



CITY OF **PALMDALE**

TOD Overlay Zone Existing Conditions and Site Analysis Report



April 2015



CITY OF **PALMDALE**

TOD Overlay Zone Existing Conditions and Site Analysis Report



Prepared for
CITY OF PALMDALE by

DYETT & BHATIA

Urban and Regional Planners

Nelson\Nygaard

Mia Lehrer + Associates

RBF Consulting

April 2015

Table of Contents

1	Introduction	1
1.1	Project Goals and Objectives.....	2
1.2	Study Area	2
1.3	Background.....	5
1.4	Planning Process	7
1.5	Report Organization.....	7
1.6	Summary of Key Points.....	8
2	Land Use and Development	11
2.1	Existing Land Use	12
2.2	General Plan and Specific Plans.....	16
2.3	Zoning.....	24
2.4	Current Development and Opportunity Sites.....	29
3	Access and Circulation	35
3.1	Roadway Network and Street Standards.....	36
3.2	Transit.....	41
3.3	Airport.....	46
3.4	Pedestrian Accessibility.....	47
3.5	Bike Network.....	48
3.6	Travel Patterns and Traffic Conditions.....	52
3.7	Circulation Opportunities and Constraints.....	57
4	Community Character and Livability	59
4.1	Community Character	60
4.2	Livability Audit	72
4.3	Stakeholder Interviews	79
5	Infrastructure	81
5.1	Water.....	81
5.2	Wastewater	85
5.3	Stormwater.....	85
5.4	Electricity and Gas	91

List of Figures

Figure 1-1: Regional Context	3
Figure 1-2: Study Area and Focus Area	4
Figure 2-1: Existing Land Use	13
Figure 2-2: Existing Residential Uses	14
Figure 2-3: Existing General Plan	17
Figure 2-4: Palmdale Transit Village Specific Plan Neighborhood Zone Diagram	20
Figure 2-5: Palmdale Transit Village Specific Plan at Final Buildout	21
Figure 2-6: Palmdale Trade and Commerce Center Specific Plan	23
Figure 2-7: Existing Zoning in the Study Area and Surroundings	27
Figure 2-8: Existing Zoning in the Study Area	28
Figure 2-9: Recent and Current Development Projects, and Vacant and Underutilized Sites	31
Figure 3-1: Existing Roadway Network and Planned Improvements	39
Figure 3-2: General Plan Standard Street Sections	40
Figure 3-3: Existing and Planned Transit	45
Figure 3-4: Bikeway Network	49
Figure 3-5: Average Daily Traffic	55
Figure 4-1: Community Character	63
Figure 4-2: Physical Setting	64
Figure 4-3: Block and Lot Pattern	65
Figure 4-4: Representative Building Types	66
Figure 4-5: Examples of Landscaped Medians and Street Trees	71
Figure 4-6: Observed Public Transit and Bike Infrastructure	75
Figure 4-7: Observed Pedestrian Hindrances	76
Figure 4-8: Observed Community Resources, Services, Recreation Areas and Wayfinding Elements	77
Figure 5-1: Water System	83
Figure 5-2: Recycled Water System	84
Figure 5-3: Wastewater System	87
Figure 5-4: Stormwater System	88
Figure 5-5: Floodplain	89

List of Tables

Table 1-1: Demographics	6
Table 2-1: Existing Land Use	12
Table 2-2: Housing	15
Table 2-3: Commercial, Industrial, and Public Uses.....	15
Table 2-4: Palmdale Transit Village Specific Plan Development Standards.....	18
Table 2-5: Palmdale Trade and Commerce Center Specific Plan Development Standards	23
Table 2-6: Summary of Zoning Regulations	25
Table 2-7: Vacant and Underutilized Land by Zoning	30
Table 3-1: AVTA Route Frequency and Service Hours	42
Table 3-2: Metrolink Route Frequency and Service Hours	43
Table 3-3: Metrolink Average Daily Weekday Boardings at PTC	43
Table 3-4: Travel Mode Split (Journey to Work).....	52
Table 3-5: Summary of Existing Intersection Vehicle Level-of-Service Analysis	53
Table 3-6: Summary of 24-Hour Vehicle Traffic Volume and Roadway Segment LOS.....	56
Table 4-1: Community Resources and Services Identified by Students	74
Table 4-2: Recreation Areas.....	78

Palmdale TOD Overlay Zone
Existing Conditions and Site Analysis Report
April 2015

This page intentionally left blank.

I Introduction



This report provides a baseline of existing conditions, trends, and opportunities in the City of Palmdale's TOD Overlay Study Area. It explores a range of issues that affect the city's long-range planning, including land use, circulation, community character, and infrastructure.

I.1 Project Goals and Objectives

The TOD Overlay project aims to develop a plan that will support Transit Oriented Development (TOD) within the vicinity of the Palmdale Transportation Center (PTC) by addressing regulatory constraints and updating the General Plan, Zoning Ordinance, and Palmdale Transit Village Specific Plan (PTVSP). In addition, street and trail improvements will be identified to make it easier and more pleasant to get around without a car. Increasing development within walking and biking distance of transit, jobs, and shopping can support affordable, healthy lifestyles. The project is undertaken in the context of major planned or proposed transportation investments which could place this district in a position of regional significance.

The City has outlined four specific objectives for this project:

- Create a visionary framework that establishes a relationship between TOD, existing and future modes of transportation, economic development, health, recreation, and sustainability.
- Create a TOD Overlay Zone within the Study Area that accommodates TOD and encourages higher density residential development within walking distance of the PTC.
- Gain a better understanding of how various modes of transportation (rail, bus, highway, local streets, bike, pedestrian, etc.) feed into and out of the Study Area in order to address constraints and create an efficient multi-modal connectivity system that encourages non-motorized modes of transportation.
- Evaluate, update, and modify existing goals, policies, objectives, and standards to align with the City's current ideologies for TOD development and multi-modalism.

Additionally, a programmatic EIR for the TOD Overlay Zone will be prepared that considers a broad range of environmental issues and is designed to streamline the environmental review process for adoption.

I.2 Study Area

Palmdale is situated in northern Los Angeles County in the heart of the Antelope Valley. Separated from Los Angeles by the San Gabriel Mountains to the south, the City's hot and dry summers and cool and windy winters are typical of the High Desert. Palmdale is located directly south of Lancaster, and the two serve as the principal cities in the Antelope Valley and the High Desert. The Study Area's regional context is shown in Figure 1-1.

Within Palmdale, the Study Area is centered around the PTC. It is generally located between Rancho Vista Boulevard (Avenue P) and Palmdale Boulevard (SR-138) and between SR-14 and 10th Street East. The Palmdale Regional Airport is located approximately one mile northeast of the PTC. The Study Area includes a variety of land uses including single- and multi-family residential, commercial, light industrial, recreational, public and community facilities, and vacant land. Two unincorporated pockets of Los Angeles County are located within the Study Area. Additionally, the Study Area overlaps with two existing specific plans, the Palmdale Transit

