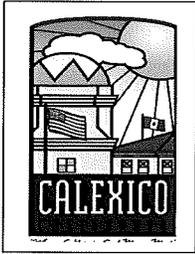


**AGENDA
ITEM**

14



AGENDA STAFF REPORT

DATE: March 21, 2018

TO: Mayor and City Council

APPROVED BY: David Dale, City Manager *DD*

PREPARED BY: David Dale, City Manager

SUBJECT: Presentation and Approval of Final Report for Calexico Bicycle Master Plan Update.

=====

Recommendation:

It is recommended that the City Council of the City of Calexico take the following action:

1. Presentation of Final Report for the Calexico Bicycle Master Plan Update.
2. Approve the Final Report for Calexico Bicycle Master Plan Update.

Background:

On April 24, 2015, the City of Calexico Public Works Department received an award letter from California Department of Transportation (Caltrans) under the Sustainable Transportation Planning for FY 2015-2016 in the amount of \$85,000.00 (\$75,250.00 – State Grant and \$9,750 – Local Match) for the Calexico Bicycle Master Plan Update. The City requested funding to update the existing Calexico Bicycle Master Plan that was approved and adopted by the City Council on May 27, 2003.

On November 2, 2016, authorized the City Manager to sign agreement of professional services with Chen Ryan Associates, Inc. for the Calexico Bicycle Master Plan Update.

Discussion & Analysis:

On May 24, 2017, Chen Ryan Associates, Inc. conducted the kick-off meeting for the Calexico Bicycle Master Plan Update. The kick-off meeting was attended by representatives from Chen Ryan Associates, Inc., Caltrans, Parks and Recreation Commission, IV Velo and media. The following work plan was presented and agreed upon:

- Analysis existing conditions
- Community outreach



- Recommendations
- Plan development

On October 21, 2017, Chen Ryan Associates and City staff took part of the 2017 First Annual Calexico Health Fair at Rockwood Plaza. The outreach event provided community members with the opportunity to review and comment on draft materials, including the project vision, project objectives, proposed supporting programs, and proposed networks.

The Calexico Bicycle Master Plan Update Final Report includes a series of recommended guidelines, regulations, and strategies to improve to build an engaged bicycle constituency in the City to advocate for implementation of the CBMP over time. These recommendations include:

- Route Selection
- Proposed Bikeway System
- Proposed Support Facilities
- Education
- Design Guidelines and Standards

Once the Final Report has been reviewed and approved; the next step for the City would be to look for funding in order to implement the above-mentioned recommendations and encourage cycling in the City of Calexico. For this reason, Public Works staff is recommending that the City Council of the City of Calexico approve the Calexico Bicycle Master Plan Update Final Report.

Fiscal Impact:

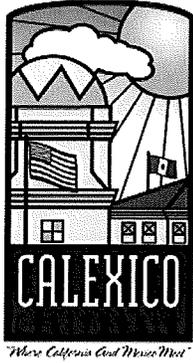
CIP Budgeted Item for FY 2017-2018.
State Grant \$79,410.00.

Coordinated With:

Department of Transportation (CALTRANS).

Attachment:

1. Draft Final Report – Calexico Bicycle Master Plan Update.

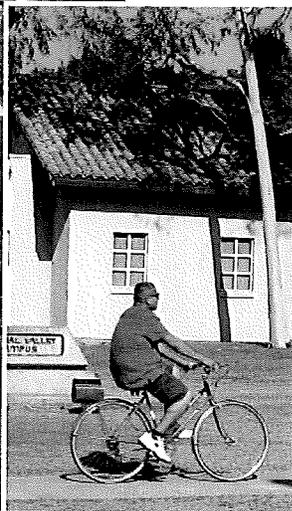
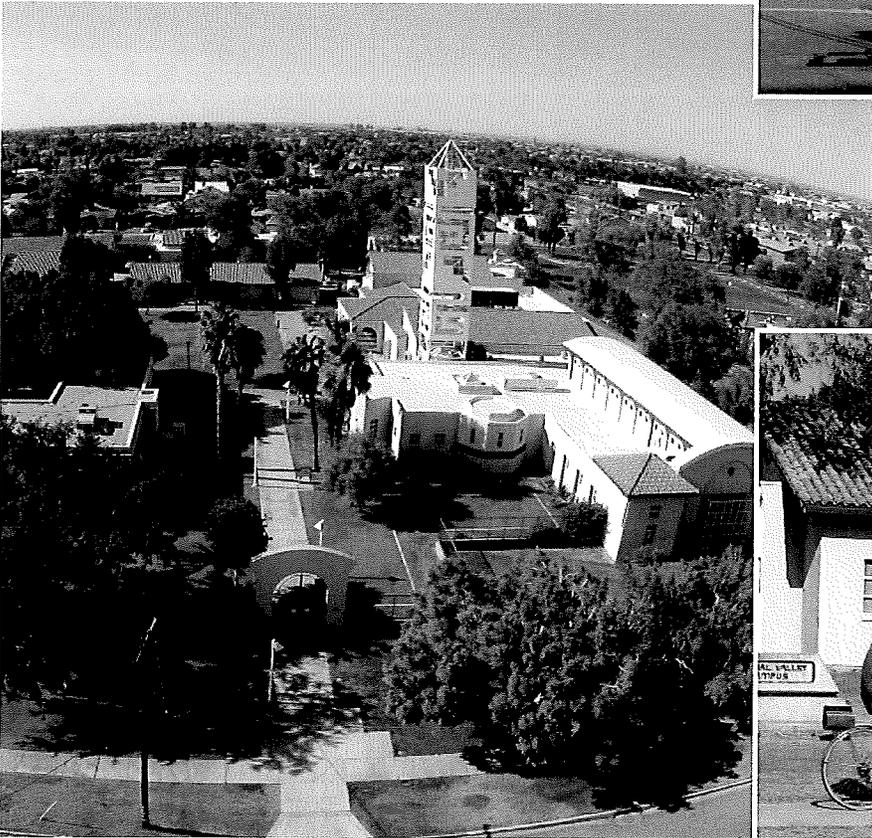


City of Calexico

bicycle master plan update



February
2018



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provided by:

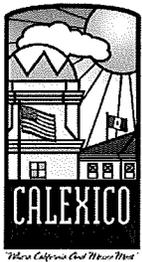


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Calexico Bicycle Master Plan Update

FINAL REPORT

February 2018



Acknowledgements and Stakeholders

City of Calexico

Martiza Hurtado, Mayor
Lewis Pacheco, Mayor Pro-Tem
Jesus Eduardo Escobar, Council Member, City Council
Bill Hodge, Council Member, City Council
Armando G Real, Council Member, City Council
David Dale, PE, City Manager
Lilly Falomir, Public Works Manager

California Department of Transportation

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Beth Landrum, Caltrans Staff
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Chen Ryan Associates

Brian Gaze, AICP, Project Manager
Aaron Galinis, Project Planner
Sasha Jovanovic, Project GIS Analyst

Stakeholders

Imperial County Velo Club

The preparation of this report was financed in part through grants from the California State Department of Transportation (Caltrans).



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Definitions

Terms or acronyms used in this document are defined below:

ADA - The Americans with Disabilities Act

Arterial (Road) - divided or undivided, relatively continuous routes that primarily serve through traffic, high traffic volumes and long average trip lengths. Traffic movement is of primary importance, with abutting land access of secondary importance.

Bicycle - A vehicle having two tandem wheels, either of which is more than 0.4 m. (16 in.) in diameter, or having three wheels in contact with the ground, any of which is more than 0.4 m. (16 in.) in diameter, propelled solely by human power, upon which any person or persons may ride.

Bicycle Facilities - A general term denoting improvements and provisions made by public agencies to accommodate or encourage bicycling including bicycle paths, bike lanes, parking and storage facilities, lockers and showers, maps of bikeways, and marked routes and shared roadways not specifically designated for bicycle use.

Bicycle Lane (Class II) - A portion of a roadway (typically 1.2-1.5 m.) which has been designated by signing and pavement markings for the preferential or exclusive use by bicyclists.

Bicycle Path (Class I) - A separated paved or hard surface (typically 2.4 m.) that serves the exclusive use of bicycles and pedestrians.

Bicycle Route (Class III) - A system of roadways that is linked by signs that designates the roadway as a route for bicyclists, generally providing a preferred route.

CIP - Capital Improvement Program Clearance- A 5-year program adopted by the Council for appropriating money for capital improvements such as roads, sewer, and water.

ICTC - Imperial County Transportation Authority- The designated transportation planning organization for mandated by the federal government to research and draw up plans for transportation-related issues and improvements. ICTC serves under Southern California Association of Governments (SCAG), the larger metropolitan organization that includes Imperial County. Calexico is a member agency.

IVAG - Imperial Valley Association of Governments

NHTSA - National Highway Traffic Safety Administration

Maquiladora - Assembly plants located in Mexico, mostly along the northern Mexican border. Materials are exported to these plants where they are assembled into finished products and then imported back into the country of origin for sale.

RTP - Regional Transportation Plan - The regional plan adopted yearly by Imperial County Transportation Authority (ICTC). Used for identifying and funding future roadway improvements.

Shared Roadway - Any roadway upon which a bicycle lane is not designated and which may be legally used by bicycles regardless of whether such facility is specifically designated as a bikeway.

Shoulder (Paved) - Portion of highway or roadway that is contiguous to the traffic lanes to allow access for emergency vehicles, bicyclists, and where designated, pedestrians.



ES 1 Executive Summary

The City of Calexico is located approximately 125 miles east of the City of San Diego, and is located along the border with Mexico, adjacent to the Mexican city of Mexicali. Calexico serves a population of 40,232, per the 2016 American Community Survey, which represents a 48 percent growth over year 2000 Census figures.

This Plan serves as an update to the 2003 City of Calexico Bicycle Master Plan, which outlined the City's first bicycle network. This update builds upon the changes that have occurred in Calexico since 2003, and provides a refreshed analysis of Calexico's bicycle mobility needs. Likewise, the bicycle network identified in this Plan builds upon the 2003 Plan. The City of Calexico's General Plan, last updated in 2015, calls for implementation of the Bicycle Master Plan to encourage cycling by planning and incorporating bicycle facilities and racks throughout the City, as well as incorporating bicycle-friendly infrastructure into future roadway design.

To guide preparation of this Bicycle Master Plan Update, stakeholder interviews were conducted in April and May of 2017. Stakeholders included community members, elected officials, and governmental agency staff, including from the City of Calexico and Caltrans. An additional public outreach event was held in October of 2017 at the Annual Calexico Health Fair, in which public comment was solicited on various components of the proposed bicycle network. Input consisted of community identification and prioritization of potential new bicycle facilities, as well as identification of potential unsafe or uncomfortable locations for cycling in the city.

The purpose of this plan is to identify key destination areas and determine where appropriate facilities should be located to provide cyclists with a comprehensive, well-connected, safe, and comfortable bicycle network. Additionally, a well-designed Bicycle Master Plan Update will allow the City to continue to pursue competitive state and federal funding for implementation of the bicycle network.

Major Recommendations

As proposed in Chapter Four, this Plan recommends implementation of a 41-mile bicycle system that will provide a network of bicycle paths, lanes, routes, and cycle track that connects to the schools, parks, employment centers, and the city center. The recommended bikeway network builds upon the recently implemented 0.5-mile Class II facility along SR-98/Birch Street between Eady and Ollie Avenues, and consists of:

- 10.7 miles of Class I bicycle paths,
- 19 miles of Class II bicycle lanes,
- 10.9 miles of Class III bicycle routes, and
- 0.4 miles of Class IV cycle track.

The estimated cost to implement the complete bikeway system is \$4,919,212. Projects have been prioritized and organized for implementation in three phases, which shall allow the City to pursue funding and arrange implementation in realistic timeframes. Ultimately, the system is designed to be reflexive of Calexico's anticipated growth, whereby safe, comfortable cycling facilities are added to the Calexico Roadway network to contribute toward the partial alleviation of trips that can be expected with the addition of new residents in Calexico.



Implementation of bicycle facilities may be realized through a variety of sources, including general funds, new development, road improvements, and grant funds.

Public workshops are also recommended to encourage input on potential revisions. A public point of contact should be established at the City to respond to public concern and/ or comments, to coordinate bikeways in conjunction with public works improvement projects, and to prepare and administer grant applications.

Programmatic Recommendations

This Bicycle Master Plan Update relies on a framework of supporting programs and activities that complete the Plan's feedback loop, thus ensuring that bicycle infrastructure, safety, and planning processes are continually improved. Programmatic recommendations span educational, enforcement, and evaluation aims, each of which offer compatibility with larger, regional planning efforts such as the Imperial County Safe Routes to School Regional Master Plan, and Imperial County Bicycle Master Plan.



1.0 Introduction

The City of Calexico is located in the Imperial Valley subregion of Southern California, directly north of the Mexican Border and approximately 90 miles east of Downtown San Diego. The City of El Centro lies approximately eight miles to the north, and the Mexican City of Mexicali is located directly to the south of Calexico. California State Route 111 traverses the City in a north-south direction, and provides the primary route of ingress and egress via Interstate 8, approximately six miles to the north of Downtown Calexico. Transit services are provided by Imperial Valley Transit, which operates three two-way routes that serve Calexico and offers service to nearby cities such as Heber, El Centro, Brawley, as well as Imperial Valley College near El Centro.



Calexico Overview

As of July 1, 2016, the US Census Department estimated the population as 40,232, an increase of 48 percent since 2000's Census population of 27,109, making Calexico the second largest city in Imperial County.

The City of Calexico supports two border crossing facilities. The west border crossing between Calexico and Mexicali served approximately 4.3 million pedestrians, 4.3 million vehicles, and 7.9 million vehicular passengers in the year 2016. Additionally, another 254,000 pedestrians, 3.8 million vehicles, 7 million vehicular passengers, and 350,000 trucks crossed the East Calexico Port-of-Entry in 2016.

The United States Department of Transportation does not maintain a separate category for cyclists, but anecdotal and observational evidence indicates a large percentage of pedestrians, as well as some vehicle crossings, are in fact cyclists, and once arriving in the United States, they cycle along Calexico's roadways. These under-reported trips are nonetheless important to acknowledge when planning for people on bikes in the City of Calexico.

1.1 Purpose

Preparing for future growth and planning for a desired quality of life predates the development of this Bicycle Master Plan Update to ensure that Calexico's previous Bicycle Master Plan efforts remain up to date, as well as to continue to position the City for competitive grant funding. As growth continues to occur, demand will increase for bicycle-serving facilities and support infrastructure.

The Calexico Bicycle Master Plan Update will continue the progress made by the 2003 *City of Calexico Bicycle Master Plan* in laying the foundation for improving bicycle conditions within the City of Calexico.

In addition to the existing Plan, this effort builds upon recommendations set forth in the *City of Calexico General Plan Update (2015)* and the *Imperial County Bicycle Master Plan (2011)*.

The primary purpose of this Bicycle Master Plan Update is to identify a system of bicycle routes and programs that will serve as a tool for implementing future bicycle facilities and multimodal roadway improvements. This Plan is intended to provide a fair assessment of current and future bicycle needs, implementation costs, and funding opportunities for bicycle facilities.

Currently, the City offers no bicycling facilities and little support infrastructure, including only several bicycle racks located at civic facilities. Instead, bicyclists primarily utilize existing streets and sidewalks, and lock their bikes around trees, parking meters, fences, or light standards. The City recognizes that, once implemented, an effective bikeway system can offer convenience for commuters and recreationalists alike, increase safety for cyclists, reduce the number of vehicles on local roads, enhance personal health, increase tourism, and improve quality of life. The Plan recommendations will connect existing and developing residential areas to destination points for both commuter and recreational bicyclists, as well as connect to the planned bicycle facilities in the County of Imperial.

Additionally, this plan responds to the provisions of the State of California Active Transportation Program, administered by Caltrans, which defines specific requirements to be included in a Bicycle Master Plan (BMP). While Caltrans no longer requires a BMP, a recent BMP is very useful in getting projects funded under Caltrans and other grant programs.

A Bicycle Master Plan must comply with the program guidelines as set forth in Section 890-894.2 of the Streets and Highways Code in order to be eligible for Active Transportation Plan (ATP) grant funds for construction of bicycle facilities. To meet Caltrans requirements, a Bicycle Master Plan must include the following elements, which are followed by notation of the location within this Plan where each item is addressed:

Table 1-1 Caltrans Active Transportation Program Checklist

Item	Location in Plan
The estimated number of existing bicycle trips and pedestrian trips in the plan area, both in absolute numbers and as a percentage of all trips, and the estimated increase in the number of bicycle trips and pedestrian trips resulting from implementation of the plan.	Chapter 4.6
The number and location of collisions, serious injuries, and fatalities suffered by bicyclists and pedestrians in the plan area, both in absolute numbers and as a percentage of all collisions and injuries, and a goal for collision, serious injury, and fatality reduction after implementation of the plan.	Chapters 2.1, 2.2, 3.5
A map and description of existing and proposed land use and settlement patterns which must include, but not be limited to, locations of residential neighborhoods, schools, shopping centers, public buildings, major employment centers, and other destinations.	Chapter 1.3
A map and description of existing and proposed bicycle transportation facilities, including a description of bicycle facilities that serve public and private schools and, if appropriate, a description of how the five Es (Education, Encouragement, Enforcement, Engineering, and Evaluation) will be used to increase rates of bicycling to school.	Chapters 4.3, 4.7
A map and description of existing and proposed end-of-trip bicycle parking facilities.	Chapter 4.4



Table 1-1 Caltrans Active Transportation Program Checklist

Item	Location in Plan
A description of existing and proposed policies related to bicycle parking in public locations, private parking garages and parking lots and in new commercial and residential developments.	Chapters 3.2, 3.4, 4.4
A map and description of existing and proposed bicycle transport and parking facilities for connections with and use of other transportation modes. These must include, but not be limited to, bicycle 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.	Chapter 4.4
A map and description of existing and proposed pedestrian facilities, including those at major transit hubs and those that serve public and private schools and, if appropriate, a description of how the five E's (Education, Encouragement, Enforcement, Engineering, and Evaluation) will be used to increase rates of walking to school. Major transit hubs must include, but are not limited to, rail and transit terminals, and ferry docks and landings. A description of proposed signage providing wayfinding along bicycle and pedestrian networks to designated destinations.	Chapters 2.1, 2.2, 3.2, 4.4, 4.7
A description of the policies and procedures for maintaining existing and proposed bicycle and pedestrian facilities, including, but not limited to, the maintenance of smooth pavement, ADA level surfaces, freedom from encroaching vegetation, maintenance of traffic control devices including striping and other pavement markings, and lighting.	Chapter 6.3
A description of bicycle and pedestrian safety, education, and encouragement 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 law impacting bicycle and pedestrian safety, and the resulting effect on collisions involving bicyclists and pedestrians.	Chapter 4.7
A description of the extent of community involvement in development of the plan, including disadvantaged and underserved communities.	Chapter 2.3
A description of how the active transportation plan has been coordinated with neighboring jurisdictions, including school districts within the plan area, and is consistent with other local or regional transportation, air quality, or energy conservation plans, including, but not limited to, general plans and a Sustainable Community Strategy in a Regional Transportation Plan.	Chapter 1.2
A description of the projects and programs proposed in the plan and a listing of their priorities for implementation, including the methodology for project prioritization and a proposed timeline for implementation.	Chapter 6.1
A description of past expenditures for bicycle and pedestrian facilities and programs, and future financial needs for projects and programs that improve safety and convenience for bicyclists and pedestrians in the plan area. Include anticipated revenue sources and potential grant funding for bicycle and pedestrian uses.	Chapter 6.4
A description of steps necessary to implement the plan and the reporting process that will be used to keep the adopting agency and community informed of the progress being made in implementing the plan.	Chapter 6.1



Table 1-1 Caltrans Active Transportation Program Checklist

Item	Location in Plan
<p>A resolution showing adoption of the plan by the city, county or district. If the active transportation plan was prepared by a county transportation commission, regional transportation planning agency, MPO, school district or transit district, the plan should indicate the support via resolution of the city(s) or county(s) in which the proposed facilities would be located.</p>	<p>This step to be taken by City of Calexico</p>

Source: Chen Ryan Associates (2018)

1.2 Project Context

The City has several qualities contributing to an ideal cycling environment, including a well-connected street grid, flat topography, and year-round sunshine. The City’s mixed land use patterns also contribute to an environment where trip origins (residential land uses) and destinations (industrial, commercial/office, open space/parks, schools) are in close proximity to one another, enabling trips to be made by bicycle or walking. **Figure 1-1** displays the City of Calexico’s location within the context of the Southern California region. The project study area includes the incorporated boundaries of the City and extends to include the Sphere of Influence as identified in Calexico's General Plan. Two primary traffic routes extend through the City: Imperial Avenue (SR 111), which extends north and south connecting to Interstate 8, and SR-98, which provides an east-west connection through the city. Cole Road, located in the northern portion of the City, provides a secondary east-west thoroughfare. As the City expands northward, the demand for cross-town trips will place additional demand pressure on these roadways.

1.3 Land Use

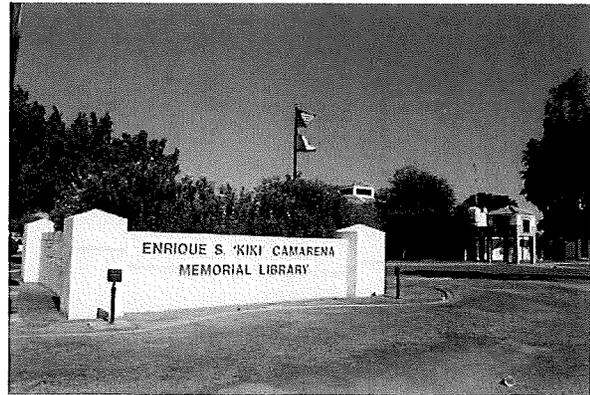
Land uses in the City of Calexico are presented in **Figure 1-2**. As shown, commercial land uses are generally located in the downtown portion of Calexico, in the center of the City near the International border. Additional neighborhood-serving commercial exists and is developing along the eastern edge of the City, particularly along Birch Street (SR 98), which supports existing and new residential communities. Retail and business centers, as well as the Calexico School District, San Diego State University Imperial Valley Campus, Border Facility, police, and fire services, provide much of the employment base within the city. Agricultural fields within the unincorporated areas of Imperial County, as well as industry in neighboring Mexicali are other primary sources of employment.

Most of the industrial land use in Calexico is located west of Imperial Avenue, along or near the railroad tracks and the Calexico International Airport. However, these industrial areas are not significantly developed and are used primarily for truck and equipment storage.

Two east-west railroad crossings, at Birch Street and Grant Street, offer the only connectivity to the portions of Calexico that are west of the railroad tracks, which poses a traffic bottleneck. Despite this, cyclists and pedestrians frequently must use these roadways to cross the tracks to connect from residences to retail services and schools.

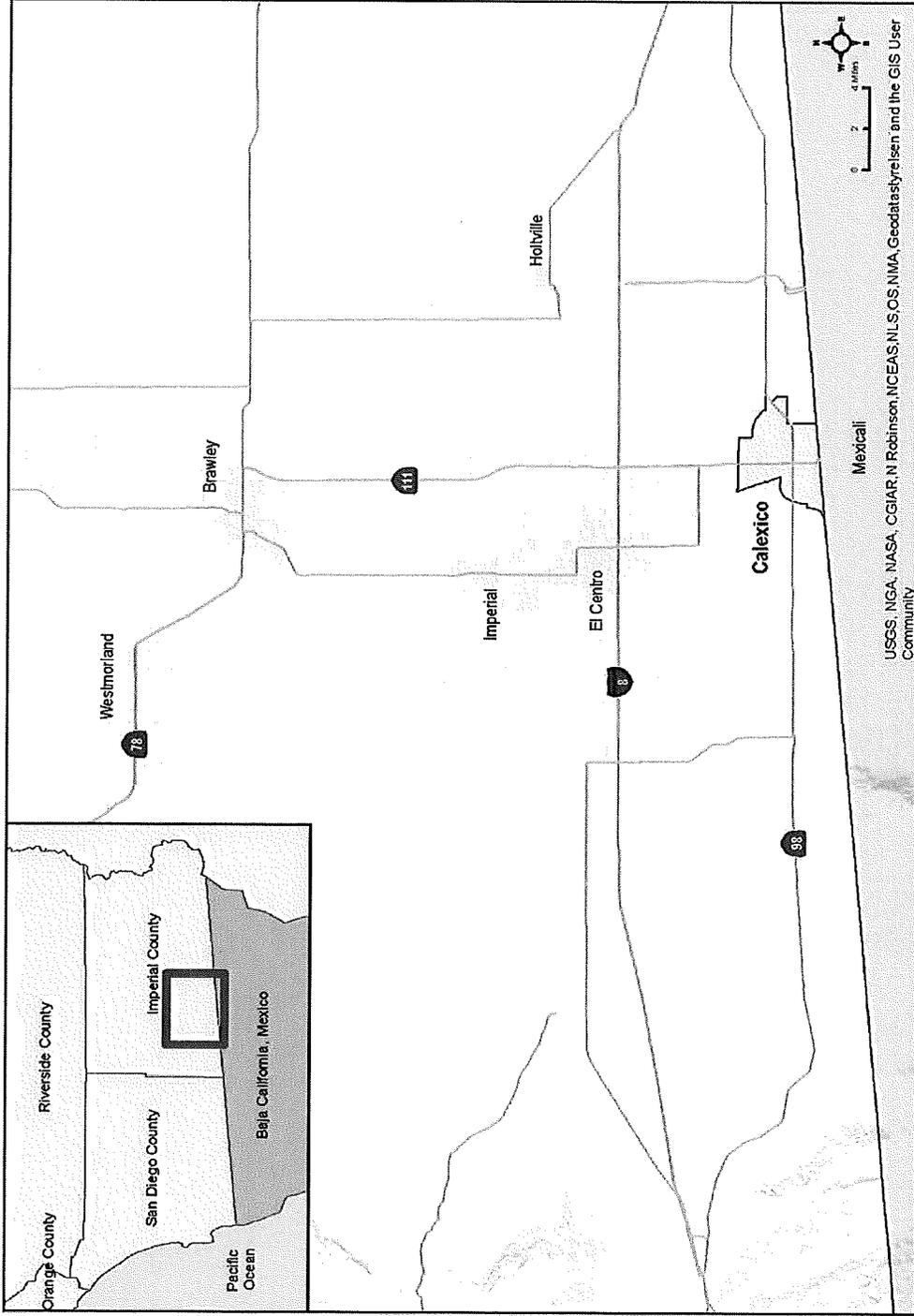


A total of 21 parks provide facilities for leisure activities, including tennis, basketball, soccer, and baseball, in addition to picnic and swimming facilities. Calexico also provides a community center and library. The Enrique "Kiki" Camarena Public Library offers a large resource collection as well as extensive community services.



