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Executive Summary

The Palmdale East Avenue Q Complete Streets Project is a multimodal corridor study that provides transportation and land use recommendations for a 1.4-mile segment of East Avenue Q. Recommendations are aligned with the City’s General Plan Update and are geared toward improving walking and biking conditions for people of all ages and abilities, as well as improving the comfort and safety of active transportation in high desert weather.

Transportation & Streetscape Recommendations:
Create a public right-of-way along East Avenue Q that includes the following:

- Continuous, protected sidewalk-level bicycle facilities along the length of the study corridor (Sierra Highway to 20th Street East).
- Continuous sidewalks and high-visibility crossings at intersections, with raised crossings at driveways.
- A center landscaped median for traffic calming where possible, reducing points of conflict, and reducing the heat island effect, with gaps as needed for driveway and emergency access.
- Streetscape furniture to create a sense of place and add amenities for people biking, walking, and shopping, including lighting, shade structures, benches, trash receptacles, and bicycle racks.
- Landscaping and green infrastructure to reduce the heat island effect, capture stormwater, and provide shade for people walking and biking along the corridor.

Land Use Recommendations:
- Create an active, ground floor pedestrian environment within three defined nodes:
  » A mixed-use node at 10th Street East that will be a lively area with mixed use development on all four corners and a “main street” character and feel.
  » A residential node at 15th Street East, located at the center of the project area, will offer differing intensities of standalone residential uses on all four corners.
  » An employment/retail node at 20th Street East, which is located at the east end of the project area, serves as a commercial and employment node.
- Increase various types of housing opportunities
- Increase local job opportunities
Introduction
Chapter 1. Introduction

Project Background

The City of Palmdale is re-imagining East Avenue Q as a safer multimodal corridor that encourages economic development and is a direct connection to a multimodal transportation hub that will provide High Speed Rail, Metrolink, and local bus service to residents. The project area includes a 1.4-mile segment of the corridor from Sierra Highway to 20th Street East.

The corridor serves an important function to the residents that live on or near the street, and those that are accessing existing retail, commercial, and institutional destinations, and it provides a connection to those traveling west to Sierra Highway for work or other purposes. East Avenue Q is also anticipated to link major destinations and activity centers, which creates an unprecedented opportunity for the City to consider multiple modes of travel and create a model that could also apply in other locations throughout Palmdale. With the future Palmdale High-Speed Rail station serving both Northern and Southern California, and the High Desert Corridor to Victorville to the east, this segment of East Avenue Q must manage many future needs. Additionally, given the high-desert climate of the city, thermal comfort for people walking and biking in high-heat and high-wind conditions is a key consideration.

Project Goals

The project goals as identified in the original project grant application are to:

- Develop a multimodal preliminary corridor plan to be merged into a Project Initiation Document (PID)
- Enhance pedestrian and bicycle activity and safety on East Avenue Q
- Develop planning-level recommendations to address shade and wind on East Avenue Q
- Provide a framework for modifying roadway geometry and sidewalk improvements that will promote walking and biking as a viable form of safe and active transportation
- Develop designs for continuous bike facilities and sidewalks along the entire stretch of the project area
- Ensure the East Avenue Q complete streets project is consistent with and complementary to the City’s General Plan Update (2045 General Plan)

What are Complete Streets?

Complete Streets is a transportation policy and design approach for streets to be planned, designed, operated, and maintained to enable safe, convenient, and comfortable travel and access for people of all ages and abilities regardless of their mode of transportation. There is no singular design prescription for Complete Streets; each one is unique and responds to its community context. A complete street may include sidewalks, bike lanes, dedicated bus lanes, comfortable and accessible public transportation stops, frequent and safe crossing opportunities, median islands, accessible pedestrian signals, curb extensions, narrower travel lanes, roundabouts, landscaping, and more.
Figure 1: Project Area
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Existing Conditions
Chapter 2. Existing Conditions

The City of Palmdale is located in Antelope Valley in northern Los Angeles County, separated from the Los Angeles Basin by the San Gabriel Mountains. Palmdale is 106 square miles in size with a population of 169,450 as of 2020\(^1\).

Safe, sustainable, and convenient travel is essential for everyone who lives in, works in, and visits Palmdale. This chapter provides an overview of the existing conditions for people walking, biking, and taking transit, analyzing who uses the corridor, connectivity, safety, and comfort. Additional analyses conducted as part of the existing conditions review not included in the body of this report are available in Appendix A: Existing Conditions. The Project Team also reviewed the following plans, studies, and reports relevant to the East Avenue Q Complete Streets Project – this review is available in Appendix B: Document and Code Review:

- City of Palmdale General Plan (1993)
- Palmdale Transit Area Specific Plan (2020)
- Avenue Q Feasibility Study (2016)
- City of Palmdale Complete Streets Plan (2019)
- City of Palmdale Safe Routes to School Plan (2019)
- City of Palmdale Design Toolbox (2018 draft)
- City of Palmdale Municipal Code

### Land Use on East Avenue Q

The 1993 General Plan land use designations on East Avenue Q are illustrated in Figure 2. The parcels on the north side of East Avenue Q are currently designated as Industrial, Business Park, and Commercial Manufacturing. This area has a heavier jobs focus, and is home to large parcels, that today are largely unbuilt. Parcels on the south side of East Avenue Q are designated as residential between 9th Street East and 18th Street East with Single Family Residential 2, Multifamily Residential, and Medium High Density Residential uses. The west end of the Project Area includes Industrial, Business Park, and Public Facility designations, while the east end includes Neighborhood Commercial and Commercial Manufacturing designations.

The Palmdale General Plan is undergoing a comprehensive update which is expected to conclude in 2022. This update will result in new land use designations and a new General Plan Land Use Map that is detailed in Chapter 4 of this report.

The project area is bound by two public facilities, the Palmdale Sheriff Station at the southeast corner of Sierra Highway and East Avenue Q to the west and the Palmdale Water District (PWD) at the northeast corner of 20th Street East and East Avenue Q to the east. Other key land use types include:

- The Palmdale Sheriff Station—ran and operated by the Los Angeles County Sheriff’s Department—serves the City of Palmdale and surrounding communities. The Palmdale Sheriff’s Station is a state-of-the-art facility constructed in 2006 that includes a 47,000 square-foot main building, 7,800 square-foot jail, and 8,400 square-foot motor pool and storage building.\(^2\)

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\(^1\) Source: US Census Bureau. [https://www.census.gov/quickfacts/palmdalecitycalifornia](https://www.census.gov/quickfacts/palmdalecitycalifornia)

The PWD has provided water services in the Antelope Valley since 1918. PWD serves the City of Palmdale and approximately 187 square miles of land in northeastern Los Angeles County, including several non-contiguous areas of the Antelope Valley.\(^3\)

Mixed residential uses within the project area include single family residences, and primarily two-story apartment complexes ranging in size and density with surface parking lots that face East Avenue Q and its cross streets. There are approximately 77 single family residential units within the project area, many of which are clustered on a single parcel. These single-family units are characterized by front-facing and front-loading garages at either the front of the building or in a detached structure at the back of the parcel. The project area contains approximately 376 multifamily residential units. The orientation of buildings and parking lots across multifamily structures varies, with smaller multifamily structures oriented facing East Avenue Q with front-loading parking lots, while larger multifamily structures feature several buildings oriented around the perimeter of a parcel with parking lots at the center.

Who uses East Avenue Q?

To better understand who is impacted by existing conditions along East Avenue Q, the Project Team analyzed the three project census tracts that compose the project area, focusing on demographics and the current environment for people walking, biking, taking transit, and driving along the corridor.

Demographics: Age and Income

One of the tenets of a complete street is that the street should function for people of all ages and abilities. This demographic analysis focuses on age, as young people and older adults may be less likely to drive alone or may be transit dependent. Another focus demographic was income, as lower income residents may also rely on walking, bicycling, and taking transit.

The project area’s population skews toward younger age groups, especially in census tract 9101.1, where 40% of residents are 19 years or younger. Table 1 provides an age breakdown within the three groups to help analyze potential mobility barriers for younger children, young adults, and older adults. In all three census tracts reviewed, teenagers and young children constitute a significant share of the population. Youth are likely to use East Avenue Q to travel in the area, as there are multiple schools nearby, including Tamarisk Elementary School, Sierra Paloma High School, Palmdale Prep Academy and R Rex Parris High School.

The Project Team collected median annual household income data to analyze any potential mobility challenges that residents may experience due to income. Residents in the project area are lower-income when compared to the City’s median annual household income – incomes in the project area’s census tracts range from 29% to 69% of the City’s median income of $60,428.

### Table 1: Resident Age

<table>
<thead>
<tr>
<th>Census Tract</th>
<th>Residents 19 years or younger</th>
<th>Residents 20-64 years</th>
<th>Residents 65 and older</th>
</tr>
</thead>
<tbody>
<tr>
<td>9101.1</td>
<td>40%</td>
<td>55%</td>
<td>5%</td>
</tr>
<tr>
<td>9105.01</td>
<td>34%</td>
<td>59%</td>
<td>7%</td>
</tr>
<tr>
<td>9105.2</td>
<td>26%</td>
<td>69%</td>
<td>5%</td>
</tr>
</tbody>
</table>

Source: American Community Survey (2018)

Walking, Biking, and Taking Transit

The Project Team led a citywide survey and received 551 responses about how residents use East Avenue Q. Of these respondents, 51% walk on East Avenue Q a few times a year or more, 21% bike around the corridor a few times a year or more, and 18% take transit around the project area a few times a year or more. Pedestrian and bicyclist count data collected on a weekday during Spring 2021 also found a low number of people walking and bicycling along the project area.

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\(^3\) History of PWD, (n.d.) Palmdale Water District. Retrieved from: [https://www.palmdalewater.org/about-pwd/pwd-history/]
Figure 2: General Plan Land Use Designations
Future counts for the project area may help create a better understanding of who walks and bikes along East Avenue Q, and how walking and bicycling trips can increase once improvements are made. There are few transit riders today and recent service cuts to Antelope Valley Transit Authority (AVTA) lines along East Avenue Q have discouraged people to regularly take the bus.

Most workers within the project area’s census tracts have access to at least one vehicle (see Table 2), indicating that many people impacted by the project may not be transit dependent. Young people and older adults, however, may be more dependent on non-automobile commuting and can benefit from balancing modes and improved transit service along East Avenue Q.