Figure I-1: Regional Setting

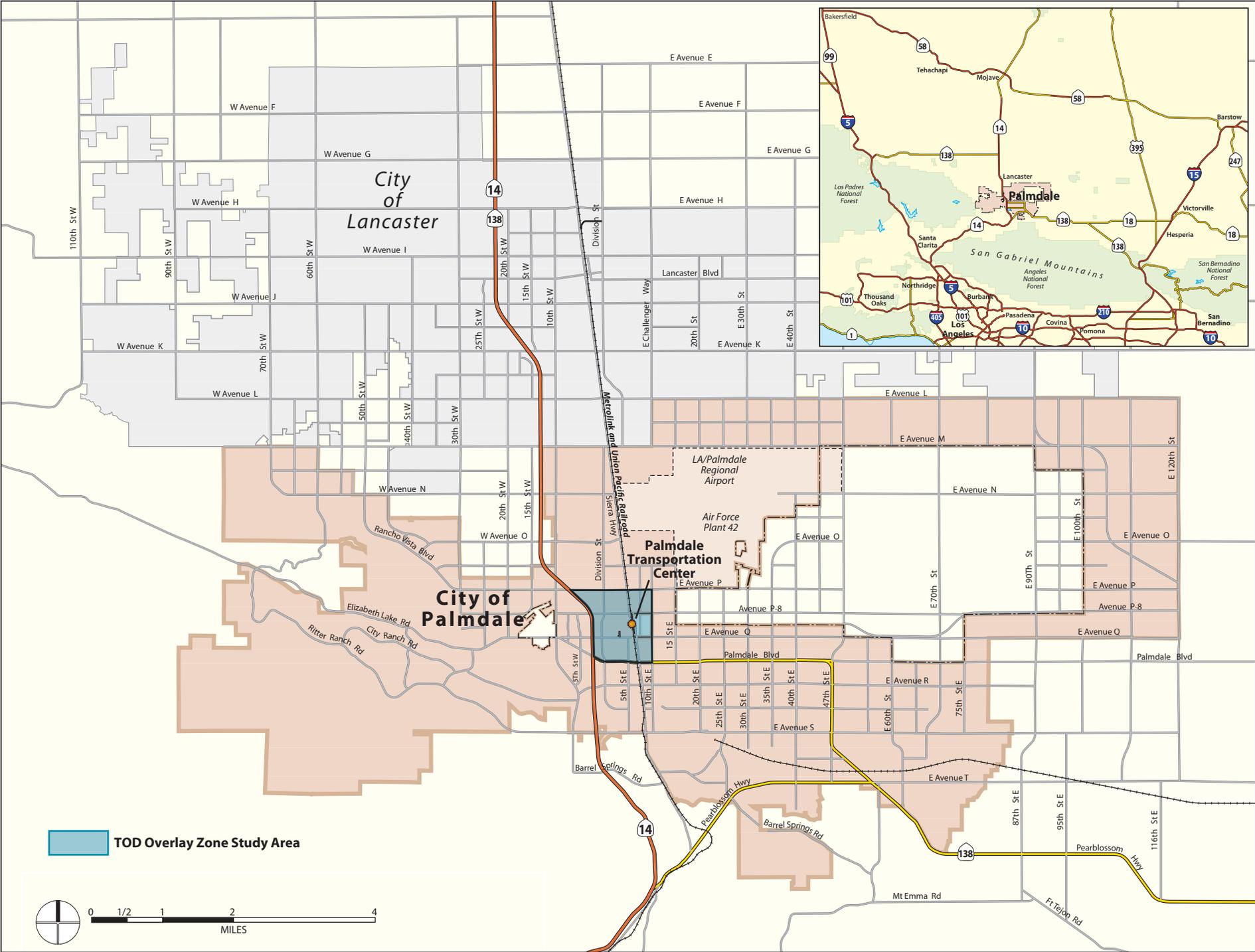
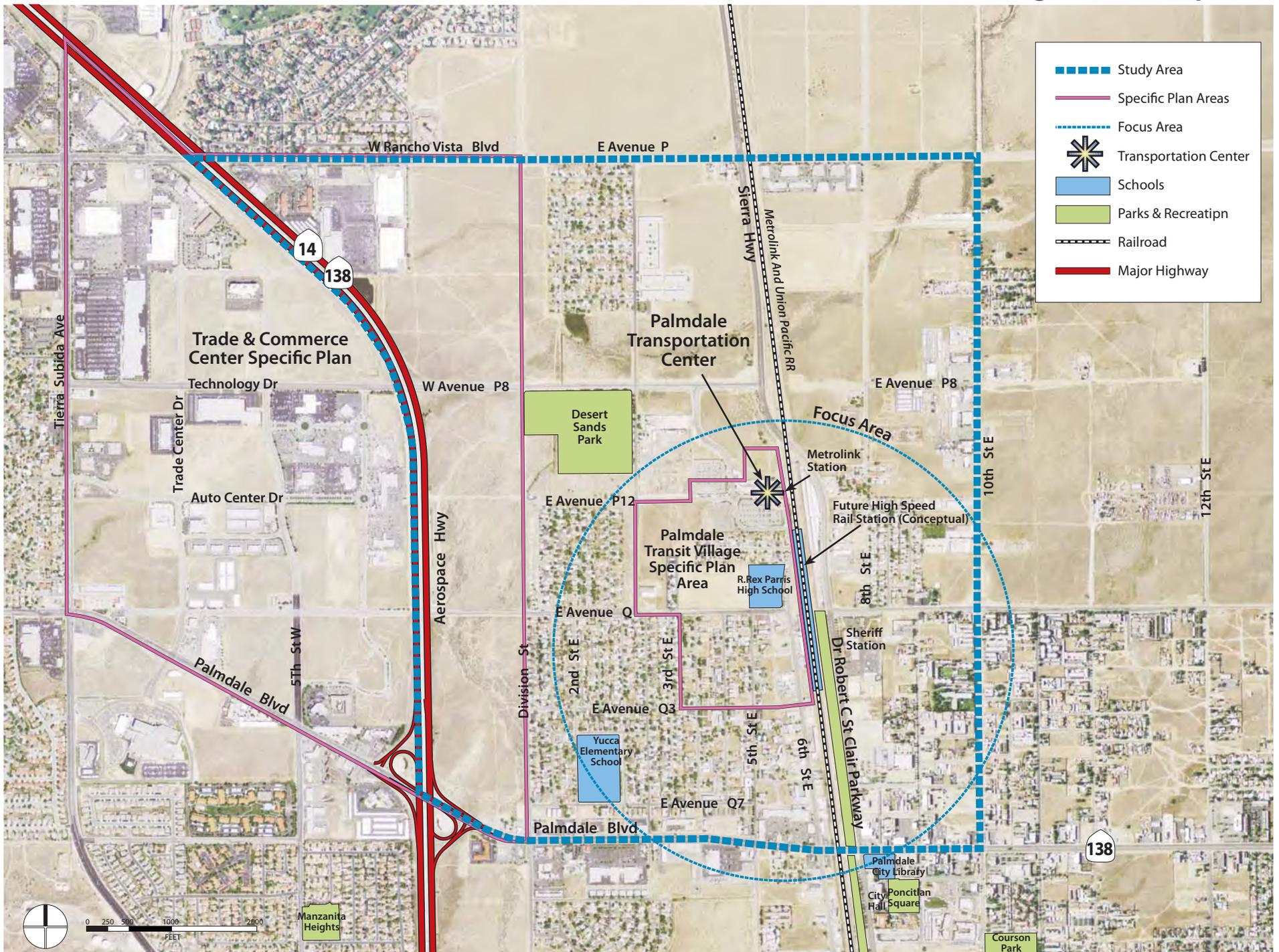


Figure I-2: Study Area



Village Specific Plan (PTVSP) and the Palmdale Trade and Commerce Center Specific Plan (PTCCSP), both of which are discussed in greater detail in Chapter 2. Within the Study Area, a Focus Area is identified, to ensure that the greatest level of attention is paid to the core area generally between the PTC and the Civic Core. A map of the Study Area and Focus Area is shown in Figure 1-2.

1.3 Background

RELATED TRANSPORTATION PROJECTS

The following planned and proposed projects reflect the region's belief and investment in improving mobility and development opportunities in Palmdale and the North Los Angeles County (NLACO) subregion. Each is supportive of TOD development standards and multi-modal connectivity.

California High Speed Rail

California High Speed Rail is a planned high speed rail system that will connect Los Angeles with San Francisco, with potential future extensions to San Diego and Sacramento. The proposed alignment includes a station in Palmdale near the PTC.

High Desert Corridor (E220)

The High Desert Corridor is proposed to improve east-west traffic through the High Desert. The highway would connect the PTC and SR-14 with US-395, I-15, Bear Valley Road, and SR-18. A high speed rail connection, bikeway, and green energy element are also being considered as part of the project.

XpressWest High Speed Rail (XpressWest)

Formerly known as DesertXpress, this private venture proposes a high speed passenger train connecting Victorville, California with Las Vegas, Nevada. An additional extension from Victorville to Palmdale is proposed in order to link XpressWest to Metrolink and California High Speed Rail service.

North County Multimodal Integrated Transportation Study (NCMITS)

An update to the 2004 North County Combined Highway Corridors Study, the NCMITS is a multimodal transportation plan for the northern portion of Los Angeles County that will serve as a blueprint for the County and the cities of Palmdale, Lancaster, and Santa Clarita. This update will take into account the passage of Measure R, a 30-year, one-half cent sales tax for transportation improvements, and new transportation developments, such as those mentioned above and Palmdale's recent acquisition of the Palmdale Regional Airport from Los Angeles World Airports.

North County Mobility Matrix

The North County Mobility Matrix will identify and apply screening criteria to corridors in the subregion to develop a framework for potential transportation improvements. The matrix will consider short (5 years), mid (10 years), and long-term (20+ years) subregional improvements.

AVENUE Q FEASIBILITY STUDY

The City of Palmdale is also undertaking a study of the potential to extend a transit-oriented development (TOD) character westward along the Avenue Q corridor. The Avenue Q study will move forward in parallel with the TOD Overlay project, with both projects sharing relevant background research and analysis and resulting in coordinated recommendations.

DEMOGRAPHIC OVERVIEW

Over the past 25 years, Palmdale has consistently been one of the fastest growing cities in the state. According to estimates from the California Department of Finance and figures from the U.S. Census Bureau, Palmdale’s population dramatically increased between 1990 and 2000, jumping from 68,946 to 116,670. This represents an increase of nearly 70 percent during this time frame. While the growth rate slowed in the 2000s, the City’s population continued to blossom, growing to 152,750 by 2010, 30 percent above the 2000 figure.

The 2008- (more current data) ACS estimates that the median age of Palmdale residents is 28.7, considerably younger than the County or the State as a whole, which reflects the large number of families residing in the city. Palmdale’s population is approximately 55 percent Hispanic or Latino, 25 percent non-Hispanic White, 13 percent non-Hispanic Black, and less than 5 percent of each of the other Census-identified categories. Median household income is \$54,277. Table 1-1 compares population and demographic data for Palmdale with the County at large.

Table 1-1: Demographics

	<i>Palmdale</i>	<i>Los Angeles County</i>
Population	151,841	9,840,024
Hispanic or Latino	54.9%	47.7%
White (non-Hispanic)	24.6%	27.8%
Black (non-Hispanic)	13.4%	8.2%
American Indian and Alaskan Native (non-Hispanic)	0.2%	0.2%
Asian (non-Hispanic)	4.3%	13.7%
Native Hawaiian and Other Pacific Islander (non-Hispanic)	0.2%	0.2%
Other (non-Hispanic)	0.3%	0.3%
Two or more races (non-Hispanic)	2.2%	2.0%
Households	40,702	3,218,511
Median Age	28.7	34.8
Median Household Income	\$54,277	\$56,241

Source: U.S. Census Bureau, 2008-2012 American Community Survey

The California Employment Development Department estimates that as of June 2014, Palmdale has an unemployment rate of 10.2 percent, which is higher than the county’s overall rate of 8.2 percent. This indicates that Palmdale is still in the process of recovering from the 2008 recession,

and residents are in need of accessible employment opportunities. Additionally, the 2008-2012 ACS reports that the average commute time for Palmdale workers is just over 40 minutes, suggesting that most commute outside of the city for work. Nearly three quarters of commuters get to work by driving alone.

1.4 Planning Process

This report is the first step in the TOD Overlay Zone planning process, which includes initial analysis of existing conditions, opportunities, and constraints. In total, the planning process is anticipated to take approximately two years, resulting in an adopted TOD Overlay Zone, EIR, and amendments to the General Plan, Zoning Ordinance, and PTVSP in the spring of 2016. The process will include numerous opportunities for community involvement, including stakeholder interviews, community workshops, and public meetings. Information about workshop and meeting dates as well as project materials can be found on the project website at www.cityofpalmdale.org/TOD.

1.5 Report Organization

Chapters in the Existing Conditions Report are organized by topic, as follows:

Chapter 1: Introduction describes project objectives, the Study Area, background and demographics, the planning process, and an overview of the report's organization.

Chapter 2: Land Use and Development summarizes existing land uses, relevant plans and zoning regulations, current development projects, opportunity sites, and development capacity.

Chapter 3: Access and Circulation describes existing roadway, transit, pedestrian and bicycle networks, and addresses planned improvements, the nearby airport, travel patterns, traffic conditions, and circulation opportunities.

Chapter 4: Community Character and Livability illustrates the existing urban form, building types and scale, street and sidewalk character, street trees and landscape, and the results of a livability audit conducted by local youth.

Chapter 5: Infrastructure examines the existing conditions of the area's infrastructure, demand, and capacity for water, wastewater, and stormwater.

The research and analysis on each topic is communicated through text, tables, and maps.

