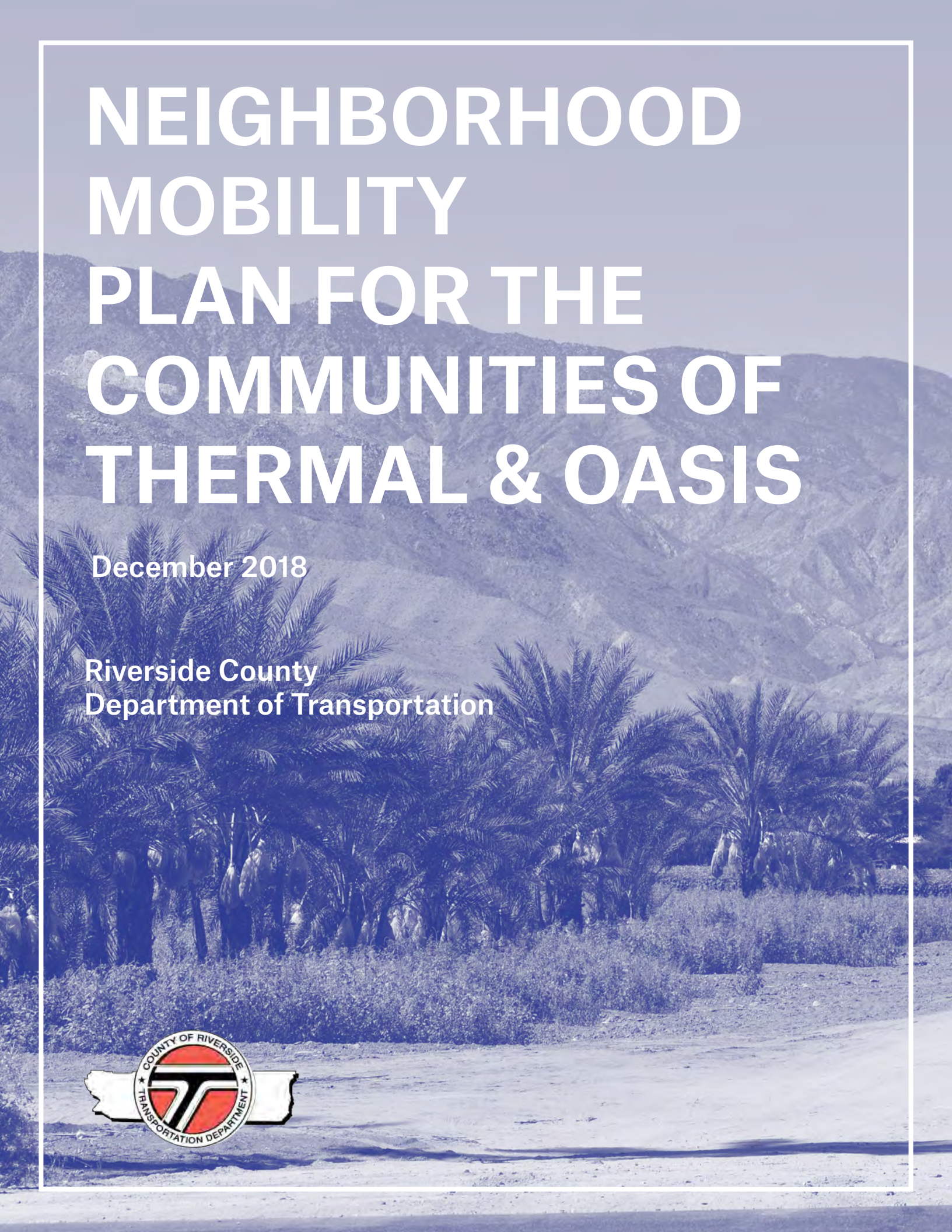
NEIGHBORHOOD MOBILITY PLAN FOR THE COMMUNITIES OF THERMAL & OASIS

December 2018

Riverside County
Department of Transportation



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December 2018

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A special thank you to workshop participants and residents from the communities of Thermal and Oasis.

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Executive Summary

The Neighborhood Mobility Plan for the Communities of Thermal and Oasis (Plan) seeks to meet the community's desire and need for a more complete transportation network and more mobility options. This Plan envisions an Eastern Coachella Valley (ECV) that is accessible, connected, and resilient, shaped directly by community residents in partnership with agencies and stakeholders. The Plan seeks to achieve the following goals:

- Equitably improve the safety of walking and biking in the ECV
- Increase walking and biking trips by implementing multi-functional infrastructure
- Improve access to pedestrian and bicycle infrastructure
- Create improved intersections that allow for pedestrian and bicycle crossings and increased visibility, while still maintaining the flow of traffic and goods
- Allow for community residents to have direct input into the shaping and phasing of proposed mobility improvements

To achieve these goals, the Plan proposes a long-term, comprehensive network of bicycle and pedestrian infrastructure that connect residents to key community facilities, such as commercial corridors, schools, and clinics. Since this network will take many years to complete, the Plan also identifies a near-term priority of a connected pedestrian framework, as well as a longer-term phasing approach.

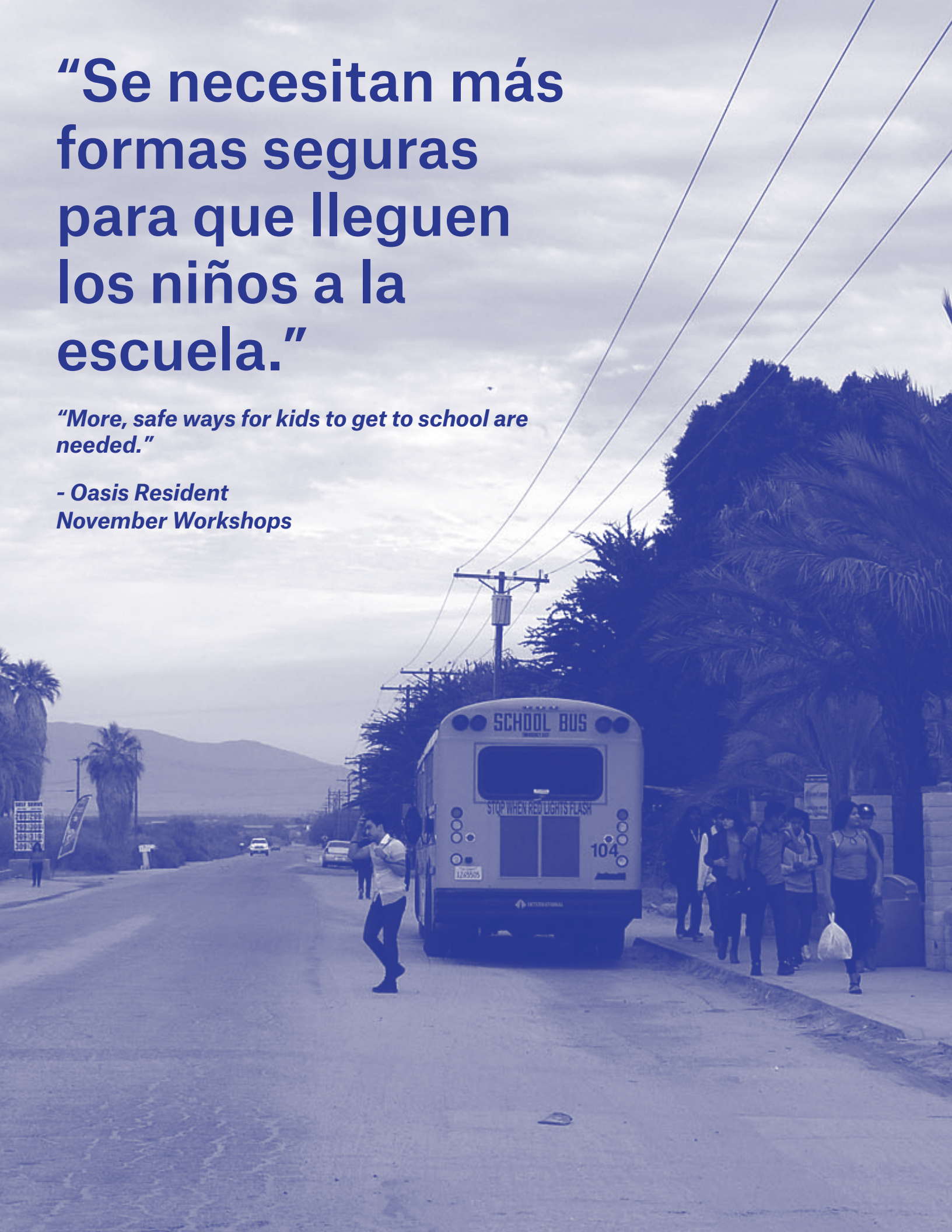
The full recommended network will result in over 70 miles of multimodal pathways, more than ten times the current amount of pedestrian and bicycle infrastructure in these communities.

This Plan envisions an Eastern Coachella Valley that is **accessible**, **connected**, and **resilient**, shaped directly by community residents in **partnership** with agencies and stakeholders. To achieve this vision, the Plan aims to improve the **physical infrastructure** and transportation services within the area, while also working toward **environmental justice** and **community empowerment** in Thermal and Oasis.

“Se necesitan más formas seguras para que lleguen los niños a la escuela.”

“More, safe ways for kids to get to school are needed.”

- Oasis Resident
November Workshops



I. Introduction

The Neighborhood Mobility Plan for the Communities of Thermal and Oasis (Plan) seeks to meet the community's desire and need for a more complete transportation network and more mobility options. This Plan sets clear goals for the future development of transportation and mobility infrastructure within the communities of Thermal and Oasis in the Eastern Coachella Valley (ECV). The recommendations in this plan will serve as the blueprint for future transportation planning in these communities while improving connections to the region at large and envisioning ways that mobility can evolve in the next 20 years within the ECV.

The communities of the ECV, including Thermal and Oasis, have limited transportation infrastructure on the ground due to a variety of reasons. In part, the current conditions reflect the rural, low-density, and somewhat remote nature of the communities relative to other population centers elsewhere in the Coachella Valley and Riverside County. These challenges have been reflected in lower levels of investment in infrastructure relative to other communities in the region. Though these issues are significant and in many ways unique to the ECV context, they are not unparalleled in other rural and low-income communities throughout Riverside County or the state of California.

Given the various interrelated challenges faced by these communities, the key to successful multi-modal transportation is a three-pronged participatory approach that values community and environment as well as infrastructure, as shown in Figure 1. To create this plan, the Riverside County Transportation

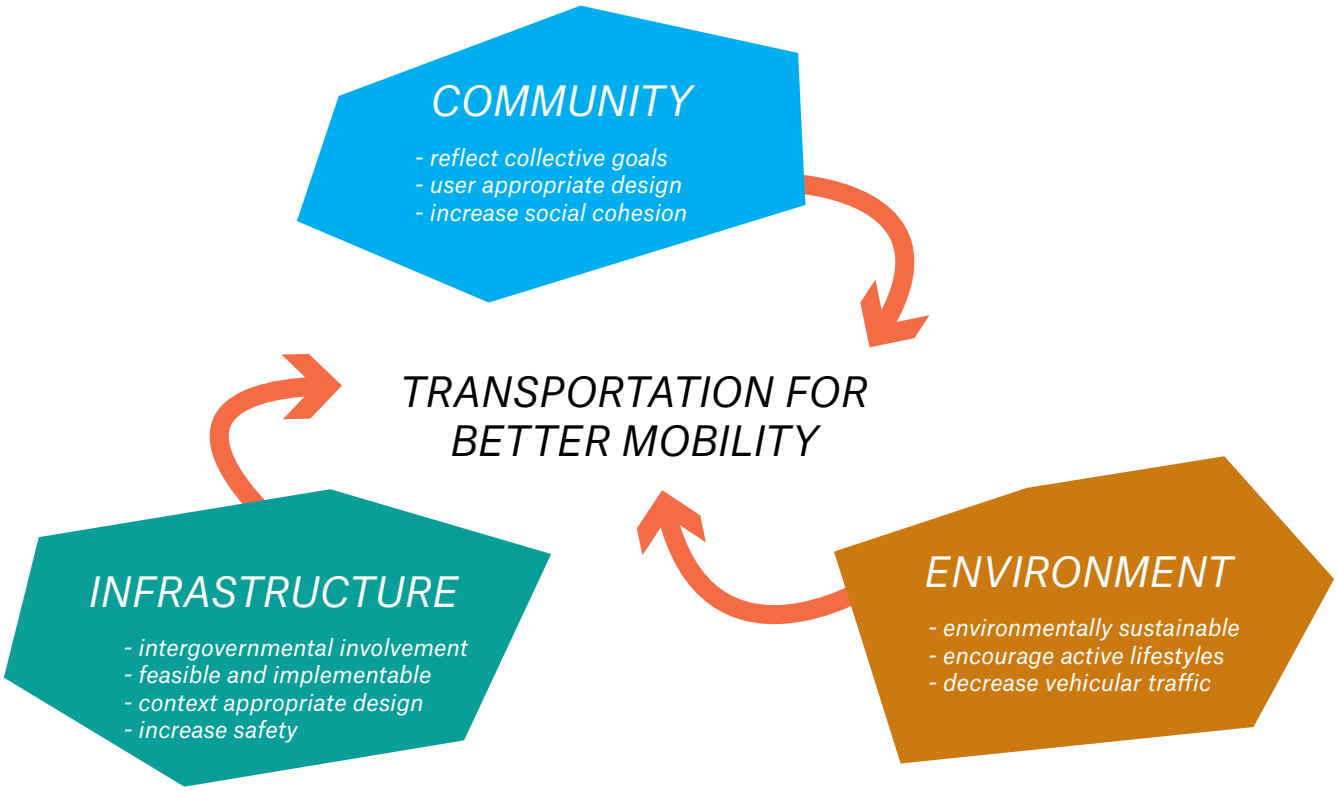


Figure 1. The Plan's Approach

Department organized a highly participatory planning process to address the concerns of Thermal and Oasis residents. The County partnered with nonprofits, local organizations, and residents to create a plan that is truly a reflection of community priorities.

The Plan was funded by a Caltrans Sustainable Communities Planning grant awarded to Riverside County in March 2017.

Purpose of the Plan

The Plan serves as a blueprint for improving transportation access, multi-modality, and healthy lifestyles within Thermal and Oasis and supports the overall goals of Riverside County's General Plan Circulation Element, building off of other regional efforts in the Coachella Valley. The primary goal of the Plan is to increase transportation safety by proposing implementable, environmentally sustainable, and context-sensitive solutions to identify and amend barriers to transportation for community members.

Additional goals of this plan are:

- Create and grow an active transportation network
- Provide greater connectivity and mobility options
- Improve public health
- Encourage community members to participate in transportation and planning decision-making

The Plan contributes to making Riverside County's transportation system more multi-modal as per the State of California's 2008 Complete Streets Act (AB 1358). This law requires local governments to consider all users—including bicyclists, pedestrians, and transit users in addition to motorists, as well as users of all ages and abilities—in planning for all streets. Furthermore, the Global Warming Solutions Act, (AB 32, 2008), and SB 375 (2008) aim to reduce greenhouse emissions, including from transportation. In improving transportation options for lower emission travel by bicyclists, pedestrians, and transit users, Riverside County will be making progress toward the objectives of these bills. Many strategies here address basic mobility needs, therefore this Plan will serve as the first step towards broader, innovative improvements needed in the unincorporated communities of Thermal and Oasis.

Neighborhood Mobility Plan Development Process

The County of Riverside initiated the plan development process in June of 2017 with the aim to identify the mobility needs of residents in Thermal and Oasis and develop corresponding solutions. The project area for this Plan is outlined in Figure 2. Residents expressed an interest in going beyond a traditional transportation planning approach; they saw the possibility for a mobility plan to address challenges of access to transportation options within their communities, and increase access to better socio-economic opportunities, amenities, and community resources. This Plan is a reflection of that intention, helping to build social resilience and community cohesion alongside needed infrastructure improvements.

Within the community, an active Transportation Justice Coalition made up of local grassroots organizations has been working with residents for several years, and has been an initiative of The California Endowment's Building Healthy Communities campaign in the ECV. Many of those nonprofits were included as part of the design and planning team for this plan. Their incorporation ensured that much of the basic needs of the community that had already been expressed were integrated into the Plan from day one, allowing for a productive and more focused set of stakeholder engagement events.

The Plan has wide community support, built through a series of workshops that were held to not only solicit feedback on the planning framework but to invite residents into the decision-making process. Three rounds of workshops were held in the communities of Thermal and Oasis, as well as mobile community engagement events and an on-street demonstration event. The first public workshop held in November 2017 asked residents to share what type of infrastructure they thought was needed and where. The second workshop in March 2018 engaged residents around the desired phasing and prioritization of the Plan. In October 2018, the draft Plan was presented at a third community workshop to ensure that all community comments and needs were integrated accurately into the final Plan. The draft Plan was also vetted through an Advisory Committee consisting of stakeholders at the community, regional, and County level.

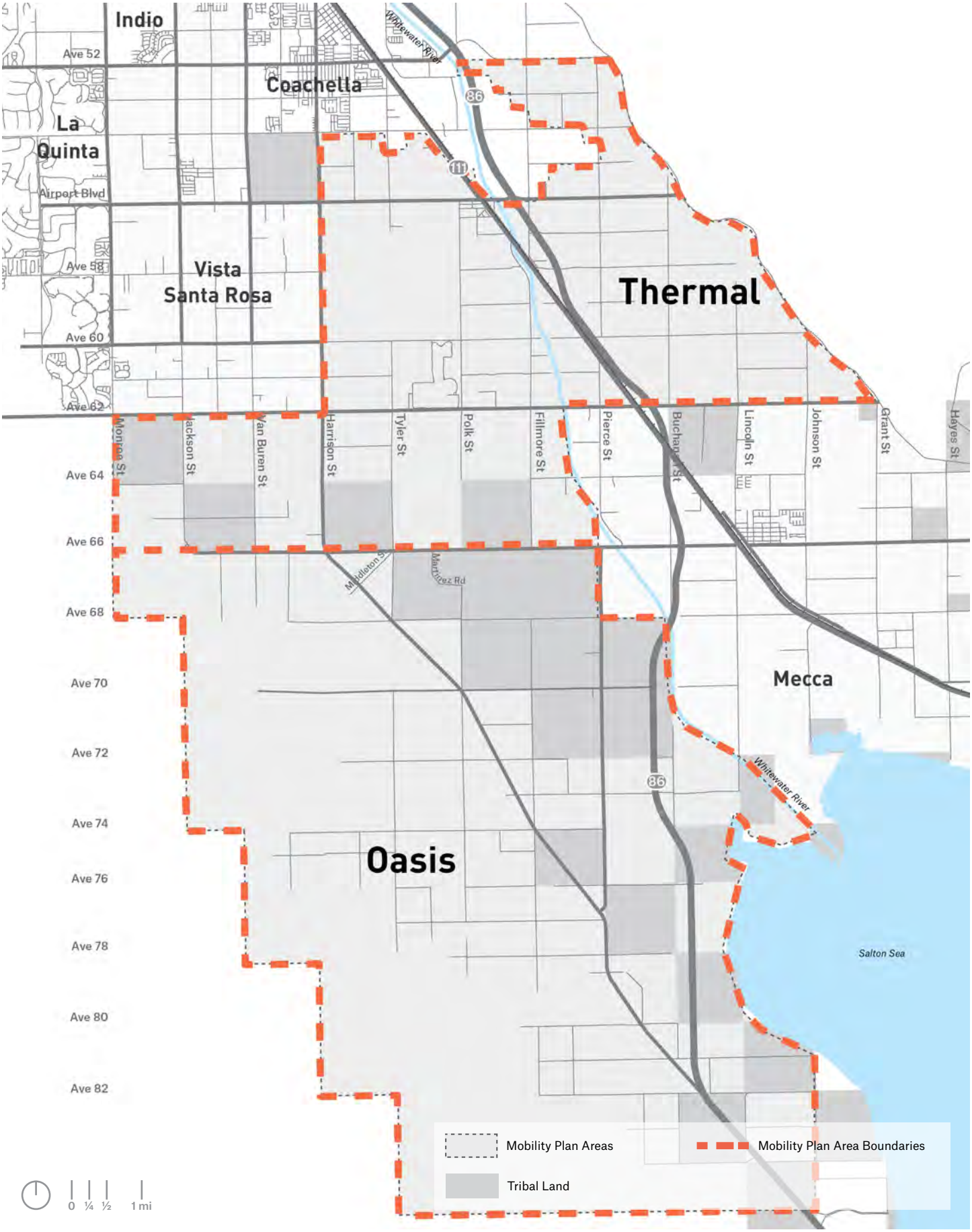


Figure 2. Neighborhood Mobility Plan Area

“Necesitamos banquetas en las calles que van rumbo a las escuelas.”

“We need sidewalks on the streets that go towards the schools.”

- Oasis Resident
November Workshops

II. Existing Conditions

Overview

The Coachella Valley in Riverside County covers approximately 675 square miles, bounded to the south by the Salton Sea and to the east and west by the San Jacinto, Santa Rosa, and Little San Bernardino mountain ranges. Largely desert throughout, the Western and Eastern sides of the valley vary widely in terms of demographic make up, income distribution, and infrastructure framework.

The Eastern Coachella Valley (ECV) is defined by locals and advocates as including the cities of Indio and Coachella as well as the unincorporated communities of Thermal, Oasis, Mecca, and North Shore.[1] The higher population tourist area of Western Coachella Valley, including Palm Springs, has experienced steady economic development and has largely been able to develop the infrastructure required to adequately serve its residents and visitors. However, the ECV, though close in proximity and interconnected economically with the Western Valley, has not experienced the same level of development.

This plan addresses the needs of the Thermal and Oasis communities, and a future plan (estimated to be completed in 2020) will address those of Mecca and North Shore. Though these plans will only directly cover the unincorporated communities of the ECV, the interconnected nature of the Coachella Valley requires us to bear in mind the ways in which the mobility, communities, economy, environment, and the future of these various communities are bound together.

The ECV, like many other parts of the Coachella Valley, also includes land belonging to Native American Tribes— specifically, the Torres Martinez Band of Cahuilla Indians, the St. Augustine Band of Mission Indians, and the Cabazon Band of Mission Indians. The majority of the land belonging to the Torres Martinez Tribe, including their headquarters, is located within the area covered by this plan.

Demographics and Income Indicators

The demographic profile of the ECV differs in many ways from that of the Western Coachella Valley and Riverside County as a whole. The populations of Thermal and Oasis are each over 95% Latino, with many monolingual Spanish speakers.

The Southern California Association of Governments (SCAG) has projected that there will be 581,300 people in the Coachella Valley in 2020, a 38% increase from 2008. The unincorporated areas of the valley are expected to see half of all the anticipated population growth between 2008 and 2035.[2]

A major hub of agricultural production for California, the ECV is part of the backbone of the American food system, representing $526 million in gross agricultural value and employing over 40% of the working adults in these two communities (see Figure 3 and Figure 4 for further demographic breakdowns).[3] Transportation to and from work is key to the economic prosperity of these communities. Currently, more than 80% of all workers drive to work, either alone or in a carpool with an average commute time of approximately 30 minutes. Much of this commute is typically during the night or low sunlight hours, such as sunrise or dusk.

Despite the agricultural prosperity of the area, poverty is widespread. As of 2016, the median household income was $28,443 for Thermal and $22,210 for Oasis, which, at less than 80% of California's statewide

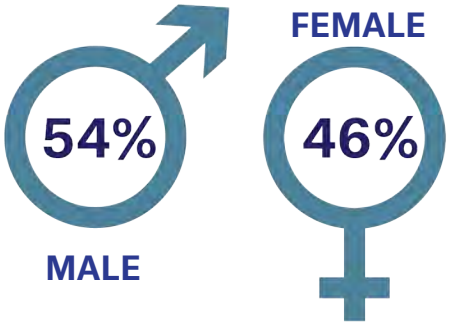
1 London, J., Greenfield, T., Zagofsky T. (2013). Revealing the Invisible Coachella Valley: Putting Cumulative Environmental Vulnerabilities on the Map. Davis CA: UC Davis Center for Regional Change.

2 SunLine Transit Agency Short Range Transit Plan FY 2017-2018.

3 London, J., Greenfield, T., Zagofsky T. (2013).

POPULATION DEMOGRAPHICS

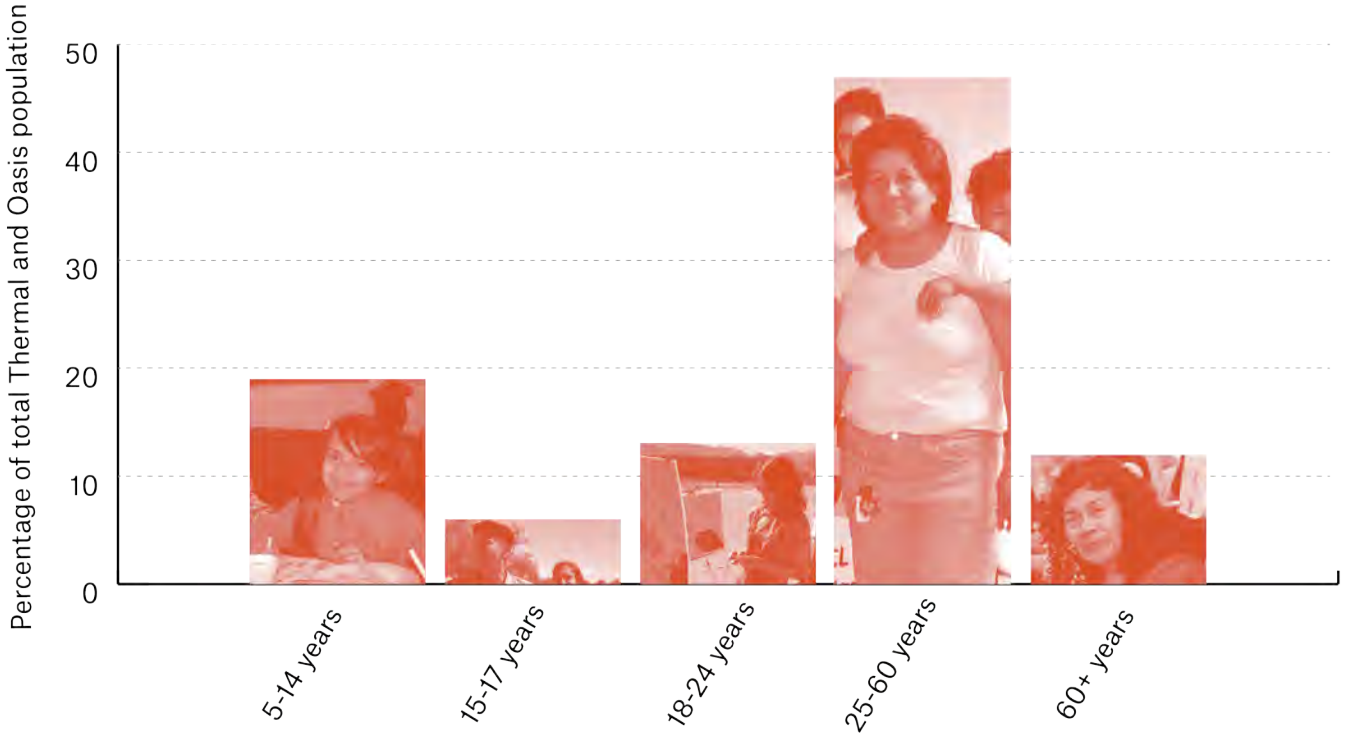
GENDER BREAKDOWN



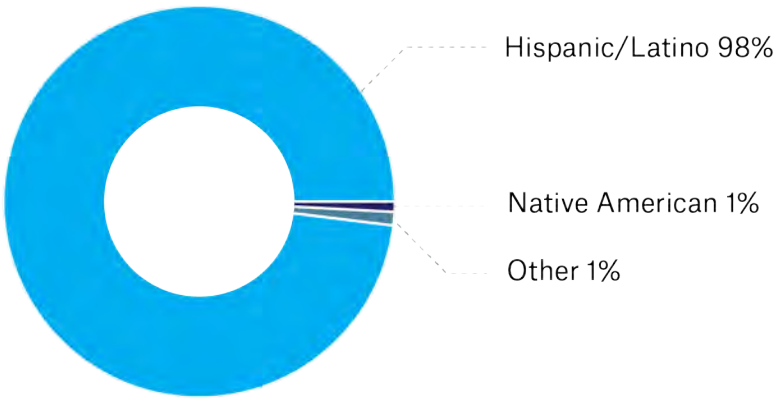
TOTAL POPULATION

THERMAL	**2,396**
OASIS	**4,374**
ECV	**21,809**

AGE DISTRIBUTION



ETHNICITY



LANGUAGE PREFERENCE

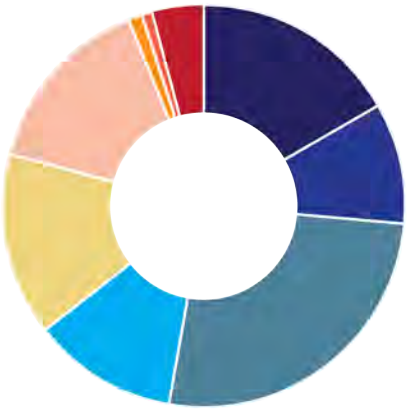
97%	Spanish speaking households
30%	Bilingual in English and Spanish
67%	Limited English proficiency

Figure 3. Thermal + Oasis Population Demographics
Source: American Community Survey 2012-2016 5-Year Estimates

INCOME AND POVERTY STATISTICS

INCOME DISTRIBUTION

Thermal



Oasis

- less than $10,000
- $10,000 - $14,999
- $15,000 - $24,999
- $25,000 - $34,999
- $35,000 - $49,999
- $50,000 - $74,999
- $75,000 - $99,999
- $100,000 - $199,999
- $200,000 or more

Coachella Valley

$25,330
Median household income
(Thermal and Oasis)

40%
Households below poverty level
(Thermal and Oasis)

JOB INDUSTRY DISTRIBUTION

43%
Agriculture

5%
Construction

5%
Education

19%
Hospitality

7%
Retail

7%
Administration

EDUCATION LEVEL

16% of population graduated from high school

2% of population has a bachelor's degree or higher

Figure 4. Thermal + Oasis Income and Poverty Statistics
Source: American Community Survey 2012-2016 5-Year Estimates

median of $63,783, distinguishes both communities as Disadvantaged Communities (DACs). In Oasis, 48.4% of the population lives below the poverty level, with this number being 32.2% in Thermal. Youth are particularly affected by this, with 46.3% and 60.7% of youth below the poverty level in Oasis and Thermal respectively.[4] These statistics point to a growing need for an equitable, easily accessible transportation system that can be used by multiple age groups to reach jobs, schools, markets, clinics, and other opportunities and necessities. This is particularly true for many lower-income residents that may not be able to afford to buy or maintain a personal vehicle.

