



CITY OF PALMDALE

Palmdale Equity Analysis

May 2023



Palmdale Equity Analysis

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1. Purpose

The following memo summarizes equity implications identified through the traffic safety and vehicle miles traveled (VMT) analyses, and through community outreach conducted for the City of Palmdale's Sustainable Transportation Plan. The purpose of the memo is to analyze disproportionate and negative impacts to disadvantaged communities in the City associated with transportation safety and VMT such as traffic accidents and fatalities, lack of public transit access and active transportation infrastructure, and congestion. Using this analysis, the memo aims to identify geographical areas for policies, programs, and infrastructure investments. It also identifies potential sources of government and grant funding to assist with implementation. The memo first provides a summary of the methodology used to identify equity communities within the City of Palmdale. The memo provides an overview of general takeaways from a review of safety and VMT data, followed by key equity takeaways related to safety and VMT. The memo then summarizes input from the community outreach process used to support the development of the City of Palmdale's Sustainable Transportation Plan. Finally, the memo covers policy and program recommendations for the City of Palmdale to equitably improve safety and reduce VMT and greenhouse gas emissions in accordance with state and regional goals.

This memo uses federal, state and regional definitions of disadvantaged communities. Analyses were conducted at the census tract level, including census tracts meeting all three equity definitions, census tracts meeting two of the definitions, and census tracts meeting at least one of the definitions. Additional safety analysis was focused on schools due to community feedback on the need for better bicycling and pedestrian safety for school aged residents. The VMT analysis focuses on household travel and employment centers given that much of the VMT within the City is derived from trips to and from major employment centers.

2. Methodology

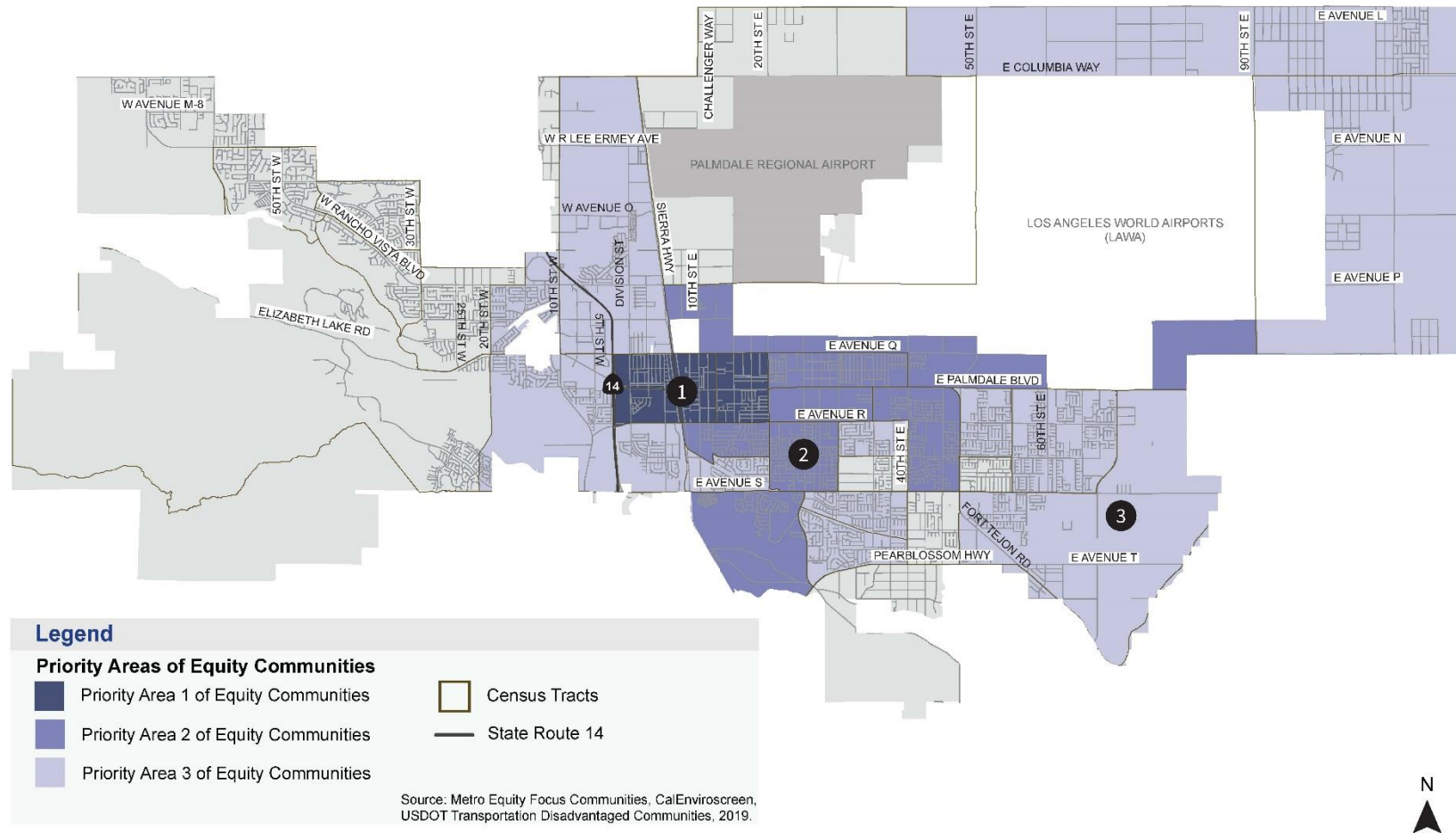
Equity implications of transportation infrastructure and mobility trends were analyzed within the City of Palmdale. This included defining equity, and reviewing equity data related to safety and VMT. Additionally, community feedback provided as part of public engagement efforts for the Palmdale Sustainable Transportation plan was reviewed for equity focused areas of the city. This analysis forms the basis for equity policy and program recommendations provided in this memo. This memo also covers infrastructure improvements addressing safety and the reduction of VMT within equity communities.



Palmdale Equity Analysis

Figure 1: City of Palmdale Equity Communities and Priority Areas

City of Palmdale



Federal, State and Regional Equity Definitions

Equity communities were identified using relevant federal, state, and regional definitions. Equity communities meeting one or more of these definitions were mapped, identifying targeted areas of analysis within the City of Palmdale (see **Figure 1**). Census tracts within the city were mapped for each of the three equity definitions:

- **Federal definition** - To meet federal definitions, census tracts meeting the "Historically Disadvantaged Community and Areas of Persistent Poverty" definition for the Rebuilding American Infrastructure with Sustainability and Equity (RAISE) grant program were mapped. The RAISE program is administered through the United States Department of Transportation (US DOT) and is consistent with interim guidance for the Justice40 Initiative. This definition is also used to support other federal grants under the Infrastructure Investment and Jobs Act (IIJA). According to US DOT, "Historically Disadvantaged Community" is defined based on the following factors:
 - Transportation access disadvantage - communities and places that spend more, and take longer, to get where they need to go
 - Health disadvantage - communities based on variables associated with adverse health outcomes, disability, as well as environmental exposures
 - Environmental disadvantage - communities with disproportionately high levels of certain air pollutants and high potential presence of lead-based paint in housing units
 - Economic disadvantage - areas and populations with high poverty, low wealth, lack of local jobs, low homeownership, low educational attainment, and high inequality
 - Resilience disadvantage - communities vulnerable to hazards caused by climate change
 - ⊕ Equity disadvantage - communities with a high percentile of persons (age 5+) who speak English "less than well."
 - **State definition** - Census tracts were mapped meeting the SB 535 disadvantaged communities' definitions, set by the California Office of Environmental Health Hazard Assessments CalEnviroScreen program (CalEnviroScreen). SB 535 disadvantaged communities are defined as:
 - The 25% highest scoring census tracts in CalEnviroScreen 4.0
 - Census tracts previously identified in the top 25% in CalEnviroScreen 3.0
 - Census tracts with high amounts of pollution and low populations
 - Federally recognized tribal areas as identified by the Census in the 2021 American Indian Areas Related National Geodatabase.
- CalEnviroScreen provides scoring to different census tracts based on the following indicators:
- Exposure indicators – exposure to pollution and toxic contaminants
 - Environmental effect indicators – adverse environmental conditions caused by pollutants
 - Sensitive population indicators – populations with physical conditions causing vulnerability to pollutants
 - Socioeconomic indicators – community characteristics causing vulnerability to pollutants
- **Regional definition** - Census tracts meeting the Los Angeles County Metropolitan Transit Agency's (Metro) definition for equity focus communities (EFCs) were mapped. Metro defines EFCs based on the following factors:
 - Income
 - Race/ethnicity
 - Vehicle ownership

The majority of Palmdale residents live in census tracts that meet one or more of these equity definitions. The equity memo categorizes equity communities into three tiers as discussed below. Categorizing equity communities into the three tiers will help the City determine which areas have the highest needs and inform how opportunities for federal, state and regional funding to support these areas:

- Equity priority area 1 – Meets all 3 equity definitions (federal, state, regional)
- Equity priority area 2 – Meets 2 equity definitions (federal and regional OR state and regional)
- Equity priority area 3 – Meets 1 equity definition (federal, state, or regional)

An analysis of safety and VMT data was then applied using Geographic Information Systems (GIS). Safety and VMT data are overlaid on census tracts meeting federal, state, and regional equity definitions. The analysis and recommendations are discussed by equity priority areas.

The Palmdale Safety Plan presents a safety evaluation of the City's transportation network for targeted areas. The Safety Plan presents information crash type, target locations, and notable relationships between current efforts and crash history. The Safety Plan analyzes crash data from 2017-2021 on an aggregate basis as well as at specific locations to identify high-crash locations, high-risk locations, as well as city-wide trends and patterns. Collision data for pedestrians, bicycle, and automobiles provided in the LRSP was utilized in analyzing safety for this memo.

Data on vehicle miles traveled (VMT) were analyzed for equity communities in the City of Palmdale. In the analysis, VMT per capita and employment data gathered from the City of Palmdale was analyzed within equity priority areas. VMT data was calculated using the City's travel demand model and validated using cellphone capture data from Replica.

The VMT data were separated into the following categories:

- Employment-related VMT, which refers to employment VMT per employee resulting from automobile-only trips between home and workplaces. Employment-related VMT baseline thresholds were gathered from the *Transportation Impact Analysis Guidelines* document published by LA County Public Works.
- Employment density, which refers to the number of jobs in a specific location
- VMT per capita, which refers to total VMT resulting from all vehicles and trip purposes per person (residents and employees inclusive). Baseline VMT per capita thresholds was gathered from the *Transportation Impact Analysis Guidelines* document published by LA County Public Works.

The employment-related VMT and VMT per capita data for the City of Palmdale is compared to the VMT average for North LA County, wherein areas are color coded based on existing VMT levels relative to VMT significance thresholds for CEQA. CEQA requires VMT levels to be at least 16.8% below the area average; if not, VMT mitigations should be taken.

Measures and forecasting data from the National Cooperative Highway Research Program (NCHRP) 552 were also utilized in the VMT analysis. While not geolocated such as employment-related VMT or VMT per capita, VMT findings around active transportation and public transportation correlate with other findings and their correlation to equity priority areas is discussed in this memo.

3. Analysis

This section summarizes key takeaways from the equity, safety, and VMT analysis. The analysis includes key findings for equity communities meeting federal, state and regional definitions. The safety analysis includes key findings related to schools given community feedback on the need for safety improvements around schools. VMT analysis is focused on employment-related VMT, employment density, and VMT per capita. Lastly, key findings are presented from community engagement conducted as part of the City of Palmdale's Sustainable Transportation Plan.

Equity Communities

Most census tracts in the City of Palmdale meet at least one equity definition. Census tracts in equity priority area 1, meeting federal, state, and local equity definitions, are located between East Avenue O and East Avenue R. Census tracts in equity priority area 3, which only meet Metro's definition of EFC's, are located between East Avenue Q and Pearl Blossom Highway. The majority of census tracts between E Columbia Way and Pearl Blossom Highway also meet US DOT's equity definition. Because a majority of the census tracts in the City are defined as equity communities, major parts of the city would benefit from increased investment in active transportation infrastructure, safety improvements, and reductions in VMT and greenhouse gas emissions. **Figure 1** illustrates census tracts within the City of Palmdale meeting these equity definitions.

Four census tracts within the City are in equity priority area 1, identifying equity communities where there is a concentration of vulnerable households. These census tracts are located between East Avenue Q and East Avenue R. Residents of these areas have the highest equity needs and face the most transportation, environmental, and socioeconomic-related barriers based on federal, state and regional equity definitions. These census tracts would benefit most significantly from investments in pedestrian and bicycle infrastructure, safety enhancements and strategies to reduce VMT to improve residents' mobility throughout the city. The City could prioritize transportation funding in equity priority area 1 to ensure programs are targeted in this area.

A majority of census tracts in equity priority area 2 are located east of Sierra Highway. Residents in this area also have high equity needs and face similar transportation, environmental, and socioeconomic-related barriers to that of equity priority area 1. A focus on investment in transportation infrastructure in these areas could help residents get more equitable access to high-quality transportation services and improved traffic safety.

Census tracts in equity priority area 3 are located east of West 20th Street. Because these census tracts meet at least one of the three equity definitions, residents experience transportation, environmental, and socioeconomic-related barriers meeting federal, state, or regional need definitions. Transportation funding for programs and infrastructure in this area will also enhance equity city-wide.

Safety

All Collisions

The following provides data on all types of collisions that occur in the City of Palmdale. These include automobile, pedestrian and bicycle collisions presented in **Figure 2**.