Enrique "Kiki" Camarena Public Library

Figure 1-1 Calexico Within the Region



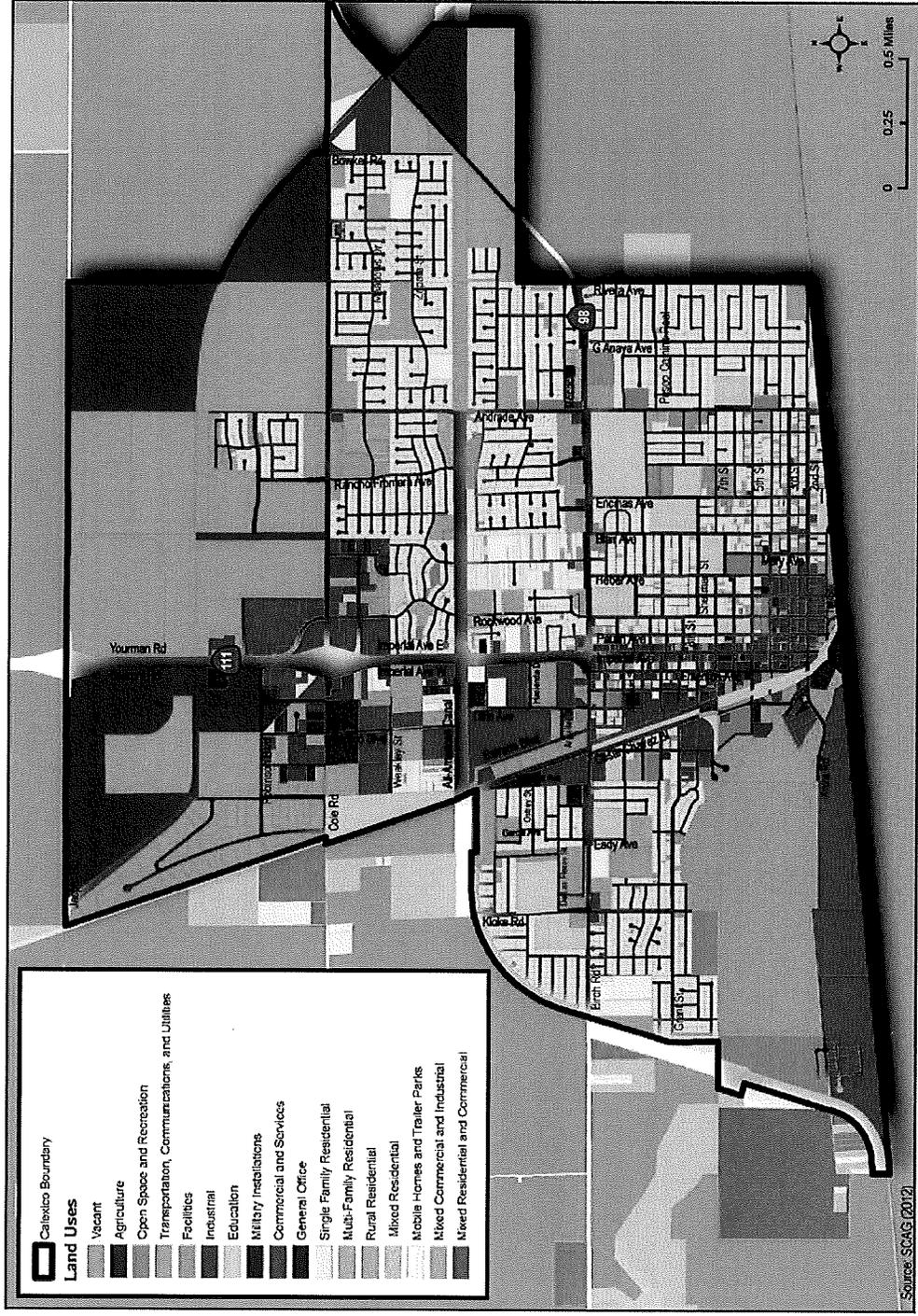
Location of Calexico within the Region

Calexico Bicycle Master Plan

CHEN RYAN



Figure 1-2 Calexico Land Uses (2012)



2012 Land Uses

Calexico Bicycle Master Plan

CHEN RYAN



According to 2016 American Community Survey figures, the Calexico Unified School District maintains an estimated enrollment of 13,347, spanning three high schools, two junior high schools and six elementary schools. Additionally, there are three private schools, Our Lady of Guadalupe School, Calexico Mission Academy, and Vincent Memorial High School.

San Diego State University operates a campus in Calexico, called the SDSU Imperial Valley Campus. In operation for over 50 years, the Imperial Valley Campus has an enrollment of over 1,000 students. With the implementation of the Bicycle Master Plan, the students at SDSU in Calexico will directly benefit from implementation of bicycle facilities.

Created from the return flows of the Colorado River located 100 miles south of the border, the New River flows north into the United States, and empties into the Salton Sea. As the New River flows north, it collects industrial waste, sewage backflow and contaminants. Although polluted, with governmental commitment and resources the New River could be transformed from a safety concern into a recreational resource. A Class I multi-use path, as proposed in one of the recommendations of this Plan, is located along the upper portion of the New River, and would offer a unique recreation amenity for Calexico's future.

Compatibility with Local and Regional Plans

A number of previous and on-going planning efforts and relevant documents exist for the City of Calexico and the region, and provide context for the Bicycle Master Plan Update effort. The following documents were referenced to ensure compatibility and synergy:

- Calexico Transit Needs Assessment Study Final Report (2017)
- City of Calexico Bicycle Master Plan (2003)
- Imperial County Safe Routes to School Master Plan (2016)
- Imperial County Bicycle Master Plan (2011)
- SCAG 2016-2040 RTP/SCS (2016)

Calexico West Land Port of Entry Expansion and Reconfiguration (Ongoing)

The Calexico West Port of Entry is one of the busiest crossings on the southern border of the United States and Mexico. The space required for modern inspection technologies is not available and the ability to accomplish modern border-related crossing and security activities requires further facility expansion. When completed, the project will provide adequate operational space, reduced traffic congestion and a safe environment for port employees and users. Additionally, the project will reduce delays and congestion, subsequently improve air quality, and serve to encourage economic development of the region. The expansion will take place near the current border crossing facility and expand to the west. Active travel facility consideration is informed by this ongoing effort, due to the expansion of border-serving roadways that will occur, such as Cesar Chavez Boulevard.

Calexico Intermodal Transportation Center (Ongoing)

Calexico's Downtown Port of Entry (POE) is one of the three busiest ports in the nation. Over 26,000 pedestrians travel through this port, north and southbound daily from Mexico to work, shop, visit family and for business. That number is expected to increase and the planned POE improvements to vehicular and pedestrian facilities are proposed to alleviate traffic congestion and wait times. The planning and development of the Calexico Intermodal Transportation Center seeks to provide an efficient approach to collocate multiple transportation providers in one location near the border.

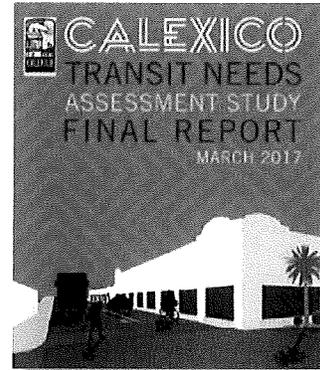


Calexico Transit Needs Assessment Study (2017)

The 2017 *Calexico Transit Needs Assessment Study* represents a joint effort between the City of Calexico and the Southern California Association of Governments (SCAG) to identify mobility-related needs in the City and develop potential strategies, which include publicly funded and private for-profit transit services, potential transit demands, and where service gaps impede quality transit connectivity. The following issues were identified within the City:

- Fragmented transit services
- Potentially unmet federal and state regulations
- Lack of basic and modern amenities (such as air conditioning)
- Operation of unlicensed taxicabs
- Lack of bicycle parking near most transit hubs

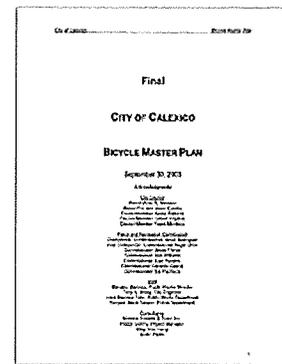
To address the aforementioned issues, key recommendations were proposed which include adoption of a transit guidelines framework, potential revision to bus, shuttle and taxicab ordinances, improvements to the local transit network, construction of a Calexico Intermodal Transportation Center, and installation of bicycle parking at major transit stops.



City of Calexico Bicycle Master Plan (2003)

The 2003 *City of Calexico Bike Master Plan* was developed “to identify a system of bicycle routes that will serve as a tool for planning future bicycle facilities and roadway improvements,” keeping mindful of the number of maquiladora industries (trans-border manufacturing facilities) and resultant border crossing trips in the community, many of which are made by bicycle-dependent populations. The Plan identifies the following four goals as guidance:

- A comprehensive, rational and equitable bikeway system connecting residential neighborhoods with parks, schools, city hall, and existing future employment based on General Plan land use designations.
- School and commuter bikeways that are easily recognized by signs and accessible from residential areas through appropriate design.
- Bicycle storage facilities and/or bicycle racks located at all parks, schools, and at new major retail and employment centers or during major renovations of existing retail and employment centers.
- Bikeways integrated with roadway improvements and/or new construction projects based on the recommended bikeway network.



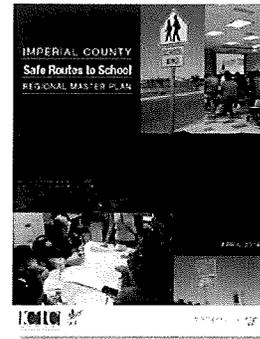
The 2003 Plan proposes a recommended bikeway network of 11.3 miles of class I bicycle paths, 22.6 miles of Class II bicycle lanes, 9.3 miles of Class III bicycle routes, and a 2.0-mile rural trail along the New River. The current Plan also provides cost estimates and recommendations for potential funding sources to construct the recommended bikeway network.



Imperial County Safe Routes to School Regional Master Plan (2016)

The *Imperial County Safe Routes to School Regional Master Plan* was adopted in April of 2016 to implement a county-wide guidance framework for physical improvements and programs for the implementation in pursuit of achieving the following two goals:

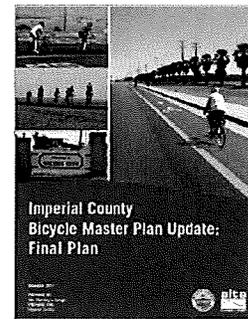
- To make it safer for students to walk and bicycle to school
- To increase the number of students walking and bicycling to school



The plan also considers health, environmental, and quality-of-life benefits that arise from increased walking and biking to school and adoption of more active lifestyles as a whole. The Plan contains a “Five E” approach framework, acknowledging and balancing the contributions required from engineering, education, encouragement, enforcement, and evaluation efforts in developing a successful plan. Conditions were recorded at each of the County’s public schools, and formed the basis of school-specific engineering recommendations, including installation of bicycle infrastructure and support facilities where they were found to be lacking. Specific plans, potential funding sources, and implementation schedules were developed for all schools within each of the County’s twelve school districts.

Imperial County Bicycle Master Plan (2011)

Approved by the County of Imperial in November 2011, the *Imperial County Bicycle Master Plan* provides an overlying, county-wide framework upon which additional bicycle master plans have been developed at citywide levels. The intent of the Plan is to serve as “the guiding document for the development of an integrated network of bicycle facilities and supporting programs designed to link the unincorporated areas and attractive land uses throughout the County.”



The Plan identifies the following three specific goals to help bicycling in Imperial County become an overall viable transportation mode:

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

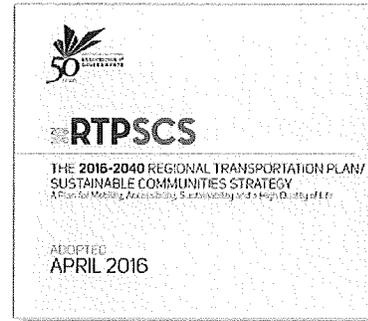
The Plan’s infrastructure recommendations include approximately 270 miles of on-street bikeways (such as Class II bike lanes and Class III bike routes), approximately 64 miles of proposed Class I multi-use paths, and a further 103 miles of bikeable shoulders along State Highways. The Plan also proposes the organization of bikeways into 15 designated routes that would emphasize utilitarian trips, connections to schools, employment, and recreational facilities, leveraging connections to city-implemented bikeways.



SCAG 2016-2040 RTP/SCS (2016)

Approved by the Southern California Association of Governments (SCAG) Board of Directors in April of 2016, the *2016-2040 Regional Transportation Plan (RTP/SCS)* serves as the overarching vision for the majority of Southern California over the next two and a half decades.

Developed in close partnership with the region's 191 cities, six counties, and tribal government, the RTP/SCS proposes a transportation network that will provide sustainable mobility choices and planning to support a sustainable and healthy region, a vibrant economy, and an outstanding quality of life for all. It includes greater investments in public transportation, bike paths, and pedestrian improvements and allows the region to meet and exceed GHG reduction targets. The primary objectives of the Regional Plan are to:



- Preserve the existing transportation system,
- Expand the regional transportation system to give people more alternatives to driving alone,
- Expand passenger rail,
- Improve highway and arterial capacity,
- Manage demands on the transportation system through Transportation Demand Management (TDM),
- Optimize the performance of the transportation system,
- Promote walking, biking, and other forms of active transportation,
- Strengthen the regional transportation network for goods movement,
- Leverage new advances in technology,
- Improve airport access, and
- Focus new growth around transit through support of High Quality Transit Areas (HQTAs), promotion of livable corridors, and strategies to bolster Neighborhood Mobility Areas (NMAs).

The Regional Plan includes a transportation network that identifies a number of public transit, highway, goods movement, bikeway, pedestrian, and supportive program projects to be implemented by 2040. The RTP/SCS includes a financially constrained plan and a strategic plan. The constrained plan includes transportation projects that have committed, available or reasonably available revenue sources, and thus are probable for implementation. The strategic plan is an illustrative list of additional transportation investments that the region would pursue if additional funding and regional commitment were secured. Such investments are potential candidates for inclusion in the constrained RTP/SCS through future amendments or updates.

SCAG is anticipating that it will obtain approximately \$556.5 billion in revenues through 2040. Of this, approximately 50 percent would be utilized for operations and maintenance of the existing regional transportation system, 44 percent for transportation capital improvements, and six percent for serving debt. Of the 50 percent of revenues earmarked for operation and maintenance, approximately 28 percent of revenues would be utilized for transit operations and maintenance, 12 percent for highway operation and maintenance, seven percent for the operation and maintenance of locally significant roads, and three percent for the operation and maintenance of passenger rail. Because not all revenues will be available at once, transportation projects and programs will be phased over the life of the plan. Revenues are projected to flow from local sales tax (46 percent), countywide taxes (12 percent), core and additional federal funds (20 percent), and core and state funding (23 percent).

1.4 Organization of the Report

Following this introductory chapter, the remainder of this Bicycle Master Plan Update is organized into the following chapters:

- **Chapter 2** presents guiding goals, objectives, and policies that establish the high-level vision for this Bicycle Master Plan Update. A summary of the outreach process establishes the link between the Community of Calexico's vision and the infrastructure, programs, and plans set forth in this document.
- **Chapter 3** summarizes factors driving bicycle demand, such as current latent demand, health and safety concerns, and the needs for commuters, students, and recreationalists.
- **Chapter 4** presents the recommended bikeway network and support facilities.
- **Chapter 5** identifies design toolkit standards for use by the City when implementing the facilities outlined in this Plan
- **Chapter 6** details implementation factors and considerations, such as project prioritization, costing, and phasing. This chapter also outlines ongoing maintenance considerations and potential sources for securing funding for implementation of bikeways and support facilities outlined in this Plan.

2.0 Goals, Objectives, and Policies

Implementation of the Bicycle Master Plan aims to increase bicycling activities through safe, comfortable facilities, in turn seeking to increase health benefits, improve air quality, and reduce traffic. The following were developed based upon a review of existing goals, objectives, and policies in the currently adopted City of Calexico Bicycle Master Plan, and refreshed based upon most current conditions in the City, as well as from stakeholder review and comment.



Historic City Hall

2.1 Goals

The following goals guide the preparation of this Bicycle Master Plan Update:

- 1.0 A comprehensive, rational and equitable bikeway system connecting residential neighborhoods with parks, schools, City Hall, and existing and future employment based on General Plan land use designations. (Objectives 1.1 – 1.4)
- 2.0 School and commuter bikeways that are easily recognized by signs and accessible from residential areas through appropriate design. (Objectives 2.1 - 2.2)
- 3.0 Bicycle storage facilities, accommodations, and/or bicycle racks located at all parks, schools, major retail and employment centers, and multimodal transit centers. (Objectives 3.1 – 3.2)
- 4.0 Bikeways integrated with roadway improvements and/or new construction projects based on the recommended bikeway network. (Objectives 4.1 – 4.2)
- 5.0 Create a safe bicycle environment. (Objectives 5.1 – 5.3)

2.2 Objectives and Policies

Identified goals are best accomplished by setting out key objectives and policies to ensure implementation of the bikeway network has a workable and identified path forward.

Objectives

- 1.1 Encourage the use of bicycles for personal transportation as an alternative to motor vehicles. (Policy 1.1.1)
- 1.2 Provide for bicycle access to employment, commercial, and other transportation and travel destinations. (Policy 1.2.1)

- 1.3 Plan, design, and construct roadways that consider facilities for bicyclists and include multi-use Class I paths for pedestrians, bicyclists, and disabled persons where feasible. (Policy 1.3.1)
- 1.4 Pursue grant funding programs for implementing the bikeway network. (Policy 1.4.1)
- 2.1 Establish easy identification of facilities for all ages and physical abilities. (Policy 2.1.1)
- 2.2 Encourage educational programs that promote the safe and efficient travel of cyclists. (Policy 2.2.1)
- 3.1 Provide for bicycle access and bicycle parking at new employment centers, commercial development, schools, and existing parks. (Policy 3.1.1)
- 3.2 Increase the number of multi-modal transit facilities with bike accommodation. (Policies 3.2.1 – 3.2.3)
- 4.1 Encourage cycling by incorporating bicycle infrastructure when developing new schools, parks, residential communities, and retail/employment centers. (Policy 4.1.1)
- 4.2 Integrate bicycle facilities as part of the design and construction of new roadways and upgrade existing roadways. (Policy 4.2.1)
- 5.1 Implement projects that improve the safety of bicyclists at key destinations. (Policy 5.1.1)
- 5.2 Support traffic enforcement activities that increase bicyclist safety. (Policy 5.2.1)
- 5.3 Evaluate impacts on bicyclists when designing new or reconfiguring streets. (Policy 5.3.1)

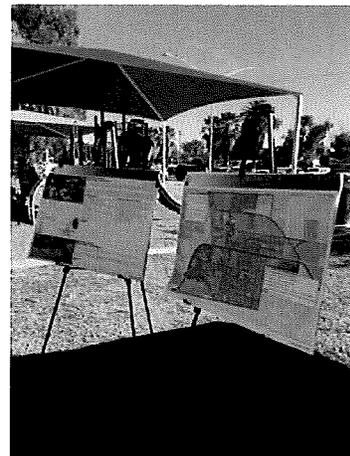
Policies

- 1.1.1 The City will develop programmatic content to encourage mode shift and use of bicycles for recreational and utilitarian travel.
- 1.2.1 The City will seek funding for and implement the bicycle network identified in this Plan.
- 1.3.1 The City will assign a staff person or appoint a volunteer or committee to coordinate and implement and maintain the bikeway system.
- 1.4.1 City staff will identify and pursue grant funding for the priority projects identified in this Plan.
- 2.1.1 The City will establish a wayfinding program to increase community awareness of Citywide bicycle facilities.
- 2.2.1 City staff will work with Imperial County and school districts to implement its portion of the Imperial County Safe Routes to School Program.

- 3.1.1 The City will develop guidelines and/or standards for bicycle parking for new or redeveloped commercial and industrial development, as well as all schools, parks and civic facilities.
- 3.2.1 The City will implement the bicycle facilities identified in this Plan that link to bus stops.
- 3.2.2 The City will work with local transit providers to ensure that bike carriers are installed on buses.
- 3.2.3 The City will install bicycle racks at multimodal facilities.
- 4.1.1 The City will develop guidelines and/or standards for implementing bicycle facilities as part of conditions of approval for new development where new roadways are required or must be altered.
- 4.2.1 The City will ensure that future roadways are built to encourage multimodal mobility.
- 5.1.1 The City will implement the bicycle facilities as proposed and phased in this Plan.
- 5.2.1 The City will work with law enforcement to implement programmatic activities pertaining to enforcement of safe roadway behavior.
- 5.3.1 The City will establish multimodal evaluation metrics to evaluate future projects' impacts to nonvehicular modes of travel.

2.3 Public Outreach Process

An important goal of this Bicycle Master Plan Update is to reflect and respond to the current unmet needs of the community, as well as considering anticipated growth. In order to encourage public input, the City of Calexico conducted stakeholder interviews in April and May of 2017. Stakeholders consisted of a combination of interested community members, elected officials, and governmental agency staff, including from the City of Calexico and Caltrans. Elected officials were interviewed individually whereas community members and agency staff were interviewed through a series of three at-large community stakeholder meetings. Approximately one dozen stakeholders were interviewed in total, during which they established the need for an educational component of bicycle planning to complement facility enhancement, as well as the desire to see bicycle facilities serve local schools. These findings in particular were incorporated into the subsequent development of this Plan.



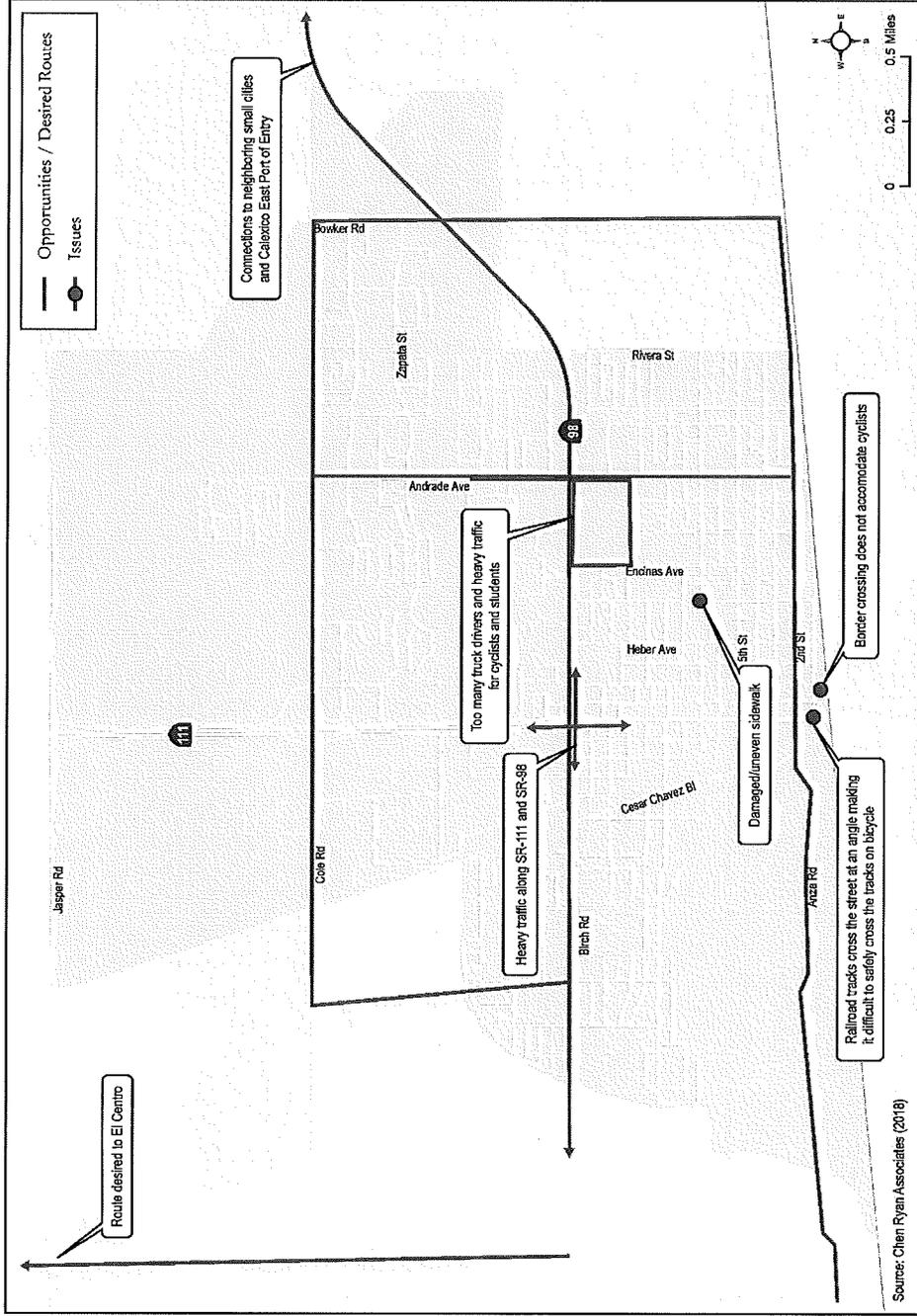
The public outreach process gathered viewpoints from community members that do and do not currently ride.

An additional public outreach event was held in October of 2017 at the Annual Calexico Health Fair. Public comment was received on various components of the proposed bicycle network. After discussing each of the routes and taking all input, the proposed bicycle network was finalized, reflecting the synthesis of community input and the route evaluations performed in support of Plan development. Together, the input received through the public outreach process provided a community-oriented basis for the preparation of this Bicycle Master Plan Update. In total,

over 100 people participated in the public outreach process as part of this effort. The needs and opportunities identified through this process are presented in **Figure 2-1**.