Additional indicators reveal that residents within the Coachella Valley are subject to disproportionate health impacts due to prevalent environmental justice issues. Rates of diabetes, asthma, and obesity are all higher than the California average.[5] For these communities, access to connective transportation infrastructure is more than a convenience—it is essential to providing for their families and ensuring a healthy lifestyle.

Land Use and Physical Conditions

Overall Conditions

As is to be expected in a region with such a prevalent agricultural industry, the majority of the land within Thermal and Oasis is designated for agricultural use as shown in Figure 5. Medium-density and low-density are the main residential land use classifications, with some small pockets of commercial uses and corridors of light industrial.

Affordable housing options are lacking in the area, with many residents living in substandard trailers in mobile home parks (locally known as “polancos”) that have unsafe drinking water, substandard wastewater systems, and unpaved roads.[6]

4 2012-2016 American Community Survey (ACS).

5 Health Assessment and Research for Communities (HARC) Survey, 2016.

6 London, J., Greenfield, T., Zagofsky T. (2013).

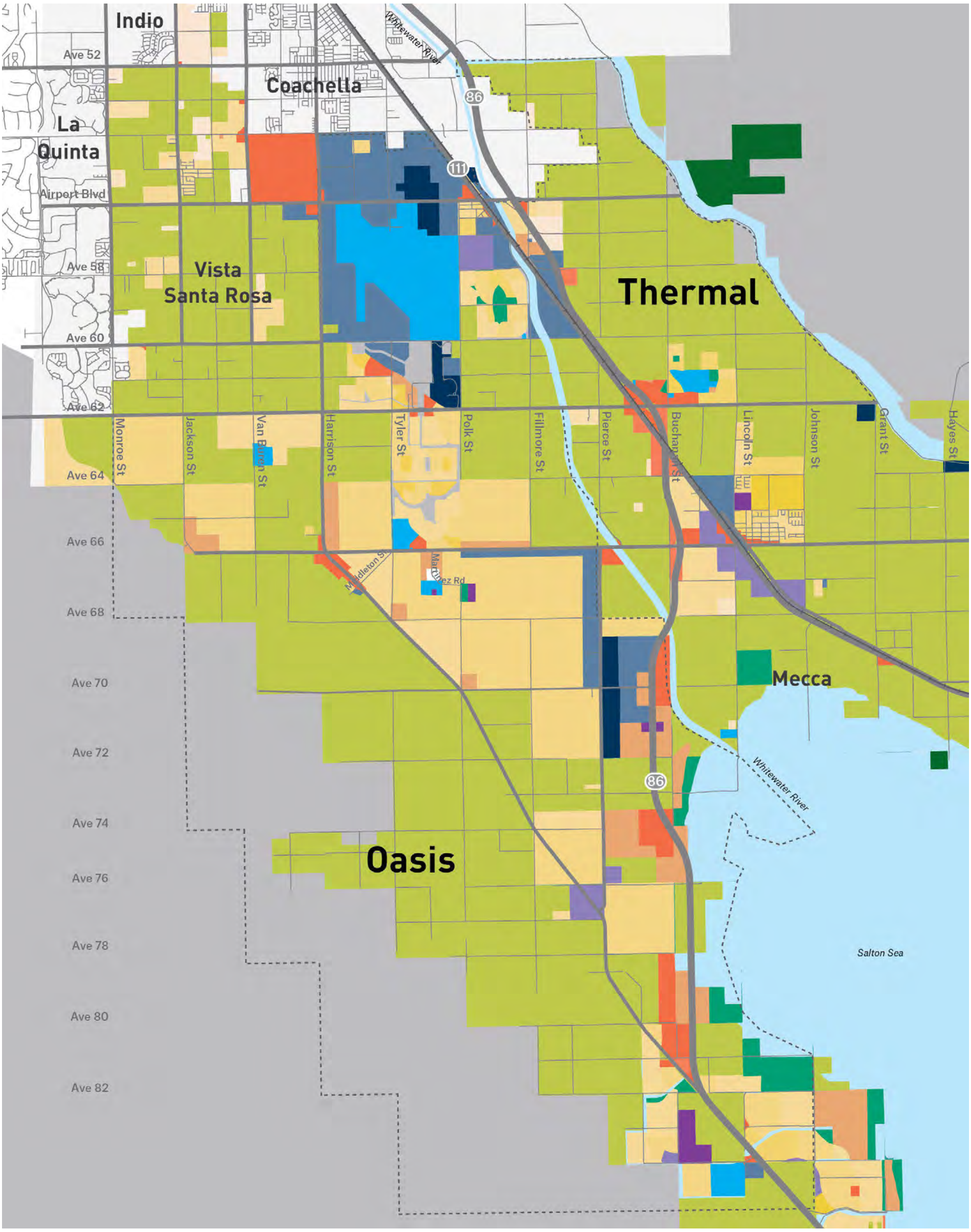


Figure 5. Riverside County Land Use (2015) and Torres Martinez Tribal Land Use (2008)

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The rural nature of many of the roads in this area is clearly evident. Few shoulders adjacent to roads are paved, making walking conditions unpleasant at best and a public health issue at worst because of the amounts of dust that are released into the air from the roadside. Dust storms are frequent, and shade is hard to come by. The lack of sidewalks or paved shoulders forces residents to either walk in the dust or in the street, adjacent to high-speed automobile, truck, and agricultural vehicle traffic. It is common to see large groups of school children walking down the middle of residential streets to ensure they are seen by oncoming traffic.

Thermal Community Destinations

Thermal as a community has a slightly denser downtown area centered at the intersection of Airport Boulevard and Polk Street that includes facilities such as elementary schools and municipal buildings. The majority of residents in Thermal live in this area, and as such much of the existing pedestrian infrastructure within these communities is centered here. However, residents routinely travel between Thermal and Oasis as well as throughout the region, highlighting the need for more connective infrastructural networks. Additional housing is located on the eastern side of Highway 86, as well as a College of the Desert campus.

Oasis Community Destinations

Oasis is less centralized, but still has some denser pockets of housing and key destinations spread throughout. The intersections where there is more commercial activity are Harrison Street and Avenue 66, and Pierce Street and Avenue 70. The corridor along Martinez Road is also a main destination because of the location of the Torres Martinez tribal headquarters and clinic, which serves the community beyond those that reside on tribal lands. Dense housing along Harrison Street and Polk Street also make these areas key to focus on when thinking about a complete transportation network that connects residents' homes to markets, schools, and other important destinations.

The relationship between existing infrastructure, public transportation, and housing can be seen in Figure 6 and Figure 7.

Desert Mirage High School students walking home through a vacant lot due to lack of pedestrian facilities

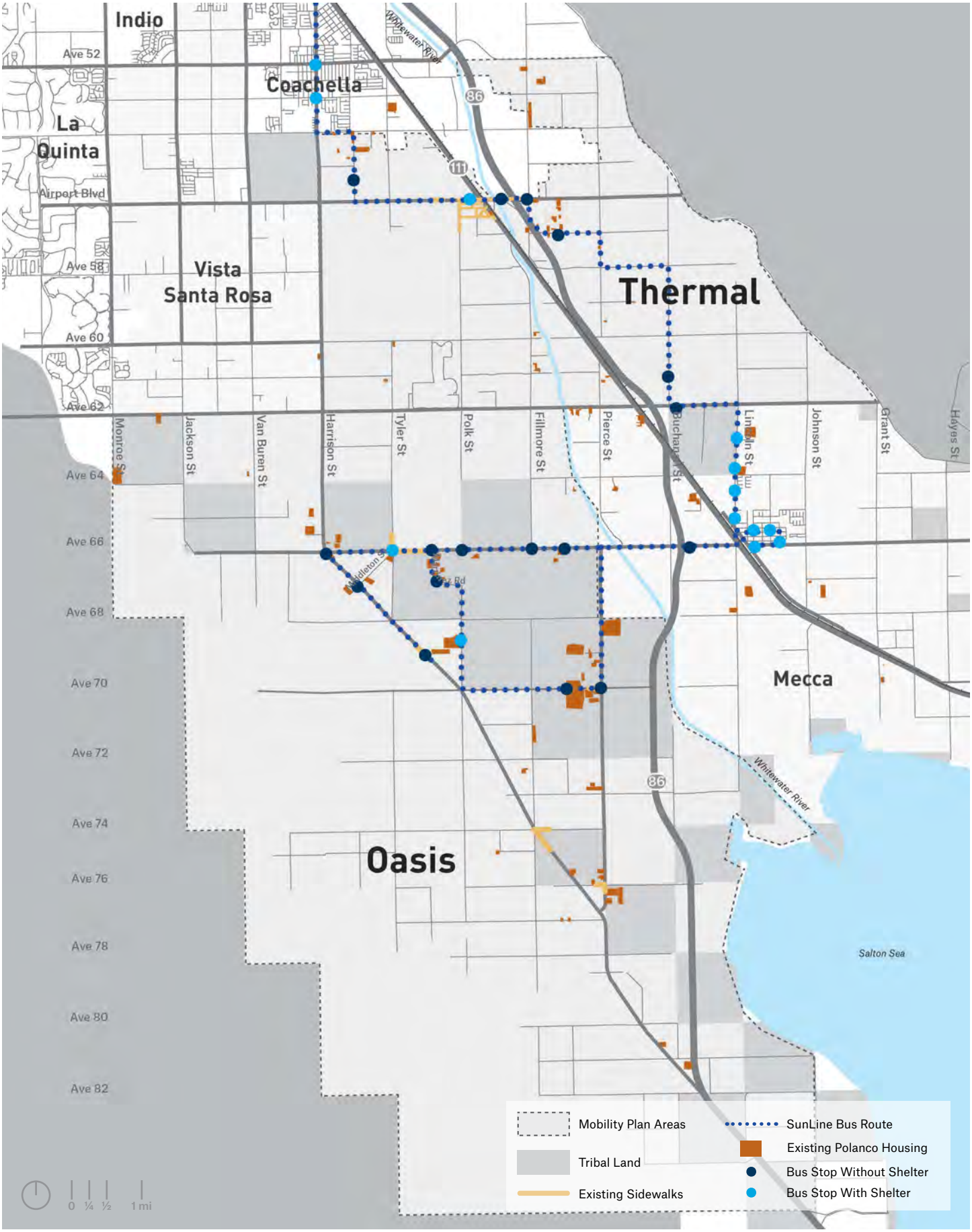


Figure 6. Locations of Existing Pedestrian and Public Transit Facilities in Relation to Existing Housing

Figure 7. Locations of Existing Pedestrian and Public Transit Facilities in Relation to Existing Housing: Downtown Thermal Detail

Unpaved farm roads are prevalent in the area

Harrison Street, a major thoroughfare in Oasis

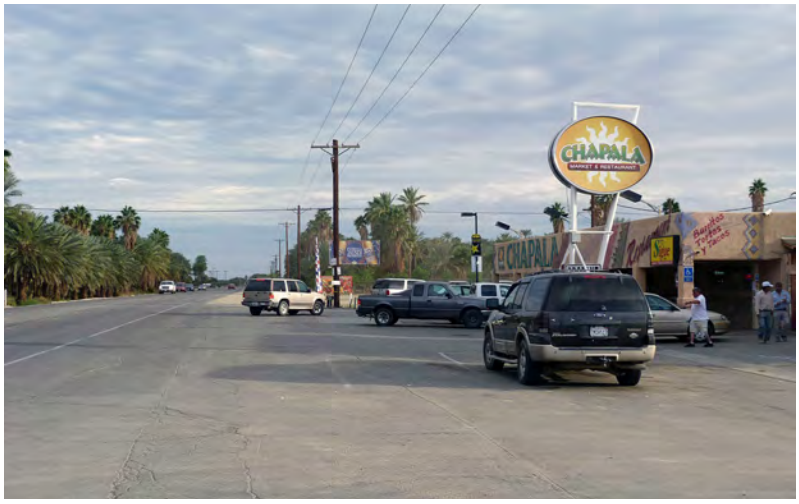
Typical biking conditions

The shoulder of Grapefruit Blvd.

Signalized intersections have no connection to further pedestrian facilities

An informal path along the dirt shoulder of Harrison Street, along which some pedestrians walk.

A typical unsheltered SunBus stop



Roadside uses in the ECV

Residents walk through vacant lots to avoid the roadside

Avenue 70 heading toward Pierce Street in Oasis

Transportation Infrastructure and Connectivity Challenges

Pedestrian Facilities

Sidewalk infrastructure is sparse in the communities of Thermal and Oasis, with the largest concentration of sidewalks in downtown Thermal. The majority of sidewalks were financed by development or implemented by the Torres Martinez Tribe and have large gaps in connectivity. Sidewalk facilities are found as rare exceptions throughout Oasis and the expanses of Thermal beyond downtown. Many residents without access to personal vehicles walk and bike along dirt or graveled shoulders, or through undeveloped land.

Bicycle Facilities

There is currently no bicycle infrastructure within the communities of Thermal or Oasis.

Two main types of bicyclists are typically seen in Thermal and Oasis: (1) bicyclists traveling to and from local destinations, and (2) bicyclists riding for leisure or exercise. The first group tend to be individual residents of Thermal or Oasis who ride in the dirt on the side of the road to reach local destinations within the ECV. The second group are often residents of nearby communities like La Quinta and Palm Desert, who ride through the ECV for recreation, most often in pairs or groups. These bicyclists are usually more comfortable riding in traffic, and thus are usually seen riding in the roadway alongside automobiles.

Bicycle and Pedestrian Counts

Riverside County does not currently have a bicycle and pedestrian count program in place. According to data from the 2015 American Community Survey ("ACS"), no residents responded that they bicycle to work. Counts taken in the afternoon in March 2018 at the intersection of Harrison Street and 66th Avenue found a peak hour count of 2 cyclists at the intersection. While this describes the current number, it is likely this significantly under represents the demand for bicycling activity given that there is currently no dedicated bicycle facilities in the area.

The SunBus stop at Avenue 66 and Fillmore Street

The number of pedestrians can be estimated using data from the 2015 ACS on commuter travel. This percentage likely underestimates the actual number of people walking, even after the transit commute share is taken into account, as many people may walk for non-commute trips. Additionally, the area lacks infrastructure for walking and biking, like sidewalks and bike lanes/paths, which this plan will address. The lack of comfortable facilities can be a barrier for people who walk and bike or would otherwise utilize walking and biking facilities more regularly and in greater numbers. Using the walking and transit commute mode share 2015 ACS 5-year estimates, 2.6 percent of residents walk for at least a portion of their journey to work. Counts taken in the afternoon in March 2018 at the intersection of Harrison Street and 66th Avenue between the hours of 3 and 5 pm found a peak hour count of 11 pedestrians at the intersection. Many residents noted that they walk through fields or vacant lots rather than along the roads because of roadside safety concerns, and therefore the counts may not reflect the full demand for pedestrian or bicycle facilities.

While data is still insufficient to draw conclusions, more ongoing counts should take place to understand active transportation behavior in the ECV and support the expansion of facilities moving forward.

Public Transit and School Buses

The Coachella Valley is served by SunLine Transit Agency, which provides local fixed-route bus (SunBus), dial-a-ride paratransit (SunDial), and vanpool commuter (SunVan) services. SunLine's service area encompasses 1,120 square miles of the Coachella Valley. One SunBus line—Line 91—currently serves residents within the communities of Thermal and Oasis. For those that use the SunBus transit system, 84% are transit dependent and 73% use the bus four times a week or more.[7] Through a passenger survey conducted in November 2014, SunLine noted that approximately 76% of riders have a household income below $25,000. Work is the primary transit trip purpose for 35% of respondents, with 16% of respondents using the SunBus for shopping, and 14% for school.[8]

On average, Line 91 runs once an hour between 9 am and 6 pm.[9] Some of these stops have shelters installed, and in one location residents built a bench for those waiting for the bus; however, the majority of stops are marked only by a simple pole and sign. Per SunLine policy, shelters cannot be built in areas that do not already have existing sidewalks because the structures need to have a concrete pad to anchor to for structural reasons. These shade structures can be vital during the summer months, when temperatures regularly reach over 100 degrees Fahrenheit.[10]

Table 1 illustrates SunLine's current performance for Lines 91 and 95, which respectively serve the

7 SunBus 2014 Rider Survey, via SunLine Transit Agency Short Range Transit Plan FY 2017-2018.

8 SunBus 2014 Rider Survey, via SunLine Transit Agency Short Range Transit Plan FY 2017-2018.

9 www.sunline.org/transit_routes/route/line91

10 Equity in Rural Transportation Policy Brief, via Women's Policy Institute - County Rural Transportation Team.

LINE	PASSENGER COUNTS	PASSENGERS PER REVENUE HOUR (PPRH)	COST PER PASSENGER	PASSENGER REVENUE PER HOUR	FAREBOX RECOVERY RATIO
91	198,391	12.6	$12.45	$10.01	9.54%
95	36,295	7.0	$4.16	$29.45	28.11%
SunDial	164,025	2.4	$33.42	$75.39	17.12%

Table 1. Analysis of SunLine Performance Statistics, FY 2015-2016 (via SunLine Transit Agency Short Range Transit Plan FY 2017-2018)

communities of Thermal and Oasis, and Mecca and North Shore. This data shows that low ridership ultimately leads to unsustainable farebox recovery ratios (the fraction of operating expenses that are met by the fares paid by passengers) under current conditions.

SunLine's SunDial paratransit service offers curb-to-curb service to seniors and persons with disabilities, and offers next-day complementary demand-response service to all Coachella Valley residents. SunDial provides service 363 days a year during the same hours as the fixed-route network.[11] SunLine is also anticipating an expansion of their on-demand options through a service called TransLoc, which will enable the agency to launch a pilot program specifically for areas of low density where traditional transit applications have not been as successful.

Coachella Valley Unified School District (CVUSD) currently runs 100 buses along 31 routes within the Coachella Valley, servicing between 9,000 and 11,000 students daily. CVUSD has had two main challenges in servicing the school-age populations of Thermal and Oasis:

- Low population density and large distances between mobile home parks make adequate bus servicing difficult
- Lack of sidewalks means that students living close enough to walk to school are not able to do so in a safe manner, resulting in the need for more school bus services

Additional pedestrian and bicycle facilities throughout these two communities would help to alleviate some of the demand on these bus routes.

Residents have self-initiated ways to overcome some of these challenges. For example, networks of informal ridesharing locally known as "raites" provide additional transportation options by creating informal carpooling networks to and from agricultural fields.

Vehicular Roadways

Automobile travel and agricultural goods movement are the most prevalent means of transportation within the ECV, and the current transportation infrastructure is built to prioritize that reality. Posted speed limits are at least 45 MPH along major roads with traffic signals. Large vehicles used for agricultural work or transporting foodstuffs are common on these streets. With the exception of downtown Thermal and portions of Harrison Street, most intersections are unsignalized.

Residents and local groups expressed concern that collisions may be underreported due to issues on both the institutional and community sides: (1) slow police and highway patrol response times in the ECV, and (2) community hesitance to report crashes given the large numbers of immigrants in the community. According to SWITRS data between 2010-2014, approximately 4 collisions occurred per 1,000 person population in these two communities. A heat map of collision locations is provided in Figure 8.

11 SunLine Transit Agency Short Range Transit Plan FY 2017-2018.

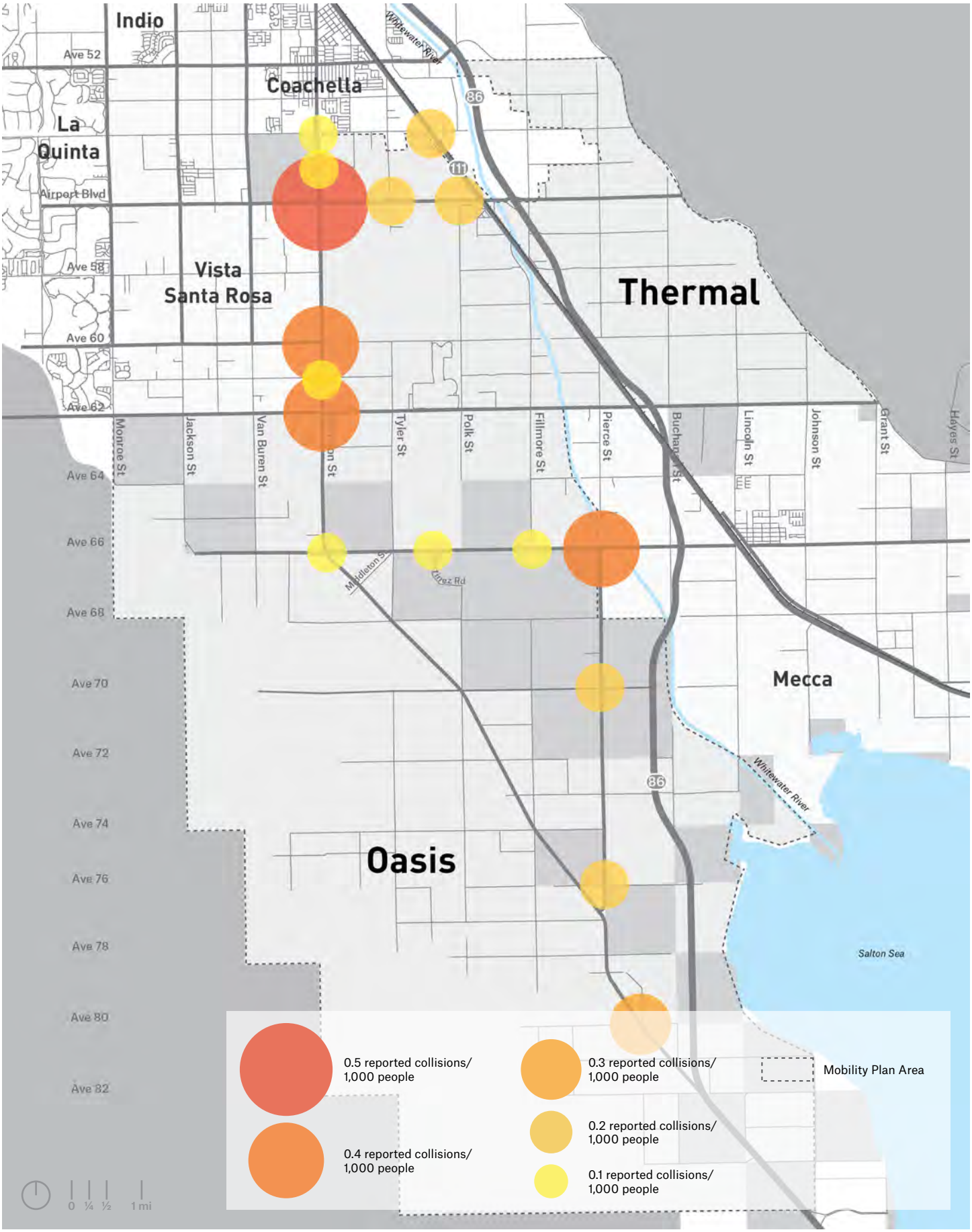


Figure 8. Reported Collision Heat Map

Environmental Conditions

CalEnviroScreen 3.0

CalEnviroScreen is a mapping tool that helps identify California communities that are most affected by many sources of pollution, and where people are often especially vulnerable to pollution's effects. CalEnviroScreen uses environmental, health, and socioeconomic information to produce scores for every census tract in the state. An area with a high score is one that experiences a much higher pollution burden than areas with low scores.[12]

The census tract containing the main part of Thermal scores in the 70th percentile on CalEnviroScreen, while the census tract containing the southern portion of Thermal and the majority of Oasis scores in the 72nd percentile (shown in Figure 9). The adjacent census tract that encompasses Mecca and North Shore scores in the 84th percentile.

Statewide programs, including those under SB 535 (2012) and AB 1550 (2016), that use CalEnviroScreen to determine whether communities qualify as DACs require communities to score in the top 25%. Thermal and Oasis fall just outside of this cutoff, though other parts of the ECV—Mecca, North Shore, and parts of the cities of Indio and Coachella—do qualify. While residents of Thermal and Oasis still face a significant environmental challenges, such as high dust levels, pollution from agricultural pesticides, and intense heat, their rural nature and less dense population results in a lower CalEnviroScreen score.

The Salton Sea

The Salton Sea, though not directly an influence on transportation, factors heavily into the environmental conditions of Thermal and Oasis. Declining water flows and rising temperatures are causing the Sea to shrink, exposing large swaths of playa (dry lakebed) and increasing the amount of dust emissions in the region. In the next 15 years, it is anticipated that the Sea's surface will drop by 20 feet, the volume will decrease by 60%, and the salinity will triple.[13] Residents within Thermal and Oasis face disproportionate environmental risk because of this issue, particularly through their exposure to harmful dust particles. The ECV has rates of pediatric asthma over 20%, in comparison to the national average of 8%.[14] With the quickening of the shrinking of the Sea, these rates are anticipated to increase.

12 https://oehha.ca.gov/calenviroscreen/report/calenviroscreen-30

13 Cohen, Michael J. (2014) *Hazard's Toll.*

14 Marshall, John R. "Why Emergency Physicians Should Care About the Salton Sea." Western Journal of Emergency Medicine: Integrating Emergency Care with Population Health, 21 Sept. 2017.