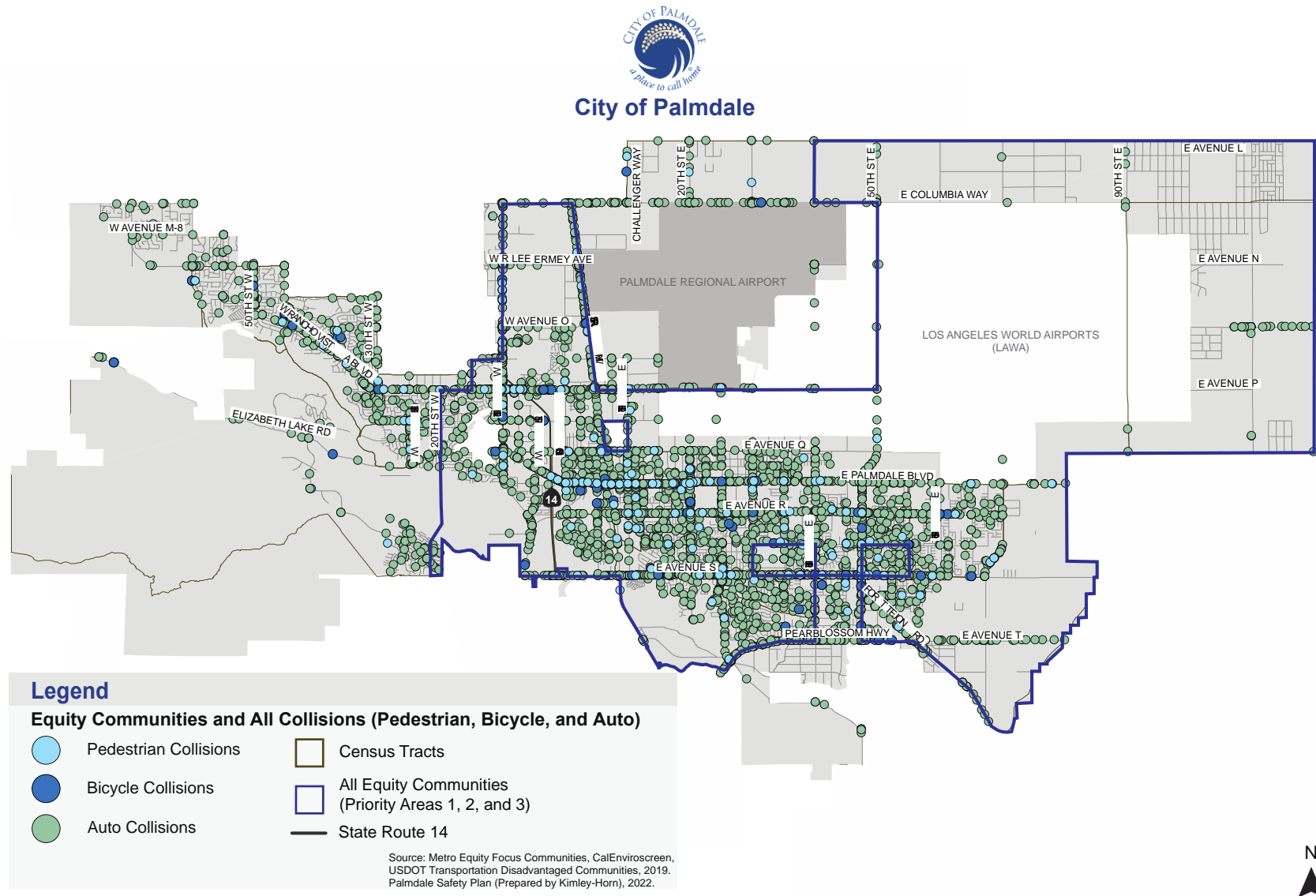
Palmdale Equity Analysis

A majority of all collisions occur within equity communities in the City of Palmdale. Collision types include those involving pedestrian, bicycle, and automobiles. Street and sidewalk improvements such as protected bike lanes, signalized intersections, pedestrian scale lighting, and reduced speeds can improve safety conditions for all residents, specifically those located within equity communities.

Per the Safety Plan, 39% of all collisions have occurred at unsignalized intersections. As these locations are not controlled by a signal, there can be additional opportunities for conflict and collisions. While not all intersections require traffic signals or other traffic control devices, signals, protected pedestrian crossings, and other signs and markings can be installed where appropriate to reduce collision rates and injuries.

Palmdale Equity Analysis

Figure 2: City of Palmdale All Collisions and Equity Communities



Thirty-two percent of all collisions were due to aggressive driving, while seven percent of all collisions were due to impaired driving (6.6%). Aggressive driving can include driving at unsafe speeds, improper passing, and other aggressive driving behaviors. Aggressive driving can be mitigated with lower speeds and improvements to street infrastructure. It is equally as important to address impaired driving through mitigations such as sobriety checkpoints. Long-term solutions such as systemic education programs for youth can help foster a better driving culture within Palmdale. Street improvements and mitigation efforts will best serve equity communities given that the majority of collisions in the City of Palmdale occur in equity communities. These types of collisions have in many cases have resulted in fatalities.¹

28% more of Palmdale's fatal & severe injury (F&SI) collisions occurred at intersections than the statewide average, this includes all collisions (auto, pedestrian, and bicycle) within the City. Fifty one percent (51.1%) of Palmdale's F&SI crashes occur at intersections, which is higher than the statewide average of 23.6% for all collisions at intersections. The primary causes for these collisions are improper turning and unsafe speeding. It is essential to prioritize traffic safety measures and intersection improvements that reduce F&SI collisions at intersections. Such measures will increase safety for equity communities located in the majority of the City of Palmdale. Severe collisions that have recently occurred in the City have a lasting impact on families.²

There are concentrations of severe and fatal pedestrian and bicycle collisions within equity priority areas 1 and 2. These are located along East Palmdale Blvd between Division St. and 40th St East and East Avenue S between Sierra Highway and 47th Street East. Many collisions occur at street segments and intersections near shopping centers in particular adjacent to East Avenue S and 47th St East, and East Palmdale Blvd and Division Street.

Pedestrian Collisions

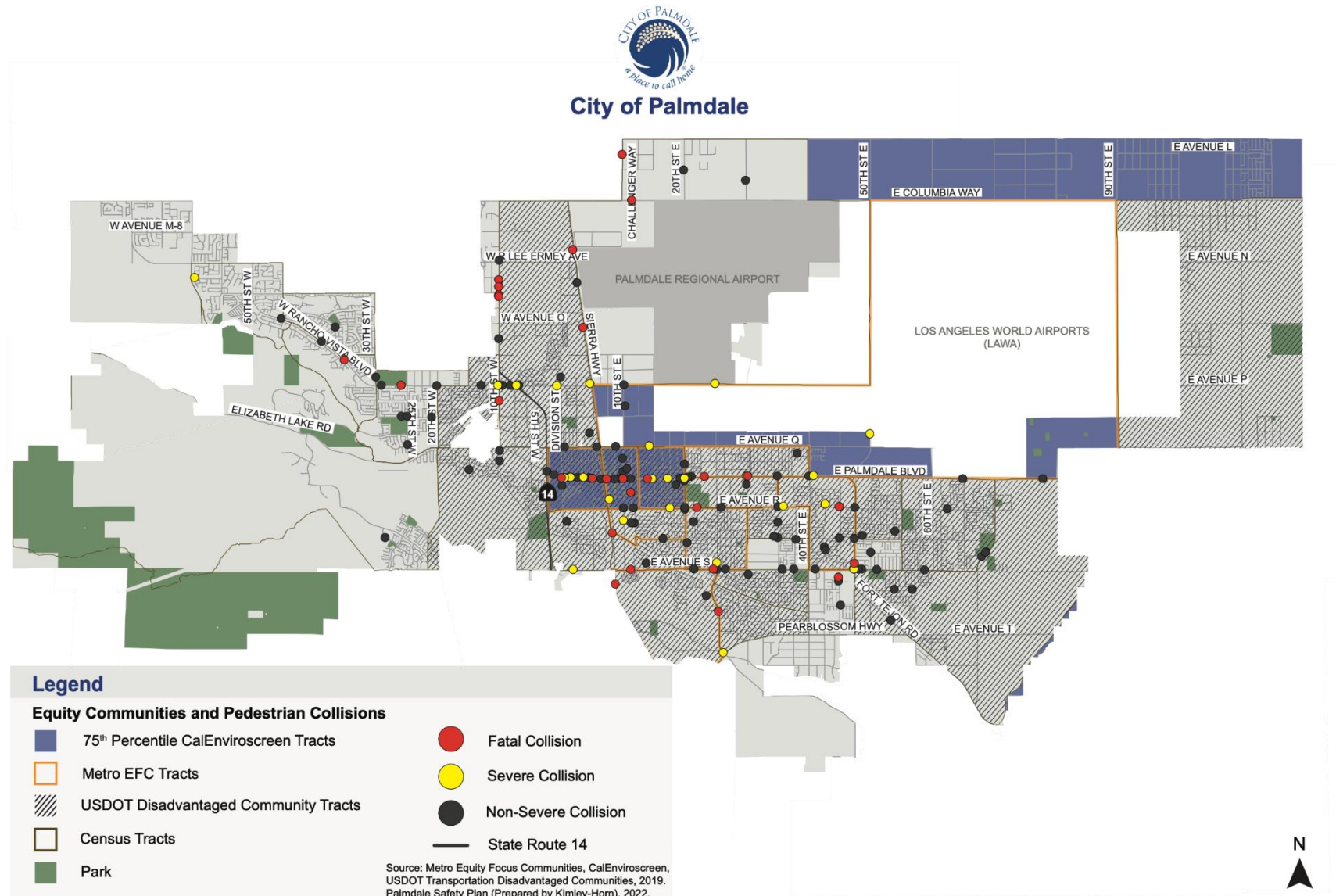
About 97% of pedestrian collisions reported injury or pain, serious injury, or fatality (96.7%, or 179 out of 185, respectfully). Among the total pedestrian collisions, approximately 29% reported serious injury or fatality and 68% reported some form of injury or pain. This demonstrates the vulnerability of pedestrians and the need for improved safety measures. **Figure 3** illustrates all pedestrian collisions, highlighting those that resulted in a fatality or serious injury. **Error! Reference source not found.** A majority of pedestrian collisions resulting in a fatality or serious injury occurred in equity priority areas 1 and 2. Fatal and serious injury collisions in equity priority area 1 are located along East Palmdale Blvd between Division Street and 20th Street East. Fatal and serious injury collisions in equity priority area 2 are located along East Palmdale Blvd, East Avenue R, and East Avenue S.

¹ [Palmdale Fatal Pedestrian Street Vendor Crash 25th Street East Avenue S \(californiainjuryaccidentlawyer.com\)](https://californiainjuryaccidentlawyer.com/palmdale-fatal-pedestrian-street-vendor-crash-25th-street-east-avenue-s/)

² [2 Children Among 4 Killed in Head-On Palmdale Wreck - CBS Los Angeles \(cbsnews.com\)](https://www.cbsnews.com/news/children-killed-head-on-palmdale-wreck/)

Palmdale Equity Analysis

Figure 3: City of Palmdale Pedestrian Collisions in Equity Communities





Palmdale Equity Analysis

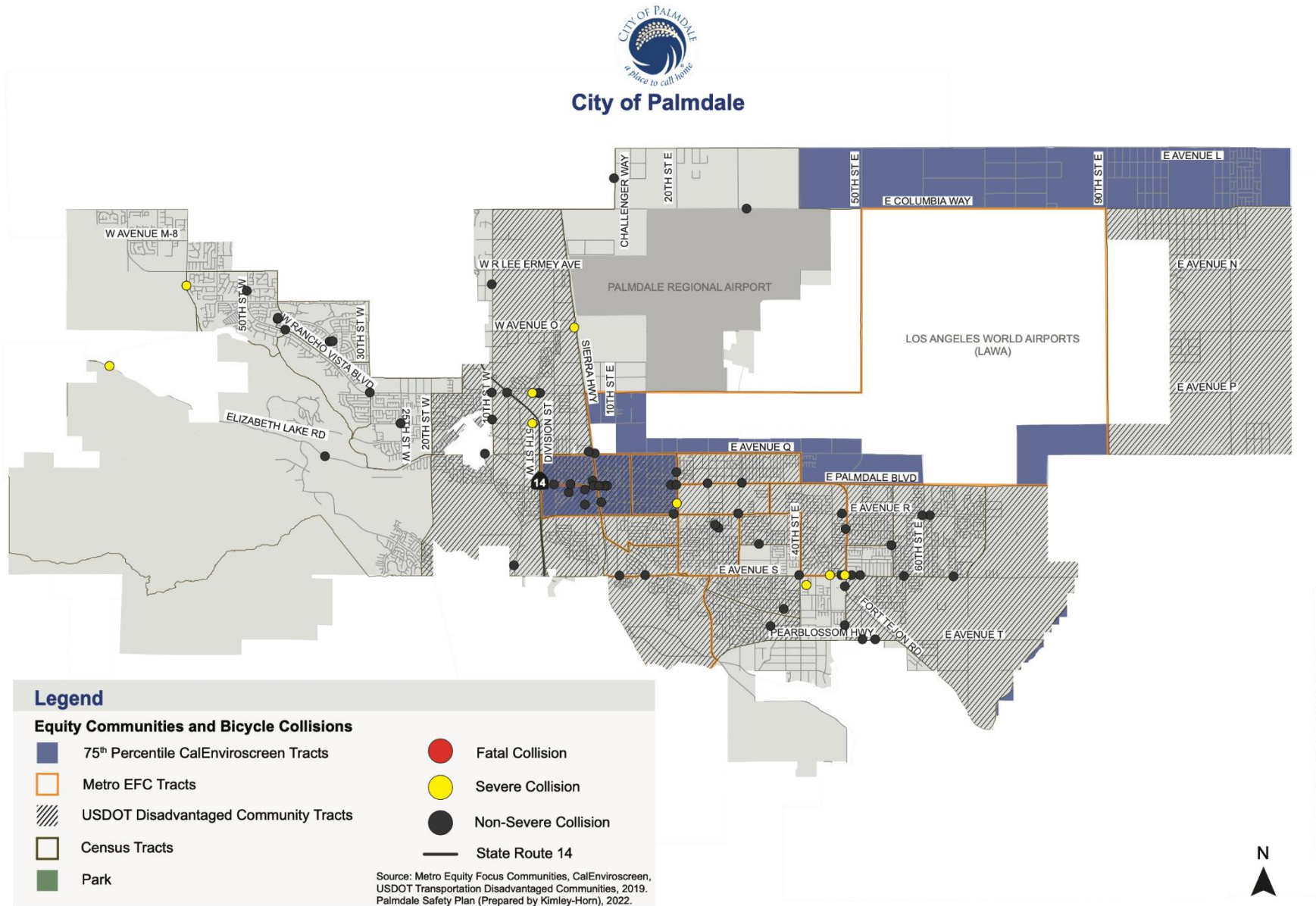
The majority of pedestrian collisions occurred at night (78.6%). Most of Palmdale's street network either has no lighting, or has car-oriented lighting infrastructure. Given that the majority of pedestrian collisions occurred in equity communities, lighting improvements to increase pedestrian visibility can improve safety conditions for communities without sufficient sidewalk infrastructure.

