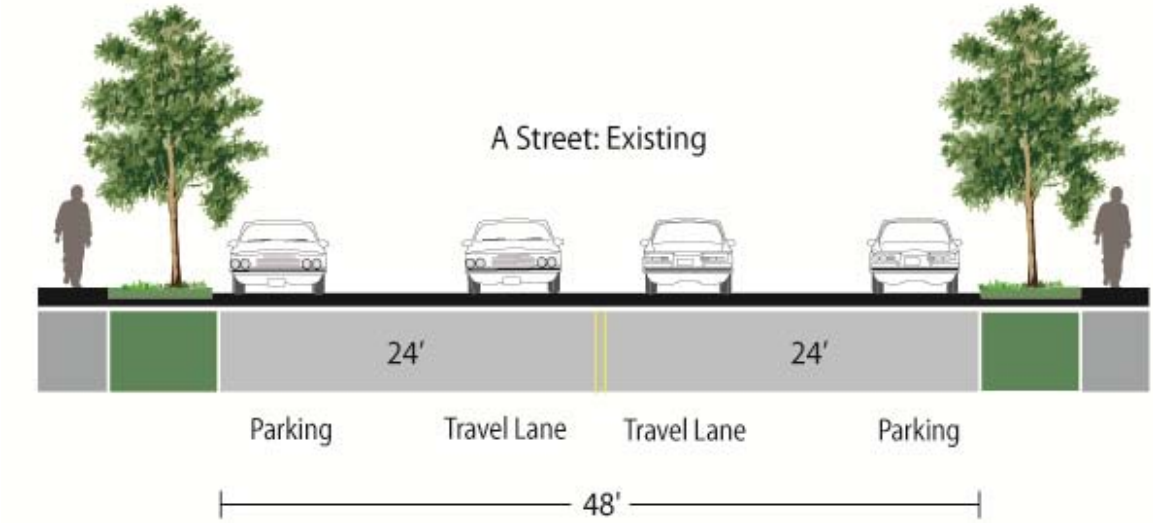
Proposed Improvements

- Install Class II bike lanes on A Street from Rio Vista Avenue to 8th Street
- Install wayfinding signage at key destinations/decision points

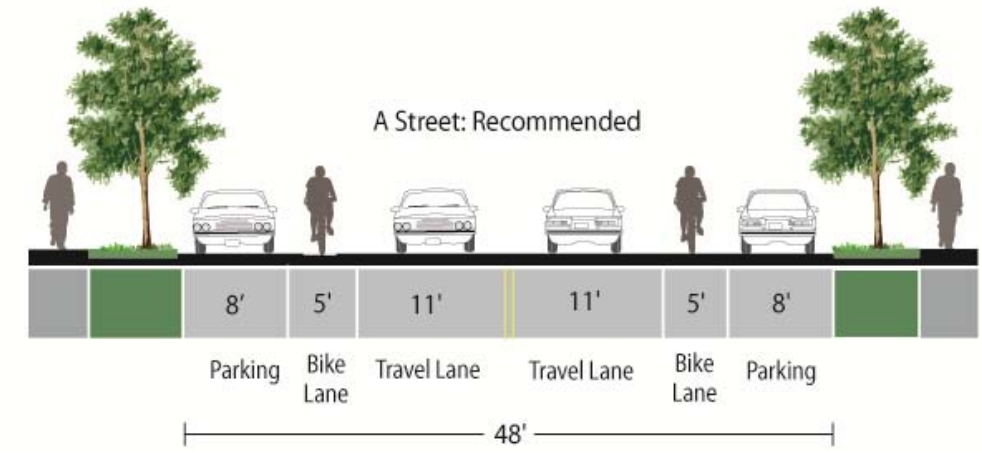
Estimated Cost

$55,000

Concept Graphic: Existing Cross-Section



Concept Graphic: Recommended Cross-Section



Concept Graphics: Aerial Maps

A Street (Rio Vista Avenue to 2nd Street)

A Street (2nd Street to 8th Street)

Bicycle Project #2: K Street (Western Avenue to Eastern Avenue)

Project Site

K Street between Western Avenue and Eastern Avenue is an east-west roadway along the southern edge of Brawley. It is primarily a local collector, though between 1st Street and Imperial Avenue it is classified as a collector. It has a curb-to-curb width of approximately 46 to 49 feet and on-street parallel parking that serves adjacent residences. In addition to single family residences, K Street provides access to Meserve Park between 2nd Street and 3rd Street, and secondary access to Sacred Heart School, Longfellow Park, and Guadalupe Park.

There is one travel lane in each direction, which are not delineated by a center line. Few intersections along this segment of K Street are controlled either by stop signs or traffic signals.

This segment of K Street crosses the Union Pacific Railroad tracks between 8th Street and 9th Street.

Photo

Signalized Intersection of 1st Street (north-south) and K Street (east-west)

Project Challenges

K Street has no existing bikeways. Bicyclists must share travel lanes with motorists as there is no separation between modes. Bicyclists must cross at-grade, angled railroad tracks, which creates the potential for collisions as bicycle tires often get trapped in railroad tracks. Minimal traffic control at intersections has the potential to increase motor vehicle speeds and thus create a challenging bicycling environment. Though K Street provides primary and secondary access to key destinations in Brawley, there is a lack of wayfinding to direct bicyclists to these locations and to other existing bikeways.

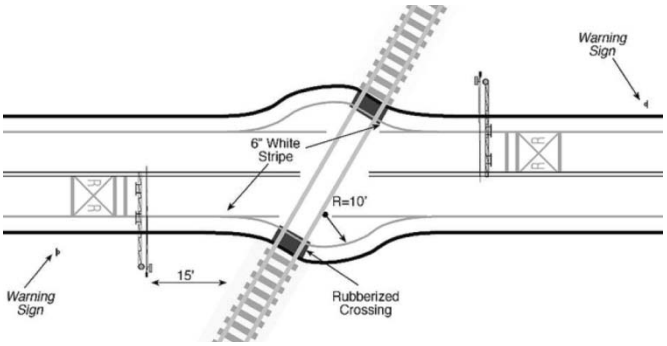
Estimated Cost

$100,000

Proposed Improvements

- Install Class II bike lanes on K Street from Western Avenue to Eastern Avenue
- Install wayfinding signage at key destinations and decision points
- Implement bicycle railroad crossing treatment
- Install bicycle detection and pavement markings at signalized intersections

Concept Graphic: Example Bicycle Railroad Crossing Treatment

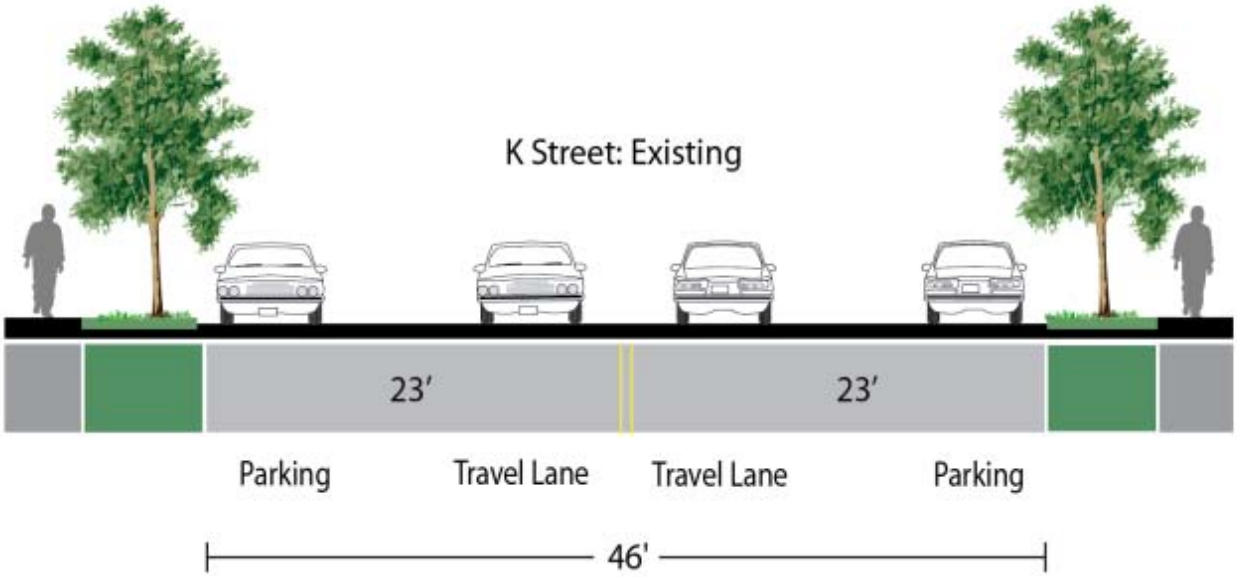


Aerial Map and Concept Graphics:

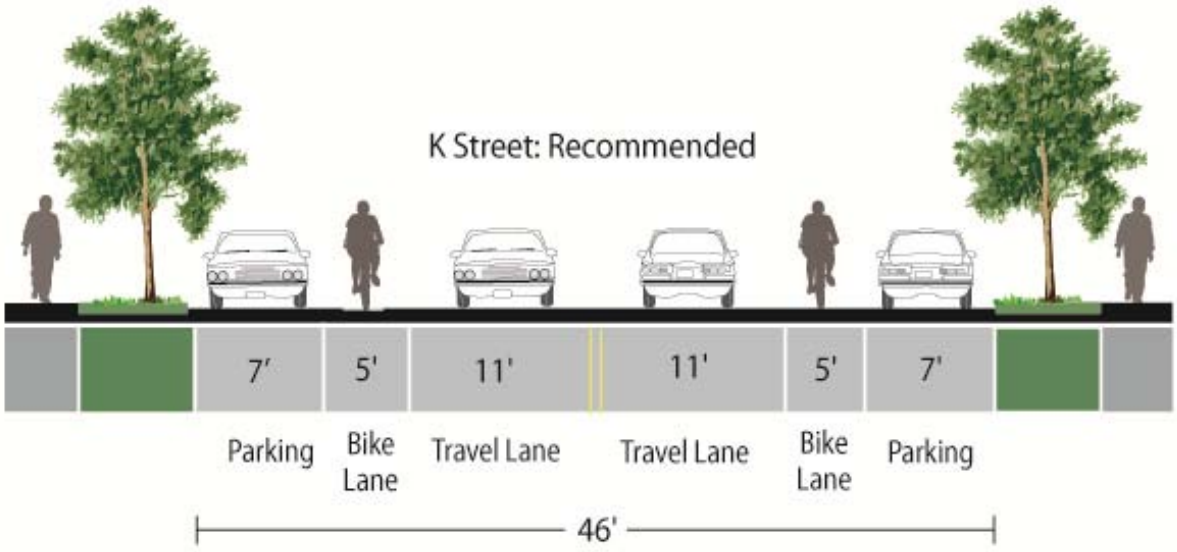
K Street (Western Avenue to 9th Street)

K Street (9th Street to Eastern Avenue)

Concept Graphic: Existing Cross-Section



Concept Graphic: Recommended Cross-Section



Bicycle Project #3: Cesar Chavez Street / 10th Street (B Street to Malan Street)

Project Site

Cesar Chavez Street between B Street and Malan Street is a north-south collector roadway in the southeastern portion of Brawley. North of K Street, it has one travel lane in each direction and a center turn lane, and a curb-to-curb width of approximately 57 to 59 feet. South of K Street, the center turn lane drops to a striped center line and the curb-to-curb width is approximately 55 feet. On-street parallel parking serves adjacent residences. In addition to single family residences, Cesar Chavez Street provides access to Longfellow Park and St Margaret Mary Church, and provides secondary access to commercial land uses along Main Street. Few intersections along this segment of Cesar Chavez Street are controlled either by stop signs or traffic signals.

Photo

Cesar Chavez Street (north-south) at K Street (east-west)

Project Challenges

Cesar Chavez Street has no existing bikeways. Bicyclists must share travel lanes with motorists as there is no separation between modes. Minimal traffic control at intersections has the potential to increase motor vehicle speeds and thus create a challenging bicycling environment. Though Cesar Chavez Street provides primary and secondary access to key destinations in Brawley, there is a lack of wayfinding to direct bicyclists to these locations and to other existing bikeways.

Proposed Improvements

- Install Class II bike lanes on Cesar Chavez Street from B Street to Malan Street
- Install wayfinding signage at key destinations and decision points
- Install bicycle detection and pavement markings at signalized intersections

Estimated Cost

$60,000

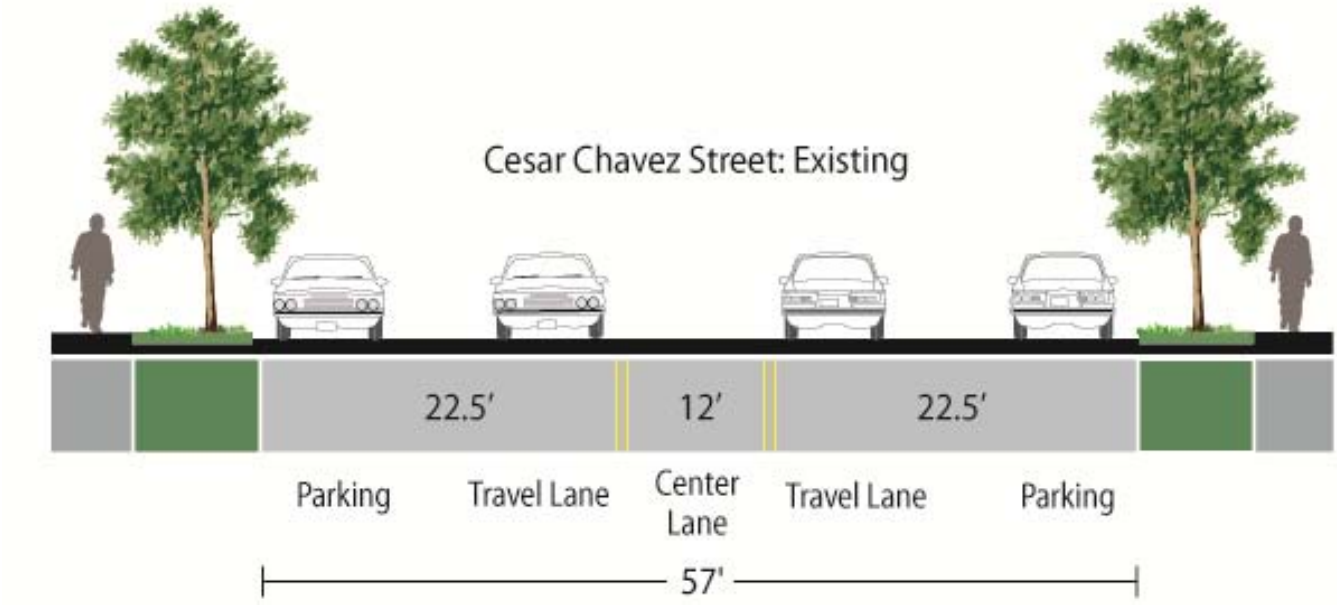
Concept Graphic: Example of Bicycle Signal Detection

Aerial Map and Concept Graphics:

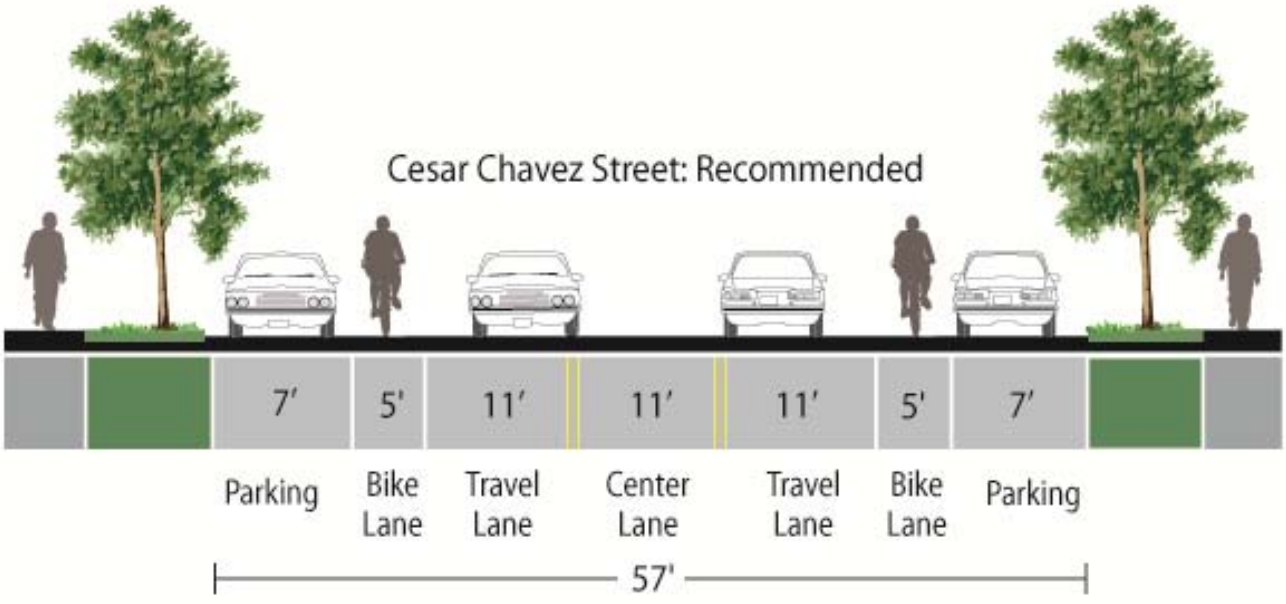
Cesar Chavez Street / 10th Street (B Street to G Street)

Cesar Chavez Street / 10th Street (H Street to Malan Street)

Concept Graphic: Existing Cross-Section



Concept Graphic: Recommended Cross-Section



Pedestrian Project #1: Intersection of A Street / 1st Street

Project Site

The intersection of A Street and 1st Street is in the northwest portion of Brawley, just west of Warner Park. A Street is a collector and 1st Street is residential roadway. Both streets have on-street parallel parking and adjacent residences. Four schools are located less than one quarter mile of the intersection: Phil Swing Elementary School (directly west on A Street), Western Baptist Christian School, Desert Valley Continuing School, and Renaissance School.

A Street has a curb-to-curb width of approximately 50 feet and 1st Street has a curb-to-curb width of approximately 45 feet. At this intersection 1st Street is stop-controlled and there is no traffic control on A Street. Stop lines on 1st Street are faded and difficult to see. Crosswalks are not provided on either street.

Project Challenges

Because of faded stop lines and a lack of marked crosswalks there is nothing to make motorists aware that pedestrians are crossing. Few controlled intersections and long distances between traffic controls may cause high vehicle speeds, creating challenges for pedestrians crossing A Street. The lack of clear marked pedestrian crossings is also a concern as this intersection is located near four schools and could be a commute route for children.

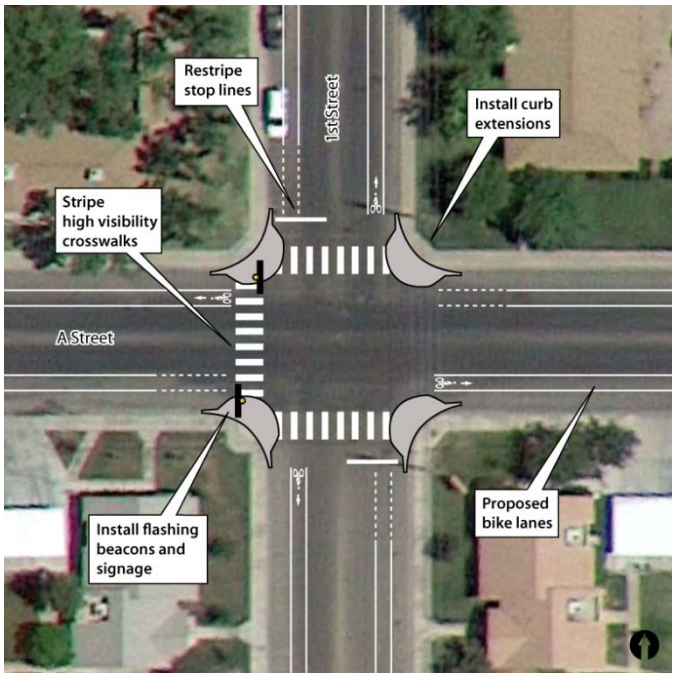
Photo

Intersection of 1st Street approaching A Street

Proposed Improvements

- Install stop lines to delineate where motorists should stop at the stop sign and reinforce that a stop is required for traffic control
- Install high visibility zebra crosswalks to increase awareness of pedestrians crossing both streets
- Install curb extensions to shorten the crossing distances for pedestrians crossing A Street and calm traffic speeds
- Install flashing beacons and W16-7p and W11-2 yield to pedestrian signage at approach to elementary school

Concept Graphic: Aerial Map



Estimated Cost

$325,000

Concept Graphics: Flashing Beacons, Curb Extensions

Pedestrian Project #2: Intersection of 1st Street / E Street

Project Site

The intersection of E Street and 1st Street is in the northwest portion of Brawley, just north of the commercial land uses on Main Street. Both streets are residential and have on-street parallel parking. Hawthorne Park, which contains athletic fields, is located at the northeast corner of this intersection.

There are no painted stop lines on the eastbound and westbound stop-controlled approach on E Street. Crosswalks are not provided to serve users of the athletic field located at the northeast corner of the intersection.

Project Challenges

Because of a lack of stop lines and marked crosswalks there is nothing to make motorists aware that pedestrians are crossing.

Passive and active design elements are lacking at the athletic fields to create separation between the play areas and motorist traffic. While a raised curb edge is provided at the edge of the roadway, the lack of landscaping or fencing means that children or adults may intersect the roadway anywhere along the boundary of the play fields. This creates potential for pedestrian/motorist conflicts along the entirety of roadways surrounding the athletic fields.