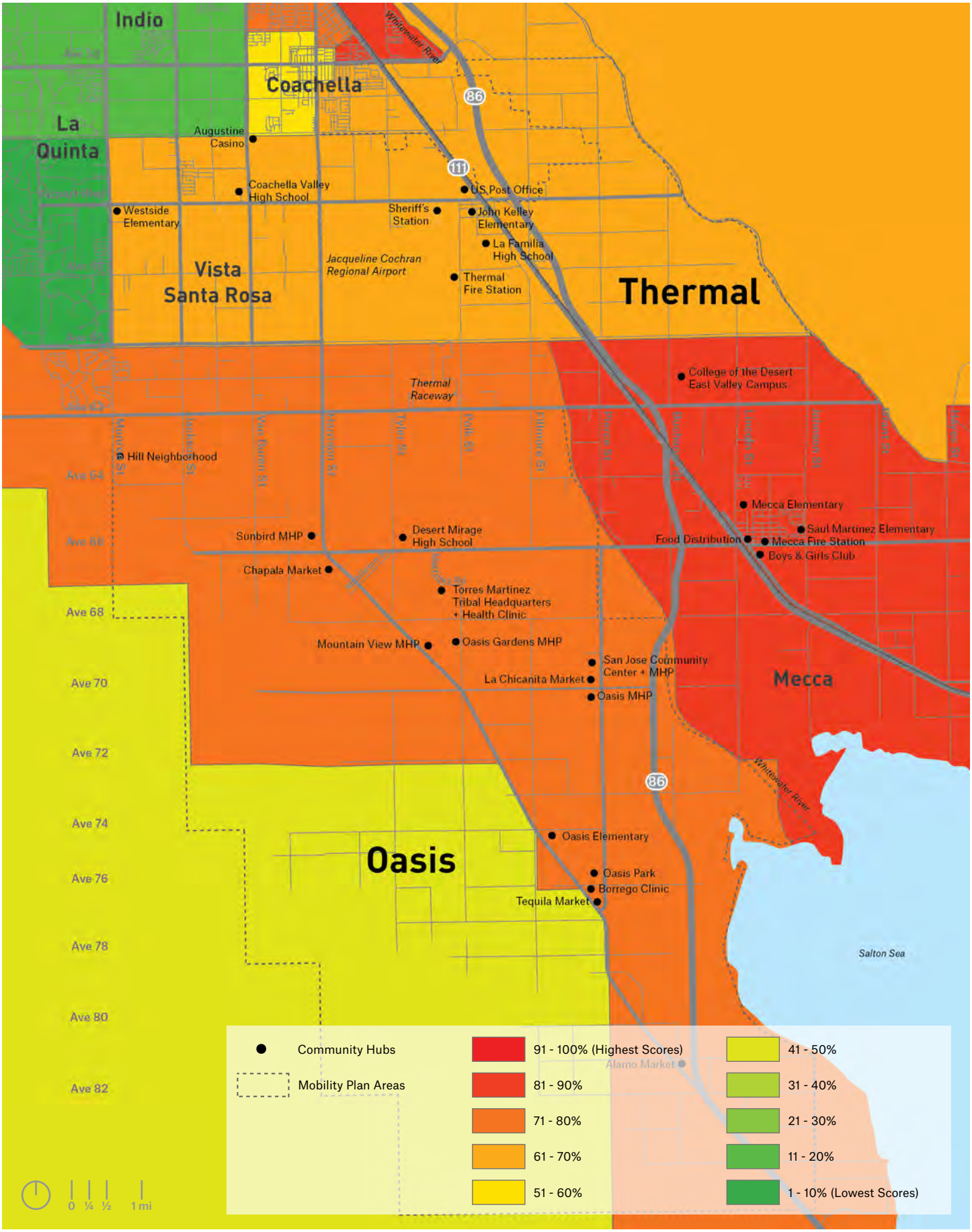
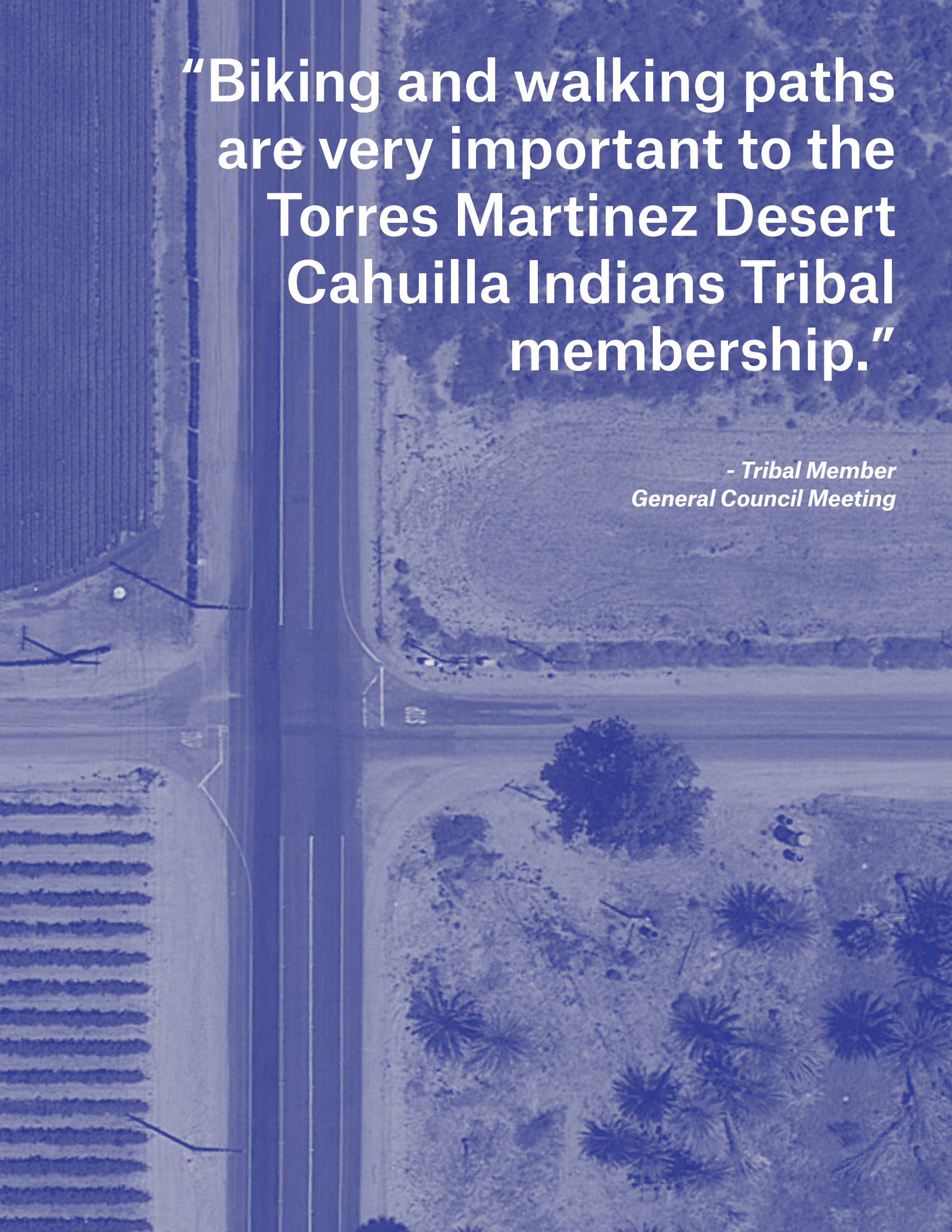


Figure 9. CalEnviroScreen 3.0 Percentile Scores by Census Tract
Source: OEHHA



“Biking and walking paths are very important to the Torres Martinez Desert Cahuilla Indians Tribal membership.”

- Tribal Member
General Council Meeting

III. Policy and Planning Context

Local Plans

Local plans and programs relating to mobility and active transportation in the ECV were reviewed to ensure consistency of the Neighborhood Mobility Plan for the Communities of Thermal and Oasis with existing policies. Relevant plans and policies prepared by local agencies with immediate jurisdiction over this area are described in this chapter.

Riverside County

Riverside County's General Plan, especially:

- Eastern Coachella Valley Area Plan
- Circulation Element
- Land Use Element
- Housing Element
- Multipurpose Open Space Element

Riverside County Integrated Project (RCIP) Vision for 2020, as adopted in 1998, guides the General Plan (updated in 2015). In part, it envisions Riverside County as having:

- A transportation system that keeps pace with growth and new demands for mobility, including for varied forms of transit, and that is also designed with a high regard for the environment
- A range of choices in communities and neighborhoods, from sophisticated urban villages to quality suburban neighborhoods to spacious rural enclaves, all centered around high quality schools and programs
- Thriving agriculture that continues to play an important part in the County's economy

More specific to transportation, the Circulation Element further intends, among other things, to "provide a plan to achieve a balanced, multimodal transportation network that meets the needs of all users of the streets, roads, and highways for safe and convenient travel in a manner that is suitable to the rural, suburban, or urban context of the General Plan."

To reach the RCIP Vision, particularly to work towards multimodal transportation and to encourage compact development, the ECV Area Plan:

- Seeks to provide numerous alternatives to the automobile, such as transit, pedestrian and equestrian systems, and bicycle facilities so that residents can access the region by a number of transportation options
- Designates community development land uses in areas adjacent to the existing urban fabric, leaving agriculture and open space uses on the periphery
- Identifies and designates additional lands with the potential to accommodate farmworker housing for residential uses

For the ECV, the Circulation Element and Area Plan propose the future development of a network on bicycle and multi-use trails in tandem with development.

Overall, this Mobility Plan is consistent with the General Plan's stated goals, and its adoption will work toward achieving the RCIP Vision and making Thermal and Oasis more connected and accessible to the region.

Find the General Plan at http://planning.rctlma.org/ZoningInformation/GeneralPlan.aspx

Thermal Design Guidelines (2009). While no design guidelines currently exist for Oasis, the Thermal Design Guidelines provide recommendations for the design of architecture and community spaces, along with sidewalks, trails, and pathways. Chapter 7 proposes alternative designs for active transportation facilities.

Find Thermal's design guidelines at http://planning.rctlma.org/DevelopmentProcess/DesignGuidelines.aspx

Upcoming developments, as per consultation with the Riverside County Planning Department's current planning staff. Relatively little development

is upcoming in Thermal and Oasis in the near term—mostly a few polanco mobile home parks (MHPs) and some Conditional Use Permits (CUPs). The College of the Desert Mecca / Thermal Campus was also recently built in the southeast Thermal, at Buchanan Street between Avenues 60 and 62. This is an important asset for the ECV communities and its students.

In addition, the General Plan designates a Thermal Town Center and an Oasis Town Center in each community respectively. Each is composed of Mixed Use Area neighborhoods (MUA) and Highest Density Residential Development areas (HHDR), as designated by the County's Land Use and Housing Elements, that are expected to house significant populations of new residents in the long term should they come to fruition. Similarly, there are four Specific Plans (SP) approved by the County for Thermal and Oasis:

- SP 303—Kohl Ranch: adopted 1999
- SP 362—Panorama: adopted 2009
- SP 369—Thermal 551: adopted 2010
- SP 375—Travertine Point: adopted 2012

SPs 303, 362, and 369 are located within Thermal, while SP 375 is located in the southern end of Oasis. All four Specific Plans are for master planned communities with various mixes of residential, commercial, and recreational uses.

Find Riverside County's Specific Plans at http://planning.rctlma.org/SpecificPlans/ApprovedSpecificPlansDocuments.aspx

Upcoming transportation infrastructure improvements, as per Riverside County Transportation Improvement Program (TIP) and the Riverside County Projects Portal.

Find the Riverside County TIP at http://rctlma.org/trans/Project-Information/TIP/Transportation-Improvement-Document

Find the Riverside County Projects portal at http://rcprojects.org/

Riverside University Health System-Public Health's **Safe Routes to Schools (SRTS) Program** for the ECV was recently funded via an ATP Cycle 3 non-infrastructure grant. The program aims to address barriers and difficulties for children walking to schools primarily via encouragement and education. The program will work with Active Transportation Ambassadors (ATA) who will earn certificates and become community role models for active transportation. Other components of the program include:

- Pedestrian and bicycle instructor training
- Pedestrian and bicycle safety rodeos
- Promotion of SCAG's "Go Human" campaign
- Implementing pedestrian and bike safety campaigns on school campuses
- International Walk to School Day
- International Bike to School Day
- Frequent Walker Program and Bike Trains
- Active transportation meetings
- Walkability workshops and walk audits
- Partnership with California Highway Patrol
- Monitoring and evaluation via pre- and post-surveys

The SRTS program for the ECV is currently funded to run from July 2018 to July 2020.

Find information on Public Health's SRTS programs at http://www.rivcoips.org/Safe-Routes-to-School/About-SRTS

SunLine Transit Agency

SunLine's **Short Range Transit Plan (SRTP)**, updated annually, is intended to serve the following purposes:

1. Identify the transit services and capital improvements required to meet SunLine's transit needs over a three year period and the proposed sources of funding to carry out the plan.
2. Serve as a management tool to guide activities over the next year.
3. Provide justification for operating and capital assistance for grant applications to be submitted to state and federal funding agencies.

Find SunLine's FY 2017-18 SRTP at https://www.sunline.org/planning-department

Torres Martinez Desert Cahuilla Tribe

The Torres Martinez Tribe shared their current **Land Use Map** with the County for the purposes of this plan, as shown in Chapter 2. The Tribe is working toward expanding their long-range planning and will soon begin a master planning process.

The Torres Martinez Tribe also shared a **Tribal Transportation Safety Assessment (T2SA)** (2016) conducted with assistance from UC Berkeley's Institute for Transportation Studies with the County. This Plan took the findings of the T2SA into account in assessing the region's mobility needs and came to many of the same conclusions, particularly highlighting the need for improvements at the intersection of Avenue 70, Polk Street, and Harrison Street.

Regional Plans

Other relevant plans prepared by planning agencies that also affect the Eastern Coachella Valley region include the following:

Coachella Valley Association of Governments (CVAG)

CVAG's **Active Transportation Plan (ATP)** (2015) compiles active transportation plans from the various jurisdictions and governments within the Coachella Valley to create a regional ATP and coordinate local and regional efforts. For the unincorporated ECV, CVAG's ATP drew from the bicycle and trail planning then existing from Riverside County. The improvements proposed by CVAG are concentrated in the western valley, outside of this Plan's focus area.

The **Coachella Valley Link (CV Link) Master Plan** (2016) lays out a vision to connect the Coachella Valley via a 50-mile multi-purpose recreational trail along the Whitewater River. The core alignment of the CV Link reaches the northern edge of Thermal at Airport Boulevard, with "future extensions" to the Salton Sea and Mecca-North Shore planned to reach into the ECV. Additionally, "community connectors" are planned from the edge of the core alignment into the Thermal Town Center, the College of the Desert's East Valley Campus, and the Salton Sea State Park. The improvements recommended in this Plan would help connect downtown Thermal to the CV Link, as well as the future extensions at Avenue 66 and Pierce Street, enhancing connectivity throughout the region and to the Salton Sea.

Finally, CVAG's **Transportation Project Prioritization Study (TPPS)** (2016), in combination with the ATP and CV Link Master Plan, serves as the Regional Transportation Plan (RTP) for the Coachella Valley. It identifies and prioritizes transportation projects in the region, including some regional active transportation projects, and feeds into SCAG's RTP. Within the Eastern Coachella Valley, the TPPS lists projects such as the East Valley Community Connectors for the CV Link, bike lanes and routes on Grapefruit Boulevard, Airport Boulevard, Harrison Street, Pierce Street, Polk Street, Monroe Street, and Jackson Street. Almost all of these projects are concentrated in the portions of Thermal and Oasis near the CV Link or bordering incorporated cities in the Coachella Valley, particularly La Quinta, Indio, and Coachella.

Throughout all three of these documents, CVAG identifies whether corridors and bikeways are of "regional significance", meaning those that are identified in the TPPS, or that meet two or more of the following criteria:

- Traverse two or more jurisdictions
- Connect to a SunLine transit route stop
- Connect key destinations such as commercial centers, colleges, high-density residential development, or civic centers
- Tie directly into the CV Link or its planned extensions

Some regionally significant corridors, such as Harrison Street, can be found within the ECV, but most of the ECV's corridors are not considered regionally significant under CVAG's plans.

Find all of CVAG's plans at http://www.cvag.org

Southern California Association of Governments (SCAG)

SCAG's **Regional Transportation Plan / Sustainable Communities Strategy (RTP/SCS)**, is the long-range transportation plan that provides a vision for major transportation investments in the Southern California region. In addition, the SCS portion is a newly required

element that integrates land use and transportation strategies to achieve emissions reduction targets.

Find the RTP/SCS at http://rtpscs.scag.ca.gov/

SCAG's **Regional Housing Needs Assessment (RHNA)** mandated under state housing laws, quantifies the need for housing within each of SCAG's jurisdictions. Riverside County uses the RHNA for land use planning in deciding how and where to allocate future housing needs and growth.

Find the RHNA at http://rtpscs.scag.ca.gov/Pages/Regional-Housing-Needs-Assessment.aspx

Conclusions

Overall, while there are a variety of local and regional plans in existence, most cover the ECV only minimally when it comes to matters of multimodal and active transportation. This Plan is the first by Riverside County to address active transportation in unincorporated areas of the County.

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“Hay personas que agarran el bus que andan en sillas de ruedas. Ellos son personas enfermas—lo necesitan por favor.”

“There are people who take the bus that are in wheelchairs. They are sick people—they need [the bus] please.”

- Thermal Resident
November Workshop

IV. Stakeholder Engagement

Overview

Obtaining direct input from the residents of Thermal and Oasis was a critical part of the development of the Mobility Plan. It was essential that residents not only provided feedback on the decisions and strategies under consideration, but were true partners in the development of the Plan from the beginning of the process to ensure the Plan meets their needs, uses their knowledge, and has impact. Residents identified priority corridors and intersections that need improvement, suggested what those improvements could be, and decided how improvements should be prioritized. The County requested input on pedestrian, bicycle, vehicular traffic, public transit, and rideshare opportunities from these residents.

Because of the current lack of infrastructure in these communities, a transparent process was necessary to build trust with community members. Input and exchange from members of the public and agency groups were facilitated through participatory design workshops, meetings with key stakeholders, mobile research beacon deployments, an on-the-street design pop-up, and smaller one-on-one meetings. A summary of these events, the feedback and input collected, and the subsequent analysis is provided in this chapter.

Stakeholder Involvement

Members of the public, community-based organizations, and government entities were included in the engagement and outreach efforts of this plan. These three stakeholder groups helped provide a well-rounded assessment of needs from different perspectives, weighing community input evenly with that of agency stakeholders to create equitable solutions.

A number of community groups provided the foundation for the public engagement process; primarily Inland Congregations United for Change (ICUC), Leadership Counsel for Justice and Accountability (LCJA), and Lideres Campesinas. A local design and community development organization, Kounkuey Design Initiative (KDI) was also part of the team. These groups grounded the Plan in a multi-year history of public conversations, discussions, and input on mobility needs. Events, meetings and workshops were conducted primarily in Spanish to fully include monolingual residents and break down language barriers, and as a result over 50 residents were engaged and gave their input into the shaping of the Plan.

Stakeholders from multiple Riverside County Departments provided feedback and guidance on the feasibility of the Plan, and how it relates to other initiatives and plans underway within the County and region as described in Chapter 3.

Advisory Committee

An Advisory Committee for the Plan was formed and consulted throughout the project to schedule community design charrettes, discuss key issues, identify additional stakeholders, determine strategies to engage all segments of the community, and maximize charrette participation. The following organizations participated in this Advisory Group:

- Coachella Valley Association of Governments (CVAG)
- Coachella Valley Housing Coalition (CVHC)
- Coachella Valley Unified School District (CVUSD)
- Desert Recreation District (DRD)
- Office of Assembly Member Eduardo Garcia
- Riverside County Economic Development Agency (RCEDA)
- Riverside University Health System-Public Health (RUHS-PH)
- Riverside County Supervisor District 4
- Riverside County Transportation Commission (RCTC)
- SunLine Transit Agency

- Thermal Oasis Community Council
- Torres Martinez Band of Desert Cahuilla Indians

Three Advisory Committee meetings were held at different points in the plan development process. The first Advisory Committee meeting was held in September 2017 to give an overview of the Plan scope and collect existing datasets from the stakeholder team. These datasets were used to create a basemap and identify data gaps.

The second and third Advisory Committee meetings were held directly after the public workshops. These meetings served to inform the agencies of the outcomes and conclusions from the community workshops, helping to create a more transparent process and improve communications between residents and those in agency positions. These meetings also acted as brainstorming sessions for possible ways to leverage existing funding already received by the County, or to understand key points of coordination between the Plan and other initiatives underway in the area.

Engagement Events and Public Involvement

Engagement events were centered around two key topics:

- Identifying key community needs and transportation barriers
- Prioritizing infrastructure solutions and phasing of improvements

Residents and stakeholders from both communities were engaged in an intensive and highly participatory public process to assess and document conditions for all travel modes and users (youth, seniors, people with disabilities, residents, visitors, and businesses), identify shared values and concerns, and prioritize improvements.

Public design charrettes were central to the formulation of this community-based plan. Charrettes took place in Thermal and Oasis in November 2017, March 2018, and October 2018. The purpose of the charrettes was to work with residents to identify barriers to walking, bicycling, and transit throughout the communities, as well as to suggest solutions in the form of design and operational changes, development of public transit route and mode options, and prioritization of infrastructure and phasing.

First Round of Community Workshops

The first round of community workshops occurred in November, 2017. Over the course of four days, workshops were conducted in Oasis and Thermal respectively, as well as stakeholder meetings and mobile research beacon deployments. The aim of these workshops was to:

- Introduce residents to the goals, structure, and utility of a transportation plan
- Understand the larger-scale challenges that residents face when trying to move around the ECV
- Explain different traffic devices, improvement options, and other types of infrastructure
- Identify where new components of pedestrian, bicycle, public transit, and vehicular infrastructure should be placed and prioritized

The information gathered at this workshop was highly valuable, as it highlighted not only the issues to be addressed, but required residents to prioritize the type of infrastructure needed based on cost. The residents were split into groups, with each given a different mode of transportation (pedestrian, bicycle, public transit, and vehicular). Within each mode, four types of infrastructure with dollar amounts attached to them were specified as options. With a fixed budget, the residents were required to choose, mile for mile, the types of infrastructure they would like and where they should be located. This participatory budgeting exercise made the stakes real and understandable, giving the design team a more grounded and focused understanding of where key corridors were located and why they were important to community members.

New ways of ridesharing or vanpooling were also discussed at this meeting, and how these types of arrangements were already being informally utilized within the community.

Oasis Workshop, November 2017

Corridor prioritization and participatory budgeting activity

Example of improvement type for infrastructural budgeting exercise

Second Round of Community Workshops

The second round of community workshops took place in March 2018. Similar to those held in November, two community workshops were conducted over the course of four days in Thermal and Oasis, along with an on-street pop-up demonstration. The goals of these workshops were:

- Solicit input and feedback on the synthesized priorities maps that had been produced after the first round of workshops
- Confirm prioritized corridors and intersections
- Explain the potential timeline for project implementation
- Identify corridors or blocks that should be prioritized in the first round of phasing and/or funding

The approval and funding process was explained by walking residents through a typical timeline for project approval, funding, and execution. Though it can be a largely opaque and complicated framework, it is vital that community members understand how a plan goes from design to approval and implementation. Without this, unrealistic expectations are set within the community which leads to overall distrust and additional dissatisfaction. By helping residents understand what is meant by short, medium, and long term timelines, along with communally deciding what portions of the plan should be the first phase of focus, residents were able to more fully understand the practicalities of the implementation process.

Refining priority corridors at the second workshop in Thermal, March 2018

Discussing priorities at the second workshops in Thermal and Oasis, March 2018

Presenting the Draft Plan at the third workshop in Thermal, October 2018

Third Round of Community Workshops

The third round of community workshops took place in October 2018. This last round of workshops were held over the course of two days in Thermal and Oasis. The goals of these workshops were:

- Solicit comments and feedback directly from residents and local stakeholders on the Plan as part of the public review period
- Confirm prioritized corridors and intersections
- Confirm the suitability of proposed improvement typologies to users in the local context
- Revisit the potential timeline for project implementation and potential ways to organize
- Discuss ways to improve community engagement in future mobility planning efforts

The draft Plan was presented to residents, specifically detailing the proposed goals, improvements, and phasing. As in the second round of workshops, the expected process for programming and implementation of improvements was discussed in order to set realistic expectations and avoid sowing distrust with the community. The phasing was explained as what would be desired for the County to pursue when development or funding opportunities become available, but not a guarantee. Residents also had a discussion with local organizing partners present about how to organize to ensure as many beneficial improvements as possible are implemented.

For all workshops, all meetings were conducted in Spanish with English translation. Food and childcare were provided. All locations were accessible and chosen to maximize community turn-out.

Discussing ways to improve engagement at the third workshop in Thermal, October 2018

Mobile Research Beacon Deployments

Reaching a large number of diverse residents is important to the engagement process to gather broad and authentic input. Members of the Project Team went door to door prior to each set of workshops to help raise awareness about the mobility plan and why it was important, as well as to invite people to the public meetings. Locations and times were carefully planned to ensure residents would generally be available for these workshops. However, many agricultural workers in the ECV work six days a week with long hours, and their evening time is precious to them and their families. Therefore, in addition to workshops, the team took the approach of "meeting people where they are" through the deployment of a mobile research beacon.

This beacon is a cart that can be easily be moved between public gathering spaces to give people information on the project and gather resident input. For the purposes of these deployments, residents were asked to play a game in which they identified the different ways they move around the ECV currently, and how they would like to be able to get around in the future. The results of this activity are shown in Figure 10. At present, many residents rely on cars to go to work, school, or areas of recreation. However, when asked how they would imagine an ideal transportation scenario, it was clear that the appetite for multimodal transportation was strong.

Deployments occurred at a market in Oasis on a Friday, and on Sunday in Thermal at a market and a local church.

Mobile research beacon deployments at Chapala Market and a local church, November 2017

On-Street Pop-Up Demonstration

During the second round of workshops, the team undertook an on-the-street demonstration to help residents understand what types of bicycle infrastructure could be possible in their neighborhoods. Using a parking lot adjacent to a public park, a "mock" street was created using stencils, spray paint, and masking tape. One side of the "street" depicted a Class 1 bike lane, whereas the other side showed a Class 2 bike lane and a sidewalk. This allowed people to understand in a tangible way what the experience of walking or biking alongside a street may be in their own neighborhoods. Resident feedback largely favored the implementation of a shared pedestrian/bicycle Class 1 system, as many participants did not feel safe walking directly alongside the road without a vertical barrier to separate them from the high speed traffic.

Residents were also invited to give anecdotal information on collisions (described in Chapter 2) and safe routes to schools. In partnership with CalWalks, a "video voice" station was set up to interview and record residents that were more comfortable testifying to their experience verbally than in another form. Youth members led the interviews, and the resulting videos were screened at the last round of workshops.

Discussing improvement alternatives at the on-street pop-up demonstration in Oasis, March 2018

How do you move around the ECV currently?

Walk:	9.0%
Bike:	2.4%
Bus:	4.8%
Drive:	72.4%
Rideshare:	11.4%

Ideally, how would you like to move in the future?

Walk:	17.7%
Bike:	18.6%
Bus:	16.3%
Drive:	35.8%
Rideshare:	11.6%

Figure 10. Mobile Research Beacon Deployment Outcomes

Agency Coordination

As with any plan, coordination between governmental agencies is necessary, allowing for a fuller understanding of projects underway and potential opportunities to leverage infrastructure and funding to maximize planning efforts.