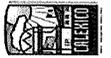
Figure 2-1 Community Identified Needs and Opportunities



Calexico Bicycle Master Plan

Community Identified Needs and Opportunities

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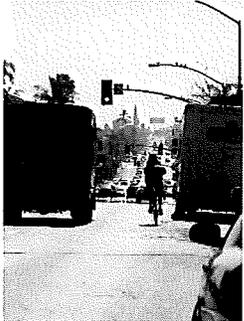
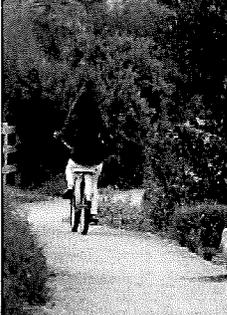


3.0 Bicycle Facility Demand

Bicycling is one of the most popular forms of recreational activity in the United States, and its share as a mode choice for utilitarian travel is continually growing. Generally, the demand for bikeways is predicated by the number of cyclists evident on roadways, the number of bike-related accidents, and public opinion or requests for new bikeways. However, establishing bicycle facilities as the City continues to grow will provide increased opportunities for cycling for pleasure and for commuting to work, school, or shopping. The latent demand for bikeways stems from those cyclists that would cycle if bikeways were available.

Bicyclists form a highly diverse group of individuals whose cycling preferences and cycling skill is varied. Cyclists have been generally categorized as belonging to one of four types, based upon their comfort and interest in cycling (*Dill, et al; Four Types of Cyclists? Examination of Typology for Better Understanding of Bicycling Behavior and Potential, Portland State University*):

Table 3-1 The Four Types of Cyclists

Example	Description
	<p>The “Strong and the Fearless” represent fewer than half of a percent of the population. These are the people who will ride regardless of roadway conditions. They tend to self-identify as “cyclists,” and riding is a strong part of their identity. They are generally undeterred by roadway conditions.</p>
	<p>The “Enthusied and Confident” are those who have been attracted to cycling and are comfortable sharing the roadway with automotive traffic, but prefer to do so operating on their own facilities. They are attracted to riding where streets have been redesigned to make them work well for bicycling. They appreciate bicycle lanes and bicycle boulevards. This demographic comprises approximately seven percent of the population.</p>
	<p>The vast majority of people are the “Interested but Concerned.” These individuals are curious about bicycling. They are hearing messages from a wide variety of sources about how easy it is to ride a bicycle regularly, about how bicycling is booming, about “bicycle culture”, and about the need for people to lead more active lives. They like riding a bicycle, and they would like to ride more. However, they are cautious toward most riding conditions, and are uncomfortable with riding in mixed traffic. Very few of this group regularly rides bicycles, and particularly not along arterials, or to major commercial and employment destinations. This group represents approximately 60 percent of the population. They would ride if they felt safer on the roadways—if cars were slower and less frequent, and if there were more quiet streets with few cars and paths without any cars at all.</p>





Approximately one third of the population falls into the last category - the **“No Way, No How”** group that is currently not interested in bicycling at all, for reasons of topography, inability, or simply a lack of interest.

Generally, when planning for bicycle facilities, various levels of bicyclist abilities are considered in relation to the community and environment in which they live and cycle. Advanced cyclists are oftentimes happily served by bicycle *compatible roadways* designed to accommodate shared use by bicycles and vehicles. Basic riders, on the other hand, are more comfortable with *designated roadways* with bicycle facilities that encourage bicycle use.

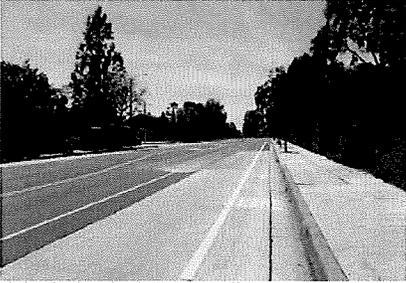
A *compatible roadway* is one which incorporates design features that allow a competent bicyclist to safely share the roadway with a vehicle. Design features may include traffic volumes, speeds, and signage. Typically, this facility is a Class III bicycle route.

A *designated roadway* is one that encourages cycling through the use of lane markings and signage. Typically, this facility is a Class II bicycle lane or Class IV cycle track. Other considerations of a designated roadway may include traffic conditions, appropriate width and geometries, and directness of route. A Class I bicycle path is recommended for those inexperienced cyclists and other recreational uses since it is separated from the road and motorized traffic.

In Calexico, the experience level of cyclists in Calexico predominantly falls into the “interested but concerned” category, based upon the small but steady number of cyclists observed throughout the city where roadway conditions are calm and inviting. There are also more experienced cyclists that bike longer distances, making use of the region’s rural open spaces. Implementation of the recommended network will ultimately result in bicycle facilities that can improve mobility for varying levels of cyclists.

Table 3-2 discusses the bicycle facility classifications; the different types of cyclists feel comfortable on different facility types.

Table 3-2 Bicycle Facility Design Classifications

Description	Example
<p>Class I Multi-Use Path – Also referred to as a bike paths or shared-use paths, Class I facilities provide a completely separated right-of-way designed for the exclusive use of bicycles and pedestrians with crossflows by motorists minimized. Multi-use paths can provide connections where roadways are non-existent or unable to support bicycle travel. The minimum paved width for a two-way multi-use path is considered to be eight-feet, with a two-foot wide graded area adjacent to the pavement.</p>	
<p>Class II Bike Lane – Provides a striped lane designated for the exclusive or semi-exclusive use of bicycles with through travel by motor vehicles or pedestrians prohibited. Bike lanes are one-way facilities located on either side of a roadway. Pedestrian and motorist crossflows are permitted. Additional enhancements such as painted buffers and signage may be applied. The minimum bike lane width is considered to be five-feet.</p>	
<p>Class III Bike Route – Provides shared use of traffic lanes with cyclists and motor vehicles, identified by signage and/or street markings such as “sharrows”. Bike routes are best suited for low-speed, low-volume roadways with an outside lane of 14 feet or greater. Bike routes provide network continuity or designate preferred routes through corridors with high demand.</p>	
<p>Class IV Cycle Track – Also referred to as separated or protected bikeways, cycle tracks provide a right-of-way designated exclusively for bicycle travel within the roadway and physically protected from vehicular traffic. Cycle tracks can provide for one-way or two-way travel. Types of separation include, but are not limited to, grade separation, flexible posts, or on-street parking.</p>	



3.1 Demand for Bicycle Facilities

A common analysis technique used to understand potential demand for cycling – or the propensity to make a bike trip – is through an assessment of population and land use characteristics. A bicycle propensity model was created to support this assessment and combines likely bike trip generator inputs – population, employment, zero-vehicle households, and bicycle commuters – with likely bike trip attractors, or key land uses understood to attract bicycle trips. These trip-attracting land uses include the international border, schools, retail, parks, and recreational spaces. When combined, the active transportation generators and attractors provide a foundation for understanding active transportation demand across the City of Calexico.

Bicycle Trip Generators and Attractors

Table 3-3 displays the inputs, thresholds, and multiplier values used to create the bicycle trip generator submodel. Generator input values listed as “high” reflect conditions with a greater likelihood of generating a bicycle trip. Generator input values in the “low” range are understood to generate relatively fewer trips.

Table 3-3 Bicycle Propensity Trip Generator Submodel Inputs

Generator	Units	Multiplier Values					Weights
		High 4	Medium 3	Low 2	Zero 1	Zero 0	
Population Density	Residents / Acre	≥ 25	15.1 – 25	10.1 – 15	5.1 – 10	≤ 5	4
Employment Density	Jobs / Acre	> 10	7.1 - 10	4.1 - 7	1.1 - 4	≤ 1	3
Bicycle Commuters	Percent of Commuters	> 4%	2.1 – 4%	1.1 – 2%	0.1 – 1%	0%	2
Zero-Vehicle Households	Percent of Households	> 10%	5.1 – 10%	3.1 – 5%	1.1 – 3%	≤ 1%	1

Source: US Census, 2011 – 2015 American Community Survey 5-Year Estimates (2018); Chen Ryan Associates (2018)

Figure 3-1 displays Calexico’s 2010 population density. As illustrated in Table 4-2, higher population densities are associated with potentially higher levels of bicycle trip generation. Relatively higher levels of population density are found throughout the City, but are particularly found in the southern portion of Calexico near the international border.

Figure 3-2 displays 2015 employment density for Calexico. Relatively higher levels of employment density are found in the southern portion of Calexico near the international border, and taper off as one moves to the north. The eastern and western portions of the City have little to no employment, as they are primarily residential.

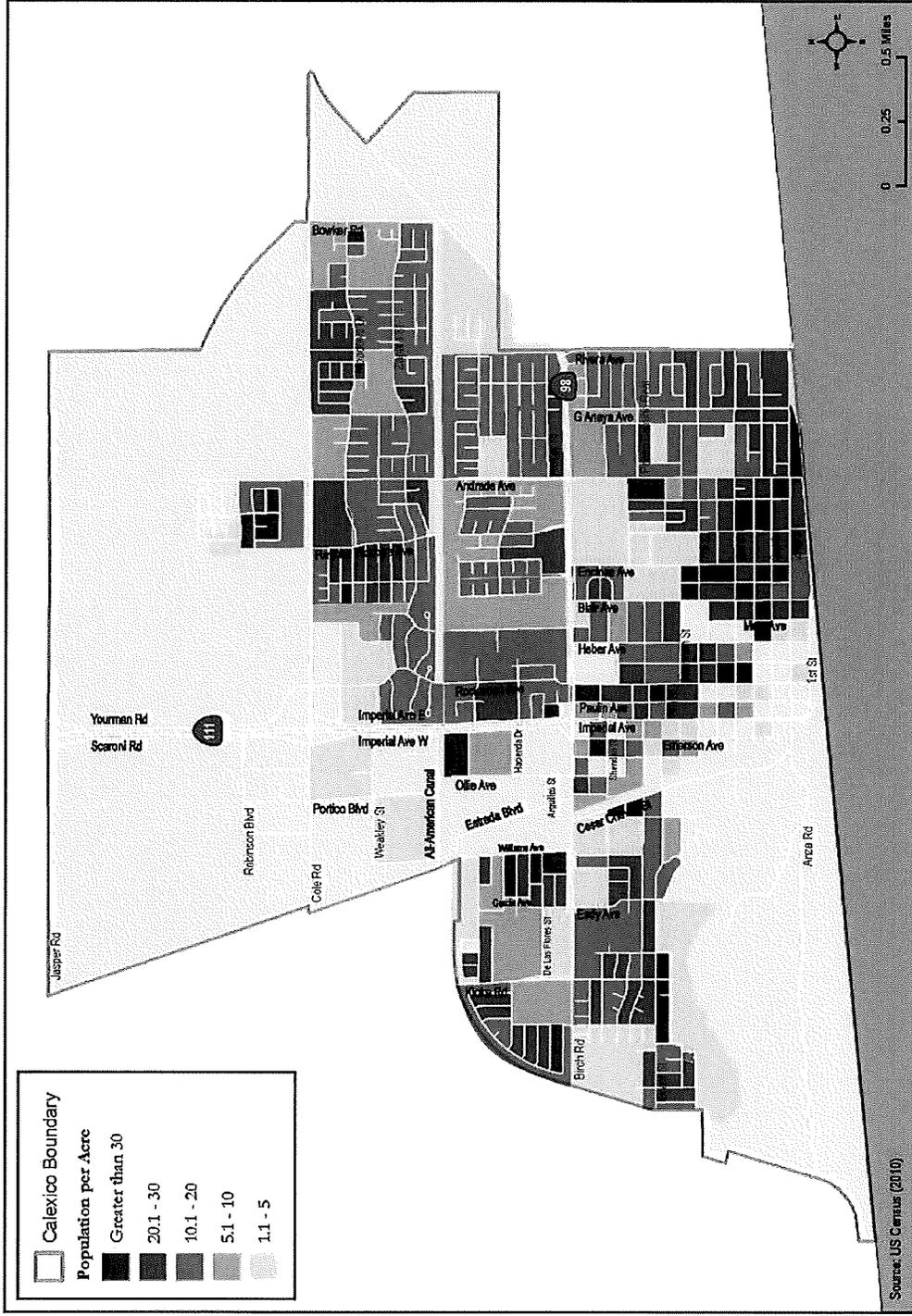


Relatively denser portions of Calexico are conducive to a higher ridership propensity.

Figure 3-3 shows the share of households with zero-vehicle ownership. Higher rates potentially indicate an increased reliance on active transportation and public transit from some residents located within these areas. A majority of the City has significant populations with access to zero vehicles. The eastern and western portions of Calexico are less likely to have households with no access to a vehicle.

Five variables identified as trip generators (population density, employment density, zero-vehicle households, pedestrian commuters, and bicycle commuters) were combined to create and Bicycle Trip Generator Submodel composite map to display areas with increased potential for generating active transportation trips. **Figure 3-4** displays the Bicycle Trip Generator Submodel results. As shown, a relatively higher concentration of active transportation trip generators can be found in the central, southern portion of Calexico nearest the international border. The areas in the northern, eastern, and western portion of Calexico have relatively fewer bicycle generator characteristics.

Figure 3-1 Citywide Population Density (2010)



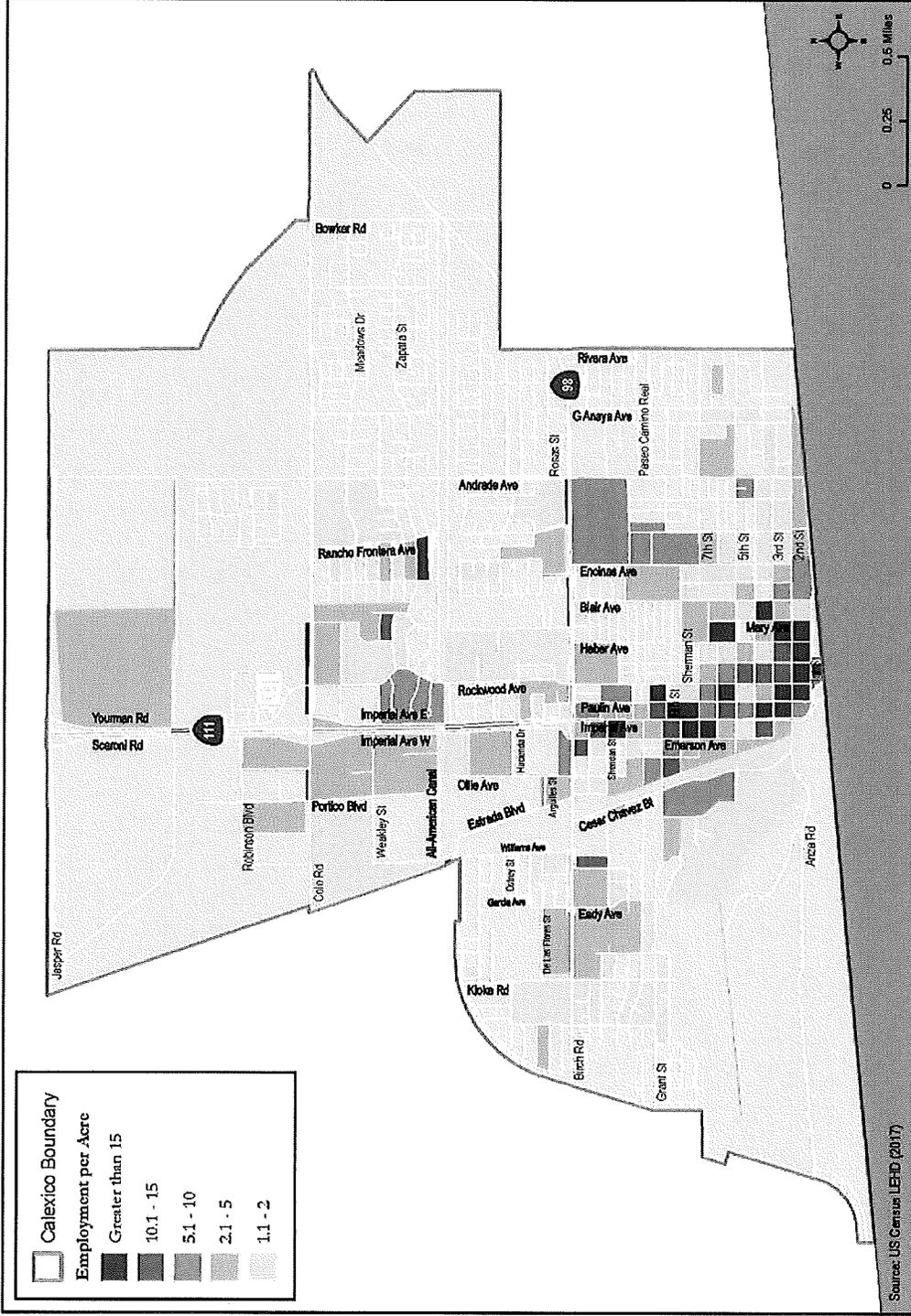
Citywide Population Density by Census Block (2010)

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Figure 3-2 Citywide Employment Density (2017)

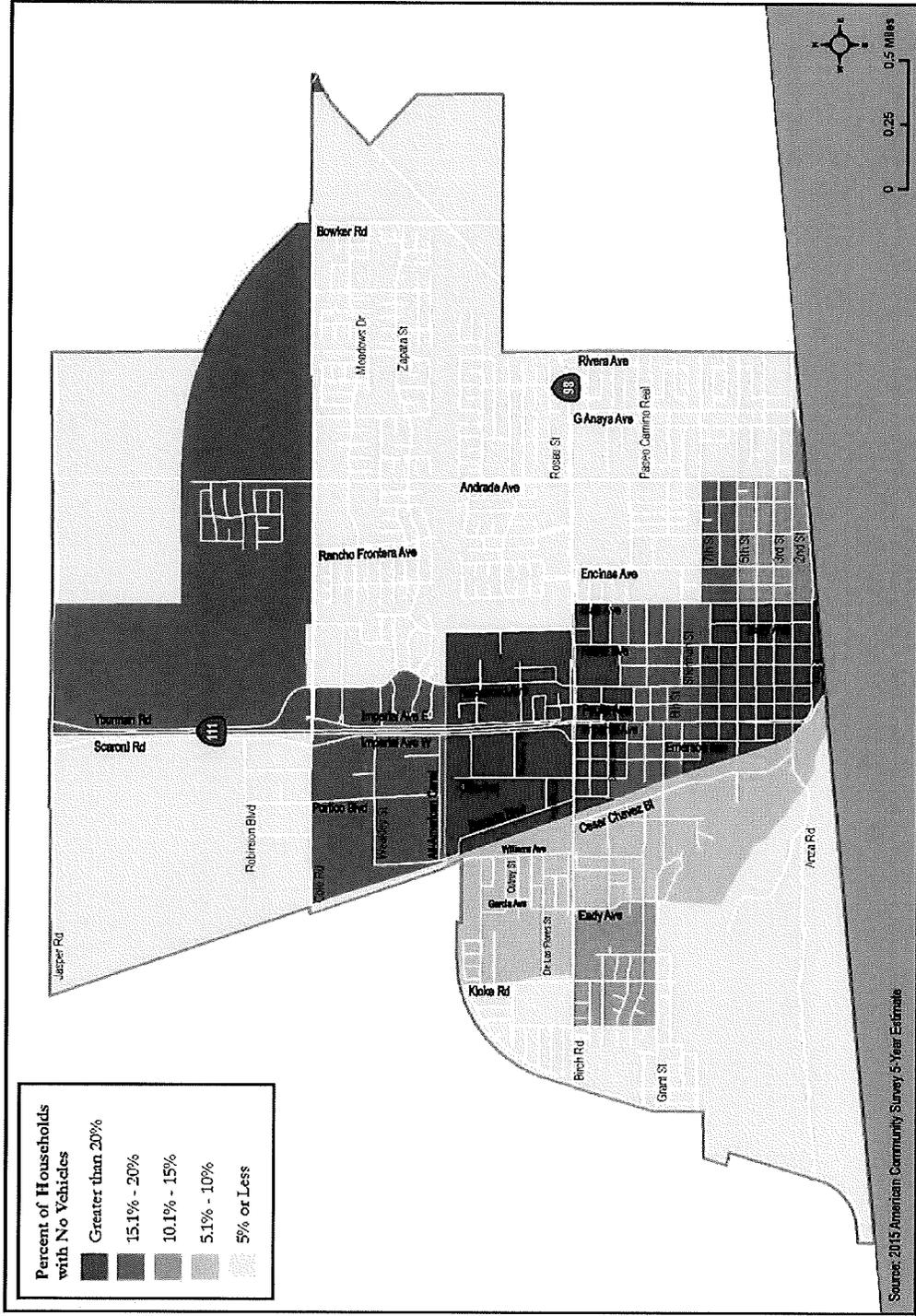


Citywide Employment Density by Census Block (2017)

Calexico Bicycle Master Plan



Figure 3-3 Percent of Households with No Vehicles Available (2015)

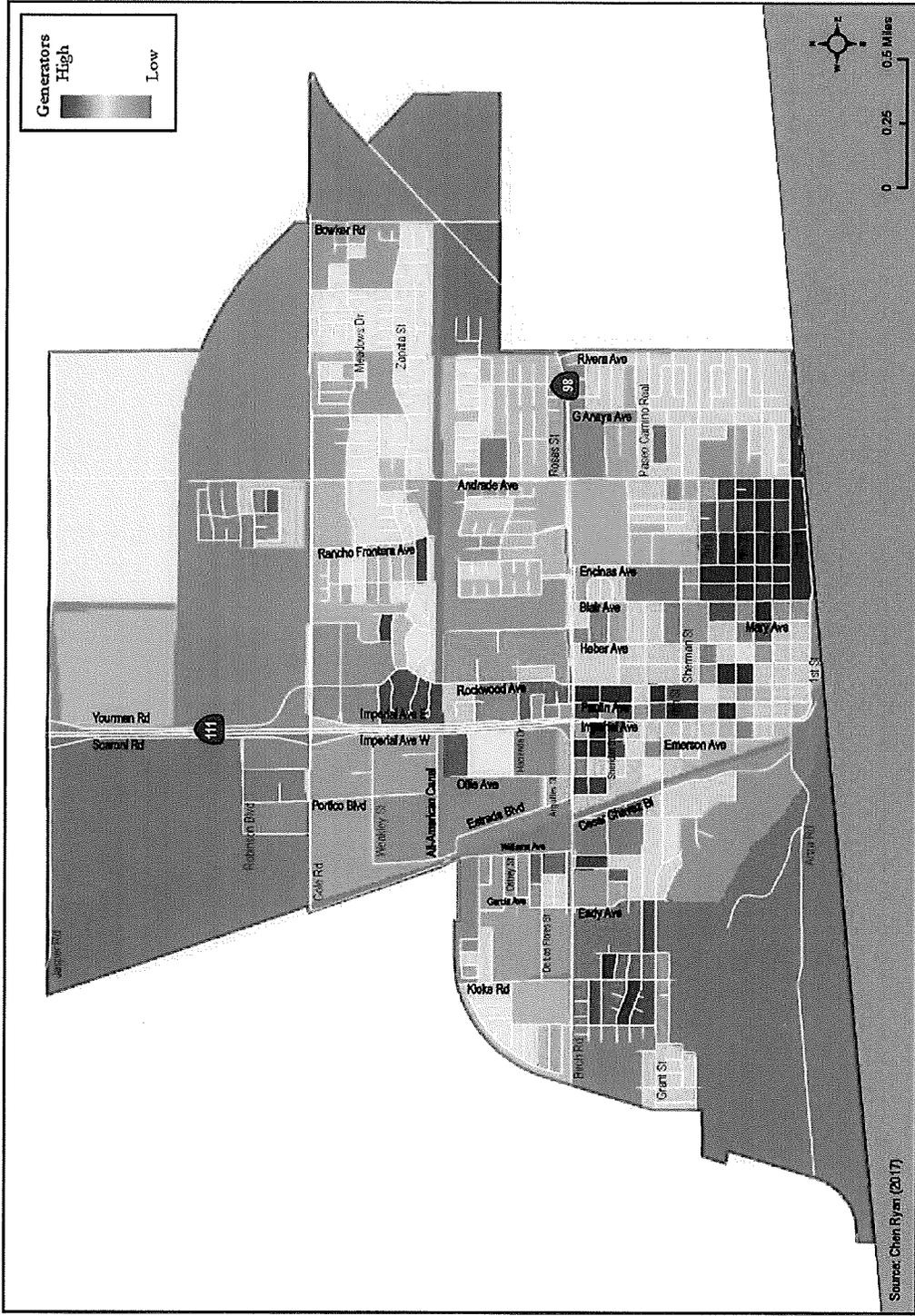


Percent of Households with Zero Vehicles Available (2015)

Calexico Bicycle Master Plan



Figure 3-4 Bicycle Trip Generator Submodel



Active Transportation Trip Generator Submodel

Calexico Bicycle Master Plan

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The Bicycle Trip Attractor Submodel was created using the input variables displayed in **Table 3-4**. Each attractor is buffered by one-mile, with multipliers that decrease every quarter-mile interval away from the trip attractor. A point value is calculated by multiplying the distance multiplier by the weight assigned to each attractor.

Table 3-4 Bicycle Propensity Trip Attractor Submodel

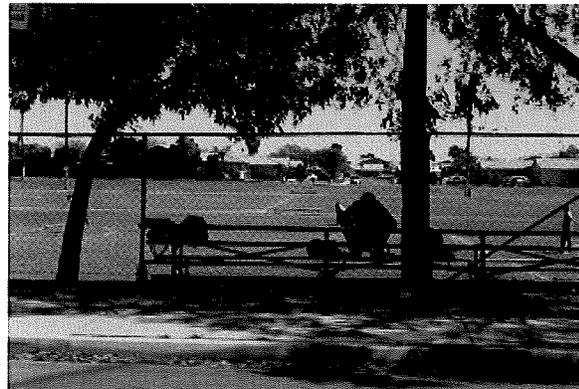
Land Use Attractors	Within ¼ Mile	Between ¼ and ½ Mile	Between ½ and ¾ Miles	Between ¾ and 1 Mile	Weights
International Border	7.5	5	3.75	2.5	5
Regional Class I Bicycle Paths	6	4	3	2	4
Parks	4.5	3	2.25	1.5	3
High, Middle and Elementary Schools	1.5	1	0.7	0.5	1
Retail Uses	1.5	1	0.75	0.5	1
Civic Uses	1.5	1	0.75	0.5	1

Source: Chen Ryan Associates (2018)

Figure 3-5 displays the Bicycle Trip Attractor Submodel, combining each of the trip attractor inputs into a single composite map. The greatest concentration of trip attractors is located in the core of Calexico near the international border and downtown areas. The areas in the northern, eastern, and western portion of Calexico have relatively fewer bicycle attractor characteristics.