I.6 Summary of Key Points

While the following chapters provide a thorough analysis of the Study Area's existing conditions, the key points of this report are summarized below:

LAND USE AND DEVELOPMENT

- There is a diverse mix of existing land uses in the Study Area, including single- and multi-family residential, commercial, industrial, public, and recreational uses.
- Approximately 55 percent of land in the Study Area is currently vacant. Most of this vacant land is located north of the PTC or west of Division Street.
- The Study Area is near the site of the Palmdale Regional Airport and U.S. Air Force Plant 42. This poses development constraints on certain portions of the Study Area.
- There are two Specific Plans located within the Study Area: the Palmdale Transit Village Specific Plan and the Palmdale Trade and Commerce Center Specific Plan.

ACCESS AND CIRCULATION

- The Study Area's primary arterials include SR-14, Sierra Highway, Division Street, 10th Street East, Rancho Vista Boulevard/East Avenue P, Avenue Q, and Palmdale Boulevard.
- The largest planned roadway project in the Study Area is the High Desert Corridor, which could include a new expressway or freeway link between SR-14 in Palmdale and SR-18 in San Bernardino County.
- Existing transit service in the Study Area is comprised of a local bus network, commuter bus lines, and commuter rail service. Bus service frequency is relatively low considering the area's proximity to activity centers and the general connectivity to other transit service.
- Transit improvement/expansion plans include new high speed rail service to points throughout California and possibly to Las Vegas.
- While continuous sidewalks exist in some portions of the Study Area, many north-south residential streets lack contiguous sidewalks of any kind. Additionally, there are long crossings for pedestrians on many major streets.
- Currently, there are several gaps in the Study Area's bike network, which is comprised of bike paths, bike lanes, and bike routes.
- Approximately 70 percent of employed residents in the Study Area commute to work by driving alone. Only 11 percent take public transportation, bike, or walk.

COMMUNITY CHARACTER AND LIVABILITY

- The Study Area primarily consists of low-intensity development and vacant land, with the most density occurring in the Focus Area. Most development is non-contiguous and single story.
- SR 14 and the railroad tracks serve as distinct boundaries that divide the Study Area and limit east-west movement.
- The Study Area features a variety of block and lot patterns ranging from smaller scale residential blocks to large-scale industrial and commercial superblocks.
- The Dr. Robert C. St. Clair Parkway along Sierra Highway is a great pedestrian and recreational asset for Palmdale.
- While some portions of the Study Area have streetscape treatments such as landscaped medians or street trees, these treatments are generally uncoordinated and sparse.
- A Livability Audit conducted by local students found there to be a lack of adequate public transportation, bike, and pedestrian infrastructure in the Study Area. In addition, students expressed a desire for additional community resources, services, and recreation areas.

INFRASTRUCTURE

- Upgrades to existing water and sewer infrastructure may be required to accommodate future development.
- Current infrastructure does not provide recycled water service in the Study Area, though there is potential for this in the future.
- Portions of the Study Area are located within 100- and 500-year floodplains.
- The City requires developers to construct drainage facilities in accordance with the City of Palmdale Master Drainage Plan and/or pay drainage fees that will be used to construct drainage facilities.
- Southern California Edison (SCE) has improvement plans to meet increased demand in Palmdale, including upgrading substations and conductors, extending power lines, and replacing poles.
- The Southern California Gas Company (SCGC) provides natural gas to the City of Palmdale. New development in the Study Area may require the concurrent laying of additional gas lines.

Palmdale TOD Overlay Zone
Existing Conditions and Site Analysis Report
April 2015

This page intentionally left blank.

2 Land Use and Development



This chapter documents the existing land use and regulatory context of the Study Area in order to provide an understanding of development opportunities and constraints from the perspectives of local land use compatibility. It reviews the existing land use pattern, the General Plan and relevant Specific Plans, the Zoning Ordinance, current development projects, and opportunity sites. It also estimates potential development capacity in the Study Area, while considering constraints to development.

2.1 Existing Land Use

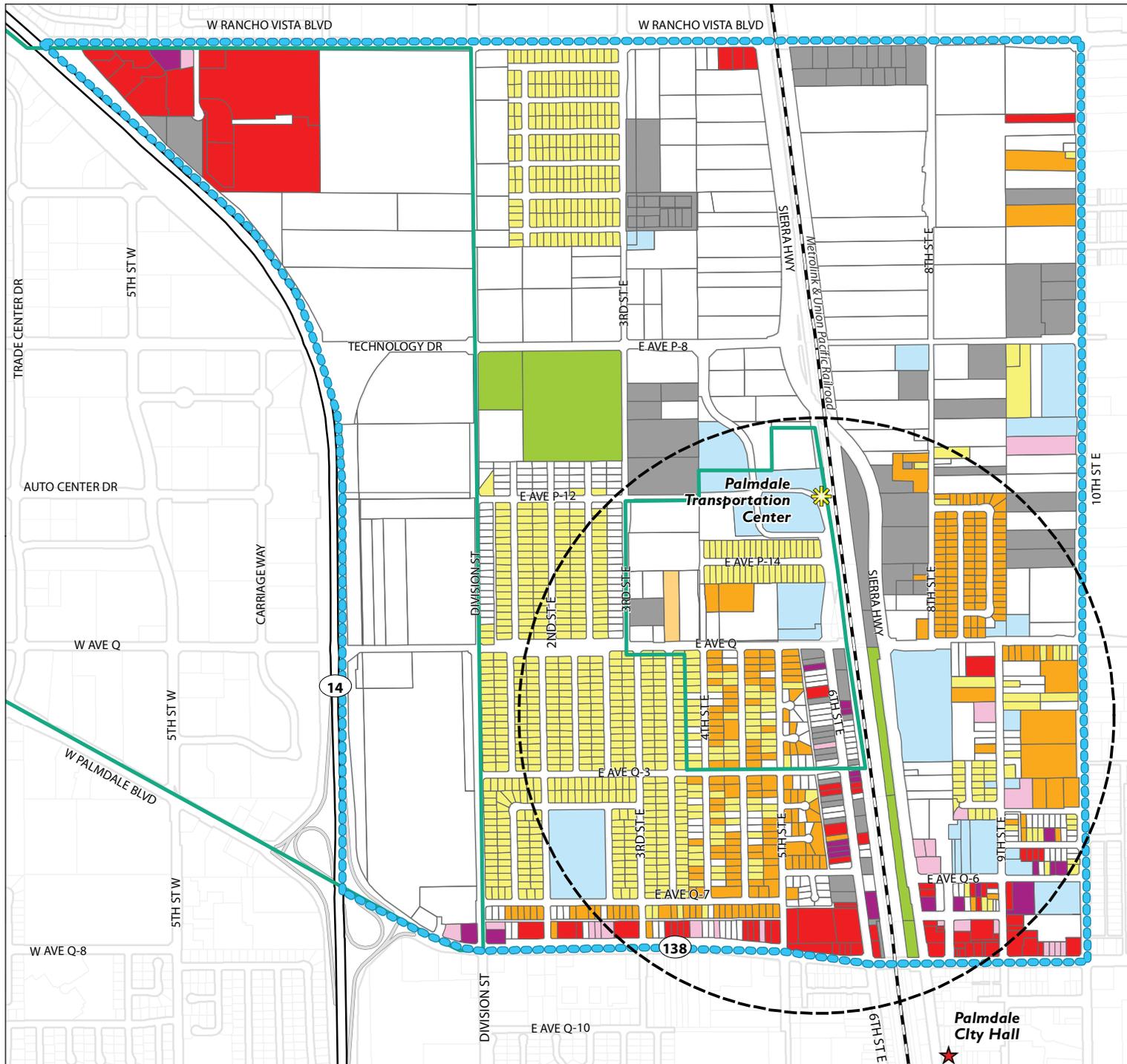
The existing pattern of land uses within the Study Area is shown in Figure 2-1. Table 2-1 describes land use in terms of total acreage. The Study Area contains a diverse mix of existing land uses, with the greatest diversity of uses located within the Focus Area on either side of Sierra Highway. Most single-family housing is located in clusters east of Division Street. Multi-family housing (including duplexes, triplexes, and apartment buildings) is largely concentrated south and east of the Palmdale Transportation Center (PTC). Industrial uses are generally found north of Avenue Q or along a stretch of 6th Street East that abuts the railroad tracks. A commercial strip lines Palmdale Boulevard near the downtown core, and a large shopping center anchors the corner at West Rancho Vista Boulevard and State Route (SR) 14. Over half of the Study Area is comprised of vacant parcels, most of which are located north of the Transportation Center or west of Division Street.

The Study Area is directly adjacent to the site of the Palmdale Regional Airport (PMD) and U.S. Air Force Plant 42. While PMD once offered commercial flights, Plant 42 is now the primary user of the site. Most facilities are owned by private aerospace contractors, including Boeing, Lockheed Martin, and Northrop Grumman.

Table 2-1: Existing Land Use

<i>Land Use Type</i>	<i>Acres</i>	<i>Percent of Total</i>
Single Family Residential	148	14%
Mobile Homes	2	< 0.5%
Multifamily Residential	67	7%
General Commercial	63	6%
Office Commercial	10	1%
Service Commercial	7	1%
Industrial	83	8%
Public/Community	58	6%
Open Space/Recreation	29	3%
Vacant	567	55%
Total	1,035	100%

Source: Dyett & Bhatia, 2014; City of Palmdale, 2014



**Figure 2-1:
Existing Land Use**

- Single Family Residential
 - Mobile Homes
 - Multi-Family Residential
 - General Commercial
 - Office Commercial
 - Service Commercial
 - Industrial
 - Public/Community
 - Open Space/Recreation
 - Vacant
- Focus Area
 - Study Area
 - Specific Plans