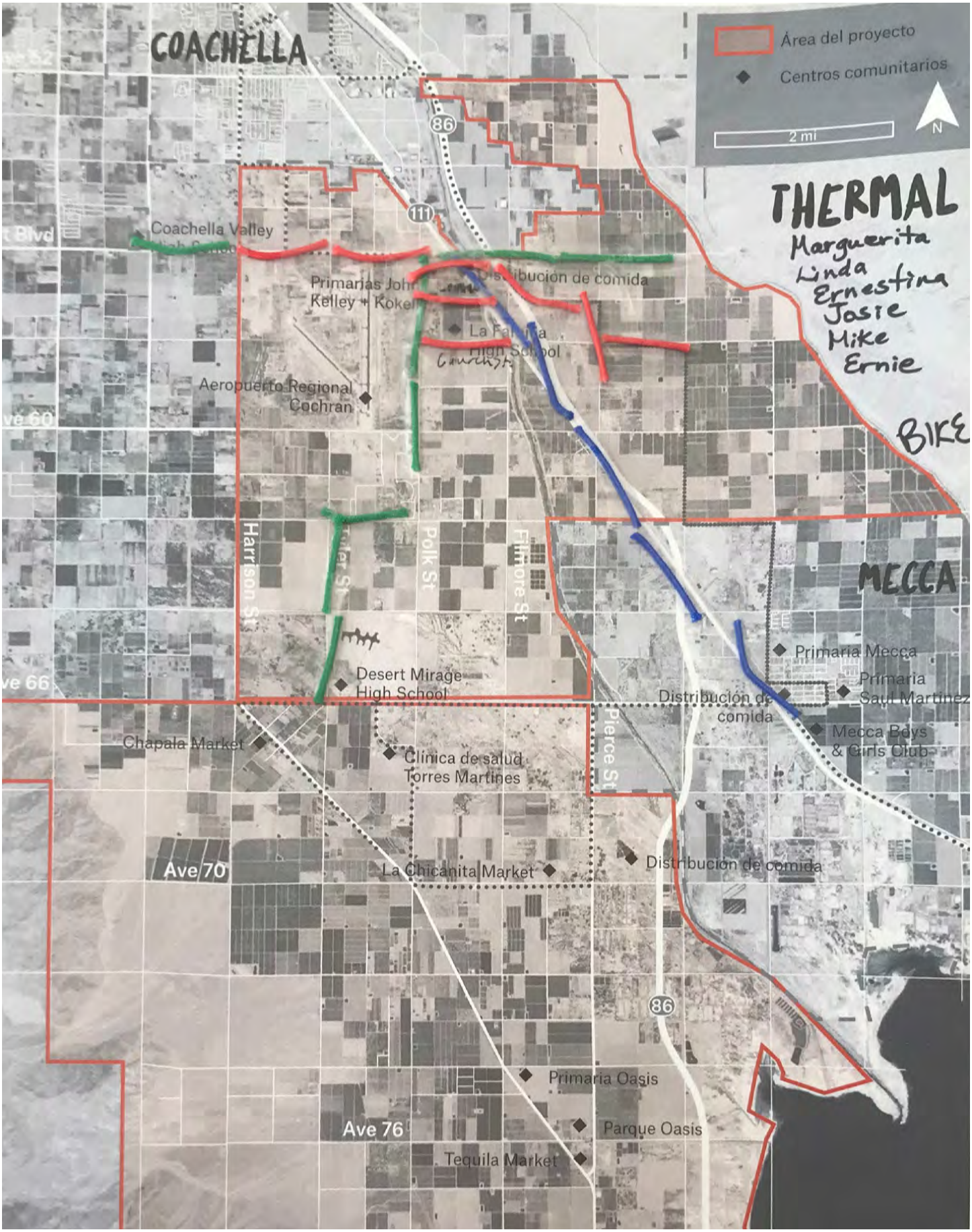
SunLine Transit Agency

SunLine Transit Agency provided great insight and help within this process. As explained in Chapter 2, SunLine faces low ridership numbers in the area even though the need is great. While this plan cannot provide specific recommendations for SunLine as they are a separate entity, the team felt it was important to discuss public transit with residents and share these thoughts and findings directly with the Transit Agency. SunLine has also been carrying out public workshops as part of their own internal review and planning process in these communities, and deepened our understanding of the challenges they face in implementation and community ridership expectations. In addition, an assessment of the bus routes and line configurations are underway, to be completed by 2019. The recommendations in Chapter 6 lay out a framework for potential public transit infrastructure improvements in Thermal and Oasis, including the placement of shade structures, increased service, more critical bus lines and bus stops, and larger regional transit connections.

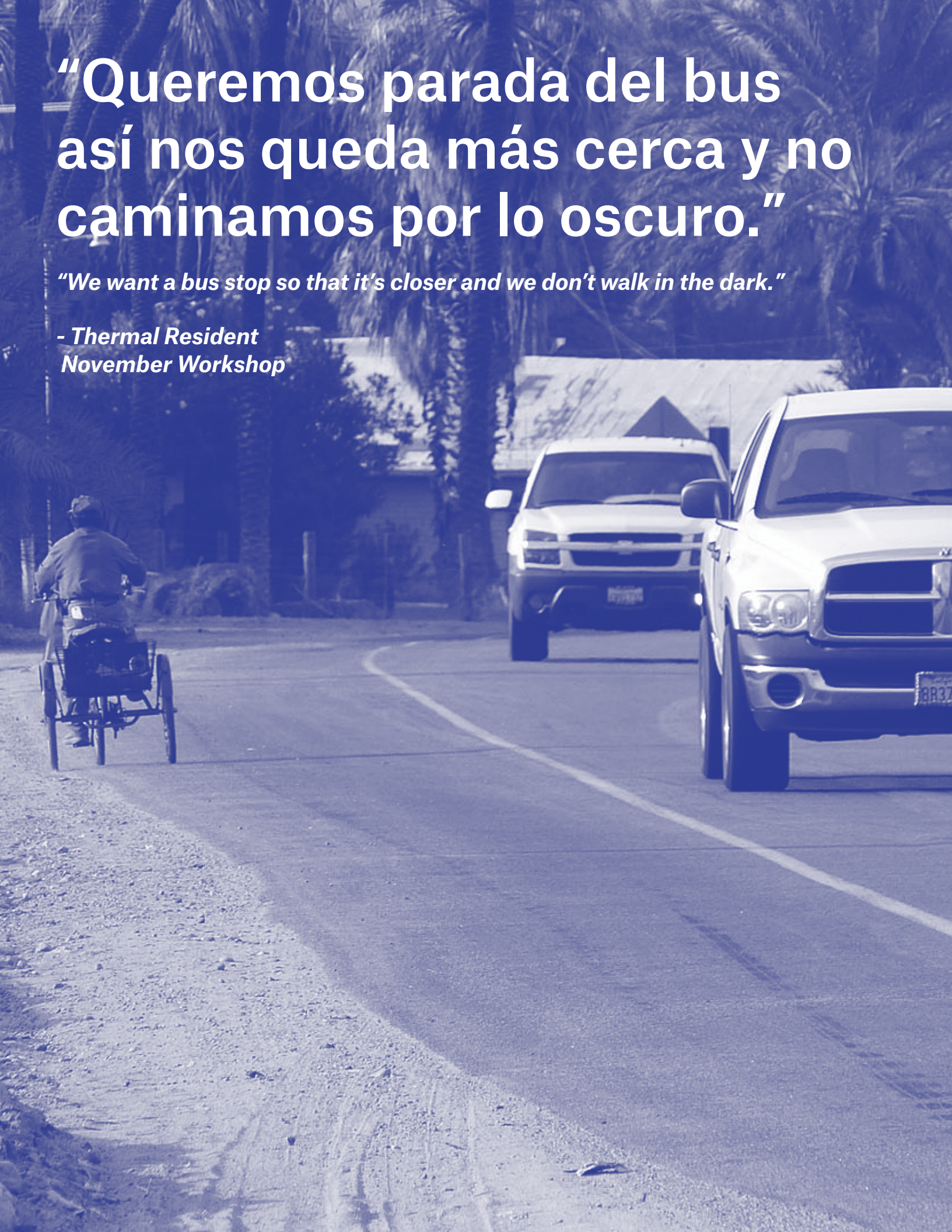
Torres Martinez Band of Desert Cahuilla Indians

Many of the approximately 5,500 members of the Torres Martinez Band of Desert Cahuilla Indians use the same community amenities as other residents within Thermal and Oasis, and have similar concerns about the current lack of infrastructure. Much of the land within Thermal and Oasis is either owned by the tribe, or is considered fee land. Fee land is land that has been sold by the tribe to another entity (private or public); however in many of these cases the road right of way remains under the jurisdiction of the Bureau of Indian Affairs (BIA). Because of the patchwork nature of the tribal land, close coordination when proposing potential infrastructure improvements with the Tribe was essential. In addition to meetings with the Planning and Maintenance Departments within the tribe, presentations were made to the Tribal Council and General Council to facilitate many of the same conversations that were held at the larger public workshops and ensure the Tribe's voice was heard. Within each meeting, the tribal members echoed what was said in the larger public meetings, and added information regarding housing developments on their land and connectivity issues within these areas.

Additional meetings were held with the Thermal Oasis Community Council, Riverside County Supervisor District 4, Coachella Valley Association of Governments (CVAG), Desert Recreation District (DRD), Coachella Valley Unified School District (CVUSD), Riverside County Economic Development Association (RCEDA), and Riverside University Health System-Public Health (RUHS-PH).



Example of a collaborative community-determined bicycle network from the workshop in Thermal, March 2018



“Queremos parada del bus así nos queda más cerca y no caminamos por lo oscuro.”

“We want a bus stop so that it’s closer and we don’t walk in the dark.”

- Thermal Resident
November Workshop

V. Neighborhood Mobility Needs Assessment

Overview

The first step toward assessing the neighborhood mobility needs in Thermal and Oasis was to examine the existing conditions of the region. The second step was to document and analyze all the challenges that residents had previously shared. The Project Team was conscious of previous engagement conducted by other community organizations regarding mobility issues, and wanted to acknowledge and make use of this past work so that the community was not approached as if the Plan were being developed from a blank slate. These needs are shown in Figure 11. The third step in assessing the community's mobility needs took the form of the community and stakeholder engagement outreach. Building off of this work as described in Chapters 2 and 4, this section details the mobility challenges that are currently impacting residents' quality of life and serves as a baseline for the goals and proposed improvements that follow in the remainder of this Plan.

Discussing known community needs with the Advisory Committee in September 2017

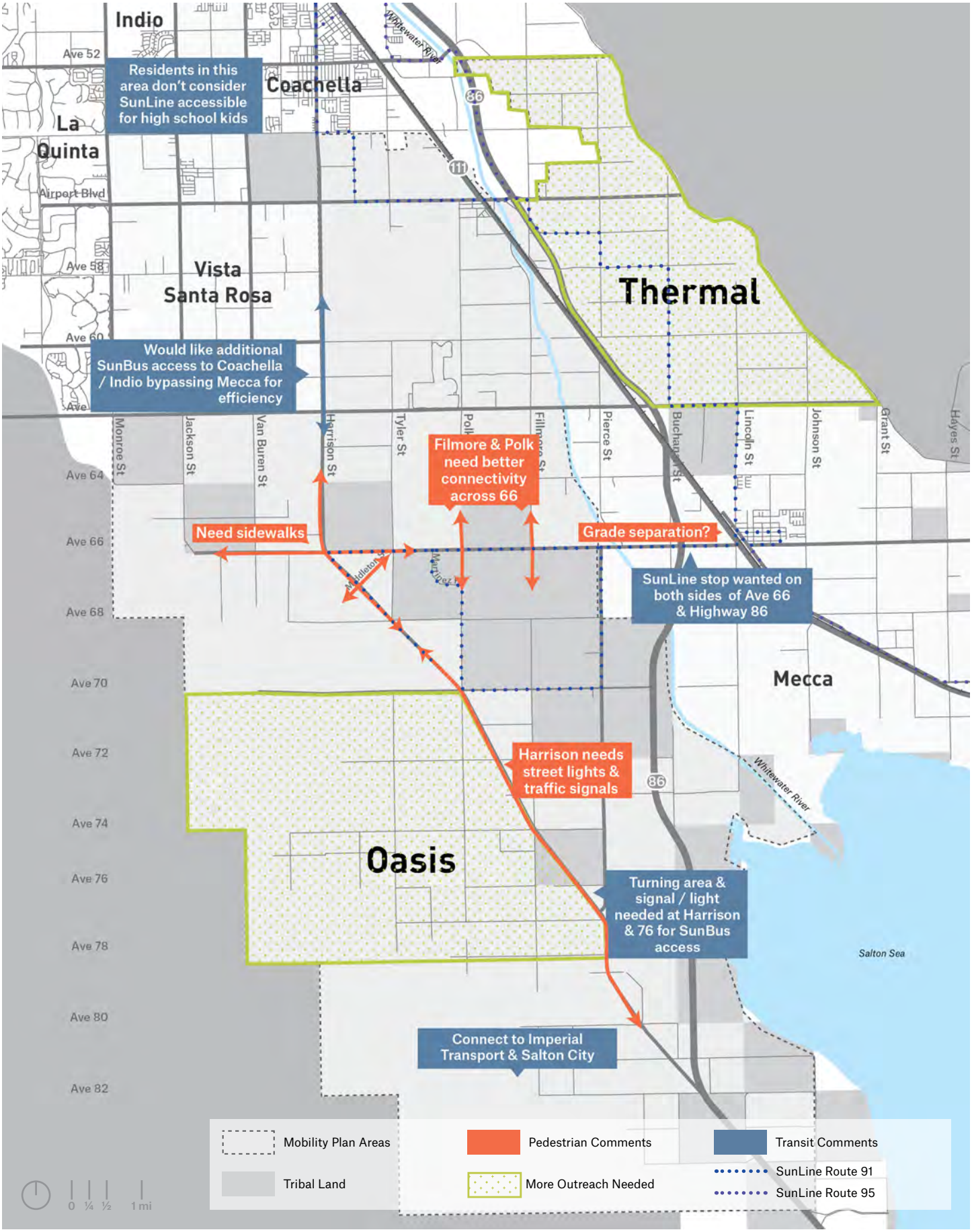


Figure 11. Community Needs Identified by Local Agencies, September 2017

Neighborhood Mobility Challenges

Identifying transportation challenges was one of the first tasks undertaken during the engagement process. Residents were presented with statements that identified large-scale mobility challenges, and asked to vote on those that they agreed with. The results of this exercise are shown in Figure 12 below.

These challenges broke down into four major categories:

- More transportation options that encourage multimodal use
- Improved safety, particularly for pedestrians and cyclists
- Prioritization of school connectivity
- Transportation options that promote social cohesion

There are multiple barriers to overcoming the above challenges, primarily the absence of infrastructure for travel other than by vehicle. Sidewalks, paved shoulders, and public street lighting encourage pedestrian activity both during the day and at night. Crosswalks do not exist, or are not easily visible.

When asked what areas of Thermal and Oasis were challenging to walk or bicycle in, residents answered that essentially all areas fit this description because of the lack of infrastructure to enable these activities. Main thoroughfares such as Harrison Avenue and Airport Boulevard were identified in particular because of the speed of cars along these streets.

Figure 13 and Figure 14 show the most recent plans from the two local stakeholders that are responsible for land use planning for Thermal and Oasis: Riverside County and the Torres Martinez Tribe. This is overlain with community hubs identified by the Project Team, the Advisory Group, and local residents, highlighting the locations of schools, churches, markets, clinics, and recreational areas such as parks. The local SunBus route (line 91) is also included. Figure 13 and Figure 14 show the primary regional destinations that residents need to travel to in Thermal and Oasis in order to access the amenities and resources that are necessary for a good quality of life. Currently these amenities or community centers are spread widely throughout

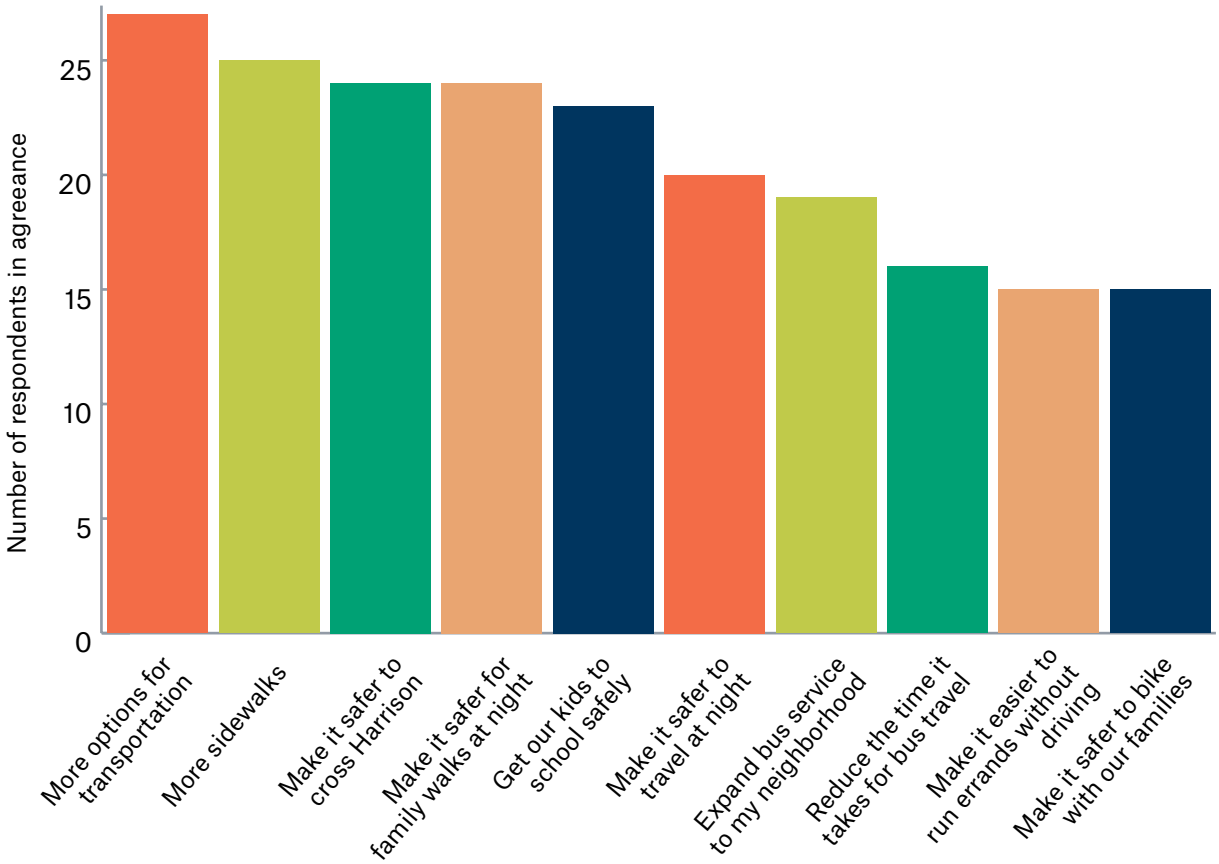


Figure 12. Results from Mobility Challenges Exercise, November, 2017

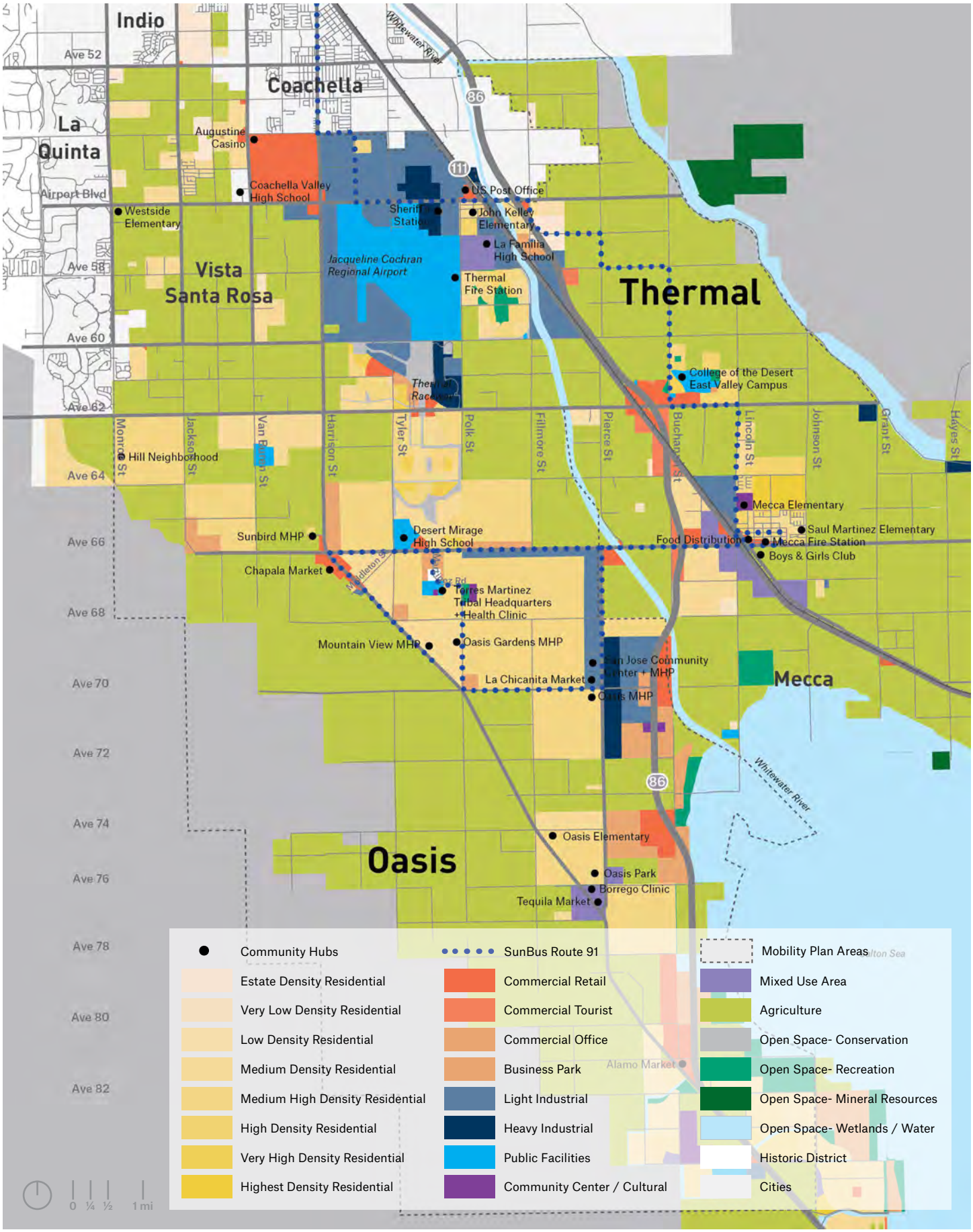


Figure 13. Regional Land Use Planning
Riverside County Land Use (2015), Torres Martinez Tribal Land Use (2008), Community Hubs

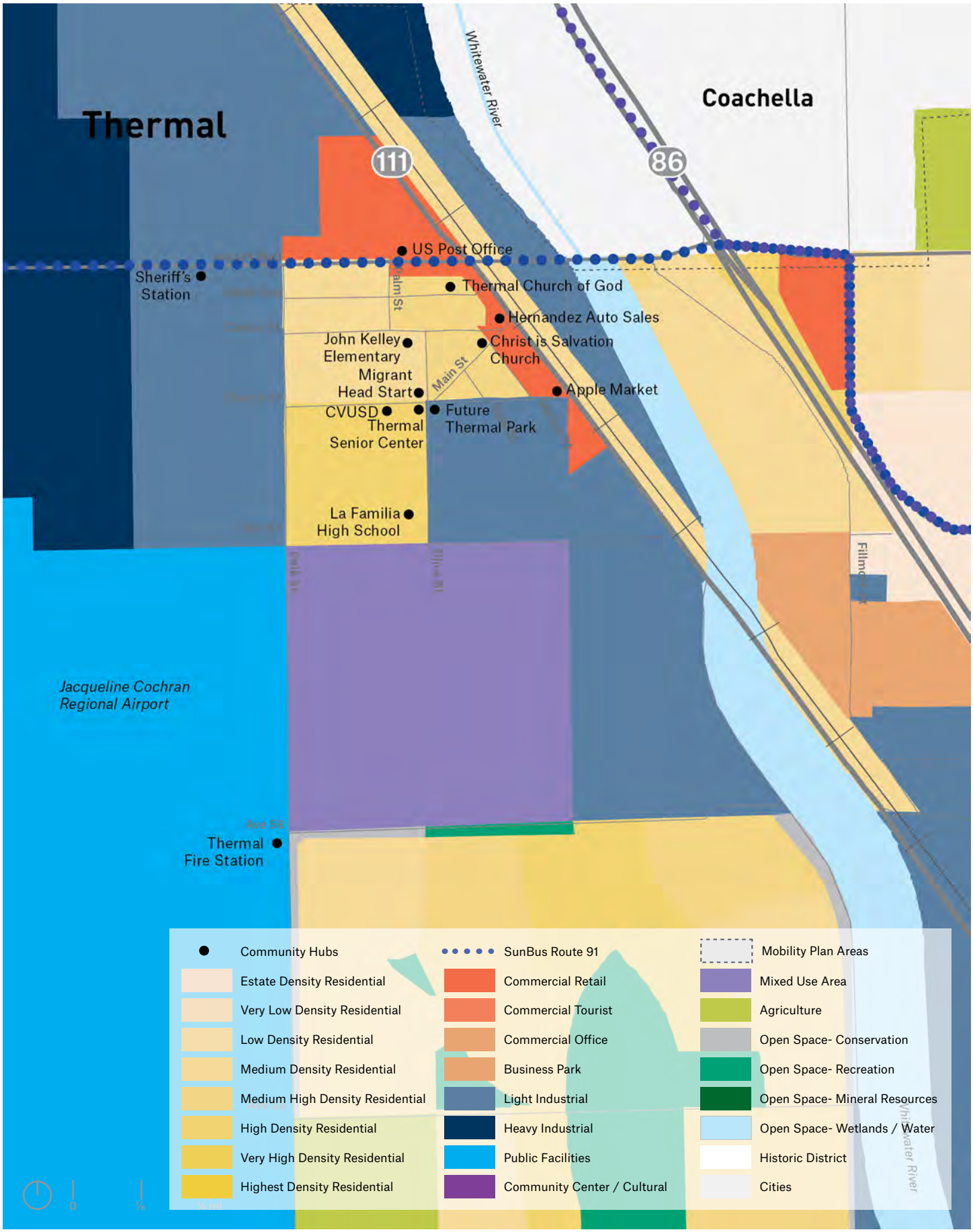


Figure 14. Regional Land Use Planning: Downtown Thermal Detail
Riverside County Land Use (2015), Torres Martinez Tribal Land Use (2008), Community Hubs

the neighborhoods, as there are few areas of dense population. This is a challenge to navigate with the current transportation system, as it is necessary to use a car to access these different nodes of activity and not all residents have the means to own a family vehicle.

Identified Mobility Needs

Local and Regional Travel Destinations

On a regional scale, residents want better connections to other communities in the Eastern Coachella Valley, including Mecca, North Shore, and the cities of Coachella and Indio in order to access public amenities and employment opportunities. Further regional connections are also desired, particularly for commuters, to nearby Western Coachella Valley cities such as La Quinta and Palm Desert where the College of the Desert campus and many jobs are located. Indeed, through their survey results SunLine found that approximately one-quarter of all bus trip users were traveling to Palm Desert, many of those being students at the College.[1]

Some residents expressed interest in potentially connecting south to Imperial County or even further to Calexico and Mexicali. While these regional connections were considered within the development of priorities and proposed projects within this plan, they will be explored in more depth through the Eastern Coachella Valley Regional Transportation Plan (anticipated to be completed in 2020). Multimodal connections and larger-scale connectivity frameworks between communities promote social cohesion in the region, and long-term resiliency and sustainable communities.

Major Areas for Improvements

Residents and stakeholder agencies alike stressed that multi-functional infrastructure in the ECV could raise the quality of life for residents, enable a more varied menu of transportation options, and improve environmental quality. This approach of community-based priorities, appropriate infrastructural responses, and sustainable modes of transportation helped to shape the opportunities identified in the region.

Layered onto this approach, residents identified improved safety, better connections to schools, and access to multimodal travel as driving factors within their vision for improvements. Residents were particularly focused on providing better school connections within Thermal and Oasis, especially to the school complex at Avenue 66 and Tyler containing Desert Mirage High School, Toro Canyon Middle School, and Las Palmitas Elementary School. Many children would like to walk to school from nearby housing along Harrison Street, Middleton Street, and Martinez Road. However, because of the lack of infrastructure and long distances, many take school buses, which is a burden on the CVUSD system.

1 Riverside County Transportation Commission (2015). Task 2: Existing and Future Transportation Conditions: Strategic Assessment.

Overall Community Mobility Priorities

Figure 15 and Figure 16 are a direct translation of what community members identified as their top improvement priorities during the first round of workshops in Thermal and Oasis. Despite their lack of technical engineering knowledge, community members served as experts, sharing lived experience and providing a far greater level of detail than could be gleaned through secondary research.

Each of the priority intersections or corridors shown in Figure 15 and Figure 16 are a result of the infrastructure budgeting and prioritization exercise. Resident prioritization from each of the Oasis and Thermal workshops independently matched one another, highlighting common needs within the region.

Main ideas from the workshops included:

- A connective "triangle" in Oasis that would provide connectivity between the new Oasis Park at Avenue 76 and Pierce Street, up to Avenue 66, and down Harrison Street. This would serve to link many of the more densely populated polancos with markets, parks, and other necessary amenities.
- North-South connections between the communities of Thermal and Oasis, with additional infrastructure in the downtown area of Thermal.

The Overall Mobility Priorities map is shown in Figure 17. This map expands upon the direct feedback from community input (Figure 15 and Figure 16) and adds existing conditions, existing policies and planning, best practices research, and stakeholder and agency guidance. Each of these sources enriched the prioritization process, allowing the priorities to emerge organically and clearly. These priorities are further broken down into individual modes and phasing in Chapters 7 and 8.