Bicycle Collisions

Concentrations of bicycle collisions occurred in equity priority area 1 east of State Route 14 along East Palmdale Blvd. High speeds and a lack of bike infrastructure creates an unsafe environment for bicyclists along East Palmdale Blvd (see **Figure 4**). The addition of protected and painted bike lanes can increase safety for bicyclists within equity priority area

Palmdale Equity Analysis

Figure 4: City of Palmdale Bicycle Collisions in Equity Communities

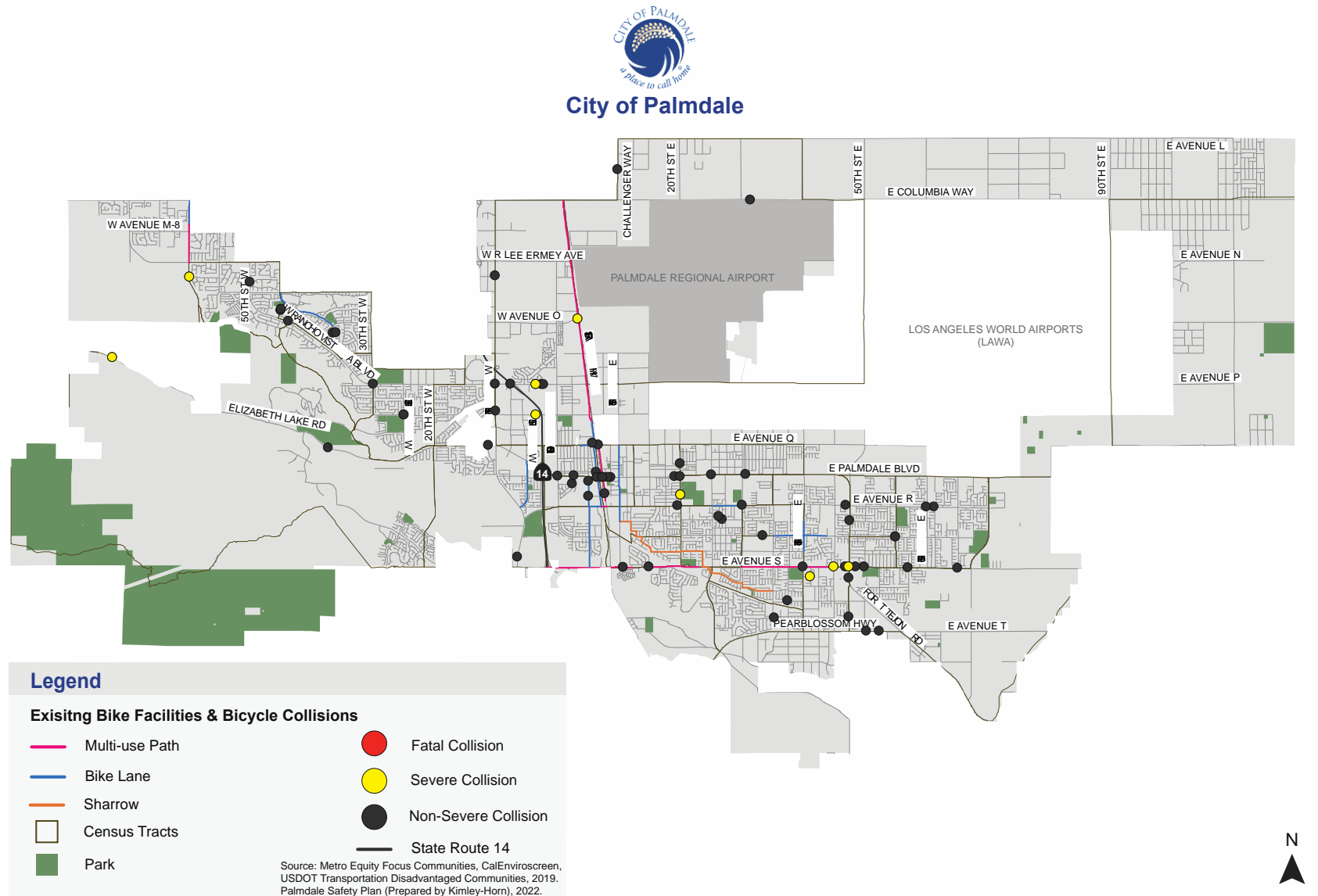


Palmdale Equity Analysis

Twenty percent of all bicycle collisions included vehicle right-of-way violations. While there were no fatalities reported for all bicycle collisions, three collisions resulting in serious injury border equity priority area 2 along East Avenue S. Most serious injury collisions occurred at locations with no existing bicycle infrastructure (**Figure 5**). Proper bike infrastructure such as protected bike lanes can increase bicyclist safety by creating a physical buffer between cars and bicyclists. Separation of cars and bicyclists on the street can help reduce the number of serious injury collisions within equity communities.

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Figure 5: City of Palmdale Existing Bicycle Facilities and Bicycle Collisions



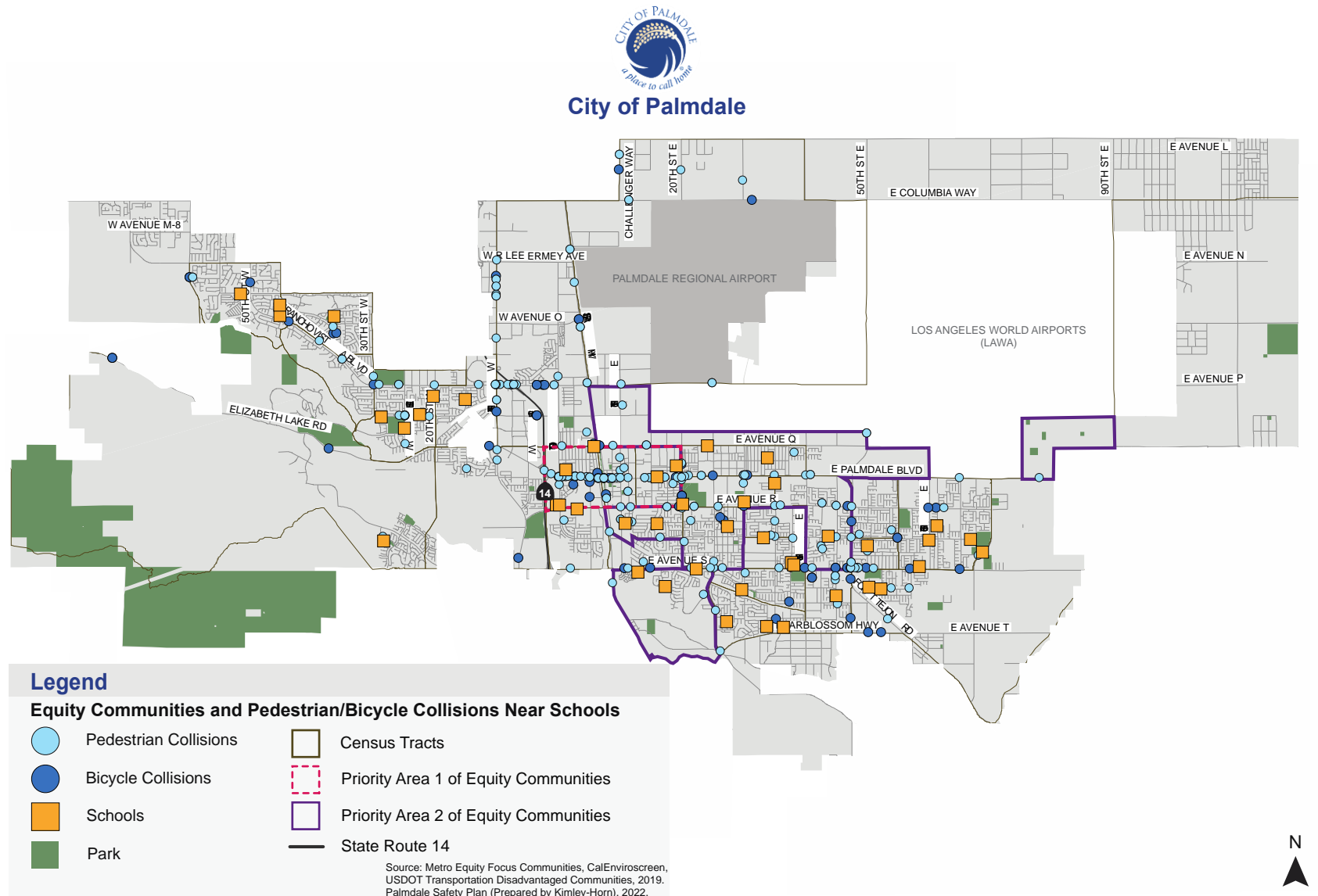
Schools

Concentrations of pedestrian and bicycle collisions occur near schools. **Figure 6** displays pedestrian and bicycle collisions and proximity to schools within the City. There is a concentration of pedestrian and bicycle collisions nearby schools located in equity priority area 1, east of State Route 14 along East Palmdale Boulevard and 20th Street East. Improving pedestrian and bicycle infrastructure near schools can improve safety for those walking and biking to schools, particularly students.

Most schools in Palmdale primarily fall within equity priority area 2. In equity communities, there is a lack of public transit, pedestrian, and bicycle infrastructure, which causes residents to rely on cars to travel to nearby destinations and essential services such as grocery stores, hospitals and medical clinics, schools, and workplaces. There are concentrations of pedestrian and bike collisions within equity priority area 2 (see **Figure 6**), along East Palmdale Boulevard, East Avenue R, East Avenue S, and 47th Street East.

Palmdale Equity Analysis

Figure 6: City of Palmdale Pedestrian and Bicycle Collisions near Schools



VMT

The following section analyzes vehicle miles traveled (VMT) in the context of equity communities in the City of Palmdale. Analyzing VMT in the context of equity communities shows how vulnerable populations travel, which then ensures that the City's VMT reduction policies and programs will disproportionately benefit these communities through government investment and grant funding. In the analysis, VMT and employment data gathered from the City of Palmdale was overlaid with map data depicting equity priority areas in order to analyze the VMT levels and types of trips in such areas.

The VMT analysis was separated into the following categories:

- Employment-related VMT, which refers to employment VMT per employee resulting from automobile-only trips between home and workplaces. Employment-related VMT in equity communities is important for the City to understand because it shows the commuting patterns of vulnerable communities and potential problems they may face such as long commutes and high congestion. Challenges identified from the analysis helps to inform future policies and programs to reduce commuting by car, decrease vehicle emissions, and improve air quality.
- Employment density, which refers to the number of jobs in a specific location. Employment density in equity communities is important for the City to understand because it shows areas that vulnerable residents work in and provides insight into where there is a disparity of housing vs. jobs. The City can introduce more active transportation options to reduce VMT, improve multimodal access, and improve air quality.
- VMT per capita, which refers to total VMT resulting from all vehicles and trip purposes per person (residents and employees inclusive). VMT per capita in equity communities is important for the City to understand because it shows overall travel patterns of vulnerable communities and potential problems they may face such as long travel times, high congestion, and lack of access to public transit. The insights gained will inform the City's policies and programs for VMT reduction.

In the analysis of employment-related VMT and VMT per capita, data for the City of Palmdale is compared to the VMT average for North LA County, wherein areas are color coded based on existing VMT levels relative to VMT significance thresholds for CEQA. CEQA requires VMT levels to be at least 16.8% below the area average. According to the Transportation Impact Analysis Guidelines document from LA County Public Works, the North LA County average for VMT per capita is 43.1 and the employment-related VMT is 19.0. The maps are color coded as follows:

- Green areas have VMT levels that are less than 16.8% below the North LA County average. Areas that are color-coded green have VMT that does not require mitigation measures.
- Yellow areas have VMT levels that are 0 to 16.8% below the North LA County average. Areas that are color-coded yellow are below the average, but still require VMT mitigation measures to meet the 16.8% reduction requirement.
- Red areas have VMT levels that are higher than the North LA County average. Areas that are color coded red are above the average and require more significant VMT mitigation measures.

The VMT analysis also provides findings regarding how currently proposed investments in active transportation and rail transit are forecasted to affect future VMT levels in the City by 2045. Active transportation includes those who walk and/or bike for a commute to work, and those who walk and/or

bike for other trips, otherwise referred to as a non-commute trip. The number of new pedestrians and cyclists is estimated using the National Cooperative Highway Research Program (NCHRP) 552 methodology provided in the Guidelines for Analysis of Investment in Bicycle Facilities. Rail transit was evaluated using three major rail projects as part of the VMT reduction strategy: the California High-Speed Rail (CAHSR), Brightline West, and Metrolink Antelope Valley Line. While these data are not geolocated within the equity priority areas such as the employment-related VMT discussed above, the VMT findings for active transportation and public transit are important for this equity analysis because the majority of fatal or severe pedestrian and bicycling crashes happen within the top tier of the equity priority areas. Further, households in the equity priority areas are more likely to be low-income and public transit dependent. Improvements in the active transportation network and public transit facilities can improve access, safety and quality of life, while also reducing VMT.

The VMT reduction numbers for the proposed Brightline West line are estimated using information provided in the High Desert Corridor FEIR/EIS report. The VMT reduction numbers for the Antelope Valley Line are estimated based on current ridership and line characteristics and proposed increase in frequencies.

The section below shows maps and analysis of employment-related VMT, employment density, and VMT per capita in each equity priority area tier. This section then goes over the VMT modelling analysis conducted for active transportation and public transit.

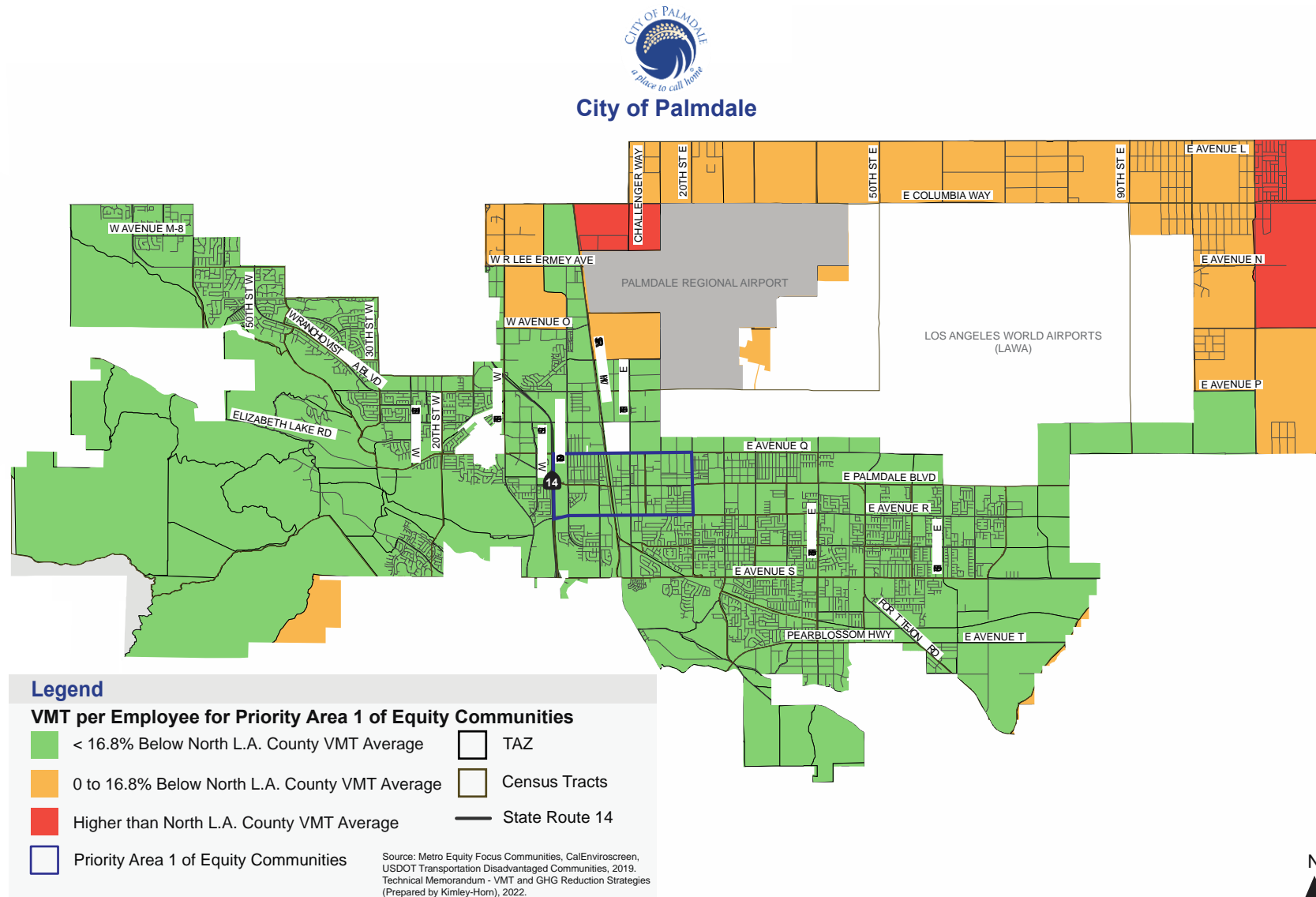
Employment-Related VMT

In census tracts in equity priority area 1, employment produces fewer VMT than 16.8% below the North LA County VMT average, which does not exceed CEQA thresholds. Because VMT levels in this area do not surpass the thresholds set by CEQA, major mitigation measures are not required (see **Figure 7**). Employees in the area are likely able to use public transit rather than private vehicles to commute, which leads to VMT levels below the CEQA thresholds. Alternatively, employees of the area may live close to their job, which also leads to lower VMT levels. The City could implement more transit and active transportation infrastructure and ensure existing transit systems are well-maintained to keep employment-related VMT in the area below CEQA thresholds.