Photos

There is a lack of separation between the athletic fields in Hawthorne Park and the street

Proposed Improvements

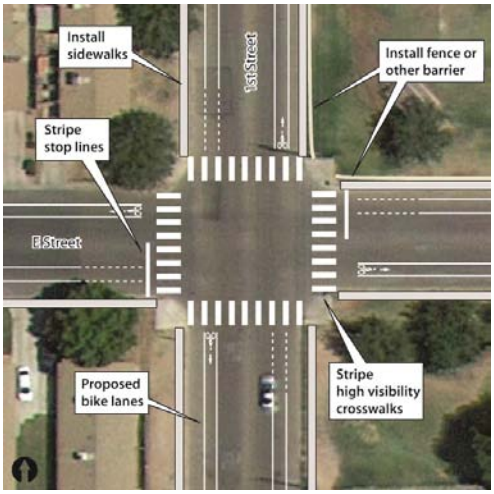
- Install stop lines on E Street to clearly delineate where motorists should stop at the stop sign and reinforce that a stop is required for traffic control
- Stripe high visibility zebra crosswalks at all four legs to increase awareness of pedestrians crossing the street
- Install landscaping, fencing, or other aesthetically pleasing barriers along the boundary of the athletic fields to help minimize the risk of collisions involving athletic field users and motorists on adjacent roadways
- Install sidewalks approaching the intersection

Estimated Cost

$150,000

Concept Graphic: Example of Fencing

Concept Graphic: Aerial Map



Pedestrian Project #3: Main Street (Railroad Tracks to 9th Street)

Project Site

Main Street is a commercial corridor bisecting northern and southern Brawley. On the south side of Main Street west of 9th Street, the pedestrian path is interrupted by angled parking serving the commercial property. Diagonal off-street parking is provided in place of a sidewalk. A short rolling curb with gutter allows motorists traveling eastbound on Main Street to turn right anywhere throughout this segment to access the diagonal parking.

During field review, pedestrians were observed crossing Main Street between the railroad tracks and 9th Street instead of crossing at the nearest intersection.

Project Challenges

The missing sidewalk segment forces pedestrians to walk on asphalt paving in a parking area with the potential for motorist-pedestrian conflicts. The mountable curb increases the chances of collisions occurring between motorists and pedestrians/bicyclists as motorists can enter at any location rather than at one driveway. The lack of a defined crossing of Main Street at 9th Street encourages pedestrians crossing midblock.

Photos

Pedestrians must walk through parking due to missing sidewalk segment

Proposed Improvements

- Stripe high visibility pedestrian crosswalk and yield lines on Main Street at 9th Street
- Install RRFB and W16-7p and W11-2 yield to pedestrian signage at crosswalk
- Eliminate the seven diagonal parking spaces and one parallel parking space to install curb, gutter, and sidewalks. Review of parking operations may be conducted to determine if adequate parking supply is provided on the west side of the commercial building or using on-street parallel parking on 9th Street to accommodate the parking demand from the commercial business.

Estimated Cost

$75,000

Concept Graphic: Aerial Map

6.4 Network Cost Estimates

This section lists costs estimates for recommended bikeway and pedestrian improvement projects.

Estimated unit costs may vary from what is provided in this Plan depending on environmental conditions of a given facility, unforeseen construction cost variations, and similar considerations. Cost assumptions also exclude the specific treatments that may vary by site and must be determined by field review, such as traffic calming measures, restriping of existing lanes, and sign removal. Before constructing recommended facilities, additional field work will be required to verify conditions. These include but are not limited to: roadway width, travel lanes, actual motor vehicle speeds, motor vehicle volumes, bicycle and motor vehicle travel patterns and conflicts, and pavement conditions.

6.4.1 Bicycle Network Cost Estimates

Table 6-6 shows the planning-level cost estimates for each bicycle and pedestrian facility type, as well as the cost to implement the proposed bicycle network in Brawley.

Table 6-6: Planning Level Cost Estimates for Bicycle Facilities

Facility	Unit Cost	Length of Proposed Network	Unit Cost per Mile	Estimated Cost
Class I Bike Path	Paving, striping, and signage	6	$800,000/mile	$4,800,000
Class II Bike Lanes	Striping, signage, and travel lane restriping	22.5	$40,000/mile	$900,000
Class III Bike Routes	Pavement markings and signage	17.5	$25,000/mile	$437,500
Totals		**46**		**$6,137,500**

These costs do not include right-of-way acquisition.

Cost Estimates for Maintenance and Operations

Regular and appropriate maintenance of bicycle facilities should be part of the normal roadway maintenance program. Well-maintained bicycle facilities increase safety and encourage use of the facility. A comprehensive bicycle maintenance program should include periodic review of sign conditions, pavement markings, barriers, and surface conditions. Extra emphasis should be put on keeping the bike lanes and roadway shoulders clear of debris and glass.

Bicycle network maintenance unit costs are shown in Table 6-7. Bicycle facility maintenance costs are based on per-mile estimates, which cover labor, supplies, and amortized equipment costs for weekly trash removal, monthly sweeping, and bi-annual resurfacing and repair patrols. Other maintenance costs include restriping bike lane lines, sweeping debris, and calibrating signals for bicycle sensitivity.

Table 6-7: Recommended Bikeway Network, Annual Operation and Maintenance Cost Estimates

Facility Type	Unit Cost	Notes
Class I Maintenance	$8,500 mile/year	Lighting and removal of debris and vegetation overgrowth
Class II Maintenance	$2,000 mile/year	Repainting lane stripes and stencils, sign replacement as needed
Class III Maintenance	$1,000 mile/year	Sign and stencil replacement as needed

6.4.2 Pedestrian Projects Cost Estimates

Table 6-8 provides planning-level unit costs for typical pedestrian improvements.

Table 6-8: Pedestrian Improvement Unit Costs

Item	Unit	Cost
Audible Signals	EA	$1,000
Crosswalk- High visibility	EA	$1,200
Countdown Head Signals	EA	$800
Crosswalk- In pavement Flashing Lights	EA	$75,000
Crosswalk-Transverse	EA	$500
Traffic sign	EA	$400
Pedestrian push button	EA	$800
Pedestrian beacon	EA	$10,000
Curb ramp	EA	$5,000
Curb extension	EA	$50,000
Construct sidewalk	SF	$90
Curb and gutter	LF	$40
Pedestrian countdown signal	EA	$800
Advance stop bar	EA	$200
Wayfinding/misc. signing	EA	$200
Yield line	LF	$6
Pedestrian refuge island	EA	$30,000
Stop line	LF	$8
Other landscaping	SF	$150
Truncated domes (retrofit plastic)	EA	$400
Speed feedback sign	EA	$10,000

Table 6-9: Planning Level Cost Estimates for Pedestrian Network Improvements

Improvement Type	Number of Projects	Estimated Cost
Sidewalk Infill	37	$2,030,000
Crossing Improvements	73	$4,034,000
Total	***111***	***$6,064,000***

6.5 Funding Sources

There are a variety of potential funding sources that can be used to build the proposed improvements, including local, state, regional and federal funding programs, as well as private sector funding. Most of the federal, state, and regional programs are competitive processes and involve the completion of extensive applications with clear documentation of the project needs, costs and benefits. In regard to funding opportunities, the following should be noted:

- Funding sources are highly competitive, with many agencies competing for the same "pots" of money.
- Funding is limited; capital funding needs far outweigh available funding every year.
- Applying for funding is a time-consuming and staff-intensive process.
- Collaboration and partnerships with local agencies and community groups is key.

The following information serves as a general guide to funding sources. Staff should refer to current guidelines provided by the granting agency when pursuing any funding opportunity.

6.5.1 Federal Funding

The passage of the Intermodal Surface Transportation Efficiency Act (ISTEA) in 1991 signaled a major change to allocation of federal funding for transportation projects. As the first federal legislation after the completion of the Interstate Highway System, ISTEA presented an intermodal approach to transportation planning and funding, giving additional control to the country's Metropolitan Planning Organizations. ISTEA and subsequent transportation legislation, the Transportation Equity Act for the 21st Century (TEA-21) (1998) and the Safe, Accountable, Flexible, Efficient Transportation Equity Act, a Legacy for Users (SAFETEA-LU) (2005), have allocated dedicated funding for transit, bicycle and pedestrian projects and programs. Bicycle and pedestrian projects are funded at a very small percentage compared to highway projects, but SAFETEA-LU provided broader eligibility requirements than previous acts that allow bicycle and pedestrian projects to qualify for traditional "highway" funding.

On June 29, 2012 a new transportation bill (MAP-21) was passed that has many changes to the funding of bicycle and pedestrian projects. SAFETEA-LU, the previous legislation, 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.'

Map-21 Funds

According to the FHWA, MAP-21's Transportation Alternatives Program (TAP) "provides funding for programs and projects defined as transportation alternatives, including on- and off-road pedestrian and bicycle facilities,

infrastructure projects for improving non-driver access to public transportation and enhanced mobility, community improvement activities, and environmental mitigation; recreational trail program projects; safe routes to school projects; and projects for the planning, design or construction of boulevards and other roadways largely in the right-of-way of former Interstate System routes or other divided highways."[16]

Nationwide, MAP-21 provides States $808,760,000 in fiscal year 2013 and $819,900,000 in fiscal year 2014, totaling to $1,628,660,000 over the two-year lifetime of the bill. This is a reduction in funding from $1.2 billion annually, a reduction of approximately one third. California's TAP funding can be calculated by dividing the nationwide total based on its proportionate share of funding from the Transportation Enhancements program in fiscal year 2009. Additionally, states may 'opt-out' of up to 50 percent of the funding and use it for other projects. If California decides to opt-out, this will result in a reduction in dedicated funding for transportation alternative related improvements by up to two-thirds when compared to 2011 levels. For most TAP projects, including Safe Routes to School, the Federal share is 80 percent Federal and the State share is 20 percent (or local match with a sliding scale). This represents an increase in local match from prior funding sources.

More information on TAP, including eligible activities, can be found at:
http://www.fhwa.dot.gov/map21/guidance/guidetap.cfm

Congestion Mitigation and Air Quality Improvement Program

Congestion Mitigation and Air Quality Improvement funds are programmed by the Federal Transportation Bill for projects that are likely to contribute to the attainment of a national ambient air quality standard, and provide congestion mitigation. These funds can be used for a variety of bicycle and pedestrian projects, particularly those that are developed primarily for transportation purposes. The funds can be used either for construction of bicycle transportation facilities and pedestrian walkways, or for non-construction projects related to safe bicycle and pedestrian use (maps, brochures, etc.). The projects must be tied to a plan adopted by the State of California and the Regional Government Agency.

Land and Water Conservation Fund (LWCF)

The Land and Water Conservation Fund allocates money to state and local governments to acquire new land for recreational purposes, including Bicycle Paths, and support facilities such as bike racks. The Fund is administered by the National Parks Service and the California Department of Parks and Recreation and has been reauthorized until 2015.

Cities, counties and districts authorized to acquire, develop, operate, and maintain park and recreation facilities are eligible to apply. Applicants must fund the entire project, and will be reimbursed for 50 percent of costs. Property acquired or developed under the program must be retained in perpetuity for public recreational use. The grant process for local agencies is competitive, and 60 percent of grants are reserved for Southern California. In 2009, approximately $1.25 million was allocated to fund recommended projects in California.

[16] http://www.fhwa.dot.gov/map21/guidance/guidetap.cfm

Rivers, Trails and Conservation Assistance Program (RTCA)

The Rivers Trails and Conservation Assistance Program (RTCA) is a National Parks Service program which provides technical assistance via direct staff involvement, to establish and restore greenways, rivers, trails, watersheds, and open space. The RTCA program provides only for planning assistance, as there are no implementation monies available. Projects are prioritized for assistance based upon criteria which include conserving significant community resources, fostering cooperation between agencies, serving a large number of users, encouraging public involvement in planning and implementation and focusing on lasting accomplishments.

6.5.2 State Funding

This section summarizes the primary state bicycle and pedestrian project and planning funding sources.

AB 2766 Subvention Funds

Funds from the registration of every motor vehicle registered or renewed each year in California are distributed directly to the cities in an Air Quality Management District's (AQMD) jurisdiction for mobile source emission reduction programs. Subvention Funds can be used for bicycle-related projects that reduce mobile source emissions.

Bicycle Transportation Account

The State of California Bicycle Transportation Account (BTA) is an annual statewide discretionary program that is available through the Caltrans Bicycle Facilities Unit for funding bicycle projects. Available as grants to local jurisdictions, the emphasis is on projects that benefit bicycling for commuting purposes. As of 2009, the BTA makes $7.2 million available each year. The local match is a minimum of 10 percent of the total project cost.

BTA projects are intended to improve safety and convenience for bicycle commuters, and can include, but are not limited to, any of the following:

- New bikeways serving major transportation corridors
- New bikeways removing travel barriers to potential bicycle commuters
- Secure bicycle parking at employment centers, park-and-ride lots, rail and transit terminals
- Bicycle-carrying facilities on public transit vehicles
- Installation of traffic control devices to improve the safety and efficiency of bicycle travel
- Elimination of hazardous conditions on existing bikeways
- Planning
- Improvement and maintenance of bikeways

Eligible project activities include project planning, preliminary engineering, final design, right-of-way acquisition, and construction and/or rehabilitation. This program will fall under the tentatively named Active Transportation Program along with multiple others as part of Governor Jerry Brown's FY 2013-2014 budget.

Environmental Enhancement and Mitigation Program (EEMP)

Environmental Enhancement and Mitigation Program (EEMP) funds are allocated to projects that offset environmental impacts of modified or new public transportation facilities including streets, mass transit guideways, park-and-ride facilities, transit stations, tree planting to equalize the effects of vehicular emissions, and the acquisition or development of roadside recreational facilities, such as trails. State gasoline tax monies fund the EEMP, which annually allocates $10 million for mitigation projects. This program will fall under the tentatively named Active Transportation Program along with multiple others as part of Governor Jerry Brown's FY 2013-2014 budget.

Environmental Justice: Context Sensitive Planning Grants

The Caltrans-administered Environmental Justice: Context Sensitive Planning Grants Program funds planning activities that assist low-income, minority, and Native American communities in becoming active participants in transportation planning and project development. Grants are available to transit districts, cities, counties, and tribal governments. This grant is funded by the State Highway Account at $1.5 million annually statewide. Grants are capped at $250,000. The City of Brawley was awarded this grant in 2005 for their "From State Highway to Multi-Modal Main Street" plan that utilized community input and recommendations to complete the Downtown Specific Plan.

Highway Safety Improvement Program (HSIP)

The Highway Safety Improvement Program (HSIP) is a state safety program that funds safety improvements on all public roads and highways. These funds attempt to reduce the number and severity of traffic accidents at improved locations.

Local agencies compete for HSIP funds each year by submitting candidate safety projects to Caltrans for review and analysis. Caltrans prioritizes these projects statewide and releases an annual HSIP Program Plan that identifies the approved projects. The State disperses funding annually following the federal fiscal year. Approximately $27 million dollars were available in the 2007 funding cycle.

The HSIP considers funding two project types: Safety Index and Work Type. Safety Index Projects qualify for funding based on a State-calculated safety index. These projects receive a statewide priority with this index. A project that fails to receive funding under the Safety Index category automatically moves into the Work Type category and competes for funding with other projects in this category. Work Type projects receive approximately 25 percent of the available HSIP funds, while Benefit/Cost projects receive about 75 percent.

Projects in the Safety Index category include installing raised median islands, protected left-turn phasing, and widened roadways. Work Type Projects include curb ramps, crosswalks, installation of right turn lanes, and construction of new bus stop aprons.

Office of Traffic Safety (OTS) Grant

The Office of Traffic Safety Grants (OTS) fund safety programs and equipment. Bicycle and pedestrian safety is a specifically-identified priority. This category of grants includes enforcement and education programs, which can encompass a wide range of activities, including bicycle helmet distribution, design and printing of billboards and bus posters, other public information materials, the development of safety components as part of physical education curriculum, or police safety demonstrations through school visitations.

The grant cycle typically begins with a request for proposals in October, which are due the following January. In 2006, OTS awarded $103 million to 290 agencies.

Recreational Trails Program (RTP)

In California, RTP funds are administered by the California State Parks Department. Recreational Trails Program funds may be used for the following:

- Maintenance and restoration of existing trails;
- Purchase and lease of trail construction and maintenance equipment;
- Construction of new trails;
- Acquisition of easements or property for trails; and
- Operation of educational programs to promote safety and environmental protection related to trails (limited to five percent of a State's funds).

$2.1 million statewide was available in fiscal year 2011. Under MAP-21, RTP funding is a set-aside from the TAP. Unless the Governor opts out in advance, an amount equal to the State's FY 2009 RTP apportionment is to be set aside from the State's TAP funds for recreational trails projects.[17] This program will fall under the tentatively named Active Transportation Program along with multiple others as part of Governor Jerry Brown's FY 2013-2014 budget.

Safe Routes to School (SR2S) Program

The state-legislated Safe Routes to School (SR2S) program began in 1999. Since then, ten funding cycles have been completed. The state typically announces the list of awarded projects in the fall.

The SR2S program aims to reduce injuries and fatalities to schoolchildren and to encourage increased walking and bicycling among students. The program achieves these goals by constructing facilities that enhance safety for students in grades K-12 who walk or bicycle to school. Enhancing the safety of the pathways, trails, sidewalks, and crossings also attracts and encourages other students to walk and bicycle.

The SR2S program is primarily a construction program. Construction improvements must occur on public property. Improvements can occur on public school grounds providing the cost is incidental to the overall project cost. Statewide, the program typically provides approximately $25 million annually. The maximum reimbursement percentage for any SR2S project is ninety percent. The maximum amount that SR2S funds to any single project is $900,000.

Eligible project elements include bicycle facilities, traffic control devices and traffic calming measures. Up to ten percent of project funding can go toward outreach, education, encouragement, and/or enforcement activities. The 2009 cycle provided $48.5 million in funding. This program will fall under the tentatively named Active Transportation Program along with multiple others as part of Governor Jerry Brown's FY 2013-2014 budget.

[17] http://www.fhwa.dot.gov/map21/guidance/guidetap.cfm

Transportation Development Act (TDA) Article III (SB 821)

TDA Article III funds are distributed by the State of California and administered at the County level, which can be used by cities for planning and construction of bicycle and pedestrian facilities. The Southern California Association of Governments (SCAG) administers this program and establishes its policies.

Fund allocation to counties occurs on an annual cycle based on population. Local agencies may either draw down these funds or place them on reserve. Agencies must submit a claim form to SCAG by the end of the allocated fiscal year. Failure to do so may result in losing the allocated funds.

TDA Article III funds may be used for the following activities related to the planning and construction of bicycle and pedestrian facilities:

- Engineering expenses leading to construction.
- Right-of-way acquisition.
- Construction and reconstruction.
- Retrofitting existing bicycle and pedestrian facilities, including installation of signage, to comply with the Americans with Disabilities Act (ADA).
- Route improvements such as signal controls for bicyclists, bicycle loop detectors, rubberized rail crossings, and bicycle-friendly drainage grates.
- Purchase and installation of bicycle facilities such as secure bicycle parking, benches, drinking fountains, changing rooms, restrooms, and showers which are adjacent to bicycle trails, employment centers, park-and-ride lots, and/or transit terminals and are accessible to the general public.

6.5.3 Local Funding

Measure D, a one-half cent transportation sales tax that was approved by Imperial County voters in 1989, has generated more than $140 million for county transportation improvement projects. As of 2010, over $18 million has been allocated to the City of Brawley as a result of Measure D. Additionally, Brawley took out a bond against its future Measure D allocations, increasing its revenues to over $14 million. The City built the Cattle Call Park Bicycle and Pedestrian Trail with Measure D funds.[18]

6.5.4 Non-Traditional Funding

This section summarizes the primary non-traditional funding sources the City could use to implement bicycle and pedestrian projects.

Bikes Belong Grants

The Bikes Belong Coalition is a national coalition of bicycle retailers and suppliers "working to put more people on bikes more often." The organization provides grants for up to $10,000 with a 50 percent match that recipients may use towards paths, bridges and parks.

[18] http://www.co.imperial.ca.us/PublicWorks/Lta/PdfDocuments/LTABrochure2010draft_edited.pdf

Community Action for a Renewed Environment (CARE)

The US EPA administers this grant program to help communities organize and take action to reduce toxic pollution in their local environments. Applicants must fall within the statutory terms of EPA's research and demonstration grant authorities. CARE request for proposals were not issued in 2012.

Community Development Block Grants

The CDBG program provides money for streetscape revitalization, which may be largely comprised of bicycle and pedestrian improvements. Federal Community Development Block Grant Grantees may use CDBG funds for activities that include (but are not limited to) acquiring real property; building public facilities and improvements, such as streets, sidewalks, and recreational facilities; and planning and administrative expenses, such as costs related to developing a consolidated plan and managing CDBG funds.

Adopt-A-Trail Programs

Adopt-A-Trail Programs can be used to fund new construction, renovation, trail brochures, informational kiosks and other amenities. These programs can also be extended to include sponsorship of trail segments for maintenance needs.

New Construction

Future road widening and construction projects are means of concurrently providing Bike Lanes and sidewalks. So that roadway construction projects providing these concurrent facilities are appropriate and feasible, it is important that an effective review process is in place so that new roads meet the standards and guidelines presented in this Plan.