Overall mobility priorities were ranked through the community workshop process. Many of the intersections that were identified as needing improvement are along Harrison Street, as there are currently three traffic signals on the road between Avenue 62 and Avenue 76. Additional street lighting would help increase visibility of stop signs in this area. Corridors that are coded as first priority are main connector roads that support community amenities in the area such as schools, clinics, and commercial areas.

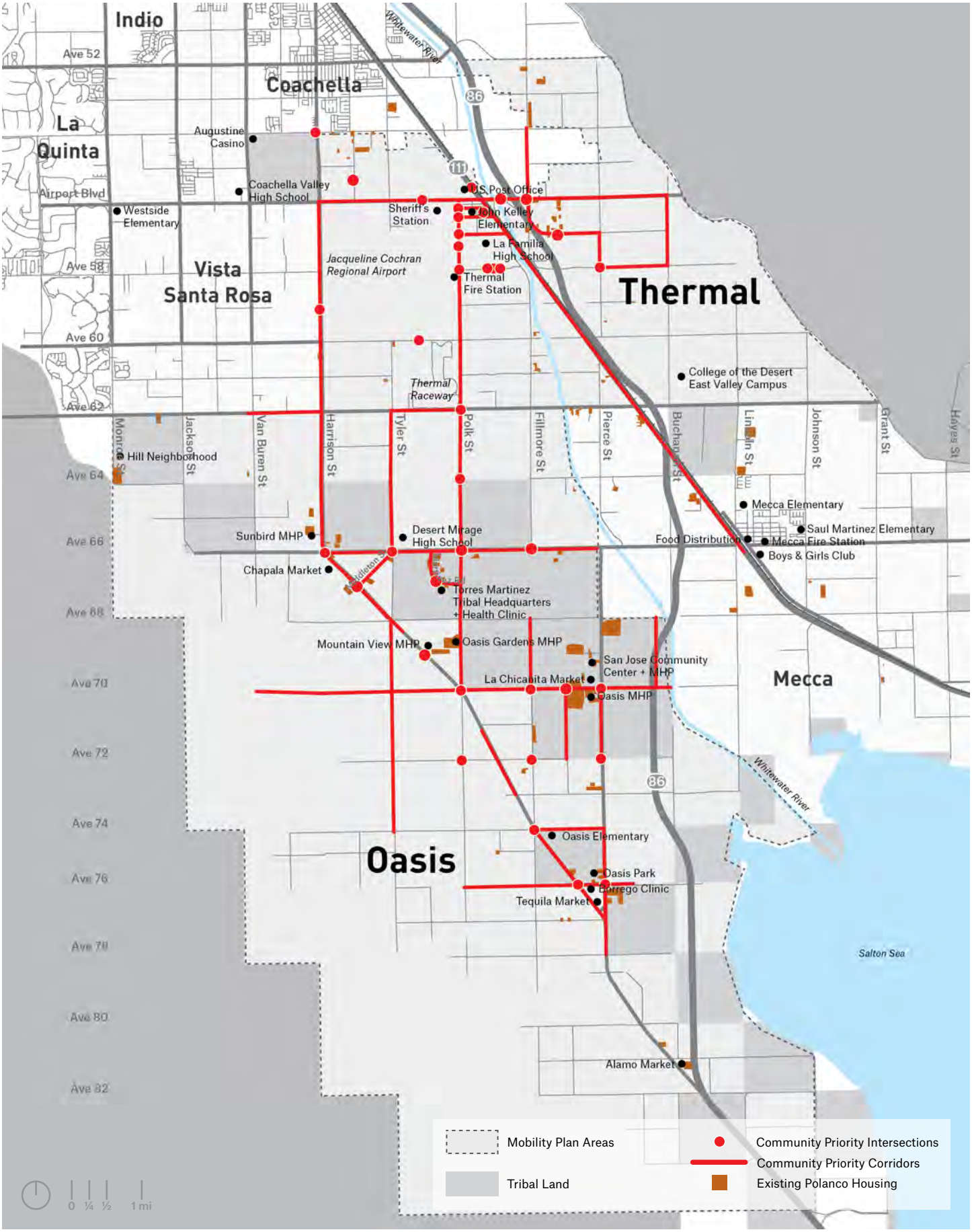


Figure 15. Priority Areas from Community Workshops

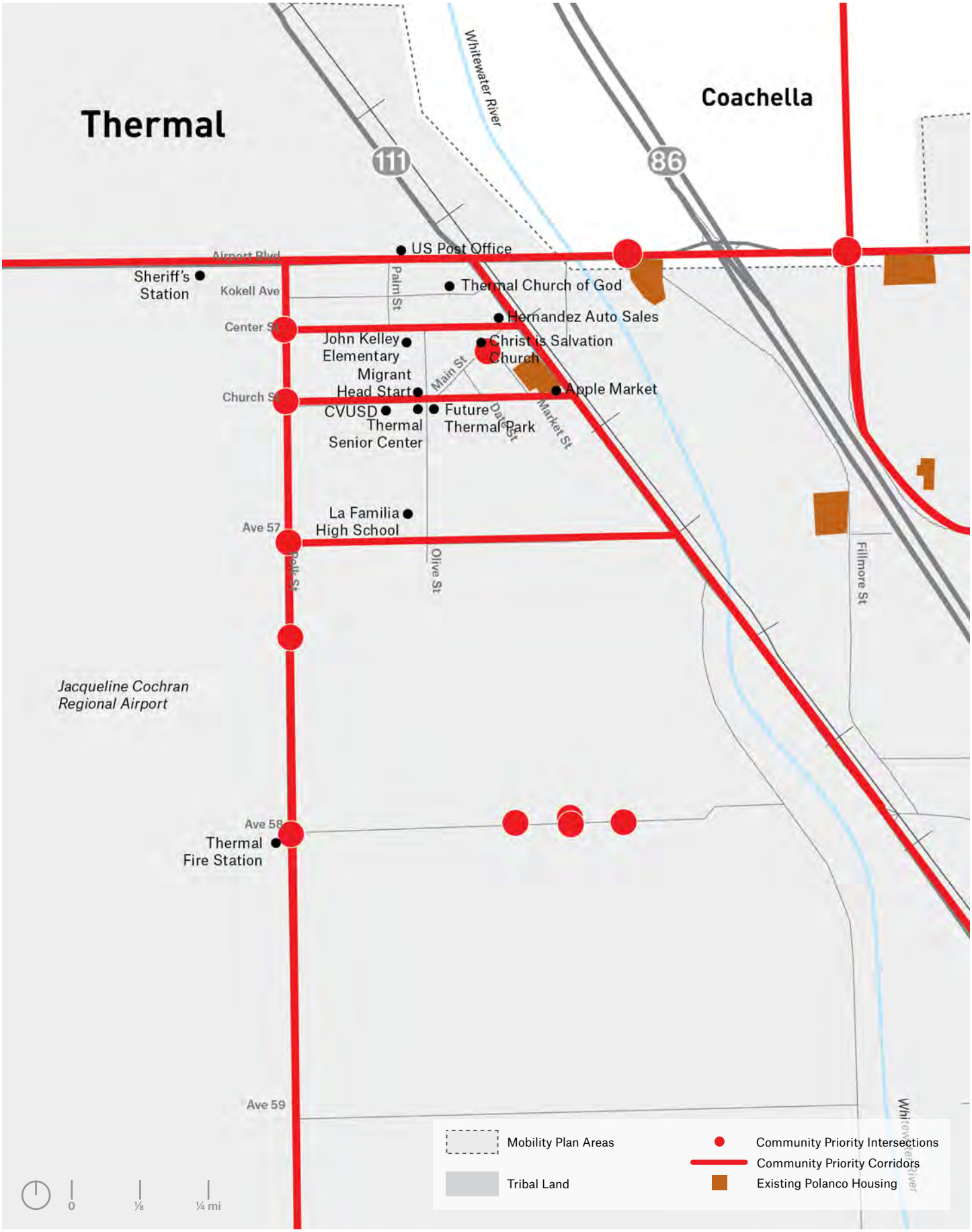


Figure 16. Priority Areas from Community Workshops: Downtown Thermal Detail

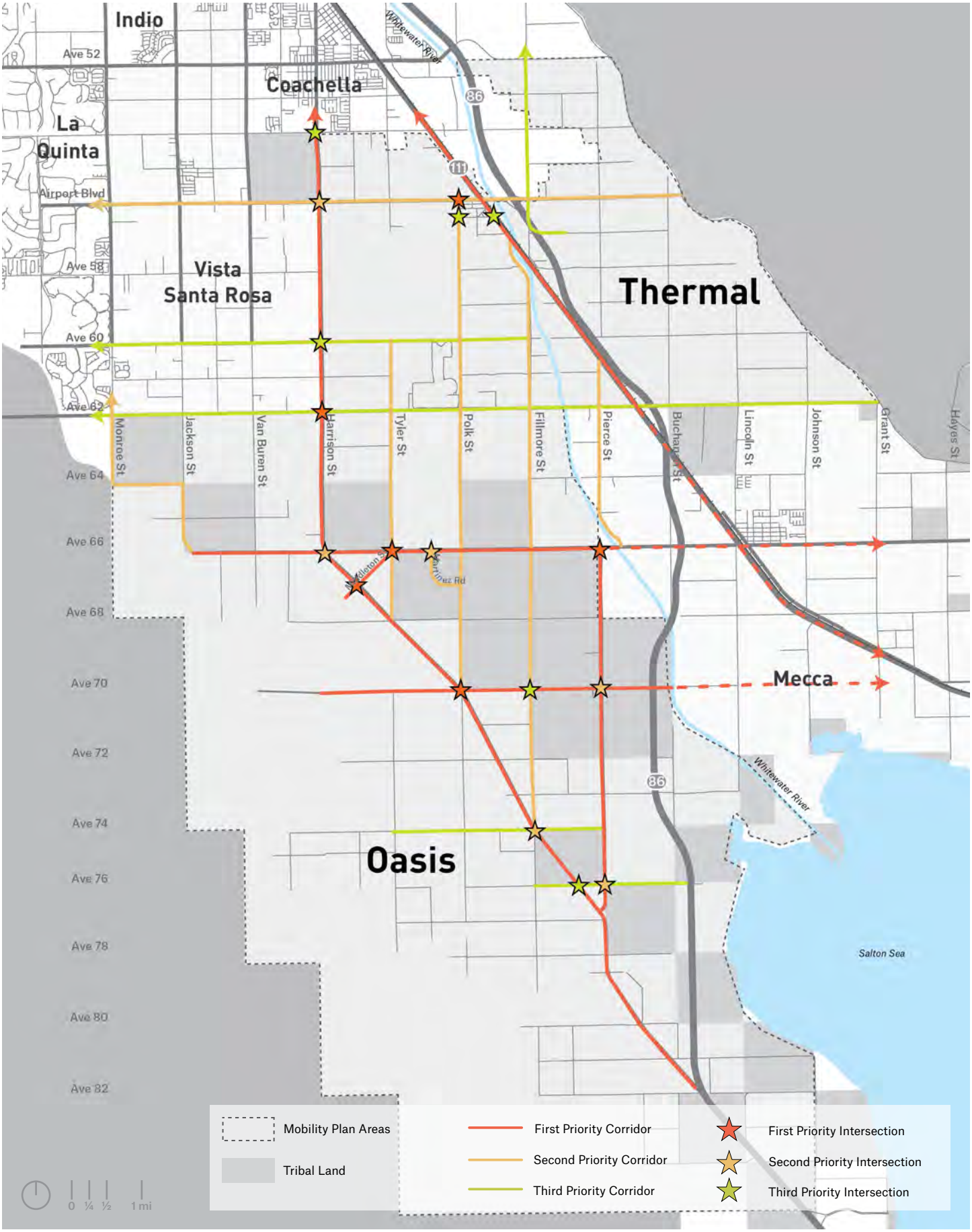
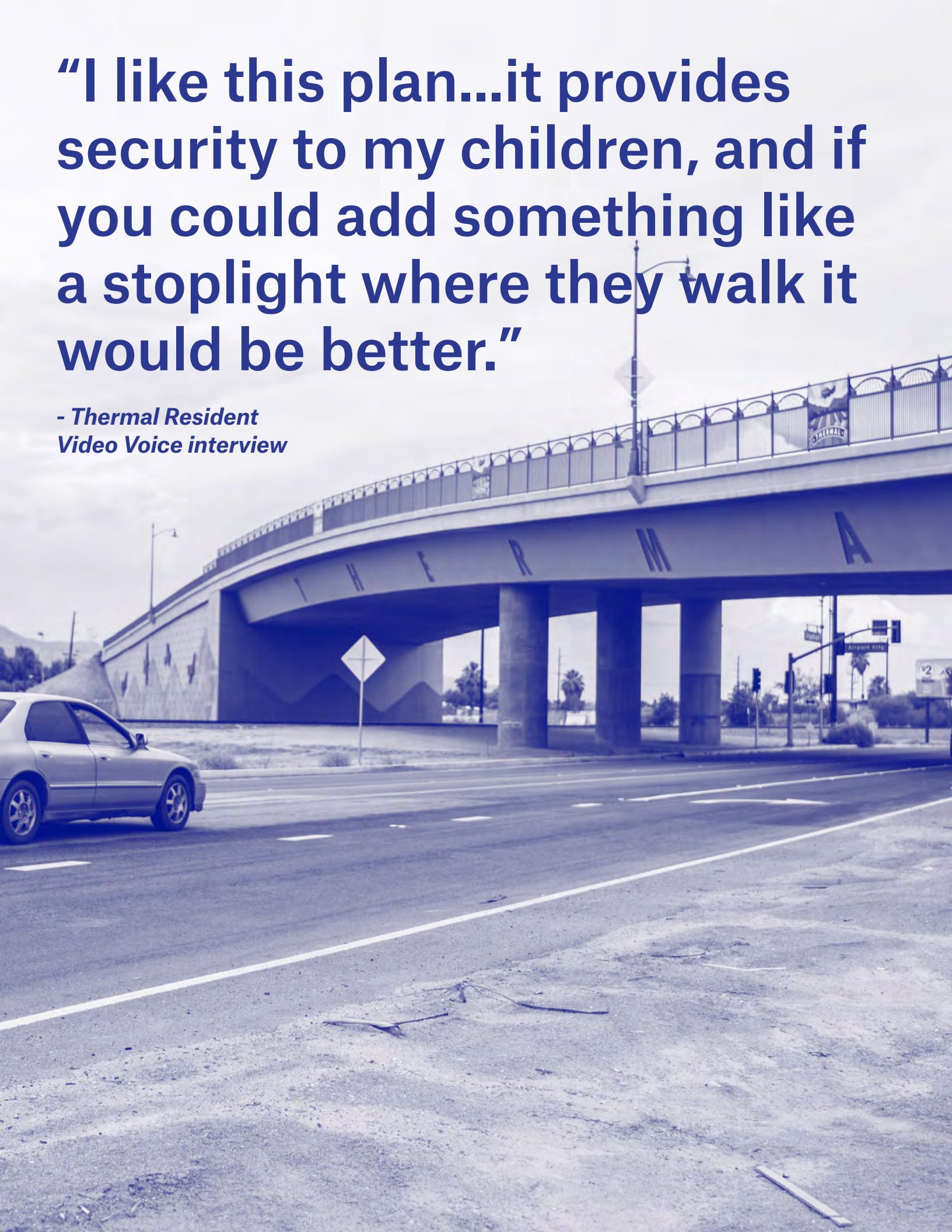


Figure 17. Overall Priority Corridors

Current condition of Avenue 70 west of the intersection with Pierce Street, identified as a First Priority Corridor



“I like this plan...it provides security to my children, and if you could add something like a stoplight where they walk it would be better.”

- Thermal Resident
Video Voice interview

VI. Goals, Objectives, and Strategies

Overview

The Neighborhood Mobility Plan for Thermal and Oasis envisions communities that are connected to a broader regional system which offers multiple transportation modes, meets people's changing needs through flexible and context sensitive solutions, and values the importance of laying a broad framework for future improvements and projects. This plan aims to blend infrastructural improvements with those that encourage community cohesion and values resident voices. Throughout the Plan, the strategies proposed seek to have multi-functional value by considering mobility holistically. This means that infrastructure, environment, and community were each considered as critical elements during decision-making processes. As a result, this plan will enable residents to build more resilient communities while improving connections within the Coachella Valley.

The Roadmap: Goals, Objectives, and Strategies

The overall goals, objectives, and strategies for the Plan broadly address a goal of integrating infrastructure, environment, and community in Table 2 on the following page. The goals within this plan are meant to identify the overarching ambitions that residents have for their community, both in its current condition and in the future. Objectives take these goals and create implementable best practices to guide any physical or planning solution proposed. Lastly, the strategies are meant to serve as directives for each solution, highlighting methods to meet each objective.

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GOALS	OBJECTIVES	STRATEGIES
1. Promote mobility	Better accommodate multimodal travel by foot, bicycle, and public transit	Plan and construct more pedestrian facilities
		Plan and construct more bicycle facilities
		Develop alternate transit services
2. Increase bicyclist and pedestrian safety	Design pedestrian facilities to maximize pedestrian safety	Ensure sidewalks are well-placed and wide enough to be used by a variety of users and abilities
		Improve visibility by improving or implementing crosswalk markings, lighting, and signage at intersections
	Design bicycle facilities to maximize bicyclist safety	Ensure bicycle facilities are designed to be usable by a variety of bicyclists and minimize perceived levels of traffic stress
	Ensure safe routes to school	Coordinate with CVUSD to understand students needs and provide more pedestrian infrastructure, particularly crosswalks adjacent to schools and the surrounding communities
3. Promote shared mobility and transit use	Make transit more convenient to use	Refine bus routes and locations of transit stops in the Eastern Coachella Valley in accordance with community input
		Provide more transit shelters that have a shade element
	Expand additional shared mobility options	Institute a formalized vanpool program
		Encourage innovative ride-on-demand programs
4. Improve communication between transit agencies, stakeholders, and community members and organizations	Expand opportunities for participation in planning and design	Create a resident transportation task force that routinely meets with Community Councils and the County Transportation Department
		Prioritize transportation projects that are championed by the community
	Increase transparency around transportation decision-making	Increase communication between agencies, stakeholders, and the public, especially outside of traditional channels
5. Enhance public health	Provide facilities for recreational activities and exercise	Increase miles of pedestrian and bicycle infrastructure
		Supplement Riverside County's Public Health Department initiatives with information on alternative modes of transit
	Promote social cohesion and neighborhood connectivity	Prioritize transportation projects that connect neighborhoods to identified community centers or hubs
6. Decrease greenhouse gas emissions	Expand modes of transportation available beyond fossil fuel based vehicles	Incentivize electric and hybrid vehicles within public transit

Table 2. Goals, Objectives, and Strategies

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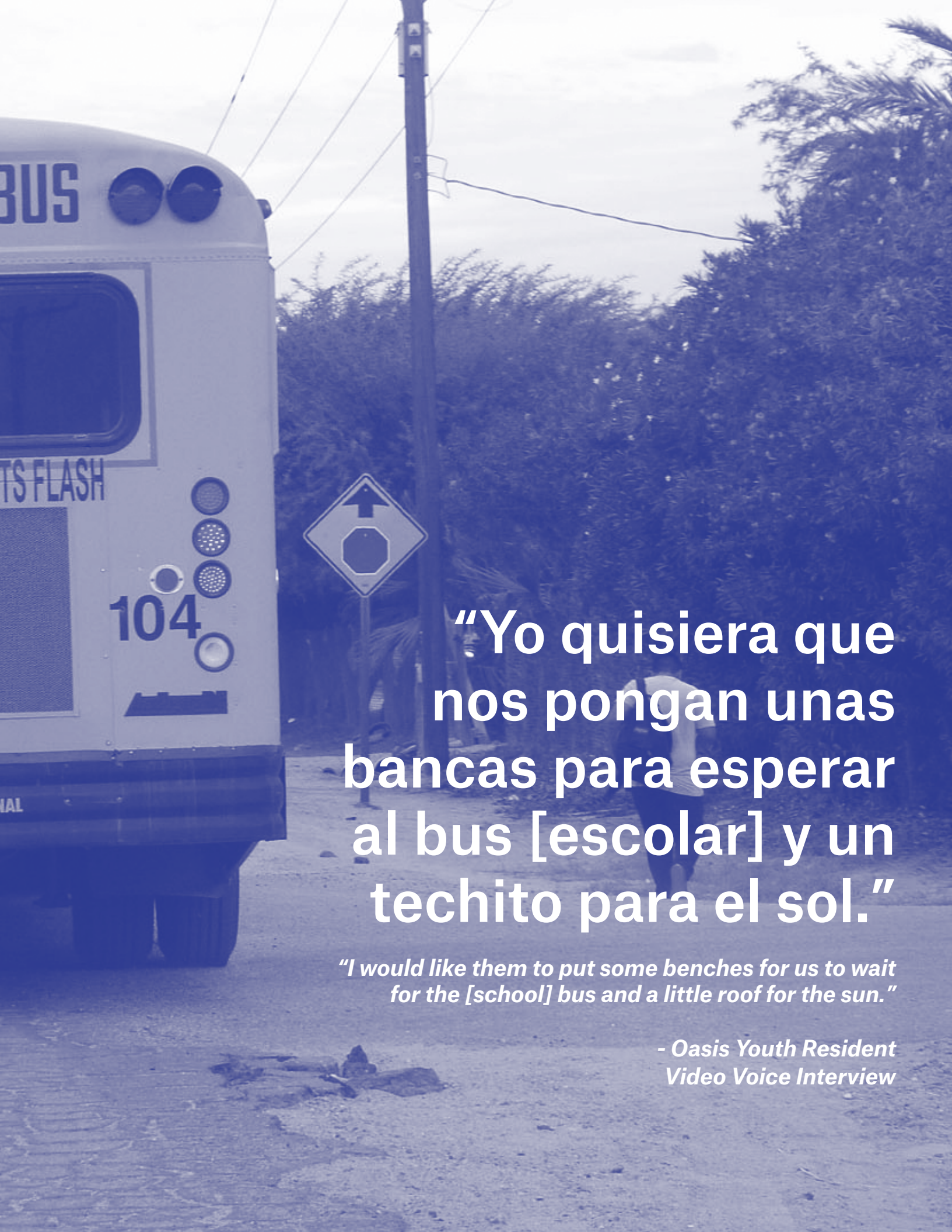

“Yo quisiera que nos pongan unas bancas para esperar al bus [escolar] y un techito para el sol.”

“I would like them to put some benches for us to wait for the [school] bus and a little roof for the sun.”

- Oasis Youth Resident
Video Voice Interview

VII. Proposed Improvements and Programs

Overview

This section recommends network improvements for the communities of Thermal and Oasis based on community input, needs analysis findings, research, observations, and existing infrastructure. These improvements are intended to implement and support pedestrian and bicycle infrastructure in Thermal and Oasis, connect communities, and provide the communities of Thermal and Oasis with actionable solutions to transportation issues within the ECV.

A menu of design options for potential improvements, the space they require, their ideal application context, and advantages and disadvantages is located in the Appendix. This list of different transportation facilities is drawn from design manuals and best practices, including Caltrans' Manual of Uniform Traffic Control Devices (MUTCD) and Highway Design Manual (HDM), as well as National Association of City Transportation Officials (NACTO) standards. The menu of design options is meant to serve as a flexible array of options that fit within the palette of improvements preferred by the community. These options should be studied further relative to specific contexts as projects move towards implementation.

Priorities for each of these modes were developed through a combination of agency and community input, as illustrated in Figure 17 in Chapter 5. These priorities began at their base from resident suggestions, were vetted through agency expertise, and evaluated on their implementability and practicality.

Proposed Pedestrian Facility Improvements

Approach

In many ways, the pedestrian improvements proposed in this plan are the most important, as they aim to lay a network of wide sidewalks and paths throughout the community to facilitate pedestrian trips, particularly for children traveling to and from school. Much of the proposed pedestrian infrastructure will be combined with the bicycle infrastructure as multimodal paths.

Additional infrastructure supporting a comfortable and safe walking experience is also necessary in order to have a fully functional pedestrian network. Improvements could include **shade structures** that can serve as areas of respite during hot summer days, **street lighting** to allow for safe travel in the early morning hours or during the evening, and **benches** for creating public gathering spaces and opportunities for rest. **Crossing improvements** are also key to effective connectivity and safety. Residents expressed preference for paths and sidewalks that do not meander, as they prefer to be able to reach their destinations quickly in the hot climate.

Suggested Improvements

Figure 18 and Figure 19 show the corridors on which pedestrian facility improvements are recommended, with additional details provided in Table 3.

Priority should be given to infrastructure improvements that can accommodate multimodal travel and the behavioral context of residents within the ECV. Below are the recommended options for improvements:

- **Class I multimodal paths** are the most preferred option for improvements where right of way allows. These paths should be open to bicyclists as well as pedestrians, while being safely separated from the road. Residents have expressed that wide paths are particularly desirable, especially near the schools where larger groups of students walk together. As shown in Figure 20, a suggested **minimum of 10 feet width** is recommended to allow for multiple people to walk in a group, with a minimum of 5 feet of separation from vehicular traffic, as per Caltrans HDM.[1] Colored asphalt is further recommended by best practices, including NACTO, to allow for visual distinction and to minimize heat radiation. Paths should be striped for two-way traffic as per MUTCD standards.[2]
- **A concrete sidewalk at least 5 feet wide** is suggested as the second most preferable alternative in areas with narrow right of way. As shown in Figure 21, a **curb and gutter** are necessary to provide a safe separation from vehicular traffic and to manage stormwater infiltration. Although rain is sparse in this climate, the ECV is highly vulnerable to flooding, both in areas with and without infrastructure. In the portions of Thermal that currently have paved sidewalks without gutters, flooding is a common issue.

Appendix 1 provides more details about these design options and their ideal applications, as well as about additional alternatives that may be suited to the context.

Some of these improvements are recommended on corridors that may be unpaved in some segments. It is expected that these roads will be paved as County-led or Tribe-led infrastructural improvements or development progress in the area, and pedestrian facility improvements should be included as part of this process.