In census tracts in equity priority area 2, employment produces fewer VMT in Palmdale than 16.8% below the North LA County VMT average, which does not exceed CEQA thresholds. This means that VMT levels for commuters do not surpass the thresholds set by CEQA and therefore does not require major mitigation measures (see **Figure 8**). Similar to equity priority area 1, employees living in the area may be more likely to rely on public transit for commuting, which leads to less driving and VMT levels below the CEQA thresholds. Also, employees may live closer to their job, which also leads to low VMT levels. The City could continue to invest in transit and active transportation infrastructure in the area to keep employment-related VMT levels low.

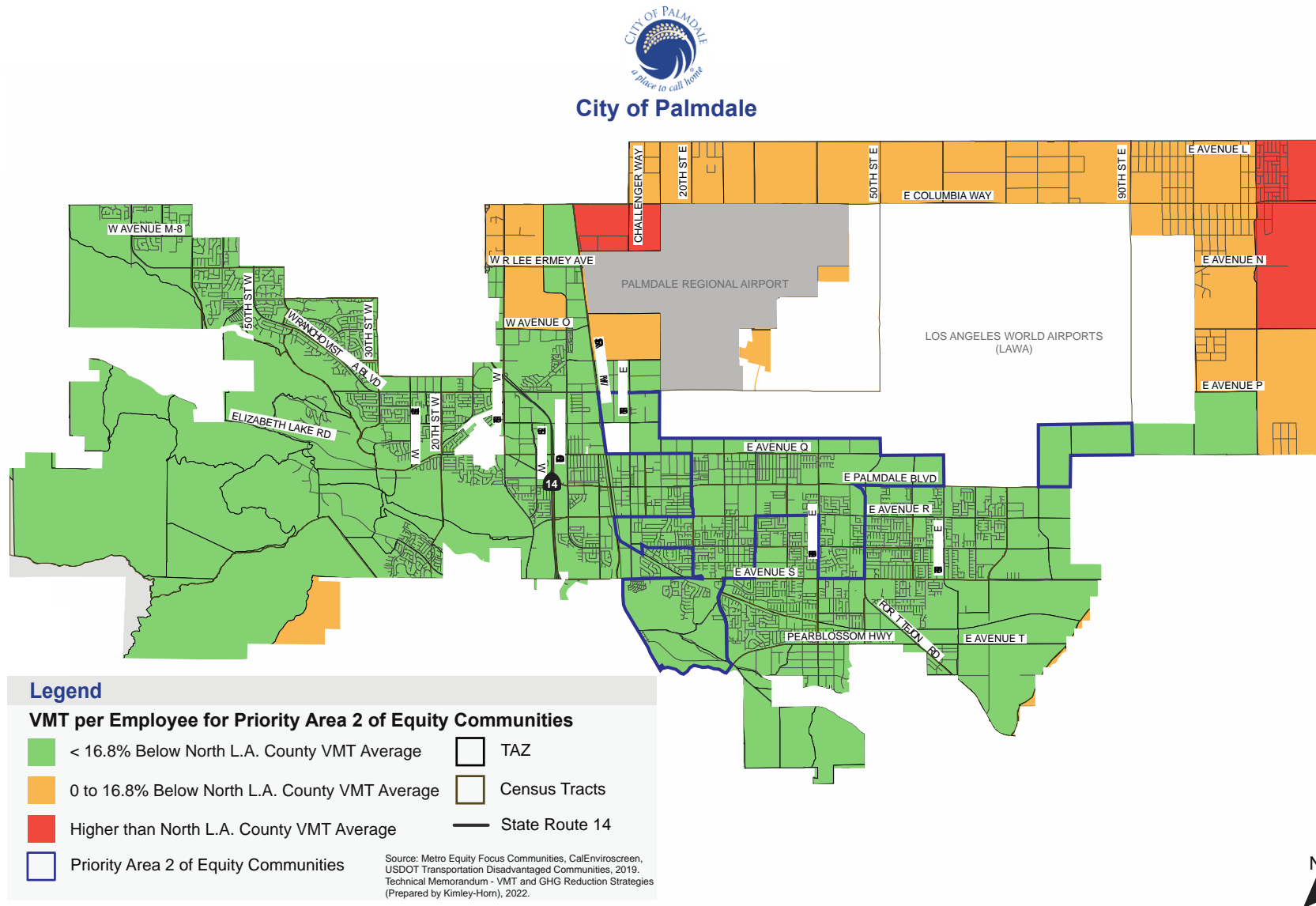
Palmdale Equity Analysis

Figure 7: City of Palmdale Employee VMT in Equity Priority Area 1



Palmdale Equity Analysis

Figure 8: City of Palmdale Employee VMT in Equity Priority Area 2



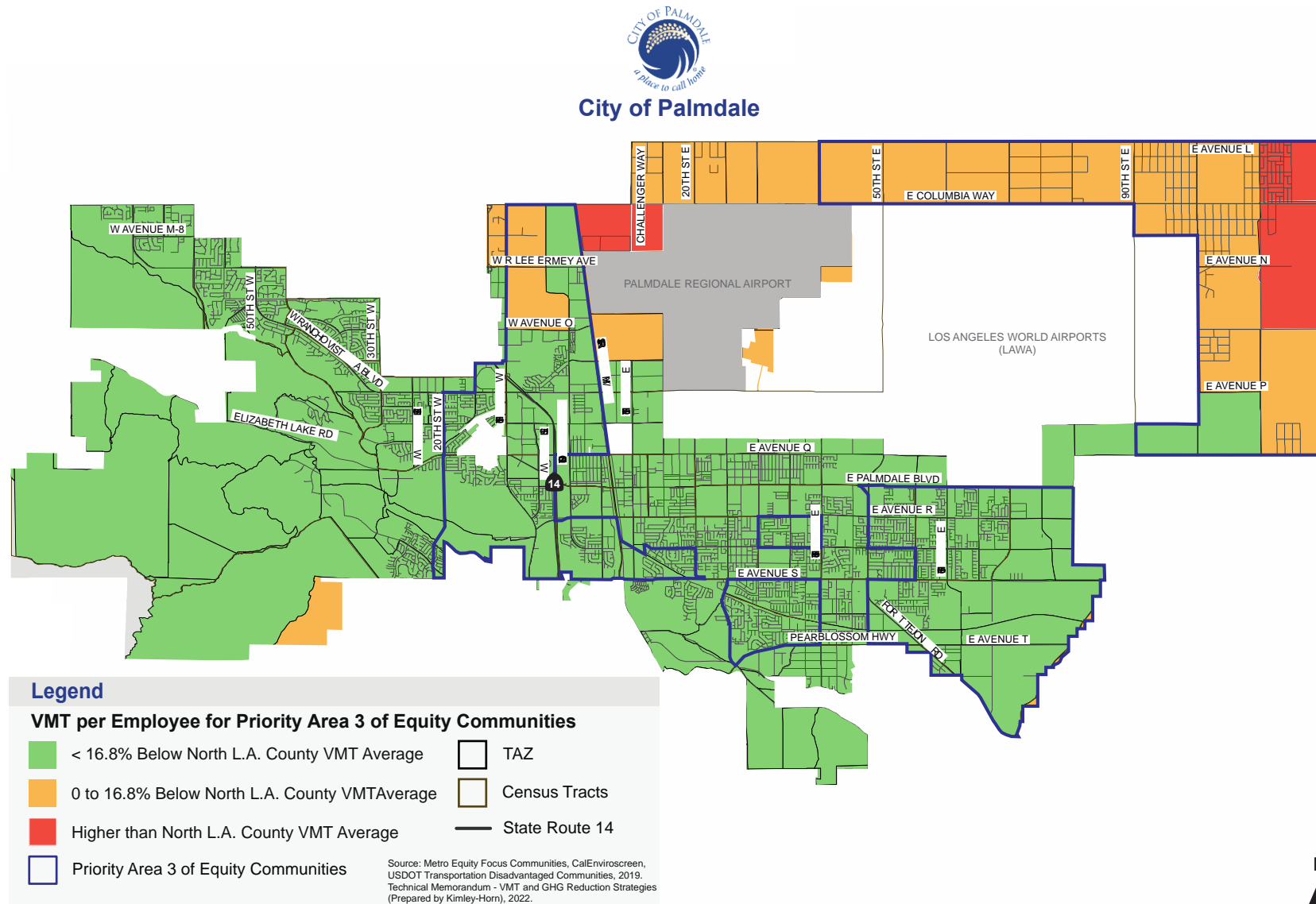


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In census tracts in equity priority area 3, employment-related VMT in Palmdale generally exceeds the 16.8% below the Northern LA County average threshold. Some priority areas are shown in yellow, meaning that they exceed the threshold, but are still below the North LA County average, or red where they are above the North LA County average. Because this area of the city is near or on the city limits, it has limited access to alternative mobility options (such as public transit, walking, and biking), which limits options for residents to avoid single occupancy vehicle driving commutes and leads to higher VMT levels (see Map 9). The City could explore implementing shared transportation services like public transit or vanpool programs that run along major corridors such as East Columbia Way, East Avenue L and East Avenue N to help residents commute more sustainably and reduce VMT levels. As the city develops, more land use diversity in priority 3 areas will also allow for shorter drives and reduced VMT over time.

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Figure 9: City of Palmdale Employee VMT in Equity Priority Area 3



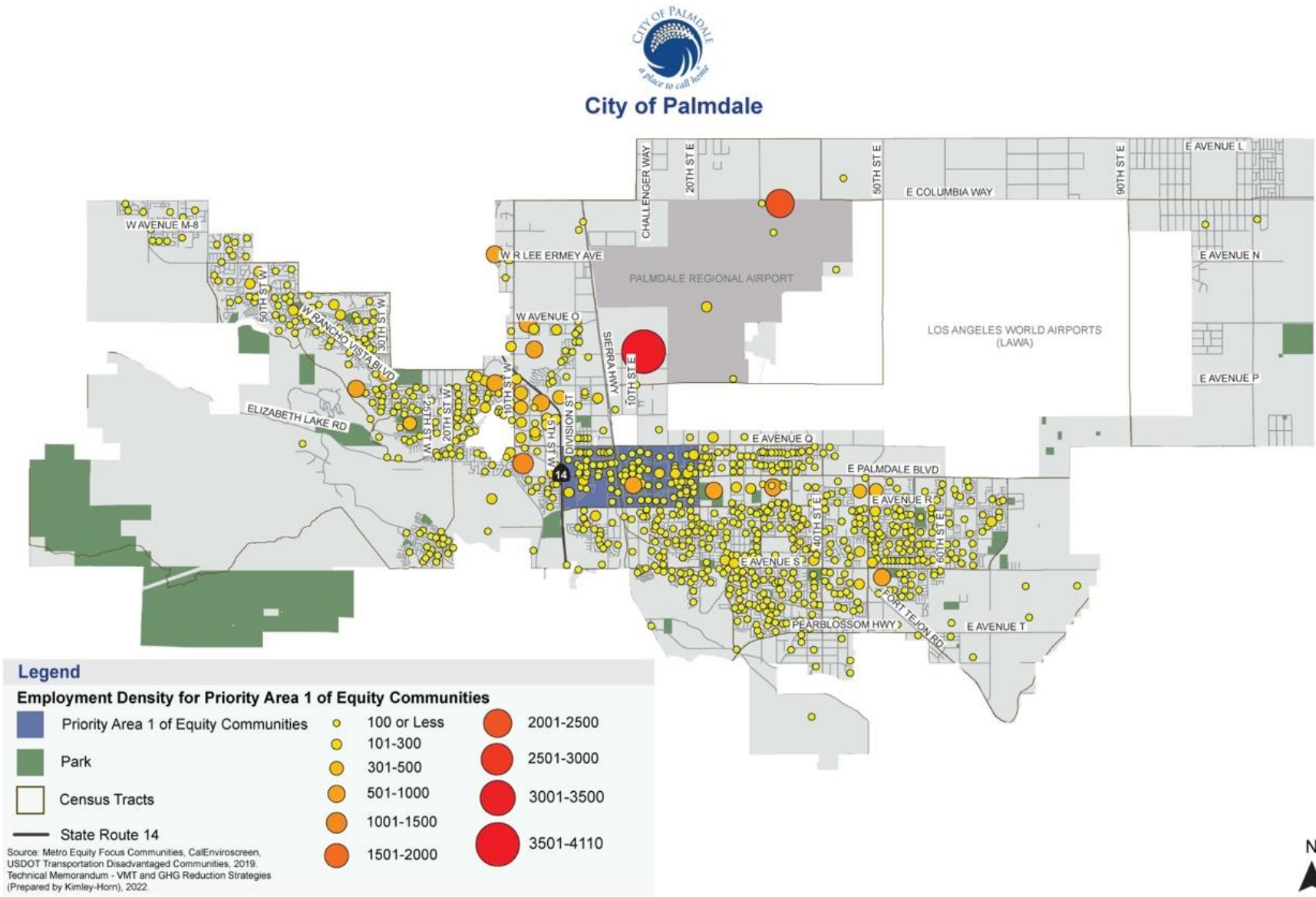
Employment Density

In the analysis of employment density, low levels of job density are defined as 0 - 500 jobs per census block; moderate levels of job density are defined as 501 - 2,000 jobs per census block; and high levels of job density are defined as 2,001- 4,110 jobs per census block.

In census tracts in equity priority area 1, job density is low to moderate (0 – 2,000 jobs per census block). The job density of a majority of the tracts is 100 jobs or less, but there are two to three areas east of Highway 14 each with a job density of 101 - 300, and one area east of the Sierra Highway with a job density of 501 to 1,000. Map 10 displays job density for census tracts in equity priority area 1. This shows that the census tracts are not major employment centers and are primarily made up of land uses other than commercial or industrial. Furthermore, vulnerable residents in the areas are likely to commute outside of the tracts for work. The City could introduce public transit or vanpool services and active transportation infrastructure along major corridors such as East Avenue Q, East Palmdale Boulevard, and East Avenue R, as well as intersecting streets running north to south to help vulnerable residents commute to work without using a car, which will help reduce VMT.