Impact Fees

Another potential local source of funding is Development Impact Fees (DIFs), typically tied to trip generation and traffic impacts produced by a proposed project. A developer may reduce the number of trips (and hence impacts and cost) by paying for on-and off-site bikeway improvements, which will encourage residents to bicycle rather than drive. "In-lieu" or parking fees may be used to help construct new or improved bicycle parking. Establishing a clear nexus or connection between the impact fee and the project's impacts is critical in avoiding a potential lawsuit.

Mello-Roos

Bike paths, lanes, and pedestrian facilities can be funded as part of a local assessment or benefit district. Defining the boundaries of the benefit district may be difficult unless the facility is part of a larger parks and recreation or public infrastructure program with broad community benefits and support.

Other

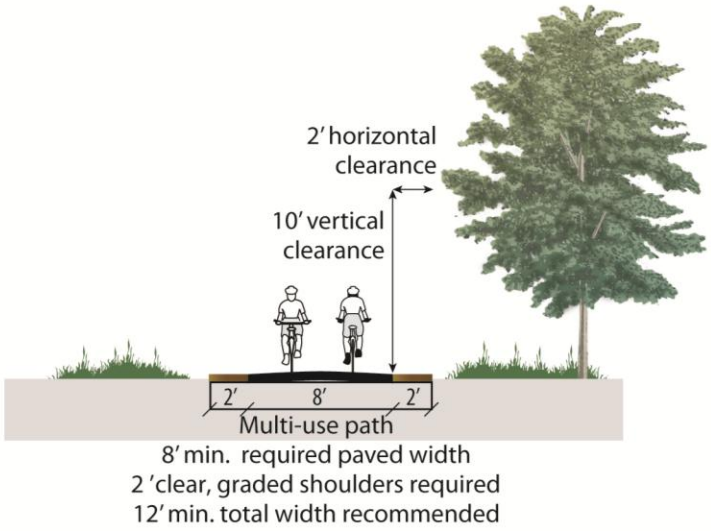
Local sales taxes, fees, and permits may be implemented, requiring a local election. Parking meter revenues may be used according to local ordinance. Volunteer programs may substantially reduce the cost of implementing some of the proposed bikeways. Using groups such as the California Conservation Corps (who offer low-cost assistance) can be effective at reducing project costs. Local schools or community groups may use the bikeway or pedestrian project as a project for the year, possibly working with a local designer or engineer. Work parties may be formed to help clear the right of way where needed. A local construction company may donate or discount services. A challenge grant program with local businesses may be a good source of local funding, where corporations "adopt" a bikeway and help construct

and maintain the facility. Public/private partnerships may also be utilized as a funding mechanism to implement bicycle related projects and facilities.

Appendix A. Bikeway and Pedestrian Facility Design Guidelines

CLASS I
Shared-Use Path

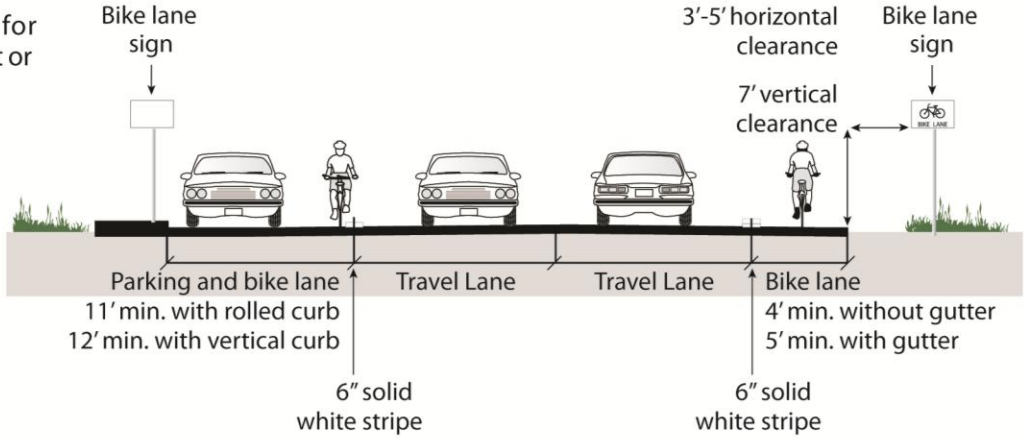
Provides a completely separated right of way for the exclusive use of bicycles and pedestrians with crossflow minimized.



8′ min. required paved width
2 ′clear, graded shoulders required
12′ min. total width recommended

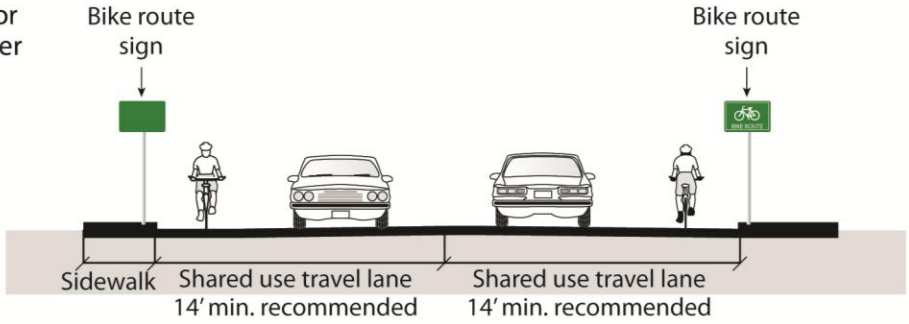
CLASS II
Bike Lane

Provides a striped lane for one-way bike travel on a street or highway.



CLASS III
Bike Route
Signed Shared Roadway

Provides for shared use with pedestrian or motor vehicle traffic, typically on lower volume roadways.

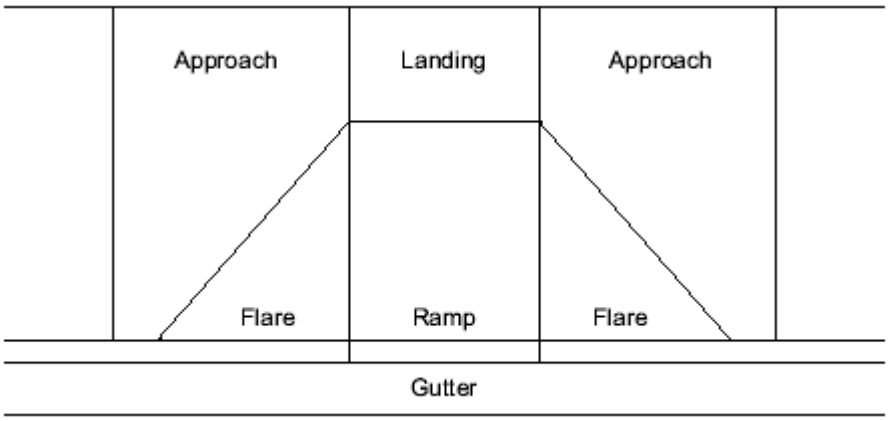


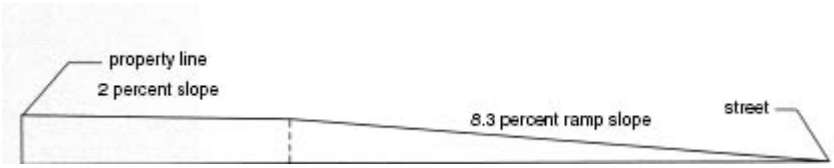
ADA Curb Ramp Components and Slope

Description

The main components of curb ramps are the landing, approach, flare, ramp and gutter, and are necessary to provide a gentle transition between the curb and sidewalk. Various ramp designs may be used to regulate the slope of the ramp.

Graphic





NOTE: Use Caltrans Standards

Potential Applications

- All intersections.
- Midblock crossings.
- Multi-use trail and roadway intersections.

Guidelines

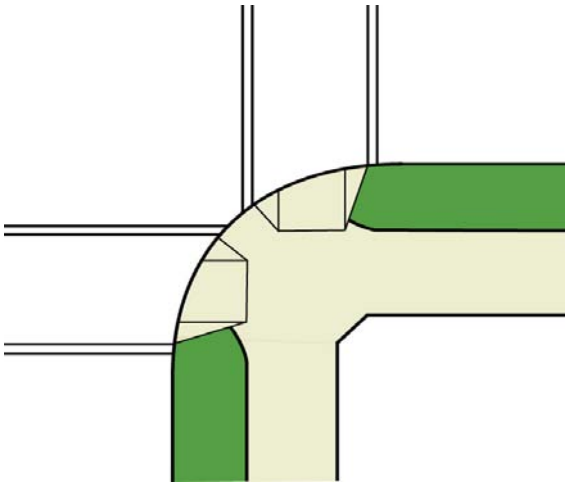
1. Curb ramps should be designed to accommodate the level of use anticipated at specific locations, e.g. sufficient width for the expected level of peak hour pedestrian volumes and other potential users.
2. Adequate drainage should be provided to prevent flooding of curb ramps.
3. Tactile strips must be used to assist sight-impaired pedestrians in locating the curb ramp.

ADA Curb Ramp Design and Location

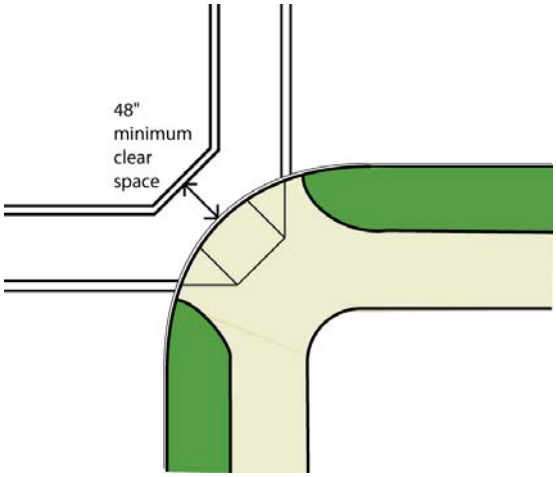
Description

Curb ramps are necessary for people who use wheelchairs to access sidewalks and crosswalks. ADA requires the installation of curb ramps in new sidewalks, as well as retrofitting existing sidewalks. Curb ramps may be placed at each end of the crosswalk (perpendicular curb ramps), or between crosswalks (diagonal curb ramps). The ramp may be formed by drawing the sidewalk down to meet the street level, or alternately building up a ramp to meet the sidewalk.

Graphic



Perpendicular curb ramps



Diagonal curb ramp

Potential Applications

- All intersections.
- Midblock crossings.
- Multi-use path and roadway intersections.

Guidelines

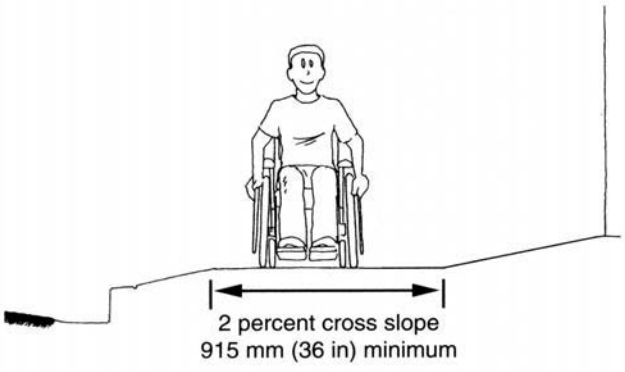
1. Perpendicular curb ramps should be used at large intersections. Curb ramps should be aligned with crosswalks, unless they are installed in a retrofitting effort and are located in an area with low vehicular traffic.
2. The minimum width of a curb ramp should be 36 inches, in accordance with ADAAG Guidelines.

ADA Sidewalks and Trail – Grade and Cross Slope

Description

Making sidewalks and trails ADA compliant involves ensuring that the grade and the cross slope of the sidewalk or trail is safe for disabled users. Gentle grades are preferred to steep grades due issues of control, stability and endurance. The cross slope is significant for issues of control, not only for wheelchair users, but for those with difficulty walking as well.

Graphic



Potential Applications

- All sidewalks, especially those on uneven or steep terrain.

Guidelines

1. Cross slope should not exceed 2 percent.
2. Longer, steeper grades should have landings every 400 feet where people can rest.

Sidewalk Design

Description

Sidewalks are comprised of four zones: curb, furnishings, through pedestrian, and frontage. The curb zone abuts the street and provides a buffer between the sidewalk and the street. The furnishings zone lies between the through zone and the curb zone and provides a location for street furniture and other public amenities such as trash receptacles, bicycle racks, lighting, news racks, and water fountains. The through pedestrian zone is the sidewalk space for walking and is located between the furnishings zone and the frontage zone. The through pedestrian zone is the widest zone and should be clear of obstructions at all times. Finally, the frontage zone provides a transition between the building or property line and the through zone. The frontage zone may feature furniture and act as an outdoor extension of restaurants or cafés. All design and construction must be in conformance with the Americans with Disabilities (ADA) requirements.

Potential Applications

- All sidewalk locations.

Guidelines

1. Sidewalks should be located on both sides of the street.
2. Sidewalks should be constructed of durable, slip-resistant materials, like Portland cement.
3. Sidewalk zones should be clearly delineated—furniture should not be placed in the curb zone, etc.
4. The through pedestrian zone should be kept clear of obstructions at all times.
5. While the width of the curb, furnishings and frontage zones may be adjusted to reflect the needs of the site, the through zone should always occupy the majority share of the sidewalk space, and should be at least 5' wide in all locations.
6. Meandering sidewalks should be avoided, as straight sidewalk segments provide pedestrians with the most direct route possible between destinations.
7. General maintenance should be conducted regularly to repair cracks and gaps and remove debris, which can present safety hazards to pedestrians.
8. Sidewalks in Caltrans right-of-way should be designed according to the California Highway Design Manual (May 7, 2012 version) Chapter 100. Sidewalk width standards and guidelines are found in Section 105.2.

Sidewalk and Pathway Materials

Description

Sidewalks are generally constructed of Portland cement concrete. Sidewalk surfaces should be firm, stable and slip-resistant when dry. Some sidewalks are designed using decorative materials, such as brick or cobblestone. Although these surfaces may improve the aesthetic quality of the sidewalk, they may make mobility difficult for wheelchair users and create vibration. Brick and cobblestone also have a tendency to buckle, creating a tripping hazard and requiring increased maintenance. For these reasons, brick and cobblestone sidewalks are not recommended. Creative alternatives to brick sidewalks include concrete sidewalks with brick trim, which preserves the decorative quality of brick but is an easier surface to negotiate; or colored asphalt or concrete stamped to look like brick.

Graphic

Sidewalk with brick trim

Potential Applications

- All sidewalk corridors.

Guidelines

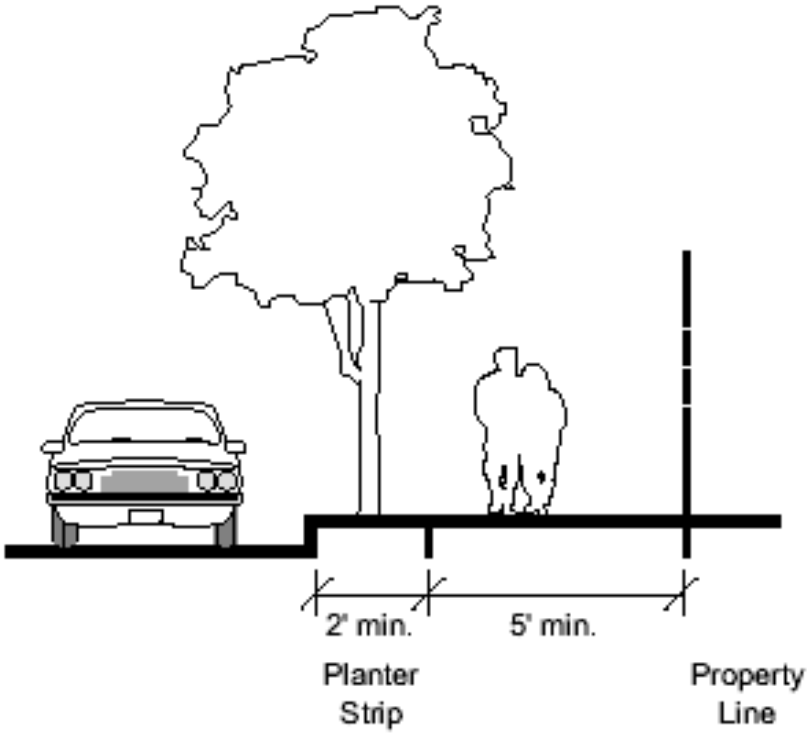
1. See Sidewalk Design above for additional sidewalk design details.

Sidewalk Zones – Residential

Description

Residential sidewalks are generally narrower than commercial zone sidewalks, and priority should be given to the through pedestrian zone's width in residential sidewalk design. Residential sidewalks do include the other sidewalk zones, such as for placement of utility boxes in the furnishings zone, yet these zones are less prominent than in commercial areas where furnishings and frontage zones may feature ample seating and amenities like newsstands.

Graphic



Potential Applications

- Residential areas

Guidelines

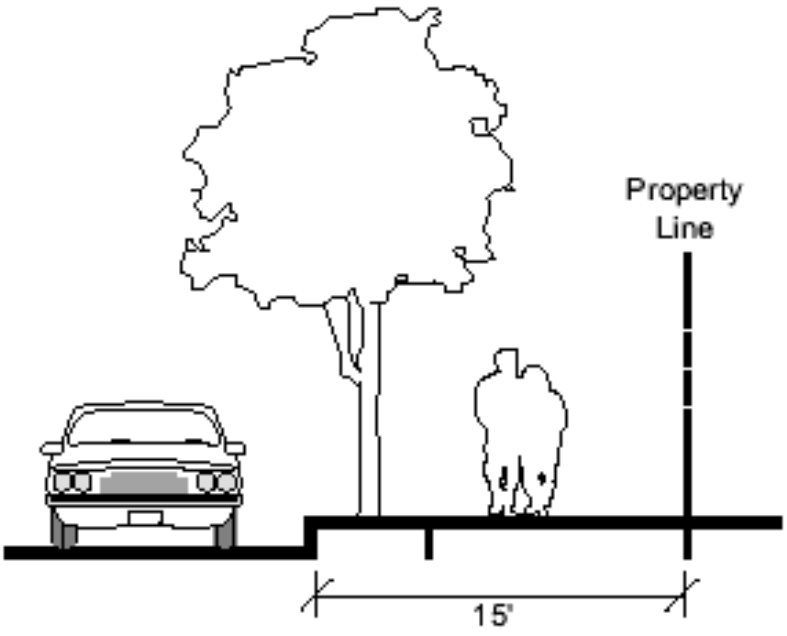
1. See also guidelines Sidewalk Design - Sidewalk Zones.
2. 2' minimum planter strip is recommended on all collector and arterial roadways to provide a buffer to pedestrians.

Sidewalk Zones – High Density

Description

Medium to high-density pedestrian zones located in areas with commercial or retail activity like Downtown Hollister provide excellent opportunities to develop an inviting pedestrian environment. The frontage zone in retail and commercial areas may feature seating for cafés and restaurants. The furnishings zone may feature seating, as well as newspaper racks, water fountains, utility boxes, lampposts, street trees and other landscaping. The medium to high-density pedestrian zone should provide an interesting and inviting environment for walking as well as window shopping.

Graphic



Potential Applications

- Sidewalks in commercial zones should have an entire width of approximately 15 feet.

Guidelines

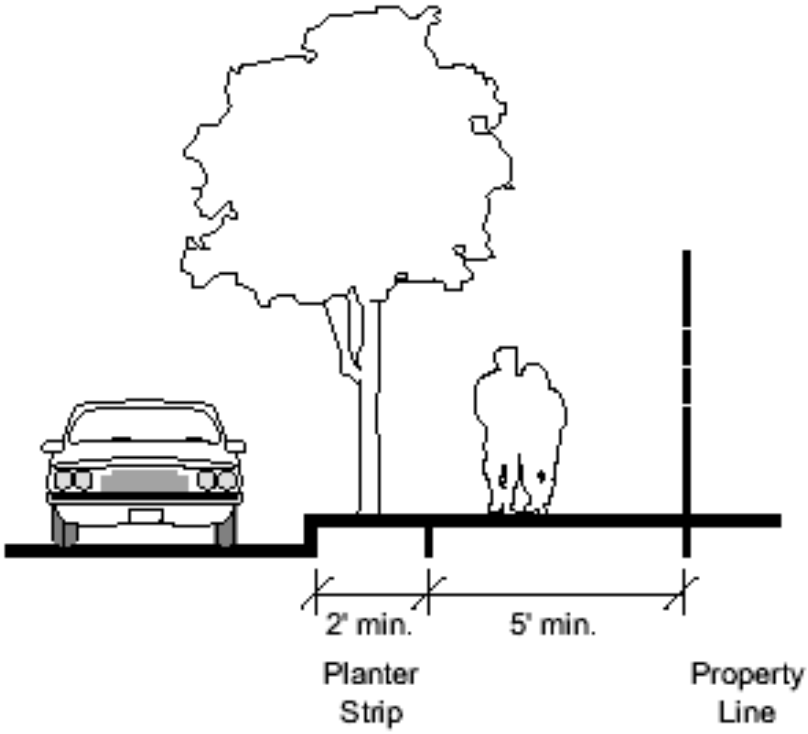
1. See guidelines for Sidewalk Design – Sidewalk Zones.

Sidewalk Zones – Industrial Zones

Description

Sidewalks through industrial zones are essential components of the pedestrian network. Industrial zones and arterial roadways often experience heavy truck traffic which is both unpleasant and potentially dangerous for pedestrians. Providing a broad furnishings zone will help separate pedestrians from heavy vehicle traffic. A limited frontage zone is appropriate for industrial zones and arterial roadways because there is a reduced need for seating or street-side vending in these locations.

Graphic



Potential Applications

- Industrial areas or zones.
- Along arterial roadways or other routes with heavy truck traffic.