The Bicycle Propensity Model, displayed as **Figure 3-6**, was created by combining the trip generator and trip attractor submodels with equal weighting. As shown, the results closely mirror those presented in the trip attractor and trip generator submodels, with the greatest propensity identified in the center of the community and nearest the international border, stretching roughly to SR-98 in the north, Andrade Avenue in the east, and Cesar Chavez Boulevard in the west.

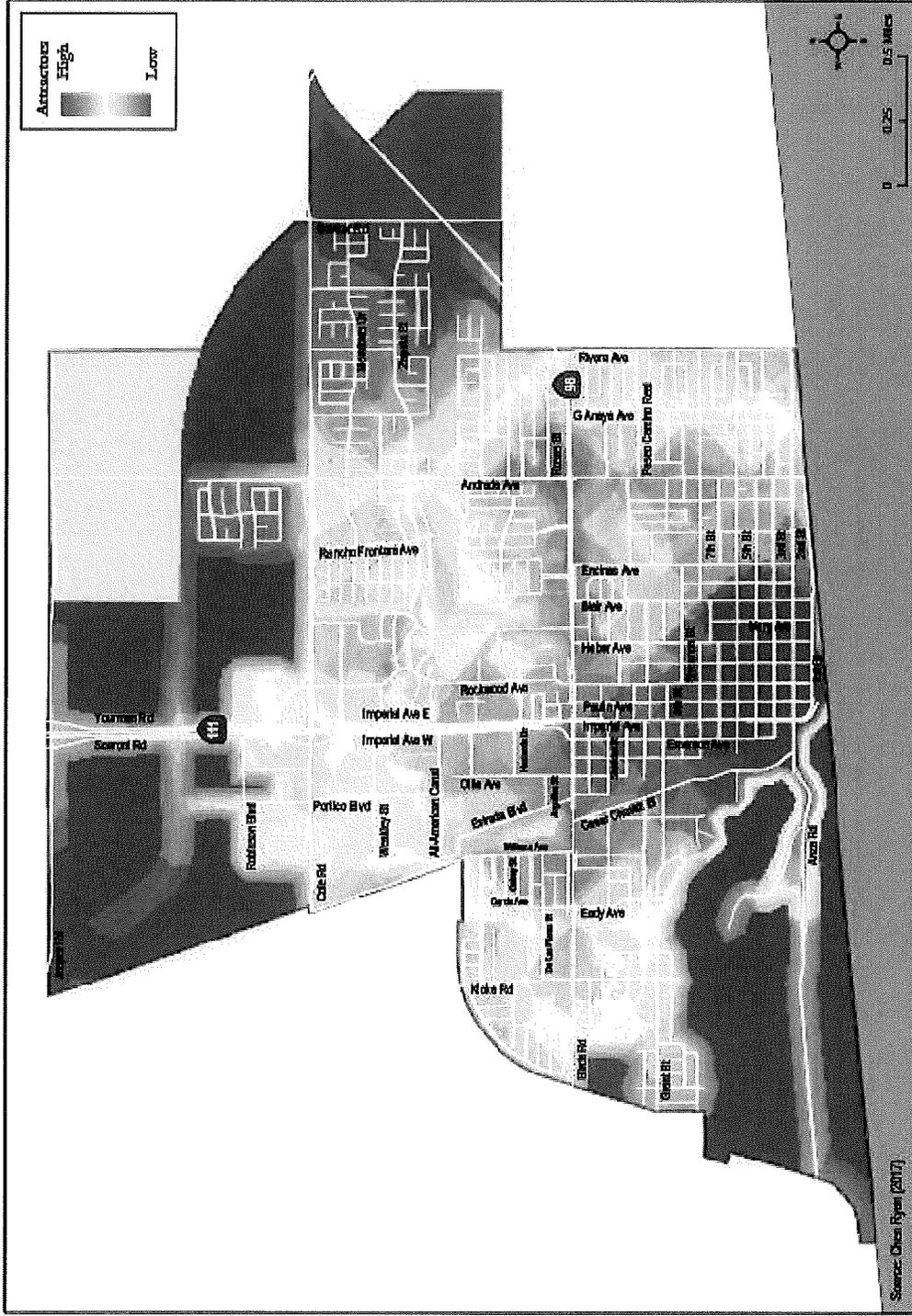
Higher propensity is indicative of areas with increased potential for bicycling due to relatively higher levels of trip attractors and trip generators. However, these areas may also have increased barriers related to bicycling, including higher posted speed limits and traffic volumes, more bicycle collisions, and more travel lanes.



Parks are one potential attractor for bicycle riders.



Figure 3-5 Bicycle Trip Attractor Submodel



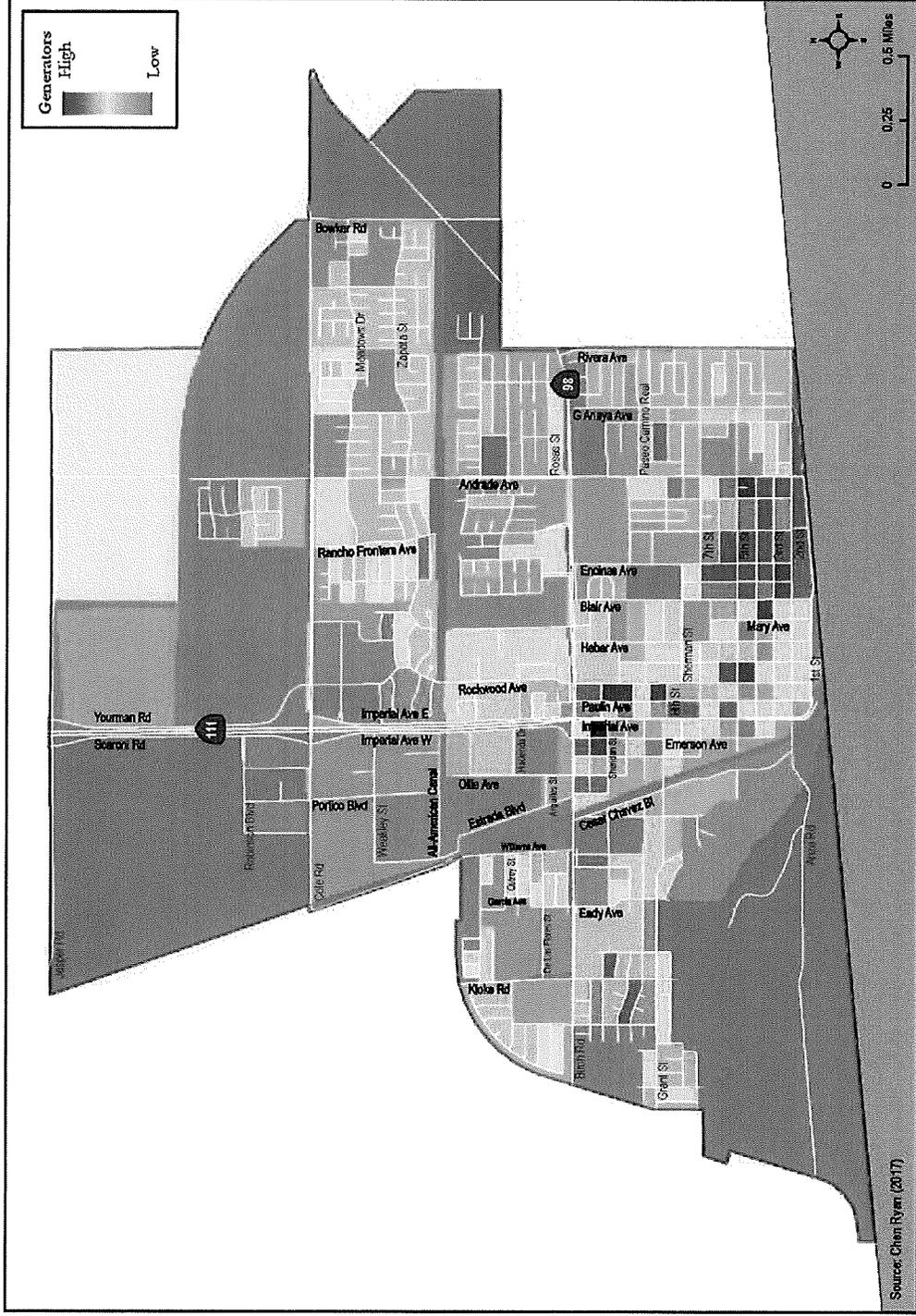
Source: Chen Ryan (2017)

Active Transportation Trip Attractor Submodel

Calexico Bicycle Master Plan



Figure 3-6 Bicycle Propensity Model



Active Transportation Propensity Model

Calexico Bicycle Master Plan

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3.2 Bicycle Counts

Bicycle counts were collected in May, 2017 at 15 locations throughout the City. Locations were determined based upon a number of factors, including collision history, proximity to schools, shopping centers, parks, Circulation Element guidance, and achieving an even coverage throughout Calexico City Limits. Counts were conducted on a standard weekday during AM and PM peak hours (7-9AM and 4-6PM, respectively). Locations include:

1. SR-111 and Cole Road
2. SR-111 and SR-98
3. SR-111 and Second Street
4. SR-98 and Kloke Avenue
5. SR-98 and Eady Avenue
6. SR-98 and Rockwood Avenue
7. SR-98 and Encinas Avenue
8. SR-98 and E Riviera Street
9. Andrade Avenue and Cole Road
10. Andrade Avenue and Seventh Street
11. Zapata Street and G. Cleveland Avenue
12. Rockwood Avenue and Fifth Street
13. Rockwood Avenue and Cole Road
14. Caesar Chavez Boulevard and Grant Street
15. Blair Avenue and Seventh Street

Table 3-5 summarizes number of bicycles counted at the fifteen locations where data was collected.

Bicycle counts by location are also displayed in **Figure 3-7** for AM and PM peaks. The counts inform Plan development by indicating locations where a relatively higher number of cyclists are found, to guide placement and prioritization of facilities, as well as to provide an additional layer of detail that supplements the demand modeling process.



Fifteen on-street locations were selected for counting current bicyclists.

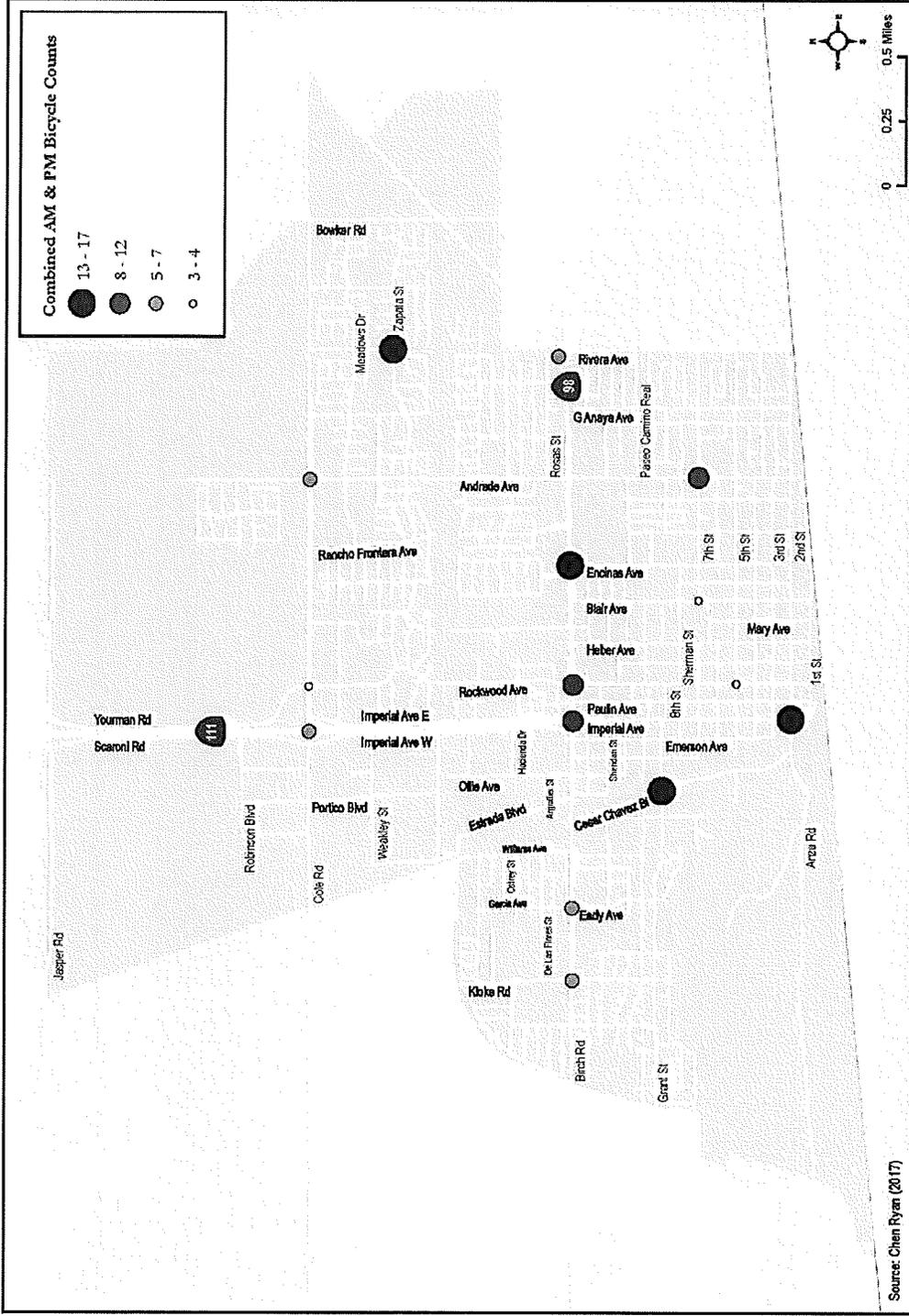
Table 3-5 Bicycle Counts

No.	Location	At	AM Peak (7AM- 9AM)	PM Peak (4PM- 6PM)	Total	Percentage
1	SR-111	Cole Road	6	1	7	5.1%
2	SR-111	SR-98	8	4	12	8.6%
3	SR-111	Second Street	6	8	14	10.0%
4	SR-98	Kloke Avenue	1	6	7	5.1%
5	SR-98	Eady Avenue	4	2	6	4.3%
6	SR-98	Rockwood Avenue	8	3	11	7.9%
7	SR-98	Encinas Avenue	14	3	17	12.2%
8	SR-98	E Riviera Street	6	0	6	4.3%
9	Andrade Avenue	Cole Road	5	1	6	4.3%
10	Andrade Avenue	Seventh Street	6	4	10	7.2%
11	Zapata Street	G. Cleveland Avenue	14	3	17	12.2%
12	Rockwood Avenue	Fifth Street	0	4	4	2.9%
13	Rockwood Avenue	Cole Road	0	4	4	2.9%
14	Caesar Chavez Boulevard	Grant Street	6	9	15	10.8%
15	Blair Avenue	Seventh Street	0	3	3	2.2%
Total			84	55	139	n/a
Percent			60.4%	39.6%	n/a	100%

Source: Chen Ryan Associates (2018)



Figure 3-7 Combined AM/PM Peak Period Bicycle Counts



Combined AM/PM Peak Period Bicycle Counts

Calexico Bicycle Master Plan

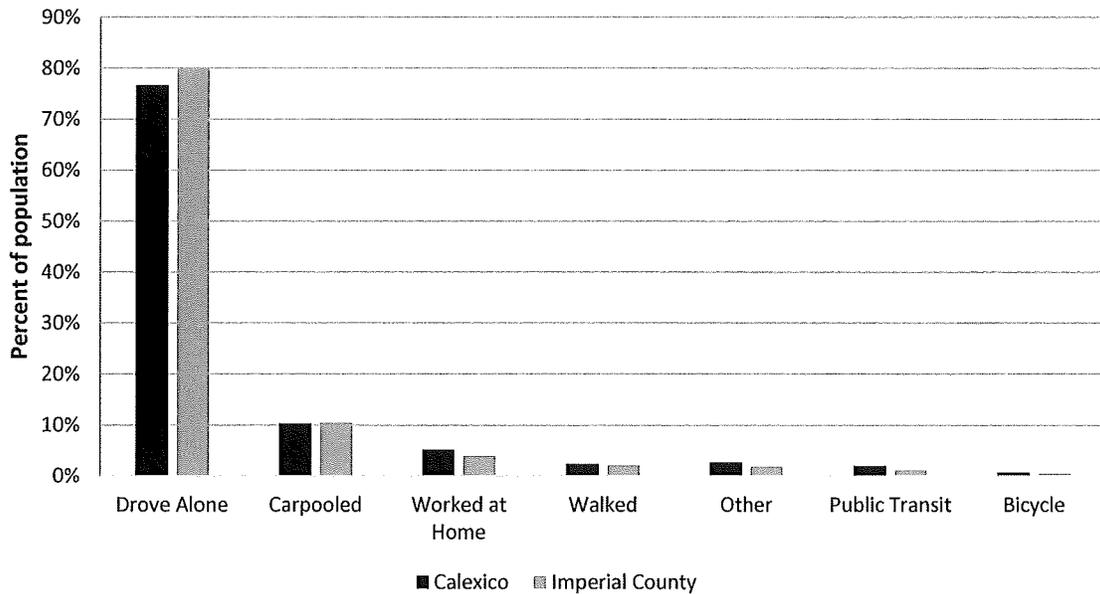


3.3 Commuter Needs

Most of Calexico's residents are employed locally, primarily in agriculture (producing, packaging, or distribution), at maquiladoras in Mexicali, or government services (police, fire, or border patrol). Of the 16,354-person labor force, 13,182 are employed resulting in an eight percent unemployment rate, per 2015 American Community Survey five-year estimates. Safe and economical transportation becomes a necessity in a community where transportation costs must be affordable.

Figure 3-8 displays a comparison of means of transportation to work for Calexico and Imperial County. As shown, Calexico has slightly lower rates of commuters driving alone or carpooling to work than Imperial County as a whole. Also noteworthy is a slightly higher percentage of Calexico residents that work from home, walk to work, take public transportation, ride a bicycle, or commute via some other means, as compared to Imperial County as a whole.

Figure 3-8 Means of Transportation to Work



Source: US Census, 2011 – 2015 American Community Survey 5-Year Estimates (2018)

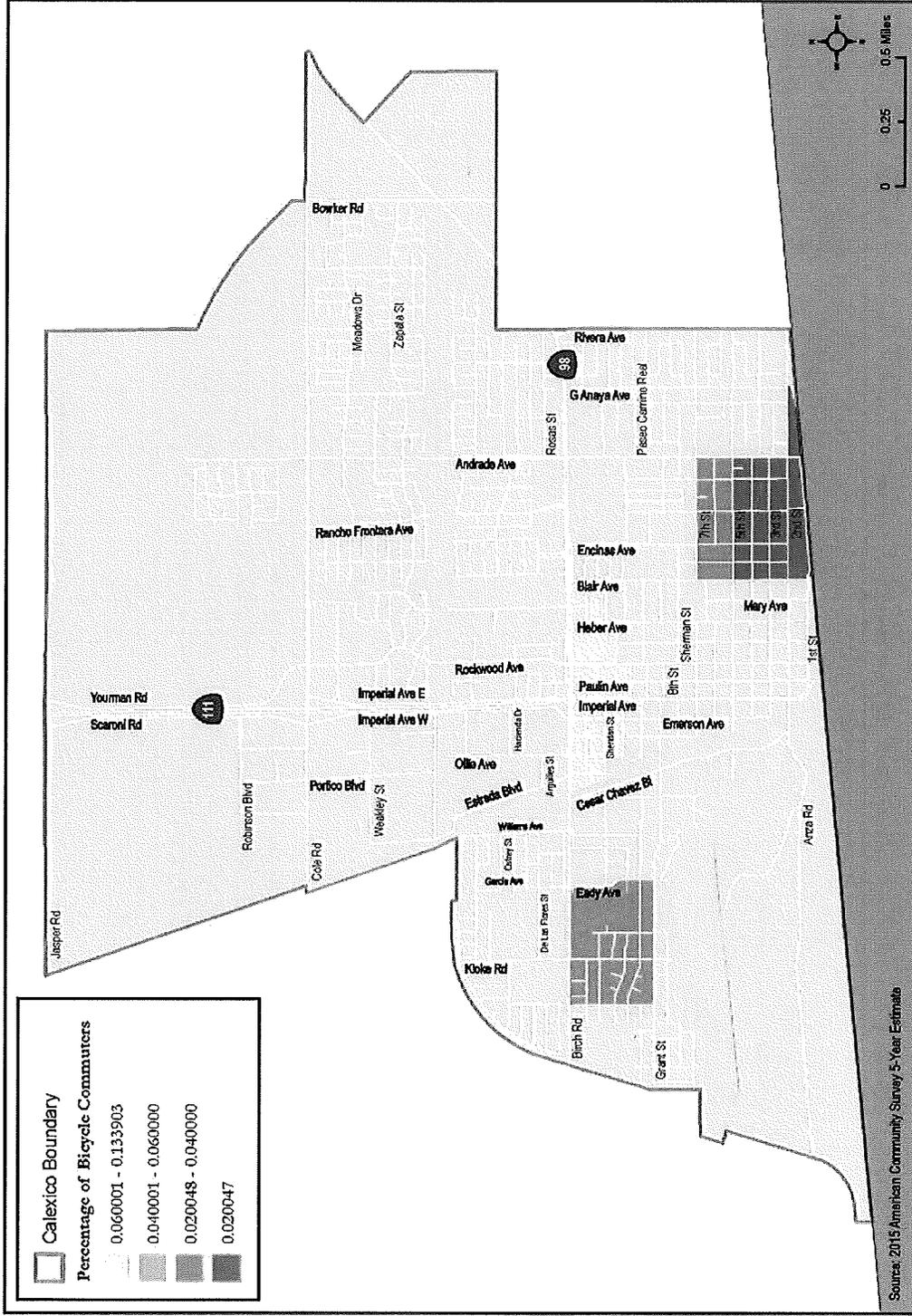
Figure 3-9 displays commuters who ride a bicycle to work. The level of bicycle commuting is relatively higher in the central portion of Calexico near the junction of SR-98 and SR-111. Additional portions of the community with relatively higher levels of bicycle commuting are in the western portion of Calexico near William Moreno Jr. High School, as well as in the central portion of the City near the international border.



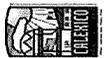
Calexico is home to relatively more bicycle commuters as compared to Imperial County.



Figure 3-9 Percent of Commuters Who Bicycle to Work



Bicycle Commute Mode Share by Census Block Group (2015)



The convenience of crossing the border by bicycle to avoid delays of vehicle checking and searches has resulted in a large number of bicyclists who bike over the border. Bicycle racks are present at Friendship Park to serve the needs of the growing number of cross-border cyclists.

In order to accommodate bicyclists that would like to commute to work, the City should consider adopting standards for bicycling parking for new commercial and industrial development (see Goal 4.0). The recommended provision is to require five percent of the automobile parking requirement of over 15 spaces be designated for bicycle parking with installation of, at minimum, an inverted-U bicycle rack. Each inverted-U is capable of accommodating two bicycles.

Bus services are provided by a combination of Imperial Valley Transit and private carriers. Bus service provides a direct connection from Calexico, north to El Centro, Imperial, Brawley and beyond. To encourage multi-modal transit, bicycle racks are included on Imperial Valley Transit’s fleet is equipped with bicycle racks. It is also recommended that bicycle facilities link to bus stops to the extent feasible, and that transit centers and transfer points be equipped with bicycle parking (see Goal 3.0).



Bicycle connections to transit should be encouraged, and can be an important means of allowing cyclists to reach destinations further afield.

Figure 3-10 displays existing transit stops and route alignments in the City of Calexico. Transit in Calexico is provided by Imperial Valley Transit (IVT), with 12 routes and 20 buses throughout Imperial County. IVT provides the City of Calexico with connections to neighboring cities such as El Centro, Heber, Brawley, as well as key destinations such as Imperial Valley College.

Ridership data, as obtained from the 2017 *Calexico Transit Needs Assessment Study*, indicates that Route 1, connecting Calexico with the City of El Centro, carries the most total passengers. In addition, Route 21, connecting Calexico with Imperial Valley College, yields high ridership within the City of Calexico. Ridership figures are summarized in **Table 3-6**. In addition, it is of note that the City is served by a number of privately-owned fixed-route services, such as Calexico Transit Service, L&A Shuttle, Gran Plaza Outlets Shuttle, as well as demand-response services. Although these services do not offer on-board bicycle accommodation, and do not publish ridership data, they nonetheless enhance the mobility options available in Calexico, and may still be useful to patrons able to park their bicycles prior to boarding the transit vehicle.

Table 3-6 IVT Fixed-Route Ridership (FY2016)

Route No.	Route Name	Ridership	Productivity
1	El Centro-Calexico	416,083	30.5 riders per hour
21	IVC Express	72,847	40.7 riders per hour
31/32	Brawley Direct	36,942	20.4 riders per hour

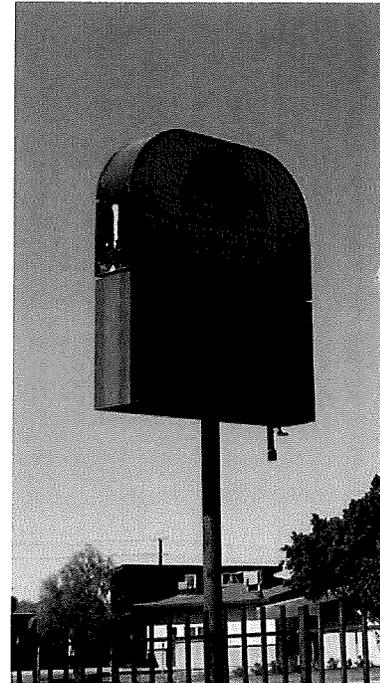
Source: Imperial County Transportation Commission (2017), Chen Ryan Associates (2018)



3.4 Student Needs

The Calexico Unified School District includes six elementary schools, two junior high schools, and three high schools comprising of the following schools:

- Aurora High School (continuation high school)
- De Anza 9th Grade Academy
- Kennedy Gardens Elementary School
- Blanche Charles Elementary School
- Jefferson Elementary School
- Dool Elementary School
- Mains Elementary School
- Calexico High School
- Enrique Camarena Junior High School
- Rockwood Elementary School
- Cesar Chavez Elementary School
- Jefferson Elementary School
- William L. Moreno Junior High School



Calexico High School.