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Figure 10: City of Palmdale Job Density in Equity Priority Area 1



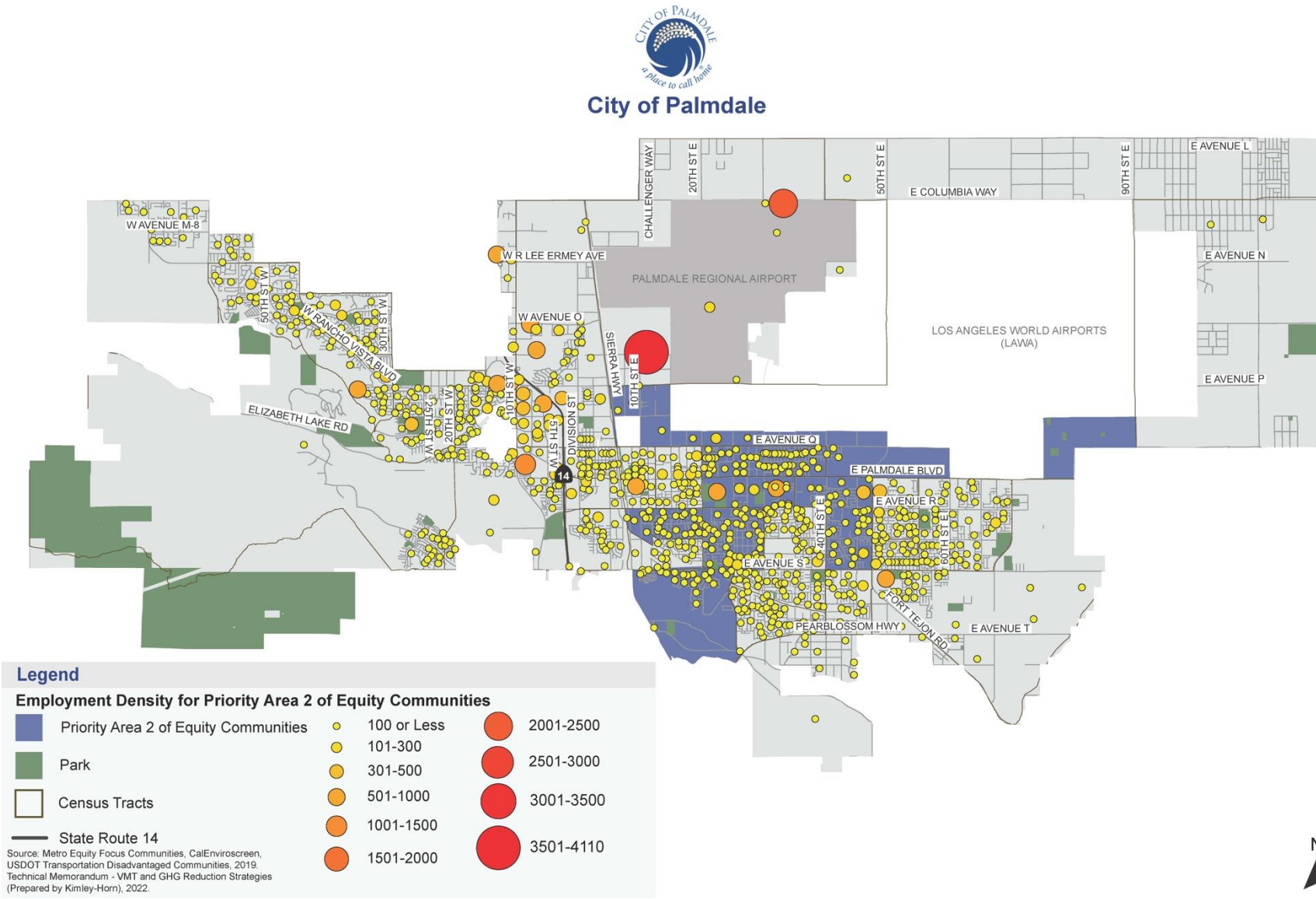


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In census tracts in equity priority area 2, job density is low to moderate (0 - 2,000 jobs per census block). A majority of the tracts have low job densities, but there are two hubs each with a job density of 501 - 1,000 and two hubs each with a job density of 301 - 500 in the southern part of the city south of East Palmdale Boulevard and north of East Avenue R (see Map 11). Overall, these areas are also not major employment centers and are likely made up of land uses other than commercial or industrial. Because there are several hubs with moderate job densities in that area, the City could implement multimodal street infrastructure between East Palmdale Boulevard and East Avenue R to facilitate more sustainable commute patterns for vulnerable residents and reduce VMT.

Palmdale Equity Analysis

Figure 11 : City of Palmdale Job Density in Equity Priority Area 2



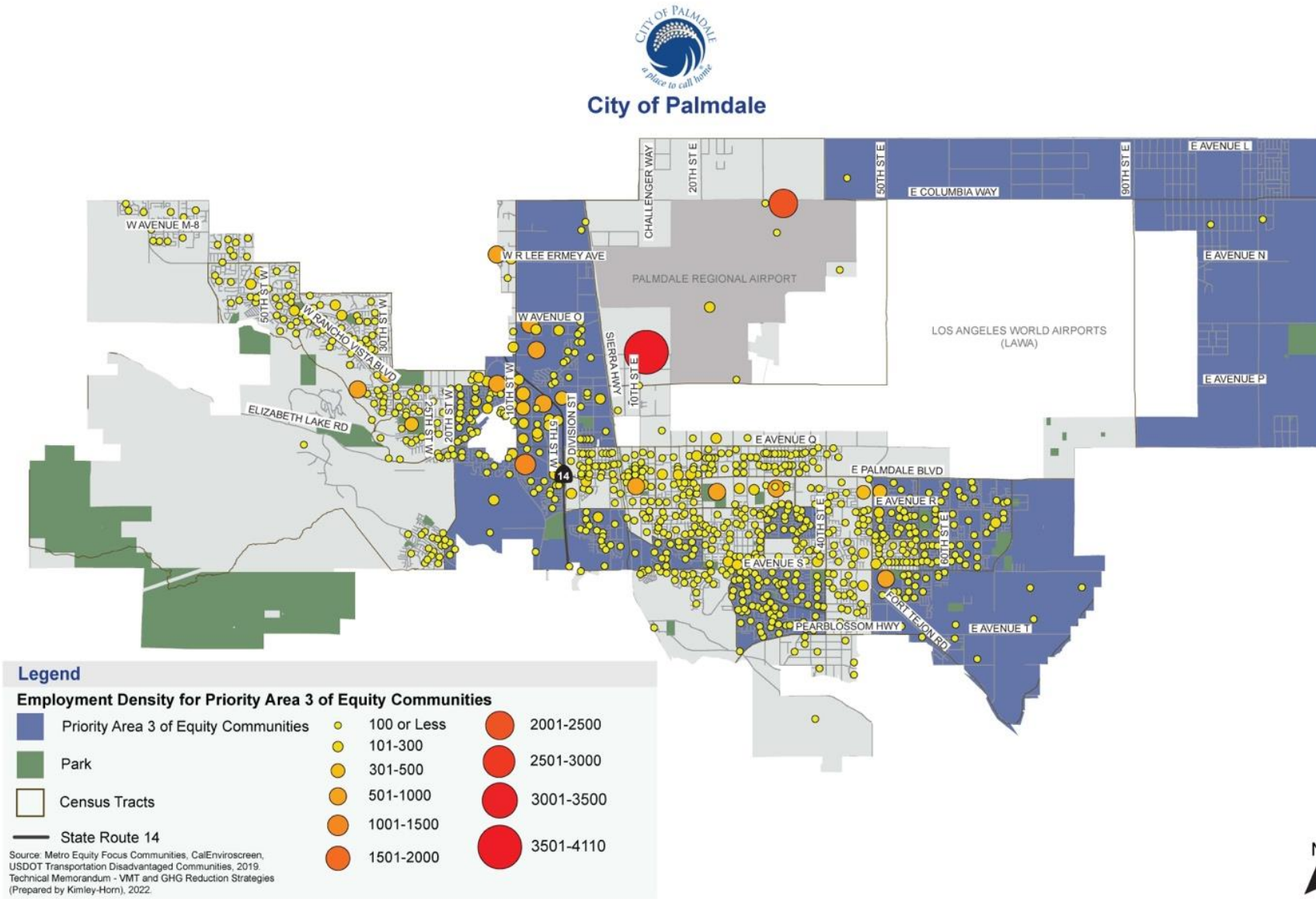


Palmdale Equity Analysis

In census tracts in equity priority area 3, job density is low to moderate (0 – 2,000 jobs per census block). While the majority of the areas have low job densities, there is a cluster of employment hubs with moderate job density (501 – 2,000 jobs) in the western part of the city west and north of State Route 14 (see Map 12). These hubs attract more traffic and generate higher levels of VMT relative to hubs with low job density. To reduce VMT and support sustainable commuting to the hubs of moderate job density in the area, the City could introduce multimodal street options and infrastructure along and around State Route 14.

Palmdale Equity Analysis

Figure 12: City of Palmdale Job Density in Equity Priority Area 3

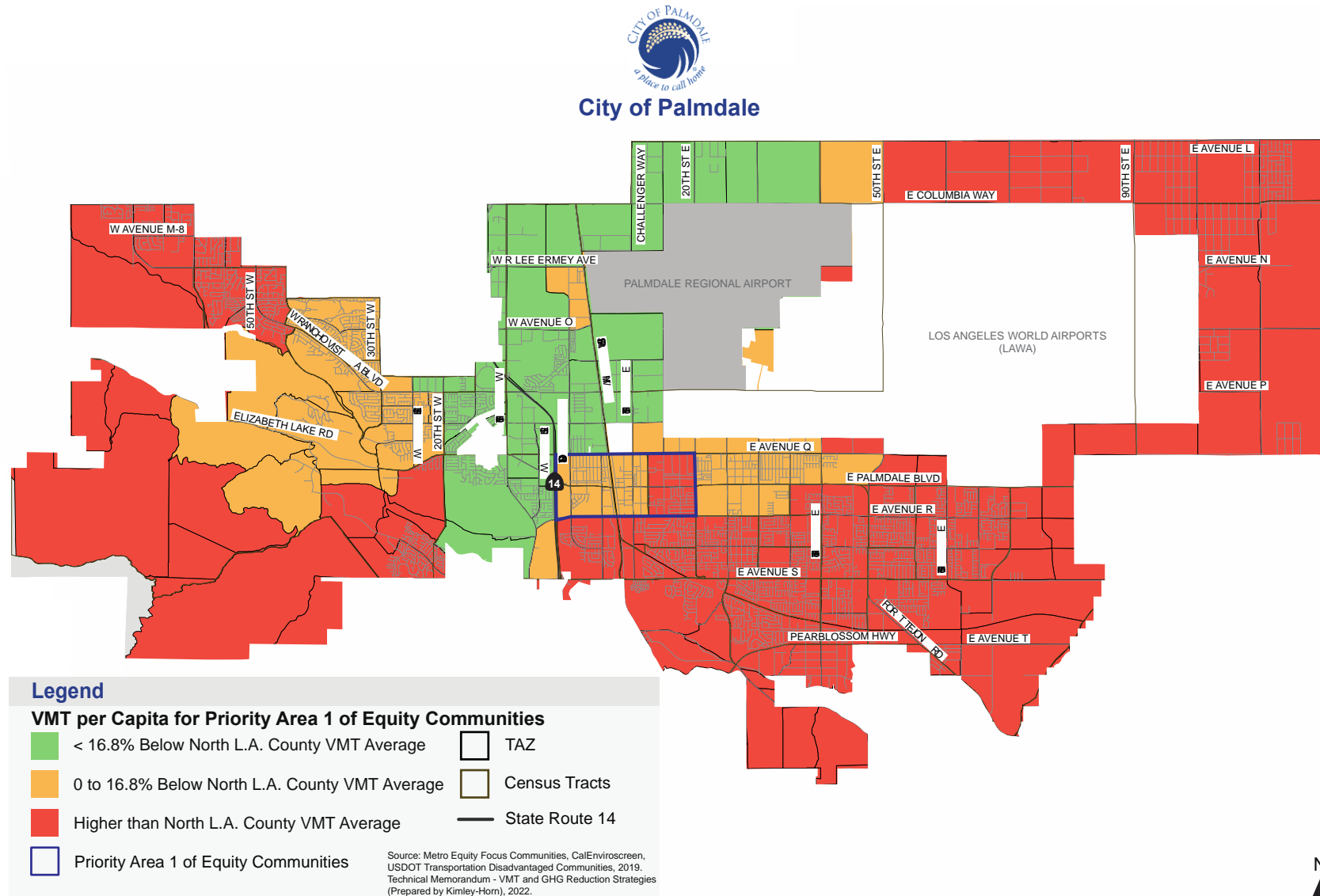


VMT Per Capita

In census tracts in equity priority area 1, VMT per capita is higher than the North LA County average on the east side of the area and 0 to 16.8% below the North LA County average in the west side of the area. This suggests that the area does not have enough jobs suitable for the area's residents to allow for more people to work in their own neighborhoods. Alternatively, the community resources that residents need are not available in the area, which forces them to travel long distances to access them whether by driving, public transit, or other modes. To reduce VMT per capita and increase use of active transportation, the City could invest in public transit and pedestrian and bike infrastructure along major corridors including East Avenue Q and East Avenue R as well as major streets intersecting both from north to south. The infrastructure improvements can include bicycle lanes, bicycle paths, expanded sidewalks, wayfinding signage, curb bulb outs, and other similar improvements. It could also add sidewalk improvements on all streets in the areas to enhance walkability. Map 13 displays VMT per capita for census tracts in equity priority area 1. A resident travel survey could also help identify missing amenities and land uses that residents are traveling out of their neighborhoods to access.

Palmdale Equity Analysis

Figure 13: City of Palmdale VMT per Capita in Equity Priority Area 1

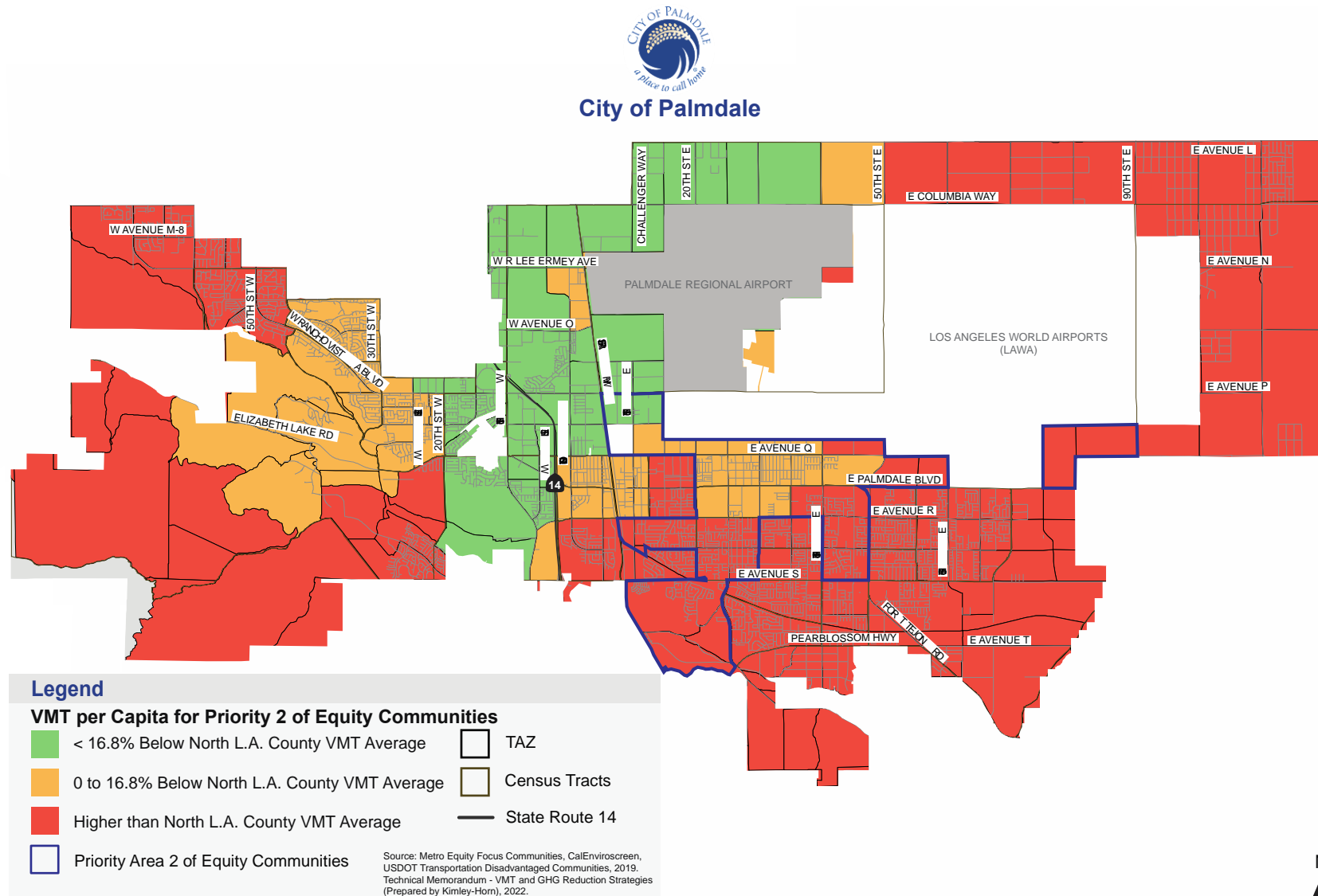


Palmdale Equity Analysis

In census tracts in equity priority area 2, VMT per capita is generally higher than the North LA County average or 0 to 16.8% below the County average in select areas. The lack of public transit, pedestrian, and bicycle infrastructure causes residents to rely on cars to travel to nearby destinations and essential services such as grocery stores, hospitals and medical clinics, schools, and workplaces. The City could invest in active transportation infrastructure and provide multimodal mobility options for residents of the areas in order to reduce VMT per capita. These can include the improvements identified in the 2045 General Plan or the Palmdale Safety Plan. Major corridors could be prioritized including East Palmdale Boulevard, East Avenue R, and East Avenue S, as well as select streets that intersect them from north to south. Map 14 displays VMT per capita for census tracts in equity priority area 2.