Guidelines

1. The furnishings zone, in combination with the curb zone, should provide a minimum 2 foot buffer between the pedestrian through zone and heavy traffic on industrial or arterial roadways.
2. See also Sidewalk Design – Sidewalk Zones.

Sidewalk Design – Furniture

Description

Street furniture is an integral part of good pedestrian design and walkable neighborhoods. The design and placement of street furniture should take into consideration the security, comfort and convenience of the user. Street furnishings should always be accessible to the disabled, and should be sited in a manner that preserves the width of the through zone.

Graphic

Potential Applications

- All sidewalks with a ten foot minimum width necessary to accommodate a furnishings zone.
- Sidewalks with significant pedestrian volumes.

Guidelines

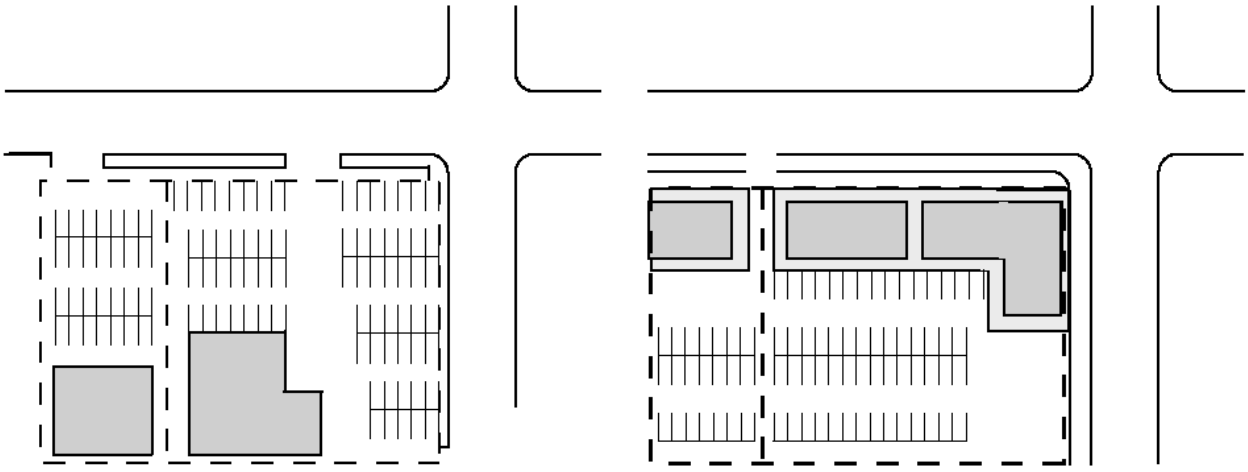
1. Sidewalk amenities should be located within the Furnishings or Frontage Zones as described in Sidewalk Design – Sidewalk Zones.
2. Seating should be provided adjacent to major destination points, such as restaurants, where they are often necessary and where they will be used frequently.
3. Seating and other amenities should be made of durable, high-quality materials which visually reinforce community identity and the design of nearby buildings.
4. Sidewalk bulb-outs can be used to accommodate additional street furniture in high-use areas.
5. Street furnishing design and location should consider car overhangs and door movement when placed near the curb and be located at the ends of the on-street stalls rather than the center.
6. No sidewalk amenity should reduce the clear width of a sidewalk or walkway to less than 4 feet.
7. To aid the visually disabled, use colors that contrast with the sidewalks color and surroundings.
8. Design and location of streetscape amenities should comply with ADA requirements.

Sidewalk Design – Driveways and Curb Cuts

Description

Driveways in locations with significant pedestrian traffic become conflict zones for motorists and pedestrians. Motorists exiting and entering driveways often do not see pedestrians approaching from a perpendicular direction, as they are focused on locating gaps in traffic in order to proceed. In addition, lengthy driveways and curb cuts may present cross slope or grade challenges to disabled persons. ADA standards should be used in the construction and retrofitting of all driveways and curb cuts.

Graphic



Conventional parking and access configuration

Potential Applications

- All sidewalks with driveways and curb cuts.
- Pedestrian sidewalks adjacent shopping centers and other retail sites with multiple driveway entrances.
- Residential neighborhoods with variable development patterns leading to frequent driveways and curb cuts.

Guidelines

1. Curb cuts for two-way traffic should not be wider than 26 feet, with an exception for curb cuts that provide frequent access for semi-trucks.
2. In nonresidential pedestrian supportive areas, there should be no more than one curb cut per 200 linear feet of street frontage.

Crosswalk Placement

Description

One of the most effective means of turning an important corridor into a community "spine" or "seam," rather than a "divider," is providing for safe street crossings. Communities frequently elect to install crosswalks at limited locations, such as only on certain legs of an intersection, or infrequently across a multi-lane arterial in order to promote vehicular circulation. These decisions do not eliminate pedestrian use of these roadways and intersections, but rather make travel more difficult for existing pedestrians. Advances in pedestrian design in recent years have increased the visibility and effectiveness of pedestrian crossings in protecting pedestrian safety, making installation of pedestrian crosswalks appropriate in many locations where traffic engineers once considered them inappropriate. Roadway geometry, traffic volumes and speeds, and signal configuration and timing must be carefully considered as a part of all new crosswalk installations and retrofits. The diagram below shows general guidelines for crosswalk placement on multiple roadway types.

Potential Applications

- All intersections.

Guidelines

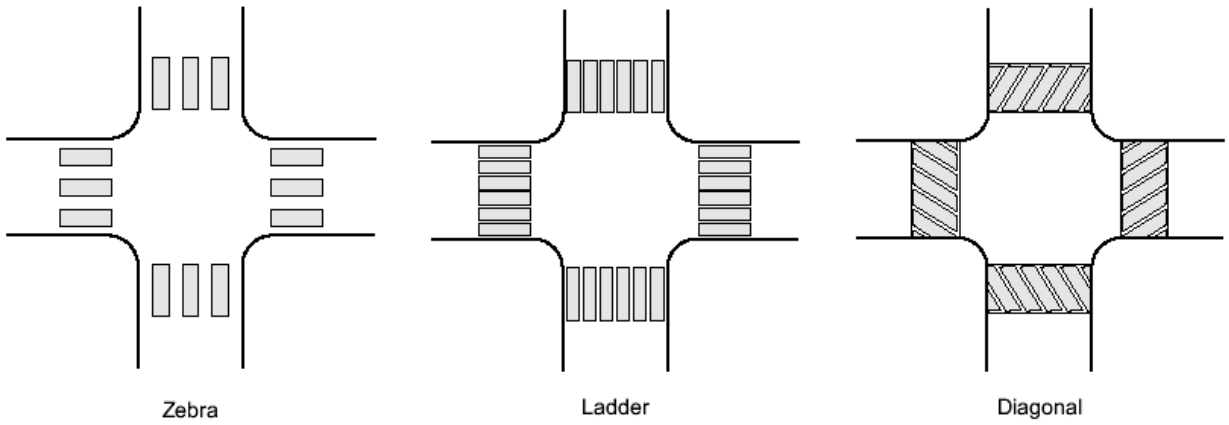
1. Guidelines for installation of marked crosswalks at uncontrolled intersections based on traffic volumes, pedestrian volumes, speed and number of lanes are addressed in the next section.
2. The width of crosswalks should be a minimum of 12 feet wide. Unless small-scale intersection conditions dictate otherwise widths should be increased where there is a greater amount of pedestrian activity.
3. Crosswalks should be adequately lit.
4. Marked crosswalks should be considered for uncontrolled crossing locations if there are no controlled crossings (by a traffic signal or stop sign) within 600 feet of the proposed crossing location (provided that the other guidelines presented here are met.)
5. Unless circumstances dictate otherwise, marked crosswalks should be provided at all signalized intersections where pedestrian crossing equipment is provided.
6. Marked crosswalks alone are insufficient (i.e.., without traffic-calming treatments, traffic signals, pedestrian signals (when warranted) or other substantial crossing improvements presented in these guidelines) and should not be used under the following conditions:
    - Where the speed limit exceeds 40 mph.
    - On a roadway with four or more lanes without a raised median or crossing island that has (or will soon have) an ADT of 12,000 vehicles per day or greater.
    - On a roadway with four or more lanes with a raised median or crossing island that has (or will soon have) an ADT of 15,000 vehicles per day or greater.
7. Special crosswalk markings should be used in order to increase the visibility of the crosswalk and on uncontrolled approaches to un-signalized intersections. These special markings are generally more appropriate on roads where the adjacent land use may divert drivers' attention.
8. Traffic signals should provide pedestrians, including seniors, the disabled, and children, with adequate time to cross the street or at least reach a pedestrian refuge in the middle of the street. An average walking speed which has been used historically is 4 feet/second to determine signal duration. However, a reduced speed such as 3.0 or 3.25 feet/second should be applied to compensate for the elderly and disabled.
9. Signal timing in #8, will have to be balanced with signal frequency. Ideally, pedestrian signals should be at a cycle frequency such as 60 to 90 seconds in order to dissuade jaywalking.

Crosswalk Striping at High-Volume Intersections

Description

Crosswalks at intersections should be striped in a manner that alerts motorists to the presence of pedestrians. The striping pattern should reflect the level of pedestrian traffic and location of the crosswalk. Ladder crosswalks should be used in high-traffic pedestrian areas, while crosswalks with parallel line striping should be used at low-traffic residential intersections. Parallel line striping should be adequate for most signalized or stop controlled intersections, although ladder striping may be used if necessary (for example, if the site has a history of pedestrian collisions).

Graphic



Potential Applications

- All high-volume intersections with pedestrian traffic.

Guidelines

1. In locations with significant pedestrian activity, crosswalks should be placed no further than 195-295 feet apart, and no closer than 145 feet apart.
2. In other locations with limited (but some) pedestrian activity, crosswalk frequency may be varied but should not exceed 395 feet without a crosswalk.
3. The stripes in parallel pavement marking crosswalks should be placed 10 feet apart. In situations where the crosswalk must be narrower, the minimum distance for parallel striping is 6 feet apart.
4. Ladder pavement markings should feature 2 foot wide by 10 foot long bars.

Pedestrian Signals

Description

Pedestrian signals ensure that pedestrians are given adequate time to cross the roadway and are not stranded in the crosswalk by signal lights with insufficient crossing time. Pedestrian push buttons, like the one shown below, should be accessible to people in wheelchairs and easy to find for the sight impaired. Depending on intersection configuration, location, and use, a variety of visual crossing indicators can be used.

Graphic

Pedestrian pushbutton, pedestrian countdown signal, vibrotactile pushbutton.

Potential Applications

- All high volume signalized intersections where pedestrian crossings are permitted.

Guidelines

1. Pedestrian push buttons should be located at the level top of the curb ramp cut at approximately 40 inches off the ground.
2. Pedestrian pushbuttons should be located where sight impaired pedestrians can easily find them.
3. Vibrotactile pedestrian signals should be provided wherever sight-impaired pedestrians are expected.
4. All pedestrian signal placement complies with Caltrans and ADA guidelines.

Pedestrian Warning Signage

Description

Pedestrian warning signage should accompany all pedestrian infrastructure improvements. Pedestrian warning signage may be placed on existing signposts (if appropriate) to reduce visual clutter.

Graphic

Potential Applications

- All pedestrian facilities.

Guidelines

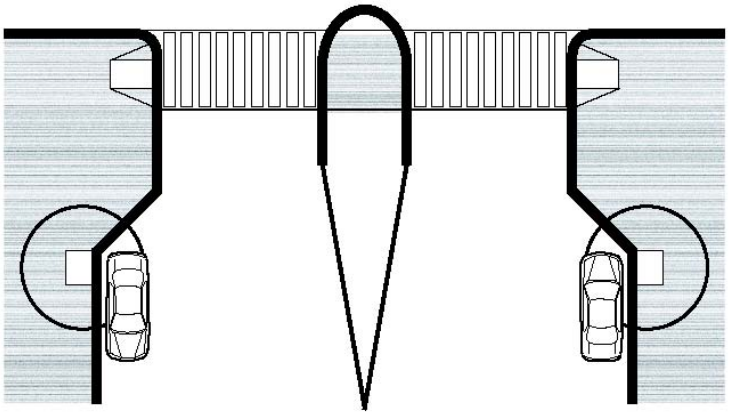
1. Pedestrian signs should be installed according to the guidelines set forth in the CA MUTCD.
2. Pedestrian crossing signs (W54) should be used adjacent to all unexpected pedestrian crossing areas.
3. One drivers-side sign is appropriate on two-lane lower speed roads.
4. Two signs facing each direction should be installed on roads with more than two lanes, higher speed roads, or roadways with medians (with one sign on the median where medians exist, otherwise on the opposite side of the street).
5. The color of all pedestrian crossing signs should be "Fluorescent Yellow-Green" per (CA MUTCD).
6. Overhead pedestrian crossing signs should be installed on streets with four or more lanes or two or three lane roads with widths greater than 50 feet at crossings where pedestrian crossing activity is more than 50 to 100 crossing per hour or where sight distance of the driver may not allow view of roadside signs.
7. Pedestrian symbol signs (W11-2) should be installed in advance of pedestrian crossings at isolated crossing areas. These signs are typically not used in urban areas at intersections or where motorists would normally expect pedestrians.
8. Warning signage should be placed on existing signposts if possible to reduce visual clutter.

Pedestrian Refuge Islands

Description

Pedestrian refuges in wide or busy streets can improve safety for pedestrians and vehicles. They are defined as areas within an intersection or between lanes of traffic where pedestrians may safely wait until vehicular traffic clears, allowing them to cross a street. These islands are particularly helpful for seniors, the disabled, and children who may be unable to cross the street during the available signal time. Another benefit to pedestrians is that it can significantly reduce delay in crossing unsignalized intersections since the pedestrian need only search for vehicles in one direction at a time.

Graphic



Pedestrian refuge island at an intersection

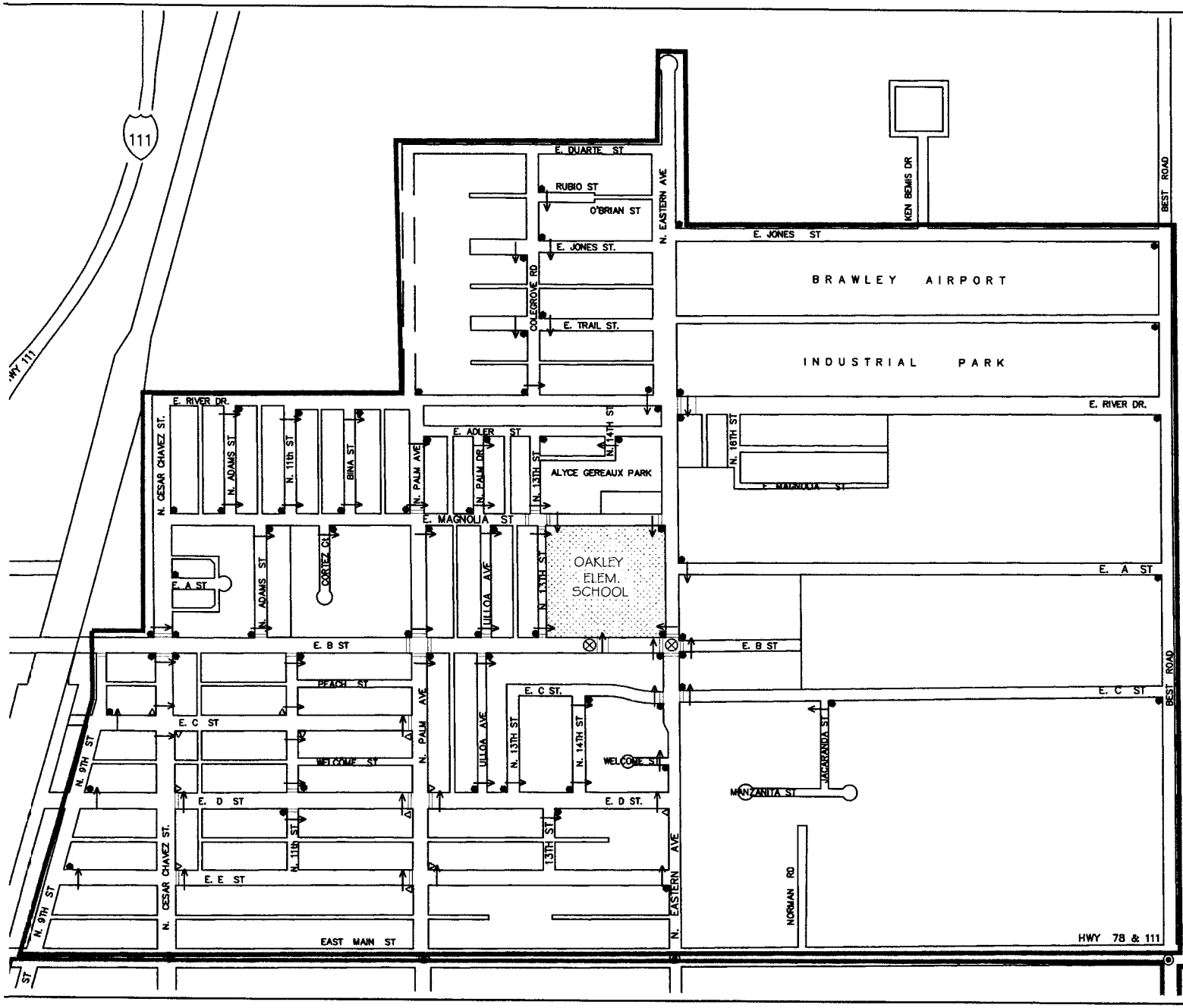
Potential Applications

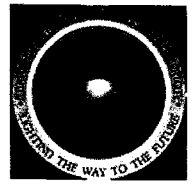
- Intersections with high vehicular traffic volumes and pedestrian traffic.
- Wide roadways where a two legged crossing will increase ability of pedestrians to cross roadways taking advantage of traffic gaps, without modifications to adjacent intersection signal timing.
- Multi-use path crossings of multi-lane roadways.

Guidelines

1. Detectable warnings such as truncated domes, flashing light signals, signs, and audible sounds should be used.
2. Pedestrian refuge islands should be installed at crossings of streets with 4 or more lanes, where a demonstrated crossing demand exists, and where it is feasible to provide a refuge island.
3. Pedestrian refuge islands should be installed at crossings of streets with two to three lanes, with traffic volumes higher 7,500 vehicles per day, and speeds greater than 35 mph.
4. Refuge islands should be a minimum of four feet wide by eight feet long. This is an absolute minimum that should not be used at multi-use path crossings or other locations where bicycle traffic may be anticipated.
5. Pedestrian refuge islands should be well illuminated.
6. Some type of vertical element should be provided on the island including trees, bollards, landscape features, or sign posts.
7. Pedestrian refuge islands should be ADA compliant; where it is not possible to include ramps and waiting pads that meet ADA requirements, waiting areas should be at-grade with the roadway.

Appendix B. Suggested Routes to School





PEDESTRIAN ROUTES TO SCHOOL
OAKLEY ELEMENTARY SCHOOL

LEGEND

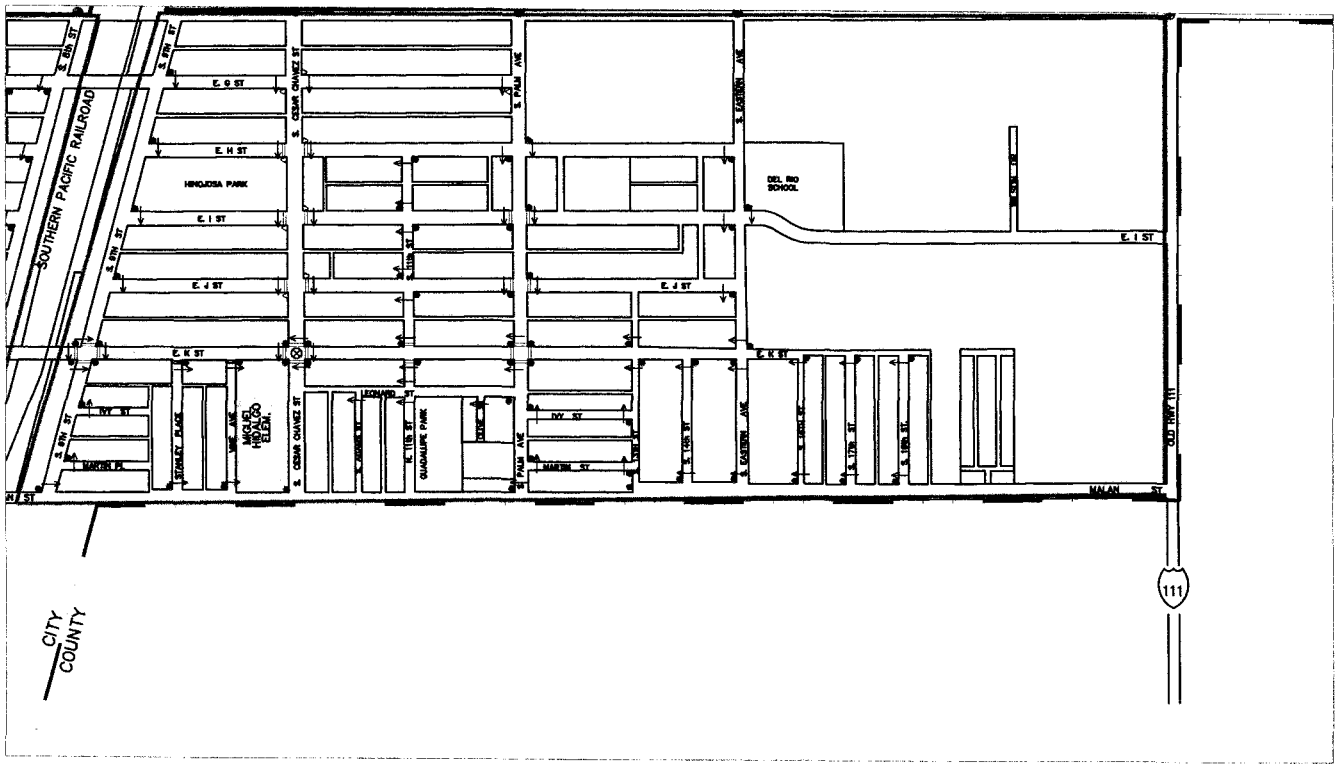
- OAKLY SCHOOL BOUNDRIES
- HILDALGO SCHOOL BOUNDRIES
- STOP SIGNS R-1
- TRAFFIC SIGNALS
- YIELD SIGN R-2
- CROSSWALK
- CROSSING GUARD

PARENTS:

This map shows the recommended crossings to be used from each block in your school attendance area. Following the arrows, select the best route from your home to the school and mark it with a colored pencil or crayon. This is the route your child should take. Instruct your child to use this route and to cross streets only at locations shown. You and your child should become familiar with the route by walking it together: Obey marked crosswalks, stop signs, traffic signals and other traffic controls. Crossing points have been located at these controls wherever possible, even though a longer walk may be necessary. Instruct your child to always look both ways before crossing the street. If no sidewalk exists, student should walk facing traffic.