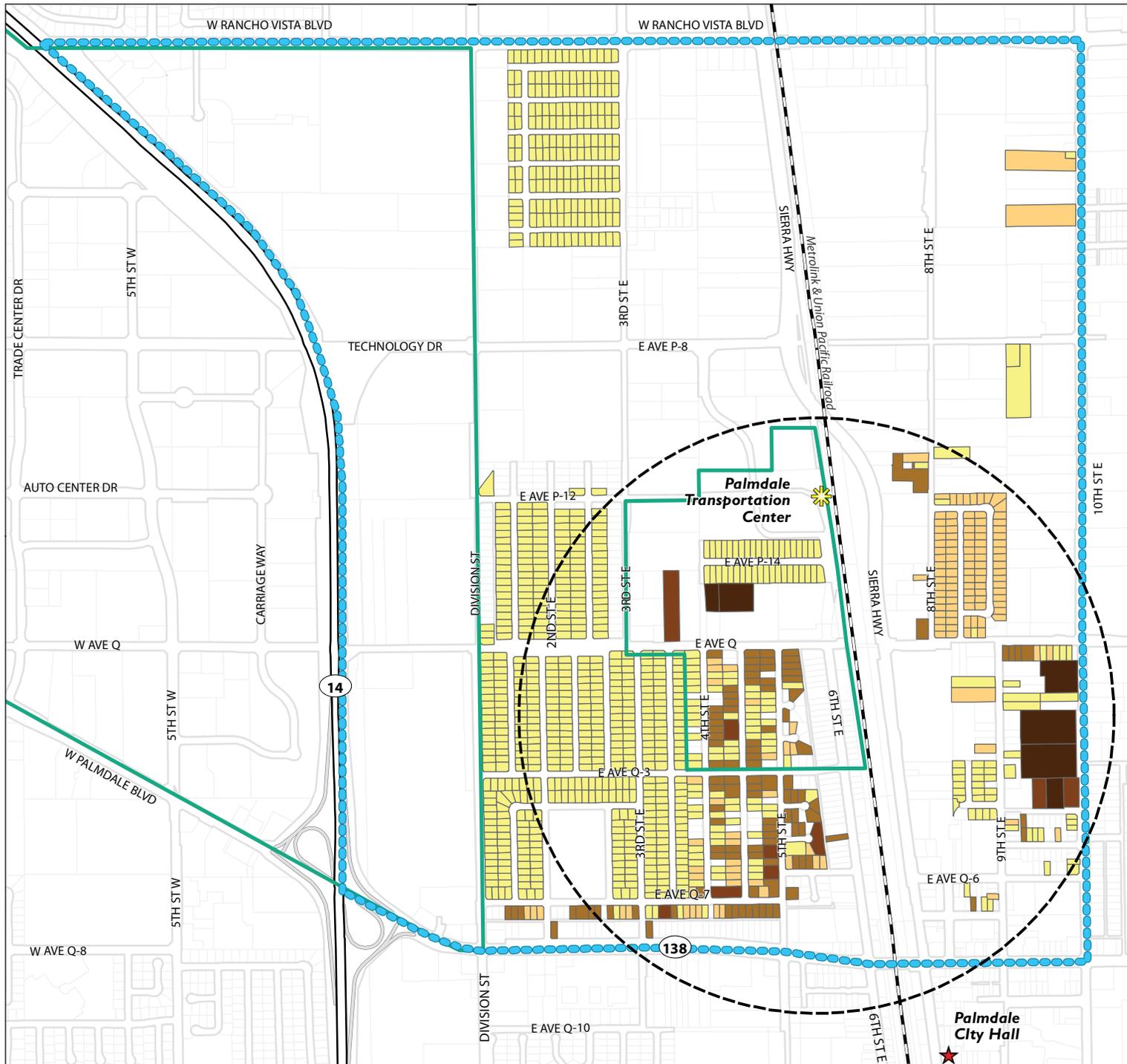
Source: Dyett and Bhatia, 2014

0 375 750 1,500



FEET





**Figure 2-2:
Existing Residential Units**

- 1
- 2 - 3
- 4 - 10
- 11 - 30
- >30
- Focus Area
- Study Area
- Specific Plans

Source: Dyett and Bhatia, 2014

0 375 750 1,500



RESIDENTIAL USES

Combined, residential land uses cover 21 percent of the Study Area (excluding streets and other rights of way). This includes a total of 2,142 existing housing units. Single-family residential makes up 68 percent of the Study Area’s residential land, including 863 existing units (40 percent of all units). Multi-family housing occupies 31 percent of residential land, and 58 percent of the Study Area’s housing units (1,250 units). Duplexes and triplexes account for more than half of multifamily housing units, though there are also some larger apartment buildings, including three with 50 or more units along 10th Street East as well as a new, 156-unit development near the PTC. Additionally, there is a 29-unit mobile home park located on a small strip of unincorporated land off of Avenue Q. Existing residential units by housing type are represented in Table 2-2 and Figure 2-2.

Table 2-2: Housing

<i>Land Use Type</i>	<i>Housing Units</i>	<i>Percent of Total</i>
Single Family Residential	863	40%
Mobile Homes	29	1%
Multi-Family Residential	1,250	58%
Total	2,142	100%

Source: City of Palmdale, 2014

COMMERCIAL, INDUSTRIAL, AND PUBLIC USES

The Study Area contains nearly 1.2 million square feet of commercial space, composed of a mix of small retail shops, large shopping centers, eating establishments, service stations, and professional and medical office space. It also has over 1.3 million square feet of industrial space, mainly light industrial uses. Additionally, there are roughly 120,000 square feet of public facilities, including the Palmdale Transportation Center, Yucca Elementary School, R. Rex Parris High School, the Palmdale Sheriff Station, the South Valley WorkSource Center, and the Hammack Activity Center, as well as about 40,000 square feet of community uses such as churches. The Study Area also has some notable public open spaces, including Yucca Community Garden on Avenue Q-3, Desert Sands Park, and the Dr. Robert C. St. Clair Parkway. Table 2-3 shows square footage by land use type for commercial, industrial, public, and community uses.

Table 2-3: Commercial, Industrial, and Public Uses

<i>Land Use Type</i>	<i>Square Feet</i>
Commercial	1,195,246
Industrial	1,342,435
Public and Community Uses	120,013
Total	2,657,694

Source: Dyett & Bhatia, 2014; City of Palmdale, 2014

2.2 General Plan and Specific Plans

PALMDALE GENERAL PLAN

Adopted in 1993, the Palmdale General Plan provides goals, policies, and programs for future growth and development in the City. The General Plan includes all seven state-required elements (the issues of conservation and open space have been combined into the Environmental Resources Element) as well as a Public Services Element, a Community Design Element, and a Parks, Recreation and Trails Element.

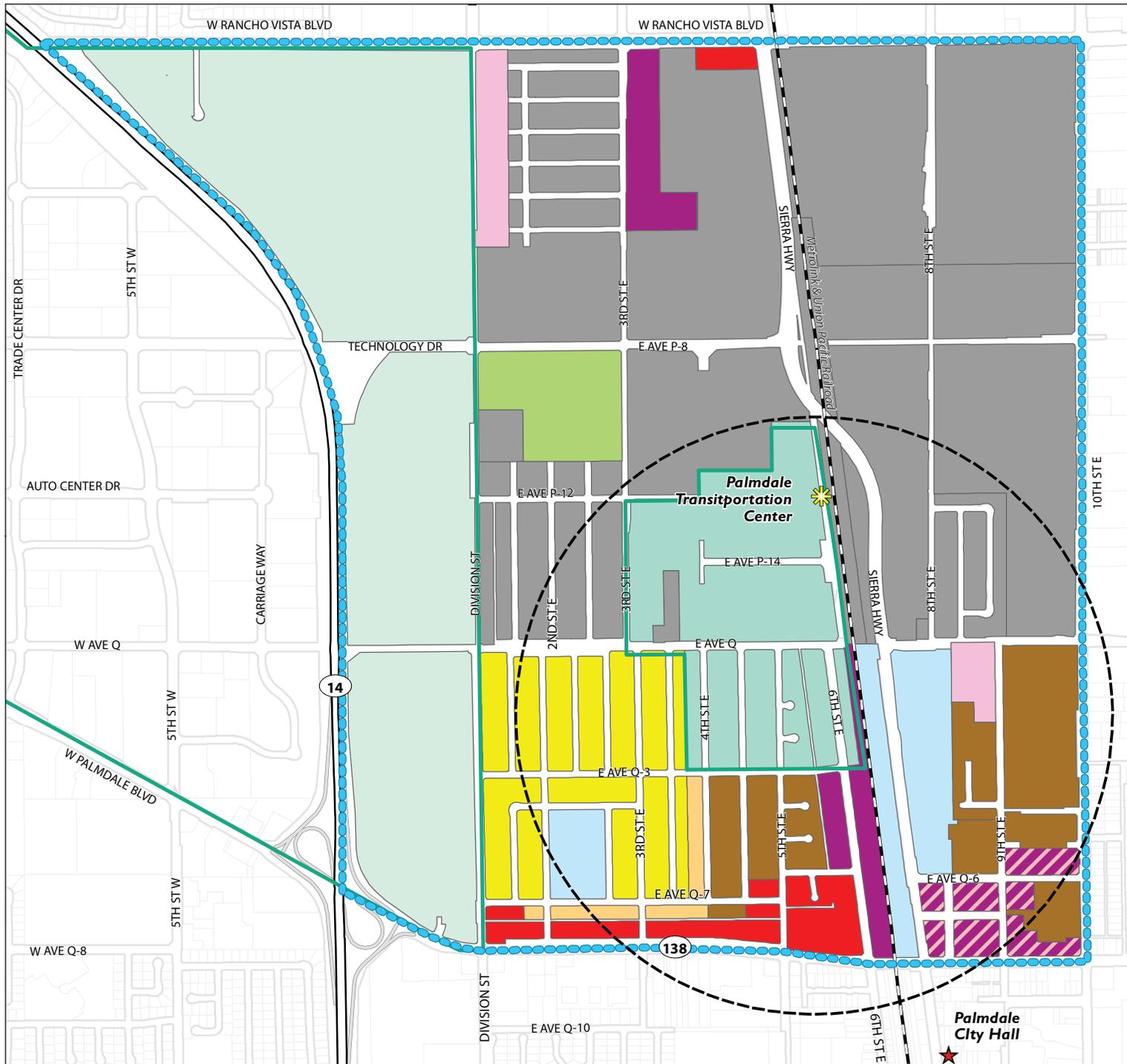
The General Plan was drafted at a time when Palmdale was experiencing rapid growth. The physical expanse of land within the City and the associated potential for growth underlie the following goals established during the planning process:

- Provide adequate land in various use designations and develop policies to promote a stable and diversified economic base.
- Buffer incompatible land uses.
- Revitalize the historic downtown.
- Protect sensitive ecological areas.
- Develop a community identity.
- Maintain a high quality of development.
- Provide adequate infrastructure to support new development.
- Preserve viewsheds and open space.

General Plan land use designations within the Study Area are shown in Figure 2-3. These include Single-Family, Low-Medium, and High Density Residential; General, Office, and Service Commercial; Downtown Mixed Use; Public Facility; Open Space; and Industrial designations. The Industrial designation makes up a large proportion of the Study Area, including the greatest amount of undeveloped land, particularly east of the railroad tracks. The Study Area also includes land classified according to its Specific Plan designation.