Palmdale Equity Analysis

Figure 14: City of Palmdale VMT per Capita in Equity Priority Area 2

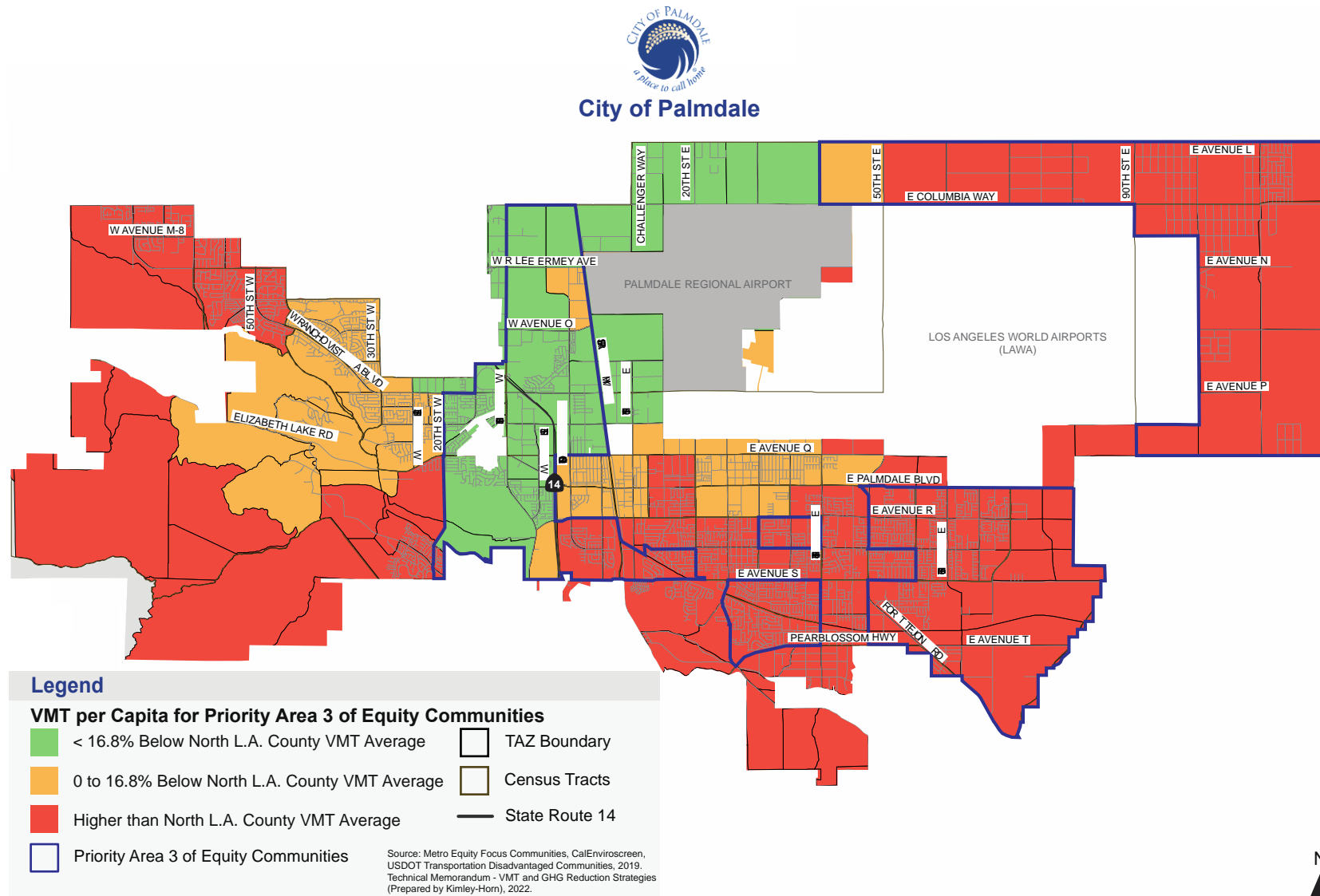


Palmdale Equity Analysis

In census tracts in equity priority area 3, VMT per capita is more than 16.8% lower than the North County average between the Sierra Highway and 20th Street West whereas VMT per capita is higher than the North County average in the east, northeast, south and southeast portions of the City of Palmdale. Map 15 displays VMT per capita for census tracts in equity priority area 3. The areas shaded in green have more hubs of moderate job density, which implies residents may commute shorter distances to work and resulting in below average VMT levels. On the other hand, the areas shaded in red are on the peripheries of the city, which means they need to drive long distances to access jobs, schools, hospitals, and other essential resources and community destinations. Such areas also have lower access to public transit and active transportation infrastructure; both reasons contribute to a higher VMT per capita. To reduce VMT per capita, the City could introduce public transit or vanpool services to connect residents in the red-shaded areas to desired destinations. It could also develop active transportation infrastructure to facilitate walking and biking within neighborhoods. Over the long-term, introduction of more varied land uses in the peripheral areas of the City will help reduce VMT in those areas.

Palmdale Equity Analysis

Figure 15: City of Palmdale VMT per Capita in Equity Priority Area 3



Active Transportation

Active transportation improvements will lead to a reduction of 714 daily commuter VMT within the City of Palmdale by 2045. VMT will be reduced by 714 commuter miles daily due to increases in walking and biking from currently proposed active transportation improvements. Improvements in increased walking and biking infrastructure can aid in improving these numbers. For equity priority areas, the needs for active transportation infrastructure are even more pressing. A majority of fatal and serious injury pedestrian and biking collisions occur in equity priority areas 1 and 2, as noted above. Focusing infrastructure improvements on key corridors, particularly in equity priority areas 1 and 2 can support reductions in VMT and promote walking and biking.

Rail Transit

Proposed rail projects in the City will decrease daily VMT by 77,000 miles by 2045. There are three major rail projects currently being considered with potential stops in the City of Palmdale:

- 1) The California High-Speed Rail Authority (CHSRA) routes connecting of Merced/San Francisco to Los Angeles/Anaheim will have high speed rail line sections between Bakersfield and Palmdale, and between Palmdale and LA Union Station/Anaheim, with a station in the City of Palmdale.
- 2) The Brightline West high-speed rail route is a proposed high speed rail feeder service that will link the California HSR and Brightline West. That feeder service may be built within the High Desert Corridor right-of-way. The stop serving Brightline West would be in Palmdale.
- 3) Metrolink's Antelope Valley Line is currently Metrolink's third busiest line with approximately 7,000 riders per weekday. The Antelope Valley Line currently has a stop at the Palmdale Transportation Center (PTC). This line provides rail access to the City of Los Angeles, which is a major employment center for many Palmdale residents.

VMT reductions for both the proposed California HSR and Brightline West services were not calculated separately as part of this off-model analysis. However, ridership is estimated to include 5,600 one-way trips per day. Brightline West was evaluated using information from the High Desert Corridor FEIR/EIS report; estimated VMT reductions could be as high as 25,000 per day. The future ridership of the Antelope Valley Line is expected to increase by 1,000 new trips per day; VMT reductions are expected to decrease by 52,000 miles per day.

Rail connections offered by the three projects discussed will provide access to employment centers and major destinations for equity populations, while reducing VMT. Those living in equity priority areas within the City of Palmdale are more likely to be low-income and/or live in zero-car households, making them public transit dependent. Efforts to reduce VMT for equity communities can be bolstered by investments in first/last mile connections for households with limited access to a vehicle. For example, having better rail connections to Los Angeles, a major and diverse employment center, can improve economic mobility for low-income households and address VMT reductions supported by first/last mile connections. The Palmdale Transportation Center (PTC), which currently serves the Metrolink Antelope Valley Line and is proposed to serve the CHSRA high-speed rail line, is within walking and biking distance of equity priority area 1. Infrastructure improvements and first/last mile connections can further reduce

VMT levels by helping residents in equity communities access the PTC by transit, biking and/or walking without needing a car.

4. Community Engagement

As part of the development of the Sustainable Transportation Plan, the project team engaged with people who live, work, and spend time in Palmdale to identify places where improvements are needed. In Summer 2022, the project team hosted community workshops, pop-up events, a survey, and conducted a Social Pinpoint exercise to receive community feedback on transportation priorities in Palmdale. In Fall 2022, the project team hosted a second round of workshops, which included a participatory budget exercise, to gather additional feedback on how to prioritize infrastructure, policy, and program improvements. A total of 90 responses were recorded for the Social Pinpoint exercise and 53 responses were recorded for the survey. This section details key takeaways from the survey, Social Pinpoint exercise, and the participatory budget exercise.

Survey takeaways

The survey provided an avenue for community members to identify transit improvement preferences within the City of Palmdale. The survey included four questions covering transit expansion options, types of transit implementation, pedestrian improvements, and bicycle improvements. The survey received 52 responses.

About 20% of survey respondents selected that they walk or bike to get around Palmdale. Although the vast majority of survey respondents noted that they drive alone (90.70%), a large percentage of respondents noted that they also walk or bike to get around the city. Respondents were able to select multiple options for how they move around the city

The top priorities for survey respondents included street beautification, improving pedestrian infrastructure, and improving bike infrastructure. The top ranking priority selected was to beautify the streetscape with shade, seating, trash receptacles, and art (66.28%). Over half of respondents selected adding or improving bike lanes as a top priority (51.16%), while just over 60% of respondents identified adding or improving sidewalks (60.47%). While the latter two priorities would specifically improve safety for pedestrians and bicyclists, all three priorities selected would also make walking and cycling more attractive and convenient for users.

The highest ranking transportation safety concerns was vehicle speeding (73.26%), while over half of survey respondents also noted uneven or missing sidewalks as a significant transportation safety concern (56.98%). Missing sidewalks indicate that pedestrians do not have a safe place to walk and can be in conflict with speeding cars. Additionally, uneven sidewalks can compromise pedestrian safety and comfort.

Almost half of survey respondents noted they would drive less often or less far if amenities were closer (48.84%). Several studies have documented that pedestrians will walk up to a half mile to access an amenity while bicyclists will cycle up to three miles to access an amenity. This survey response indicates that respondents believe amenities are far away and transportation and land use planning could be better aligned to reduce VMT and promote alternative mobility. Other survey responses

indicate that current walking and biking infrastructure to schools, jobs, and essential services are not safe or convenient.

Social Pinpoint takeaways

There were 90 comments collected via Social Pinpoint, an online tool which allows participants to drop pins and geolocate comments within city boundaries. For this memo, comments were reviewed in equity priority areas.

Equity Priority Area 1

Residents expressed a desire for a bike share program in and around equity priority area 1. There were five public comments documented in the Social Pinpoint that expressed interest for a bike share program between Sierra Highway and East 20th Street, and between East Avenue Q and Palmdale Boulevard. Residents also expressed interest in seeing bike share stations along S Avenue, at the Palmdale Transportation Center.

Residents expressed a need for improved pedestrian infrastructure, such as upgrading crosswalks near major interchanges and intersections, as well as wider sidewalks along major streets. Several comments address the need to repaint or upgrade crosswalks at intersections. One commenter wrote, “This cross walk is not well marked and is very dangerous. An under ramp would be so much safer here [West Palmdale Boulevard near the SR 14 interchange].” Several comments also addressed a need for wider sidewalks.

Equity Priority Area 2

Residents expressed a need for safe bicycling and pedestrian facilities to transit facilities. Current existing conditions are unsafe to access rail and bus transit facilities. One commenter wrote, “Idea: Railroad Eastside Metrolink and Bikeway”, indicating a desire for protected bicycling facilities.

Residents expressed wanting slower speed limits, as well as infrastructure and program development. Residents noted both a need for slower speed limits in addition to redesigning streets for better bike and pedestrian safety. Further, residents expressed enthusiasm for developing programs such as walking school buses. One commenter wrote, “I agree that we need lower speeds, especially on R-8 where a boy was killed going to school. What happened to the Ave R project? I love the parent walking bus idea.” This comment was located in census tracts in equity priority area 2 but it is worth noting the comment was located close to census tracts in equity priority area 1.

Residents expressed interest integration of bike and transit facilities. Several comments suggested developing a bikeway that parallels the railway running through Palmdale. Several comments also suggested integrating a bike share program into current transit facilities.

Equity Priority Area 3

Residents expressed a need for better rail and bus integration and transfers. Improvements to schedule timing of bus routes and commuter rail service (Metrolink) can help to encourage alternative mobility options and improve customer experience. Comments expressed that there is not enough time to transfer from rail to local bus services. One commenter wrote, “The bus that would get me home is scheduled to arrive 5 minutes before my train arrives. The next one is an hour later. Public transportation is not good for me to use as a commuter. I commute daily to Glendale from Palmdale; always stressful.”

Residents expressed a need for better bike connectivity to large employment centers. Gaps in the current bike network do not allow for residents to safely bike to and from jobs, especially across major highways such as SR 14 and the Sierra Highway. One commenter wrote, “A safe bike connector from the Sierra Highway bike path to the Lockheed Martin gate would allow for more bike commuting opportunities to this large employer in the area.”

Participatory Budgeting Takeaways

As part of the community engagement process, a participatory budgeting activity was conducted to give residents an opportunity to decide how they would allocate funds. The activity received 48 online responses. Participants were able to choose to invest in the following:

- Infrastructure Improvements
- Policy and Enforcement Measures
- Education and Programming

Funding for infrastructure improvements was most popular among residents. Infrastructure Improvements received the most funding with 56% of the total funding allocated (\$4,507 out of the total amount of \$8,004), indicating a top priority for Palmdale residents. The second most popular item was Policy and Enforcement Measures with 24% (\$1,893) and Education and Programming was last with 20% (\$1,604).

5. Infrastructure, Policy, and Program Recommendations

This section of the memo details recommendations for infrastructure improvements, policy recommendations, and program recommendations to improve safety and reduce VMT for equity communities within the City of Palmdale. Recommendations are based on existing conditions, safety and VMT analysis and community input.