Estimados Padres:

Este mapa muestra los cruzadas recomendados para las peatanes de cada cuadra en la area de su escuela. Siguienda las flechas en el mapa, selecione la ruta mas segura de su casa a la Escuela y marquelo con un lapis o tiza de color. Esta es la ruta que su hijo (a) debe de usar. Digale a su hijo (a) que use esta ruta y que cruce las calles solamente en los lugares indicados. Usted y su hijo (a) deberian de familiarizarce con esta ruta. Obedezcan los rotulos de peatones, de altos, semaforos y tados los señales de trafico. Puntos para cruzar estan locolizados en areas controladas, aunque sea necesaria de olargar el tiempo para cruzar. Instruye o su hijo (a) que siempre se fije de los dos lados antes de cruzar la calle. El estudiante debe de siempre caminar en la direccian opuesta del trafico si no existe una banqueta.



PEDESTRIAN ROUTES TO SCHOOL
HILDALGO ELEMENTARY SCHOOL

LEGEND

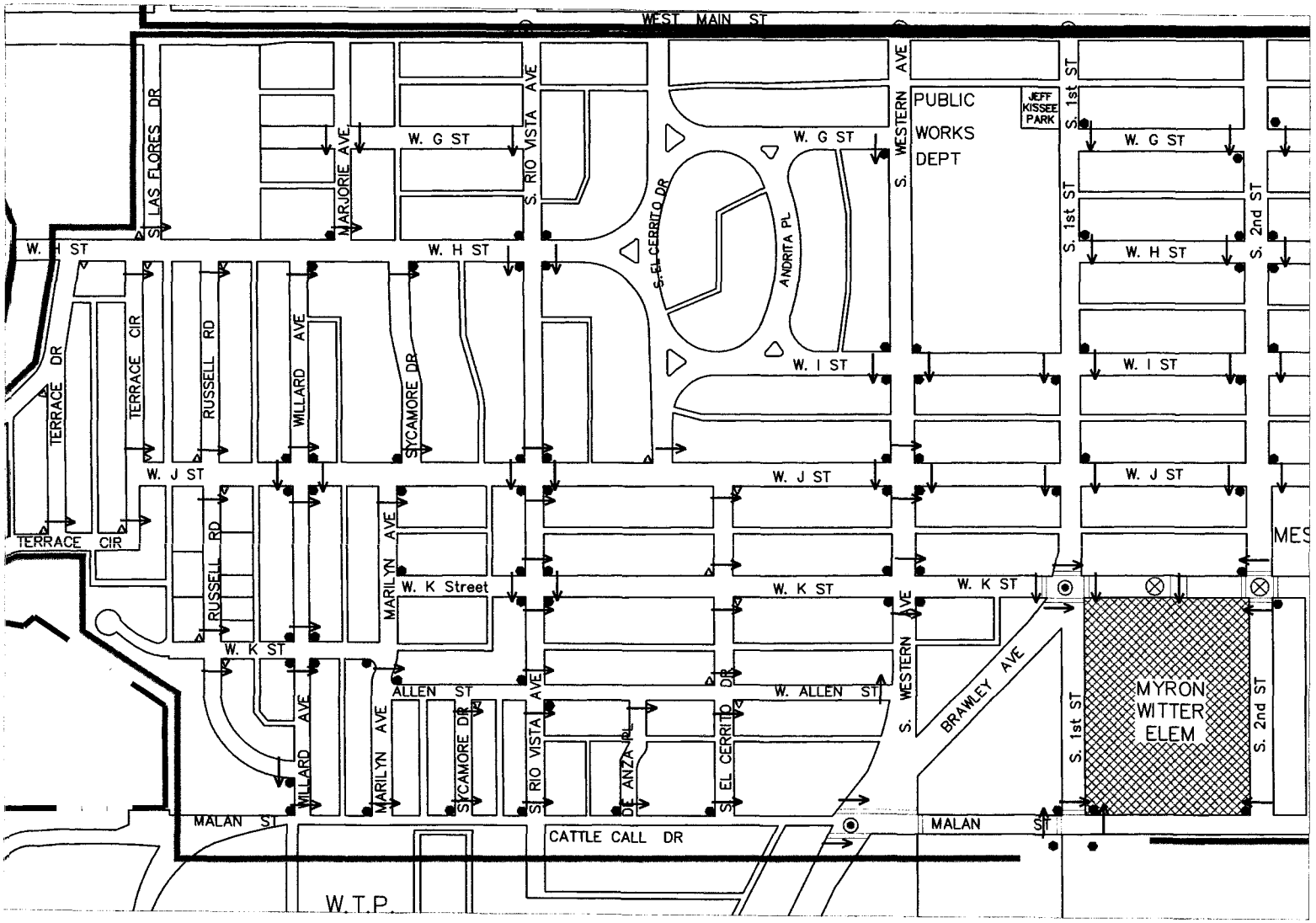
- HILDALGO SCHOOL BOUNDRIES
- WITTER SCHOOL BOUNDRIES
- PHIL SWING SCHOOL BOUNDRIES
- STOP SIGNS R-1
- TRAFFIC SIGNALS
- YIELD SIGN R-2
- CROSSWALK
- CROSSING GUARD

PARENTS:

This map shows the recommended crossings to be used from each block in your school attendance area. Following the arrows, select the best route from your home to the school and mark it with a colored pencil or crayon. This is the route your child should take. Instruct your child to use this route and to cross streets only at locations shown. You and your child should become familiar with the route by walking it together: Obey marked crosswalks, stop signs, traffic signals and other traffic controls. Crossing points have been located at these controls wherever possible, even though a longer walk may be necessary. Instruct your child to always look both ways before crossing the street. If no sidewalk exists, student should walk facing traffic.

Estimados Padres:

Este mopo muestra los cruzados recomendodos para los peatones de cada cuadra en la orea de su escuela. Siguiendo las flechas en el mapa, selecione la ruta mas segura de su casa a la Escuela y marquelo con un lapis o tiza de color. Esta es la ruta que su hijo (a) debe de usar. Digale a su hijo (a) que use esta ruta y que cruce las calles solamente en los lugares indicados. Usted y su hijo (a) deberian de familiarizarce con esta ruta. Obedezcan los rotulos de peatones, de altos, semaforos y todos los señales de trafico. Puntos para cruzor estan locolizados en areas controladas, aunque sea necesario de alargar el tiempo para cruzar. Instruye a su hijo (a) que siempre se fije de los dos lados antes de cruzar la calle. El estudiante debe de siempre caminar en lo direccion opuesta del trafico si no existe una banqueta.



CITY OF BRAWLEY INCORPORATED 1908

CREATING THE WAY TO THE FUTURE

PEDESTRIAN ROUTES TO SCHOOL
WHITTER ELEMENTARY SCHOOL
FOR STUDENTS LIVING WEST OF SCHOOL

LEGEND

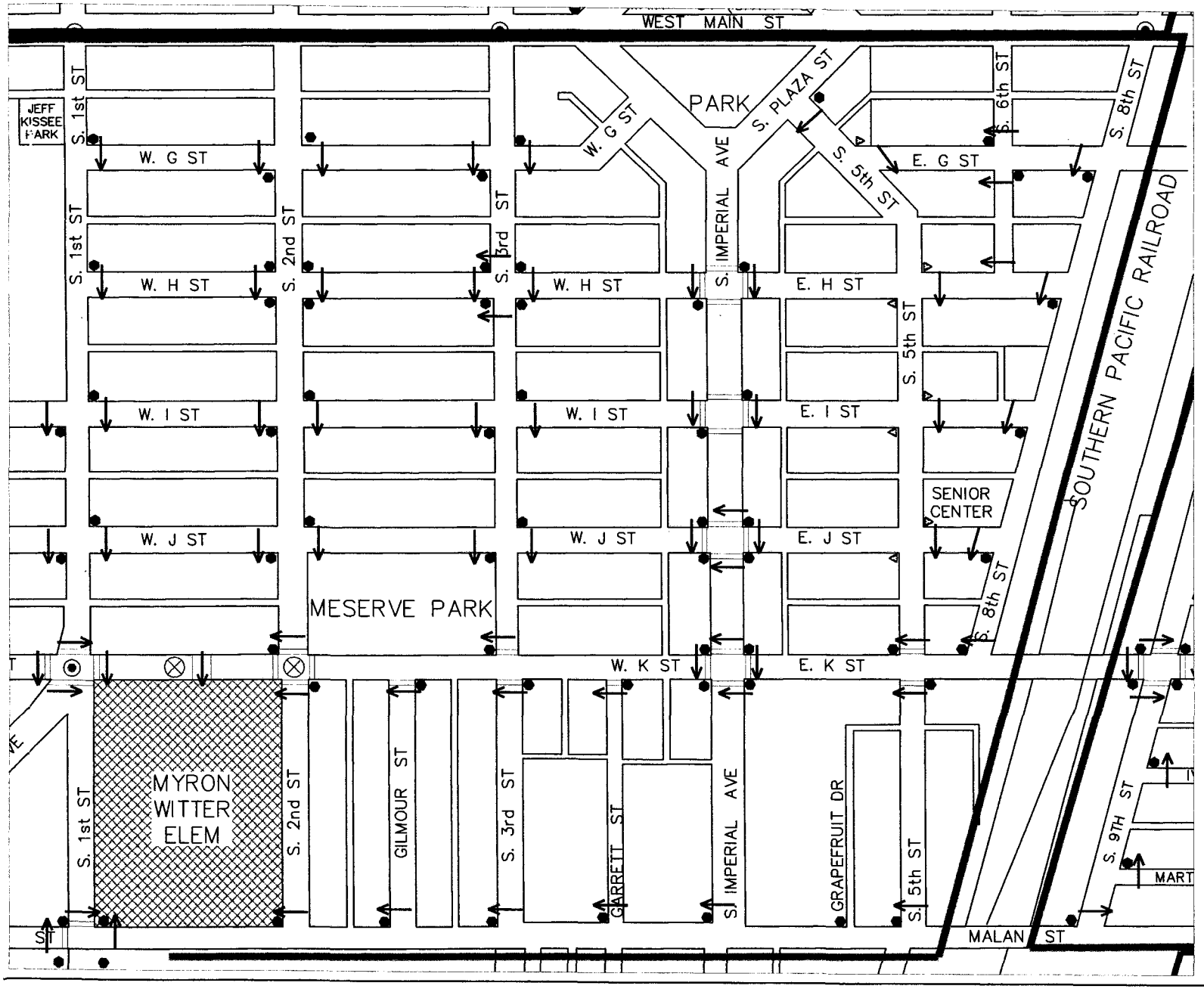
- PHIL SWING SCHOOL BOUNDRIES
- WITTER SCHOOL BOUNDRIES
- STOP SIGNS R-1
- TRAFFIC SIGNALS
- YIELD SIGN R-2
- CROSSWALK
- CROSSING GUARD

PARENTS:

This map shows the recommended crossings to be used from each block in your school attendance area. Following the arrows, select the best route from your home to the school and mark it with a colored pencil or crayon. This is the route your child should take. Instruct your child to use this route and to cross streets only at locations shown. You and your child should become familiar with the route by walking it together: Obey marked crosswalks, stop signs, traffic signals and other traffic controls. Crossing points have been located ot these controls wherever possible, even though a longer walk may be necessary. Instruct your child to always look both ways before crossing the street. If no sidewalk exists, student should walk facing traffic.

Estimados Padres:

Este mapa muestra los cruzados recomendados para los peatones de cada cuadra en la area de su escuela. Siguienda las flechas en el mapa, selecione lo ruta mas segura de su casa a la Escuela y marquela con un lopis o tiza de color. Esta es la ruta que su hijo (a) debe de usar. Digale a su hijo (a) que use esta ruta y que cruce las calles solamente en los lugares indicadas. Usted y su hijo (a) deberian de familiarizarce con esta ruta. Obedezcan los rotulos de peatones, de altos, semaforos y todos los señales de trofico. Puntos para cruzar estan localizados en areas controladas, aunque sea necesario de alargar el tiempo para cruzar. Instruye a su hijo (a) que siempre se fije de los dos lodos antes de cruzar la calle. El estudiante debe de siempre caminar en la direccion opuesta del trafico si no existe una banqueta.



CITY OF BRAWLEY · INCORPORATED 1908 ·

LIGHTING THE WAY TO THE FUTURE

PEDESTRIAN ROUTES TO SCHOOL
WHITTER ELEMENTARY SCHOOL
FOR STUDENTS LIVING EAST OF SCHOOL

LEGEND

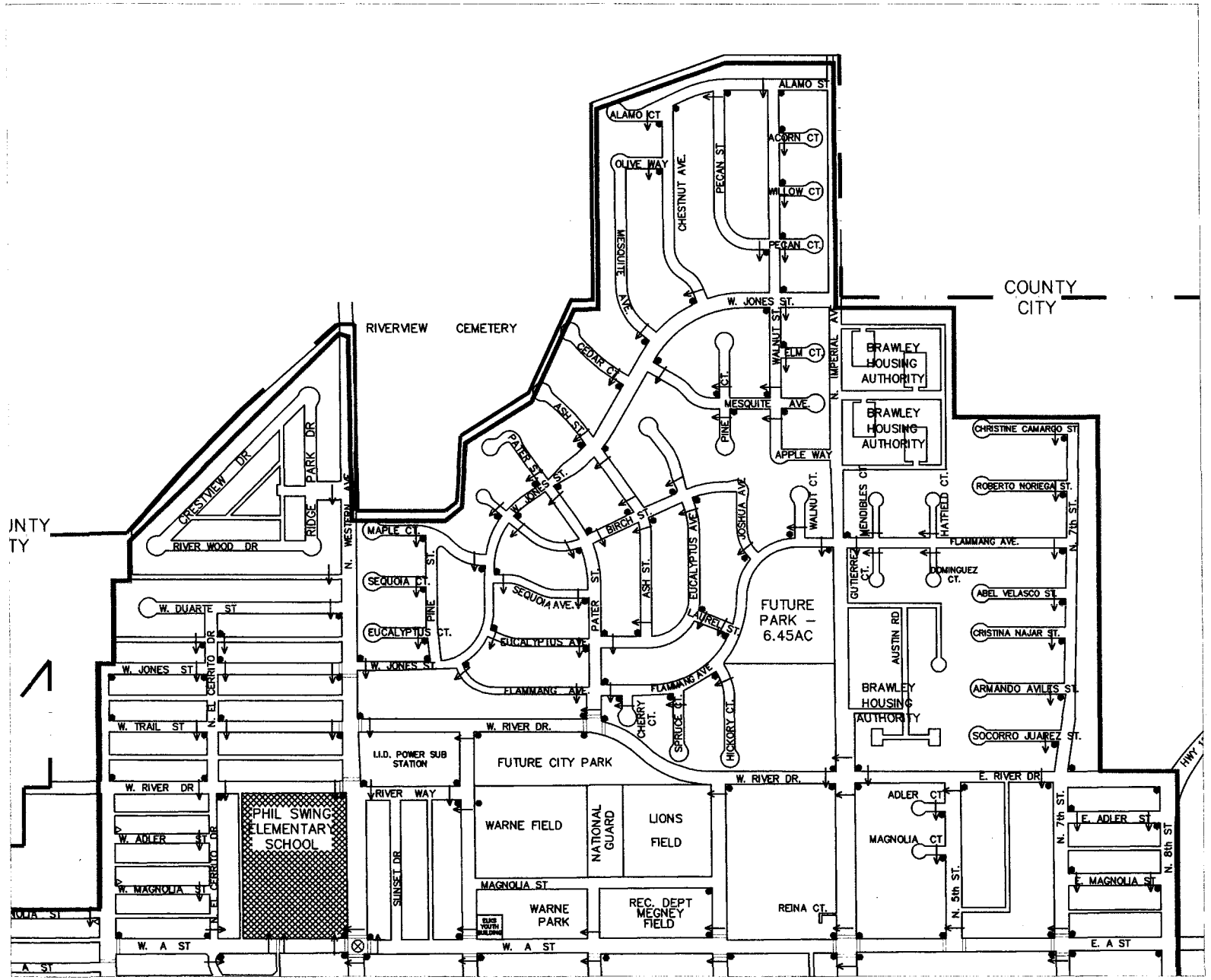
- PHIL SWING SCHOOL BOUNDRIES
- WITTER SCHOOL BOUNDRIES
- HILDALGO SCHOOL BOUNDRIES
- STOP SIGNS R-1
- TRAFFIC SIGNALS
- YIELD SIGN R-2
- CROSSWALK
- CROSSING GUARD

PARENTS:

This map shows the recommended crossings to be used from each block in your school attendance area. Following the arrows, select the best route from your home to the school and mark it with a colored pencil or crayon. This is the route your child should take. Instruct your child to use this route and to cross streets only at locations shown. You and your child should become familiar with the route by walking it together: Obey marked crosswalks, stop signs, traffic signals and other traffic controls. Crossing points have been located at these controls wherever possible, even though a longer walk may be necessary. Instruct your child to always look both ways before crossing the street. If no sidewalk exists, student should walk facing traffic.

Estimados Padres:

Este mapo muestro los cruzados recomendados para los peatones de cada cuadra en la area de su escuela. Siguiendo las flechas en el mapa, selecione la ruta mas segura de su cosa a la Escuela y morquelo con un lapis o tizo de color. Esto es la ruta que su hijo (a) debe de usar. Digole a su hijo (a) que use esta ruta y que cruce los calles solamente en los lugares indicados. Usted y su hijo (a) deberian de familiarizorce can esta ruto. Obedezcan los rotulos de peatones, de oltos, semaforos y todos los señales de trafico. Puntos para cruzar estan locolizados en oreas cantroladas, aunque sea necesario de olargar el tiempo para cruzar. Instruye a su hijo (o) que siempre se fije de los dos lados ontes de cruzar la calle. El estudiante debe de siempre caminar en lo direccion opuesta del trofico si no existe una banqueta.



PEDESTRIAN ROUTES TO SCHOOL
PHIL SWING ELEMENTARY SCHOOL
FOR STUDENTS LIVING NORTH OF SCHOOL

LEGEND

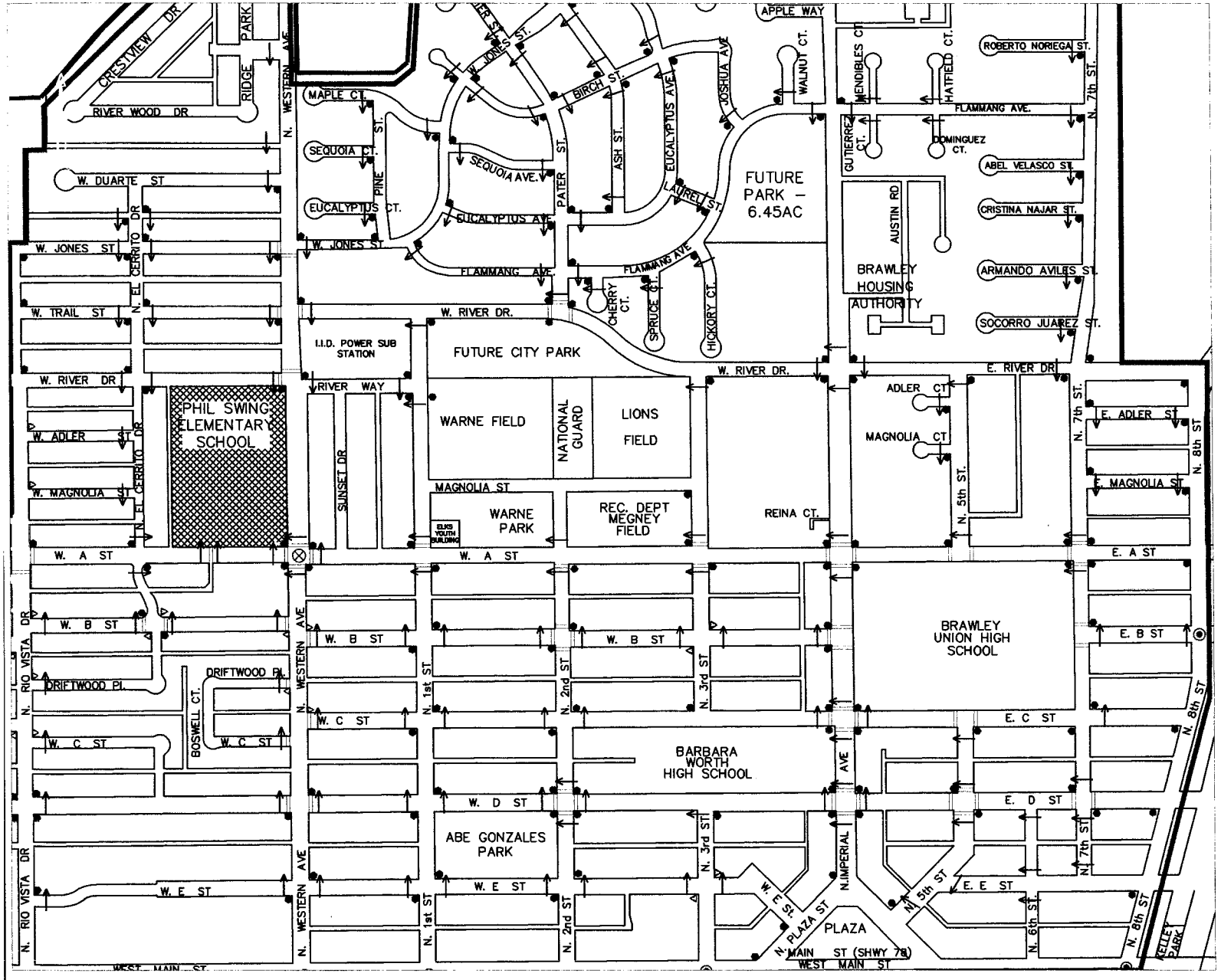
- PHIL SWING SCHOOL BOUNDRIES
- STOP SIGNS R-1
- TRAFFIC SIGNALS
- YIELD SIGN R-2
- CROSSWALK
- CROSSING GUARD

PARENTS:

This map shows the recommended crossings to be used from each block in your school attendance area. Following the arrows, select the best route from your home to the school and mark it with a colored pencil or crayon. This is the route your child should take. Instruct your child to use this route and to cross streets only at locations shown. You and your child should become familiar with the route by walking it together: Obey marked crosswalks, stop signs, traffic signals and other traffic controls. Crossing points have been located at these controls wherever possible, even though a longer walk may be necessary. Instruct your child to always look both ways before crossing the street. If no sidewalk exists, student should walk facing traffic.