<table>
<thead>
<tr>
<th>Census Tract</th>
<th>No vehicles</th>
<th>1 vehicle</th>
<th>2 vehicles</th>
<th>3 vehicles</th>
<th>4 vehicles</th>
<th>5 or more vehicles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tract 9101.01</td>
<td>2.3% (15)</td>
<td>11.9% (79)</td>
<td>33.6% (223)</td>
<td>41.1% (273)</td>
<td>1.1% (7)</td>
<td>10.1% (67)</td>
</tr>
<tr>
<td>(664 total)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tract 9105.01</td>
<td>10.3% (151)</td>
<td>56.8% (833)</td>
<td>24.0% (352)</td>
<td>8.9% (131)</td>
<td>0.0% (0)</td>
<td>1.2% (17)</td>
</tr>
<tr>
<td>(1467 total)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tract 9105.02</td>
<td>4.3% (66)</td>
<td>14.5% (224)</td>
<td>50.9% (788)</td>
<td>13.6% (210)</td>
<td>14.8% (229)</td>
<td>3.3% (51)</td>
</tr>
<tr>
<td>(1547 total)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All tracts</td>
<td>6.3% (232)</td>
<td>30.9% (1136)</td>
<td>37.1% (1363)</td>
<td>16.7% (614)</td>
<td>6.4% (236)</td>
<td>3.7% (135)</td>
</tr>
<tr>
<td>(3678 total)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: American Community Survey (2019)

**Multimodal Volumes**

Multimodal turning movement counts were collected at five East Avenue Q study intersections on March 4, 2021: Sierra Highway, 10th Street East, 12th Street East, 15th Street East, and 20th Street East. The counts included motor vehicles, pedestrians, and bicyclists and were completed during the AM and PM peak periods (7-9 AM, 4-6 PM). While East Avenue Q is a major arterial, volumes were relatively low, with the highest directional motor vehicle volumes never rising above 500 vehicles per hour. Pedestrian and bicycle volumes were also very low, with no intersection experiencing more than five total during a peak hour. Weather was also likely not a factor in walking and bicycling volumes as there was no precipitation that day with a high temperature of 67 degrees. Count data is summarized in Figure 3 and Figure 4.
Figure 4: Study Intersection Turning Movement Volumes (PM Peak Hour) – Existing Conditions
Driving

Traffic Operations

A traffic operations analysis was conducted on East Avenue Q to document existing conditions through level of service (LOS)\(^4\), delay (measured in seconds), and volume-to-capacity ratio (v/c)\(^5\). The analysis, completed in Synchro 10 software, included five signalized and unsignalized intersections on East Avenue Q between Sierra Highway and 20\(^{th}\) Street East. Measured traffic operations conditions show very little delay during AM and PM peak hour conditions and suggest some current intersections are overbuilt and additional right- and left-turn lanes are not warranted. A summary of these findings is provided in Table 3.

Parking

Parking along the project area is primarily on-street, except for residential apartments that have assigned off-street parking and commercial locations with surface parking lots. Parking along East Avenue Q is illustrated in Figures 5, 6, and 7. On-street parking along East Avenue Q is underutilized, which is likely associated with the lack of developed parcels. As East Avenue Q develops with more housing and commercial destinations, the demand for parking will grow. Curbside parking is some of the most valuable space and regulating curbside use can help balance space for people who choose not to drive. This can include more dedicated space for expanded sidewalks, parkways, separated bicycle facilities, and dedicated transit stops. The curbside should also support new mobility services, such as passenger loading zones for ride hailing services (Lyft, Uber), and micromobility options like bike share and scooter share.

Table 3: East Avenue Q Traffic Operations Summary: Existing Conditions

<table>
<thead>
<tr>
<th>Intersection</th>
<th>Time Period</th>
<th>LOS (Delay) [v/c]</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Sierra Hwy (Signalized)</td>
<td>AM</td>
<td>NB (14.3) [0.39]</td>
<td>SB (15.3) [0.35]</td>
<td>-</td>
<td>EB (12.9) [0.28]</td>
<td>WB (14.2) [0.34]</td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td>C (21.2) [0.47]</td>
<td>C (25.8) [0.72]</td>
<td>-</td>
<td>B (18.6) [0.52]</td>
<td>C (22.8) [0.71]</td>
</tr>
<tr>
<td>10th Street East (Signalized)</td>
<td>AM</td>
<td>C (26.4) [0.51]</td>
<td>C (24.9) [0.21]</td>
<td>B (16.9) [0.29]</td>
<td>B (16.4) [0.46]</td>
<td>B (19.2) [0.43]</td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td>D (42.2) [0.77]</td>
<td>C (32.8) [0.54]</td>
<td>C (21.8) [0.67]</td>
<td>B (20.0) [0.59]</td>
<td>C (25.9) [0.62]</td>
</tr>
<tr>
<td>12th Street East (Unsignalized)</td>
<td>AM</td>
<td>B (11.8) [0.08]</td>
<td>0.0</td>
<td>-</td>
<td>-</td>
<td>A (1.1) [-]</td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td>C (18.6) [0.17]</td>
<td>B (11.0) [0.01]</td>
<td>-</td>
<td>-</td>
<td>A (1.5) [-]</td>
</tr>
<tr>
<td>15th Street East (Unsignalized)</td>
<td>AM</td>
<td>A (8.9) [0.12]</td>
<td>A (8.7) [0.07]</td>
<td>A (8.4) [0.22]</td>
<td>B (10.8) [0.41]</td>
<td>A (9.5) [-]</td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td>B (11.3) [0.22]</td>
<td>B (11.0) [0.18]</td>
<td>C (16.1) [0.70]</td>
<td>C (17.8) [0.64]</td>
<td>C (15.2) [-]</td>
</tr>
<tr>
<td>20th Street East (Unsignalized)</td>
<td>AM</td>
<td>A (8.6) [0.18]</td>
<td>A (8.6) [0.10]</td>
<td>A (8.9) [0.27]</td>
<td>B (11.0) [0.48]</td>
<td>A (9.7) [-]</td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td>B (10.9) [0.28]</td>
<td>B (12.7) [0.20]</td>
<td>E (39.2) [0.03]</td>
<td>C (21.2) [0.82]</td>
<td>C (24.7) [-]</td>
</tr>
</tbody>
</table>

\(^4\) LOS describes traffic conditions—the amount of traffic congestion—at an intersection or on a roadway. LOS ranges from A to E, with A indicating a condition of little or no congestion and F indicating a condition with severe congestion, unstable traffic flow, and stop-and-go conditions. For intersections, LOS is based on the average delay experienced by all traffic using the intersection during the busiest (peak) 15-minute period. LOS A through D are generally considered acceptable.

\(^5\) Volume-to-capacity ratio (v/c) represents the sufficiency of an intersection to accommodate the vehicular demand. A v/c ratio less than 0.85 generally indicates that adequate capacity is available, and vehicles are not expected to experience significant queues and delays. As the v/c approaches 1.0, traffic becomes unstable, and delay and queuing conditions may occur. Once the demand exceeds the capacity (a v/c ratio greater than 1.0), traffic flow is unstable and excessive delay and queuing is expected.
Figure 6: Parking from 10th Street East to 15th Street East
Palmdale East Avenue Q | Parking
Section 3: 15th St East to 20th St East

- Red: No Parking
- Purple: Unregulated Roadside Parking
- Green: Curb Parking
- Yellow: Unregulated Roadside (Unoccupied)

Figure 7: Parking from 15th Street East to 20th Street East
**Connectivity**

East Avenue Q provides a critical opportunity for improved connectivity in Palmdale – the corridor connects to or is in close proximity to important destinations like the Palmdale Transportation Center, schools, hospitals, and the future high-speed rail. East Avenue Q is also an alternate route to Palmdale Boulevard for access to CA Highway -14, Sierra Highway, and key regional destinations. A map showing the street, bicycle, and transit network, as well as traffic control devices, can be found in Figure 8.

**Bicycle and Pedestrian Connectivity**

The location of East Avenue Q positions it as an opportune connector for multimodal travel, but the existing conditions on the ground do not yet reflect its potential as a key connective corridor. There are no bicycle facilities along the project area, but the corridor intersects with the Doctor Robert C. St. Clair Parkway, a shared-use off-street path adjacent to Sierra Highway. Bike facilities are proposed for the entire project area, as well as 10th Street East (which intersects with East Avenue Q) as part of the City’s Bicycle Master Plan. East Avenue Q has inconsistent sidewalks, with gaps throughout the project area that may discourage walking to nearby destinations or connecting to transit stops.

**Transit Connectivity**

The project area is near the Palmdale Transportation Center, which serves regional transportation needs and offers multiple transit services: AVTA and Santa Clarita Transit bus service, Amtrak bus service, Greyhound bus service, and Metrolink commuter rail service. East Avenue Q hosts several AVTA transit lines, but there are few people who primarily use transit to commute to work near the project area when compared to other modes.

The most prominent AVTA route along the project area is Route 98, which has six stops (three stops in each direction) and operates very limited hours. This line is a special circulator route for commuters between the Palmdale Transportation Center and Pete Knight High School, running in the eastbound direction during weekday mornings and westbound in the afternoon. Boarding data from January 1, 2019 to January 31, 2020 shows low ridership, with the highest-use stop along the project area being the eastbound 11th Street East stop (55 boardings for the year), and westbound 10th Street East stop (46 alightings for the calendar year). Route 98 was not in operation when students were not in school during the COVID-19 pandemic, but service restarted once students started attending school in person.

Route 3 and 51 also travel on East Avenue Q, but only from Sierra Highway to 10th Street East, with one stop on each side of the roadway. For the same time period per stop boardings ranged from 1,569 to 2,438 and alightings ranged from 1,161 to 2,049. Route 3 operates with a frequency of 30 minutes on weekdays and 60 minutes on weekends, while Route 51 operates approximately every two hours weekdays and weekends. More frequent east-west service in the area operates a half mile to the south on Palmdale Boulevard where Route 1 operates with a 15- to 60-minute frequency depending on time of day and week.

**Motor Vehicle Connectivity**

East Avenue Q is a major arterial in the City’s functional classification system, an autocentric grouping of streets based on connections to other street types and services they provide. Higher order facilities like arterials generally carry higher volumes of traffic and have direct connections to limited access highways like Sierra Highway while also connecting to areas of regional importance. While current volumes on East Avenue Q are relatively low, they may grow significantly as development occurs in the project area.

Motor vehicle connectivity on Avenue Q is continuous from Sierra Highway to 42nd Street East, but is bisected by the rail lines near the project area. Today, anyone living along East Avenue Q east of Sierra Highway would need to travel a roundabout path of at least a mile to reach the Palmdale Transportation Center or R. Rex Parris High School. Better connections would improve overall roadway connectivity and potentially increase multimodal use of the corridor east of Sierra Highway.
Figure 8: Project Area Transportation Network
Safety and Comfort on East Avenue Q

The Project Team’s investigation of safety and comfort focused on pedestrian and bicyclist separation from moving vehicles, safety at crosswalks, and comfort from the natural elements of the high-desert.

Collision History and Areas of Conflict

From 2015 to 2019, there were 12 collisions within the project area. Eleven of the 12 collisions did not involve bicyclists or pedestrians – the one collision involving a pedestrian at the intersection of East Avenue Q and Sierra Highway resulted in a severe injury. Reviewing collision history is one approach to understanding street safety, but a more proactive approach looks at the systemic factors that may cause conflicts in the future. This may include long distances between marked crosswalks, high posted speed limits, permissive turning movements, and low visibility for people driving. Along the corridor, there are multiple potential conflict zones between drivers and people walking and bicycling. Table 4 details the locations and potential conflicts within the project area.