The total public-school student population is approximately 8,800 students. The private educational institutions include Calexico Mission Academy located on First Street and Our Lady Guadalupe School on Rockwood Avenue and Vincent Memorial High School on Sheridan Avenue. The Imperial Valley Campus of San Diego State University and a satellite campus of Imperial Valley College offer higher education.

The Imperial County Safe Routes to School Plan (2015) offers guidance for safe connectivity and support programs to each of the public schools in Calexico. The Plan, which was built upon public workshops and input, identified potential factors that reduce the initiative to bicycle to school on the part of students and parents. Generally, students who did not cycle avoided cycling due to safety concerns, stemming from a combination of vehicular volumes, high speeds, and a lack of bicycle facilities. Bicycle lanes and bike paths were recommended in areas where there is heavy traffic and along roadways to schools, including schools that are generally located near calmed roadways, since significant drop off and pick up-related traffic can cause temporary bottlenecks and unsafe riding conditions. Bicycle racks were also generally found to be lacking at schools. Frequently, a lack of secure bike parking impacts the decision on whether to cycle.

The Safe Routes to School Plan offers educational and programmatic insight for use by parent groups and administrators to facilitate education about cycling safety the merits of wearing helmets. Key safety problems associated with bicycling to school were the low percentage of students who wore helmets, traffic volumes, and on-street parking interfering with cyclists. The facility and programmatic recommendations found in the Imperial County Safe Routes to School Plan were integrated into the development of this Plan to ensure compatibility, as well as to further the implementation of the identified facility and programmatic treatments.

3.5 Recreation Needs

Growth in non-motorized travel typically entails development of systems of facilities, including appropriately designed roads and traffic systems, separated bicycle paths and trails, provision of safe and secure parking at destinations, transit systems which accommodate bicyclists, and, perhaps most importantly, the development of information, education and enforcement policies and programs which encourage bicycle use within that community. With over fourteen parks within the City, offering a variety of amenities



It is important to ensure that all residents can reach recreational areas, parks, and public plazas.

including playing fields and a skateboarding park, bicycle facilities will provide a connection to each of these facilities enhancing the overall recreational amenities of the city. Bicycle racks were only noted at the City Hall and Border Park, thus underscoring the additional need for end-of-trip facilities such as bicycle parking to be implemented in common recreational areas, such as all City parks at a minimum.

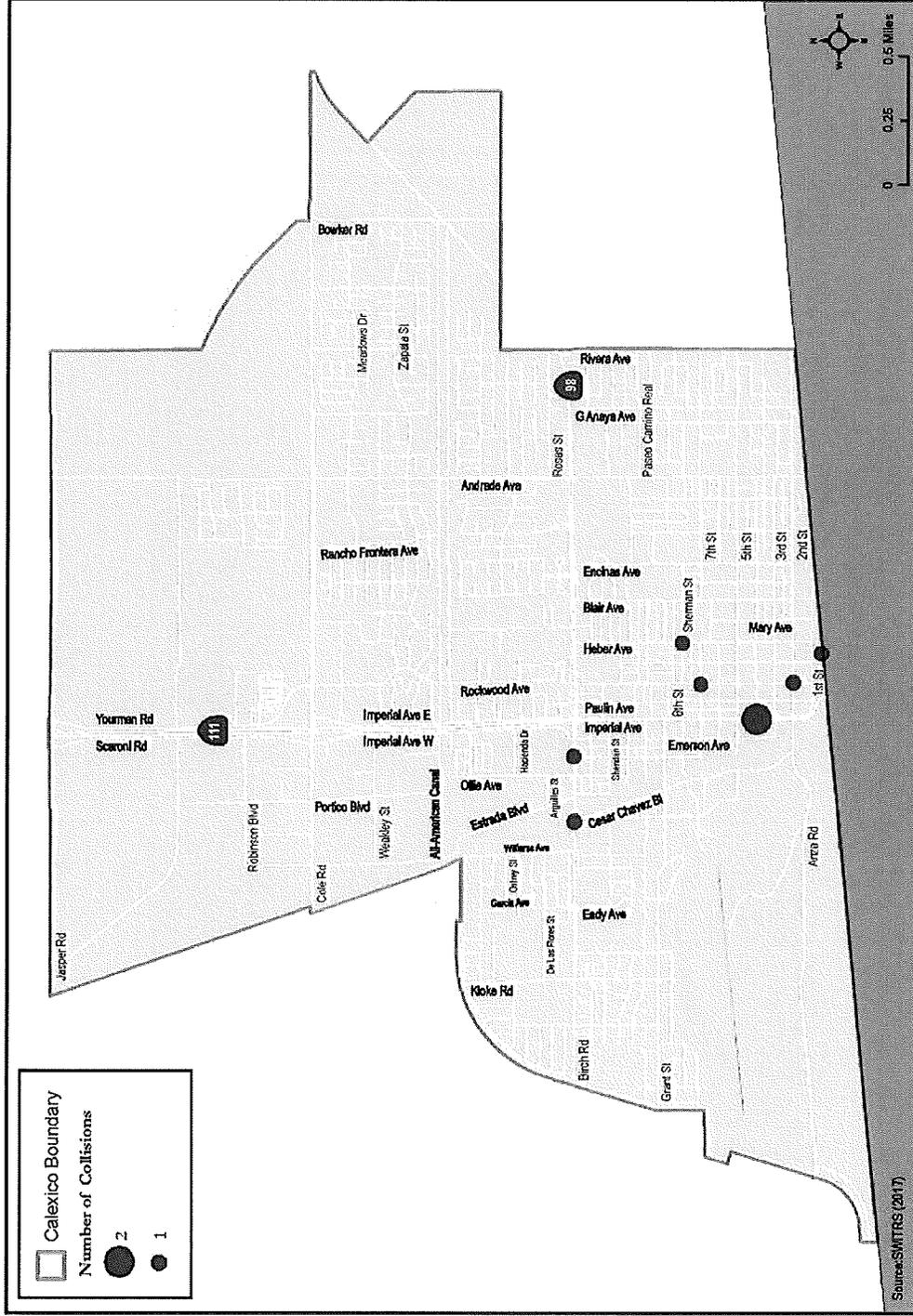
3.6 Safety

Collision data can be used to identify potential deficiencies related to bicycle travel. There were no bicycle collisions recorded for the year 2016. Therefore, the collision review draws from five years of data representing the period of January 2011 – December 2015. Collision data was obtained from the California Statewide Traffic Integrated Records System (SWITRS). The analysis was used to identify trends and patterns related to collision locations, causes, time, party-at-fault and victim age.

Collision Locations

The bicycle collision assessment found 9 bicycle-involved collisions reported during the five-year analysis period. The bicycle collision locations are displayed in **Figure 3-11**. Bicycle collisions are generally distributed across the central portion of the City, and near the two state route highways that bisect Calexico. These locations are summarized in **Table 3-7**. As shown, the intersection of SR-111 and 4th Street had two collisions in the five-year analysis period, in the year 2012 and 2015.

Figure 3-11 Bicycle Collisions (January 2011 – December 2015)



Bicycle Collisions (2011-2015)

Calexico Bicycle Master Plan

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Table 3-7 Most Frequent Bicycle Collision Locations (January 2011 – December 2015)

Intersection	Collisions
SR-111 and 4 th Street	2
2nd Street and Rockwood Avenue	1
Yourman Road and Pole 40819	1
1 st Street and Heffernan Avenue	1
SR-98 and Harold Avenue	1
SR-98 and Cesar Chavez Boulevard	1
Rockwood Avenue and 7 th Street	1
Heber Avenue and Sherman Street	1
Total	9

Source: SWITRS (2018)

Table 3-8 displays bicycle-involved collisions by roadway location. As shown, a majority of collisions were recorded to have occurred at intersections. It is important to note that while some collisions may occur at midblock locations, a portion of the midblock collisions are within the influence area of major intersections, which likely exerts an influence on some collision factors.

Table 3-8 Bicycle Collisions by Roadway Location (January 2011 – December 2015)

Collision Location	Collisions	Percent of Total
Intersection	5	55.6%
Midblock	4	44.4%
Total	9	100.0%

Source: SWITRS (2018)

3.7 Air Quality and Health Needs

Replacing vehicular trips with bicycle trips has a measurable impact on reducing human-generated greenhouse gases (GHGs) in the atmosphere that contribute to climate change. Fewer vehicle trips and vehicle miles traveled (VMT) translates into fewer mobile source pollutants such as carbon dioxide, nitrogen oxides, and hydrocarbons being released into the air. Providing transportation options that reduce VMT is an important component of decreasing greenhouse gas emissions and improving air quality. Chapter 4 outlines the estimated air quality impacts of improved bicycling in the County of Imperial.

Public health professionals have become increasingly aware that the impacts of automobiles on public health extend far beyond asthma and other respiratory conditions caused by air pollution. There is a much deeper understanding of the connection between the lack of physical activity resulting from auto-oriented community designs and various health-related problems, such as obesity and other chronic diseases. Although diet and genetic predisposition contribute to these conditions, physical inactivity is now widely understood to play a significant role in the most common chronic diseases in the US, including heart disease, stroke, and diabetes. Creating bicycle-friendly communities is one of several effective ways to encourage active lifestyles.



4.0 Recommended Bikeway Network

The choice of whether a bicycle facility should be a Class I, II, III, or IV is dependent on many factors. Roadways which could easily accommodate Class II bike lanes with signing, striping and minor improvements and would provide connections to schools, parks and employment centers, were considered for bike lanes. Although bicycle travel is permitted on most streets and highways without bikeway designations, it is desirable to place bike route (Class III) designations roadways that will allow for development of a complete bikeway network, as well as to draw attention to the presence of cyclists.

4.1 Route Selection

There are two areas recognized in Calexico that offer opportunities for Class I bicycle paths: 1) the system of canals operated by the Imperial Irrigation District and 2) the New River. These separated bikeways would provide an opportunity for all ages and abilities to bike, walk, rollerblade, and/or use a wheelchair along a scenic corridor.

Additionally, based on the goals presented in Chapter 2, recommendations gathered from members of the public, and upon conducting visual site surveys, a system of proposed Class II, III, and IV bikeway routes was developed. Some general principles that guided the bicycle facilities planning process include:

1. Every street is a bicycling street and all locations accessible to a motor vehicle should be accessible by bike.
2. All appropriate agencies and general public should be involved in the planning process.
3. Transportation plans should overcome existing barriers to bicycle travel, create no new barriers, and encourage new bicycling facilities.
4. Roadway improvements should provide access to all destinations through the most direct or feasible route.
5. The plan should remain flexible and anticipate changes to the system as the City grows and community facilities, schools, and employment centers are established.

In all, the bikeway system is a network of planned routes, that were based upon the following considerations:

1. Directness to schools, employment centers, or attractions
2. Roadway conditions
3. Traffic volumes and speeds
4. Network continuity and access
5. Attractiveness and security of bikeway facilities
6. Elimination of barriers that restrict bicycle travel
7. Conflict avoidance with vehicular traffic



Field review revealed that although there are a number of opportunities for cycling, key problem areas exist along major roadways – particularly those that experience high volumes of truck traffic. These roadways include: Imperial Avenue (SR111), Birch Street (SR98), Kloke Road, Cole Road, Meadows Road, and Andrade Avenue. Other areas where bicycling may incur conflicts with vehicles is in downtown, where one-way streets and angled parking make it difficult for cyclists to safely maneuver.

4.2 Plan Review and Update

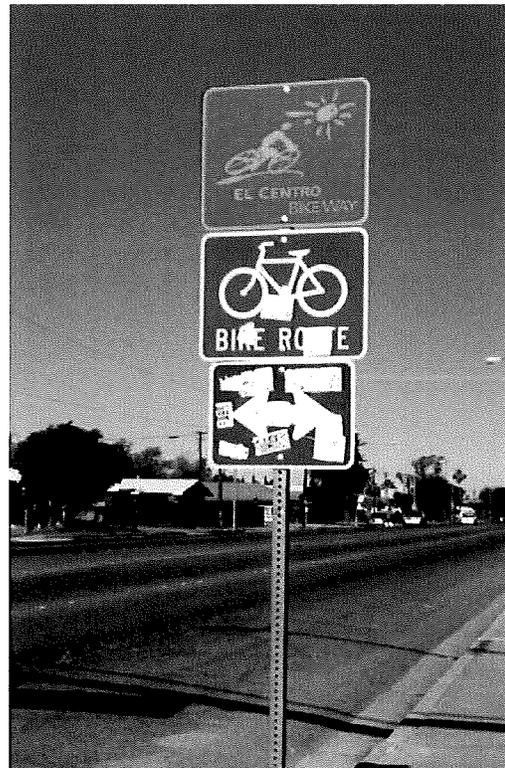
Once adopted, City staff should review and update the plan every four years, as required by Caltrans for grant programs. An assessment based upon the successes of completed facilities, a reappraisal of cost estimates, and identification of changes in the proposed system to meet future increased demand for bicycle facilities and new development should accompany any update. Any major changes will be subject to further environmental review. Once approved by the City Council, the document should be forwarded to the Imperial Valley Association of Governments, then to Caltrans, for approval.

4.3 Proposed Bikeway System

The Calexico bicycle system was based upon public input, consultation with staff, and site review. The criteria for selecting a specific route was based upon the following:

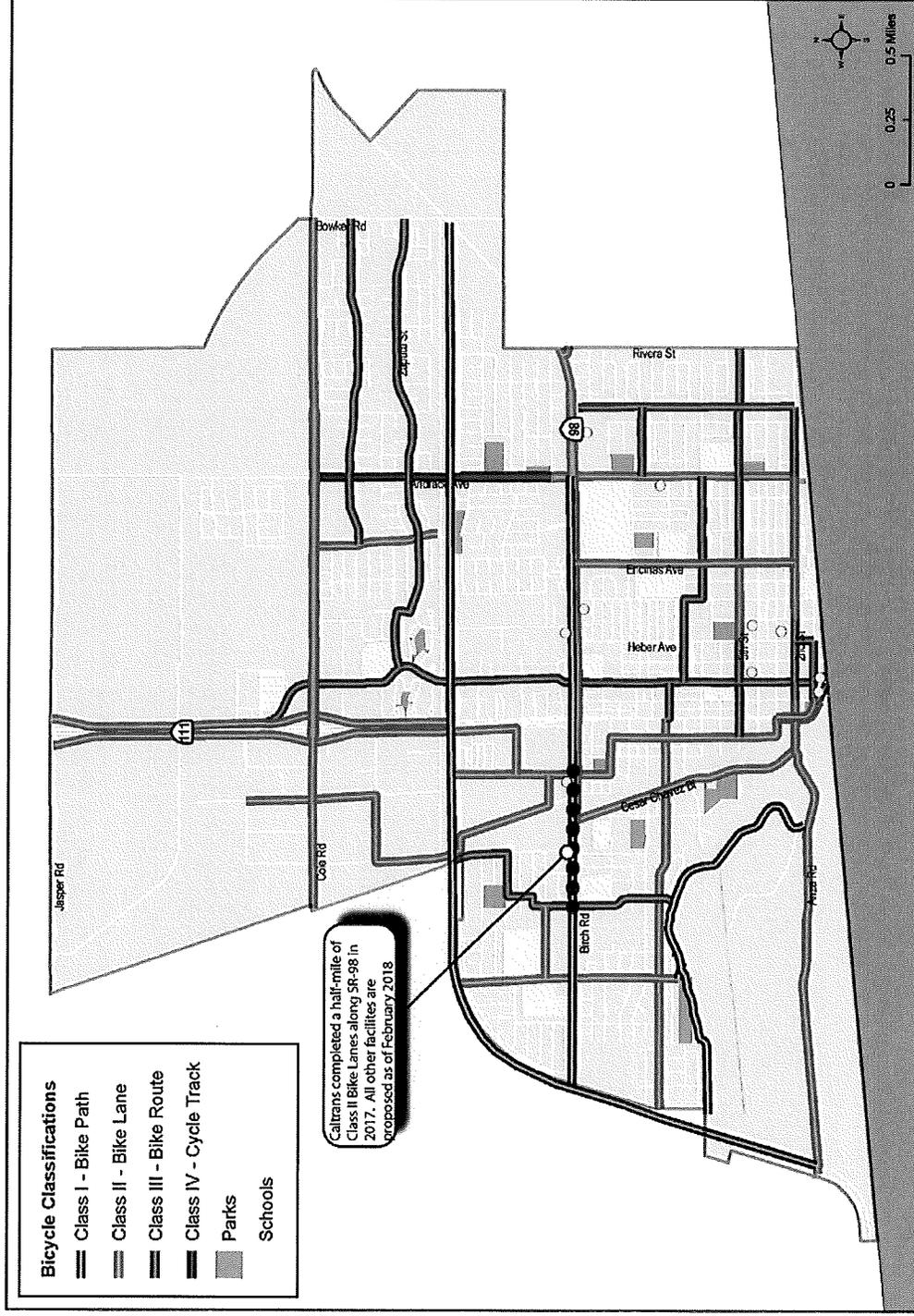
1. Coverage - The system should provide equitable, reasonable access from all portions of Calexico for commuting to employment, including downtown and commercial areas, schools, and recreation routes.
2. System Rationale - Each route in the system should serve a definitive purpose (recreation connection, or commuting) so that users will understand and use the facilities.
3. Creating a Regional Bike System - The bikeway system should have good connections to existing and proposed bikeways in the adjacent cities and county, and provide potential routes to schools and employment centers within the cities.

Figure 4-1 presents the proposed bikeway network for the City of Calexico. Facilities are also presented in **Table 4-1**, including mileage of facility.



A Class III bike lane denotes the region-serving El Centro Bikeway.

Figure 4-1 Proposed Callexico Bikeway Network and Key Destinations



Proposed Bicycle Network and Key Destinations

Callexico Bicycle Master Plan

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Table 4-1 Calexico Proposed Bikeway Network

Location	From	To	Mileage
Class I Multi-Use Path			
All-American Canal	2 nd Street	Birch Street/SR-98	4.6
New River Trail	All-American Canal	2 nd Street	2.4
Birch Street/SR-98	All-American Canal	Andrade Avenue	2.4
Class II Bike Lane			
Ollie Avenue/Sheridan Street/Emerson Avenue/Imperial Avenue/SR-111	All-American Canal	International Border	1.7
Andrade Avenue	Rosas Street	2 nd Street	1.5
5 th Street	Heber Avenue	Encinas Avenue	0.3
Cesar Chavez Boulevard	Birch Street/SR-98	2 nd Street	0.9
Kloke Road	All-American Canal	New River Trail	0.9
2 nd Street	All-American Canal	Paulin Avenue	1.9
2 nd Street	Mary Avenue	Andrade Avenue	0.6
Imperial Avenue/SR-111	3 rd Street	International Border	0.2
Birch Street/SR-98	Cesar Chavez Boulevard	Rivera Avenue	1.0
Portico Boulevard/Weakley Street/Estrada Boulevard/Arguilles Street	Robinson Boulevard	Ollie Avenue	1.6
Imperial Avenue/SR-111 West	Jasper Road	Ollie Avenue	2.0
Frontage/Hacienda Drive	Jasper Road	All-American Canal	1.6
Imperial Avenue/SR-111 East Frontage	Cole Road	All-American Canal	0.5
Rancho Frontera Avenue	Birch Street/SR-98	2 nd Street	0.9
Encinas Avenue	Birch Street/SR-98	End	0.1
Rivera Avenue	Kloke Road	Eady Avenue	0.3
De Las Flores Street	End	Imperial Avenue/SR-111	1.5
Grant Street	Pruett Road	Bowker Road	2.7
Cole Road	Emerson Avenue	Heber Avenue	0.4
Class III Bike Route			
5 th Street	Encinas Avenue	Rivera Avenue	0.8
5 th Street	Imperial Avenue/SR-111	International Border	2.3
Rockwood Avenue	All-American Canal	New River	1.1
Pruett Road/Ostrey Street/Garcia Avenue/Eady Avenue	Paulin Avenue	Mary Avenue	0.3
2 nd Street	Andrade Avenue	G Anaya Avenue	0.3
2 nd Street	Grant Street	Rockwood Avenue	0.2
8 th Street/Imperial Avenue/SR-111	Rockwood Avenue	Andrade Avenue	0.9
Sherman Street/Blair Avenue/7 th Street	End	Anza Road	0.9
G Anaya Avenue	Rockwood Avenue	Bowker Road	1.8
Robert Kennedy Street/Zapata St	Andrade Avenue	G Anaya Avenue	0.3
Paseo Camino Real	Rancho Frontera Avenue	Bowker Road	1.3
Meadows Drive	Paulin Avenue	2 nd Street	0.3
1 st Street/Heber Avenue			
Class IV Cycle Track			
Andrade Avenue	Cole Road	Rosas Street	0.4
Total:			40.9

Source: Chen Ryan Associates (2018)



4.4 Proposed Support Facilities

Support facilities and programs are an important part of the Calexico Bicycle Master Plan Update. Support facilities may include bicycle parking (bike racks or lockers), showers for commuters, and staging areas.

Bicycle Parking

Bicycle parking may be separated into two categories: short term parking and long-term parking. Short-term bicycle parking is usually defined as being two hours or less and consists of a bicycle rack or series of bicycle racks, whereas long-term parking suggests that bicyclists may leave the bike all day, overnight, or for a longer duration. Long-term parking options include:

- Lockers, for one or two bicycles
- Racks in an enclosed, lockable room or fenced area
- Racks in an area monitored by security (cameras, guards, or other personnel)
- Racks or lockers in an area always visible to employees.

A lack of bike racks and other facilities is a frequently-mentioned reason why bicyclists or would-be bicyclists don't ride, or ride less often. Bicycle racks are currently only located at Border Park and City Hall, but not at city parks, key employment centers, or at transit facilities. At a minimum, the City should install bike racks at city parks and high-volume transit facilities, and encourage installation at major employment areas, as the fear of bicycle theft is a significant deterrent to bicycle use.

To further encourage bicycling, the City should adopt bicycle-parking standards for future commercial and industrial development. Typical standards are one bicycle rack (ten bicycles) per 40 elementary and junior high school students, per 100 high school students, and per 100 employees. The number of racks needed at each location can be determined when the existing rack begins to exceed 80 percent capacity.

Heavy bicycle use is another reason for locating bicycling racks. Standard locations are schools and parks. Other determinants for siting bike parking are:

- Visual observation - observation of where bikes are illegally parked due to lack of bicycle racks.
- User Input - asking bicyclists and bike groups.
- Land use criteria - targeting areas where people gather such as coffee shops, bookstores, recreation centers.
- Zoning code - requiring new commercial development and change in business to install bike parking proportionate to car parking requirements. Bike racks should be located at each school and at shopping areas in excess of 50,000 square feet, or where it is evident that there is high cycling use (such as downtown).

Racks should be installed in the public right-of-way, at schools and parks, or at commercial and industrial sites in conformance with setback requirements. Bike racks should be located based on the following:

- Visibility - Cyclists should be able to easily spot bicycle racks from the street.
- Access - Bicycle racks should be convenient to building entrances and street access. Whenever possible, racks should be placed within 50 feet of building entrances.

- Security - Locate parking within view of passers-by, retail activity, office windows, or within a fenced area for long-term parking such as at a school.
- Lighting - To avoid theft, bicycle-parking areas should be well lit or located within a well-lighted area.
- Weather protection - Whenever possible, protect bicycle parking area from weather by siting under an existing overhead or covered walkway.
- Avoid conflict with pedestrians or vehicles - Locate racks so that parked bicycles do not block walkways or near vehicle parking.

The design of the rack should accommodate the following:

- Support the bike frame at two locations (not just the wheel).
- Allow both the frame and at least one wheel to be locked to the rack (without requiring that the lock be placed near the bicycle chain).
- Allow the use of either a cable or "U-type" lock,
- Bicycles which are equipped with water bottle cages.
- Bicycle which are not equipped with kickstands.
- Bicycles of various sizes, including diverse types of and sizes of frames, wheel sizes, and tire widths.

Three common ways of providing secure long-term bicycle parking are 1) fully enclosed lockers accessible only by the user, 2) a continuously-monitored facility, and 3) restricted access to facilities where only owners of bicycles are permitted access to the area. Bicycle lockers are intended for long-term parking and to protect against theft of the entire bicycle and its components and accessories.

Bicycle storage lockers may be considered at transit stations or major employment locations where the lockers are internal and are maintained by the employer. Bicycle lockers are typically rented to bicyclists for daily use over a period of time. Rental costs vary from one agency to another. A survey conducted by Pedestrian and Bicycling Information Center revealed a low rental of \$2.00 per month (Tucson, AZ), to a mid-- range of \$5.00 per month (Santa Cruz, CA and Caltrain), to a high-end rental of \$10.00 per month in Portland, Oregon.

Shower Facilities

Cyclists may be more apt to commute by bicyclist to their place of employment, if shower facilities were offered or readily available at nearby fitness centers or gymnasiums. The City maintains shower facilities at the Recreation and Community Center at 707 Dool Avenue. Some employers typically offer shower facilities, such as fire stations or police stations. The City should encourage new major employers to provide shower facilities for their employees.

Staging Areas

Other support facilities may include staging areas at key locations where it is anticipated to have a high usage or if the facility is located a long distance from where cyclists may start their rides. These staging areas may include a number of other amenities, including:

- Bike racks

- Shade shelters
- Benches and/or picnic tables
- Signage (interpretative and directional)
- Lighting
- Trash receptacles
- Emergency telephones
- Restrooms or portable restrooms
- Water fountains (with bottle spouts and dog basins)

Class I bike paths frequently have added support facilities such as lighting, signing, water fountains, and interpretative signing since the number of users are frequently higher than a roadway and the type of users include not only cyclists, but pedestrians, disabled persons, and rollerblades. Loop detectors designed for the purpose of detecting bicycles waiting at signalized intersections should be installed at intersections with bicycle lanes as part of roadway expansion or reconstruction projects.



Ample bike parking near parks and staging areas provide key support to riders.