Estimados Padres:

Este mapa muestra los cruzados recomendados para los peatones de cada cuadra en la area de su escuela. Siguiendo las flechas en el mapa, selecione la ruta mas segura de su casa a la Escuela y marquelo con un lapis o tiza de color. Esta es la ruta que su hijo (a) debe de usar. Digale a su hijo (a) que use esta ruta y que cruce las calles solamente en los lugares indicodos. Usted y su hijo (a) deberian de familiarizarce con esta ruta. Obedezcan las rotulos de peatones, de altos, semaforos y todos los señales de trafico. Puntos para cruzar estan localizados en areas controladas, aunque sea necesario de alargar el tiempo para cruzar. Instruye a su hijo (a) que siempre se fije de los dos lados antes de cruzar la calle. El estudiante debe de siempre caminar en lo direccion opuesto del trafico si no existe una bonqueta.



PEDESTRIAN ROUTES TO SCHOOL
PHIL SWING ELEMENTARY SCHOOL
FOR STUDENTS LIVING SOUTH OF SCHOOL

LEGEND

- PHIL SWING SCHOOL BOUNDRIES
- WITTER SCHOOL BOUNDRIES
- STOP SIGNS R-1
- TRAFFIC SIGNALS
- YIELD SIGN R-2
- CROSSWALK

PARENTS:

This map shows the recommended crossings to be used from each block in your school attendance area. Following the arrows, select the best route from your home to the school and mark it with a colored pencil or crayon. This is the route your child should take. Instruct your child to use this route and to cross streets only at locations shown. You and your child should become familiar with the route by walking it together: Obey marked crosswalks, stop signs, traffic signals and other traffic controls. Crossing points have been located at these controls wherever possible, even though a longer walk may be necessary. Instruct your child to always look both ways before crossing the street. If no sidewalk exists, student should walk facing traffic.

Estimados Padres:

Este mapa muestra los cruzados recomendados para los peatones de cada cuadra en la area de su escuela. Siguiendo las flechas en el mapa, selecione la ruta mas segura de su casa a la Escuela y marquelo con un lopis o tiza de color. Esta es la ruta que su hijo (a) debe de usar. Digale a su hijo (a) que use esta ruta y que cruce los calles solomente en los lugares indicados. Usted y su hijo (a) deberian de familiarizarce con esta ruta. Obedezcan los rotulos de peatones, de altos, semaforos y todos los señoles de trafico. Puntos para cruzar estan localizados en areos cantrolados, aunque sea necesario de alargar el tiempo para cruzar. Instruye a su hijo (a) que siempre se fije de los das ladas antes de cruzar la calle. El estudionte debe de siempre caminar en la direccion opuesta del trofico si no existe uno banqueta.

Appendix C. Surveys

The City of Brawley is developing a Non-Motorized Transportation Plan to address walking and bicycling needs in the community. We want to hear from you!

Please complete the survey below and give us your thoughts.

Thank You!

Please return with your utility bill payment to:

City of Brawley
Finance Department
400 Main St.
Brawley, CA 92227

1. Where do you live? Please enter your nearest intersection.

Street One _____

Street Two _____

2. How far is your job or school from where you live?

☐ Under 2 miles (a) ☐ 3 – 5 miles (b) ☐ 6 – 10 miles (c)
☐ 11 – 20 miles (d) ☐ Over 20 miles (e) ☐ I do not work or go to school (f)

3. What is your age group?

☐ 0 –17 (a) ☐ 18 – 25 (b) ☐ 26 – 35 (c)
☐ 36 – 45 (d) ☐ 46 – 55 (e) ☐ Over 55 (f)

4. What is your primary mode of commuting (3 days per week)?

☐ Drive alone (a) ☐ Carpool/vanpool (b) ☐ Public transit (c)
☐ Motorcycle (d) ☐ Bike (e) ☐ Walk (f) ☐ Other (g)

5. How often do you commute by bicycle?

☐ 5+ days per week (a) ☐ 3 – 4 days per week (b)
☐ 1 – 2 days per week (c) ☐ 1 – 2 days per month (d)
☐ Less than 1–2 days per month (e) ☐ I never commute by bicycle (f)

6. How often do you commute by walking?

☐ 5+ days per week (a) ☐ 3 – 4 days per week (b)
☐ 1 – 2 days per week (c) ☐ 1 – 2 days per month (d)
☐ Less than 1–2 days per month (e) ☐ I never commute by walking (f)

7. If you ride a bicycle, what are your reasons? (check all that apply)

☐ To get to work or school (a) ☐ For exercise/recreation (b)
☐ To shop, run errands, or eat out (c) ☐ To visit friends/family (d)
☐ To get to/from transit (e) ☐ It is cheaper than other modes (f)
☐ Other (please specify) (f)_____

8. If you walk, what are your reasons? (check all that apply)

☐ To get to work or school (a) ☐ For exercise/recreation (b)
☐ To shop, run errands, or eat out (c) ☐ To visit friends/family (d)
☐ To get to/from transit (e) ☐ It is cheaper than other modes (f)
☐ Other (please specify) (f)_____

9. What keeps you from biking more often? (check all that apply)

☐ Lack of off-street paths (a) ☐ Lack of on-street bike lanes (b)
☐ Lack of on-street bike routes (c) ☐ Behavior of motorists (d)
☐ I do not feel safe (e) ☐ I travel with small children (f)
☐ I don't have enough time (g) ☐ My destinations are too far away (h)
☐ Health issues/concerns (i) ☐ Insufficient lighting (j)
☐ I have too much to carry (k) ☐ Lack of bike parking (l)
☐ Other (please specify) (f)_____

10. If you ride a bicycle or walk, what is the length of your average trip?

Biking trip: _____ miles

Walking trip: _____ miles OR _____ blocks

11. What keeps you from walking more often? (check all that apply)

☐ Behavior of motorists (a) ☐ I do not feel safe (b)
☐ I travel with small children (c) ☐ I don't have enough time (d)
☐ My destinations are too far away (e) ☐ Health issues/concerns (f)
☐ Other (please specify) (g)_____

12. Please rank to what degree the following conditions affect your decision to ride a bicycle:

Presence of off-street bike paths	☐ Very important	☐ Somewhat important	☐ Neutral	☐ Somewhat unimportant	☐ Unimportant
Presence of on-street bike lanes	☐ Very important	☐ Somewhat important	☐ Neutral	☐ Somewhat unimportant	☐ Unimportant
Presence of bike routes	☐ Very important	☐ Somewhat important	☐ Neutral	☐ Somewhat unimportant	☐ Unimportant
Condition of bikeway/roadway (i.e. pavement quality)	☐ Very important	☐ Somewhat important	☐ Neutral	☐ Somewhat unimportant	☐ Unimportant
Traffic volumes/speeds	☐ Very important	☐ Somewhat important	☐ Neutral	☐ Somewhat unimportant	☐ Unimportant
Behavior of motorists	☐ Very important	☐ Somewhat important	☐ Neutral	☐ Somewhat unimportant	☐ Unimportant
Behavior of other cyclists	☐ Very important	☐ Somewhat important	☐ Neutral	☐ Somewhat unimportant	☐ Unimportant
Amount of street lighting	☐ Very important	☐ Somewhat important	☐ Neutral	☐ Somewhat unimportant	☐ Unimportant
Access to bike parking and storage	☐ Very important	☐ Somewhat important	☐ Neutral	☐ Somewhat unimportant	☐ Unimportant
Ability to combine bicycle trips with transit trips	☐ Very important	☐ Somewhat important	☐ Neutral	☐ Somewhat unimportant	☐ Unimportant
Travel time	☐ Very important	☐ Somewhat important	☐ Neutral	☐ Somewhat unimportant	☐ Unimportant
Available information of bike routes	☐ Very important	☐ Somewhat important	☐ Neutral	☐ Somewhat unimportant	☐ Unimportant
Weather	☐ Very important	☐ Somewhat important	☐ Neutral	☐ Somewhat unimportant	☐ Unimportant

PLEASE SEE OTHER SIDE

13. Please rank to what degree the following conditions affect your decision to walk:

Presence of walking paths	☐ Very important	☐ Somewhat important	☐ Neutral	☐ Somewhat unimportant	☐ Unimportant
Presence of sidewalks	☐ Very important	☐ Somewhat important	☐ Neutral	☐ Somewhat unimportant	☐ Unimportant
Amount of street lighting	☐ Very important	☐ Somewhat important	☐ Neutral	☐ Somewhat unimportant	☐ Unimportant
Amount of shade	☐ Very important	☐ Somewhat important	☐ Neutral	☐ Somewhat unimportant	☐ Unimportant
Traffic volumes/speeds	☐ Very important	☐ Somewhat important	☐ Neutral	☐ Somewhat unimportant	☐ Unimportant
Behavior of motorists	☐ Very important	☐ Somewhat important	☐ Neutral	☐ Somewhat unimportant	☐ Unimportant
Perceived safety	☐ Very important	☐ Somewhat important	☐ Neutral	☐ Somewhat unimportant	☐ Unimportant
Ability to access transit stops	☐ Very important	☐ Somewhat important	☐ Neutral	☐ Somewhat unimportant	☐ Unimportant
Travel time	☐ Very important	☐ Somewhat important	☐ Neutral	☐ Somewhat unimportant	☐ Unimportant
Available information of walking routes	☐ Very important	☐ Somewhat important	☐ Neutral	☐ Somewhat unimportant	☐ Unimportant
Weather	☐ Very important	☐ Somewhat important	☐ Neutral	☐ Somewhat unimportant	☐ Unimportant

14. Please rank your interest in the following non-motorized programs:

Riding skills and safety courses for adults	☐ Not interested	☐ Somewhat interested	☐ Very interested
Riding skills and safety courses for children	☐ Not interested	☐ Somewhat interested	☐ Very interested
Safe Routes to School programs for children	☐ Not interested	☐ Somewhat interested	☐ Very interested
Public awareness campaigns	☐ Not interested	☐ Somewhat interested	☐ Very interested
Special events	☐ Not interested	☐ Somewhat interested	☐ Very interested
Maps and guides	☐ Not interested	☐ Somewhat interested	☐ Very interested
Information websites	☐ Not interested	☐ Somewhat interested	☐ Very interested
Commuter incentive programs	☐ Not interested	☐ Somewhat interested	☐ Very interested
Information and maps delivered to my home	☐ Not interested	☐ Somewhat interested	☐ Very interested
Booths at public events	☐ Not interested	☐ Somewhat interested	☐ Very interested

15. Where would you like to see new bicycle facilities?

_____

_____

_____

_____

_____

16. Where would you like to see new pedestrian facilities?

_____

_____

_____

_____

_____

17. If you would like to be contacted about additional opportunities to stay involved in the project, please enter your contact information:

Name_____

Phone Number_____

Email_____

PLEASE SEE OTHER SIDE

La Ciudad de Brawley está desarrollando un Plan de Transporte no motorizado para hacer frente a las necesidades de caminar y andar en bicicleta en la comunidad. ¡Queremos escuchar de usted!

Por favor complete la siguiente encuesta y dénos sus pensamientos.

¡Gracias!

Por favor devuelva con su pago de factura de servicios públicos a:

City of Brawley
Finance Department
400 Main St.
Brawley, CA 92227

1. ¿Dónde vive usted? Por favor escriba su intersección más cercana.

Calle Uno _____

Calle dos _____

2. ¿Qué tan lejos está su trabajo o escuela de donde usted vive?

☐ Menos de 2 millas (a) ☐ 3 – 5 millas (b) ☐ 6 – 10 millas (c)
☐ 11 – 20 millas (d) ☐ Más de 20 millas (e) ☐ No trabajo ni voy a la escuela (f)

3. ¿Cuál es su grupo de edad?

☐ 0 –17 (a) ☐ 18 – 25 (b) ☐ 26 – 35 (c)
☐ 36 – 45 (d) ☐ 46 – 55 (e) ☐ Más de 55 (f)

4. ¿Cuál es su modo de transporte principal (3 días por semana)?

☐ Conduzco solo (a) ☐ Comparto auto/van (b) ☐ Transporte público (c)
☐ Motocicleta (d) ☐ Bicicleta (e) ☐ Caminar (f) ☐ Otro (g)

5. ¿Qué tan a menudo va al trabajo en bicicleta?

☐ 5+ días por semana (a) ☐ 3 – 4 días por semana (b)
☐ 1 – 2 días por semana (c) ☐ 1 – 2 días por mes (d)
☐ Menos de 1–2 días por mes (e) ☐ Nunca viajo en bicicleta (f)

6. ¿Qué tan a menudo va al trabajo a pie?

☐ 5+ días por semana (a) ☐ 3 – 4 días por semana (b)
☐ 1 – 2 días por semana (c) ☐ 1 – 2 días por mes (d)
☐ Menos de 1–2 días por mes (e) ☐ Nunca voy al trabajo a pie (f)

7. Si usted viaja en bicicleta, ¿cuáles son sus razones?
(marque todas las que apliquen)

☐ Para ir al trabajo o a la escuela (a) ☐ Para ejercicio/recreación (b)
☐ Para comprar, hacer mandados, comer fuera (c) ☐ Para visitar amistades/familia (d)
☐ Para llegar a/de transporte (e) ☐ Es más barato que otros modos (f)
☐ Otra (por favor especifique) (f)_____

8. Si usted camina, ¿cuáles son sus razones?
(marque todas las que apliquen)

☐ Para ir al trabajo o a la escuela (a) ☐ Para ejercicio/recreación (b)
☐ Para comprar, hacer mandados, comer fuera (c) ☐ Para visitar amistades/familia (d)
☐ Para llegar a/de transporte (e) ☐ Es más barato que otros modos (f)
☐ Otra (por favor especifique) (f)_____

9. ¿Qué le previene andar en bicicleta más a menudo?
(marque todas las que apliquen)

☐ Falta de rutas para bicicletas fuera de calle (a) ☐ Falta de ciclovías en las calles(b)
☐ Falta de rutas para bicicletas en las calles (c) ☐ El comportamiento de conductores (d)
☐ No me siento seguro (e) ☐ Viajo con niños pequeños (f)
☐ No tengo suficiente tiempo (g) ☐ Mis destinos están muy lejos (h)
☐ Problemas/preocupaciones de salud (i) ☐ Insuficiente alumbrado (j)
☐ Tengo demasiado que cargar (k) ☐ Falta de estacionamiento para bicicletas (l)
☐ Otra (por favor especifique) (f)_____

10. Si usted viaja en bicicleta o camina, ¿cuál es la distancia de su viaje promedio?

Viaje en bicicleta: _____ millas
Viaje a pie: _____ millas O _____ cuadras

11. ¿Qué le previene caminar más a menudo?
(marque todas las que apliquen)

☐ El comportamiento de conductores (a) ☐ No me siento seguro (b)
☐ Viajo con niños pequeños (c) ☐ No tengo suficiente tiempo (d)
☐ Mis destinos están muy lejos (e) ☐ Problemas/preocupaciones de salud (f)
☐ Otra (por favor especifique) (g)_____

12. Por favor califique hasta qué grado las siguientes condiciones afectan su decisión para montar en bicicleta:

La presencia de rutas para bicicletas fuera de calle	☐ Muy importante	☐ Un poco importante	☐ Neutral	☐ Un poco no importante	☐ No importante
La presencia de carriles para bicicletas en las calles	☐ Muy importante	☐ Un poco importante	☐ Neutral	☐ Un poco no importante	☐ No importante
La presencia de rutas para bicicletas	☐ Muy importante	☐ Un poco importante	☐ Neutral	☐ Un poco no importante	☐ No importante
Las condiciones de la ciclovía/carretera (i.e. calidad del pavimento)	☐ Muy importante	☐ Un poco importante	☐ Neutral	☐ Un poco no importante	☐ No importante
Volúmenes/velocidades del tránsito	☐ Muy importante	☐ Un poco importante	☐ Neutral	☐ Un poco no importante	☐ No importante
El comportamiento de conductores	☐ Muy importante	☐ Un poco importante	☐ Neutral	☐ Un poco no importante	☐ No importante
El comportamiento de otros ciclistas	☐ Muy importante	☐ Un poco importante	☐ Neutral	☐ Un poco no importante	☐ No importante
Cantidad de alumbrado de la calle	☐ Muy importante	☐ Un poco importante	☐ Neutral	☐ Un poco no importante	☐ No importante
Acceso a estacionamiento y almacenamiento de bicicletas	☐ Muy importante	☐ Un poco importante	☐ Neutral	☐ Un poco no importante	☐ No importante
Habilidad de combinar viajes de bicicleta con viajes de transporte público	☐ Muy importante	☐ Un poco importante	☐ Neutral	☐ Un poco no importante	☐ No importante
Tiempo de viaje	☐ Muy importante	☐ Un poco importante	☐ Neutral	☐ Un poco no importante	☐ No importante
Información de rutas para bicicleta	☐ Muy importante	☐ Un poco importante	☐ Neutral	☐ Un poco no importante	☐ No importante
El clima	☐ Muy importante	☐ Un poco importante	☐ Neutral	☐ Un poco no importante	☐ No importante

POR FAVOR VEA EL OTRO LADO

13. Por favor califique hasta qué grado las siguientes condiciones afectan su decisión para montar en bicicleta:

Presencia de veredas para caminar	☐ Muy importante	☐ Un poco importante	☐ Neutral	☐ Un poco no importante	☐ No importante
Presencia de banquetas	☐ Muy importante	☐ Un poco importante	☐ Neutral	☐ Un poco no importante	☐ No importante
Cantidad de alumbrado en las banquetas	☐ Muy importante	☐ Un poco importante	☐ Neutral	☐ Un poco no importante	☐ No importante
Cantidad de sombra	☐ Muy importante	☐ Un poco importante	☐ Neutral	☐ Un poco no importante	☐ No importante
Volúmenes/velocidades de tránsito	☐ Muy importante	☐ Un poco importante	☐ Neutral	☐ Un poco no importante	☐ No importante
El comportamiento de los conductores	☐ Muy importante	☐ Un poco importante	☐ Neutral	☐ Un poco no importante	☐ No importante
Seguridad percibida	☐ Muy importante	☐ Un poco importante	☐ Neutral	☐ Un poco no importante	☐ No importante
Habilidad para acceder paradas de tránsito	☐ Muy importante	☐ Un poco importante	☐ Neutral	☐ Un poco no importante	☐ No importante
Tiempo de viaje	☐ Muy importante	☐ Un poco importante	☐ Neutral	☐ Un poco no importante	☐ No importante
Información de rutas para caminar	☐ Muy importante	☐ Un poco importante	☐ Neutral	☐ Un poco no importante	☐ No importante
El clima	☐ Muy importante	☐ Un poco importante	☐ Neutral	☐ Un poco no importante	☐ No importante

14. Por favor califique su interés en los siguientes programas no motorizados:

Cursos de habilidades para montar bicicleta y seguridad para adultos	☐ Ningún interés	☐ Un poco interesado	☐ Muy interesado
Cursos de habilidades para montar bicicleta y seguridad para niños	☐ Ningún interés	☐ Un poco interesado	☐ Muy interesado
Programas de rutas seguras a la escuela para niños	☐ Ningún interés	☐ Un poco interesado	☐ Muy interesado
Campañas de conciencia pública	☐ Ningún interés	☐ Un poco interesado	☐ Muy interesado
Eventos especiales	☐ Ningún interés	☐ Un poco interesado	☐ Muy interesado
Mapas y guías	☐ Ningún interés	☐ Un poco interesado	☐ Muy interesado
Sitios informativos de Internet	☐ Ningún interés	☐ Un poco interesado	☐ Muy interesado
Programas de incentivos para viajar al trabajo o la escuela	☐ Ningún interés	☐ Un poco interesado	☐ Muy interesado
Información y mapas entregados a mi casa	☐ Ningún interés	☐ Un poco interesado	☐ Muy interesado
Casetas en eventos públicos	☐ Ningún interés	☐ Un poco interesado	☐ Muy interesado

15. ¿Dónde le gustaría ver nuevas instalaciones para bicicletas?