PALMDALE TRANSIT VILLAGE SPECIFIC PLAN

As shown in Figure 2-3, the Palmdale Transit Village Specific Plan Area is located in the heart of the Study Area. The Plan intends to create a transit village with a mix of uses in the blocks surrounding the PTC, about a mile northwest of downtown. It takes a Transit-Oriented Development (TOD) approach to improving connectivity in the area and creating a pleasant pedestrian-oriented experience.



**Figure 2-3:
Existing General Plan**

- Single Family Residential
- Low-Medium Density Residential
- High Density Residential
- General Commercial
- Office Commercial
- Service Commercial
- Downtown Commercial Mixed Use
- Industrial
- Public Facility
- Open Space
- Palmdale Trade and Commerce Center Specific Plan
- Palmdale Transit Village Specific Plan
- Focus Area
- Study Area
- Specific Plans

Source: City of Palmdale, 2014

0 375 750 1,500



FEET



Table 2-4: Palmdale Transit Village Specific Plan Development Standards

<i>Neighborhood Zone</i>	<i>Allowable Uses</i>	<i>Building Setback</i>	<i>Minimum FAR (Floor Area Ratio)</i>	<i>Residential Density (units/acre)</i>	<i>Max. Building Height</i>
A	Retail/Commercial Office Mixed-Use Civic	0 to 6 ft. (Non-Res.)	0.80	NA	60 ft.
B	Retail/Commercial Office Civic	0 to 6 ft. (Non-Res.)	0.60	NA	60 ft.
C	Civic Residential	0 to 6 ft. (Non-Res.) 0 to 8 ft. (Residential)	NA	25 to 40	45 ft.
D	Civic Residential	0 to 10 ft. (Non-Res.) 0 to 12 ft. (Residential)	0.40	18 to 30	45 ft.
E	Civic Residential	0 to 6 ft. (Non-Res.) 8 to 18 ft. (Residential)	NA	8 to 12	36 ft.
F	Retail/Commercial Office Mixed-Use Civic Residential	0 to 8 ft. (Residential)	0.60	18 to 30	45 ft.
G	Retail/Commercial Office Mixed-Use Civic	0 to 6 ft. (Non-Res.)	0.40	12 to 16	45 ft.
H	Residential	8 to 18 ft. (Residential)	NA	12 to 16	45 ft.
I	Residential	8 to 18 ft. (Residential)	NA	8 to 12	36 ft.

Source: Palmdale Transit Village Specific Plan, 2007; Dyett & Bhatia, 2014.

The goals of the Palmdale Transit Village Specific Plan include:

- Encourage investment and development in the vicinity of the PTC.
- Provide investors with a level of certainty regarding the future of the area and the quality of development that is expected.
- Allow for a mix of uses that result in a vital neighborhood that complements the existing character of Palmdale.
- Provide for the residential, commercial, and employment needs of the community that are complementary with the development of the PTC and follow TOD principles.
- Provide a level of flexibility that will allow incremental development of the Plan to address the changing demands and needs of the real estate market.

Further, the Plan establishes development standards and design guidelines that aim to maximize the efficiency of land surrounding the PTC. The standards and guidelines promote new development, open spaces, and attractive and vibrant streets that are safe for all users.

TOD Development Standards

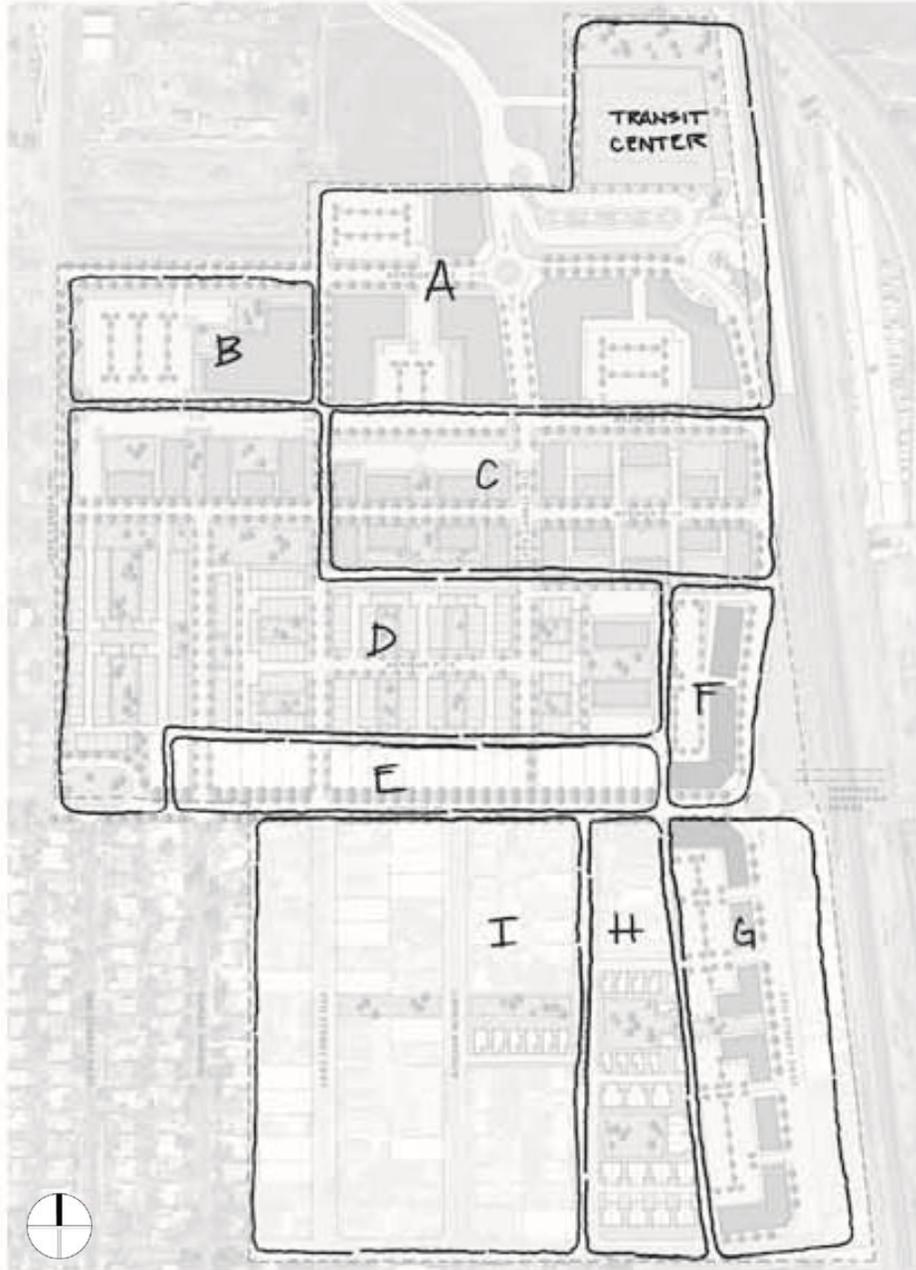
The Palmdale Transit Village Specific Plan features a Neighborhood Zone Diagram with nine zones (A through I). The Neighborhood Zone Diagram is reproduced here as Figure 2-4. For each of these Neighborhood Zones, the Specific Plan establishes permitted uses; setbacks and build-to lines; lot and dwelling size standards; density and intensity ranges; building heights; lot coverage requirements; open space and parking requirements; and other standards. Table 2-4 summarizes the development standards that apply in each Neighborhood Zone. In general, the areas directly adjacent to the PTC (zones A and B) are envisioned to have retail, office, and mixed use with residential, and the highest intensity of development, with buildings that create consistent street frontages and rising up to 60 feet. The 6th Street East corridor (zones F and G) is also planned to be a commercial and mixed-use area, but with lower intensities and building heights. The remainder of the Specific Plan area is reserved for residential and civic uses, with a more urban character closest to the PTC grading down to single-family and townhouse development adjacent to existing neighborhoods.

Design Guidelines

Beyond the required standards, the Palmdale Transit Village Specific Plan also seeks to inform aspects of building design, with the goal of enlivening the public realm and producing an attractive built environment. Design guidelines address façade variation, building materials, design of building entries, and screening of equipment. There are specific guidelines for residential buildings and courtyards; commercial and civic buildings; surface parking lots; parks and plazas; lighting; signage; and public art.

Figure 2-5 illustrates full buildout of the Palmdale Transit Village Specific Plan.

Figure 2-4: Palmdale Transit Village Specific Plan Neighborhood Zone Diagram



Source: Palmdale Transit Village Specific Plan, 2007.

Figure 2-5: Palmdale Transit Village Specific Plan at Final Buildout



Source: Palmdale Transit Village Specific Plan, 2007.

PALMDALE TRADE AND COMMERCE CENTER SPECIFIC PLAN

The Palmdale Trade and Commerce Center Specific Plan Area is generally located between Rancho Vista Boulevard (Avenue P) and Palmdale Boulevard (SR-138) and between Tierra Subida Avenue and Division Street, encompassing the western edge of the Study Area and extending to the west. The plan intends to create a diversified employment center in central Palmdale, reducing the number of residents needing to commute outside of the City for work. It was originally drafted in response to the City's population surge in the late 1980's during which growth in the residential sector was significantly greater than growth in the commercial and industrial sectors.

The goals of the Palmdale Trade and Commerce Center Specific Plan include:

- Provide a viable mix of commercial, industrial and public uses consistent with the capabilities of the City and special districts to provide services.
- Establish a mixed use activity center to complement residential development.
- Design and coordinate development to complement central Palmdale, creating an attractive activity center and enhancing the image and quality of life in the City.
- Ensure that the road network provides for the functional access needs of the area.
- Encourage the use of intermodal transportation.
- Provide for attractive, safe and well-functioning public services and facilities.
- Ensure that future development minimizes environmental impacts to the extent feasible.
- Ensure that development is subject to public review and adequate mitigation in regards to hazards.