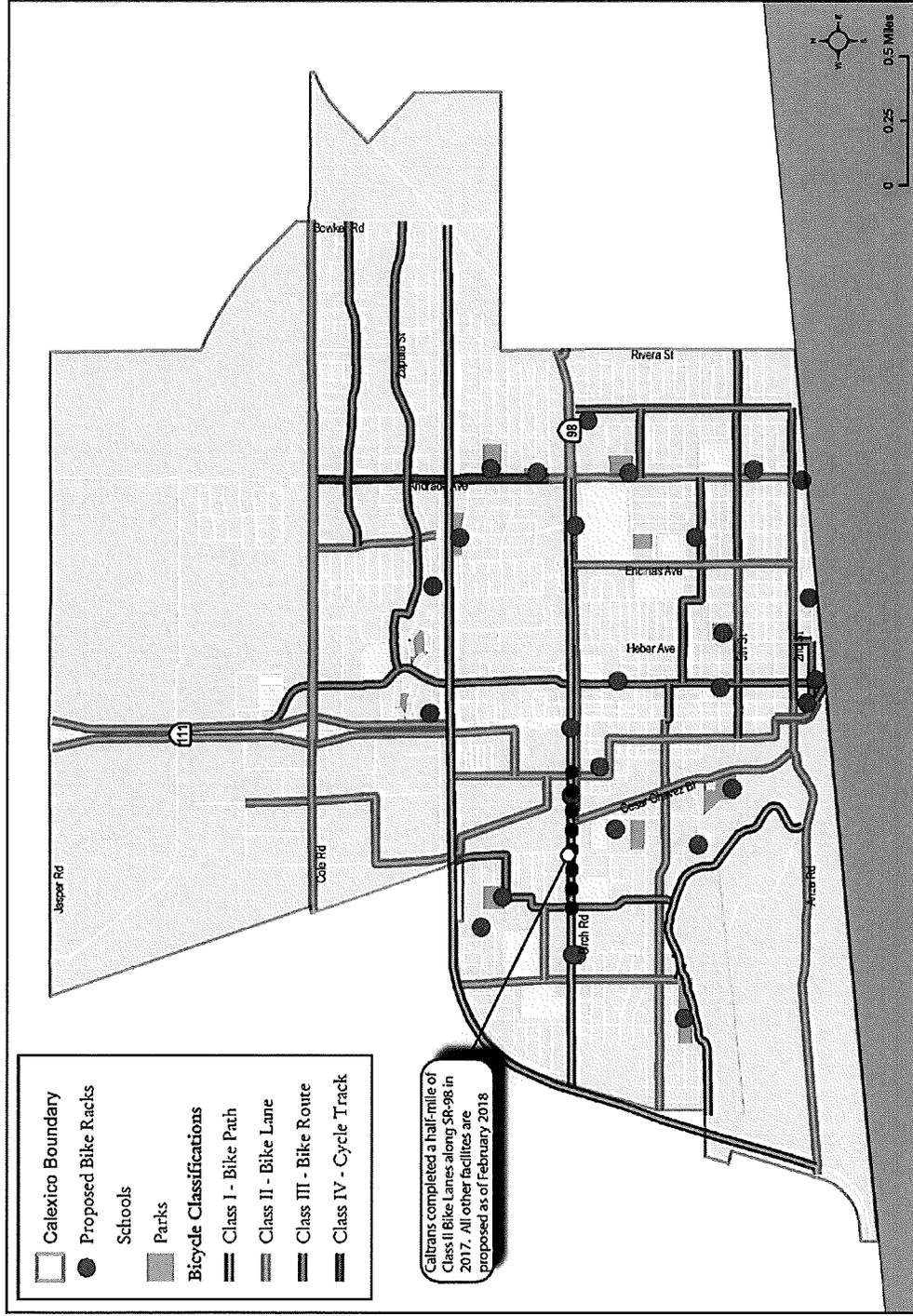
Staging areas in Calexico are typically the local parks, which offer parking. Restrooms and picnicking are also generally available. Since the design of the recommended facilities will connect to the parks, the logical choice will be to use the existing parking. Nosotros Park will provide a parking connection to the New River rural trail.

A map of proposed support facilities is presented in **Figure 4-2**.

4.5 Key Plan Changes and Updates

The 2003 Bicycle Master Plan proposed a bikeway system consisting of 45.2 miles of bicycle facilities, spanning 11.3 miles of Class I multi-use paths, 22.6 miles of Class II bicycle lanes, and 9.3 miles of bicycle routes. At the time of this Bicycle Master Plan Update, no facilities from the 2003 Bicycle Master Plan have been implemented. Thus, the purpose of this plan is to achieve continuity, while reflecting the community's growth between 2003 and the present day and new design guidance. Changes and updates generally reflect deviations and re-routes of the bicycle network that will serve a larger catchment of users, and that favor the lowest-stress facility possible. Changes to the Class I network reflect right-of-way acquisition constraints and planned recreational opportunities, such as the removal of the railroad-adjacent multi-use path, and upgrade of the New River Trail to a multi-use path, respectively. Several facilities have been omitted based upon professional judgement in determining which facilities provide a wholistic network approach for Calexico, such as in several instances where facilities were proposed either on dead-end streets. In other instances, the proposition of neighboring facilities rendered certain bikeways redundant. These changes are presented in **Figure 4-3**.

Figure 4-2 Proposed Support Facilities

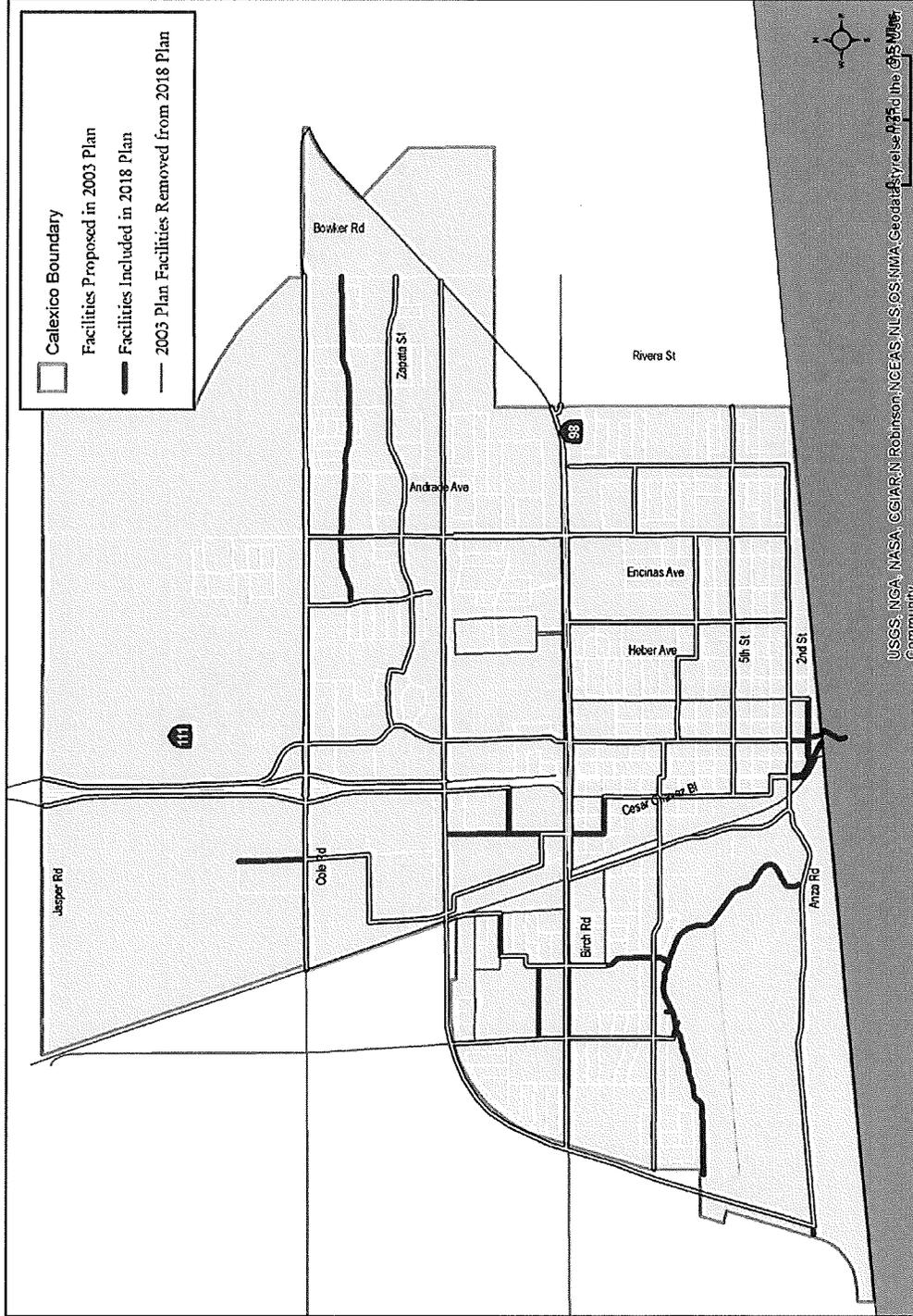


Proposed Bicycle Support Facilities

Calexico Bicycle Master Plan



Figure 4-3 Bicycle Master Plan Update Changes



Key Plan Changes and Updates

Callexico Bicycle Master Plan

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4.6 Estimated New Users

While Census data provides insight to mode choice for commute trips, understanding the varied number of reasons why we choose to make a trip, as well as the mode we choose, is more difficult to ascertain. The following analysis is intended to extrapolate a conservative estimate of the number of trips taken when other factors are included, such as:

- Recreational trips
- Biking trips to transit
- Biking trips for work-from-home employees
- Trip chaining and round-trip effects on facility use levels

Table 4-2 uses population growth factors, rates of current bicycle use, and generally accepted marginal rates of additional bicycle use adoption based upon the creation of new facilities to provide a summary of the estimated number of new users expected in the future as projects are implemented. Scenarios include 2020 conditions, at which time it is assumed that no priority projects are constructed, 2030 conditions, at which time it is assumed that Phase I projects will be completely implemented, Year 2040 conditions, when it is assumed that half of the network buildout has occurred, and Year 2050 conditions, when it is assumed that the bicycle network has been built out.

Table 4-2 Proposed New Bikeway Users

Year	2020	2030	2040	2050
Scenario	Assumes no Completed Projects	Assumes Phase I Priority Projects Completed	Assumes Half of Network Completed	Assumes Build-Out of Network
Miles of Network	0.5	11.70	20.40	40.80
Estimated Daily Weekday Users – No Projects	1,496	1,715	1,872	2,044
Estimated Users – With Projects	n/a	1,827	1,989	2,105
Estimated Additional New Users Per Period	0	112	117	61

Source: Chen Ryan Associates (2018)



The current popularity of crossing the International Border by bicycle suggests that improved facilities will encourage further use.



4.7 Recommended Programs

Active transportation planning follows the “Six E’s” framework of Engineering, Education, Encouragement, Enforcement, Equity, and Evaluation. Of these, four are related to programmatic activities that support and complete a feedback loop for ensuring that bicycle infrastructure is continually improved: Education, Encouragement, Enforcement and Evaluation.

Together, the Six E’s work in concert to enhance the bicycling experience in the City of Calexico. The following section presents recommended programs and policies to support the overarching goals of this plan. These programs have proven to be popular and effective in other bicycle-friendly communities.

Education

Education programs enable bicyclists, pedestrians, and motorists alike 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. Curricula should be appropriate to the target audience and to the format of instruction.

Community Bicycle Education Courses



Most bicyclists do not receive comprehensive instruction on safe and effective bicycling techniques, laws, or bicycle maintenance. Bike skills training courses are an excellent way to improve both cyclist confidence and safety. The League of American Bicyclists (LAB) developed a comprehensive bicycle skills curriculum, that is considered the national standard for adults seeking to improve their on-bike skills.

The classes available include bicycle safety checks and basic maintenance, basic and advanced on-road skills, commuting, and driver education. The City of Calexico can partner with the local bicycle groups and other non-profit community-based organizations, such as the Imperial Valley Velo Club, to offer LAB bicycle skills courses, incorporating them into recreation center programs or other City programs.

Youth Bicycle Safety Education



Youth bicycle safety programs educate students about the rules of the road, proper use of bicycle equipment, biking skills, street crossing skills, and the benefits of bicycling. Such education programs are frequently part of Safe Routes to School programs.

Bicycle safety education can integrate into classroom time, physical education periods, or after school. Classroom lessons administered by a volunteer, trained professional, law enforcement officer, or teacher can teach children about bicycling and traffic safety. Individual lessons should focus on one or two key issues and include activities that are fun and engaging. Bicycle safety lessons are most appropriate for fourth

through eighth grade students. The National Center for Safe Routes to School (SR2S) online guide summarizes key messages to include in pedestrian and bicycle safety curriculums. In addition to classroom-based activities, periodic “safety assemblies” can also provide bicycle safety education. Safety assemblies convey a safety message through the use of engaging and visually stimulating presentations, videos, skits, guest speakers, or artistic displays. Assemblies should be relatively brief and focus on one or two topics. Classes receiving on-going instruction on related topics can participate by presenting their lessons to the rest of the school. Schools can reinforce safety assembly lessons by reiterating the message in school announcements, school newsletters, posters, or other means. In addition to providing safety instruction, safety assemblies generate enthusiasm about biking.

Bicycle Rodeos



Bicycle Rodeos are individual events that help students develop basic bicycling techniques and safety skills through the use of a bicycle safety course. Rodeos 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. Bicycle Rodeos 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. Trained adult volunteers, local police, and the fire department can administer Bicycle Rodeos. The Rodeos can be stand-alone events or can be incorporated into health fairs, back-to-school events, and Walk and Bike to School days.

Share the Path Campaign

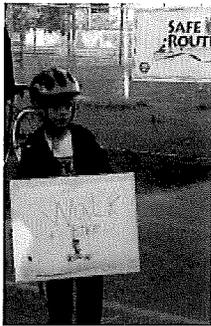


Conflicts between path users can occur on popular, well-used path systems. “Share the Path” campaigns promote safe and courteous behavior among all users. These campaigns typically involve distribution of bicycle bells and other bicycle paraphernalia, and brochures with safety tips, and maps at bicycle rides and other public events.

Effective Share the Path campaigns generally involve the following:

- Developing a simple, clear Share the Path brochure for distribution through local bike shops and wherever bike maps are distributed.
- Hosting a bicycle bell giveaway event on a popular shared-use path. Volunteers and agency staff can distribute bells to cyclists and “Share the Path” brochures to other path users, and answer Target audience School-age Children.

Safe Routes to School Program



Helping children walk and bicycle to school is good for children's health and can reduce congestion, traffic dangers and air pollution caused by parents driving children to school. Robust Safe Routes to School programs address five of the Six E's- Engineering, Education, Encouragement, Enforcement, and Evaluation. The City of Calexico should work with local school districts to implement a Safe Routes to School (SR2S) Program that can add to the work accomplished to date in the Imperial County Safe Routes to School Program.

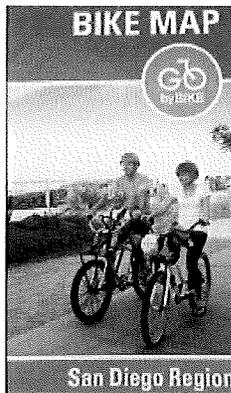
The initial phase of a SR2S program is known as a bicycle and pedestrian audit, which helps assess walking and biking conditions of streets adjacent to elementary schools. Parents, students, neighbors, and City planners and/or traffic engineers should be invited to join in the audit. Safety concerns, issues, and ideas should be recorded. After the bicycle and pedestrian audit is conducted, maps for each elementary school showing recommended routes to reach school, along with high-traffic intersections and routes to avoid, should be produced and distributed.

As a final step, an initial infrastructure improvement plan should be produced for each elementary school, including cost estimates and a prioritized project list. This infrastructure improvement plan will serve as a blueprint for future investments, and can be used to apply for further grant funding.

Encouragement

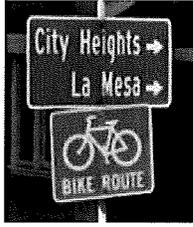
Encouragement programs focus on encouraging people to bicycle more frequently by providing incentives, recognition, or services that make bicycling a more convenient transportation mode.

Bicycling Maps



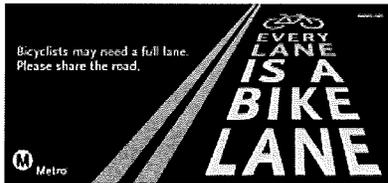
One of the most effective ways of encouraging people to bicycle is to distribute maps and guides to show that bicycle infrastructure exists. A map can also demonstrate the ease in accessing different parts of the community by bike, and highlight unique areas, shopping districts, or recreational areas. Maps can be countywide, community-specific, or neighborhood maps, and can be available on paper and/or online. Schools may create specialized biking and walking maps to direct students to walk and bicycle along the safest routes to school. 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 should 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.

Bicycle Signage Program



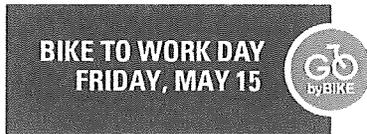
A signage program can support individuals choosing to make nonmotorized trips by advertising routes and popular destinations. The County may develop a uniform signage concept and plan for bikeways, including uniform sign designs, placement guidelines (e.g. sign location and frequency), a map of proposed bikeways and corridors to receive signage, and guides on the avoidance of placing excessive signage. Signage posted along bikeways should be consistent with other County signage standards.

Share the Road Education Campaign



A Share the Road campaign educates motorists, bicyclists and pedestrians about their legal rights and responsibilities on the road, and the need for increased courtesy and cooperation among all users. Share the Road campaigns often hold periodic traffic checkpoints along roadways with concentrated bicycle and pedestrian activity. Motorists, bicyclists and pedestrians stop at these checkpoints to receive a Share the Road flyer and can give feedback to officers regarding the campaign. Checkpoints can also occur along local bikeways and paths. Public service announcements on radio and television can help promote the Share the Road campaign.

Bicycling Campaigns



Bike to Work and School events are high profile encouragement programs that introduce people to bicycle commuting. These events also serve to change the general public's perceptions and attitudes toward bicycle commuting. Common elements of Bike to Work events include commuting workshops, guided commutes, and group rides to increase comfort and familiarity with bicycling routes. Organizers can supplement these events with stations or bicycle pit stops to reward bicycle commuters with treats and other incentives, team bicycling challenges, and celebrity events (e.g., Mayor bikes to work).

Event Bicycle Parking



Providing safe and secure bicycle parking helps encourage individuals to bicycle. San Francisco passed a city ordinance that requires all major city events to provide bike parking and pioneered an innovative tool for stacking hundreds of bicycles without racks. The County of Imperial may consider temporary bicycle parking for events with expected large attendance and at regularly occurring events like a Farmer's Market.

Community Bikeway/Walkway Adoption



Community Bikeway/Walkway Adoption programs resemble the widely instituted Adopt-a-Highway programs throughout the country. These programs identify local individuals, organizations, or businesses interested in “adopting” a bikeway, walkway, or shared-use path. “Adopting” a facility means that a person or group is responsible for the facility’s maintenance, either through direct action or funding the County’s maintenance of that facility. For example, members of a local recreation group may volunteer every other weekend to sweep a bikeway and identify larger maintenance needs. Alternatively, a local bike shop may adopt a bikeway by providing funding for the maintenance costs. Some adopted bikeways post sponsors’ names on bikeway signs to display their commitment to bicycling.

Community Walks/Bike Tours



Community walks and tours are healthy ways to promote historical and cultural aspects of the region. Groups that can organize community tours include County staff, neighborhood organizations, schools, and other groups that want the public to interact with the physical environment. Community walks and bike tours are effective tools for examining potential improvements to the physical environment and educating participants on resources/amenities available within the County.

Enforcement

Motorists, pedestrians and bicyclists alike are sometimes unaware of each other's rights as they travel city streets. Enforcement programs target unsafe bicyclist and motorist behaviors and enforce laws that reduce bicycle/motor vehicle 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 organizations. Educating the public through enforcement policies will supplement the physical improvements made in the City of Calexico.

Bicycle Light Enforcement



California Vehicle Code (CVC) §21201 requires bicycles to mount a front white light and red rear reflectors when ridden at night. Bicycling without lights reduces bicyclists' visibility and visibility to motor vehicles, and therefore increases bicyclists' risks of being involved in bicycle-car crashes. For these reasons, increasing bicycle light use should be a top priority for improving bicycle safety in the City of Calexico. Bicycle light enforcement can effectively impact behavior

particularly if bicyclists can avoid penalty by obtaining a bike light. One option is for officers to give offenders warnings, explain the law, and install a free bike light at the time of citation. Alternatively, officers can write "fix-it tickets" and waive the fine if bicyclists can prove that they have purchased a bike light within a specified timeframe. When citing bicyclists, officers can also provide coupons for free or discounted lights at a local bike shops, if available.

Bike light outreach campaigns can include the following components:

- Placing advertisements on transit benches, transit vehicles, and local newspapers reminding bicyclists about the importance of bike lights.
- Distributing media releases with statistics about the importance of using bike lights and relevant legal statutes.
- Partnering with local cycling groups to publicize bicycle light use, especially at schools. Groups should receive campaign materials to distribute to constituents along with coupons for free or discounted bike lights.
- Stationing volunteers at key intersections and paths to thank bicyclists for bike lights, rewarding cyclists with a small gift.
- Organizing a community bike light parade with prizes.
- Providing discounts on bike lights and reflective gear at local bike shops.

Targeted Enforcement

Traffic enforcement agencies, such as local Police and Sheriff's Departments, enforce laws pertaining to bicycles as part of the responsible normal operations. Targeted enforcement is one way to publicize bicycle laws in a highly visible and public manner. Targeted enforcement may take the form of intersection stings, handing out informational sheets to motorists, bicyclists and pedestrians; and enforcing speed limits and right-of-way.

Speed Radar Trailer / Permanent Speed 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 a speed limit sign. Speed trailers may be effective on busier arterial roads without bikeway facilities or near schools with reported speeding. The speed trailer's roadway placement should not obstruct bicycle traffic. 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. They can also be transported easily to streets where local residents complain about speeding problems. The Sheriff's Department may station an officer near the trailer to issue speeding citations when speeding continues to occur. Speed radar trailer. City staff may provide the management role for this program, working with the public and determine which locations are in most need. This program can be administered randomly, cyclically, or as demand necessitates because of the speed trailers' portability.

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 cyclists and motorists through enforcement and also serve as excellent outreach personnel to the public at parades, street fairs, and other gatherings. Portland, OR Bicycle Patrol Officer.

Evaluation and Planning

Evaluation programs help the City measure how well it is meeting the goals of this Plan and related plans that address the need to increase bicycle ridership. Evaluation is a key component of any engineering or programmatic investment.

Convene a Permanent Bicycle Advisory Committee

Many states, regional agencies, and cities have an official Bicycle Advisory Committee made of citizen volunteers, appointed by Board of Supervisors or the appropriate body, to advise on bicycling issues. An advisory committee establishes the region's commitment to making bicycling safer and more desirable and has the potential to assist the City in getting funding for bicycle-related projects.

The Bicycle Advisory Committee (BAC) should be composed of representatives from all bicycle stakeholder groups. The role of the BAC should include some or all of the following:

- Review and provide citizen input on capital project planning and design as it affects bicycling (e.g., corridor plans, street improvement projects, signing or signal projects, and parking

facilities)

- Review and comment on changes to zoning, development code, comprehensive plans, and other long-term planning and policy documents
- Participate in the development, implementation and evaluation of Bicycle Master Plans and bikeway facility standards
- Provide a formal liaison between local government, staff, and the public
- Develop and monitor goals and indices related to bicycling in the County
- Promote bicycling, including bicycle safety and education

Because BAC members are volunteers, it is essential to have strong participation in order for the committee to be successful. A County staff person should be formally assigned to the BAC and should take charge of managing the application process, managing agendas and minutes, scheduling meetings, bringing agency issues to the BAC, and reporting back to the agency and governing body about the BAC's recommendations and findings.

City Bicycle Coordinator

To assist with implementation of the many projects and programs recommended in this Plan, the City should establish a part/full-time Bicycle Coordinator position, so that staff time is available to administer and advance the County's bicycle planning and programmatic efforts. The job duties for this staff person would include overseeing the implementation of this plan, prepare for future Bicycle Master Plan updates, coordinating a community stakeholders group and administering the program recommendations listed in this plan, as well as expanding on these programs in the future.

Develop and Adopt a Complete Streets Policy

Local governments adopt Complete Streets policies in order to direct transportation planners and engineers to consistently design roadways with all users in mind (e.g., motorists, transit riders, pedestrians, bicyclists, older people, children, and people with disabilities). Once a policy is in place, training is recommended for professionals whose work will be affected by the policy (e.g., planners and engineers).

The Complete Streets Coalition provides the following guidance on Complete Streets principles and policy:

The Principle:

- Complete Streets are designed and operated to enable safe access for all users. Pedestrians, bicyclists, motorists and transit riders of all ages and abilities must be able to safely move along and across a complete street.
- Creating Complete Streets means changing the policies and practices of transportation agencies.
- A Complete Streets policy ensures that the entire right-of-way is routinely designed and operated to enable safe access for all users.
- Transportation agencies must ensure that all road projects result in a Complete Street appropriate to local context and needs.

Elements of a Good Complete Streets Policy:

- Specifies that 'all users' includes pedestrians, bicyclists, transit vehicles and users, and motorists, of all ages and abilities.
- Aims to create a comprehensive, integrated, connected network.

- Recognizes the need for flexibility: that all streets are different and user needs will be balanced.
- Applies to both new and retrofit projects, including design, planning, maintenance, and operations, for the entire right-of-way.
- Makes any exceptions specific and sets a clear procedure that requires high-level approval of exceptions.
- Directs the use of the latest and best design standards.
- Directs that complete streets solutions fit within the context of the community.
- Establishes performance standards with measurable outcomes.

Perform Annual Bicycle Counts

Many jurisdictions do not perform regular bicycle counts. As a result, they do not have a mechanism for tracking bicycling trends over time, or for evaluating the impact of projects, policies, and programs. It is recommended that the City of Calexico perform and/or coordinate annual counts of bicyclists (and ideally pedestrians, as well) on both on- and off-street facilities according to national practices. The National Bicycle and Pedestrian Documentation Project has developed a recommended methodology, survey and count forms, and reporting forms. This approach may be modified to serve the needs and interests of individual jurisdictions. The City should manage tracking, analysis, and reporting activities. Counts can be done manually by staff/volunteers or using video or a variety of other technologies.



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5.0 Design Guidelines and Standards

Bicyclists are entitled to travel on all roads except those that are lawfully prohibited to them (California Vehicle Code § 21200). Many motorists do not know that by law, bicyclists on conventional roadways are not required to use a separated path or shoulder. There are many cyclists who prefer cycling in the lane of traffic. Like motorists, bicyclists want to reach their destinations safely, conveniently, and with a minimum of delay. Many bicycle commuters or long-distance cyclists avoid bicycle paths due to slower moving bicyclists or pedestrians. Frequently, bicycle paths are not direct or continuous, and are used more by recreationalists than commuters. However, each community is comprised of cyclists with different abilities, and those who desire different types of facilities. All four classes of bike facility, Class I multi-use paths, Class II bike lanes, Class III bike routes, and Class IV cycle tracks, described below, serve different purposes and user groups. Each community should offer facilities that meet these varied needs.