_____

_____

_____

_____

_____

16. ¿Dónde le gustaría ver nuevas instalaciones para peatones?

_____

_____

_____

_____

_____

17. Si le gustaría que nos comunicáramos acerca de oportunidades adicionales para mantenerse involucrado en el proyecto, por favor escriba su información de contacto:

Nombre_____

Número de teléfono_____

Correo electrónico_____

POR FAVOR VEA EL OTRO LADO

Appendix D. Bicycle and Pedestrian Counts

Location 1: Willard Avenue and Cattle Call Drive

Thursday, 10/25/2012 Time: 7-9 AM Weather: clear/cool

Time Period	Bicycles		Pedestrians		Others	Purpose		Additional Bicyclist Information		
	Male	Female	Male	Female		Transportation	Recreation	No Helmet	Wrong Way Riding	Riding on Sidewalk
00-:15		1	3	4		2	6	1		
15-:30			7	1		2	6			
30-:45	2		3	1		3	3	2	1	2
45-1:00				2			2			
1:00-1:15	1		1	7		3	6	1	1	
1:15-1:30			3	2		1	4			
1:30-1:45	1	1		4			6	2		
1:45-2:00	1	2	3	4		1	9	3	1	
Totals	5	4	20	25	0	12	42	9	3	2
Notes: Jaywalking/ 1x motorized wheel chair /5x dog walking										

Thursday, 10/25/2012 Time: 5-7 PM Weather: sunny with a slight breeze/fair

Time Period	Bicycles		Pedestrians		Others	Purpose		Additional Bicyclist Information		
	Male	Female	Male	Female		Transportation	Recreation	No Helmet	Wrong Way Riding	Riding on Sidewalk
00-:15	3	1	1			1	4	2	1	4
15-:30	1			6			7			
30-:45	1	2		1		1	3	3		
45-1:00	1		2	3		1	5	1		
1:00-1:15	1		1	4			3			
1:15-1:30	1		1			2		1		1
1:30-1:45				2			2			
1:45-2:00				3		2	1			
Totals	8	3	5	19	0	7	25	7	1	5
Notes: No activity at Rio Vista, changed to Willard Ave										

Saturday, 10/27/2012 Time: 12-2 PM Weather: Fair

Time Period	Bicycles		Pedestrians		Others	Purpose		Additional Bicyclist Information		
	Male	Female	Male	Female		Transportation	Recreation	No Helmet	Wrong Way Riding	Riding on Sidewalk
00-:15	2		1	2			5	2		
15-:30	1			1	4	2	4	1		
30-:45										
45-1:00	1						1	1	1	1
1:00-1:15			2	2		2	2			
1:15-1:30										
1:30-1:45	1		1				2			
1:45-2:00			1	3		1	3			
Totals	5	0	5	8	4	5	17	4	1	1
Notes: changed location from Rio Vista to Cattle Call Dr										

Location 2: A Street and 1st Street

Thursday, 10/25/2012 Time: 7-9 AM Weather: chilly

Time Period	Bicycles		Pedestrians		Others	Purpose		Additional Bicyclist Information		
	Male	Female	Male	Female		Transportation	Recreation	No Helmet	Wrong Way Riding	Riding on Sidewalk
00-:15	3		5	10		15	3	3		1
15-:30			7	6		9	4			1
30-:45			29	18	2	47	2			
45-1:00	1		25	18		41	3	1	1	
1:00-1:15	3		6	11		16	4	3	1	2
1:15-1:30			2			2		1		1
1:30-1:45		4	3	1		8				
1:45-2:00			1	2		1	1			
Totals	7	4	78	66	2	139	17	8	2	5

Thursday, 10/25/2012 Time: 5-7 PM Weather: Cold

Time Period	Bicycles		Pedestrians		Others	Purpose		Additional Bicyclist Information		
	Male	Female	Male	Female		Transportation	Recreation	No Helmet	Wrong Way Riding	Riding on Sidewalk
00-:15	3		2	3		3	2	3		1
15-:30	1		11	3		2	11	1		1
30-:45	1	1	13	9		14	9	2		
45-1:00	1		5	4	3	8	4	1		
1:00-1:15	4	1	6	8	3	14	8	3	1	1
1:15-1:30	2		1	2		2	1	1	2	
1:30-1:45	1	1			2	2	2	2		2
1:45-2:00	3		5	6	1	8	5	2	2	
Totals	16	3	43	35	9	53	42	15	5	5

Saturday, 10/27/2012 Time: 12-2 PM Weather: warm/breezy

Time Period	Bicycles		Pedestrians		Others	Purpose		Additional Bicyclist Information		
	Male	Female	Male	Female		Transportation	Recreation	No Helmet	Wrong Way Riding	Riding on Sidewalk
00-:15										
15-:30			3			3				
30-:45	1			1	3	1	1			1
45-1:00	1	1	4	2		3	5	1		1
1:00-1:15	4		2	2	1	4	3	4		3
1:15-1:30										
1:30-1:45			2	1		3				
1:45-2:00	2		2			2		2		
Totals	8	1	13	6	4	16	9	7	0	5
Notes: Pedestrian Jaywalking, * Two Boys on one bike (1 Pedaling, 1 standing on peds)										

Location 3: Plaza and 3rd Street

Thursday, 10/25/2012 Time: 7-9 AM Weather: cold

Time Period	Bicycles		Pedestrians		Others	Purpose		Additional Bicyclist Information		
	Male	Female	Male	Female		Transportation	Recreation	No Helmet	Wrong Way Riding	Riding on Sidewalk
00-:15				1		1				
15-:30				1		1				
30-:45			3	11		13	1			
45-1:00			6	2		8				
1:00-1:15			1			1				
1:15-1:30				4	1	5				
1:30-1:45			1	2	1	4				
1:45-2:00	2					2		2	1	
Totals	2	0	11	21	2	35	1	2	1	0

Thursday, 10/25/2012 Time: 5-7 PM Weather: Cold

Time Period	Male	Female	Male	Female		Transportation	Recreation	No Helmet	Wrong Way Riding	Riding on Sidewalk
00-:15	3	3	3	3		8	4	3		3
15-:30			3	4		6	1			
30-:45	7	3	1	6		13	5	9		6
45-1:00	3		4	5	1	10	2	3		2
1:00-1:15	3		5	3		5	6	3		3
1:15-1:30	3	2	5	6		13	4	5		5
1:30-1:45	1		2	3		3	3	1		1
1:45-2:00	3		8	2		9	4	3		1
Totals	23	8	31	32	1	67	29	27	0	21

Saturday, 10/27/2012 Time: 12-2 PM Weather: Wind

Time Period	Bicycles		Pedestrians		Others	Purpose		Additional Bicyclist Information		
	Male	Female	Male	Female		Transportation	Recreation	No Helmet	Wrong Way Riding	Riding on Sidewalk
00-:15	7	4	7	4	1	1	1	2		2
15-:30	1		1	1				1		1
30-:45	4		4			2	2	4	1	3
45-1:00	1		11	5						
1:00-1:15			11	3						
1:15-1:30	3		8	6		1		1	1	1
1:30-1:45	1		3	2						
1:45-2:00		2	4	2						
Totals	17	6	49	23	1	4	3	8	2	7
Notes: A lot of Jaywalking & no helmets for little kids, but they should have helmets.										

Location 4: Imperial Avenue and K Street

Thursday, 10/25/2012 Time: 7-9 AM Weather: fresh

Time Period	Bicycles		Pedestrians		Others	Purpose		Additional Bicyclist Information		
	Male	Female	Male	Female		Transportation	Recreation	No Helmet	Wrong Way Riding	Riding on Sidewalk
00-:15			1			1				
15-:30	2					2		2	1	1
30-:45	3		1			3	1	3		2
45-1:00	2			1		2	1	2		1
1:00-1:15	1			1	1	1	1	1	1	1
1:15-1:30				2			2			2
1:30-1:45										
1:45-2:00	1		1				2	2		
Totals	9	0	3	4	1	9	7	10	2	7

Thursday, 10/25/2012 Time: 5-7 PM Weather: Cold

Time Period	Bicycles		Pedestrians		Others	Purpose		Additional Bicyclist Information		
	Male	Female	Male	Female		Transportation	Recreation	No Helmet	Wrong Way Riding	Riding on Sidewalk
00-:15										
15-:30										
30-:45	7	3	4	2		10	6	5	2	2
45-1:00	2	2	5	2	2	2	3	2	1	
1:00-1:15	1	1	3	1	2	1	2	1		
1:15-1:30				1				1		
1:30-1:45										
1:45-2:00										
Totals	10	6	12	6	4	13	11	9	3	2

Location 5: Eastern Avenue and B Street

Thursday, 10/25/2012 Time: 7-9 AM Weather: Cold

Time Period	Bicycles		Pedestrians		Others	Purpose		Additional Bicyclist Information		
	Male	Female	Male	Female		Transportation	Recreation	No Helmet	Wrong Way Riding	Riding on Sidewalk
00-:15	1		6	16		11	12	1		
15-:30	3	1	13	12	1	16	14	3		1
30-:45	1		14	20		34		1	1	
45-1:00	8		41	63	2	101	13	8	5	3
1:00-1:15	4		15	21	3	30	11	4	3	2
1:15-1:30	9	3	4	10	2	15	9	8	2	1
1:30-1:45	5	1		1		6	1	6		
1:45-2:00	3			4	3	7	1	3	2	
Totals	34	5	93	147	11	220	61	34	13	7

Thursday, 10/25/2012 Time: 5-7 PM Weather: Sunny with a breeze

Time Period	Bicycles		Pedestrians		Others	Purpose		Additional Bicyclist Information		
	Male	Female	Male	Female		Transportation	Recreation	No Helmet	Wrong Way Riding	Riding on Sidewalk
00-:15										
15-:30	5	7				11	1	10		5
30-:45	4				1	4	1	4		2
45-1:00			1	3	2	6				
1:00-1:15	1		10	17		15	4	1	1	
1:15-1:30			12	24	6	26	11			
1:30-1:45			3		1		4			
1:45-2:00			1				1	1	1	
Totals	10	7	27	44	10	62	22	16	2	7

Location 6: Highway 78 and Eastern Avenue

Thursday, 10/25/2012 Time: 7-9 AM Weather: Breezy

Time Period	Bicycles		Pedestrians		Others	Purpose		Additional Bicyclist Information		
	Male	Female	Male	Female		Transportation	Recreation	No Helmet	Wrong Way Riding	Riding on Sidewalk
00-:15	1		5	1				1		1
15-:30	1		1	1		2	2	1	1	
30-:45	2	2		1				6		1
45-1:00	2	2	3	1			1			2
1:00-1:15	1			1		1		1		1
1:15-1:30	1		2		1			1	1	
1:30-1:45	1			4				1		1
1:45-2:00	2		1					2		1
Totals	11	4	12	9	1	3	3	13	2	7

Thursday, 10/25/2012 Time: 5-7 PM Weather: Cool

Time Period	Bicycles		Pedestrians		Others	Purpose		Additional Bicyclist Information		
	Male	Female	Male	Female		Transportation	Recreation	No Helmet	Wrong Way Riding	Riding on Sidewalk
00-:15	4		1	1		1		4	2	2
15-:30			2	1						
30-:45	1		1			2		1		1
45-1:00	1		1	1		2		1		1
1:00-1:15	3			1		4		3	2	1
1:15-1:30	4	2	1	2		7	1	4		4
1:30-1:45	1	1		1		3		1		1
1:45-2:00	2		1			3		1		1
Totals	16	3	7	7	0	22	1	15	4	11

Saturday, 10/27/2012 Time: 12-2 PM

Time Period	Bicycles		Pedestrians		Others	Purpose		Additional Bicyclist Information		
	Male	Female	Male	Female		Transportation	Recreation	No Helmet	Wrong Way Riding	Riding on Sidewalk
00-:15						5				
15-:30	4	1								
30-:45										
45-1:00						1		1		
1:00-1:15										
1:15-1:30										
1:30-1:45										
1:45-2:00										
Totals	4	1	0	0	0	6	0	1	0	0

Location 7: Eastern Avenue and K Street

Thursday, 10/25/2012 Time: 7-9 AM

Time Period	Bicycles		Pedestrians		Others	Purpose		Additional Bicyclist Information		
	Male	Female	Male	Female		Transportation	Recreation	No Helmet	Wrong Way Riding	Riding on Sidewalk
00-:15			7	3						
15-:30			5	7		1	1			
30-:45	1		1	1				1		
45-1:00			1							
1:00-1:15										
1:15-1:30										
1:30-1:45										
1:45-2:00	1					1		1		
Totals	2	0	14	11	0	2	1	2	0	0

Thursday, 10/25/2012 Time: 5-7 PM Weather: Fair

Time Period	Bicycles		Pedestrians		Others	Purpose		Additional Bicyclist Information		
	Male	Female	Male	Female		Transportation	Recreation	No Helmet	Wrong Way Riding	Riding on Sidewalk
00-:15	5		3			7		5		
15-:30		1		1		2				
30-:45		1		1		2		1		1
45-1:00	1		1			1		1		
1:00-1:15	3		2	2		3	4	3		1
1:15-1:30			3	2		5				
1:30-1:45					1	1				
1:45-2:00	3		2			3		3		
Totals	12	2	11	6	1	24	4	13	0	2

Saturday, 10/27/2012 Time: 12-2 PM

Time Period	Bicycles		Pedestrians		Others	Purpose		Additional Bicyclist Information		
	Male	Female	Male	Female		Transportation	Recreation	No Helmet	Wrong Way Riding	Riding on Sidewalk
00-:15						5				
15-:30	4	1								
30-:45										
45-1:00						1		1		
1:00-1:15										
1:15-1:30										
1:30-1:45										
1:45-2:00										
Totals	4	1	0	0	0	6	0	1	0	0

Appendix E. Pedestrian Project Maps from Previous Plans

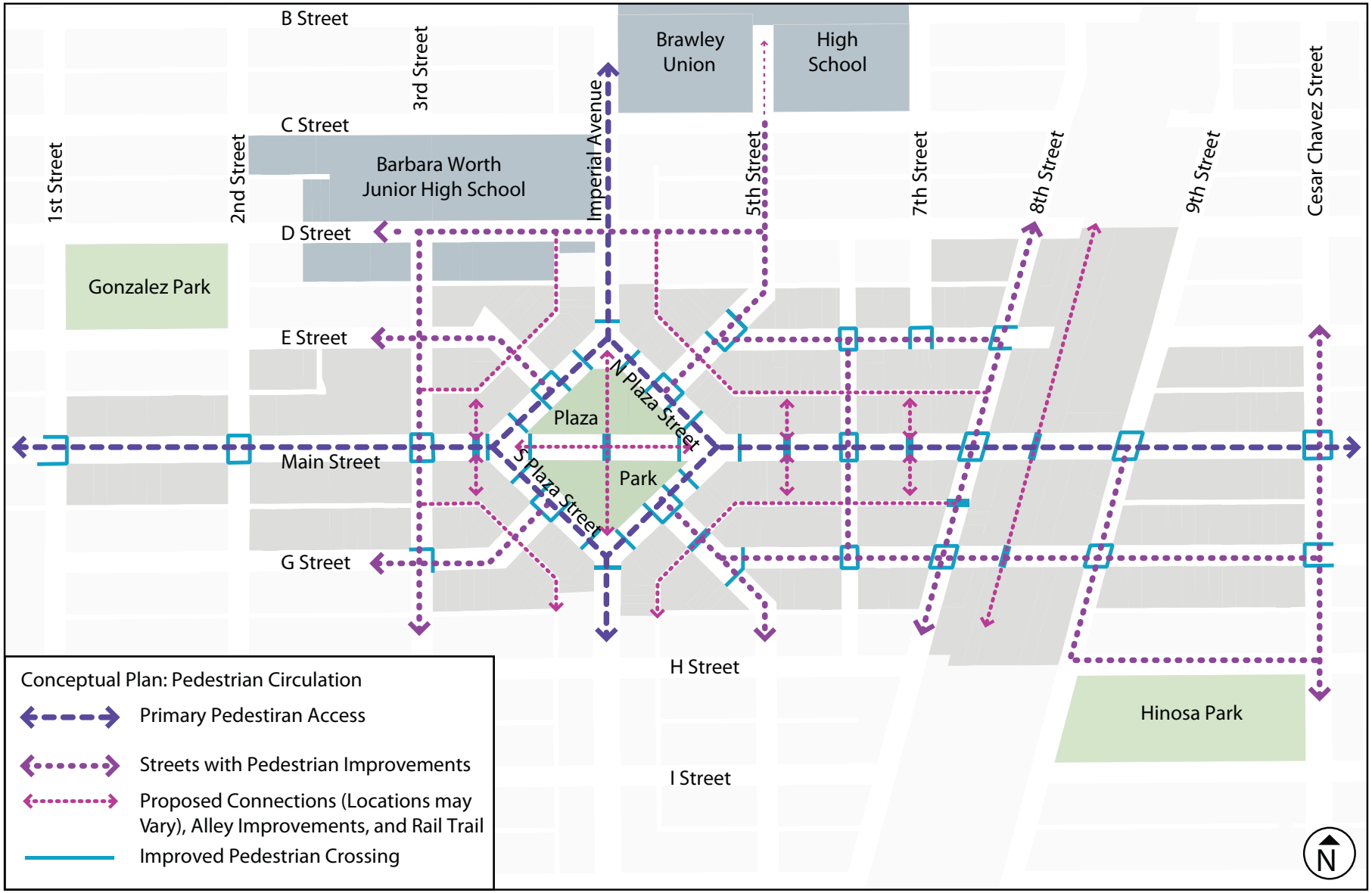
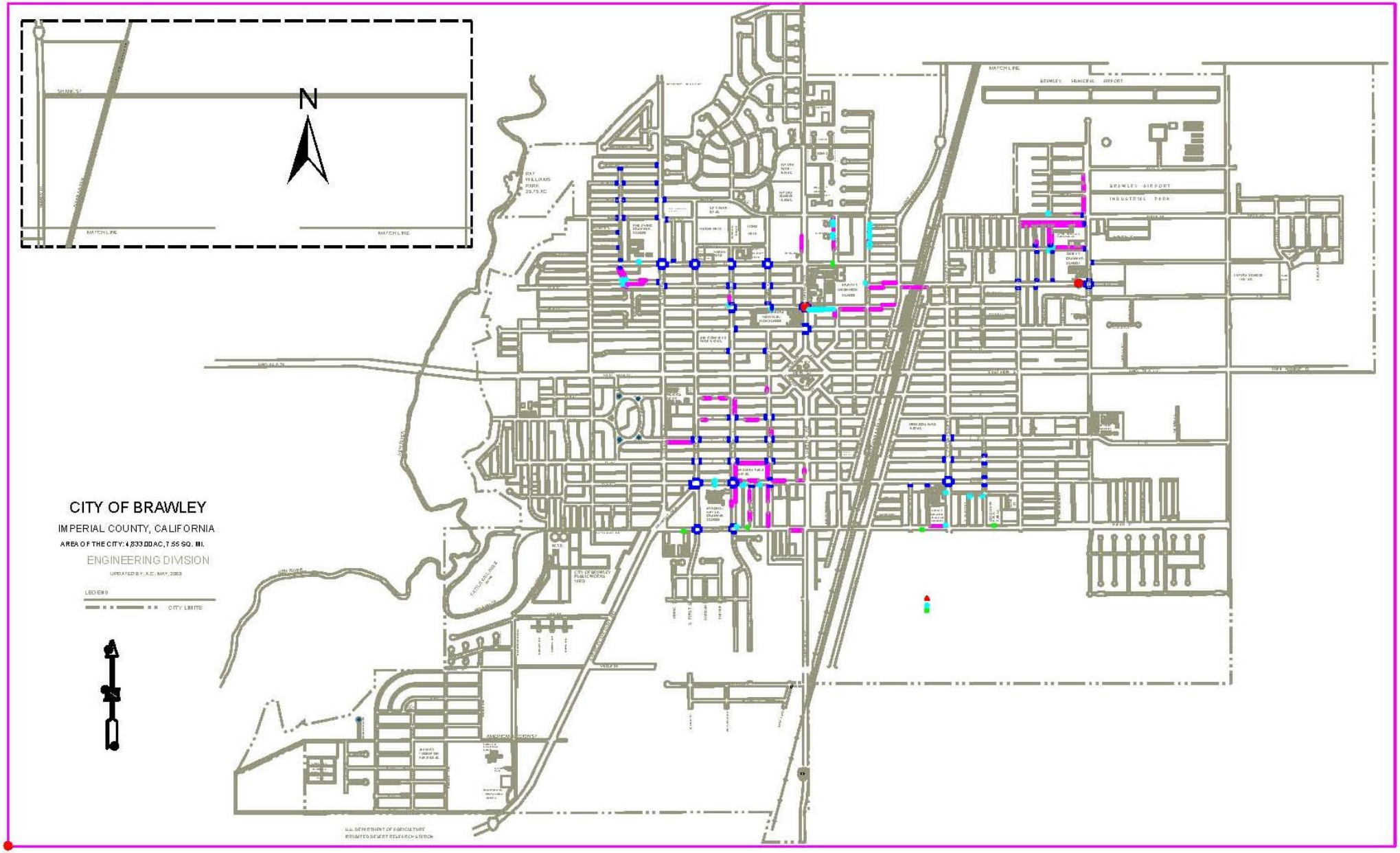
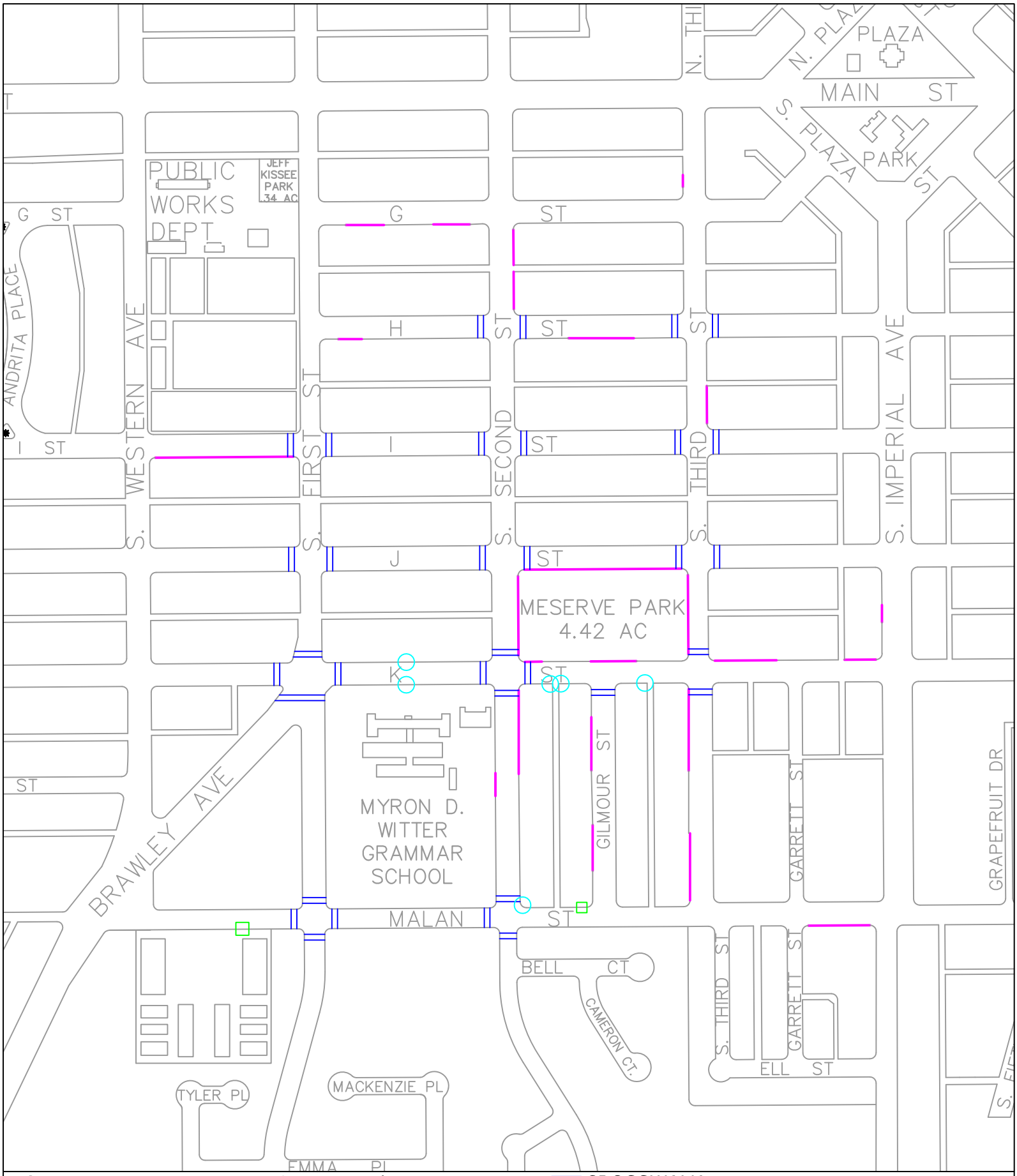