Land Use Plan

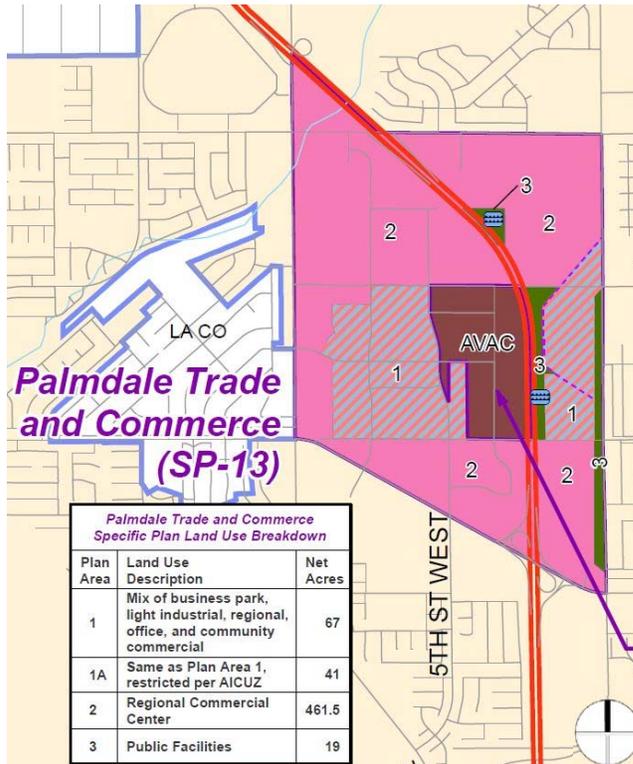
The Specific Plan establishes four land use categories: Planned Development, Mixed Use, Mixed Use-AICUZ Restricted, and Public Facility. The Planned Development land use category covers land between Avenue Q and Palmdale Boulevard in the southwest corner of the Study Area, and land between Avenue P-8 and Rancho Vista Boulevard in the northwest corner. This zone is established for the development of such uses as retail outlets, hotels and motels, entertainment facilities, and offices.

The Mixed Use and Mixed Use-AICUZ Restricted categories cover the Study Area between Avenue Q and Avenue P-8, west of Division Street. See Figure 2-6. These zones are established for the development of a combination of business park, light industrial, and regional and community commercial uses. In the AICUZ Restricted zone, these uses must be compatible with the Air Force Plant 42 Air Installation Compatibility Use Zone II (these requirements are summarized in Section 2.3 below).

The Public Facility category covers a small area along SR-14 north of Avenue P-8, where there is a stormwater detention basin.

The land use map for the Palmdale Trade and Commerce Center Specific Plan area is shown in Figure 2-6. Development regulations are summarized in Table 2-5.

Figure 2-6: Palmdale Trade and Commerce Center Specific Plan



Source: City of Palmdale.

Table 2-5: Palmdale Trade and Commerce Center Specific Plan Development Standards

Land Use Category	Minimum Developable Area	Maximum Height	Maximum Site Coverage	Minimum Building and Parking Setback	Min. Landscaping and Depth of Landscaping along street frontages
Planned Development (PD)	½ gross acre	45 ft., except with a CUP	90%, including parking	Building: 30 ft. Parking: 20 ft.	10% 20 ft.
Mixed Use (MU)	1 gross acre	45 ft, except with a CUP	90%, including parking	Building: 30 ft. Parking: 20 ft.	10% 10 ft.
Mixed Use-AICUZ	1 gross acre	35 ft.	40%, buildings only	Building: 30 ft. Parking: 20 ft.	10% 10 ft.
Public Facilities (PF)	Per applicable provisions of Palmdale General Plan, Zoning Ordinance, and City standards				

Source: Palmdale Trade and Commerce Center Specific Plan, 1990; Dyett & Bhatia, 2014.

2.3 Zoning

PALMDALE ZONING ORDINANCE

The Zoning Ordinance is a regulatory tool used to implement the goals, objectives, and policies of the General Plan as they pertain to development. It establishes regulations to ensure that an appropriate mix of land uses is developed that enhance established neighborhoods and districts while providing opportunities for infill, expansion, and economic development. The Ordinance consists of a zoning map, which defines the locations of zoning districts, and a zoning code that details the requirements for each district.

Palmdale's zoning districts are organized by land use, and are consistent with General Plan land designations. Figure 2-7 shows zoning in the Study Area and its larger context. The southern edge of the Study Area is part of the Palmdale Boulevard commercial corridor. Surrounding the Study Area there are largely single-family residential zoning districts to the southwest, industrial zoning districts to the north and east, and the Palmdale Trade and Commerce Center Specific Plan to the west.

As Figure 2-8 highlights, the Study Area itself contains single- and multi-family residential, commercial, industrial, and recreational zoning districts. The majority of residential and commercial zoning districts are located south of Avenue Q, while most industrial zoning is located to the north. The Study Area also encompasses the Palmdale Transit Village Specific Plan Area and some unincorporated pockets of Los Angeles County. Table 2-6 provides a summary of typical uses and development standards that apply in each zoning district in the Study Area. See Section 2.2 for standards that apply in the Specific Plan Areas.

AIR INSTALLATION COMPATIBLE USE ZONE

The Air Force Plant 42 Air Installation Compatible Use Zone (AICUZ) Study (2012) is intended to protect operational capabilities, while promoting compatible land uses in areas subject to noise exposure and accident potential from aircraft operations. The City of Palmdale and other local jurisdictions are responsible for updating zoning and other development regulations, as needed, to be consistent with the Study's recommendations.

The AICUZ identifies three types of constraints: height limitations on structures to prevent obstruction of flight operations; noise exposure from aircraft overflight; and accident potential near runways.

None of the TOD Overlay Study Area is within noise contours that exceed 60 dB CNEL, and aircraft-related noise is not a relevant constraint for this effort. However, a substantial portion of the Study Area is covered by the AICUZ Study's Accident Potential Zone (APZ) II. In APZ II, residential uses are recommended to be limited to 1 to 2 dwelling units per acre. Certain types of industrial activities are not recommended because of the risks they could pose in the case of accident. Retail, service, and office uses should be low-intensity in terms of the number of people and structures, and meeting places are not recommended. For most non-residential uses, buildings should be limited to one story, and lot coverage should not exceed 20 percent. The coverage of APZs in and around the Study Area is shown on Figures 2-7 and 2-8.

Table 2-6: Summary of Zoning Regulations

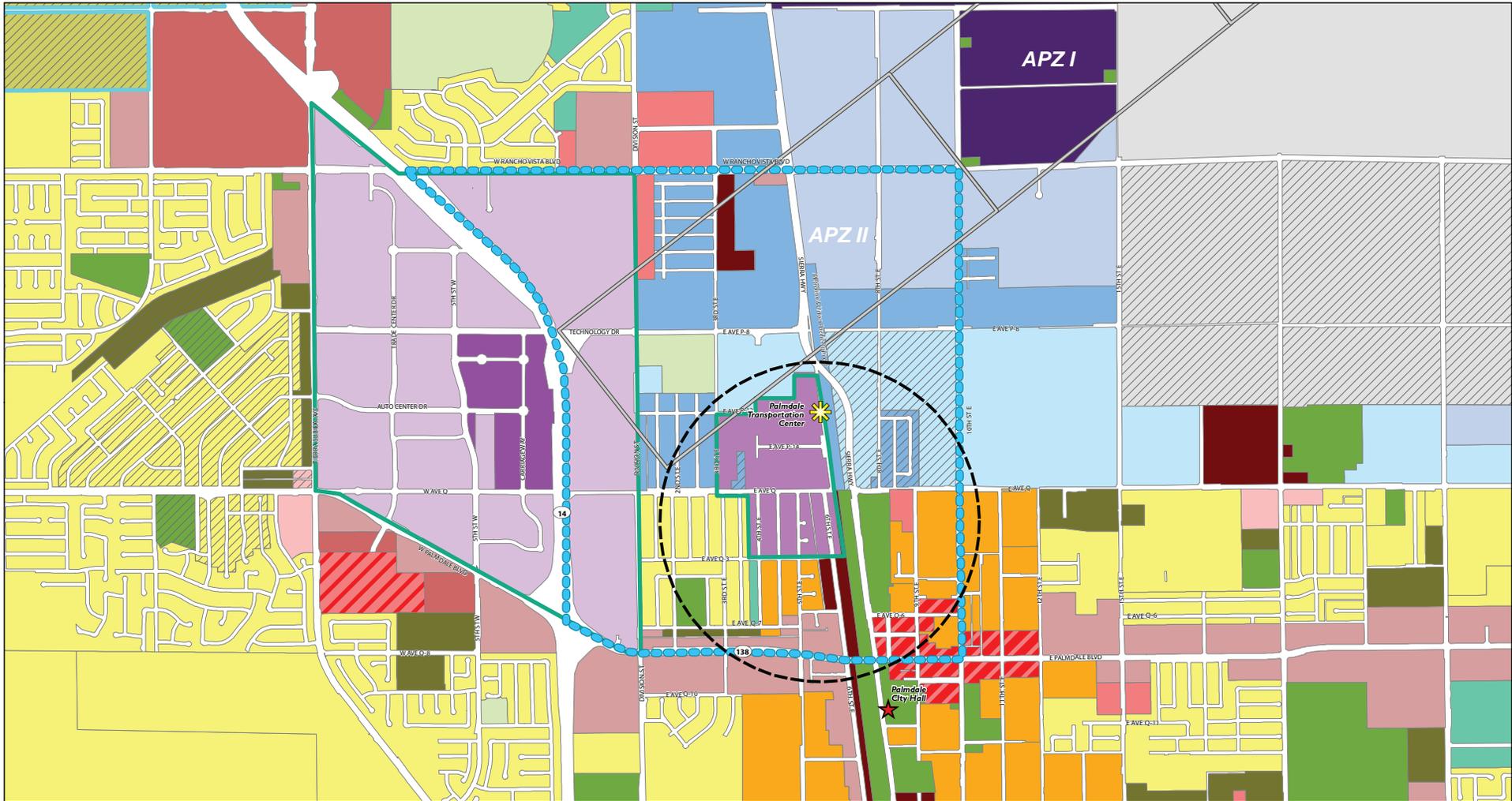
<i>Zoning District</i>	<i>Intent¹</i>	<i>Density or Intensity</i>	<i>Minimum Lot Area</i>	<i>Maximum Building Height</i>	<i>Maximum Lot Coverage</i>	<i>Common Open Space / Landscaping</i>
Residential Zones						
Single Family Residential (R-1)	Single-family residential	0 to 6 units/acre	7,000 sq. ft.	2 stories, 35 ft.	40%	NA
Medium Residential (R-2)	Single-family attached, detached	6.1 to 10 units/acre 4,000 sq. ft. per dwelling unit (3,500 sq. ft. per unit for mfd home subdivisions)	7,000 sq. ft. for single-family	2 stories, 35 ft.	50%	30% required for common, usable open space, for multiple-family developments of >5 units
Multiple Residential (R-3)	Condominiums, apartments	Up to 16 units/acre 2,500 sq. ft. per dwelling unit (2,200 sq. ft. per unit for mfd home subdivisions)	20,000 sq. ft.	3 stories, 45 ft.	50%	30% required for common, usable open space, for multiple-family developments of >5 units
High Density Residential (R-4)	Apartments	30 to 60 units/acre 870 sq. ft. per unit	40,000 sq. ft.	5 stories, 60 ft.	80%	15% required for common, usable open space, for multiple-family developments of >5 units
Commercial Zones						
Light Commercial (C-1)	Convenience shopping	0.5 FAR	5,000 sq. ft.	2 stories, 35 ft.	50%	NA
Office Commercial (C-2)	Businesses, professional offices	1.0 FAR	20,000 sq. ft.	3 stories, 45 ft.	80%	NA
General Commercial (C-3)	Variety of retail and service uses	1.0 FAR	5,000 sq. ft.	3 stories, 45 ft.	90%	NA
Service Commercial (C-5)	Wholesale, distribution, construction-related	0.5 FAR	10,000 sq. ft.	3 stories, 45 ft.	50%	NA