<table>
<thead>
<tr>
<th>Location</th>
<th>Description of Conflict</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intersection of Sierra Highway and East Avenue Q</td>
<td>The missing south crosswalk leg at this intersection limits direct connection to the existing dirt trail.</td>
</tr>
<tr>
<td>Intersection of 10th St East and East Avenue Q</td>
<td>This intersection has protected left turns and signal phasing for pedestrians, but there is a potential conflict between drivers making eastbound right turns from Avenue Q onto 10th Street East. The geometry at the southwest corner of the intersection is not well defined today.</td>
</tr>
<tr>
<td>Intersection of 15th St East and East Avenue Q</td>
<td>In addition to a long east-west crossing distance across 15th Street East, this intersection’s complex roadway geometry is unpredictable for all modes and can cause conflicts between drivers, pedestrians, and bicyclists.</td>
</tr>
<tr>
<td>Intersection of 17th St East and East Avenue Q</td>
<td>The lack of traffic control devices at this uncontrolled intersection creates potential conflicts between drivers and people walking or biking.</td>
</tr>
<tr>
<td>Intersection of 20th St East and East Avenue Q</td>
<td>This 4-way stop controlled intersection does not have marked crosswalks, which impacts pedestrian visibility and presence.</td>
</tr>
<tr>
<td>Along East Avenue Q</td>
<td>Large spacing between marked crosswalks and high posted speed limits create a street that encourages speeding. Paired with low levels of street lighting, this can be a significant safety issue at night.</td>
</tr>
</tbody>
</table>

Pedestrian Crossing Assessment

Today, there are very few marked crosswalks along East Avenue Q, and the distances between existing marked crosswalks are more than a quarter mile (Table 5). Studies show that people are more likely to cross at an intersection with a traffic signal or a pedestrian signal head (Walk/Don’t Walk signs). People are also more likely to cross at any location with a marked crosswalk than at those without.\(^6\)

Although existing low traffic volumes and undeveloped land use may justify the current infrequency of marked crossings, a complete street must allow people walking the opportunity to safely cross East Avenue Q, particularly at intersections and along travel desire lines. The National Association of City Transportation Officials (NACTO) recommends marked crossings at 200-foot intervals for dense city areas. Examining the context of East Avenue Q, a marked crossing at every major intersection is approximately 650-foot spacing, which would offer more frequent crossing opportunities for people walking.

<table>
<thead>
<tr>
<th>Intersections (from – to)</th>
<th>Distance (ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sierra Hwy</td>
<td>10th Street East</td>
</tr>
<tr>
<td>10th Street East</td>
<td>15th Street East</td>
</tr>
</tbody>
</table>

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Figure 9: Roadway Collisions (2015-2019)
Bicycling Level of Traffic Stress (LTS)

The Project Team conducted a Level of Traffic Stress (LTS) assessment for people bicycling around the project area to identify the stress of street networks for bicycling based on built-environment, speed, and volume characteristics (Figure 10). The methodology used by the planning team is adapted from criteria published by the Mineta Transportation Institute (MTI). The LTS analysis scores streets on a scale from 1 to 4 as follows:

- **LTS 1**: Strong separation from all except low speed, low volume traffic. Simple crossings. Suitable for children.
- **LTS 2**: Except in low speed / low volume traffic situations, cyclists have their own place to ride that keeps them from having to interact with traffic except at formal crossings. Physical separation from higher speed and multilane traffic. Crossings that are easy for an adult to negotiate. Corresponds to design criteria for Dutch bicycle route facilities. A level of traffic stress that most adults can tolerate, particularly those sometimes classified as “interested but concerned.”
- **LTS 3**: Involves interaction with moderate speed or multilane traffic, or close proximity to higher speed traffic. A level of traffic stress acceptable to those classified as “enthused and confident.”
- **LTS 4**: Involves interaction with higher speed traffic or close proximity to high-speed traffic. A level of stress acceptable only to those classified as “strong and fearless.”

The LTS analysis (Figure 11) found that East Avenue Q is a high-stress corridor for people walking and bicycling today. The street has a varying profile but high posted speed limits for a segment that only has one travel lane in each direction. The absence of continuous sidewalks also contributes to the high stress nature of the street, though missing sidewalks were not a factor incorporated into the LTS analysis. Today, residents may not feel comfortable bicycling beyond the limits of their immediate neighborhood because it is hemmed in by larger, high-stress streets like Sierra Highway, 10th Street East, 15th Street East, 20th Street East, and East Palmdale Boulevard, or cut off from the adjacent neighborhood by a high-stress crossing of a major street.

Figure 10 illustrates how different types of riders are comfortable with different types of bicycle facilities. Shared use paths are more comfortable and less stressful for children, while shared roadways may only encourage advanced bicyclists. In general, collector and arterial streets with bicycle facilities are less stressful than those without, but many streets with bicycle facilities can still be high stress due to higher vehicular speeds and volumes. Bicycle facility planning and design thinking over the past decades has not included consideration of riders who may feel uncomfortable in these situations. East Avenue Q has the opportunity to serve as a low stress east-west connection and create a more comfortable way to connect neighborhoods to services.

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Transit Facilities

Six AVTA bus stops are located along East Avenue Q. Most bus stops on the corridor have accompanying facilities like seating and a shelter, which offers refuge from the heat and rain. Some, however, lack these amenities, creating an uncomfortable waiting environment for transit riders. One bus stop location (the westbound Line 98 stop at 10th Street East) has a cut out for buses to pull into, complete with a concrete pad. This cut out is located at the far side of the intersection, although the actual bus zone is located at the nearside of the intersection (east of 10th Street East) within a dedicated right turn lane.

Shade Analysis

The city's high-desert climate warrants special focus on shade elements to enhance the thermal comfort of people walking, biking, and taking transit. The full corridor was organized into three distinct sections for the shade analysis – see Appendix A for all shade exhibits.

As typical for most California geographies, the northern section of the corridor is mostly exposed to direct sunlight and lacks sufficient shade. This largely undeveloped part of the corridor lacks sidewalk facilities and mature canopy trees, making it a prime area for shade investment as the area experiences new development. The northwestern portion of East Avenue Q between Sierra Highway and 10th Street East, with the single-family units, has no street trees and therefore lacks sufficient shade throughout the year. The south side of East Avenue Q from 9th Street East to 12th Street East lacks sufficient shade during hotter months due to inconsistent tree spacing. The south side of the corridor from 12th Street East to 15th Street East provides sufficient shade throughout the year because mature canopy trees have been planted within eight feet of the back of the sidewalk. The north side of East Avenue Q between 15th Street East and 20th Street East (where the commercial development adjacent to 20th Street East is located) provides pockets of sufficient shade; one of which includes a bus stop with a shade structure. While the tree spacing in this section is seemingly inconsistent, additional tree wells along the sidewalk create shade coverage that encompasses the entire sidewalk in specific pockets, one of which includes a bus stop without a shelter.

Two bus stops out of the six along the corridor are completely exposed and lack any shade from canopy trees or shade structures. The first stop sits on the south side of the East Avenue Q between 11th Street East and 12th Street East, and the second is on the north side of East Avenue Q between Orchid View Place and 15th Street East. The remaining four bus stops are in areas that maintain sufficient shade throughout the year due to the presence of shelters and densely planted canopy trees.
Engagement and Outreach
Chapter 3. Engagement and Outreach

Community outreach and engagement were critical parts of the entire planning process. Overall, the goal of the community engagement for this project was to leverage a transparent and inclusive set of outreach activities that provide ample opportunities for meaningful engagement from the City’s diverse community. The intention was to foster a sense of participation, contribution, and ownership among local corridor residents and business owners, as well as the larger Palmdale community.

Outreach and Engagement Strategies

A wide variety of outreach and engagement strategies were used to work toward the project’s engagement goals, with the hope of minimizing barriers to participation and inviting the broadest possible community input.

The first round of community engagement began in Spring 2021 and focused on gathering input on the community’s experiences within the project area, understanding current perceptions of the corridor’s existing conditions, and identifying future opportunities and the types of improvements that community members would like to see. Community input was collected and used to develop draft concepts. The second round of public engagement began in the Summer of 2021, when draft concept alternatives for East Avenue Q were shared with the public for final input and confirmation.

Public input contributed to defining a shared vision for the corridor and a better understanding of future transportation uses and needs. Outreach activities to gather community feedback were conducted in both project phases and virtual activities were supplemented with tactics designed to reach people without internet or computer access. These activities included:

- Three Technical Working Group meetings
- One project survey
- Two virtual workshops with Q&A
- Two pop-up events (in-person)
- Youth outreach (one interview)

COVID-19 Approach

In alignment with public health guidelines for in-person gatherings, the Project Team implemented 100% virtual public meetings. This format achieved attendance numbers that perhaps may not have been reached using traditional in-person methods. To promote participation in the project from those who had limited internet or computer access, socially distanced in-person pop-ups were hosted in or near the project area to meet people using the corridor and solicit their feedback.

Promotion and Notification

The Project Team designed a notification process that aimed to reach all levels of stakeholders, including non-English speakers. Spanish translation and interpretation were provided for all project materials and at both public workshops. The project’s database of 1,400+ contacts (City officials/staff, major employers, academic institutions, business associations, and community groups) was a key resource for disseminating project information and encouraging participation.

Figure 12: Instagram Post
Promotion and notification materials and distribution methods are detailed in Table 6, and examples of promotional materials can be seen in Figures 12, 13, and 14.

<table>
<thead>
<tr>
<th>Notification type</th>
<th>Materials and Distribution Methods</th>
</tr>
</thead>
</table>
| **Print notification** | • **Flyers and posters:** Distributed at Palmdale Transportation Center, Marie Kerr Center, Palmdale City Library, Palmdale Community Resource Center, City Hall, Palmdale Sheriff’s Station, Legacy Commons, Palmdale School District, South Antelope Valley Emergency Services, Yucca House Community Garden, Domenic Massari Park, Hispanic Chamber of Commerce, Palmdale Water District, and other key business and high-traffic areas along Avenue Q  
  • **Postcards:** Mailed to 2000+ addresses within a ¼ mile of the project corridor |
| **Digital notification** | • **Social media campaign:** 8 Facebook and Twitter posts with almost 20,000 impressions  
  • **Geofenced online advertisements:** Targeted online ads with over 250,000 impressions  
  • **Press releases:** Antelope Valley Press and Antelope Valley Times  
  • **Palmdale Connections newsletters**  
  • **Weekly eblasts**  
  • **Electronic billboard advertisements**  
  • **Palmdale Minute video segment**  
  • **Extended outreach toolkit:** A resource for 83 stakeholders and Technical Working Group members that contained copy-ready text, graphics, and links with details about upcoming engagement opportunities |

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**Figure 13:** Facebook Post

**Figure 14:** Postcard Mailer (back and front)
Technical Working Group Meetings

The Project Team convened an 18-person Technical Working Group (TWG) made up of representatives from local and regional organizations, Los Angeles County staff, and City of Palmdale staff. The TWG’s role was to review and provide feedback on key findings and recommendations throughout the life of the project, and the group met three times.

- **April 2021**: The Project Team presented an overview of the project and described key findings from the existing conditions analysis. Feedback from the TWG included the importance of connectivity for bike and pedestrian networks, the need for improvements to support all ages and abilities, and a desire for improved landscaping and lighting.

- **July 2021**: The Project Team gave an update on public input and presented multiple draft cross-section options for East Avenue Q. TWG feedback (see Figure 15) included support for one-way bike lanes and concern over having enough space for bike and pedestrian facilities to shift where the right-of-way was limited.

- **October 2021**: The Project Team provided an engagement summary and presented the preferred design alternative as well as new crossing locations. TWG feedback included support for a two-lane cross section, sidewalk-level bike lanes, and pedestrian-scale lighting.