Infrastructure Improvements

Adding pedestrian safety infrastructure and signals at intersections can help reduce fatal and severe injury collisions for pedestrians. The majority of collisions within the City occurred at intersections, exceeding the State average. Furthermore, the majority of pedestrian and bicycle collisions occurred in equity priority areas 1 or 2. Intersections within these census tracts could be prioritized for safety improvements. Pedestrian safety infrastructure such as Leading Pedestrian Interval (LPI) signal timing allows pedestrians to enter the intersection before a car can, therefore improving the visibility of pedestrians. Alternatively raised sidewalks and high visibility crosswalks can help to improve pedestrian safety, where appropriate. One study in Hawaii found that raised crosswalks improved safety for pedestrians in 2020 despite there being more pedestrian fatalities overall across the United States.³ Improved pedestrian and bicycle facilities at intersections, such as painted bike lanes, protected bike lanes, high visibility crosswalk markings, pedestrian scrambles, curb extensions, and proper pedestrian signal clearance timing and minimum green bicycle timing (per MUTCD) can increase safety for residents walking or biking to work, school, essential services, and community events. Figures 1-5 provide examples of pedestrian and bicycle facilities at both signalized and unsignalized intersections. In

³ [Hawaii shows pedestrian safety can improve, even in historically dangerous year – State Smart Transportation Initiative – UW–Madison \(ssti.us\)](https://www.ssti.us/hawaii-shows-pedestrian-safety-can-improve-even-in-historically-dangerous-year-state-smart-transportation-initiative-uw-madison)

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in addition to lowering speed limits, implementing street medians and pedestrian islands can provide additional safety for both pedestrians crossing the street and keeping cars from migrating into oncoming traffic.

Incorporating pedestrian safety measures such as wider sidewalks, raised crosswalks, curb extensions, wayfinding signage, and lighting can help improve the safety for pedestrians throughout Palmdale while also building a sense of place. One study completed on reducing pedestrian fatalities found that lowering speed limits in addition to incorporating traffic calming measures such as shade trees to make the street feel smaller, speed bumps, and street medians can help reduce aggressive driving behaviors and reduce collisions.⁴ The majority of fatal and severe injuries for both pedestrians and bicyclists fall within census tracts in equity priority areas 1 or 2. While Figures 16-19 are specific to crossing improvements, these images also include example of infrastructure improvements. Figures 20-24 show examples of pedestrian and bicycling infrastructure that parallels a street.

Figure 17: Three-Way Pedestrian Island, Street Median, and Pedestrian Signal



Source: Portland, Oregon

Figure 16: Painted Bike Crossing and Speed Limit Bulb Out



Source: Portland, Oregon

Figure 18: Painted Crosswalk and Pedestrian Island



Source: Eugene, Oregon

Figure 19: Raised Crosswalk, Street Median, and Flashing Signal



Source: Lakeland, Florida

⁴ [Oregon Walks Fatal Pedestrian Crash Report – Oregon Walks](#)

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Figure 20: Bollard-Protected Bike Lane, Street Trees, and Crosswalk



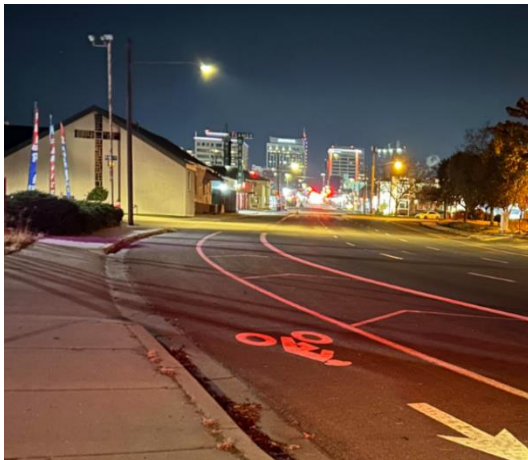
Source: Seattle,

Figure 21: Streetscaped-Protected Bike Lane



Source: Seattle, Washington

Figure 23: Buffered Bike Lane and Street Lighting



Source: Boise, Idaho

Figure 22: Wide Sidewalk, Protected Cycle Track, and Bike/Ped Wayfinding



Source: San Juan, Puerto

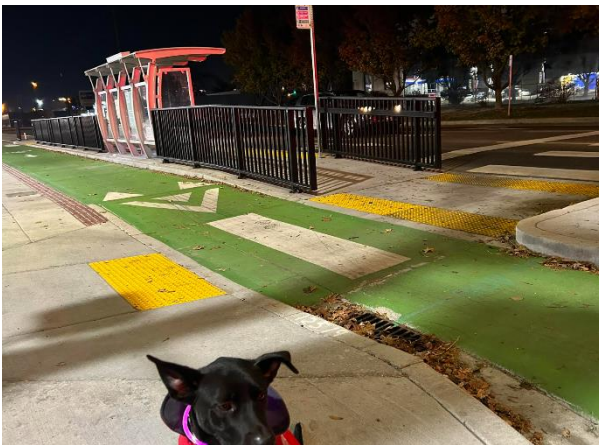
Figure 24: Concrete Barrier-Protected On-Street Cycle Track



Source: Washington, DC

Providing better lighting can improve the visibility and safety of pedestrians and bicyclists. A majority of reported pedestrian collisions in the city happen at night. Roads such as East Avenue R, East Avenue S, and East Palmdale Boulevard could be prioritized for implementation of additional lighting because these roads have concentrations of fatal and severe injury collisions for both pedestrians and bicyclists. Further, these roads fall within equity priority areas 1 or 2. Figure 25 and Figure 26 provide examples of a bus stop with and without additional lighting at night. Enhancing street lighting, as well as installing human-scale lighting, flashing crosswalks, and reflective pedestrian signs can improve existing sidewalk and intersection conditions for pedestrians travelling in the dark. Improved lighting conditions also support perceived safety and comfort.

Figure 25: Bus Stop, Protected Bike Lane, and Crosswalk with Additional Street Lighting



Source: Boise, Idaho

Figure 26: Bus Stop and Protected Bike Lane with Standard Street Lighting



Source: Boise, Idaho

Increasing pedestrian and bicycling infrastructure as part of a Safe Routes to School program can improve safety of those walking or biking to/from school. Within the City of Palmdale a majority of pedestrian and bicycle collisions occur near schools. A majority of both collisions and schools are located in equity priority areas 1 or 2. Flashing and raised crosswalks, continuous sidewalks, protected bike lanes, and pedestrian signage can increase pedestrian and bicyclist visibility and safety. Motorist behavior can also cause issues near schools. An ongoing safety campaign and an educational program could be considered to improve school area safety. There are two Safe Routes to School grant opportunities for implementing improved infrastructure discussed in more detail in Section VIII: Funding Sources.

Pedestrian wayfinding and signage could be bi-lingual. The City of Palmdale is a majority-minority City with Hispanics comprising the largest minority group (61%), while almost half of all residents speak a language other than English at home (48%)⁵. Incorporating wayfinding and signage in both English and Spanish helps to include portions of the population who utilize streets and roads but may speak another

⁵ US Census Bureau, Quick Facts, July 2021. Available online <https://www.census.gov/quickfacts/palmdalecitycalifornia>

language. This can serve to improve safety and access, particularly to key destinations in the city. Figure 13 provides an example of bilingual pedestrian wayfinding signage.

Multimodal street infrastructure could be implemented near job hubs to facilitate sustainable commuting and alternative mobility options. There are several hubs each with moderate job density (501 – 2,000 jobs per census block) west of Highway 14, which could be considered for multimodal street infrastructure because there is a consistent inflow and outflow of transportation users in the area. The City could implement multimodal street services and infrastructure such as public transit, protected bike lanes, crosswalk markings, and curb extensions that connect job hubs to equity communities and facilitate more biking and walking as commute modes.

Implement design standards to improve bus stop infrastructure.

Most of the bus stops did not have seating, shading, trash receptacles, or continuous sidewalks during a site visit to equity communities. Many of the bus stops only consisted of a sign. Developing and implementing design standards for bus stops will improve future upgrades and expansion of bus stops provide safety and comfort for transit users.

Figure 27: Bilingual Bike/Ped Wayfinding



Source: San Juan, Puerto Rico

6. Policy Recommendations

Safety

The following policy recommendations will help the City of Palmdale improve safety for pedestrians and bicyclists, especially within census tracts meeting at least one of the three equity definitions.

Modify City policies to allow for street calming traffic measures. Current City policies don't allow for speed humps⁶ as a street calming treatment. Adoption of an updated traffic calming toolbox will allow the City of Palmdale to streamline and quickly build proven street calming measures to support slower driving, and pedestrian and bicycling safety.

Develop a Vision Zero Policy for the City of Palmdale. The development of a Vision Zero Policy provides the guiding vision and framework for all safety programs to reduce and eliminate fatal and severe injury collisions. The majority of pedestrian and bike collisions occur in equity priority areas 1 and 2. The Vision Zero Policy should be informed by existing safety data (i.e., collisions, speed limits, etc.) which helps identify streets that are unsafe for pedestrians and cyclists. A city-level policy can identify streets in need of safety improvements and recommend and prioritize strategies and solutions to make streets safer for all. The adoption of a Vision Zero Policy by the City of Palmdale is a vital step towards improving safety conditions and showing a commitment to addressing community safety concerns.

⁶ [Neighborhood-Traffic-Safety-PDF \(cityofpalmdale.org\)](https://www.cityofpalmdale.org/Neighborhood-Traffic-Safety-PDF)

Implement the General Plan's Complete Streets policy. The policy can support safe and inclusive streets for all users by introducing wide sidewalks, protected bike lanes, bus lanes, curb extensions, and intentionally designed crossings. Many of the streets identified as needing pedestrian and bike improvements fall in equity priority areas 1 and 2. The city could prioritize implementation of Complete Streets in equity communities where sidewalk and street conditions pose challenges for residents to walk and bike in their neighborhood. Complete Streets also serve as a tool to reduce the number of pedestrian and bicycle collisions throughout the city.

Incorporate safety analysis findings in future updates of safety programs. The City of Palmdale can implement safety programs such as Safe Routes to School and Crossing Guard Programs to improve safety conditions for pedestrians and bicyclists. Existing safety findings can inform the planning and recommendations for future programs by highlighting safety needs and concerns. Areas that have high concentrations of pedestrian and bicycle collisions should be the center of future updates to safety programs, especially those located in equity priority areas 1 and 2. Additionally, any safety analysis in equity communities could guide future safety programs to ensure the communities with the greatest need as being considered.

Monitor state and federal safety priorities, guidance, and funding opportunities. Aligning Palmdale's safety efforts with statewide and federal priorities and goals can guide the planning and implementation of future transportation policies and projects. It can also ensure that future projects meet the requirements for multiple state and federal funding opportunities. Specifically, monitoring funding opportunities to improve safety conditions within equity communities can help the City of Palmdale fund a wide range of pedestrian and bicycle improvements. Many grant programs have a specific focus on increasing equitable community development and addressing climate change goals.

VMT

The following policy recommendations will help the City of Palmdale reduce its overall VMT and make progress towards its sustainability and emissions goals.

Align transportation and land use policies and projects. The city could adopt a requiring that all new land use development within the city provides ease of access to all forms of transportation including public transit, encourages Complete Streets, provides pedestrian and bicycle network infrastructure, and locates amenities nearby. Policies to co-locate a mix of uses and transportation infrastructure (for transit, bikes and pedestrians) will help to reduce short trips via automobile and promote alternative mobility options throughout the city, thereby reducing VMT.

Implementing a Complete Streets policy can also address VMT by prioritizing pedestrian and cycling infrastructure connecting to existing transit facilities and job centers. In addition to prioritizing multimodal infrastructure, Complete Streets policies can assist in reducing VMT by providing users in equity communities with more safe, sustainable, and affordable options than driving, especially to job centers in the city. This can improve air quality and public health particularly in communities already vulnerable to environmental issues. The City could utilize a Complete Streets policy and design guidelines to implement elements such as bicycle and pedestrian improvements, wayfinding, public art, shade trees, green streetscape infrastructure, etc. The City could prioritize design, implementation, and/or repair of streets in equity priority areas 1 and 2, near transit hubs and areas connecting to job

centers, essential community resources, and places of interest within the city based on comprehensive community engagement.

Develop active transportation infrastructure policy for all new land use development sites. Instead of parking minimums, new developments could be required by law to provide or financially support active transportation infrastructure in and around the site area. Much of the infill development identified by the City is located in equity priority areas 1 and 2. Such investments benefit equity communities by ensuring connections to alternative mobility options thereby reducing emissions and VMT.

7. Program Recommendations

Safety

The following program recommendations will help the City of Palmdale improve safety for pedestrians and bicyclists, especially within equity communities.

Develop a variety of Safe Routes to School programs to promote walking, biking, and rolling to school.

The majority of pedestrian and bike collisions occurred nearby schools. In addition, the majority of schools are located in census tracts in equity priority areas 1 and 2. Safe Routes to School programs recognize that alternative modes of transportation can be the main or only way that children get to school. As such, programs like Walk and Bike to School Day create space for communities to come together and enjoy the benefits of walking and biking to school. Community participation in programs can lead to advocating efforts calling for improved walking and bicycle facilities to allow students to get to school safely. The city could actively collect resident comments and feedback to form an understanding of their safety concerns and locate areas in need of safety improvements. Programs could also be implemented throughout the City of Palmdale, specifically in equity communities where existing pedestrian and bicycle facilities do not support safety. The active participation of city leaders in Safe Routes to School programs demonstrates the community that the City is committed to addressing safety issues specifically for children. The City can also be ready for any changes in technology that could result in a reduction in school-related traffic. Promotion of these technological changes can reduce car trips in the City.

Organize and host low-cost tactical urbanism projects to pilot safety improvements, gather community feedback, and help build community buy-in. The City of Palmdale can organize a program that supports tactical urbanism projects where community members are able to participate in developing and testing out transportation improvements. In addition to such projects being low-cost and relatively quick to implement, tactical urbanism projects present the opportunity for residents to play an active role in improving safety conditions within their neighborhood and provide ideas for additional projects. This also supports building community buy-in to build more permanent infrastructure. Figures 28-32 show an example of a temporary pedestrian bulb-out with some street art to support placemaking. The city can collect community feedback to inform future safety projects and identify areas of high concern. Tactical urbanism project and event locations could be located on streets in equity communities where current conditions are unsafe for pedestrians, particularly in equity priority areas 1 and 2. Specifically, projects and events can be tested in East Palmdale Blvd between State Route 14 and 20th Street East, as well as along East Palmdale Blvd, 47th Street East, and East Avenue S.

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Figure 29: Temporary Bulb Out with Planters and Bollards



Source: Portland, Oregon

Figure 28: Bulb Out with Street Art and Bollards



Source: Los Angeles, California

Figure 30: PARKing Day Bike Education and Fix-It Shop



Source: Eugene, Oregon

Figure 32: Sidewalk Art Placemaking Project with High School Students



Source: Portland, Oregon

Figure 31 : Survey Collection at PARKing Day Event



Source: Eugene, Oregon

Organize pedestrian and bike programs that educate the public on safety measures and provides community resources. The City of Palmdale can organize a Bike Ride event that closes specified routes from car traffic and opens the streets to cyclists, pedestrians. The route should connect communities, businesses, and recreation centers to allow for safe access throughout the city. One example of such programming is the international, annual PARKing Day, where businesses and community members overtake a parking spot for a day and develop a wide array of other uses for the space (see Figures 17-18). Additional informational programming like driver and bicycle safety education could be included to create a change in driving practices and a shift towards using active transportation. The city can also collect information from residents on their safety concerns and projects they would like to see implemented in their neighborhood.