Table 2-6: Summary of Zoning Regulations

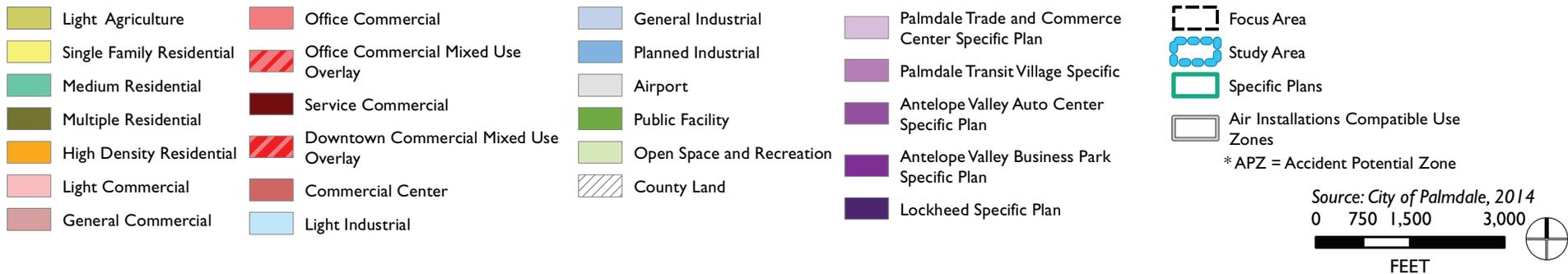
Zoning District	Intent ¹	Density or Intensity	Minimum Lot Area	Maximum Building Height	Maximum Lot Coverage	Common Open Space / Landscaping
Industrial Zones						
Light Industrial (M-1)	Light industrial uses, primarily indoor operations	0.5 FAR	20,000 sq. ft.	2 stories, 35 ft.	50%	10% required for landscaping
General Industrial (M-2)	Full range of industrial uses, including outdoor operations	0.5 FAR	20,000 sq. ft.	3 stories, 45 ft.	50%	10% required for landscaping
Planned Industrial (M-4)	Light industrial and associated uses, in cohesive industrial parks	0.5 FAR	20,000 sq. ft.	3 stories, 45 ft.	50%	10% required for landscaping
Special Purpose Zones						
Public Facilities (PF)	Schools, government, community facilities	1.0 FAR	Sufficient	3 stories, 45 ft.	90%	NA
Mixed Use Overlay (MX)	Residential and commercial, to enliven business districts	Maximum residential density: 10 units/acre. Residential to commercial FAR: 2:1	Per base zone	Per base zone	Per base zone	20% required for common, usable open space, for projects with >10 units
Open Space and Recreation (OR)	Passive open space, active recreation uses	NA	Sufficient	45 ft.	25%	NA
Downtown Commercial (C-D)	Pedestrian-friendly downtown	Ground-level space should be occupied by retail uses; office uses should generally be on 2nd floor	5,000 sq. ft.	2 stories, 35 ft.	NA; no front, side, or rear yard requirements	NA
Specific Plan Districts – see Section 2.2						

Note: See the Zoning Ordinance for a full list of permitted uses and permit requirements

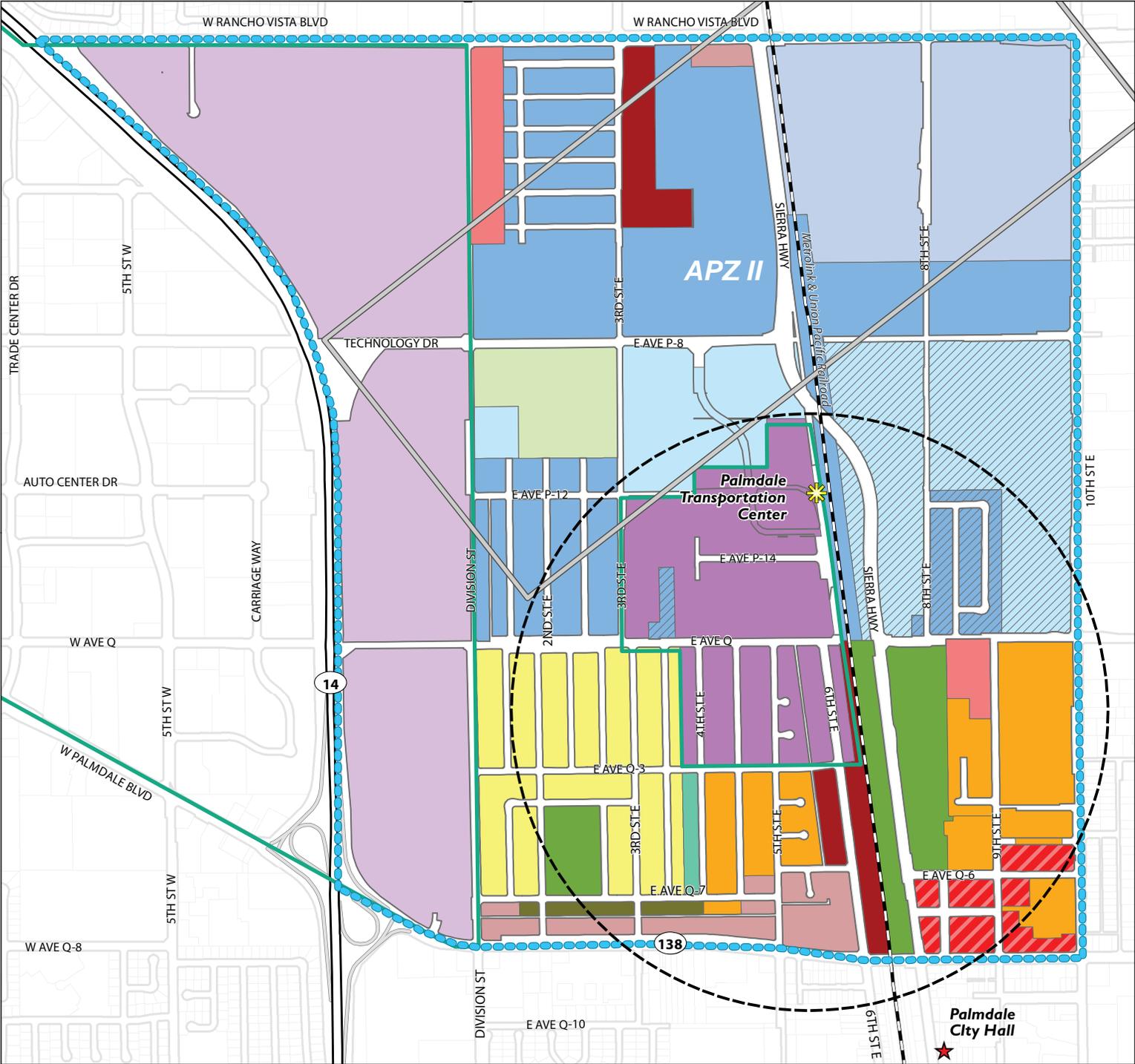
Source: City of Palmdale Zoning Ordinance, 1994; Dyett & Bhatia, 2014.



**Figure 2-7:
Existing Zoning in the Study Area and Surroundings**

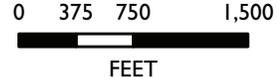


**Figure 2-8:
Existing Zoning in the
Study Area**



- Single Family Residential
 - Medium Residential
 - Multiple Residential
 - High Density Residential
 - General Commercial
 - Office Commercial
 - Service Commercial
 - Downtown Commercial
Mixed Use Overlay
 - Light Industrial
 - General Industrial
 - Planned Industrial
 - Public Facility
 - Open Space and Recreation
 - County Land
 - Palmdale Trade and
Commerce Center Specific
Plan
 - Palmdale Transit Village
Specific Plan
 - Focus Area
 - Study Area
 - Specific Plans
 - Air Installations Compatible
Use Zones
- * APZ = Accident Potential Zone

Source: City of Palmdale, 2014



2.4 Current Development and Opportunity Sites

RECENT AND CURRENT DEVELOPMENT PROJECTS

In the Study Area, two projects have recently been completed; one is under construction, and another three are currently in the development pipeline. The first and largest of the completed projects is the 156-unit Wright Brothers Court Apartments located off of 4th Street East, in close proximity to the Palmdale Transportation Center. In addition, Antelope Valley Youth Build completed construction of the Palmdale Dream Center on 5th Street East in December 2014. This facility offers transitional housing and outreach to at risk youth. A new 25,500-square foot indoor animal care facility located on Sierra Highway is currently under construction. Approved projects in the Study Area include a 10,000-square foot religious assembly building with two caretakers' residences at 10th Street East and Avenue Q-6, a 7,000-square foot commercial building on Palmdale Boulevard, and a church on 9th Street East. The locations of recent and current development projects are highlighted in Figure 2-9.

VACANT AND UNDERUTILIZED LAND

Opportunity sites are identified as those sites that may have potential for land use or intensity change over the long term. Sites may currently be vacant or underutilized. There are 352 vacant parcels in the Study Area, covering 567 acres, and ranging from small vacant lots within developed areas to large expanses of undeveloped land. The majority of this acreage is located north of Avenue Q in areas zoned for industrial use. However, there are also vacant parcels that are zoned for residential, commercial, and public uses.

Underutilized land is defined here as sites on which the assessed land value is greater than the assessed value of existing permanent improvements on the land. By this definition, the Study Area contains 79 underutilized sites, covering 88 acres. In terms of individual sites, the dominant land use among underutilized sites is commercial. This category is identified to get a sense of which parcels may be most likely to undergo change during the planning period.