![Figure 15: Feedback from a TWG meeting captured in Miro](a virtual presentation/whiteboard tool)
**Project Survey**

A bilingual online survey was available from March 29, 2021, to May 9, 2021. The survey asked respondents for input on how they use the corridor, concerns, priorities for improvements, and overall vision for active transportation and a complete street on East Avenue Q. 551 people responded to the survey.

Active modes are rarely used along the corridor – only 12.9% of survey respondents walk on or near East Avenue Q at least once or twice a week, and 78.5% stated they never ride their bikes on the corridor. Transit use was also low among respondents – 81.8% never take public transit on East Avenue Q. In comparison, around a quarter of respondents drive daily on East Avenue Q, while almost a third drive the corridor at least once or twice a week. These responses highlight the current car-oriented streetscape along the corridor, which creates a uninviting environment for people walking, biking, or taking transit.

The amenities/improvements survey respondents wanted to see most on East Avenue Q were lighting (66.2%), continuous sidewalks (61.7%), and improved pavement quality (55.3%). Primary concerns for travel along the corridor included maintenance for vandalism, trash dumping, and potholes (54.3%), missing sidewalks or crosswalks (51.9%), and an unsafe environment for walking (50.6%).

**Virtual Workshops**

Due to COVID-19, both workshops were conducted virtually using Zoom with live Spanish interpretation provided. During the workshop, materials were shared using Miro, a virtual whiteboard/presentation tool that allows for live note-taking and annotation of concepts and diagrams, as well as additional collaborative features that allow participants to see their feedback captured in real-time.

**Workshop #1**

The first virtual workshop was held on May 28, 2021, from 6-8pm, with 24 people in attendance. The Project Team presented a project overview, shared existing conditions findings, and identified opportunities for enhancements along the corridor. During polls conducted throughout the workshop, 83% of attendees stated they neither walk nor bike along East Avenue Q, and 89% "strongly agreed"
that the corridor needs improvements. All attendees either “somewhat agreed” or “strongly agreed” with the opportunities for East Avenue Q identified by the Project Team, which included continuous sidewalks, more crossing options, continuous bike lanes, better connections for bicyclists, consistent shade, and better bus stop amenities.

**Workshop #2**
The second virtual workshop was held on August 25, 2021, from 6pm-7:30pm, with 36 people in attendance. The Project Team shared an overview of the project, a summary of public input gathered so far, and three draft concepts for East Avenue Q.

**Figure 17:** Sample slide from Workshop #1 presentation

**Figure 18:** Two “narrow” draft options presented in Workshop #2 in Miro
During polls conducted throughout the workshop, attendees stated their most important complete streets elements for East Avenue Q were safe crossing opportunities; new, wide sidewalks; and landscaping and tree canopy. All attendees who responded to a poll on bike facility types preferred sidewalk-level bike lanes to on-street bike lanes along the corridor, and all respondents also agreed that they would be willing to spend a little more time while driving on East Avenue Q to ensure a safer environment for people walking and biking. Feedback on the draft concepts included enthusiasm for public seating, crosswalks, and landscaping/trees. Attendees supported a design option with wider sidewalks and no more than two vehicular travel lanes (one in each direction), stating that additional travel lanes (as depicted in Figure 19) would encourage dangerous speeds.

Figure 19: A “wider” draft option presented in Workshop #2 in Miro
Pop-Up Tabling

Two pop-up events were held in August 2021 (one at Palmdale Transit Center and one at the Palmdale Community Resource Center) to further promote the project and encourage feedback. Participants were asked to review potential improvements and choose their top improvements. Over 300 people participated in the pop-up events, and the top two selected improvements at both events were sidewalk level bike lanes and street lighting.

Youth Outreach

To gain feedback from youth stakeholders in the project area, the Project Team conducted an interview in August 2021 with members of Antelope Valley Youth Build, a program that serves learners aged 16-29 years old. Five Antelope Valley Youth Build members participated in a 45-minute interview. They described their experiences traveling on East Avenue Q as “fast and reckless” due to the lack of sidewalks and bike lanes and stated that walking and biking on the corridor felt unsafe and uncomfortable because of high driver speeds. Interviewee feedback on draft concepts was divided – some interviewees preferred a wider option with four lanes of traffic since people are “used to driving fast”, while others preferred a narrower two-lane option to calm traffic, reduce driver racing, and allow people to slow down and “appreciate small businesses.”
What We Heard

Community members who participated in the project’s outreach activities provided broad and detailed information about their needs and concerns while traveling on East Avenue Q. The following key themes came up most frequently in public feedback received about the project:

- **The current lack of pedestrian and bicycle infrastructure creates a harsh and uncomfortable walking and biking environment.** Sidewalk gaps, unmarked crossings, and a lack of bikeways were highlighted in feedback across all outreach activities. Many participants in the outreach activities were infrequent walkers, bicyclists, and transit riders along the corridor. This is likely due to the current conditions of East Avenue Q, which is more vehicle-oriented.

- **Dangerous driver behavior is an issue.** Speeding and racing were brought up in workshops and in the AV Youth Build interview as factors that contribute to a dangerous environment along East Avenue Q. Traffic calming elements like medians could help address speeding issues, an idea that was supported by workshop attendees. Community members also generally supported a two-lane design for East Avenue Q (opposed to a four-lane concept) due to concerns about speeding and safety. There was also a willingness to sacrifice driving convenience for pedestrian and bicyclist safety -- all Workshop #1 attendees stated they were willing to spend a little more time driving along East Avenue Q in order to make conditions safer for people walking and biking.

- **High-quality bike facilities are needed along the corridor.** East Avenue Q is a high-stress street for people riding bikes -- current speed limits range from 40-50 miles per hour along the corridor. There was enthusiastic public input around adding bike facilities to the street, and huge support for a sidewalk-level bike lane (at pop-up events and in workshops) that would separate people riding bikes from people driving cars.

- **Improved landscaping and lighting would vastly upgrade the walking experience on East Avenue Q.** The high desert conditions along the corridor can be hot and uncomfortable in the summer and adding trees or other shade-providing structures would mitigate the impacts of walking in hot weather. Community members pointed out the lack of lighting along the corridor, and street lighting was the most popular improvement recorded at the pop-up events.

Community feedback was incorporated throughout the planning process, helping shape the Project Team’s existing analysis, draft design concepts, and final recommended design alternative.
Recommendations
4. Recommendations

The following project recommendations for East Avenue Q focus on street improvements that improve conditions for people walking, biking, taking transit, and driving, while incorporating projected land use and zoning along the corridor consistent with the General Plan Update. These recommendations represent a logical evolution of the extensive existing conditions analysis and stakeholder engagement completed for this project.

Land Use and Zoning Recommendations

Key Land Use Issues and Opportunities

Through the planning and community engagement process, several issues and opportunities were identified. A series of key issues and opportunities pertaining to land use and urban design within the project area include:

- **Suburban Development Pattern:** Nearly all the existing development along East Avenue Q is oriented to vehicular traffic in a traditional suburban development pattern. This development type presents challenges for creating an active, pedestrian-oriented mixed use and employment corridor.

- **Vacant Land:** Approximately 55%* of the parcels within the project area are currently vacant, mostly on the north side of the corridor. While vacant land presents an opportunity to save on development costs, it also presents a challenge when individual projects develop at different times, leaving gaps in a street frontage.

- **County Jurisdiction:** A portion of the land within the project area - a “County Island” - is under County of Los Angeles jurisdiction. While the City’s General Plan provides the vision for the County Island, the County of Los Angeles regulates zoning in the area. This affects the City’s ability to further the intended main street environment within the west end of the project area.

- **Supportive of Large Projects:** While large swaths of vacant land can be challenging to develop at a similar pace, the makeup of large parcels facing East Avenue Q also presents a unique opportunity to support large mixed use and multifamily development projects, which will encourage the active, pedestrian environment envisioned for East Avenue Q.

- **Incomplete Frontages:** Although a current constraint, existing sidewalk gaps provide an opportunity to consider not only width and quality of sidewalks but how new development interfaces with the public realm.

- **Proximity to Downtown:** The project area includes the east end of the future Downtown, as envisioned within the Palmdale Transit Area Specific Plan (PTASP). The PTASP reconceptualizes Avenue Q as a “key” street with vibrant retail and entrainment activity in a mixed-used environment. East Avenue Q is envisioned as a place for commercial uses that serve daily shopping needs, mixed-use development, and multimodal transportation. The future multimodal transit station and planned “main street” near the project area will bring needed infrastructure, development, and activity to the corridor.

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* City of Palmdale GIS, UrbanFootprint (2019-2021)
Land Use Goals and Policies

The goals and policies presented below are consistent with the draft Palmdale 2045 General Plan. Policies taken directly from the draft 2045 General Plan are marked with an asterisk (*).

Goal 1: Create an active, ground floor pedestrian environment within the three nodes along the corridor: a mixed-use node at 10th Street East, a residential node at 15th Street East, and an employment/retail node at 20th Street East.

- Design the buildings facing East Avenue Q to reflect the vision for a new “main street” – active uses, street-oriented entrances, tall floor-to-ceiling heights, reduced setbacks (unless adjacent to a plaza or park).*
- Implement urban design guidelines and features that encourage pedestrian activity and reduce automobile use.*
- Encourage outdoor dining for patrons within the mixed-use designations along East Avenue Q and 10th Street East.
- Require corner treatments and special architectural features for buildings at the three major intersections on Avenue Q at 10th Street East, 15th Street East, and 20th Street East.
- Expand use of street furniture including lighting, benches, trash receptacles and landscaping to support a comfortable pedestrian environment within the three designated nodes at the intersections of East Avenue Q and 10th Street East, 15th Street East, and 20th Street East.
- Allow for various job-producing uses within the Employment Flex and Neighborhood Commercial designations, as dictated by the Palmdale 2045 General Plan, in pedestrian-oriented building types along East Avenue Q and 20th Street East.

Goal 2: Increase housing opportunities along the corridor.

- Promote new multifamily development within the mixed-use and standalone residential designations along East Avenue Q.
- Urge varying unit size and type within the standalone residential and mixed-use zones within the project area.
- Encourage affordable units that are seamlessly integrated into the overall residential or mixed-use development, and that connect to and complement the planned bicycle and pedestrian improvements planned in the project area.

Goal 3: Increase local job opportunities along the corridor.

- Support a diverse mix of light industrial, information, film, makerspace, boutique food/wine/beer processing, local food, and technology uses to provide jobs and tax revenues for the community by allowing emerging economic uses and industries within the Mixed-Use and Employment designations.*

Recommendations

The overall land use and design framework for creating a vibrant, pedestrian-oriented mixed-use multimodal corridor along East Avenue Q is presented in the following sections. A clear framework provides visitors and residents with a strong sense of place, an understanding of how to find their way around easily and safely and to efficiently identify uses and activities. These recommendations are intended to integrate both private and public realm development by focusing on the types of allowed land uses and their relationship to the public right-of-way, while leveraging the Complete Streets improvements envisioned for the corridor. The framework also addresses the City’s desired objectives of achieving a new urban form that is more compact and complete, where a diversity of uses and amenities are located within close walking distance of residences, work, and transit.