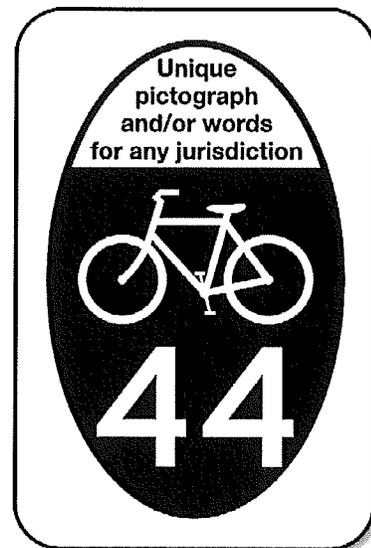
5.1 Classifications

Caltrans currently recognizes four classifications of bicycle facilities, including Class I multi-use paths, Class II bicycle lanes, Class III bicycle routes, and Class IV cycle tracks. A description and image of each of these facility types is provided in **Table 5-1**. Multi-use paths, bike lanes, and bike routes are currently planned for the City per the City of Calexico Bicycle Master Plan, however, no facilities have been implemented.

5.2 Signage

Many standard roadway signs, such as speed limit and warning signs, apply to both motorists and bicyclists. Additional signs specifically for designated bike facilities should conform to the Caltrans Highway Design Manual and/or the Manual on Uniform Traffic Control Devices (MUTCD). Caltrans Highway Design Manual, Chapter 1000 requires that bikeways include standard signs and pavement markings. The MUTCD defines standards used by road managers nationwide to install and maintain traffic control devices on all streets and highways.

In order to create continuity and identity of the bicycle system, a comprehensive sign program utilizes an identifiable logo or City seal that may be attached to the bike signs. This identifiable logo can help build support, recognition and awareness of the bikeway system and increase the number of cyclists. This identity would be used on all bikeway signage, brochures, and other materials. The logo will help define the bikeway facilities as a cohesive system rather than a series of disconnected segments. A City-wide numbering system may also be used that would identify bikeways to enable cyclists to plan a route or note where support facilities are located. Part 9 of the most recent update of the MUTCD provides guidance on the integration of logos and branding with compliant signage, such as through Bicycle Guide Sign/Plaque M1-8a, pictured.



Wayfinding and signage branding should be designed for compatibility with the California MUTCD, such as sign M1-8a.

Table 5-1 Bicycle Facility Design Classifications

Description	Example
<p>Class I Multi-Use Path – Also referred to as a bike paths or shared-use paths, Class I facilities provide a completely separated right-of-way designed for the exclusive use of bicycles and pedestrians with crossflows by motorists minimized. Multi-use paths can provide connections where roadways are non-existent or unable to support bicycle travel. The minimum paved width for a two-way multi-use path is considered to be eight-feet, with a two-foot wide graded area adjacent to the pavement.</p>	
<p>Class II Bike Lane – Provides a striped lane designated for the exclusive or semi-exclusive use of bicycles with through travel by motor vehicles or pedestrians prohibited. Bike lanes are one-way facilities located on either side of a roadway. Pedestrian and motorist crossflows are permitted. Additional enhancements such as painted buffers and signage may be applied. The minimum bike lane width is considered to be five-feet.</p>	
<p>Class III Bike Route – Provides shared use of traffic lanes with cyclists and motor vehicles, identified by signage and/or street markings such as "sharrows". Bike routes are best suited for low-speed, low-volume roadways with an outside lane of 14 feet or greater. Bike routes provide network continuity or designate preferred routes through corridors with high demand.</p>	
<p>Class IV Cycle Track – Also referred to as separated or protected bikeways, cycle tracks provide a right-of-way designated exclusively for bicycle travel within the roadway and physically protected from vehicular traffic. Cycle tracks can provide for one-way or two-way travel. Types of separation include, but are not limited to, grade separation, flexible posts, or on-street parking.</p>	

Source: Chen Ryan Associates (2018)



6.0 Bikeway Implementation

Implementation of this Bicycle Master Plan Update is ultimately based upon the availability of funding or immediate safety concerns. Specific factors that determine which route may be constructed are based on a) availability of funding for specific types of bikeways, b) capital improvement projects such as road widening and traffic control lights at intersection, or c) immediate safety concerns about a specific area.

The following section is intended to guide prioritization and phasing of the bikeway network presented in Chapter 5, including cost and maintenance considerations.

6.1 Prioritization and Phasing Plan

The proposed bikeway system can be implemented over the course of 29 bicycle projects. To determine project specifications, individual segments were combined to achieve the Plan's overarching goals and vision to deliver facilities that provide wholistic connectivity throughout the community, with a minimum of network gaps. **Table 6-1** displays the criteria used to assign prioritization scores to each of the 29 project segments. **Table 6-2** displays the prioritization scoring and phasing for each of the project segments. Projects were grouped into three phases based on their prioritization scores, to assist the City in determining an appropriate implementation schedule. Each phase is designed to implement approximately one third of the project segments, with ten projects to be implemented in Phase 1, ten projects to be implemented in Phase 2, and eight projects to be implemented in Phase 3.

A fourth category, "Partially Funded Projects," identifies the New River Parkway, portions of which are in the design phase. Since work is ongoing, it was identified additionally to, rather than as a part of the ten Priority Projects and three phases.

When completed, the New River Parkway will consist of a 2.4-mile long Class I bicycle path, which would extend from Animal Shelter Drive in the south to approximately 560 feet west of A.M. Thielemann Avenue, with Phase 1A extending from approximately 560 feet west of A.M. Thielemann Avenue to approximately 335 feet west of Linholm Avenue, Phase 1B extending from approximately 335 feet west of Linholm Avenue to Eady Avenue, and Phase 2 extending from Eady Avenue to Animal Shelter Drive.

The New River Parkway will be implemented in three phases (1A, 1B, and 2). Currently, the 0.75-mile long Phase 1B is funded through a \$1,600,000 through the DEMO-SAFETEA LU grant programs from the US Department of Transportation for preliminary engineering, as well as through an additional \$1,600,000 for construction that was allocated in FY2015-2016. Both grants have a City matching grant of \$400,000 which is being funded by Proposition 84-River Parkway Program (California Natural Resources Agency).

Phase 1B is expected to undergo the bidding process in Mat 2018, with a contract award and execution to follow in June 2017. Construction of Phase 1B is scheduled to start in July 2018.

The two unfunded segments (1A and 2) carry a cost estimate of \$1,900,259 for both segments.

Table 6-1 Prioritization Criteria and Scoring

Prioritization Criteria	Point Value
<p>Schools: The number of schools adjacent to each project segment were counted. Those numbers, normalized for segment length, were grouped into the following ranges, with their corresponding prioritization point values shown:</p> <ul style="list-style-type: none"> • < 1 school/mi = 0 points • 1-3 schools/mi = 1 point • 3-6 schools/mi = 2 points • > 6 schools/mi = 3 points 	0 – 3 points
<p>Parks: The number of parks adjacent to each project segment were counted. Those numbers, normalized for segment length, were grouped into the following ranges, with their corresponding prioritization point values shown:</p> <ul style="list-style-type: none"> • <1 park/mi = 0 points • 1.0-1.9 parks/mi= 1 point • 2.0-2.9 parks/mi= 2 points • 3 or more parks/mi = 3 points 	0 – 3 points
<p>Bicycle Collisions: The number of collisions involving a car and a cyclist along each project segment were summarized and divided by the mileage of that project segment. Collisions per mile were then grouped into the following ranges, with their corresponding prioritization point values shown:</p> <ul style="list-style-type: none"> • High Number of Collisions (3 collisions per mile and above) = 3 points • Medium Number of Collisions (2.0-2.9 collisions per mile) = 2 points • Low Number of Collisions (0 -1.9 collisions per mile) = 1 point 	1 – 3 points
<p>Active Transportation Trip Propensity: The average weighted score from the active transportation trip propensity model created in the existing conditions was calculated for a 1,000-foot radius surrounding each project segment. Those average weighted scores were then grouped into the following ranges, with their corresponding prioritization point values shown:</p> <ul style="list-style-type: none"> • High propensity (100 or greater points) = 3 points • Medium propensity (between 50 and 100 points) = 2 points • Low propensity (fewer than 50 points) = 1 point 	1 – 3 points
<p>Public Input: Public comments about project segment locations which were received at the at outreach events received 1 point, as follows:</p> <ul style="list-style-type: none"> • No public comments = 0 points • Each discrete public comment = 1 point 	1 point per comment

Source: Chen Ryan Associates (2018)



Table 6-2 Prioritized Projects

Project	Length (mi)	Class(es)	Schools Score	Parks Score	Safety Score	Propensity Score	# of Public Comments	Total Score
Phase 1								
Andrade Ave	1.9	IV	1	2	1	3	1	8
1st St / Heber Ave	0.3	III	0	3	1	3	0	7
5th St	1.5	II, III	1	1	1	3	1	7
Imperial Ave	1.6	II	0	0	1	3	2	6
Kloke Ave	0.9	II	1	1	1	3	0	6
Birch Rd (Class 2 portion)	1.5	II	1	0	2	3	0	6
Sherman St / Blair Ave / 7th St	0.9	III	1	0	2	3	0	6
Encinas Ave	0.9	II	2	0	1	3	1	6
Rockwood Ave	2.3	III	1	0	1	3	0	5
Phase 2								
De Las Flores St	0.3	II	1	0	1	3	0	5
Portico Bl / Weakley St / Estrada Bl / Arguelles St	1.6	II	0	0	1	3	1	5
Scaroni Rd / Hacienda Dr	2.0	II	0	0	1	3	1	5
Anaya Ave	0.9	III	0	0	1	3	1	5
Paseo Camino Real	0.3	III	0	0	1	3	1	5
Meadows Dr	1.3	III	0	0	1	3	1	5
Ollie Ave / Sheridan St / Emerson Ave / 3rd St / Imperial Ave	1.7	II	0	1	1	3	0	5
Birch Rd (Class 1)	2.4	I	1	0	1	3	0	5
Pruett Rd / Ostrey St / Garcia Ave / Martinez St / Eady Ave	1.1	III	0	0	1	3	0	4
2nd St	1.2	III	0	0	1	3	0	4
Phase 3								
Robert Kennedy St / Perry Ave / Zapata St	3.0	III	0	0	1	3	0	4
Canal (east-west)	1.7	I	0	0	1	3	0	4
Grant St / 8th St	0.5	II, III	0	0	1	3	0	4
Rancho Frontera Ave	2.7	II	0	0	1	3	0	4
Cole Rd	1.8	II	0	0	1	3	0	4
Anza Rd	0.6	II	0	0	1	1	1	3
Canal (north-south) / western end of city	3.0	I	0	0	1	1	0	2
Partially Funded Projects								
New River Parkway	2.4	I	0	1	1	1	0	3

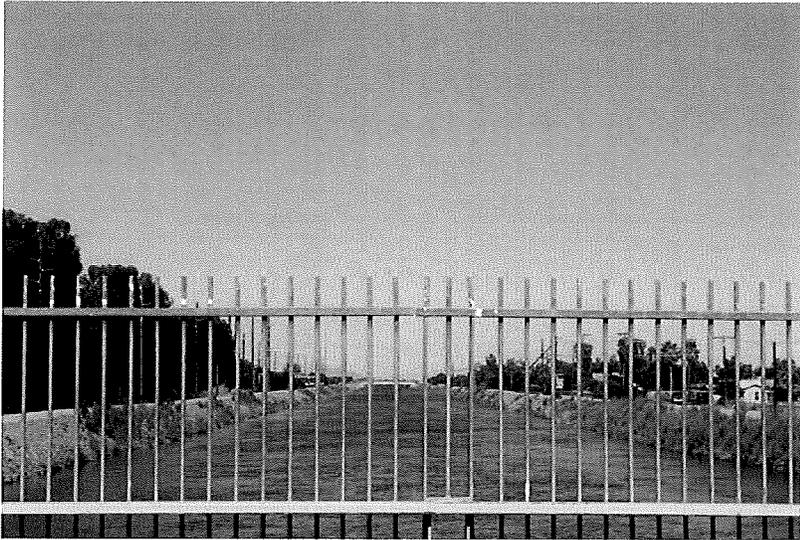
Source: Chen Ryan Associates (2018)

6.2 Project Costs

Table 6-3 presents a list of typical costs for implementation based on the type of bicycle facility. The cost estimates include design and construction costs. All costs are based on 2013 dollars with a conservative three percent annual inflation applied to bring costs in line with 2018 dollars. In the future,



costs should be adjusted based on more current rates. These costs are used to determine approximate cost to implement the proposed bikeway routes by miles. These costs may be used to determine the approximate costs to construct a route or segment. Preliminary engineering will provide a more definitive cost estimate.



The All-American Canal.



Table 6-3 Bicycle Facility Design Cost Estimates

Infrastructure	Description	Median	Average	Minimum	Maximum	Cost Unit
Bicycle Parking	Bicycle Locker	\$2,461	\$2,404	\$1,472	\$3,082	Each
Bicycle Parking	Bicycle Rack	\$621	\$759	\$74	\$4,152	Each
Multi Use Path	Class I	\$300,150	\$553,311	\$74,417	\$4,931,798	Mile
Bicycle Lane	Class II	\$102,891	\$153,146	\$6,164	\$617,182	Mile
Signed Bicycle Route	Class III	\$31,326	\$28,831	\$6,164	\$73,980	Mile
Signed Bicycle Route with Roadway Improvements	Class IV	\$277,415	\$275,356	\$49,324	\$271,481	Mile

Source: *Costs for Pedestrian and Bicycle Infrastructure Improvements*, FHWA (2013); Chen Ryan Associates (2018)

Implementation costs for each route are based on typical construction costs. **Table 6-4** lists each segment, length of the segment, and estimated cost for implementation. From a bikeway perspective, bike lanes may be installed along the roadway providing adequate width is available. Calexico's roadways are generally wide enough to accommodate bicycle lanes provided there is also adequate width for vehicle parking. The exceptions to this occur when drainage ditches, curb cuts, utility poles or lack of right-of-way make widening cost prohibitive.

Based on the criteria identified in **Table 6-2**, the total estimate to complete the Bicycle Master Plan is \$10,030,728.

Relocation of utilities or the removal of drainage ditches would be estimated on a case by case basis, and would be additional to the costs provided herein. The City may also consider installing loop detectors at an estimated cost of \$2,500 per intersection when repairing the streets, replacing utilities that require cutting into the asphalt, or when installing new traffic lights. Loop detectors designed to detect bicyclists at stop lights will encourage bicyclists to cycle more often and deter cyclists from darting across streets when the lights turn red. Additionally, costs of installing bike racks at schools, parks, and civic locations are provided in **Table 6-4**.



Table 6-4 Estimated Cost of Bikeway Network Implementation

Project	Class(es)	Length (mi)	Cost
Andrade Ave	II, IV	0.9 (Class II), 1.0 (Class IV)	\$404,014
Imperial Ave	II	1.6	\$245,033
1st St / Heber Ave	III	0.3	\$8,649
De Las Flores St	II	0.3	\$45,944
5th St	II, III	0.3 (Class II), 1.2 (Class III)	\$80,541
Portico Bl / Weakley St / Estrada Bl / Arguelles St	II	1.6	\$245,034
Scaroni Rd / Hacienda Dr	II	2.0	\$306,292
Anaya Ave	III	0.9	\$25,948
Paseo Camino Real	III	0.3	\$8,649
Meadow Dr	III	1.3	\$37,481
Grant St / 8th St	II, III	1.3 (Class II), 0.12 (Class III)	\$208,009
Ollie Ave / Sheridan St / Emerson Ave / 3rd St / Imperial Ave	II	1.7	\$260,249
Rockwood Ave	III	2.3	\$66,312
Kloke Ave	II	0.9	\$137,832
Pruett Rd / Ostrey St / Garcia Ave / Martinez St / Eady Ave	III	1.1	\$31,714
Birch Rd (Class 2)	II	1.0	\$153,146
2nd St	II, III	0.6 (Class II), 0.6 (Class III)	\$111,673
Rancho Frontera Ave	III	0.5	\$144,416
Sherman St / Blair Ave / 7th St	III	0.9	\$25,948
Robert Kennedy St / Perry Ave / Zapata St	III	1.8	\$51,896
Encinas Ave	II	0.9	\$137,832
Birch Rd (Class 1)	I	2.4	\$367,550
Canal (east-west)	I	3.0	\$459,438
Cole Rd	II	2.7	\$413,494
Anza Rd	II	1.8	\$275,663
New River Parkway Design and Phase 1B Construction (funded)	I	0.8	\$3,600,000
Canal (north-south) / western end of city	I	1.6	\$245,034
New River Parkway Phase 1A and 2 Construction	I	1.7	\$1,900,359
Installation of bike racks at all City parks, schools & community facilities (42 total)	n/a	n/a	\$31,878
Total			\$10,030,728

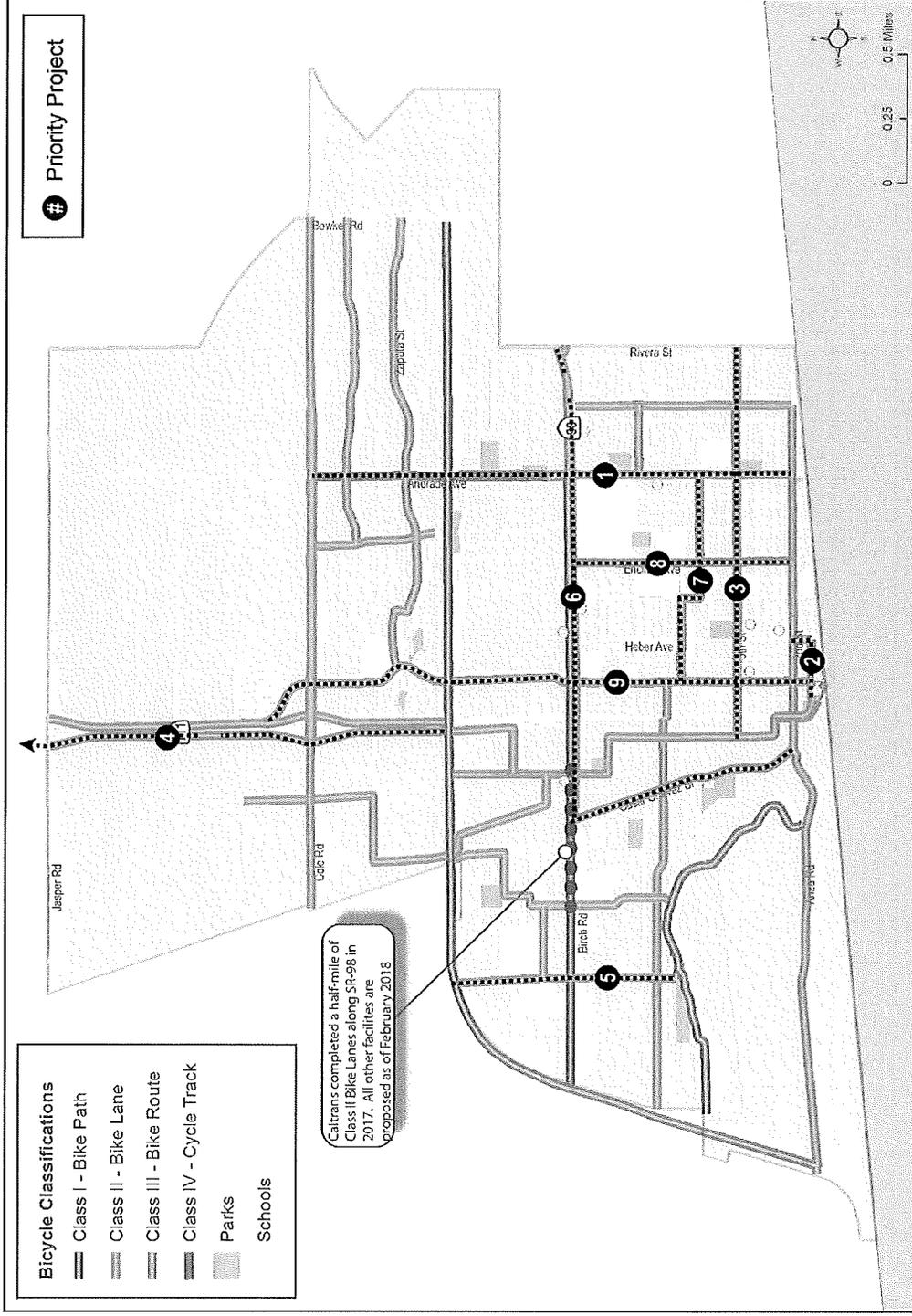
Source: Chen Ryan Associates (2018)

6.3 Project Sheets

Phase 1 projects were further analyzed for development of project sheets. **Figure 6-1** provides an overview of each Phase 1 project relative to its location within the City, followed by each project sheet. Note that Project 9, which proposes a Class II bike lane along Imperial Avenue/SR-111, takes place along a Caltrans facility. Although this roadway provides an important north-south link from the International Border through the center of Calexico, implementation of this project would require additional coordination and evaluation. Thus, this facility was not evaluated for further study as a part of this effort.



Figure 6-1 Priority Project Overview and Project Sheets



Proposed High Priority Projects

City of Calixto Bicycle Master Plan



Figure 6-3 Project Sheets 2 and 3: 1st Street/Heber Avenue & 5th Street

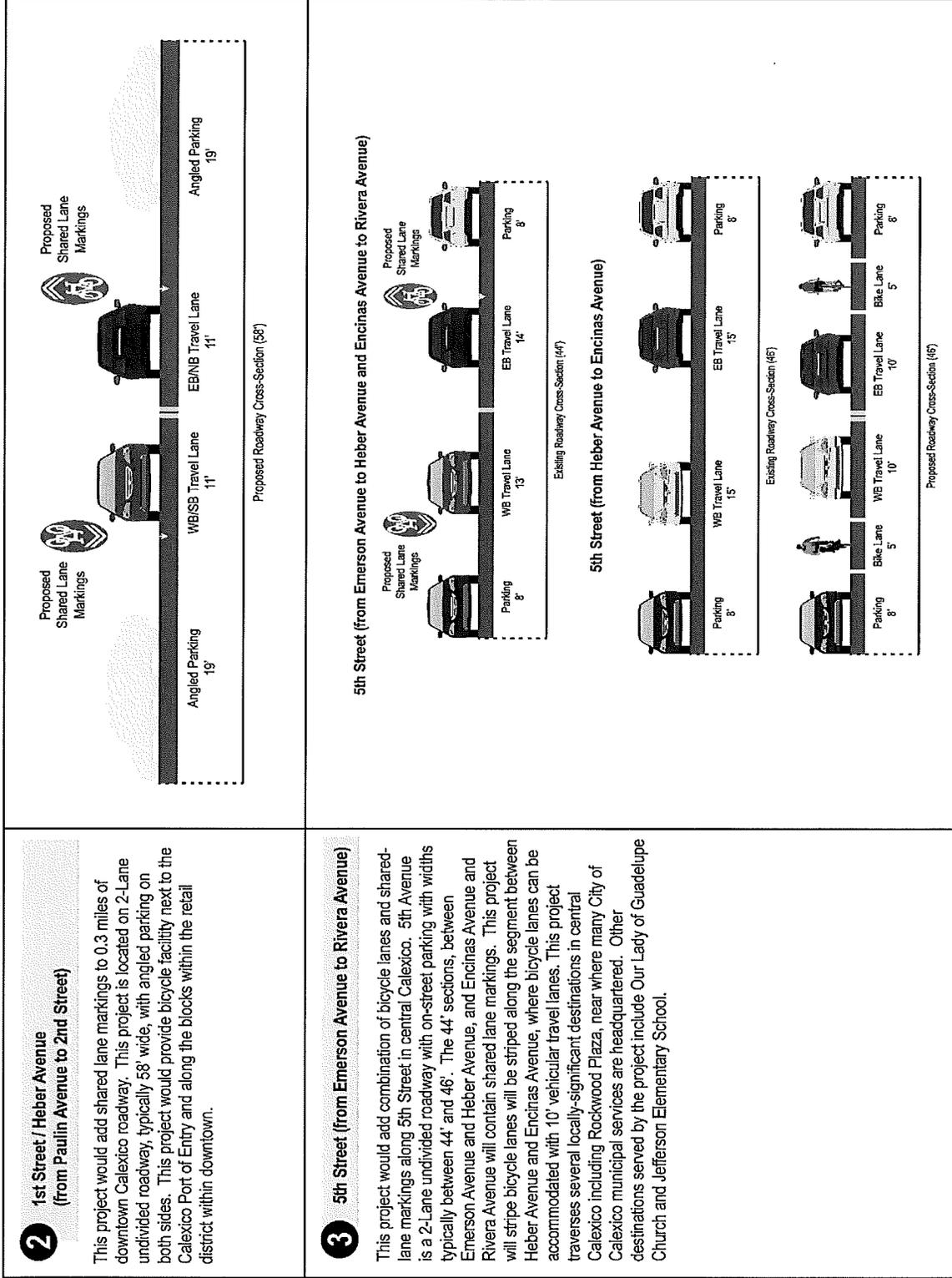
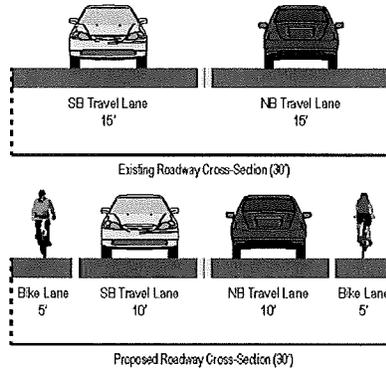


Figure 6-5 Project Sheet 4: Scaroni Avenue

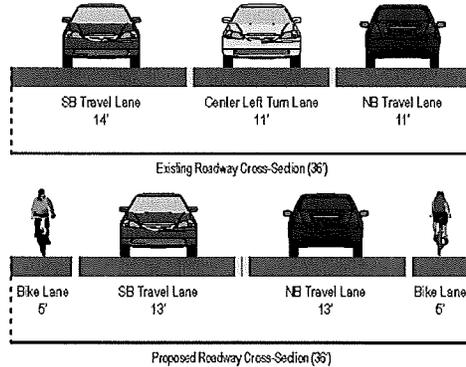
4 Scaroni Avenue (from Jasper Road to All-American Canal)

This project would stripe Class II bicycle lanes along a 1.6 mile stretch of Scaroni Avenue (frontage road on the west side of SR-111). There are three typical sections of roadway along Scaroni Avenue: a 2-Lane undivided roadway at 30' width, a 2-Lane roadway with Center Left Lane (36'), and a 2-Lane undivided at 24' width. The southerly 24' section requires a minimum of 6' of roadway widening in order to fit bicycle lanes. This project would enhance inter-city bicycle connections to cities and unincorporated area north of Calexico.