B Street
C Street
D Street
E Street
Main Street
G Street
H Street
I Street
1st Street
2nd Street
3rd Street
Imperial Avenue
5th Street
7th Street
8th Street
9th Street
Cesar Chavez Street
Brawley Union High School
Barbara Worth Junior High School
Gonzalez Park
Plaza
Park
N Plaza Street
S Plaza Street
Hinosa Park
N
Conceptual Plan: Pedestrian Circulation
Primary Pedestiran Access
Streets with Pedestrian Improvements
Proposed Connections (Locations may Vary), Alley Improvements, and Rail Trail
Improved Pedestrian Crossing

Figure 4-2: Main Street – Suggestions

Figure 4-4: Brawley Union High School and A Street - Suggestions


N
MATCH LINE
MATCH LINE
CITY OF BRAWLEY
IMPERIAL COUNTY, CALIFORNIA
AREA OF THE CITY: 4,833.00 AC, 7.55 SQ. MI.
ENGINEERING DIVISION
LEGEND
CITY LIMITS
BRAWLEY MUNICIPAL AIRPORT
BRAWLEY AIRPORT INDUSTRIAL PARK

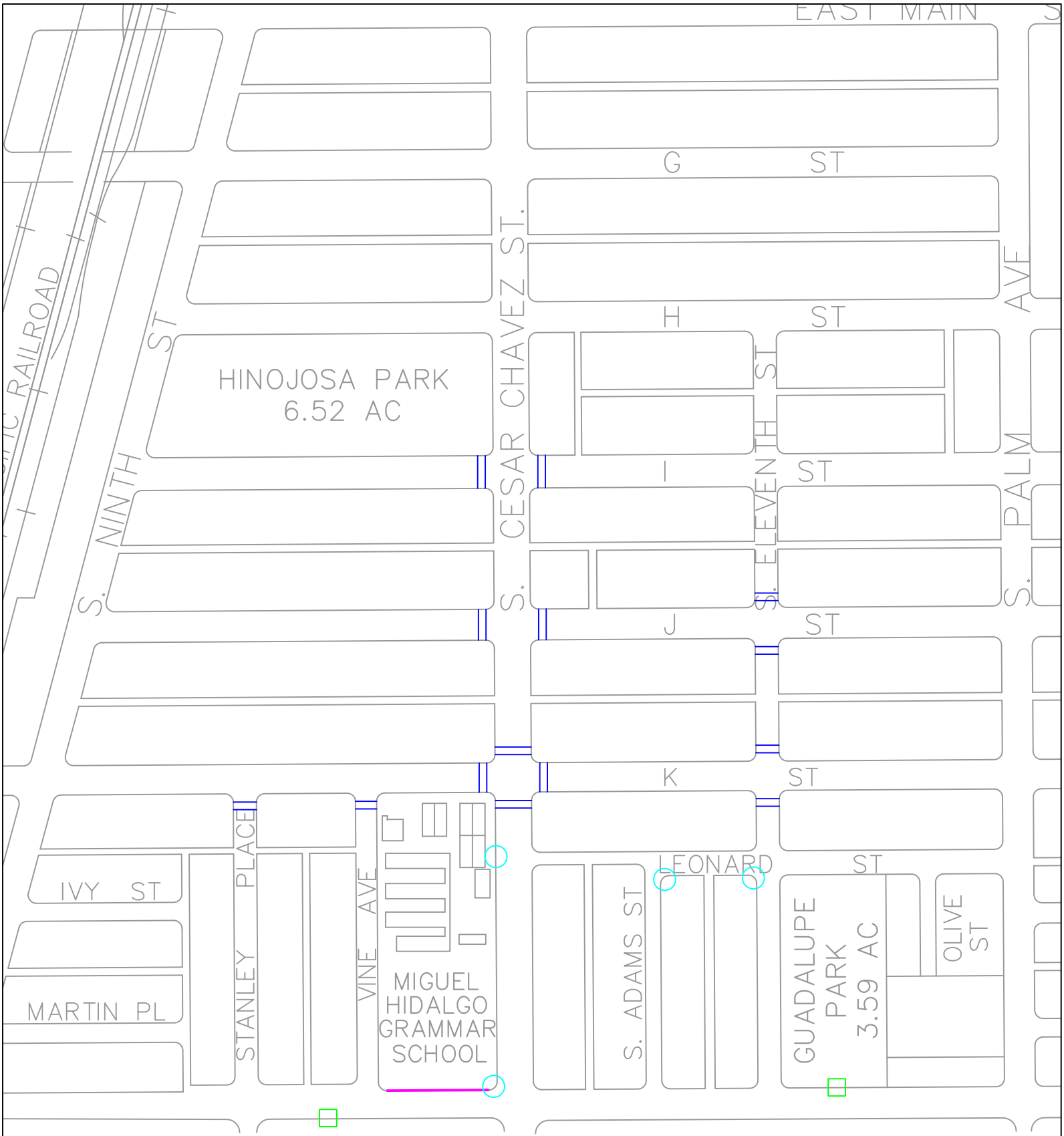


SIDEWALK | HANDICAP RAMP / PED RAMP | CROSSWALK | DRIVER FEEDBACK SIGN

BRAWLEY ELEMENTARY SCHOOL DISTRICT - MYRON D. WITTER

N

SAFE ROUTES TO SCHOOL OFF SITE IMPROVEMENT LAYOUT MAP



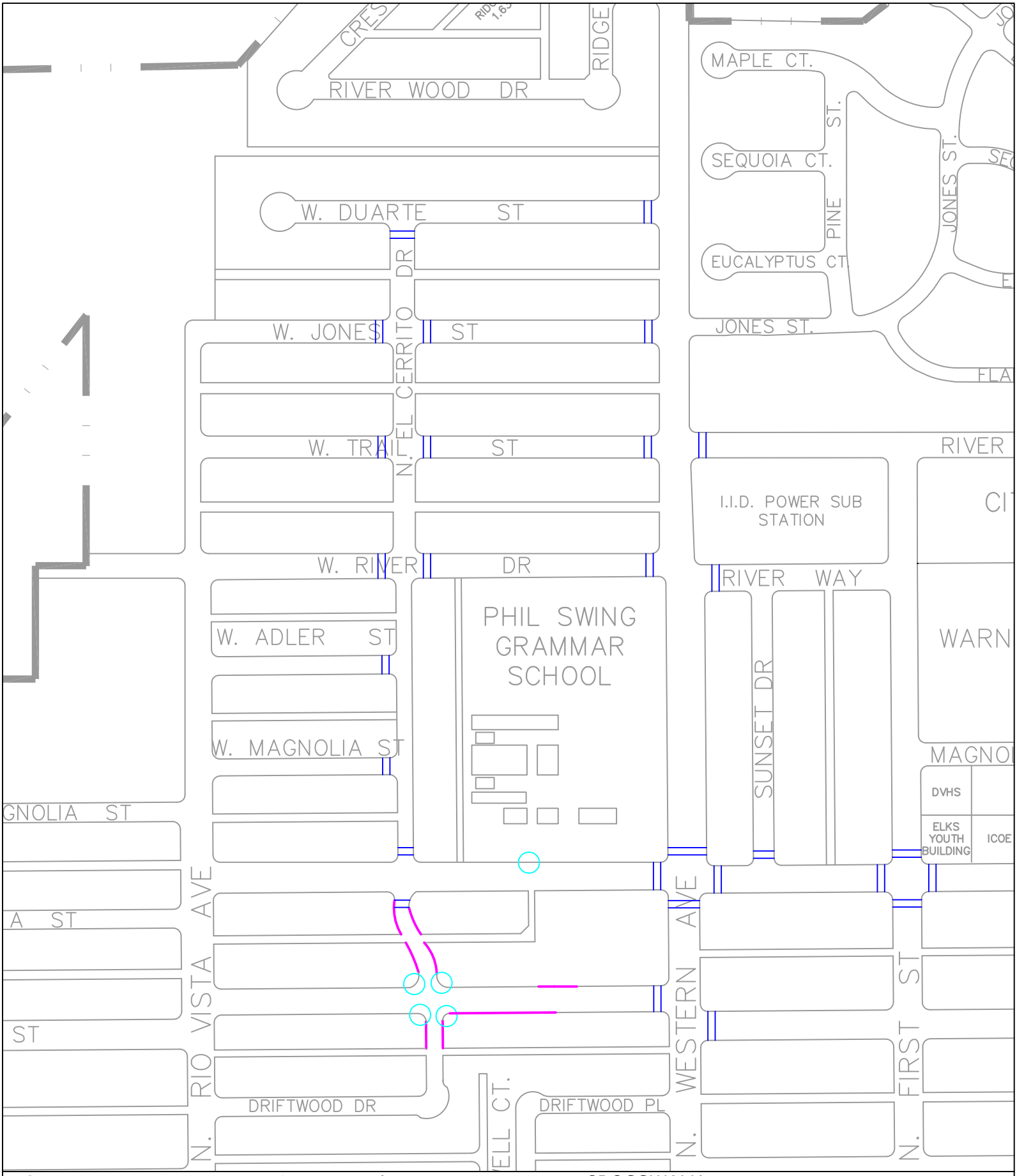
SIDEWALK | HANDICAP RAMP / PED RAMP | CROSSWALK | DRIVER FEEDBACK SIGN

CITY OF BRAWLEY INCORPORATED 1908

BRAWLEY ELEMENTARY SCHOOL DISTRICT - MIGUEL HILDAGO

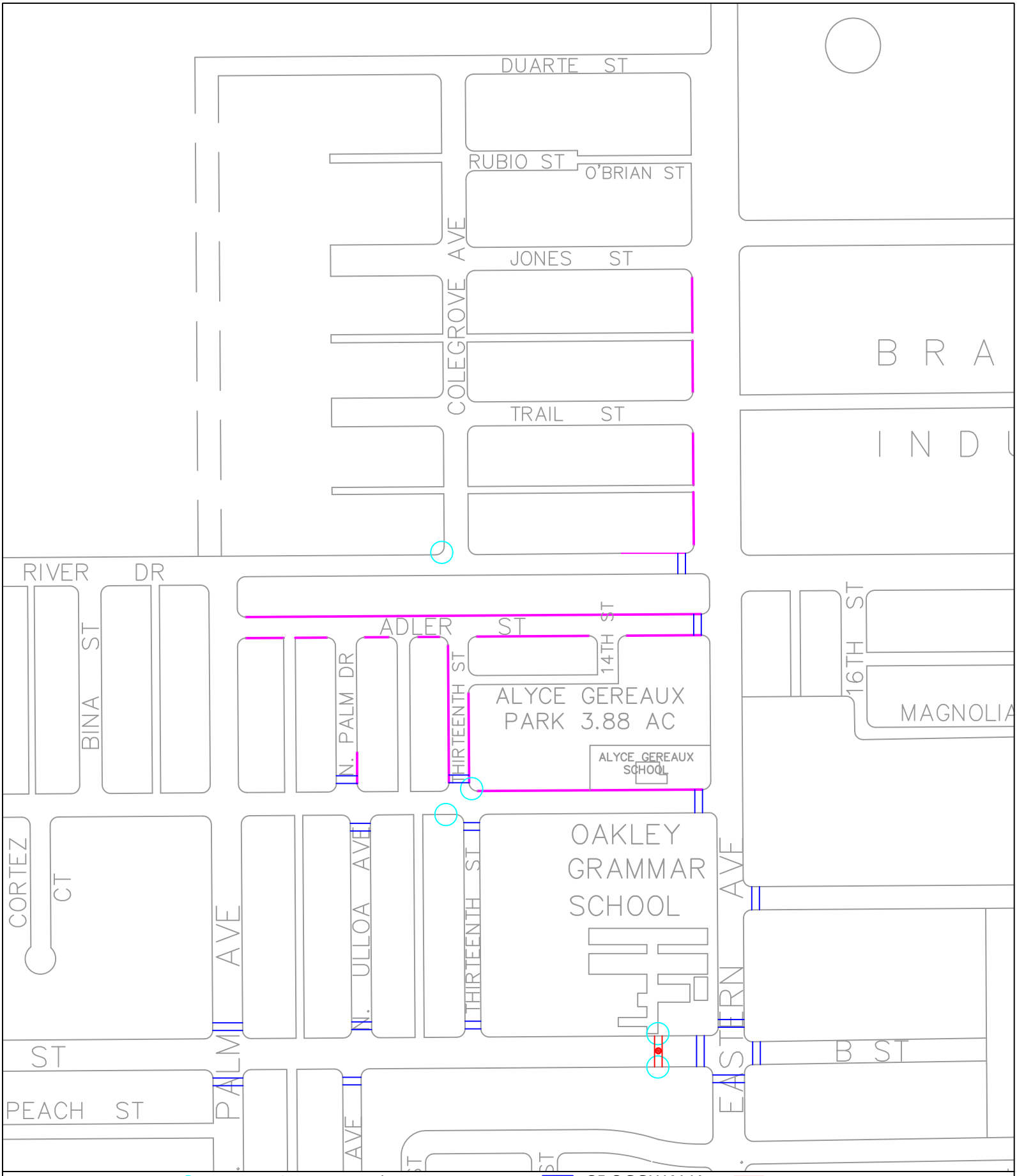
N

SAFE ROUTES TO SCHOOL OFF SITE IMPROVEMENT LAYOUT MAP



BRAWLEY ELEMENTARY SCHOOL DISTRICT - PHIL SWING

SAFE ROUTES TO SCHOOL OFF SITE IMPROVEMENT LAYOUT MAP

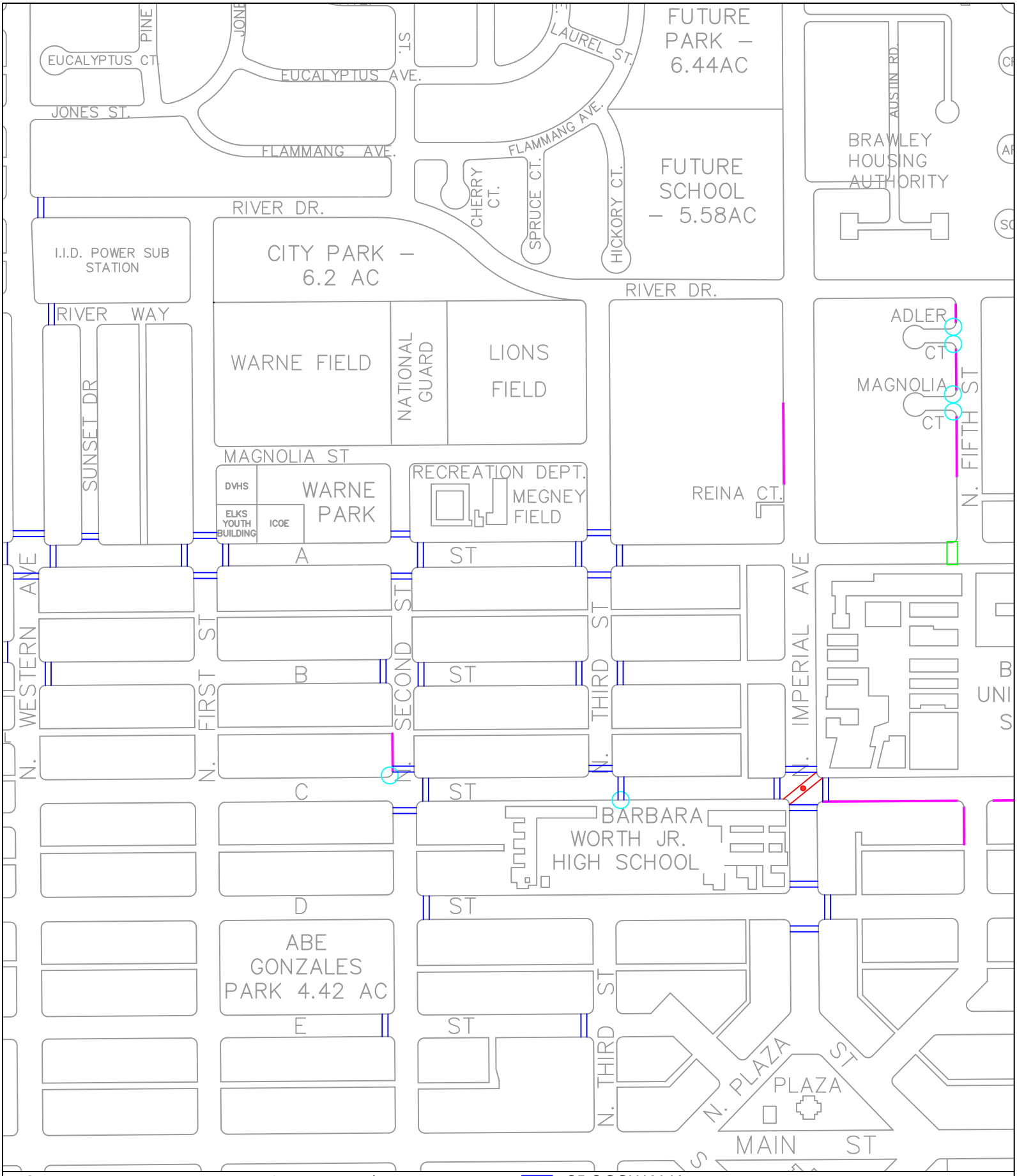


BRAWLEY ELEMENTARY SCHOOL DISTRICT - J.W. OAKLEY

N

SAFE ROUTES TO SCHOOL OFF SITE IMPROVEMENT LAYOUT MAP

4 OF 5



BRAWLEY ELEMENTARY SCHOOL DISTRICT - BARBARA WORTH JR HIGH SCHOOL

N

SAFE ROUTES TO SCHOOL OFF SITE IMPROVEMENT LAYOUT MAP