The land use designations in the draft Palmdale 2045 General Plan, are also included to provide a high-level overview of the place types envisioned for the corridor. A description of the applicable zoning from the PTASP is also included.
Land Use and Design Framework

Through the Palmdale 2045 General Plan and Palmdale Transit Area Specific Plan (PTASP), East Avenue Q transitions from a semi-residential and semi-industrial avenue to a mixed-use and mixed residential corridor. The project area, which includes the east end of the PTASP, includes mixed-use, multi-family, and employment land uses. While not currently connected across the rail tracks west of Sierra Highway, East Avenue Q is intended to continue the “main street” Palmdale environment from Division Street (which is outside of the project area) through to 10th Street East. Avenue Q will also be connected across Sierra Highway in the future via an underpass.

The East Avenue Q corridor offers three key activity nodes, one at 10th Street East, 15th Street East, and 20th Street East, all of which feature different land uses and feel. These nodes offer greater pedestrian amenities to support safe pedestrian crossings and encourage active transportation. Detailed below and illustrated in Figure 21 are key features of each node within the project area.

Avenue Q Nodes

Mixed Use Node: The node at 10th Street East will be a lively area with mixed use development on all four corners and a “main street” character and feel. This area also serves as the eastern boundary of the PTASP. Within this node, mixed-use development allows for multistory multifamily residential with active ground floor commercial uses. Ground floor uses within the mixed-use node will incorporate wide sidewalks with outdoor dining, large shopfront windows with displays and or dining rooms, street furniture and awnings to increase pedestrian comfort. The environment within this node will be the most active of the three intersections and will serve as the unofficial end of “main street” as indicated within the PTASP.

Residential Node: The 15th Street East intersection, which is located at the center of the project area, will offer differing intensities of standalone residential uses on all four corners. The intersections at this node will offer enhanced pedestrian crossings with additional amenities such as shade trees, wide sidewalks, street lighting, and bicycle parking. Residential development within this node will integrate a mix of landscaping and hardscaping.

Employment/Retail Node: The 20th Street East node, which is located at the east end of the project area, serves as a commercial and employment node. This node features different employment-based uses that require different variations of public access, though all buildings will be oriented to the street. The environment at this node will be active with pedestrian facing commercial uses, and pedestrian interface at the employment uses.

As shown in Figure 21, the land use setting along East Avenue Q evolves from more intensive mixed-use development near 10th Street East, to decreasing densities of standalone multifamily residential across the corridor to 17th Street East. From 17th Street East, the corridor moves east into employment, utilities, and retail related uses near the 20th Street East intersection, which is also the eastern project boundary. The residential development creates continuous development along the street frontage. All non-residential development is also oriented toward the street with buildings situated close to the proposed sidewalk.
4. Recommendations

Figure 21: Land Use and Design Framework
Figure 22: Draft General Plan 2045 Land Use

*Subject to minor change
Land Use Regulations

Land use regulations provide descriptions of allowed land use along with character, intent, and interaction with the corridor. Below are descriptions of land use regulations that apply to the parcels along East Avenue Q and are illustrated in Figure 22. The Draft General Plan 2045 Land Use Map in Figure 22 offers detailed, specific regulations for each parcel within the project area, while Figure 21 offers a high-level framework or vision of the intended place.

General Plan Land Use

The City of Palmdale is expected to complete the Palmdale 2045 General Plan in 2022. The plan will provide land use regulations for all parcels within the city’s jurisdiction. The Land Use Map and place types, which are listed below, are anticipated to be the final presiding General Plan land use designations, and therefore will regulate land uses within the project area. It should be noted that the land use map and place types are not yet adopted and therefore subject to minor change. General Plan place types, indicating land use, intensity, and character, are listed below for the parcels within the project area, as shown in Figure 24. The City of Palmdale is also in the process of updating its Zoning Code. The updated Zoning map and accompanying districts will be consistent with and reflect the Palmdale 2045 General Plan Land Use Map.

Neighborhood Residential 2 (RN-2): This place type is intended for a range of housing types with on-site recreation and open space up to 20 dwelling units per acre. Examples of building types within this designation include small lot detached houses, duplexes and low-rise attached houses, multiplexes, cluster housing, courtyard apartments and low-rise walkups. Buildings are setback at regular, shallow distances from the street with narrow side setbacks. The main entrance to the development and individual units are oriented to the primary street frontage and accessible directly from the street. Site design for larger developments includes narrow residential streets, wide sidewalks (minimum of six feet wide), street trees, lighting, and integrated open space of varying sizes and scales.

Neighborhood Residential 3 (RN-3): This place type is intended for “missing middle” or middle-density housing up to 30 dwelling units per acre. These neighborhoods provide a transition in scale and intensity between lower-intensity residential neighborhoods and more intense neighborhoods or mixed-use areas. Building types in this designation include duplexes and low-rise attached housing, multiplexes, garden and courtyard apartments, and low-rise walkups. Buildings are oriented to the pedestrian, with shallow setbacks and narrow side setbacks. The main entrance is located within the front façade and directly accessed from the street. Site design for larger developments includes narrow streets, wide sidewalks (minimum of six feet wide) street trees and lighting at regular intervals, and ample common open space for residents.

Neighborhood Residential 4 (RN-4): This place type is intended as a high-intensity, walkable neighborhood with a variety of types of housing, predominantly multi-family up to 50 dwelling units per acre. Areas with the RN-4 designation are located proximal to commercial, civic, employment and recreational uses. These neighborhoods are located near the high-speed rail station and function as a buffer between lower-intensity residential neighborhoods and intense mixed-use areas. Building types in this designation include townhouses or rowhouses, garden and courtyard apartments, and mid-rise apartments. Buildings are oriented toward the pedestrian, with main entrances on the front facing façade and with minimal or zero setbacks. Properties have common yards and high-quality frontages.
Mixed Use 3 (MU-3): This place type which correlates to the PTASP Urban Center (T5) designation, is intended to create a high-intensity concentration of commercial businesses and civic amenities mixed with multi-family housing along major corridors and/or near major transit. Allowed density range is 30–50 dwelling units per acre. Allowed uses include multi-family residential, retail and services, office and medical, civic, and research and development use. MU-3 areas provide employment, shopping, and living in a horizontal or vertical mixed-use format. Ground floors are primarily office, light R&D, and retail with housing above or behind. Allowed building types include condominiums or rowhouses, low-rise walkups, standalone commercial, and block-form low-rise and mid-rise buildings.

Buildings face a public street with minimal setbacks. Frontages are defined with entrance lobbies, shopfronts, or active spaces with awnings to promote a comfortable pedestrian environment. Sidewalks are required in all areas with a minimum of ten feet in width, with planting strips where possible, and include amenities like street trees, lighting, seating, among others, at regular intervals. Onsite open space typically includes plazas, mini parks, or internal courtyards. Vehicular access is encouraged to be off the rear or side streets where possible.

Neighborhood Commercial (NC): This place type is intended to foster convenience-type retail, neighborhood offices and service activities that serve the daily needs of the immediate neighborhood. Neighborhood Commercial areas are primarily located near neighborhoods, with development occasionally found on small corner parcels but more often in slightly larger configurations (5 to 10 acres). Allowed uses include neighborhood-serving retail, services, and office, entertainment, auto service, and civic uses. These designations provide gathering places for the residents of surrounding neighborhoods and are ideal locations for high-quality transit stops. Building types include standalone commercial, attached low-rise commercial buildings in a walkable “main street” configuration, and block-form low-rise buildings. Buildings support both pedestrians and vehicle traffic, with entrances direct from the sidewalk along Avenue Q and if needed, facing a rear parking lot.

Employment Flex (EF): This place type is intended to permit a mix of lighter industrial uses and more intensive service, incidental retail, and commercial uses. It is a transition zone that allows a mix of businesses that provide a wide variety of employment-generating activity. The uses allowed in this designation will support job generation, focusing on fabrication, research, distribution, and similar operations conducted primarily indoors. Primary allowed uses in this designation include light industrial, flex/makerspace, Research & Development, and office and medical uses. Secondary and supportive uses include retail, services, and auto related uses. Building types in the Employment Flex designation include minimal setbacks, oriented to the street.

Public Facilities (PF): This place type is applied to parcels that include public or private utilities and infrastructure. Uses in this designation include water storage tanks and support facilities, powerlines and rights-of-way, railroad lines and rights-of-way, and electrical substations, among others. This designation permits support buildings that are required to operate and service public and private utilities.

Specific Plan (SP): The Specific Plan designation applies to parcels that fall within an existing Specific Plan in Palmdale. Those individual Specific Plan’s include allowed uses and regulations such as height, density, and floor area ratio (FAR). Portions of the East Avenue Q project area fall within the boundaries of the PTASP. The PTASP regulates all parcels with a regulating plan with zoning districts. The zoning districts within the PTASP that affect the East Avenue Q project area are described in the following section in more detail.
Palmdale Transit Area Specific Plan

A portion of the project area falls within the PTASP, which covers the region around the future multimodal transit station and positions the segment of East Avenue Q between Division Street and 10th Street East as a future “Main Street” for Downtown Palmdale. With a future connection across Sierra Highway, East Avenue Q will continue the main street environment as it transitions into residential and other employment uses along the corridor. Listed below are the PTASP districts that are also within the project area. These parcels are outlined in red within the Regulating Plan shown in Figure 23.

Urban Core (T6):
- Desired Character: The Urban Core Zone is intended to provide buildings with the highest intensity immediately surrounding the site of the future Palmdale Multimodal Station. The focus of this zone is to provide jobs and amenities near transit.
- Desired Land Uses: Ground floors may house retail, restaurant, service, and office uses, while upper floors may accommodate office and residential uses. Residential uses are prohibited on the ground floor in this zone. Active pedestrian-oriented commercial uses are required along Avenue Q, 4th Street East, 5th Street East, Palmdale Boulevard and Sierra Highway.
- Allowed Intensity and Height: FAR range – 2.5 - 4.0; Residential density: 50-80 du/acre. Buildings up to 85 feet are permitted.

Urban Center (T5):
- Desired Character: The Urban Center Zone is intended for urban, mixed-use development immediately adjacent to, and surrounding, the Urban Core Zone and along both sides of Avenue Q and Palmdale Boulevard.
- Desired Land Uses: This zone provides for residential or mixed-use buildings up to five stories. Active pedestrian-oriented commercial uses are required on the ground floor along 4th Street East, Avenue Q and Palmdale Boulevard. Other streets may have residential uses on the ground floor. Buildings within this zone are required to step down to two stories along portions of the parcel that abut single-family zones.
- Allowed Intensity and Height: FAR range – 1.5 - 3.0; Residential density: 30-50 du/acre. Buildings up to 65 feet are permitted.

---

9 A pending modification to the PTASP may impact the noted floor-area ratios.
Transit Area Specific Plan

Figure 5-1 Regulating Plan

- Transit Area Specific Plan Boundary
- High Desert Corridor Alignment (Potential)
- SR-14 Freeway
- Union Pacific & Metrolink Rail Right-of-Way
- County of Los Angeles (Pre-Zone)
- Urban Core
- Urban Center
- General Urban
- Traditional Neighborhood
- Regional Commercial
- Business Mix
- Public Facilities
- Open Space - Recreation
- Required Active Frontage
- East Avenue Q Project Area within PTASP

*Note: East Avenue Q Project area extends beyond map extents

Figure 23: PTASP Regulating Plan

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Corridor Development

The parcels on the north side of East Avenue Q are mostly vacant, providing an unprecedented opportunity for developing consistent frontages and streetscape along the street. While private development may occur over time, the City may choose to install the public realm improvements at one time to ensure development of uniform streetscape.