1 California Department of Transportation Highway Design Manual, Index 1003.1

2 California Manual of Uniform Traffic Control Devices, Section 9C.03

Figure 18. Proposed Pedestrian Facility Improvements

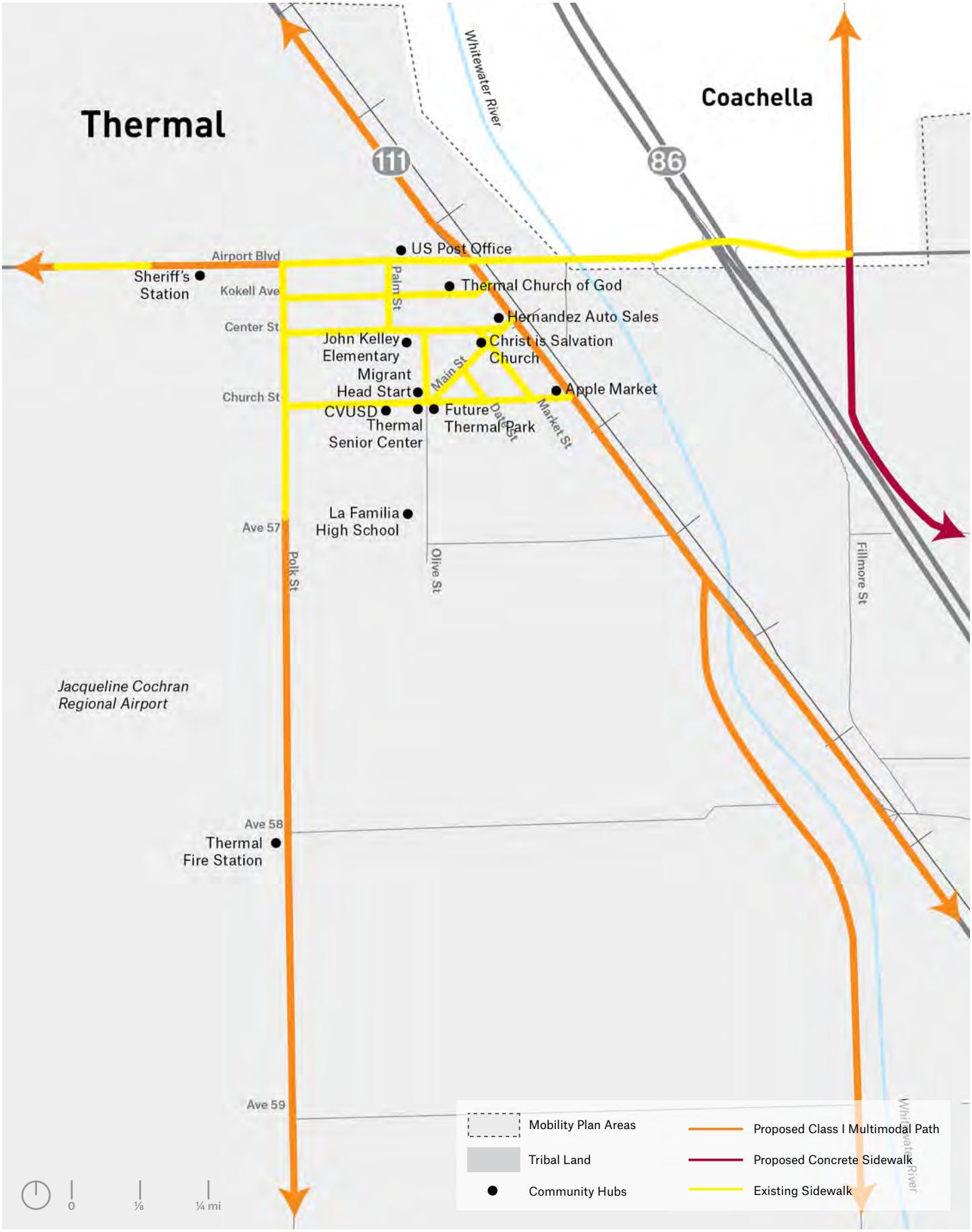

Figure 19. Proposed Pedestrian Facility Improvements: Downtown Thermal Detail

PRIORITY	ROAD	FROM	TO	MI.	SUGGESTED IMPROVEMENT
1	Harrison St.	Ave. 64	Ave. 70	3.77	Class I Multimodal Path
1	Ave. 66	Calhoun St.	Pierce St.	4.5	Class I Multimodal Path
1	Ave. 70	Harrison St.	Pierce St.	2.0	Class I Multimodal Path
1	Pierce St.	Ave. 66	Ave. 70	2.0	Class I Multimodal Path
1	Polk St.	Martinez Rd.	Ave. 70	1.5	Class I Multimodal Path
1	Martinez Rd.	Ave. 66	Polk St.	0.8	Concrete Sidewalk
1	Middleton St.	Ave. 66	End of road	1.0	Concrete Sidewalk
2	Harrison St.	Ave. 54	Ave. 64	5.0	Class I Multimodal Path
2	Harrison St.	Ave. 70	Ave. 82	6.83	Class I Multimodal Path
2	Grapefruit Blvd.	Ave. 54	Ave. 62	5.0	Class I Multimodal Path
2	Fillmore St.	Airport Blvd.	Pierce St.	1.4	Concrete Sidewalk
2	Ave. 66	Jackson St.	Calhoun St.	1.5	Class I Multimodal Path
2	Ave. 64	Monroe St.	Jackson St.	1.0	Class I Multimodal Path
2	Monroe St.	Ave. 62	Ave. 64	1.0	Class I Multimodal Path
2	Jackson St.	Ave. 64	Ave. 66	1.0	Class I Multimodal Path
2	Pierce St.	Ave. 70	Harrison St.	2.0	Class I Multimodal Path
3	Airport Blvd.	Harrison St.	Polk St.	2.0	Concrete Sidewalk
3	Tyler St.	Ave. 60	Ave. 66	3.0	Class I Multimodal Path
3	Polk St.	Airport Blvd.	Martinez Rd.	5.5	Class I Multimodal Path
3	Fillmore St.	Grapefruit Blvd.	Ave. 74	8.5	Class I Multimodal Path
3	Pierce St.	Grapefruit Blvd.	Ave. 66	2.8	Class I Multimodal Path
4	Fillmore St.	Ave. 52	Airport Blvd.	2.0	Class I Multimodal Path
4	Ave. 60	Harrison St.	Fillmore St.	3.0	Class I Multimodal Path
4	Ave. 62	Harrison St.	Grant St.	8.0	Class I Multimodal Path
4	Ave. 74	Harrison St.	Pierce St.	1.0	Concrete Sidewalk
4	Ave 76	Harrison St.	E. of Pierce St.	0.4	Concrete Sidewalk

Table 3. Proposed Pedestrian Facility Improvements

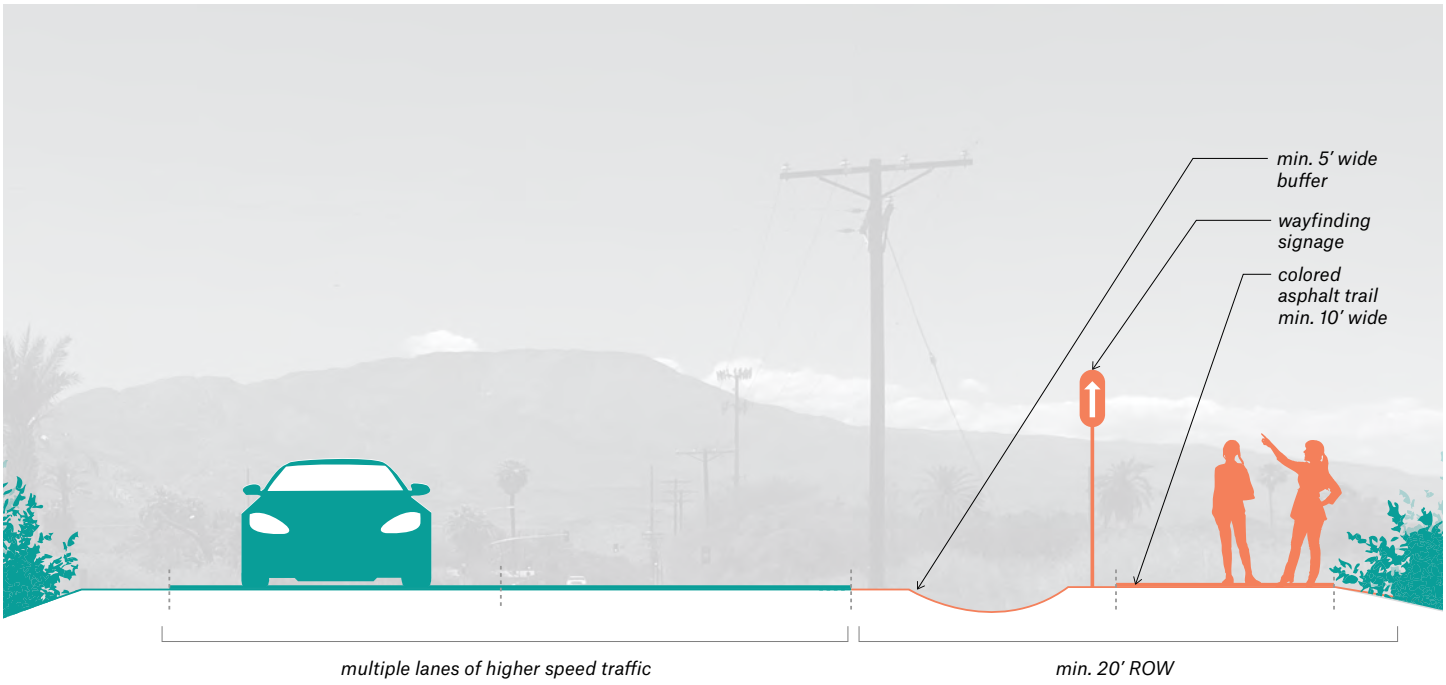

Figure 20. Typical Cross-Section: 10-foot Wide Class I Multimodal Path

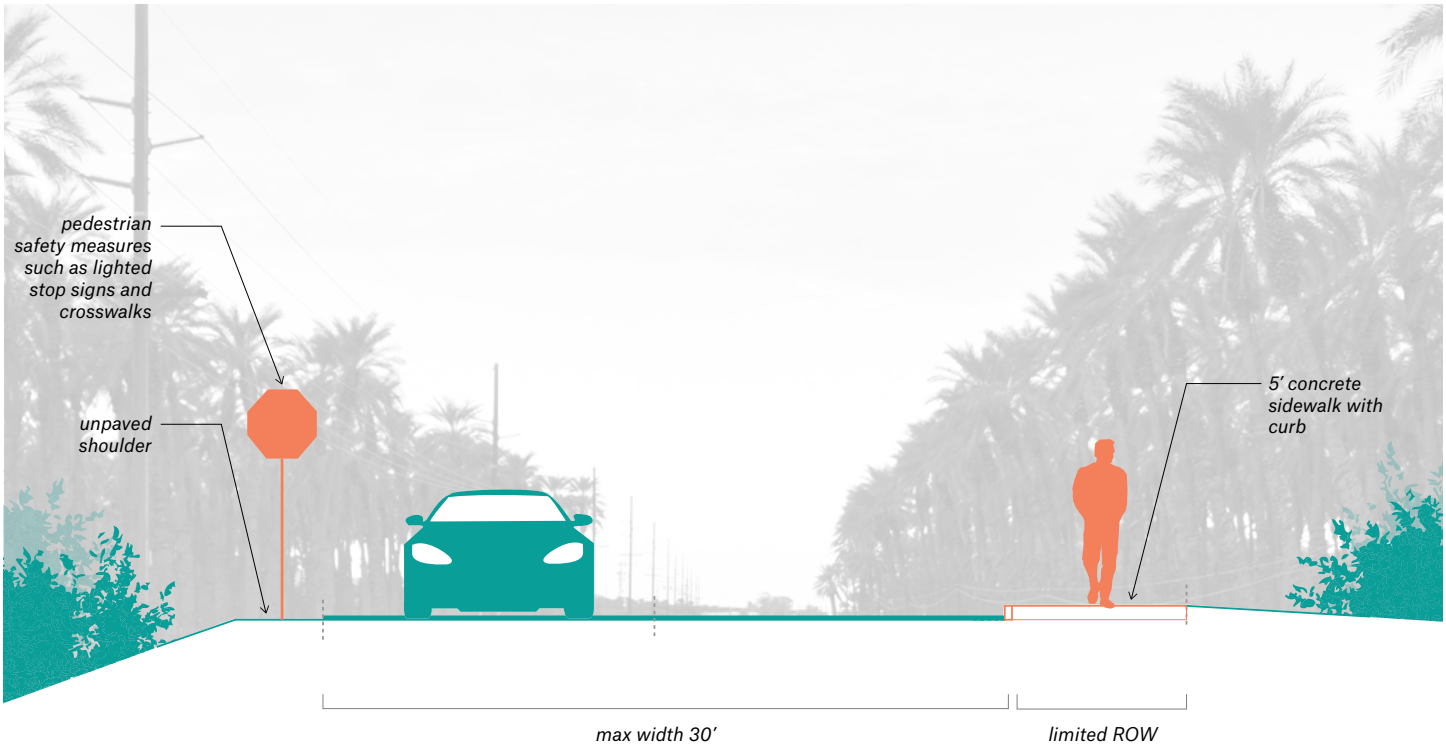

Figure 21. Typical Cross-Section: 5-foot Wide Concrete Sidewalk with Curb

Proposed Bicycle Facility Improvements

Approach

The main goal of the proposed bicycle improvements is to provide people with the ability to safely travel longer distances than pedestrians, but along the same corridors. Any short- or medium-term projects should focus on **building a base network of bike facilities**, which in turn could begin to engender a bicycle culture within Thermal and Oasis. Additional supportive facilities such as **bike racks** should be considered in the future, but bike path infrastructure is needed first.

The solutions suggested here focus on helping all types of bicyclists be safe and comfortable, from experienced athletes, to commuters, to children and families. To that end, bicycle facilities will need to be protected from high-speed traffic as much as possible. Similarly, residents expressed strong preference for paths and trails that are paved for comfortable usage not only by bicycles, but also by other wheeled vehicles such as strollers, carts, and wheelchairs.

Suggested Improvements

Figure 22 and Figure 23 show the corridors on which bicycle facility improvements are recommended, with additional details provided in Table 4.

As previously discussed, suggested improvements are meant to be multimodal and thus accessible to bicyclists and pedestrians alike. Most of the paths suggested here carry over from pedestrian recommendations. This network also provides excellent mobility for bicyclists, and no additional bicycle-only facilities are suggested. Below is the suggested improvement:

- A **Class I multimodal path** provides for bicycle and pedestrian mobility on a **paved trail** that is completely separated from a street, whether it be by dirt, plantings, a swale, berm, or another physical buffer, as shown in Figure 24. These paths should be at least 10 feet wide, as per Caltrans HDM,[5] and striped for two-way traffic, as per MUTCD standards.[6] Because of the high typical speeds of traffic throughout both communities (generally at least 45 MPH), residents expressed that even with a sidewalk they did not feel safe biking in a lane immediately adjacent to moving traffic. A separated bike and pedestrian path could serve as a multimodal option for commuters, students, and recreational users alike. Within the ECV, these bike paths should be implemented where right of way is wide enough to accommodate a **buffer of at least 5 feet**, as per Caltrans HDM.[7]

Alternatively, if class I multimodal paths are found by additional study to be infeasible, **class II bicycle lanes** provide a **signed, striped, and stenciled lane** for one-way bicycle travel along the roadway. These types of lanes are appropriate where roadways have lower speeds and narrower right of way. To maximize bicyclist safety and comfort, buffers of at least 3 feet in width should separate the bike lanes from vehicular traffic, as shown in Figure 25, marked per California MUTCD standards.[8] A vertical barrier such as a **curb or flexible delineators** between the travel lane and the cyclist would be beneficial. **Rumble strips and reflective markings** in the buffers can alternatively provide for safer separation from vehicles and visibility given low levels of lighting along the streets. Appendix 1 provides more details about these design options and their ideal applications, as well as about additional alternatives that may be suited to the context.

Furthermore, bicycle signage and wayfinding is key for the success of either type of bike facility as well as their safe utilization. Wayfinding signs can direct bicyclists along the network of lanes to community destinations, but more importantly serve as a signal to vehicular traffic to be cognizant of potential bicycle traffic. This plan recommends the installation of wayfinding signs at key decision points, and sufficient stenciling to provide for bicycle safety as per California MUTCD.

5 California Department of Transportation, Highway Design Manual, Index 1003.1

6 California Manual of Uniform Traffic Control Devices, Section 9C.03

7 California Department of Transportation, Highway Design Manual, Index 1003.1

8 See California Manual of Uniform Traffic Control Devices, Figure 9C-104(CA)

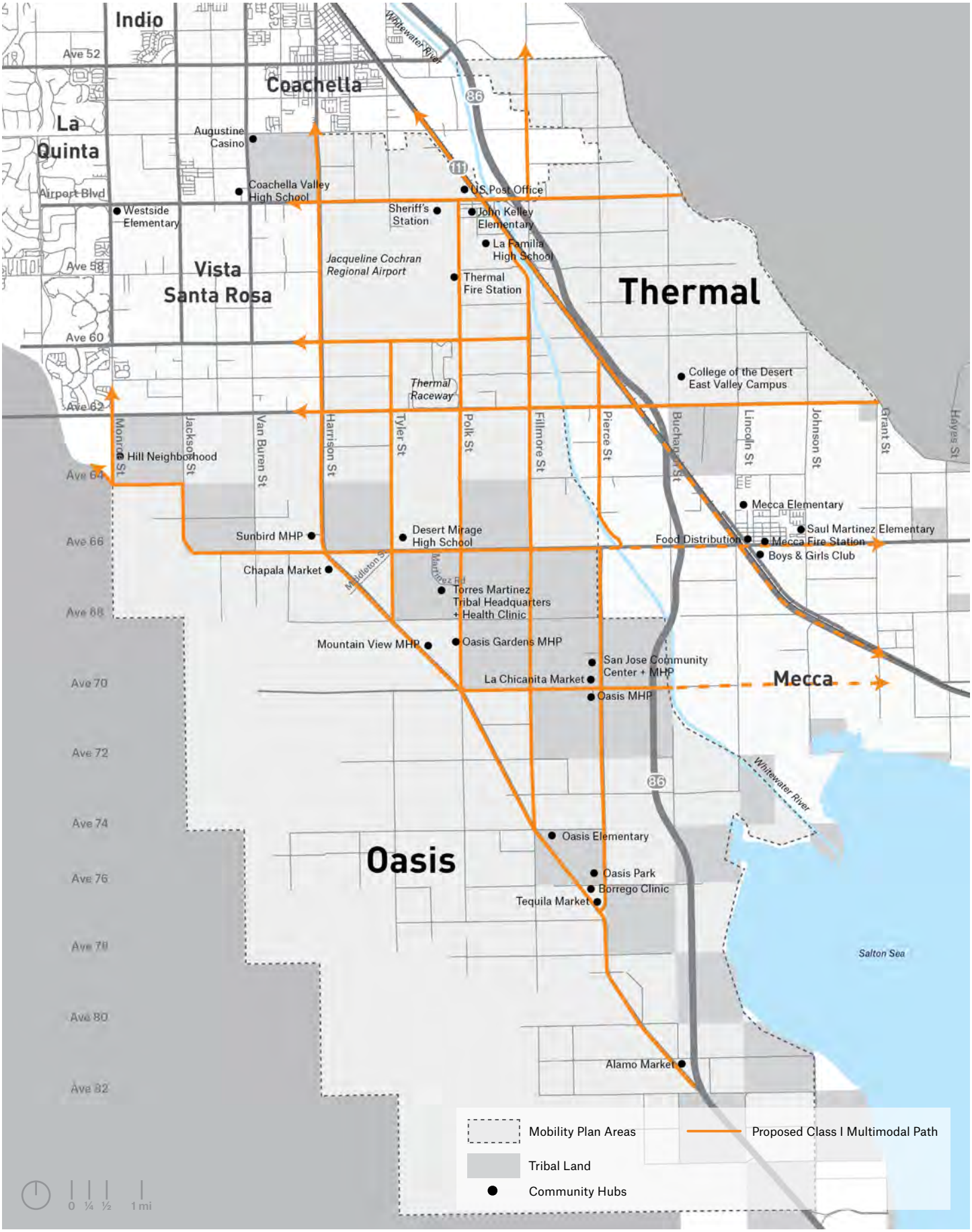

Figure 22. Proposed Bicycle Facilities

Figure 23. Proposed Bicycle Facilities: Downtown Thermal Detail

PRIORITY	ROAD	FROM	TO	MI.	SUGGESTED IMPROVEMENT
1	Harrison St.	Ave. 64	Ave. 70	3.77	Class I Multimodal Path
1	Ave. 66	Calhoun St.	Pierce St.	4.5	Class I Multimodal Path
1	Ave. 70	Harrison St.	Pierce St.	2.0	Class I Multimodal Path
1	Pierce St.	Ave. 66	Ave. 70	2.0	Class I Multimodal Path
1	Polk St.	Martinez Rd.	Ave. 70	1.5	Class I Multimodal Path
2	Harrison St.	Ave. 54	Ave. 64	5.0	Class I Multimodal Path
2	Harrison St.	Ave. 70	Ave. 82	6.83	Class I Multimodal Path
2	Grapefruit Blvd.	Ave. 54	Ave. 62	5.0	Class I Multimodal Path
2	Ave. 66	Jackson St.	Calhoun St.	1.5	Class I Multimodal Path
2	Ave. 64	Monroe St.	Jackson St.	1.0	Class I Multimodal Path
2	Monroe St.	Ave. 62	Ave. 64	1.0	Class I Multimodal Path
2	Jackson St.	Ave. 64	Ave. 66	1.0	Class I Multimodal Path
2	Pierce St.	Ave. 70	Harrison St.	2.0	Class I Multimodal Path
3	Tyler St.	Ave. 60	Ave. 66	3.0	Class I Multimodal Path
3	Polk St.	Airport Blvd.	Martinez Rd.	5.5	Class I Multimodal Path
3	Fillmore St.	Grapefruit Blvd.	Ave. 74	8.5	Class I Multimodal Path
3	Pierce St.	Grapefruit Blvd.	Ave. 66	2.8	Class I Multimodal Path
4	Fillmore St.	Ave. 52	Airport Blvd.	2.0	Class I Multimodal Path
4	Ave. 60	Harrison St.	Fillmore St.	3.0	Class I Multimodal Path
4	Ave. 62	Harrison St.	Grant St.	8.0	Class I Multimodal Path

Table 4. Proposed Bicycle Facility Improvements

Figure 24. Typical Cross-Section: 10-foot Wide Class I Multimodal Path with Public Transit stop

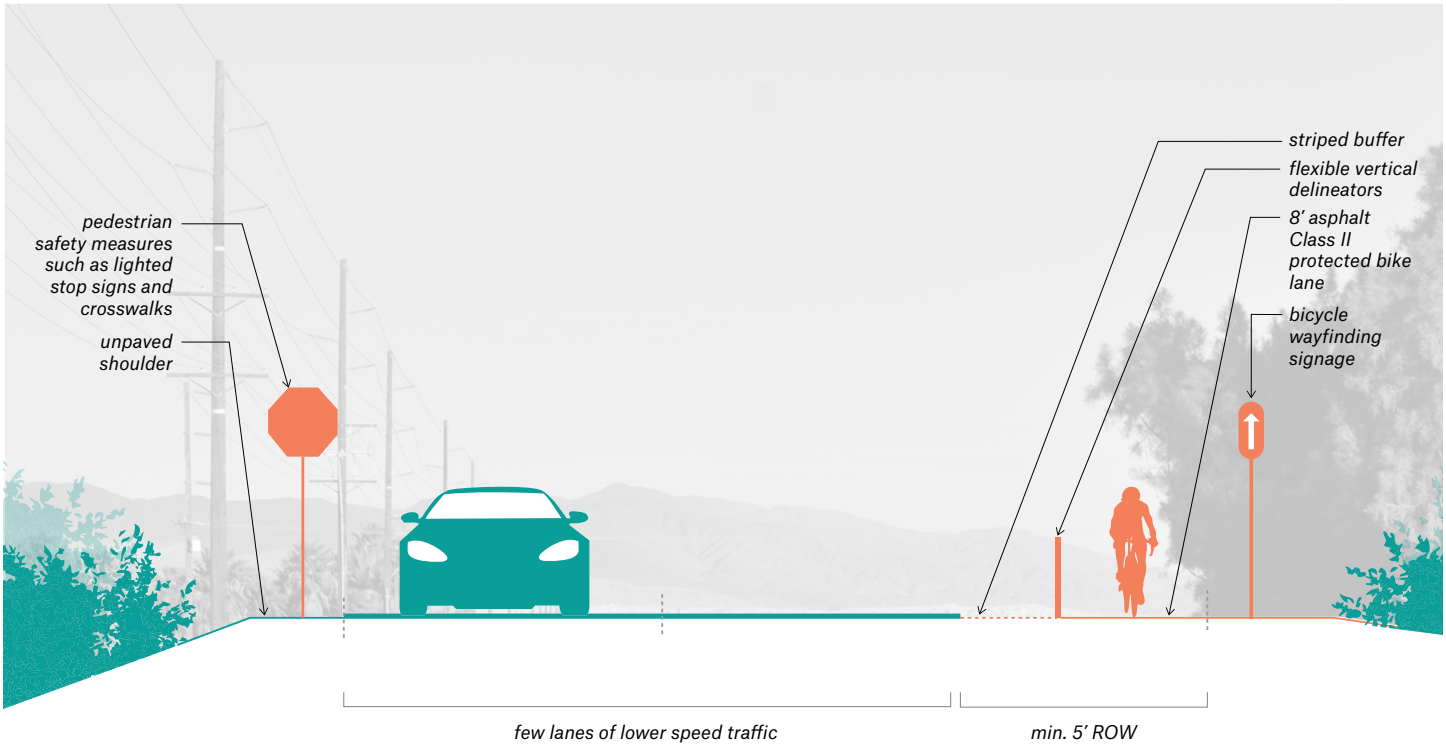

Figure 25. Typical Cross-Section: 8-foot Wide Class II Separated Bike Lane

Proposed Intersection and Pedestrian Crossing Improvements

Approach

The main goal for improving intersections in Thermal and Oasis is to address concerns around safe pedestrian access and visibility via **crosswalks** or through **traffic calming techniques**. Improvements that serve to reduce speeds at uncontrolled crossings, and hopefully therefore the number of collisions in the area, are listed below. These suggestions will need to be assessed through a full feasibility report conducted by traffic engineers within Riverside County to ensure their practicality as well as their integration into current County and Caltrans policy, but serve as a starting point.

Suggested Improvements

Figure 26 and Figure 27 show the intersections at which pedestrian crossing improvements are recommended, with additional details provided in Table 5.

Below are the suggested improvements:

- **Roundabouts, signals, or other major improvements,** as deemed appropriate by further traffic engineering studies, may be well suited for at least one intersection in the plan area. Signal placement may be warranted based on collision data at the individual location based on a variety of data including traffic volumes, collision history, speed, pedestrian volume, and other prevailing factors. This guidance is detailed in the MUTCD to assist transportation agencies in planning signal locations.[3] Existing roundabouts in other areas of the ECV have been designed to accommodate larger truck and farm vehicle traffic by including low curbs (known as a truck apron) that can be driven over if necessary. Roundabouts slow vehicles as they approach the intersection to a calculated design speed that is relatively low and consistent as the vehicles traverse the roundabout. Traffic signals, when properly placed, can reduce the instances of traffic collisions and can provide added safety to pedestrians and bicyclists.
- **Flashing stop signs** increase visibility of a stop condition, decreasing the likelihood of vehicles running the stop signs and the potential for pedestrian involved collisions. The lighting could be powered by solar panels to reduce necessary utility infrastructure. See California MUTCD for additional guidance.[4]
- **Crosswalk improvements**, with attention paid to pedestrian visibility and safety. Alternatives include new crosswalks, or re-striping of crosswalks that exist currently. Public lighting should be included for nighttime visibility in as many locations as possible. As development occurs, County standards require the installation of sidewalk, street lights and formation of funding districts to pay for on-going costs. Solar lighting options may be particularly appropriate given local challenges around power sources and maintenance.
- **Existing Signals** have been installed with crosswalks, curb returns, and pedestrian ramps as required by standards, but no sidewalks are attached to many of these pads. It is critical to extend the pedestrian facilities to connect to community destinations, improving connectivity to the pedestrian network.

Appendix 1 provides more detail about these design options and their ideal applications, as well as about additional alternatives that may be suited to the context. For example, median construction as part of a road diet can reduce roadway widths and thus improve safety for all users by regulating where vehicles make left turns and providing a point of refuge for pedestrians crossing the road.