Scaroni Avenue (from City Boundary to Robinson Avenue)



Scaroni Avenue (Robinson Avenue to Cole Road)



Scaroni Avenue (Cole Road to All-American Canal)

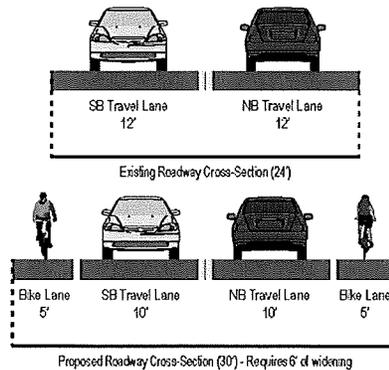
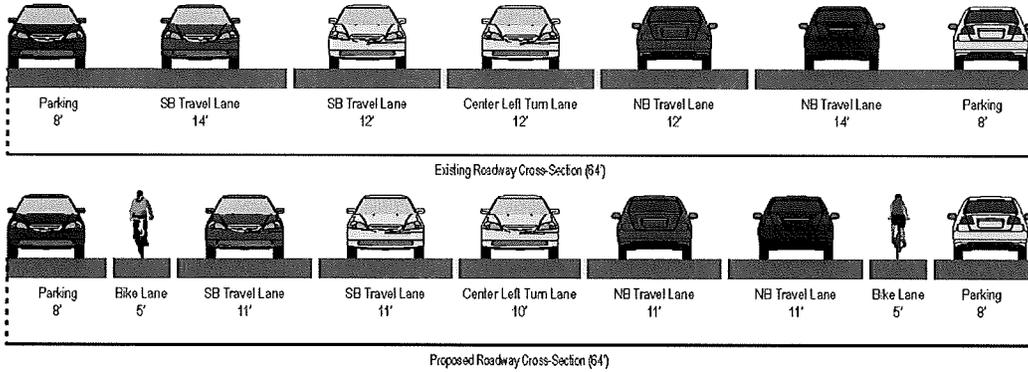


Figure 6-6 Project Sheet 5: Kloke Road

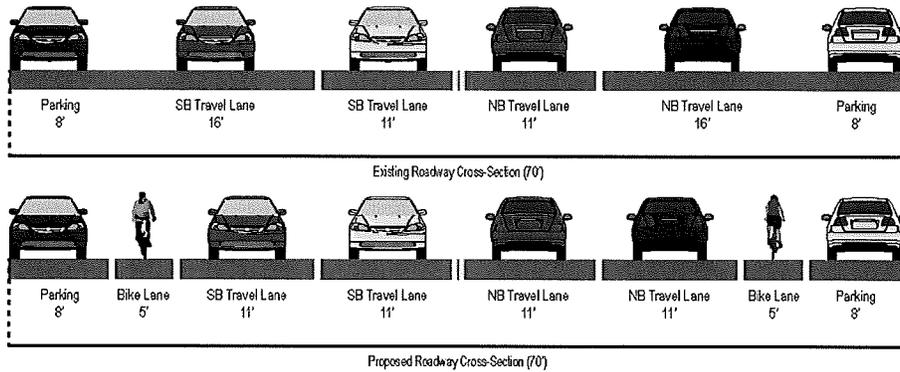
5 Kloke Road (from All-American Canal to New River Trail)

This project would stripe bicycle lanes along a nearly one mile stretch of Kloke Road. There are three typical sections of roadway along Kloke Road: a 4-Lane with Center Left Turn Lane (64'), a 4-Lane undivided roadway with on-street parking (70') and a 2-Lane undivided roadway with on-street parking (60'). Bicycle lanes fit within the confines of all three typical sections without removing vehicular-serving features. This project would provide a bicycle link from William Moreno Junior High School to Nosotros Little League Field.

Kloke Road (from All-American Canal to Birch Road)



Kloke Road (from Birch Road to Grant Street)



Kloke Road (from Grant Street to New River Trail)

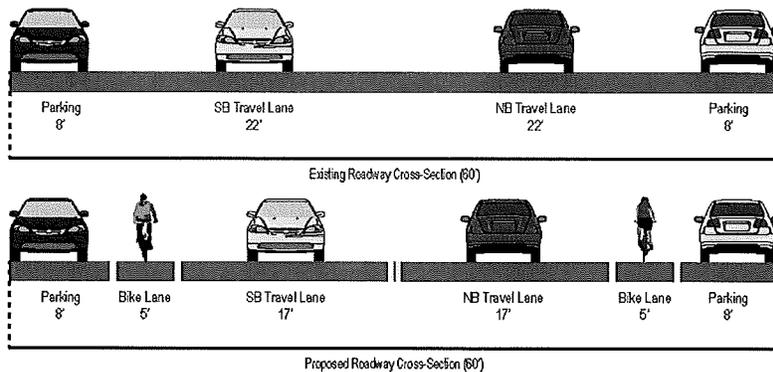


Figure 6-7 Project Sheets 6 and 7: Sherman Street/Blair Avenue/7th Street & Encinas Avenue

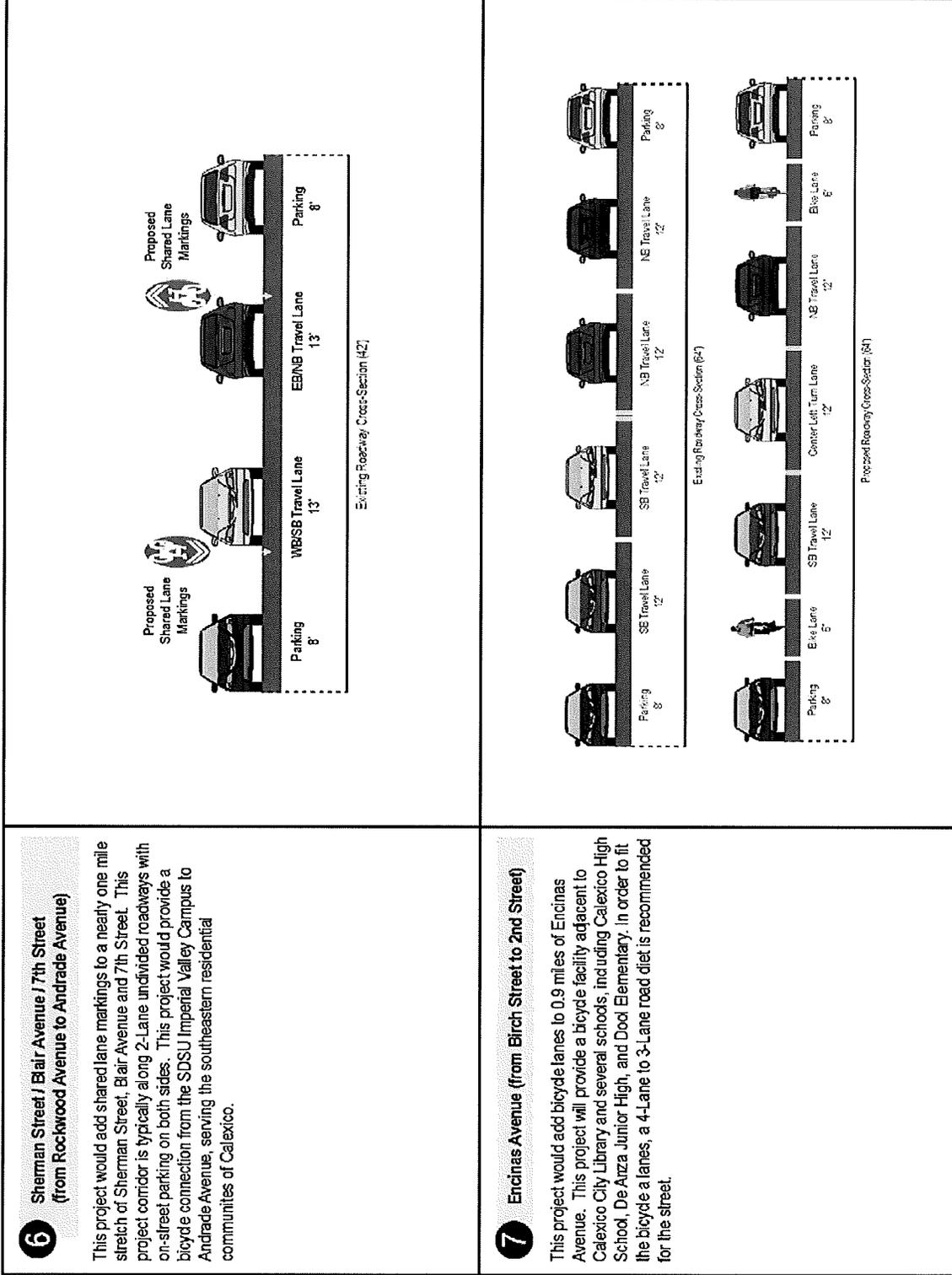
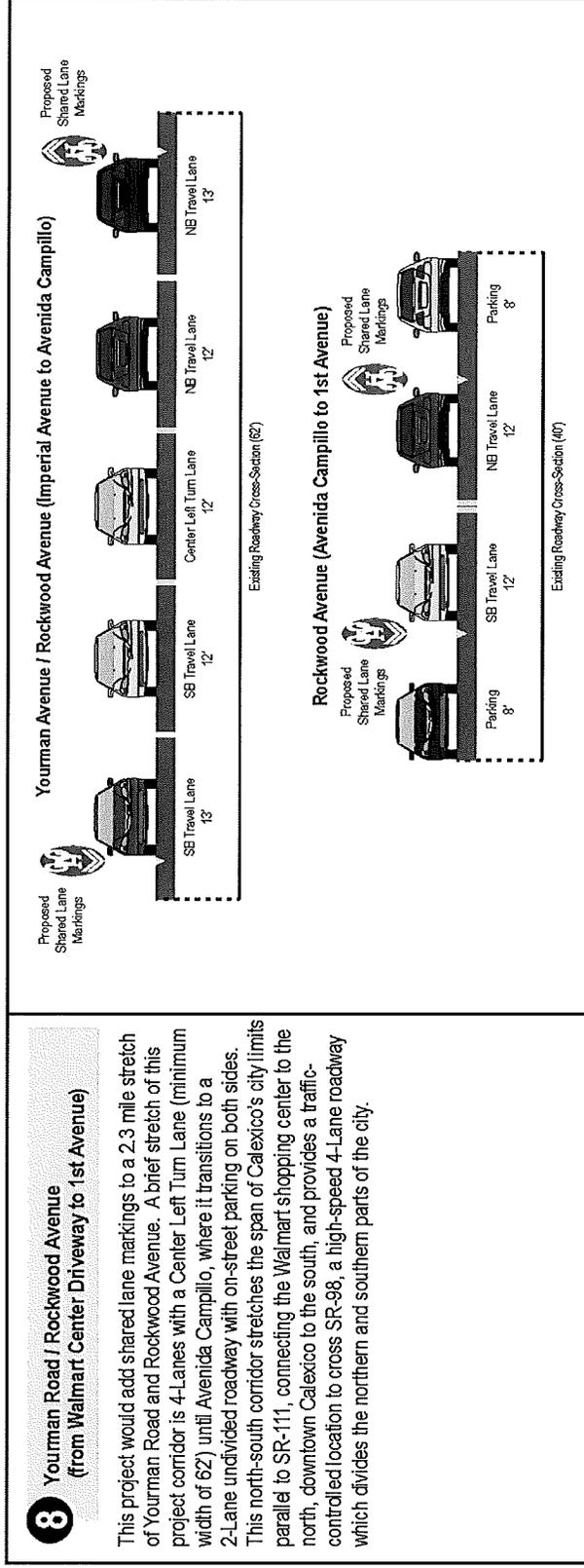


Figure 6-8 Project Sheet 8: Yourman Road/Rockwood Avenue



Note that Project 9, which proposes a Class II bike lane along Imperial Avenue/SR-111, takes place along a Caltrans facility. Although this roadway provides an important north-south link from the International Border through the center of Calexico, implementation of this project would require additional coordination and evaluation. Thus, this facility was not evaluated for further study as a part of this effort.



6.4 Maintenance

Bicycle facilities must be maintained in an appropriate manner and an ongoing maintenance program should be established. Well-maintained bicycle facilities increase safety, encourage use of the facilities, and increase longevity of the facility. The maintenance program should include a periodic review of the condition of signs, pavement markings, barriers, and surface condition. Roadway dirt, debris, and potholes affect cyclists to a greater extent than cars. It is recommended that routine surveys of the bicycle facilities are conducted to remove glass and other debris, especially on Class I bicycle paths, and to conduct routine restriping and sign replacement.

It is recommended that the City designate a staff person or appoint a local organization to serve as the bicycle coordinator. This allows local residents to know whom to contact when there are maintenance, connectivity, or general concerns for cyclists. This person would have the primary responsibility to implement the Master Plan by pursuing grant funds, coordinating with the Public Works or Engineering Department to incorporate bikeways into the Capital Improvement Program (CIP), and updating the Master Plan as appropriate. Tasks for the bicycle coordinator may include:

- Pursuing grants for bikeway projects and bicycle programs.
- Participating in Imperial Valley Association of Governments (IVAG) bicycle committees and other regional transportation groups involved in funding programs and transportation planning.
- Coordinating and promoting bikeway education, incentives, and awareness programs and events.
- Serving as the contact person for bikeway questions and concerns.
- Reviewing the Regional Transportation Plan (RTP) to ensure consistency with local and regional bikeways.
- Participating with IVAG in the developing the RTP as it relates to bicycle facilities.
- Assembling and storing bicycle accident data, usage data, and other statistical bikeway data that may be used for grant funding applications.
- Maintaining a log of maintenance tasks, costs, and scheduled bikeway improvements.
- Serve as a clearinghouse for filtering community concerns, education materials and for coordinating volunteer groups.
- Review and provide an update of the Master Plan to the City Council at a minimum of every four years and forward to Caltrans for review and approval.

6.5 Bikeway Funding

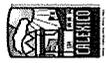
Planning efforts are constrained by concerns over limited implementation resources. Projects that are part of comprehensive plans often have a competitive edge over stand-alone projects. Indeed, there are many different ways to combine funding and other resources. Commonly-used funding sources are provided in **Table 6-4** below. As shown, there are multiple avenues to secure funding for different aspects of bikeway planning, engineering, and constructions. It should be noted, however, that grant funds are competitive, and State and Federal authorities receive more applications for funding each year than there are funding dollars available. Therefore, it is recommended that a City staff member, such as a potential Active Transit/Bicycle Coordinator, be allocated to pursuit of potential funding sources.

Table 6-5 Pedestrian and Bicycle Funding Opportunities

This table indicates potential eligibility for pedestrian and bicycle projects under US Department of Transportation surface transportation funding programs. Additional restrictions may apply. See notes and basic program requirements below and see program guidance for detailed requirements. Project sponsors should fully integrate nonmotorized accommodation into surface transportation projects. Section 1404 of the Fixing America's Surface Transportation (FAST) Act modified 23 U.S.C. 109 to require federally-funded projects on the National Highway System to consider access for other modes of transportation and provides greater design flexibility to do so.

Key: \$ = Funds may be used for this activity (restrictions may apply). \$* = See program - specific notes for restrictions. ~\$ = Eligible, but not competitive unless part of a larger project.

Activity or Project Type	Pedestrian and Bicycle Funding Opportunities - US Department of Transportation Transit, Highway, and Safety Funds															
	SB1	TIGER	TIFIA	FTA	ATI	CMAQ	HSIP	NHPP	STBG	TA	RTP	SRTS	PLAN	NHTSA - 402	NHTSA - 405	FLTP
Access enhancements to public transportation (includes benches, bus pads)	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
ADA/504 Self Evaluation / Transition Plan	\$*			\$							\$	\$	\$			\$
Active Transportation Plans																
Bicycle helmets (project or training related)																
Bicycle helmets (safety promotion)																
Bicycle lanes on road	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
Bicycle parking	\$	~\$	~\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
Bike racks on transit	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
Bicycle share (capital and equipment; not operations)	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
Bicycle storage or service centers at transit hubs		~\$	~\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
Bridges / overcrossings for pedestrians and/or bicyclists	\$	\$	\$	\$	\$	\$*	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
Bus shelters and benches		\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
Coordinator positions (state or local)						\$1 per State										
Crosswalks (new or retrofit)	\$	\$	\$	\$	\$	\$*	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
Curb cuts and ramps	\$	\$	\$	\$	\$	\$*	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
Counting equipment																



Pedestrian and Bicycle Funding Opportunities - US Department of Transportation Transit, Highway, and Safety Funds

Activity or Project Type	SB1	TIGER	TIFIA	FTA	ATI	CMAQ	HSIP	NHPP	STBG	TA	RTP	SRTS	PLAN	NHTSA - 402	NHTSA - 405	FLTP
Data collection and monitoring for pedestrians and bicyclists				\$	\$		\$	\$	\$	\$	\$	\$	\$*			\$
Historic preservation (pedestrian and bicycle and transit facilities)	\$	\$	\$	\$	\$		\$	\$	\$	\$						\$
Landscaping, streetscaping (pedestrian and/or bicycle route; transit access); related amenities (benches, water fountains); generally, as a part of a larger project	\$	~\$	~\$	\$	\$		\$	\$	\$	\$						\$
Lighting (pedestrian and bicyclist scale associated with pedestrian/bicyclist project)	\$	\$	\$	\$	\$		\$	\$	\$	\$	\$	\$				\$
Maps (for pedestrians and/or bicyclists)				\$	\$	\$		\$	\$	\$		\$	\$*			\$
Paved shoulders for pedestrian and bicycle use	\$	\$	\$			\$*	\$	\$	\$	\$	\$	\$				\$
Pedestrian plans				\$				\$	\$	\$			\$			\$
Recreational trails	\$	~\$	~\$					\$	\$	\$	\$					\$
Road diets (pedestrian and bicycle portions)	\$	\$	\$				\$	\$	\$	\$						\$
Road Safety Assessment for pedestrians and bicycles							\$	\$	\$	\$			\$			\$
Safety education and awareness activities and programs to inform pedestrians, bicyclists, and motorists on ped/bike safety	\$						\$	\$	\$	\$		\$	\$*	\$*	\$*	\$
Safety education positions								\$	\$	\$						\$
Safety enforcement (including police patrols)	\$							\$	\$	\$		\$	\$*	\$*	\$*	\$
Safety program technical assessment (for peds/bicyclists)	\$							\$	\$	\$		\$	\$*	\$*	\$*	\$
Separated bicycle lanes	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$		\$	\$*			\$
Shared use paths / transportation trails	\$	\$	\$	\$	\$	\$*	\$	\$	\$	\$	\$	\$				\$
Sidewalks (new or retrofit)	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$				\$
Signs / signals / signal improvements	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$				\$
Signed pedestrian or bicycle routes	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$				\$



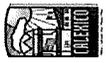
Pedestrian and Bicycle Funding Opportunities - US Department of Transportation Transit, Highway, and Safety Funds

Activity or Project Type	SB1	TIGER	TIFIA	FTA	ATI	CMAQ	HSIP	NHPP	STBG	TA	RTP	SRTS	PLAN	NHTSA - 402	NHTSA - 405	FLTPP
Spot improvement programs		\$	\$	\$	\$		\$	\$	\$	\$	\$	\$				\$
Stormwater impacts related to pedestrian and bicycle projects		\$	\$	\$	\$		\$	\$	\$	\$	\$	\$				\$
Traffic calming	\$	\$	\$	\$			\$	\$	\$	\$	\$	\$				\$
Trail bridges	\$	\$	\$	\$		\$*	\$	\$	\$	\$	\$	\$				\$
Trail construction and maintenance equipment	\$								\$RTP	\$RTP	\$					
Trail/highway intersections		\$	\$			\$*	\$	\$	\$	\$	\$	\$				\$
Trailside and trailhead facilities (includes restrooms and water, but not general park amenities; see guidance)		~\$*	~\$*				\$	\$	\$*	\$*	\$*					\$
Training						\$	\$	\$	\$	\$	\$	\$	\$*			
Training for law enforcement on ped/bicyclist safety laws	\$								\$SRTS	\$SRTS	\$	\$			\$*	
Tunnels / undercrossings for pedestrians and/or bicyclists	\$	\$	\$	\$	\$	\$*	\$	\$	\$	\$	\$	\$				\$

Abbreviations

- ADA/504: Americans with Disabilities Act of 1990 / Section 504 of the Rehabilitation Act of 1973
- SB1: Senate Bill 1 Transportation Investment bill which allocates funds to transit, bike and pedestrian projects
- TIGER: Transportation Investment Generating Economic Recovery Discretionary Grant Program
- TIFIA: Transportation Infrastructure Finance and Innovation Act (loans)
- FTA: Federal Transportation Administration Capital Funds
- ATI: Associated Transit Improvement (1 percent set-aside of FTA)
- CMAQ: Congestion Mitigation and Air Quality Improvement Program
- HSIP: Highway Safety Improvement Program
- NHPP: National Highway Performance Program
- STBG: Surface Transportation Block Grant Program
- TA: Transportation Alternatives Set-Aside (formerly Transportation Alternatives Program)
- RTP: Recreational Trails Program
- SRTS: Safe Routes to School Program/Activities
- PLAN: Statewide Planning and Research (SPR) or Metropolitan Planning Funds
- NHTSA 402: State and Community Highway Safety Grant Program
- NHTSA 405: National Priority Safety Programs (Nonmotorized safety)
- FLTPP: Federal Lands and Tribal Transportation Programs (Federal Lands Access Program, Federal Lands Transportation Program, Tribal Transportation Program, Nationally Significant Federal Lands and Tribal Projects)

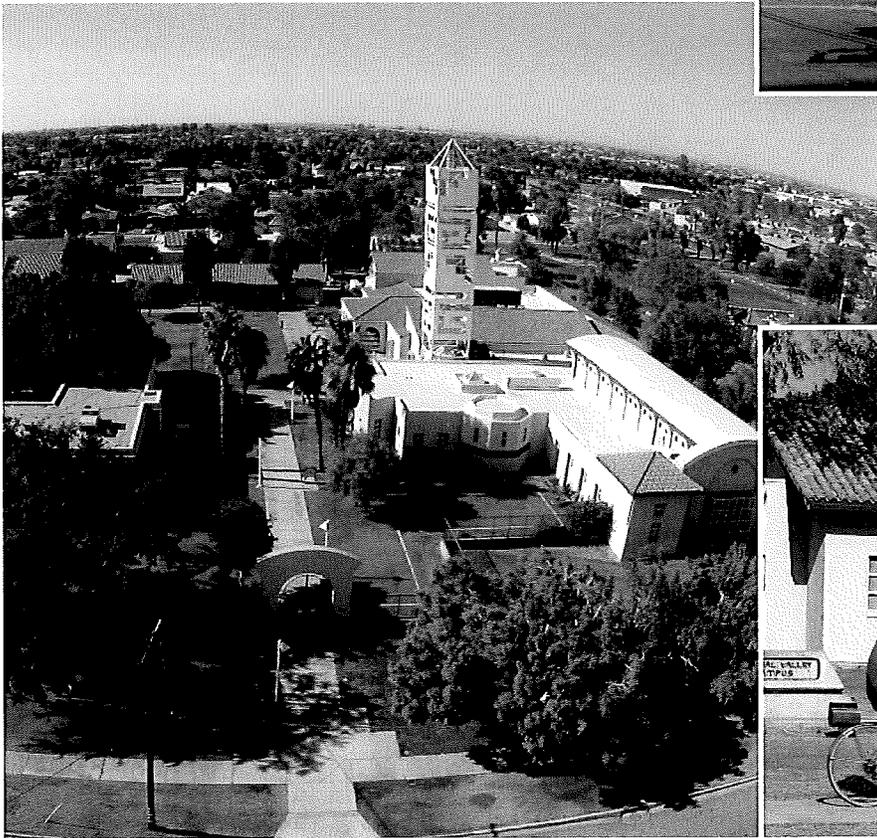
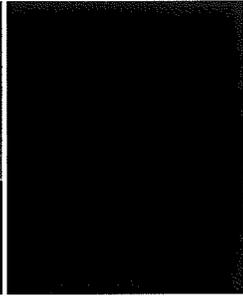
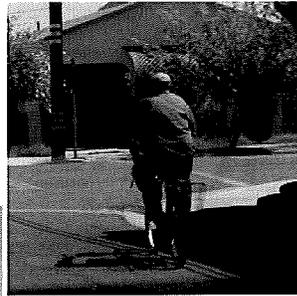
Source: Chen Ryan Associates (2018)



Summary of Comments Received

Comment Number	Comment	Action Taken
1	Replace references to Bicycle Transportation Account	Revised
2	Consider discussion/reference to the Calexico West POE Expansion.	Discussed with relevant plans/projects
3	Consider expanded discussion on the future Calexico Intermodal Transportation Center; location, schedule, connectivity, etc. ICTC will be releasing the RFP for right of way & design within the next month or two.	Discussed with relevant plans/projects
4	Priority project includes a "road diet" for Cesar Chavez Boulevard. This appears to be in conflict with the City's widening project on CCB, which is not mentioned.	Updated network and associated exhibits as needed
5	Recommend the New River Parkway project be discussed in terms of all phases of the proposed project, funding currently available and the plans to implement the first phase. (i.e. identify every phase's work to be performed and level of funding, scheduling as much as possible/known, etc.)	Additional discussion added
6	Project footnote states "Will require coordination with Caltrans; not evaluated for further study as a part of this effort" – referring to Imperial Ave. SR111 – was there a reason for this not being evaluated?	Removed footnote
7	Consider discussion of why certain proposed routes from the previous plan were deleted.	Discussed with the update/changes section
8	Update does not include recently completed Bike Lanes on SR-98 between Eady to Ollie.	Added
9	Added TAC/Stakeholder members	Revised
10	Minor spelling corrections	Completed
11	Minor figure edits	Completed





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