Private Frontages

As described in the land use framework section above and detailed below, there are three frontage types in the corridor:

Mixed-use development on East Avenue Q will have active pedestrian frontages that maintain a continuous building line at the ground floor at or near the front property line. Occasional setbacks are acceptable to incorporate outdoor patios and plazas. Mixed use frontages include primary entrances facing East Avenue Q with shopfront windows and landscaping. Frontage types include shopfronts, arcades, and galleries. Awnings and other similar shade structures will be enlarged in order to provide shade for pedestrians. Residential uses are located on upper stories or behind the buildings fronting East Avenue Q. At the 10th Street East intersection, mixed use buildings may be designed to include specialized corner treatments like angled corners and architectural elements like plazas, towers, or domes. Upper-level balconies that overhang on the public right-of-way will be permitted with appropriate encroachment permits.

Residential development will contain frontage types that are oriented to East Avenue Q with windows to provide “eyes on the street.” These include porches, stoops, and small yards. Buildings will be articulated to express the rhythm of the individual units. All buildings have at least one entrance on the front façade and directly accessed from the street. Entrances may be raised up to three feet above finished grade to provide privacy for residents. Buildings will incorporate windows and landscaping, encouraging four-sided architecture.

Commercial and employment-related development will be designed to have frontages that are oriented to the street with parking located behind the buildings. While buildings may have entrances from the parking areas, primary entrances will be oriented to the street. Setback areas will be landscaped to provide visual relief as well as privacy for ground floor users.

Public Realm

Placemaking is a key concept to creating a comfortable pedestrian environment that supports and encourages active transportation along the corridor. Listed below are descriptions of key elements of the public realm within the project area.

• Open Space: To support the mixed-use and residential nature of East Avenue Q, new open space amenities must be provided to complement and connect existing nearby facilities like the Robert C. St. Clair Parkway on the west side of Sierra Highway south of East Avenue Q. Onsite open space should be integrated into new multi-family residential developments, in the form of tot lots, plazas, dog runs, and mini parks, among others. New retail, commercial, and mixed-use developments must offer small courtyards and gathering spaces to support outdoor dining and other public gatherings. New mixed-use and residential development must connect to off-site parks such as the nearby Melville J. Courson Park, Poncitlán Square, William J. McAdam Park, and Desert Sands Park (once a connection across the rail tracks is established) among others.

• Amenities: A key component of creating a welcoming and vibrant environment along East Avenue Q is to provide supportive amenities for residents and visitors alike. See the Transportation Recommendations and Streetscape Standards section of this chapter for additional details on public realm amenities like streetscape furniture, shade, and landscaping.
Transportation Recommendations and Streetscape Standards

Key Transportation Issues and Opportunities

- **Existing street widths**: The street has variable widths throughout the corridor, which creates constraints on creating consistent, linear improvements throughout the length of East Avenue Q. However, many segments have enough width to provide opportunities for spot infrastructure improvements like pedestrian refuge islands, medians, or curb extensions.

- **Unsignalized intersections**: Only two intersections within the project area are signalized, and the other intersections throughout the corridor present opportunities for installing new signals or other forms of traffic calming devices to control speed and improve safety.

- **High stress environment for active transportation**: East Avenue Q is a high-stress street for people walking and biking. People riding bikes along East Avenue Q are forced to share the roadway with vehicles traveling at high speeds, and sidewalks are inconsistent throughout the project area, varying from five to eight feet in width, to missing entirely.

- **Lack of shade**: A limited tree canopy and many existing undeveloped parcels along East Avenue Q create a mostly unshaded environment for those traveling along the corridor.

Design Goals and Objectives

The Project Team synthesized the existing condition analysis, key issues and opportunities, input from City staff and stakeholders, and community priorities shared via public feedback, to create a set of design goals and objectives for the Project’s recommendations (Table 7).

<table>
<thead>
<tr>
<th>Goal</th>
<th>Objective</th>
<th>Community Priorities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connectivity</td>
<td></td>
<td>Developing continuous sidewalks and bicycle facilities are common feedback items from our community engagement phases.</td>
</tr>
<tr>
<td>Multimodal Operations</td>
<td>Rebalance East Avenue Q to better serve all road users, including people walking, biking, taking transit, and driving.</td>
<td>Balancing priorities for all modes was a key response from participants who attended the second workshop, as well as AV Youth Build stakeholders.</td>
</tr>
<tr>
<td>Safety &amp; Comfort</td>
<td></td>
<td>Community members noted issues with speeding along Avenue Q. They also noted a willingness to spend more time driving on Avenue Q to ensure a safer environment for people walking and biking.</td>
</tr>
<tr>
<td>Aesthetics, Sense of Place, and Land Use Integration</td>
<td>Develop continuous sidewalks and bike lanes along East Avenue Q.</td>
<td>Community feedback indicated that lighting, shade, and spaces for children are important to include for the future Avenue Q.</td>
</tr>
</tbody>
</table>

Table 7: Design Goals and Objectives
The Complete Streets recommendations for East Avenue Q include the following infrastructure changes/upgrades and streetscape recommendations:

- **Continuous, protected sidewalk-level bicycle facilities** along the length of the study corridor (Sierra Highway to 20th Street East).
- **Continuous sidewalks** and high-visibility crossings at intersections, with raised crossings at driveways.
- **A center landscaped median** for traffic calming where possible, reducing points of conflict, and reducing the heat island effect, with gaps as needed for driveway access and emergency access.
- **Streetscape furniture** to create a sense of place and add amenities for people biking and walking including lighting, shade structures, benches, trash receptacles, and bicycle racks.
- **Landscaping and green infrastructure** to reduce the heat island effect, capture stormwater, and provide shade for people walking along the corridor.

**Public Right-of-Way**

The available public right-of-way on East Avenue Q is a key factor in the concept alternatives developed for this study. The available right-of-way fluctuates from as little as 40 feet west of 9th Street East and as much as 104 feet immediately east of 10th Street. Most of the property line deviations occur in the western portion of the corridor where adjacent properties have already been developed, whereas the corridor east of 15th Street East is consistently about 80 feet. The variability in the public right-of-way does have an impact on an overall cross section for the corridor, especially if existing properties and structures are not impacted or removed. However, the north side of East Avenue Q between 9th Street East and 17th Street East is vacant land and represents a more likely opportunity for the City to acquire needed frontage as these parcels develop. Figures 24, 25, 26, and 27 highlight these varying right-of-way widths.
4. RECOMMENDATIONS

Figure 24: Existing Right-of-Way on East Avenue Q between Sierra Highway and 10th Street East

Figure 25: Existing Right-of-Way on East Avenue Q from 10th Street East to Orchid View Place
4. RECOMMENDATIONS

Figure 26: Existing Right-of-Way on East Avenue Q from Orchid View Place to 16th Place East

Figure 27: Existing Right-of-Way on East Avenue Q from 16th Place East to 20th Street East
### Basis of Design

Building on the previously discussed Design Goals and Objectives (Table 7), design criteria were identified that best represent a street that is safe and comfortable for all ages, abilities, and travel choice. While constraints like right-of-way, emergency access, and adjacent properties, among others, may limit the size and scope of change on East Avenue Q, these design criteria represent conditions that should be met, regardless of these constraints. These design criteria also adhere to the following design standards:

- City of Palmdale Safe Routes to School Plan, Bicycle Design Guidelines
- California Department of Transportation (Caltrans) Highway Design Manual
- Public Right-of-Way Accessibility Guidelines (PROWAG)
- California Manual on Uniform Traffic Control Devices (CAMUTCD)
- California Building Code (CBC)
- Caltrans Design Information Bulletin 89-01: Class IV Bikeway Guidance

Table 8 presents key design assumptions used during the development of design alternatives.

<table>
<thead>
<tr>
<th>Design Criteria</th>
<th>Value(s)</th>
<th>Justification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Travel lane width</td>
<td>• 11-foot curbside travel lanes*</td>
<td>Eleven-foot lanes are sufficient to accommodate bus and truck traffic in curbside lanes and are narrow enough to discourage speeding by smaller motor vehicles. Ten-foot interior lanes further discourage speeding while still comfortably accommodating vehicles. This national best practice is supported in the NACTO Urban Street Design Guide.</td>
</tr>
<tr>
<td></td>
<td>• 10-foot turn lanes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• 10-foot inside travel lanes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• 26-foot width for Fire Department access * excluding gutters</td>
<td></td>
</tr>
<tr>
<td>Bike lane width</td>
<td>• 5-foot minimum (excluding gutter)</td>
<td>Six-to-eight-foot bike lanes are preferred for bicyclist safety and comfort. Five-foot bike lanes are the minimum recommended one-way bicycle facility width per the AASHTO Guide for the Development of Bicycle Facilities, 5th Ed. In constrained conditions, a four-foot bike lane may be applied near bus zones, for example.</td>
</tr>
<tr>
<td></td>
<td>• 6 to 8 feet preferred* (excluding gutter) * on arterials</td>
<td></td>
</tr>
<tr>
<td>Bike lane buffer width</td>
<td>• 2-foot minimum</td>
<td>Three-foot buffers are preferred for bicyclist comfort and safety. Two-foot buffers are the minimum recommended width.</td>
</tr>
<tr>
<td></td>
<td>• 3 feet preferred (required adjacent to parking)</td>
<td></td>
</tr>
<tr>
<td>Sidewalk width</td>
<td>• 5-foot minimum</td>
<td>Five feet is a standard minimum width for sidewalks. Eight feet is preferred to allow for side-by-side travel. Four feet is the minimum width at constrained locations, per PROWAG. Per California Building Code 11B-403.5.3, if the sidewalk is less than five feet in width, a “passing space” must be provided every 200 feet.</td>
</tr>
<tr>
<td></td>
<td>• 8 feet preferred</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• 10-foot minimum preferred at mixed-use nodes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• 4 feet at pinch points</td>
<td></td>
</tr>
<tr>
<td>Landscape buffer width</td>
<td>• 4-foot minimum</td>
<td>Five feet provides sufficient space for trees to flourish without damaging the sidewalk and curb line; six to eight feet is preferred. It is possible to provide a four-foot landscaped buffer if needed.</td>
</tr>
<tr>
<td></td>
<td>• 6 to 8 feet preferred*</td>
<td></td>
</tr>
<tr>
<td></td>
<td>* reference City Approved Plant and Tree List</td>
<td></td>
</tr>
<tr>
<td>Design vehicle</td>
<td>• 40-foot City Bus on city and school bus routes</td>
<td>These design vehicles will ensure that Regional Transit bus and school bus movements are accommodated by design alternatives at bus stops and intersections. Otherwise, the design will accommodate a single unit truck.</td>
</tr>
<tr>
<td></td>
<td>• SU-30 at other locations</td>
<td></td>
</tr>
<tr>
<td>Land use context</td>
<td>Right of way design is reflective of and sensitive to the surrounding land use context</td>
<td>Pedestrian and cyclist amenities and need for on street parking will be different based on the adjacent land uses along East Avenue Q. Driveway frequency and interruptions will vary based on land use.</td>
</tr>
<tr>
<td>Acquisition cost</td>
<td>Wider right-of-way will require more land acquisition</td>
<td>Most typical right of way width is approximately 80 feet along East Avenue Q with some pinch points that are approximately 40 feet.</td>
</tr>
</tbody>
</table>

Table 8: Basis of Design Criteria
Additional design assumptions include:

- **Signal timing adjustments** may be warranted to accommodate bicycle, pedestrian, and/or transit improvements.