VMT

The following program recommendations will help the City of Palmdale reduce its overall VMT and make progress towards its sustainability and emissions goals.

Develop a bikeshare pilot program to support the City's greenhouse gas emissions reduction goals with locations in equity communities. Bikeshare programs make it easy for equity community residents to use bicycles in an accessible and affordable way, and they reduce VMT and emissions to improve sustainability and air quality in equity communities. The pilot program could allocate bicycles and stations in communities with low access to public transit, particularly in equity priority areas 1 and 2, areas close to job hubs with moderate employment density along Highway 14, and in the east and south part of the city where VMT per capita is above the North LA County average. Bicycles should be accessible in central locations such as transit hubs and stops, affordable housing developments, schools, grocery stores, faith-based institutions, etc. The pilot could also provide free or discounted rides to equity community users who identify as low-income households, seniors, students, and others.

Develop educational programming and outreach on active transportation and transit in conjunction with other existing community events. Educational programs and outreach are essential for making equity communities comfortable with transitioning away from cars towards active transportation. The City can advertise on public transit and street furniture, City-owned websites and social media accounts, existing community events and new events like LA's CicLAvia, community institutions like schools and religious organizations, transportation ambassador programs, etc. The City can also introduce Open Streets programs in equity communities that temporarily create car-free streets for pedestrians and bicyclists to enjoy in a safe way. The routes should connect equity communities to other parts of the city and include complementary programming like children's activities, farmer's markets and city booths to educate about active transportation projects. To enhance trust and buy-in from the community, the City could develop relationships with residents and community-based organizations, and carry out consistent outreach in equity communities.

Collaborate with state and regional agencies to offer electric vehicle and charging infrastructure incentive programs for disadvantaged communities to support the City of Palmdale's greenhouse gas emissions reduction goals. In exchange for purchasing or leasing an electric vehicle (EV) or installing EV charging infrastructure on private property, users would be able to access a variety of financial assistance options such as subsidies, tax credits, rebates, loans, grants, etc. At the state level, the California Air Resources Board offers a variety of EV subsidy and charging infrastructure incentive

programs for consumers including the Electric Vehicle Rebate Program, Clean Vehicle Rebate Project, the Clean Vehicle Assistance Program, and California EV Infrastructure Project. At the regional level, the Antelope Valley Air Quality Management District offers an Alternative Fuel Vehicle incentive program and the Electric Vehicle Charging Stations Program. The incentives would facilitate the adoption of electric vehicles and help the City make progress towards reducing transportation emissions, particularly in equity communities where air quality is poor. To promote equitable benefits, the program could provide subsidies of a higher proportion of the acquisition price for qualifying individuals based on income eligibility, as well as higher level of incentives for residents in equity communities. Furthermore, EV charging infrastructure could be developed in equity communities, particularly in equity priority areas 1 and 2, at important community locations such as affordable housing developments, schools, and grocery stores; residents could also be provided with free or discounted prices for EV charging.

Develop vanpooling programs for disadvantaged communities to support the City of Palmdale's VMT reduction goals. Vanpooling programs in equity communities replace single car trips by offering shared trips for commuters to ride with people they work with to employment destinations, thus reducing emissions and VMT and improving air quality. Los Angeles Metro has an existing vanpool program that is grant funded by the Federal Transit Administration's Urbanized Area Formula Program. In LA Metro's program, users lease vehicles from Metro's approved vendors and qualified users can apply for a base subsidy of 50% of the lease price of the vehicle and related costs. The City could create a similar program to that of LA Metro's and partner with select vanpool vehicle vendors. To promote equitable benefits, the program could provide higher subsidies for users living in equity communities based on income eligibility and lower ridership or occupancy requirements to encourage usage of the service. The program could prioritize coverage in equity priority areas 1 and 2, particularly the east and north-east area of the city where employment-related VMT is above the North LA County average.

Expand existing microtransit pilot service into equity communities in the City of Palmdale that include stops at essential services and important community destinations. Microtransit shuttles offer flexible and convenient shared transportation services for communities with lower access to public transit. The Antelope Valley Transit Authority currently operates a microtransit pilot that provides valuable on-demand transportation service connecting residents of Lake Los Angeles, Pearblossom, Littlerock, and Sun Village to transit routes. The City could facilitate the expansion of the pilot into equity communities within Palmdale that have the highest need. The service could help vulnerable residents easily access essential services and community destinations like malls or street festivals otherwise not served by public transit. The microtransit service could offer free or discounted rides for vulnerable residents in equity communities such as low-income individuals, women, students, etc. The services and vehicles could also be designed to serve the physical needs of residents with disabilities and seniors. The microtransit program could prioritize service in equity priority areas 1 and 2, particularly in the south and east areas of the city where VMT per capita is above the North LA County average.

Implement VMT transportation impact fee program to provide active transportation projects in equity communities where there is limited or no pedestrian or biking facilities. VMT transportation impact fees primarily aim to reduce VMT from new development by charging developers a fee on new projects based on their projected VMT impacts. The fee is used to fund public infrastructure including active transportation. Other cities in California have implemented similar programs including San Diego, which uses its impact fee to fund bicycle and pedestrian facilities, transit service, and micromobility. Its fee

levels vary based on land use and development type; the funds are directed towards implementing multimodal infrastructure in more urban areas of the city where VMT mitigation would be most effective. The City could implement a similar program and prioritize active transportation investments in equity communities that have a high dependence on public transit, have close proximity to job hubs, and lack pedestrian and bike infrastructure.

8. Funding Sources

Funding is an essential consideration in the planning and implementation of projects to achieve safety and VMT reduction goals. The following tables summarize funding opportunities at the federal, state, and local level.

Federal Funding Sources

| Funding Program and Entity | Funding Type | Eligible Modes/Description |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Charging and Fueling Infrastructure Grants (US Department of Transportation, Bipartisan Infrastructure Law) | Discretionary | This program provides funding to build electric vehicle charging infrastructure and other alternative fuel stations. |
| Congestion Mitigation Air Quality (CMAQ) (US Department of Transportation, Federal Highway Administration) | Formula | Federally designated air quality containment areas receive funding by formula to program local and regional projects |
| Metropolitan & Statewide Planning and Non-Metropolitan Transportation Planning: Sections 5303, 5304, 5305 (US Department of Transportation, Federal Transit Administration) | Discretionary | This funding source provides procedural and funding requirements for multimodal transportation planning in metropolitan areas. Planning must be cooperative, continuous, and comprehensive leading to long-range plans and short-range programs that reflect transportation investment priorities. Funds are available to states and Metropolitan Planning Organizations (MPOs) for planning activities |
| Urbanized Area Formula Program: Section 5307 (US Department of Transportation, Federal Transit Administration) | Formula | This source supports capital, planning, engineering, design projects; preventative maintenance is also eligible. For urbanized areas with populations less than 200,000, operating assistance is an eligible expense |
| Capital Investment Grants: Section 5309 (US Department of Transportation, Federal Transit Administration) | Discretionary | This source funds light rail, heavy rail, commuter rail, streetcar, and bus rapid transit projects. |
| Grants for State of Good Repair Formula Program: Section 5337 (US | Formula | This funding source provides funding for capital projects that maintain a fixed guideway or a high intensity |

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| Funding Program and Entity | Funding Type | Eligible Modes/Description |
|--------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Department of Transportation, Federal Transit Administration) | | motorbus system in a state of good repair, including projects to replace and rehabilitate, and implement transit asset management plans. |
| Grants for Buses and Bus Facilities Formula Program: Section 5339(a) (US Department of Transportation, Federal Transit Administration) | Formula | This source provides funding to states and transit agencies through a statutory formula to replace, rehabilitate, construct and purchase buses, related equipment, and bus-related facilities. In addition to the formula allocation, this program includes two discretionary components: The Bus and Bus Facilities Discretionary Program and the Low or No Emissions Bus Discretionary Program. |
| Grants for Buses and Bus Facilities Program (US Department of Transportation, Federal Transit Administration) | Discretionary | This source provides funding through a competitive allocation to states and transit agencies to replace, rehabilitate, and purchase buses and related equipment and to construct bus-related facilities. The competitive allocation provides funding for major improvements to bus transit systems that would not be achievable through formula allocations. |
| Areas of Persistent Poverty Program (US Department of Transportation, Federal Transit Administration) | Discretionary | The Areas of Persistent Poverty program provides grants for planning, engineering, technical studies, or financial plans to improve transit service in areas experiencing long-term economic distress. It also supports coordinated human service transportation planning to improve transit service or to provide new services such as paratransit. This program supports President Biden's Build Back Better initiative to mobilize American ingenuity to build modern infrastructure and an equitable, clean energy future. |
| Transit-Oriented Development Planning Pilot (US Department of Transportation, Federal Transit Administration) | Discretionary | This source provides funding to advance planning efforts that support transit-oriented development (TOD) associated with new fixed-guideway and core-capacity improvement projects. TOD focuses on growth around transit stations to promote ridership, affordable housing near transit, and revitalized downtown centers and neighborhoods. It further |

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| Funding Program and Entity | Funding Type | Eligible Modes/Description |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | | encourages local economic development. |
| Highway Safety Improvement Program (HSIP) (US Department of Transportation, Federal Highway Administration) | Discretionary | The HSIP is federally allocated to the state for roadway safety projects through a competitive program administered by Caltrans. |
| Infrastructure for Rebuilding America (INFRA) (US Department of Transportation, Federal Highway Administration) | Discretionary | These grants advance the priorities of rebuilding America's infrastructure and create jobs by funding highway, multimodal freight, and rail projects. Projects are focused on improving safety, generating economic benefits, reducing congestion, and enhancing resiliency. The projects hold the greatest promise to eliminate supply chain bottlenecks and improve critical freight movements. |
| National Infrastructure Project Assistance (MEGA) (US Department of Transportation) | Discretionary | The program is available to fund major projects that are too large or complex for traditional funding programs. The program provides grants on a competitive basis to support multijurisdictional or regional projects of significance that may also cut across multiple modes of transportation. Eligible projects could include highway, bridge, freight, port, passenger rail, and public transportation projects of national and regional significance. |
| Promoting Resilient Operations for Transformative, Efficient, and Cost-saving Transportation (PROTECT) (US Department of Transportation, Federal Highway Administration) | Formula | This program provides funding for evacuation routes, coastal resilience, enhancing resiliency of existing infrastructure, or efforts to move infrastructure to nearby locations not continuously impacted by extreme weather and natural disasters. |
| Rebuilding American Infrastructure with Sustainability and Equity (RAISE) (US Department of Transportation, Federal Transit Administration) | Discretionary | This program helps communities fix and modernize their infrastructure and can be used for a wide variety of transportation projects that will have a significant local or regional impact. |
| Safe Streets and Roads for All (US Department of Transportation) | Discretionary | This program provides funding directly to local and tribal governments for improvements to reduce crashes and fatalities, especially for cyclists and pedestrians |
| Strengthening Mobility and Revolutionizing Transportation (SMART) (US Department of Transportation) | Discretionary | This program provides competitive grants to states, local governments, and tribes for projects that improve transportation safety and efficiency. |

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| Funding Program and Entity | Funding Type | Eligible Modes/Description |
|-----------------------------------------------------------------------------------------------------------------------|---------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Surface Transportation Block Grants (US Department of Transportation, Federal Highway Administration) | Formula | This program provides funding that may be used by states and local agencies for a wide range of projects to preserve and improve the condition and performance of surface transportation, including highway, transit, intercity bus, bicycle, and pedestrian projects. |
| Safe Routes to School: Federal (US Department of Transportation) | Discretionary | There are two Safe Routes to School Programs, one federally funded, and the other state funded. The federal version of this grant program funds state, local, and regional agencies. Non-profit organizations, school districts, public health departments, and Native American tribes are eligible in partnership with a city, county, metropolitan planning organization, or a regional transportation planning agency. Targeted beneficiaries are K-8 schools. |

State Funding Sources

| Funding Program | Funding Type | Eligible Modes/Description |
|--------------------------------------------------------------------------------------------|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Active Transportation Program (ATP) (California Transportation Commission) | Discretionary | This program is intended to encourage increased use of active modes of transportation and funds bicycle and pedestrian improvement projects. Eligible projects include bicycle and pedestrian improvements and planning. SB 1 augmented the ATP with an extra \$100 million annually to the program. |
| Clean Transportation Program (California Energy Commission) | Discretionary | This program offers several grant programs for EV charging infrastructure to support passenger vehicles, freight, and buses. Zero-emission vehicle incentives are offered through California Air Resources Board (CARB). |
| Clean California (Caltrans) | Discretionary | This program, administered by Caltrans, provides funds to local communities to beautify and improve local streets and roads, tribal lands, parks, pathways, and transit centers to clean and enhance public spaces. |

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| Low Carbon Transit Operations Program (LCTOP) (Caltrans) | Discretionary | This program provides operating and capital assistance for transit agencies to reduce greenhouse gas emissions and improve mobility services for disadvantaged communities. Eligible projects include new or expanded bus or rail services, and intermodal transit facilities. At least 50% of total funds received must benefit disadvantaged communities. |
| Local Partnership Program (LPP) (California Transportation Commission) | Formula (60%) Discretionary (40%) | This “self-help” program provides local and regional transportation agencies that have passed sales tax measures, developer fees, or other imposed transportation fees to fund road maintenance and rehabilitation, sound walls, and other transportation improvement projects. Most transportation improvements are eligible. |
| Local Streets and Roads (California Transportation Commission) | Formula | Cities and counties receive funds for road maintenance, safety projects, railroad grade separations, complete streets, and traffic control. |
| Safe Routes to School: State (Caltrans) | Discretionary | The state version of this program only funds city and county applicants. The target beneficiaries of the state program are students K-12. |
| Solutions for Congested Corridors (SCCP) (California Transportation Commission) | Discretionary | Regional transportation authorities and Caltrans may nominate projects for funding to achieve a balanced set of transportation, environmental, and community access improvements to reduce congestion. |
| State Transportation Improvement Program (STIP) (California Transportation Commission) | Formula | This program provides allocations of certain state transportation funds for state highway improvements, intercity rail, and regional highway and transit improvements. Projects funded under this program are proposed by regional transportation agencies and approved by the California Transportation Commission (CTC) on a biannual basis. Projects included in the program are limited to capital improvements relative to the maintenance, safety, operation, and rehabilitation of the state highway |

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| | | system that do not add new capacity to the system. |
| Transit and Intercity Rail Capital Program (California State Transportation Agency) | Discretionary | This program provides funds for transformative capital improvements that modernize the state's intercity, commuter, and urban rail systems, and bus and ferry transit systems. |

Local Funding Sources

| Funding Program | Funding Type | Eligible Modes/Description |
|-----------------------------|------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| City/County Local Gas Taxes | Tax | City/County Local Gas Taxes are subventions local agencies receive directly from the state gas tax and are used for transportation related purposes. |
| Developer Impact Fees | Exaction | Developer impact fees are payments made by developers to the government to fund the construction of public infrastructure that is needed to serve the development and communities in the city. |
| General Fund Revenues | Local General Revenues | The General Fund and miscellaneous local road funds are general fund revenues dedicated for transportation purposes. These revenues are based on information provided in the State Controller's annual reports for local street and road expenditures and revenues. |