3 For typical guidance, see California Manual of Uniform Traffic Control Devices, Section 4L.05

4 California Manual of Uniform Traffic Control Devices, Chapter 4L

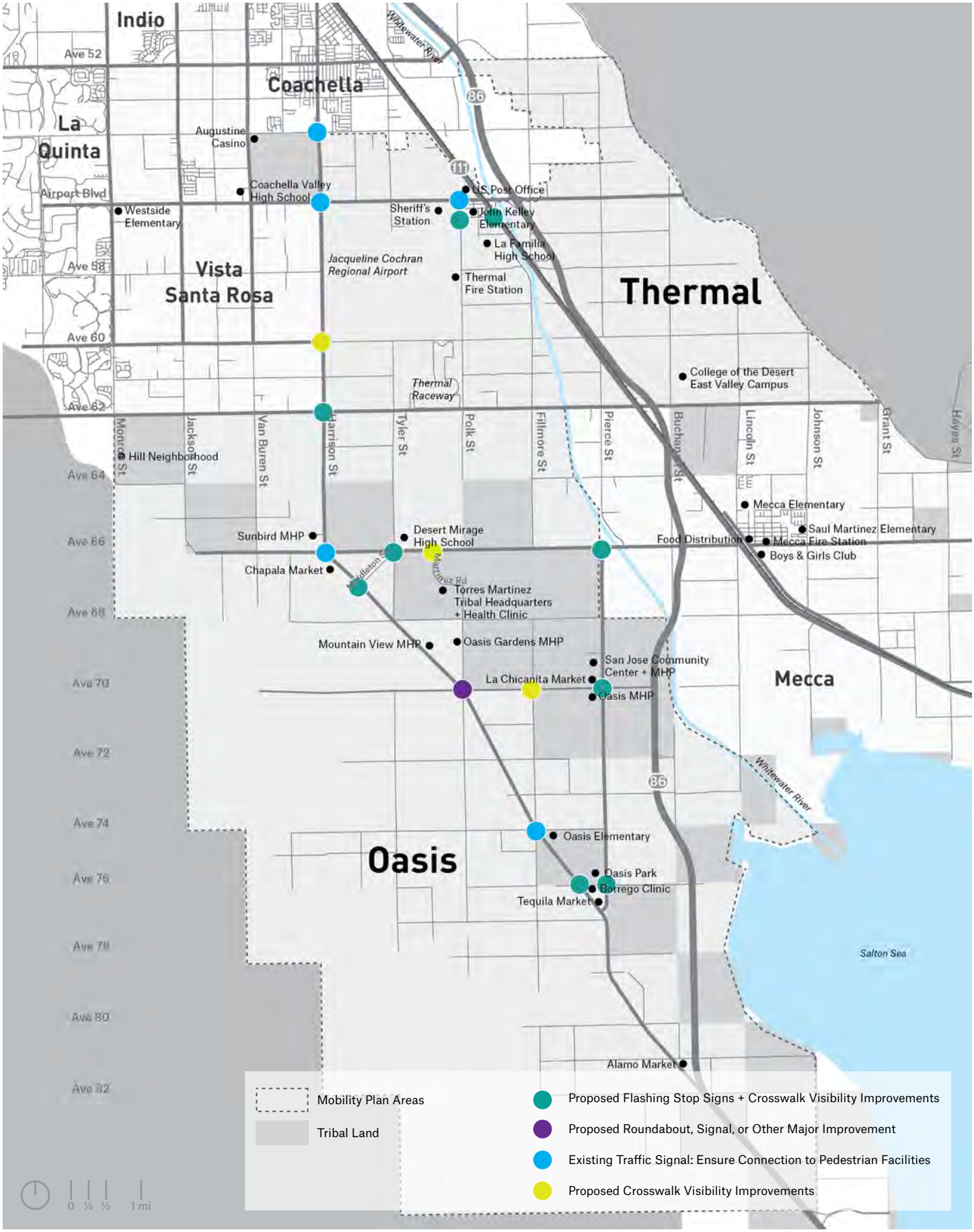

Figure 26. Proposed Intersection and Pedestrian Crossing Improvements

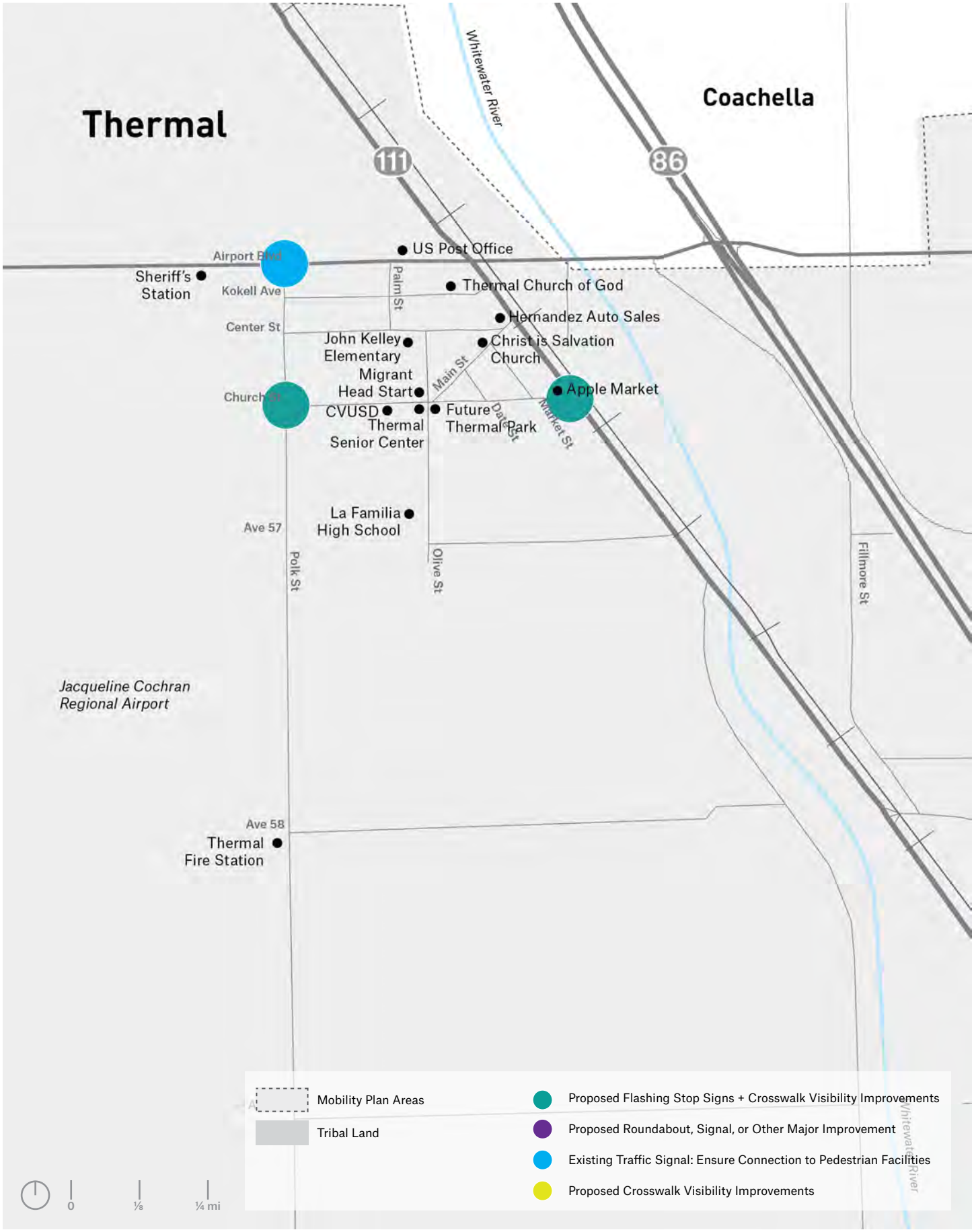

Figure 27. Proposed Intersection and Pedestrian Crossing Improvements

PRIORITY	PRIMARY RD.	SECONDARY RD.		TYPE OF IMPROVEMENT
1	Harrison St.	Ave. 62	—	Flashing Stop Signs + Crosswalk Improvements
1	Ave. 66	Tyler St.	Middleton St.	Flashing Stop Signs + Crosswalk Improvements
1	Harrison St.	Middleton St.	—	Flashing Stop Signs + Crosswalk Improvements
1	Ave. 66	Pierce St.	—	Flashing Stop Signs + Crosswalk Improvements
1	Ave. 70	Pierce St.	—	Flashing Stop Signs + Crosswalk Improvements
1	Ave. 76	Pierce St.	—	Flashing Stop Signs + Crosswalk Improvements
1	Harrison St.	Ave. 76	—	Flashing Stop Signs + Crosswalk Improvements
1	Polk St.	Church St.	—	Flashing Stop Signs + Crosswalk Improvements
1	Grapefruit Blvd.	Church St.	—	Flashing Stop Signs + Crosswalk Improvements
2	Harrison St.	Ave. 70	Polk St.	Roundabout or Other Major Improvement
3	Harrison St.	Ave. 54	—	Existing Signal: Ensure Connection to Facilities
3	Harrison St.	Airport Blvd.	—	Existing Signal: Ensure Connection to Facilities
3	Airport Blvd.	Polk St.	—	Existing Signal: Ensure Connection to Facilities
3	Harrison St.	Ave. 66	—	Existing Signal: Ensure Connection to Facilities
3	Harrison St.	Ave. 74	—	Existing Signal: Ensure Connection to Facilities
4	Harrison St.	Ave. 60	—	Crosswalk Visibility Improvements
4	Ave. 66	Martinez Rd.	—	Crosswalk Visibility Improvements
4	Ave. 70	Fillmore St.	—	Crosswalk Visibility Improvements

Table 5. Proposed Intersection and Pedestrian Crossing Improvements

Recommendations for Public Transportation and Shared Mobility

In addition to the options for pedestrian and bicycle facilities, community members provided recommendations through the public outreach process to improve SunBus and other public transit services in Thermal and Oasis. Recommendations included:

- Improving more SunBus stops throughout Thermal and Oasis, as shown in Figure 28 and Figure 29, especially by installing benches and shelters wherever possible as sidewalks are built.
- Reducing SunBus headways (currently around one hour) to improve riders' experiences and convenience.
- Considering the introduction of a more rapid line connecting Thermal and Oasis directly to the cities of Coachella, Indio, and Palm Desert via Harrison Street without going through Mecca.
- Expanding service further south into Oasis, particularly to the clinic and future park on Avenue 76 between Harrison Street and Pierce Street, as shown in Figure 28 and Figure 29.

Residents also expressed support for the exploration and expansion of new transit programs such as SunVans or more flexible on-demand services that can serve the geographically large expanse of the ECV in a more flexible manner than traditional fixed-route bus service.

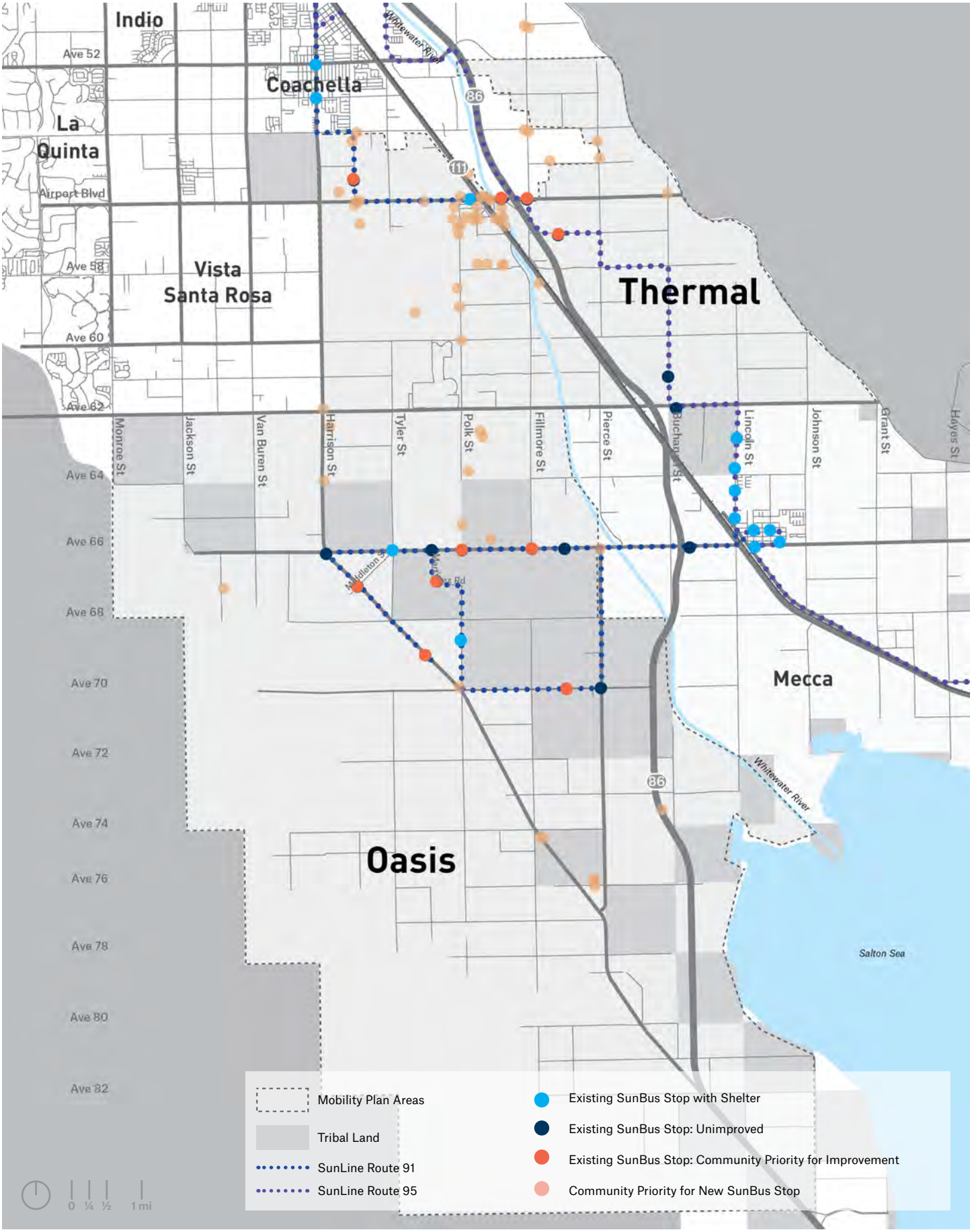

Figure 28. Community Recommendations for SunLine Improvements

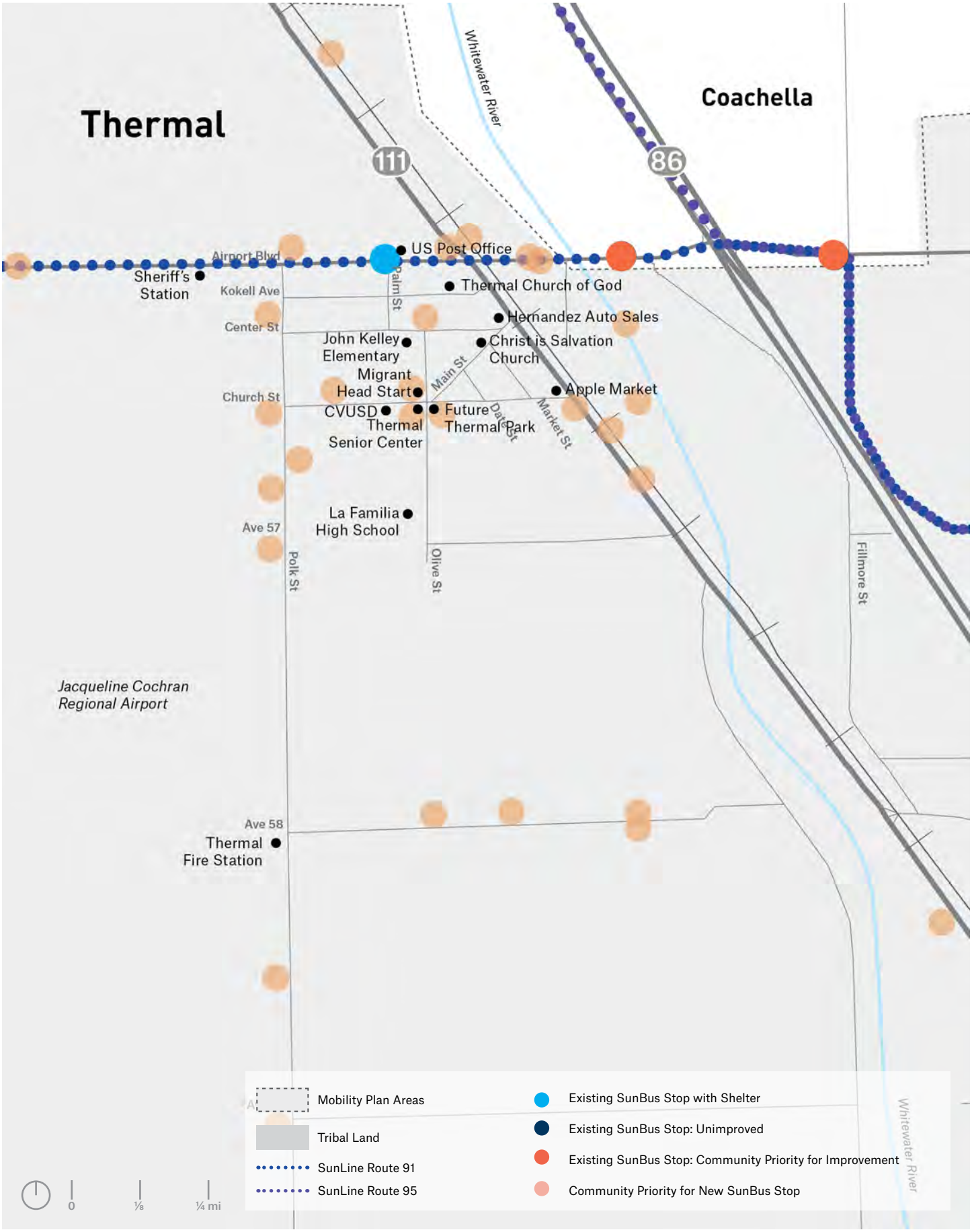

Figure 29. Community Recommendations for SunLine Improvements

Recommended Programs

While programs to support active transportation and multimodal travel should be developed in Thermal and Oasis as well as the ECV more broadly, this plan places more importance on capital improvements given the current level of infrastructure in the region. However, programs should be considered and implemented in tandem with infrastructure improvements moving forward. Given residents' concern for the mobility of students, programs centered on the youth population and schools could compliment this Plan.

Safe Routes to School (SRTS)

It is recommended that the Riverside County Department of Transportation works to coordinate and support the continuation and expansion of the work that Riverside University Health System Public Health is doing on SRTS. RUHS-PH received ATP Cycle 3 non-infrastructure funding to begin SRTS work in the ECV in 2018.

SRTS Best Practices[1]

- **Encouragement:** Events, activities and contests that spark interest in both students and parents in walking and biking to school and reward participation, promote the personal and community benefits of SRTS, and make walking or biking to school fun.
- **Education:** Classes and activities that teach students, parents, and community members safe walking and bicycling skills, including safe driving behavior. In addition, programs for parents and school staff to learn about safety tips and how to develop and sustain a SRTS program could be included.
- **Engineering:** Infrastructure improvements (signage, crosswalks, traffic signals, etc) designed to improve the safety of people walking, bicycling, and driving along school routes.
- **Enforcement:** Strategies to deter unsafe behavior of drivers, bicyclists, and pedestrians, and educate all users on obeying traffic laws and following appropriate drop-off and pick-up procedures.
- **Evaluation:** Tracking progress through regular counts, surveys, and other data collection to determine impact on student travel behavior as well as effectiveness of specific program elements.
- **Equity:** Should be integrated into all aspects of SRTS. Acknowledgment of the different challenges and barriers that students face is important to ensure that Safe Routes to School initiatives are benefiting all demographic groups. Equity, as it relates to SRTS, is about ensuring all students have safe access to and from school.

Bike Sharing

Bicycle sharing programs would increase ridership within this new bicycle network, as many residents are on limited incomes and may not have the ability to purchase a bicycle for recreation. Small, community-run bike sharing programs have been set up in other parts of the ECV, such as one in the community of North Shore, that could serve as a model for Thermal and Oasis. Larger business models such as CitiBike in New York or Metro Bike Share in Los Angeles would likely require too high of a level of infrastructure or investment to be practical in the short term.

Ride Sharing

Ridesharing services such as Uber and Lyft do exist in the ECV, but rides can take upwards of 30 minutes to meet their clients and are prohibitively expensive for many community members. They also require a smartphone, which excludes many residents. However, programs that run set routes outside of public transit that are more destination based could be more successful in the area. For example, Desert Recreation District runs a shuttle between different recreation centers that is popular among high schoolers. Additional carpooling or rideshare options such as this could help increase mobility within the region.

1 Los Angeles Metro, Safe Routes to School Resource Manual (2016)

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“[El transporte] sinceramente nos para de seguir adelante porque el transporte tiene mucho que ver con el tiempo y nuestras [vidas diarias]...”

“Transportation sincerely holds us back from moving forward because transportation has a lot to do with our time and our everyday lives...”

- Oasis Resident
Video Voice Interview

VIII. Phasing, Implementation, and Funding

Overview

Though one may assume that downtown Thermal would be an area to focus because of its relative density, the majority of residents in both Thermal and Oasis suggested prioritizing the core of Oasis first, given that Thermal already has some sidewalk infrastructure. Many of the bicycle infrastructure phasing suggestions mirror those of the pedestrian infrastructure.

The construction of recommended facilities will require additional field work to verify conditions. These include but are not limited to: roadway width, travel lanes, actual motor vehicle speeds, motor vehicle volumes, bicycle and motor vehicle travel patterns and conflicts, and pavement conditions. Final treatments should be selected based on verified conditions.

Phasing of Recommended Improvements

Phase 1: Short Term

This phase is illustrated in Figure 30 and Figure 31. These improvements should be implemented in the next 2 to 5 years. Most of these initial priorities are purposely centered around the Oasis area. Implementing these initial priorities would begin to create a network of active transportation facilities from which later improvements can be leveraged, reaching further into Oasis and Thermal, linking the two communities to each other, and connecting the ECV region as a whole.

- **Pedestrian Facility Improvements:** Create a loop of class I multimodal paths that would connect residential areas such as the Mountain View and Oasis Gardens mobile home parks with the Desert Mirage school complex is key. Additional connections along Pierce street, Avenue 70, and Harrison Street would create a new heart of Oasis that prioritizes neighborhood connectivity over cars.
- **Bicycle Facility Improvements:** Solidify a bicycle culture in Oasis by connecting key neighborhood hubs to the new Oasis Park at Avenue 76 and Pierce Street. This park could house facilities for bicycles such as dedicated bicycle parking or a bike share program. These lanes should all be class I multimodal paths.
- **Intersection and Pedestrian Crossing Improvements:** Introduce flashing stop signs at key intersections, particularly along Harrison Street, where collisions have been known to occur, and in downtown Thermal. Because of poor lighting and high speeds, cross-traffic on Harrison Street has low visibility and could benefit from clear traffic calming techniques. Downtown Thermal could similarly benefit from traffic calming and improved lighting, particularly given its higher concentration of population. In key locations, building off of the pedestrian plan, crosswalks should be included. Examples of these locations would be at Harrison Street and Middleton Street, and Middleton Street and Avenue 66.

Phase 1 Planning Level Cost Estimates

Initial planning level cost estimates in 2018 dollars for Phase 1 are shown in Table 6. Unit costs for corridor improvements presented in Table 7 are planning level cost estimates based on typical or average costs when constructing similar projects. While these costs reflect the nature of construction in Riverside County, they do not consider specific factors such as intensive grading, intersection modifications, and right-of-way acquisition that may increase actual construction costs. They also do not include costs associated with environmental planning. For some segments, project costs may be significantly greater.

Phase 2: Short-Medium Term

This phase is illustrated in Figure 32 and Figure 33. These improvements should be implemented in the next 2 to 10 years.

- **Pedestrian Facility Improvements:** Connect the Oasis 'core' to areas within Mecca, south to Oasis Elementary School, and northwest through the Hill neighborhood to La Quinta. Additional areas of spot improvements could create a complete set of sidewalks within downtown Thermal.
- **Bicycle Facility Improvements:** Focus on key connecting corridors that could further provide connections east to Mecca, and north to Grapefruit Boulevard. These connectors could serve as key pieces of infrastructure for the future phase of the CV Link plan.
- **Intersection and Pedestrian Crossing Improvements:** The intersection of Harrison Street, Polk Street, and Avenue 70, as it would likely involve intensive and long-term improvement such as the construction of a roundabout. This intersection has been communicated as the most problematic within the entire study area from residents because of the nature of five different streets coming together.

Phase 3: Medium Term

This phase is illustrated in Figure 34 and Figure 35. These improvements should be implemented in the next 5 to 10 years.

- **Pedestrian Facility Improvements:** Connect downtown Thermal south to Oasis, particularly along Polk, Fillmore, and Pierce Streets. Tyler Street would also benefit from pedestrian infrastructure because of its proximity to Desert Mirage High School; however portions of Tyler Street are not yet paved, which would need to occur prior to building sidewalks.
- **Bicycle Facility Improvements:** Implement north-south connections between Thermal and Oasis,

ROAD	FROM	TO	MILES	IMPROVEMENT	COST
Harrison St.	Ave. 64	Ave. 78	8.2	Class I Multimodal Path	$2M - $2.5M
Pierce St.	Ave. 66	Harrison St.	5.2	Class I Multimodal Path	$1M - $1.5M
Polk St.	Martinez Rd.	Ave. 70	1.5	Class I Multimodal Path	$500,000
Ave. 66	Jackson St.	Pierce St.	6	Class I Multimodal Path	$1.5M - $2M
Ave. 70	Harrison St.	Pierce St.	2	Class I Multimodal Path	$500,000
Middleton St.	Ave 66/Tyler St	End of road	1	Concrete Sidewalk +Curb +Gutter	$1M
Martinez Rd.	Ave. 66	Polk St.	0.8	Concrete Sidewalk +Curb +Gutter	$1M
				TOTAL	**$7.5M - $9M**

Table 6. Phase 1 (Short Term) Planning-Level Cost Estimates (in 2018 Dollars)

IMPROVEMENT	COST PER LINEAR FT.	REQUIRED CONTINGENCY	TOTAL COST PER LINEAR FT.	COST PER MILE
Sidewalk with curb and gutter (5 ft. width)	$150	20%	$180	$950,400
Concrete sidewalk only (5 ft. width)	$80	20%	$96	$506,880
Asphalt concrete path (10 ft. width)	$40	20%	$48	$253,440

Table 7. Cost Assumptions for Planning-Level Cost Estimates (in 2018 Dollars) via Riverside County Transportation Department

along Fillmore Street and Polk Street. These bicycle lanes could serve to connect residents with key pieces of health infrastructure such as the Torres Martinez Health Clinic.

- **Intersection and Pedestrian Crossing Improvements:** Leverage pedestrian and bicycle facilities once they are installed. These intersections currently have painted crosswalks and concrete landing pads with curb cuts, however no sidewalk connects to concrete pads. Preparing these intersections for higher volumes of foot and bicycle traffic through crosswalk improvements is key.

Phase 4: Long Term

This phase is illustrated in Figure 36 and Figure 37. These improvements should be implemented in the next 10 to 20 years.

- **Pedestrian Facility Improvements:** Extend this network east and west, and fill small gaps in the southern areas of Oasis.
- **Bicycle Facility Improvements:** Design an east-west connection along Avenue 62 and Avenue 74.
- **Intersection and Pedestrian Crossing Improvements:** Construct additional visibility improvements at intersections that are along smaller roads, but near major community amenities. Strategies such as rectangular rapid flashing beacons activated by users, flashing stop signs, or repainting crosswalk striping would improve safety.

While all of these corridors and intersections are viewed as critically important by the community, other projects may be implemented as opportunities or challenges arise. Opportunities may include grant availability, new developments, or roadway repaving.

Maintenance Strategy

The improvements proposed by the Plan were crafted in consideration of the various challenges associated with maintenance in unincorporated Riverside County generally and the ECV specifically. The designs suggested in Chapter 7 are context-sensitive and aim to require reasonably limited maintenance.