- **Adjustments to existing infrastructure** (e.g., signal infrastructure, light poles, drainage, curb lines, additional utilities) may be warranted to accommodate roadway improvements.

- **Accessibility upgrades** such as installation of tactile domes at curb ramps, reconstruction of outdated curb ramps, and construction of wheelchair clear zones at bus stops will be included in design alternatives.

- **Right-of-way impacts** will strive to be minimized but will not be constrained by existing right-of-way in areas that are currently not developed.

- **A center landscaped median** included where feasible in the design alternatives to improve aesthetics, calm traffic, reduce points of conflict, and reduce the heat island effect. Emergency vehicle access requirements may limit some opportunities for this.

- A **minimum five-foot by eight-foot boarding area** is provided at bus stops.

- **Meeting current Americans with Disability Act Standards** for all new construction.

### Alternatives Analysis

Three potential design alternatives for the corridor were developed based on the design objectives and goals identified in the previous section. The alternatives included a 90-foot configuration with one vehicular lane in each direction (Figure 28), a 90-foot configuration with two vehicular lanes in each direction (Figure 29), and a 114-foot configuration with two vehicular lanes in each direction (Figure 30). In alignment with this Plan’s Complete Streets goals, all three configurations included protected bicycle facilities, ample sidewalk widths, along with space for landscaping, trees, seating, lighting, and shade.

![Figure 28: “Narrow Option A” Alternative as presented for community feedback](image-url)
4. RECOMMENDATIONS

**Figure 29:** "Narrow Option B" Alternative as presented for community feedback

**Figure 30:** "Wider Option" as presented for community feedback
City staff and the Technical Working Group provided additional feedback to help refine the alternatives, and the Project Team then conducted an evaluation of how each alternative met the Complete Streets goals of the Plan. Table 9 details the results of the alternatives evaluation:

A full circle indicates the evaluation metric is met,
A half-circle indicates the evaluation is partially met,
An empty circle indicates the evaluation metric is not met.

<table>
<thead>
<tr>
<th>Evaluation Metric (goals)</th>
<th>Basis of Evaluation</th>
<th>90-foot 2-lane configuration (Figure 28)</th>
<th>90-foot 4-lane configuration (Figure 29)</th>
<th>114-foot 4-lane configuration (Figure 30)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connectivity</td>
<td>Continuous and consistent bikeway and pedestrian facilities throughout the project area</td>
<td>☺</td>
<td>☺</td>
<td>☺</td>
</tr>
<tr>
<td></td>
<td>Frequent and convenient crossings for bicyclists, pedestrians, and transit users</td>
<td>☺</td>
<td>☺</td>
<td>☺</td>
</tr>
<tr>
<td>Multimodal Operations</td>
<td>Minimized conflict points between modes (i.e., bikeway and pedestrian route conflict points with vehicles and transit loading and unloading)</td>
<td>☺</td>
<td>☺</td>
<td>☺</td>
</tr>
<tr>
<td></td>
<td>Vehicle delay</td>
<td>☺</td>
<td>☺</td>
<td>☺</td>
</tr>
<tr>
<td></td>
<td>Parking availability</td>
<td>☺</td>
<td>☺</td>
<td>☺</td>
</tr>
<tr>
<td>Safety &amp; Comfort</td>
<td>Wide pedestrian and bicycle facilities</td>
<td>☺</td>
<td>☺</td>
<td>☺</td>
</tr>
<tr>
<td></td>
<td>Short crossing distances for pedestrians</td>
<td>☺</td>
<td>☺</td>
<td>☺</td>
</tr>
<tr>
<td></td>
<td>Horizontal and vertical separation between vehicles and bicyclists/pedestrians</td>
<td>☺</td>
<td>☺</td>
<td>☺</td>
</tr>
<tr>
<td></td>
<td>Intuitiveness and ease of use of facilities</td>
<td>☺</td>
<td>☺</td>
<td>☺</td>
</tr>
<tr>
<td></td>
<td>Accessible design throughout the corridor</td>
<td>☺</td>
<td>☺</td>
<td>☺</td>
</tr>
<tr>
<td>Aesthetics, Sense of Place, and Land Use Integration</td>
<td>Sense of a Downtown Street, a destination</td>
<td>☺</td>
<td>☺</td>
<td>☺</td>
</tr>
<tr>
<td></td>
<td>Shade and “Greening” of the corridor with vegetation and landscaping</td>
<td>☺</td>
<td>☺</td>
<td>☺</td>
</tr>
<tr>
<td></td>
<td>Right of way design is reflective of and sensitive to the surrounding land use context</td>
<td>☺</td>
<td>☺</td>
<td>☺</td>
</tr>
<tr>
<td></td>
<td>Limited right of way impacts</td>
<td>☺</td>
<td>☺</td>
<td>☺</td>
</tr>
</tbody>
</table>
**Recommended Corridor Alternative**

After review of the three alternatives and feedback from City staff and key stakeholders, the Project Team’s final recommendation for the corridor includes a varied configuration of travel lanes and right-of-way widths that maintains comfortable walking and biking facilities with space for landscaping and street furniture, while acknowledging that automobile demand would likely increase as properties along the corridor redevelop under the proposed Palmdale 2045 General Plan land uses and zoning. Table 10 details the different configurations along each segment of East Avenue Q. The widest configuration (114 feet) recommended between Sierra Highway and 9th Street East is included as it creates a more logical continuation of the street section required within the PTASP.

<table>
<thead>
<tr>
<th>Street Segment</th>
<th>Design Recommendation</th>
</tr>
</thead>
</table>
| East Avenue Q between Sierra Highway and 9th Street East | • 114-foot public right-of-way  
• Four vehicular lanes with turn lanes  
• Landscaped median  
• Sidewalk-level bike facilities on both sides of the street  
• Sidewalks and landscaping on both sides of the street  
• Parking on both sides of the street |
| East Avenue Q between 9th Street East and 12th Street East | • 90-foot public right-of-way  
• Four vehicular lanes / turn lanes (as needed)  
• Landscaped median  
• Sidewalk-level bike facilities on both sides of the street  
• Sidewalks on both sides of the street  
• Landscaping on the south side of the street  
• Parking on the north side of the street |
| East Avenue Q between 12th Street East and 20th Street East | • 90-foot public right-of-way  
• Two vehicle lanes with turn lanes (as needed)  
• Striped and landscaped/striped median  
• Sidewalk level bike facilities on both sides of the street  
• Sidewalks and landscaping on both sides of the street  
• Parking on both sides of the street |
Streetscape and Green Infrastructure Recommendations

The public right-of-way recommendations will be enhanced through use of shade trees, street furniture, and lighting at regular intervals. Detailed below are the specific amenities that will create a comfortable pedestrian environment within the project area. These recommendations are an extension of those for East Avenue Q within the PTASP, building a more seamless experience as one travels along the corridor.

- **Shade, Landscaping and Green Infrastructure:**
  - The Chinese Elm “Ulmus Parvifolia” is the preferred deciduous tree variety along East Avenue Q, with recommended spacing of approximately 40 feet on center with four-foot tree wells at the nodes and major intersections. Tree spacing intervals may increase between nodes along East Avenue Q. Typical spacing for large canopy trees located within curb extensions and eight-foot+ wide planting strips would be 30-40 feet on center, while medium canopy trees located adjacent to parking zones and four-foot+ wide planting strips would be 20-25 feet on center. While much of the northern portion of the corridor is constrained by overhead utility lines, careful placement of trees along with shade structures can contribute to providing sufficient shade as the corridor continues to develop.
  - Engineered shade structures can support additional landscaping as well as provide much-needed shade. These structures should be placed in concert with all proposed transit stop location as well as intersections with seating.
  - Low-water use plants and ground cover should be placed along sidewalks and in medians.
  - Pervious pavement parking zones allow stormwater to soak into the ground.
  - Stormwater curb extensions capture stormwater and support large trees and should be located based on existing catch basins.

- **Streetscape Furniture:**
  - Benches, trash receptacles, and bicycle racks should be provided in high pedestrian activity areas, such as the mixed-use and retail/employment areas. These amenities must be appropriate for the high desert climate and be consistent with the surrounding design and architecture.
  - Pedestrian-scaled lighting fixtures must augment existing vehicle-scaled lights along East Avenue Q to increase safety and security of pedestrians. Fixtures should be spaced 40 to 60 feet apart within the mixed-use areas, with intervals increasing along the residential areas between nodes. Fixtures should be 15 to 20 feet tall, with LED bulbs, and adhere to the Dark Sky Association lighting guidelines.
  - All street furniture and lighting must have a consistent look across the corridor regardless of vendor or manufacturer.

Concept Design

The following concepts illustrate a plan view and cross-section to represent the four-lane configuration and the two-lane configuration included in the recommended corridor alternative, as well as recommendations for general placement of green infrastructure and streetscape furnishing elements. The full concept design is located in Appendix F.
Proposed Plan View of East Avenue Q between 10th Street East and 11th Street East

Proposed Cross Section of East Avenue Q between 10th Street East and 11th Street East

Figure 31: East Avenue Q Recommended Alternative, 10th Street to 11th Street East (Four-Lane Configuration)
4. RECOMMENDATIONS

Corridor Features

- **Stormwater Curb Extensions**: Placed at intersections and midblock locations to shorten crossing distance, capture stormwater, and support large trees.

- **Pervious Pavement Parking Zones**: Gaps between interlocking concrete pavers allow stormwater to soak into the ground.

- **Street Tree Shading**: Large canopy Chinese Elm trees are fast growing and can help shade bicycle and sidewalk zones.

- **Multimodal Pathway**: Protected sidewalk-level bike facilities and sidewalks provide a safe and comfortable space for people walking and biking.

---

**Mobility + Safety Features**

1. Separated bike and pedestrian pathway system
2. Midblock crossing pedestrian refuge island
3. Enhanced transit stop
4. Widened pedestrian space at intersections and accessible ramps
5. Carriage paths lead people from parking zones to the sidewalk

**Green Infrastructure Features**

1. Stormwater curb extensions capture street runoff
2. Pervious pavement within parking zone
3. Tree planting zone allows for a 40’ spacing of trees
4. Low water use planting area along sidewalks and medians

**Streetscape Furnishings**

1. Pedestrian scale street lighting placed 40-60’ throughout the corridor
2. Seating, trash receptacles, bike racks at high-use pedestrian areas
3. Shade structures at key intersections and transit stops (where feasible)
4. Wayfinding signage at intersections
Proposed Plan View of East Avenue Q between 15th Street East and 16th Street East

Proposed Cross Section of East Avenue Q between 15th Street East and 16th Street East

Figure 32: East Avenue Q Recommended Alternative, 15th Street to 16th Street East (Two-Lane Configuration)
Corridor Features

Low-Water Use Plants: Climate-adaptable and California native plants can add beauty to the corridor while requiring very little water use.

Street Lighting: Pedestrian scale lighting augments existing vehicle-scaled lights to improve safety for people walking.

Structural Shade: Engineered shade structures, including those that can support growing vines, can be a unique and functional street asset.

Pedestrian Seating: Benches and other seating provide a place for people to rest and add function and vitality to the streetscape.

Mobility + Safety Features
1. Separated bike and pedestrian pathway system
2. Midblock landscape island
3. Enhanced transit stop
4. Widened pedestrian space at intersections and accessible ramps
5. Carriage paths lead people from parking zones to the sidewalk
6. New traffic signal

Green Infrastructure Features
1. Stormwater curb extensions capture street runoff
2. Pervious pavement within parking zone
3. Tree planting zone allows for a 40’ spacing of trees
4. Low water use planting area along sidewalks and midblock islands

Streetscape Furnishings
1. Pedestrian scale street lighting placed 40-60’ throughout the corridor
2. Seating, trash receptacles, bike racks at high-use pedestrian areas
3. Shade structures at key intersections and transit stops (where feasible)
4. Wayfinding signage at intersections
Implementation Impacts

The Project Team evaluated the implementation impacts of the final recommended corridor alternative, reviewing traffic operations, parking, connectivity, level of traffic stress, and pedestrian crossings.

Traffic Volumes

The Southern California Association of Governments’ (SCAG) Regional Transportation Model was used to determine future traffic volumes on East Avenue Q. 2030 and 2045 future model volumes are available from SCAG, and the 2045 volumes were used to determine a growth factor that has been applied to traffic volumes collected on East Avenue Q in 2021. The model volumes account for future household-level and person-level travel choices, and as a result also determines future traffic volumes. These future turning movement volumes were then applied to the recommended alternative roadway configuration to assess impacts to motor vehicle delay (see Figures 33 and 34).

Due to ongoing COVID-19 pandemic conditions, collecting accurate data and forecasting future traffic volumes can be challenging. Traffic volumes should be collected and tracked over time to determine if these projected 2045 traffic volumes track accurately. This is especially difficult when most of the study area is currently vacant and assumes significant build-out of adjacent properties in the next 20 years. The projected peak hour directional volumes are approximately 650–750 vehicles per hour between Sierra Highway and 12th Street East, which is on the higher end of what a single travel lane can reasonably process without noticeable delays and queuing. As such, a four-lane option has been included in this section of the corridor to represent the amount of space that may be required under this higher-volume scenario, while also aligning with future land use designations that call for higher levels of mixed-use density. However, the City of Palmdale may determine that a four-lane cross section is not warranted in the future based on traffic volumes, increased numbers of pedestrians and bicyclists, lack of intense development, funding, or public input and if that is the case, a two-lane cross section may be more appropriate. The two-lane cross section recommended on the eastern end of the corridor (i.e., 12th Street East to 20th Street East) could serve as a template for the western end of the corridor if four total travel lanes are not desired.

Roadway and Intersection Capacity Operations

Similar to the existing conditions traffic operations analysis described earlier in the report, a future conditions traffic operations analysis was conducted on East Avenue Q to document future conditions (year 2045) through level of service (LOS), delay (measured in seconds), and volume-to-capacity ratio (v/c). The analysis, completed in Synchro 10 software, was completed at the same five intersections documented in the existing conditions section. For the future 2045 conditions, the proposed roadway configuration was considered, including a four-lane cross section between Sierra Highway and 12th Street East, a two-lane cross section between 12th Street East and 20th Street East, and five signalized intersections (under current conditions only two study intersections are signalized). As properties along East Avenue Q develop over time and traffic volumes increase, signal warrant evaluations should be completed to determine if and when these proposed signals are warranted, but in the interim all-way stop controlled intersections would be appropriate. The findings of this analysis are summarized in Table 11 and show no adverse traffic impact conditions.

A single-lane roundabout has been included in the recommended concept design at 17th Street East. Turning movement counts were not collected at this location which is why it is not included in Table 11. The intent of the roundabout at a single location is to visually represent what a roundabout could look like on the corridor and to also show the amount of space that may be required. Roundabouts have a proven track record of reducing the number and severity of crashes at intersections as they minimize the number of potential conflict points when

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10 LOS describes traffic conditions—the amount of traffic congestion—at an intersection or on a roadway. LOS ranges from A to F, with A indicating a condition of little or no congestion and F indicating a condition with severe congestion, unstable traffic flow, and stop-and-go conditions. For intersections, LOS is based on the average delay experienced by all traffic using the intersection during the busiest (peak) 15-minute period. LOS A through D are generally considered acceptable.

11 Volume-to-capacity ratio (v/c) represents the sufficiency of an intersection to accommodate the vehicular demand. A v/c ratio less than 0.85 generally indicates that adequate capacity is available, and vehicles are not expected to experience significant queues and delays. As the v/c approaches 1.0, traffic becomes unstable, and delay and queuing conditions may occur. Once the demand exceeds the capacity (a v/c ratio greater than 1.0), traffic flow is unstable and excessive delay and queuing is expected.
compared to a traditional signalized intersection and also facilitate slower speeds which reduces severity of potential crashes. However, roundabouts do require adjustment by users who have not navigated them before, and they also introduce a yield condition to pedestrians and bicyclists at designated crossing locations whereas a traffic signal can provide a “protected” phase for people walking or biking across the street. Roundabouts typically require more initial design and construction costs but over time require less maintenance than traffic signals.

Table 11: Traffic Operations Summary - Year 2045 Conditions

<table>
<thead>
<tr>
<th>Intersection</th>
<th>Time Period</th>
<th>LOS (Delay) [v/c]</th>
<th>Intersection</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>NB</td>
<td>SB</td>
</tr>
<tr>
<td>Sierra Hwy (Signalized)</td>
<td>AM</td>
<td>B (17.6) [0.54]</td>
<td>B (17.9) [0.48]</td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td>C (31.4) [0.69]</td>
<td>E (64.4) [1.00]</td>
</tr>
<tr>
<td>10th Street East (Signalized)</td>
<td>AM</td>
<td>C (26.0) [0.57]</td>
<td>C (22.9) [0.30]</td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td>D (36.8) [0.73]</td>
<td>D (36.8) [0.74]</td>
</tr>
<tr>
<td>12th Street East (Signalized*)</td>
<td>AM</td>
<td>A (8.6) [0.13]</td>
<td>A (9.1) [0.29]</td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td>B (12.7) [0.18]</td>
<td>B (13.6) [0.38]</td>
</tr>
<tr>
<td>15th Street East (Signalized*)</td>
<td>AM</td>
<td>A (9.1) [0.16]</td>
<td>A (9.1) [0.12]</td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td>B (12.4) [0.20]</td>
<td>B (12.5) [0.19]</td>
</tr>
<tr>
<td>20th Street East (Signalized*)</td>
<td>AM</td>
<td>A (9.1) [0.24]</td>
<td>A (8.8) [0.15]</td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td>B (14.5) [0.37]</td>
<td>B (14.6) [0.39]</td>
</tr>
</tbody>
</table>

*Proposed

Parking Impacts

There are currently very few formalized on-street parking lanes along East Avenue Q (see Figures 5, 6 and 7), and most of the corridor does not have on-street parking or has unregulated/informal curbside parking. On-street parking under the recommended alternative formalizes parking on both sides of the street where space permits and includes approximately 140 parking spaces.
Figure 33: Study Intersection Turning Movement Volumes (AM Peak Hour) - Recommended Alternative (2045)
Figure 34: Study Intersection Turning Movement Volumes (PM Peak Hour) - Recommended Alternative (2045)
Bicycling Level of Traffic Stress
An updated Level of Traffic Stress analysis reflecting the recommended alternative upgrades East Avenue Q from a "High Stress" facility for people biking to an "All Ages and Abilities" corridor. The full physical protection, potential automobile speed reductions, and significant upgrades at all intersections would drastically improve conditions for bicycling along and across East Avenue Q. Without the roadway serving as a major barrier to existing low stress streets, the ability for people biking to more safely and comfortably access larger portions of Palmdale are significantly improved. The updated analysis is provided in Figure 35.

Pedestrian Crossing Assessment
There are very limited marked crossing opportunities along East Avenue Q today, with over 2,000 feet between some controlled crossings (i.e., crossings that include a marked crosswalk and some form of traffic control to stop traffic like a stop sign, traffic signal, or pedestrian signal/beacons). Under the proposed recommendation, the distance between controlled crossings is reduced to less than 800 feet (and shorter in most instances), with new traffic signals at 12th Street East, 15th Street East, 18th Street East, and 20th Street East, and pedestrian beacons at Rambler Avenue, 11th Street East, east of Orchid View Place, and between 16th Street East and 16th Place. The signals and beacons are not warranted yet, but will likely be warranted at some point in the future as adjacent properties develop and more multimodal trips are made along and across East Avenue Q. The consistent spacing of these controlled crossings will also reinforce typical pedestrian desire lines for crossing the street, contributing to a safer and more comfortable pedestrian environment.
Figure 35: Level of Traffic Stress – Recommended Alternative
Funding Opportunities

Cities can fund complete streets in a variety of ways including funding from city, county, regional, state, federal, private, or non-profit sources. The Federal Highway Administration (FHWA), the California Department of Transportation (Caltrans), the California Transportation Commission (CTC), the California Office of Traffic Safety (OTS), the Los Angeles County Metropolitan Transportation Authority (Metro), and the Southern California Association of Governments (SCAG), among other agencies, offer a variety of active transportation funding sources that the City could use to fund and implement the designs recommended in this Corridor Study (Table 12).

The City may also consider establishing a dedicated funding source by increasing the proportion of capital improvement project (CIP) funds dedicated to complete streets projects.

<table>
<thead>
<tr>
<th>Table 12: Summary of Potential Funding Sources</th>
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<tbody>
<tr>
<td><strong>Transportation Funding Sources</strong></td>
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<tr>
<td><strong>Agency</strong></td>
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<tr>
<td><strong>Federal Programs</strong></td>
</tr>
<tr>
<td>- Congestion Management &amp; Air Quality (CMAQ)</td>
</tr>
<tr>
<td>- FHWA</td>
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<tr>
<td><strong>State Programs</strong></td>
</tr>
<tr>
<td>- Active Transportation Program (ATP) Grant</td>
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<tr>
<td>- Caltrans</td>
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<tr>
<td>- Caltrans Transportation Planning Grant Program</td>
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<tr>
<td>- Caltrans</td>
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<tr>
<td>- Highways Safety Improvement (HSIP) Grant</td>
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<tr>
<td>- Caltrans</td>
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<tr>
<td>- State Transportation Improvement Program (STIP)</td>
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<tr>
<td>- CTC</td>
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<tr>
<td>- Office of Traffic Safety Grants</td>
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<tr>
<td>- OTS</td>
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<tr>
<td><strong>Regional Programs</strong></td>
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<tr>
<td>- Sustainable Community Program (SCAG)</td>
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<tr>
<td>- SCAG</td>
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<tr>
<td>- Metro Active Transport, Transit First/Last Mile Program</td>
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<tr>
<td>- Metro</td>
</tr>
</tbody>
</table>

12 Implementation/construction elements must be quick-build projects