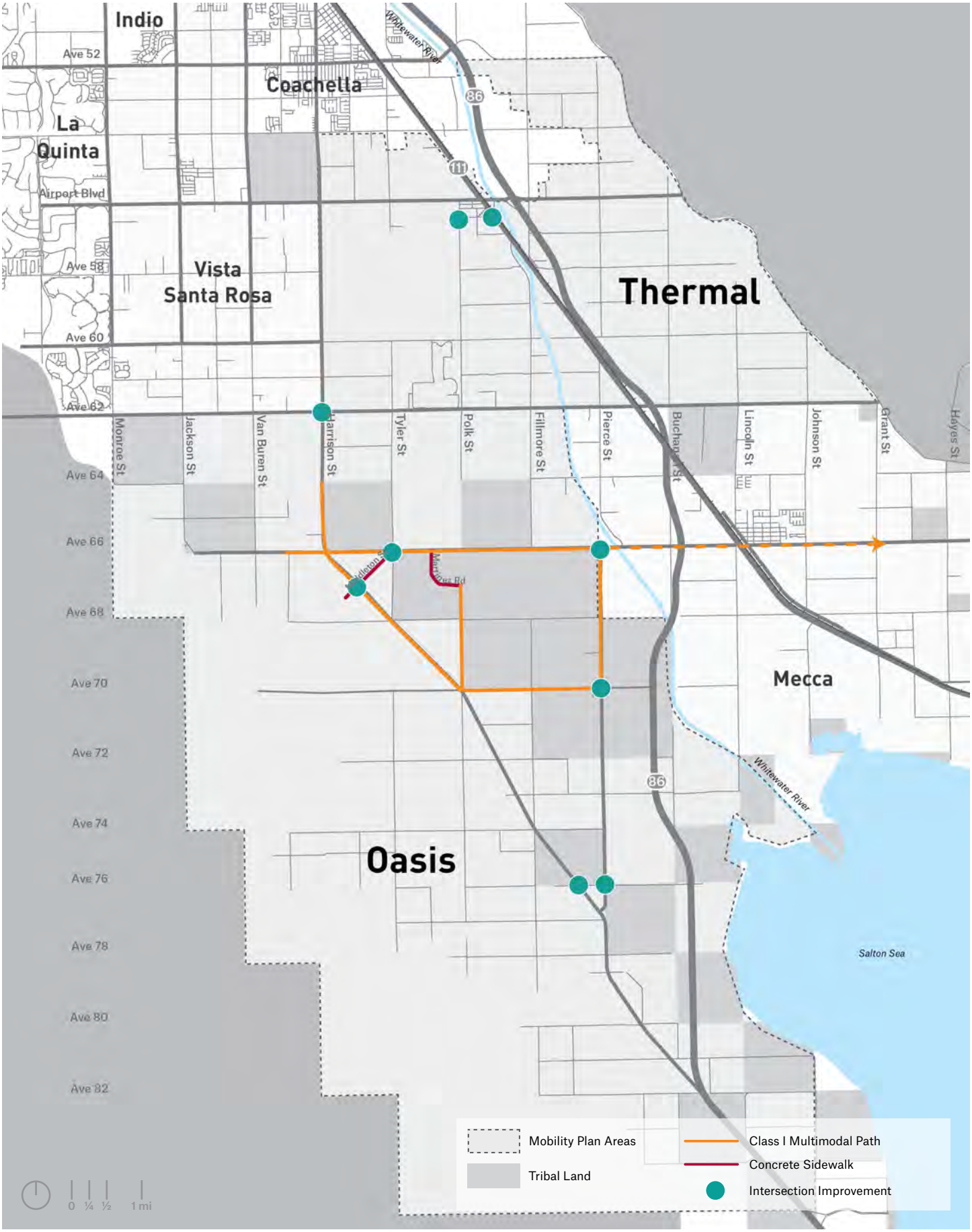

Figure 30. Proposed Facility Improvements: Short Term (Phase 1)

Figure 31. Proposed Facility Improvements: Short Term (Phase 1) Downtown Thermal Detail

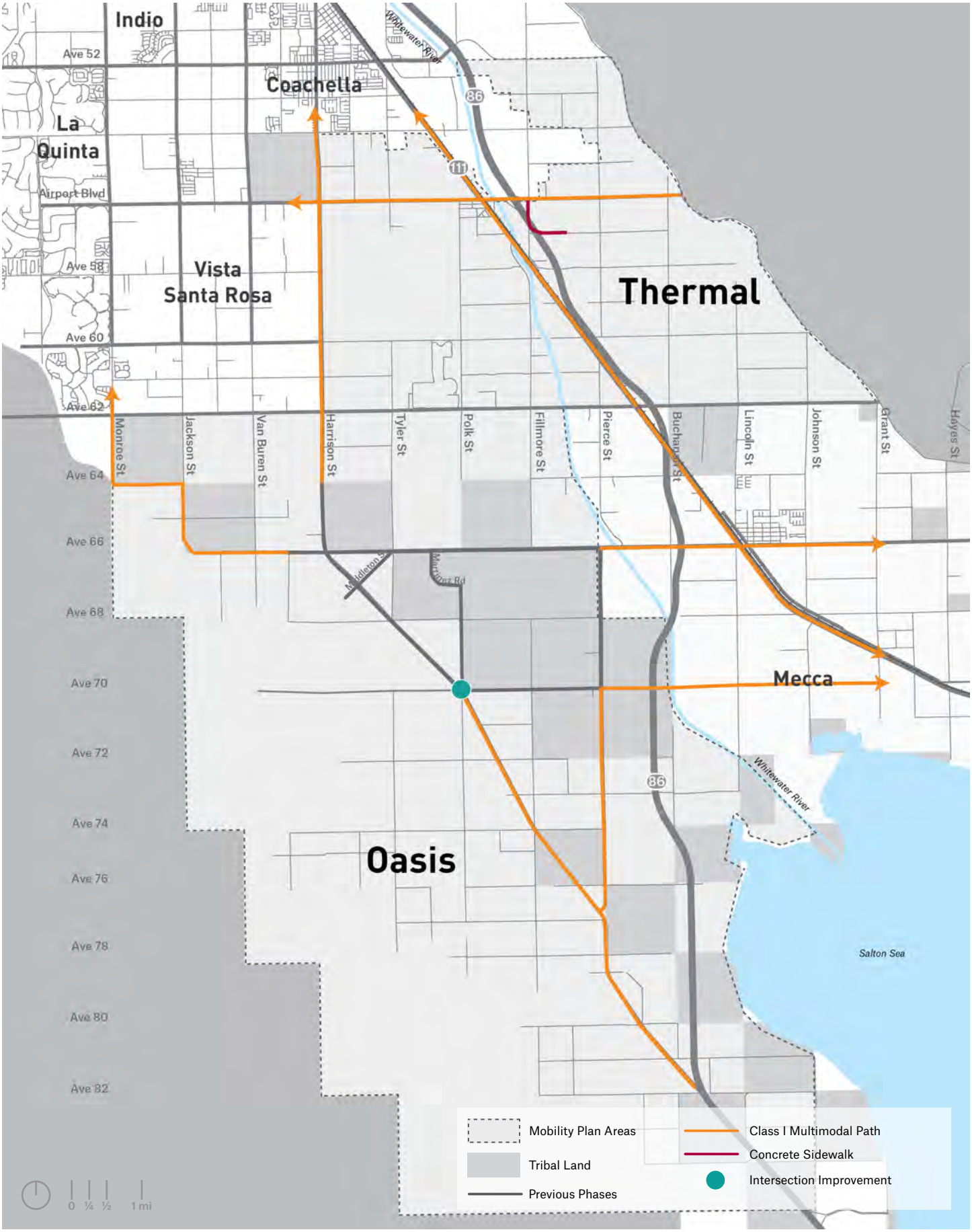

Figure 32. Proposed Facility Improvements: Short-Medium Term (Phase 2)

Figure 33. Proposed Facility Improvements: Short-Medium Term (Phase 2) Downtown Thermal Detail

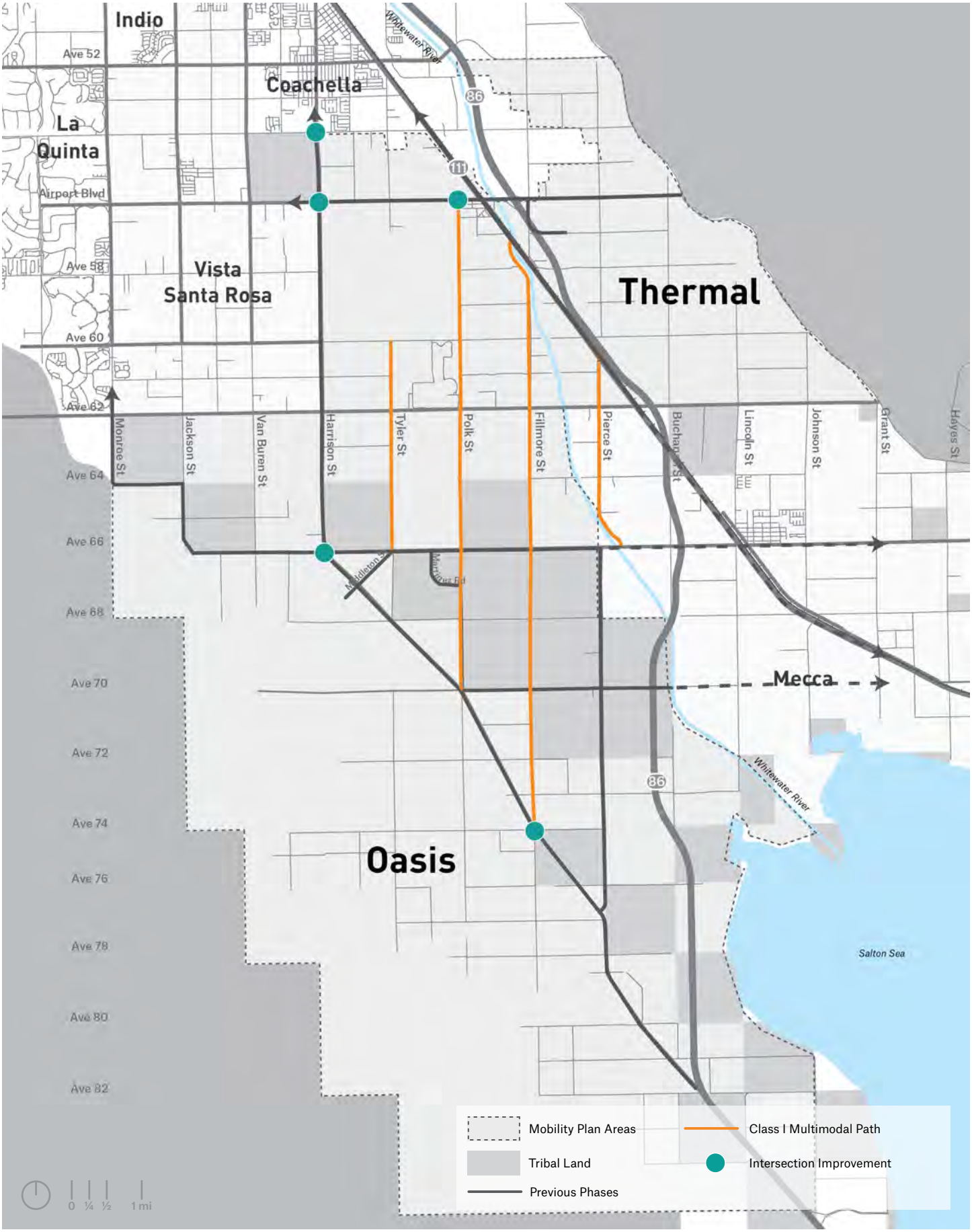

Figure 34. Proposed Facility Improvements: Medium Term (Phase 3)

Figure 35. Proposed Facility Improvements: Medium Term (Phase 3) Downtown Thermal Detail

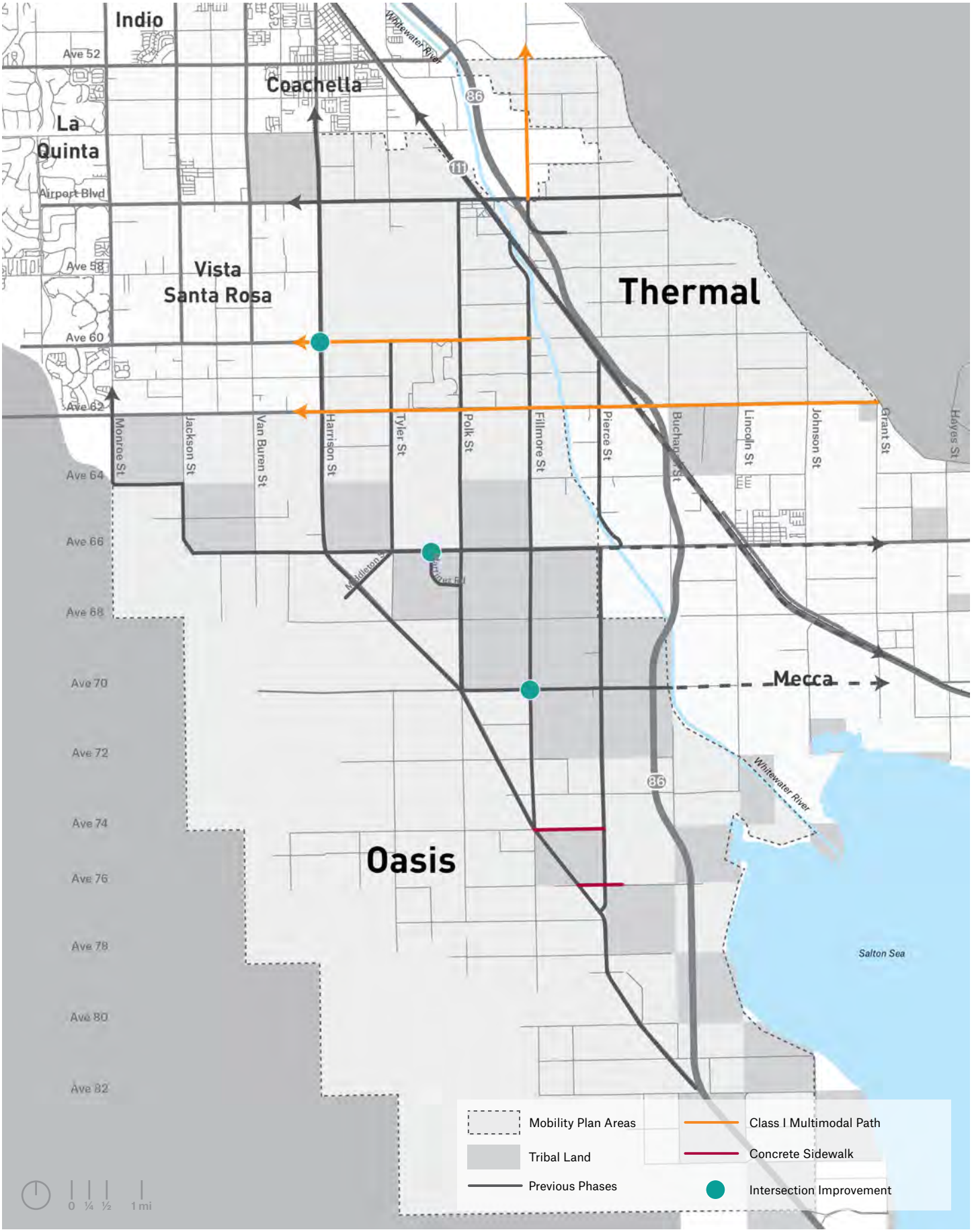

Figure 36. Proposed Facility Improvements: Long Term (Phase 4)

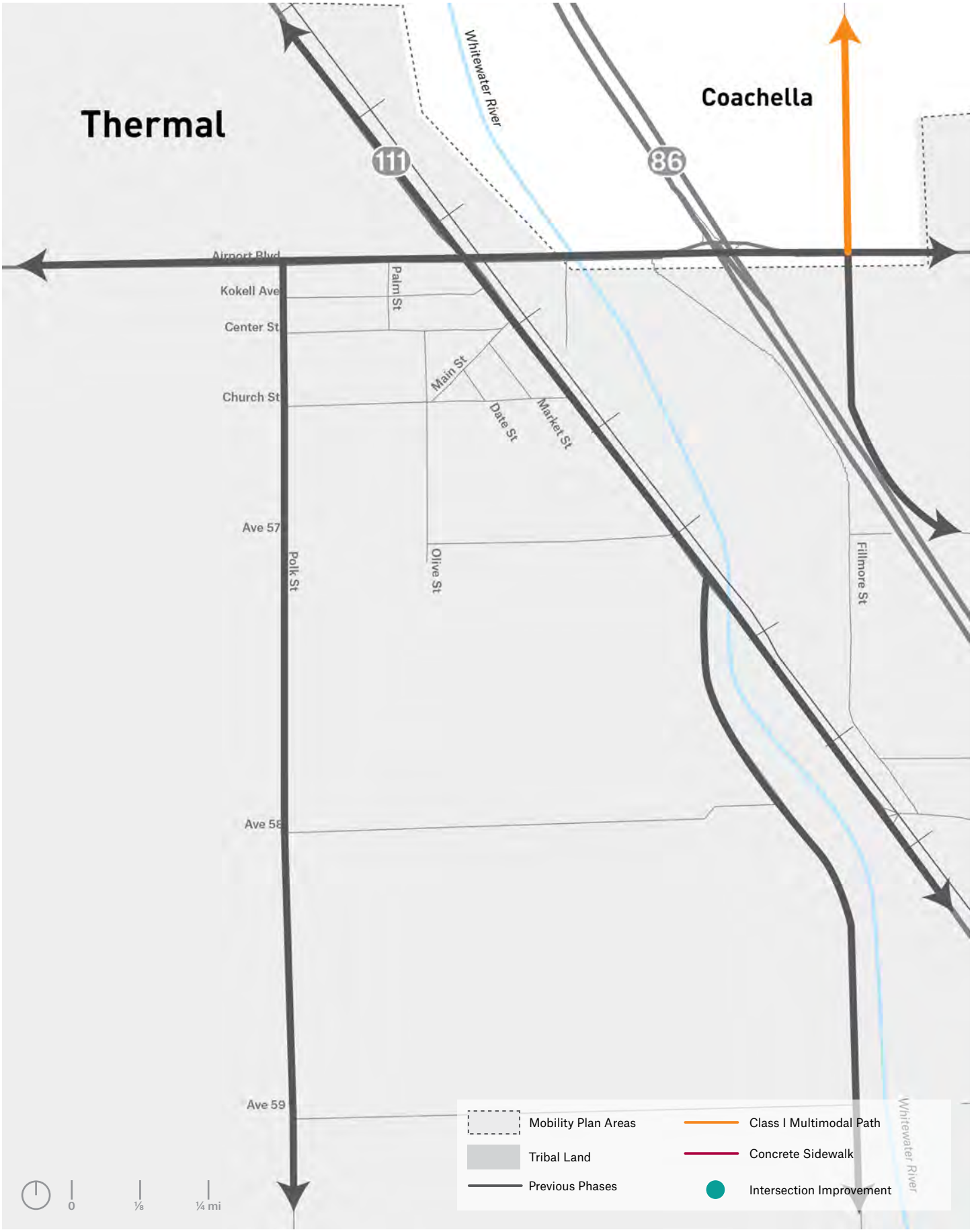

Figure 37. Proposed Facility Improvements: Long Term (Phase 4) Downtown Thermal Detail

Potential Funding Sources

State Funds

Active Transportation Program (ATP)

As of September 26, 2013, existing federal and state transportation programs, including the Transportation Alternatives Program (TAP), Bicycle Transportation Account (BTA), and State Safe Routes to School (SR2S), consolidated into a single program with a focus to make California a national leader in active transportation. The ATP is administered by the Division of Local Assistance, Office of Active Transportation and Special Programs.

The purpose of ATP is to encourage increased use of active modes of transportation by achieving the following goals:

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

Office of Traffic Safety (OTS) Grant

Office of Traffic Safety Grants (OTS) fund safety programs and equipment. Bicycle and Pedestrian Safety is a specifically identified priority. This category of grants includes enforcement and education programs, which can encompass a wide range of activities, including bicycle helmet distribution, design and printing of billboards and bus posters, other public information materials, development of safety components as part of physical education curriculum, or police safety demonstrations through school visitations. The grant cycle typically begins with a request for proposals in October, which are due the following January.

Federal Funds

Highway Safety Improvement (HSIP)

The purpose of the HSIP program is to achieve a significant reduction in traffic fatalities and serious injuries on all public roads, including non-State-owned public roads and roads on tribal land. HSIP funds are eligible for work on any public road or publicly owned bicycle or pedestrian pathway or trail, or on tribal lands for general use of tribal members, that improves the safety for its users. [1]

High Risk Rural Roads Program (HR3)

HSIP projects on rural roads can qualify as HR3 projects. Formerly its own program, HR3 funds improvements on roads that are functionally classified as rural major collectors, rural minor collectors, or rural local roads to correct or improve hazardous roadway locations or features to reduce the frequency and severity of collisions. Some roads in the ECV may be eligible for this funding.[2]

Congestion Mitigation and Air Quality (CMAQ) Improvement

The CMAQ program funds transportation projects and programs that help meet the requirements of the Clean Air Act. Eligible projects include: transit improvements, travel demand strategies, traffic flow improvements, and fleet conversions to cleaner fuel.[3]

1 State of California Department of Transportation, Division of Local Assistance. Local Assistance Program Guidelines: Processing Procedures for Implementing Federal and/or State Funded Local Public Transportation Projects. December 2008

2 Ibid.

3 Ibid

Conclusion

Given the current state of active transportation infrastructure in Thermal and Oasis, implementation of these improvements could have a significant positive impact not only on mobility in the communities, but also on various socioeconomic issues that hinge on transportation in the area, including access to employment, education, health, and other opportunities and necessities.

Improving facilities for pedestrians, bicyclists, and transit users will improve residents' ability to travel to high priority destinations (such as schools, workplaces, churches, stores, etc.) throughout the communities safely and efficiently with or without an automobile. Improving facilities for active transportation will provide recreational opportunities for residents, particularly those who aspire to walk and bike with their families for recreation and exercise. Focusing high-priority facilities around schools will also enable students living nearby to walk and bike to school more safely, both on a regular basis or when they miss the school bus. In addition to these infrastructure improvements, coordination with Riverside University Health System-Public Health team's work on Safe Routes to School can begin to shape a multimodal culture in the ECV and make transportation safer for all residents.

This Plan will be used by the Riverside County Department of Transportation to plan for future active transportation and multimodal improvements; to apply for various funding sources for planning, engineering, and construction funds; and to condition future development for permitting and ensure developer improvements. It is recommended that this plan be updated every five years, each time coordinating with local stakeholders. Communication and coordination with stakeholders, centering local knowledge, is crucial to achieving the suggested improvements.

Compliance with Other Planning Efforts

This Plan is consistent with Riverside County's stated priorities via the General Plan Circulation Element and the ECV Area Plan in continuing to make the County more welcoming to active transportation usage and less automobile-centric. Additionally, the Plan contributes to improving the mobility of Riverside County's transportation system as per the State of California's Complete Streets Act (AB 1358).

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X. Appendix: Menu of Design Options

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PEDESTRIAN FACILITY OPTIONS

	MULTI-USE PATH	SIDEWALK	ROADWAY	
	MULTI-USE PATH	STRAIGHT SIDEWALK	RAISED MEDIAN	PROVISIONAL "PROTECTED WALKING LANE"
SPACE REQUIRED	• 15 foot minimum	• 5 ft minimum	• 6-8 foot minimum	• 5-10 ft minimum / width flexible
REQUIRED COMPONENTS	• Minimum 10 ft paved surface for travel • Minimum 5 ft buffer separation from vehicle traffic	• Curb for safety and separation from the roadway • Gutter for stormwater runoff	• Raised median with pedestrian refuge • Raised area a minimum of 7 inches above roadway	• Concrete curb separator to prevent vehicle entry
RECOMMENDED COMPONENTS	• Colored pavement and/or other markings to distinguish for users and vehicles • Landscaping or other such elements to provide shade • Additional pedestrian amenities such as benches, wayfinding, and lighting	• Landscaping or other such elements to provide shade • Additional pedestrian amenities such as benches and lighting • Can be designed as a full sidewalk or ribbon sidewalk	• Landscaping (if wider median) or other such elements to provide shade • Crossing signage with lighting to allow for visibility to vehicles	• Colored pavement and/or other markings to distinguish for users and vehicles • Clear signage to indicate the intended usage of the lane
IDEAL APPLICATION	• High speed streets with relatively high traffic volumes • Main corridors with wider ROW	• Narrow / low speed streets meeting residential district criteria (25 MPH speed limit) • Corridors with narrow ROW • Ideal on both sides of street, but could be implemented on one initially	• Street having limited access points to fronting properties • Main corridors	• Temporary antecedent for areas with planned future improvements • Available paved area: existing paved shoulder or lanes that could be narrowed • Low to medium speed road
ADVANTAGES	• Safe separation from vehicles • Multi-use for pedestrian and bicyclists • Comfortable for a variety of users and age groups	• Safely separated from vehicles • Alleviates drainage issues	• Reduces risk of left-turn and head-on collisions • Equally accessible to both sides of the street • Reduces crossover traffic • Channelizes pedestrian crossings to limited locations • Traffic calming effects	• Low cost adaptation of existing facility • Quick implementation option
DISADVANTAGES	• Requires wide ROW	• Narrow walking surface that can only accommodate smaller groups of people	• Ongoing maintenance and operations cost	• Pedestrians close to vehicular traffic
GUIDELINES	• See California MUTCD: Section 9C.03 (p. 1379) and Figure 9C-2 • See California HDM: Section 1003.1	• See FHWA Designing Sidewalks and Trails for Access: Chapter 4	• See California MUTCD: Section 3I.06 (p. 814)	• See https://usa.streetsblog.org/2018/02/01/a-quick-and-dirty-fix-for-sidewalkless-streets/
PRECEDENT IMAGE				

BICYCLE FACILITY OPTIONS

	CLASS I	CLASS II	CLASS IV
	MULTIMODAL PATH	BUFFERED LANE	SEPARATED BIKEWAY
SPACE REQUIRED	• 15 foot minimum	• 8 ft minimum	• 8 foot minimum
REQUIRED COMPONENTS	• Minimum 10 ft paved surface for travel • Minimum 5 ft buffer separation from vehicle traffic • Buffer could be: vegetated swale, earthwork berm, at least 10 ft of flat earth	• Minimum 5 ft wide bicycle lane with 3 ft wide buffer • Non-vertical separators in buffer, such as rumble strips	• Minimum 5 ft bicycle lane with 3 ft wide buffer • Physical separators in buffer, such as concrete curbs or flexible delineators
RECOMMENDED COMPONENTS	• Colored pavement and/or other markings to distinguish for users and vehicles • Landscaping or other such elements to provide shade • Additional pedestrian amenities such as benches, wayfinding, and lighting	• Colored pavement to increase visibility • Reflective markers for nighttime visibility	• Colored pavement to increase visibility • Reflective markers for nighttime visibility
IDEAL APPLICATION	• High speed streets with relatively high traffic volumes • Main corridors with wider ROW	• Lower speed streets or residential streets	• Lower speed streets
ADVANTAGES	• Safe separation from vehicles • Multi-use for pedestrian and bicyclists • Comfortable for a variety of users and age groups	• Buffer zone enhances comfort for cyclists • Appropriate for narrow ROW • Convenient access to destinations • Allows for roadside parking	• Safe separation from vehicles and buffer zone enhances comfort for cyclists • Appropriate for narrow ROW • Convenient access to destinations
DISADVANTAGES	• Requires wide ROW	• Perceived as less safe than separated paths • Requires enough paved area to accommodate an extra lane of bicycle traffic, or additional pavement is needed	• Separators can complicate access • Requires enough paved area to accommodate an extra lane of bicycle traffic, or additional pavement is needed
GUIDELINES	• See California MUTCD: Section 9C.03 (p. 1379) and Figure 9C-2 • See California HDM: Section 1003.1	• See California MUTCD: Section 9C.04-42 (p. 1383) and Figure 9C-104 (CA) • See California HDM: Section 1003.2	• See California MUTCD: Section 9C.102 (p. 1386) and Figure 9C-110 (CA) • See Caltrans Design Information Bulletin 89-01
PRECEDENT IMAGE			

INTERSECTION + TRAFFIC CALMING OPTIONS

	SIGNAGE		CROSSWALKS		ROADWAY
	SOLAR FLASHING STOP SIGNS	RECTANGULAR RAPID FLASHING BEACONS (RRFB)	RAISED CROSSWALKS	MARKED CROSSWALKS	ROUNDABOUTS
DESCRIPTION	• Installing flashing components at stop controlled intersections	• Installing RRFBs in addition to crosswalk components	• Raising crosswalks above street level so that passing vehicles need to slow down • Typically 10-15 feet in width	• Lateral or longitudinal lines (or other markings) to highlight pedestrian crossing • Often accompanied by a pedestrian crossing sign	• Slow-speed, one-way intersection around a central circle • Can vary in size to accommodate up to two lanes of traffic • Mountable truck apron is used to accommodate larger vehicles
IDEAL APPLICATION	• Stop controlled intersections with high traffic volumes and/or high speed traffic	• Stop controlled intersections with high pedestrian traffic and/or high speed traffic	• Areas with high crossing demand • Crosswalks near a school • Trail crossings	• At stop-, yield-, or signal-controlled intersections • At intersections without stop or signal controls if study finds they are necessary	• Intersections that have at least three approaches and high vehicle volumes • To create a slow-speed gateway entering a neighborhood or community • To avoid creating lanes at an intersection to accommodate turning movements
ADVANTAGES	• Can improve safety at stop controlled intersections • Low maintenance costs of solar lighting	• Can improve pedestrian safety at crossings • Relatively low cost	• Improved safety for crossing pedestrians through improving driver's awareness of crossing • Encourages slower traffic speeds	• Provides guidance to pedestrians of preferred crossing locations • To alert motorists to the presence of pedestrians	• Reduces vehicular speeds • Eliminates the possibility of head-on collisions • Enhances pedestrian safety by slowing vehicle speeds and keeping crossing short with median refuge island
DISADVANTAGES	• Not as reliable as traditional powered lighting	• Slightly higher maintenance costs	• Higher cost of implementation • May impact street drainage	• Less significant safety improvement that other options • Maintenance required	• High upfront investment in infrastructure • May require increased spatial footprint for the intersection
GUIDELINES	• See California MUTCD: Section 4L.05 (p. 982)	• See FHWA Interim Approval 21	• See FHWA Traffic Calming ePrimer 3.14	• See California MUTCD: Section 3B.18 (p. 682)	• See California MUTCD: Chapter 3C (p. 769) and 4C (p. 827)
PRECEDENT IMAGE					

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