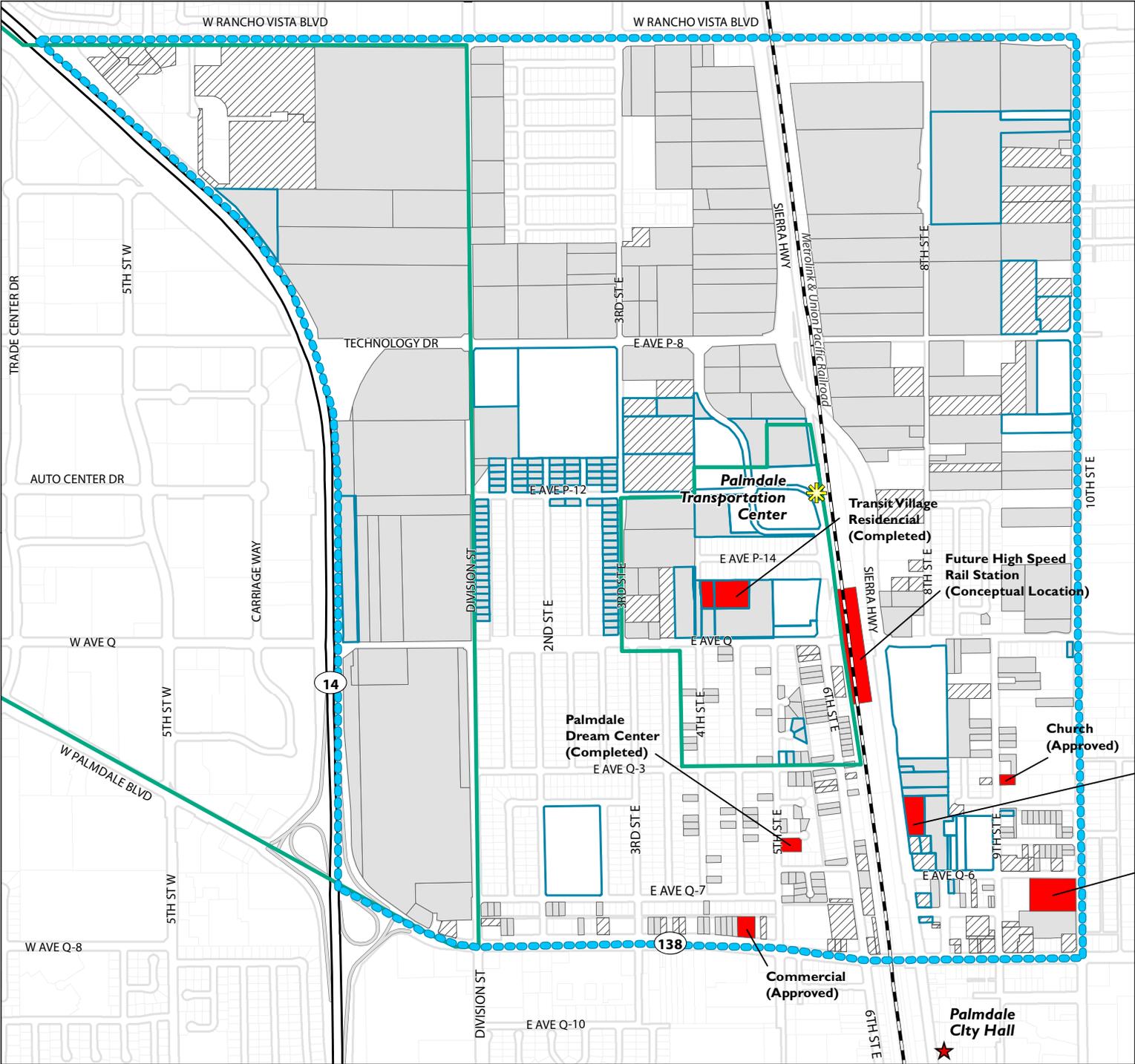
Table 2-7 shows vacant and underutilized land by zoning designation. Overall, there is the largest potential for development on land that is zoned for industrial uses and in the Palmdale Trade and Commerce Specific Plan Area. An increased emphasis on transit-oriented development could adjust zoning on some of this land and result in a higher-intensity mix of uses.

Table 2-7: Vacant and Underutilized Land by Zoning

<i>Zoning Designation</i>	<i>Vacant (acres)</i>	<i>Underutilized (acres)</i>	<i>Total (acres)</i>
Residential			
Single Family Residential	0.0	0.0	0.0
Medium Residential	0.7	0.0	0.7
Multiple Residential	0.6	0.0	0.6
High Density Residential	14.5	0.4	14.9
<i>Subtotal</i>	15.8	0.4	16.2 (2.5%)
Commercial			
General Commercial	5.3	3.5	8.8
Office Commercial	13.0	1.1	14.2
Service Commercial	5.7	3.2	8.9
Downtown Commercial Mixed Use Overlay	2.0	6.2	8.2
<i>Subtotal</i>	26.4	16.7	43.1 (6.1%)
Industrial			
Light Industrial	22.8	11.8	34.6
Pre-zone Light Industrial (County)	46.4	11.7	58.1
General Industrial	84.7	11.7	96.4
Planned Industrial	120.5	3.1	123.6
Pre-zone Planned Industrial (County)	0.5	3.6	4.1
<i>Subtotal</i>	274.9	42.0	316.9 (48%)
Public Facility	7.1	1.7	8.8 (1.3%)
Palmdale Trade and Commerce Center Specific Plan	211.2	29.5	240.7 (37%)
Palmdale Transit Village Specific Plan	32.4	0.6	33.0 (5.0%)
Total	567.3	88.2	655.6 (100%)

Source: Dyett & Bhatia, 2014

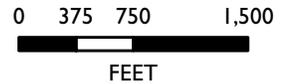
**Figure 2-9:
Recent/Current
Development Projects
and Vacant and
Underutilized Sites**



- Focus Area
- Study Area
- Specific Plans
- Publicly Owned Land
- Recent/Current Development
- Vacant Land
- Underutilized Land

- Palmdale Transportation Center
- Transit Village Residential (Completed)
- Future High Speed Rail Station (Conceptual Location)
- Church (Approved)
- Animal Care Facility (Under Construction)
- Church + 2 Residences (Approved)

Source: City of Palmdale, 2014



Palmdale TOD Overlay Zone
Existing Conditions and Site Analysis Report
April 2015

This page intentionally left blank.

DEVELOPMENT CONSTRAINTS

Some important factors that limit the development potential of several of the Study Area's vacant and underutilized sites:

- **Proximity to U.S. Air Force Plant 42:** The U.S. Air Force Plant 42 California Air Installation Compatible Use Zone (AICUZ) limits development around Plant 42 due to the effects of aircraft noise and accident potential on the surrounding area. A portion of the Study Area is located in an Accident Potential Zone (APZ) II. While this has a lesser potential for accidents than an APZ I, it still limits the development potential in this area.
- **Proximity to Sierra Highway and the Union Pacific Railroad/Metrolink rail tracks:** Sierra Highway and the railroad tracks run immediately adjacent to the PTC and the Palmdale Transit Village Specific Plan Area, cutting through the Study Area and Focus Area. This hinders the area's ability to maximize optimal Transit Oriented Development strategies, as both act as barriers that limit east-west mobility.
- **Existing regulations:** Existing residential zoning districts and densities outside of the Palmdale Transit Village Specific Plan Area limit the types of housing alternatives that can be developed in the Study Area.

This page intentionally left blank.

3 Access and Circulation



Image Source: Metrolink

This section presents an analysis of current transportation conditions in the Study Area, including an analysis of the current and planned roadway network and street standards, transit service (rail and bus), non-motorized facilities (pedestrian and bicycle), and traffic and travel patterns. Observed issues and potential opportunities associated with the transportation system are also discussed, by mode, at the end of this section.

3.1 Roadway Network and Street Standards

As shown in Figure 3-1, the Study Area's primary arterials include State Route (SR) 14, Sierra Highway, Division Street, 10th Street East, Rancho Vista Boulevard/East Avenue P, Avenue Q, and Palmdale Boulevard (SR 138). The planned approximate alignment for the future High Desert Corridor and the planned future alignment of Division Street are also shown.

EXISTING ROADWAYS

The following paragraphs describe roadways as they currently exist.

State Route 14 (SR-14) is a six-lane controlled access highway that connects Palmdale with Interstate 5 and the San Fernando Valley to the south, and United States Route 395 (US 395) to the north.

Sierra Highway is an old alignment of SR-14/Historic US Route 6, which was built as a highway in the early 20th century. While this highway, whose route ran north from Los Angeles to the Lake Tahoe area, was largely bypassed by SR-14 and other freeways in the 1970s, much of the old highway still exists. In Palmdale, the roadway is a four-lane north-south arterial

Division Street is a two-lane north-south roadway, designated as a major arterial, that extends from just north of East Avenue P-12 to East Avenue R-8 in the south, where it continues as East Avenue R-8. Division Street is worth noting because Avenues and Streets to the west of Division Street are generally designated with the prefix or suffix "West" (e.g., West Palmdale Boulevard, 10th Street West), while those to the east of division are designated with the prefix or suffix "East" (e.g., East Palmdale Boulevard, 10th Street East).

10th Street East is a two- to four-lane north-south arterial forming the eastern edge of the Study Area, running parallel to SR-138 and the Sierra Highway. It connects to the Lockheed Martin Aeronautics center in the north, a major employer, and several schools and residential areas in the south.

Rancho Vista Boulevard/East Avenue P is a four- to six-lane arterial that connects the Study Area with neighborhoods to the east and west, and to the Palmdale Airport.

Avenue Q is a two- to four-lane arterial that connects the Study Area to residential districts to the east, and, via Trade Center Drive, to West Palmdale Boulevard to the west. East of SR14, Avenue Q generally provides one travel lane in each direction with a center turn lane. It is bisected by the Metrolink/Union Pacific railroad tracks, creating a gap in the corridor between 6th Street East and Sierra Highway.

Palmdale Boulevard is a four- to six-lane arterial and a major east-west connector, linking the Study Area with neighborhoods to the east and west, as well as Elizabeth Lake Road. Between SR-14 and 50th Street East in east Palmdale, Palmdale Boulevard also serves as State Route 138. The roadway contains two travel lanes in each direction, expanding to three between SR-14 and Sierra Highway, with a raised median and/or center turn lanes. Along with West Rancho Vista

Boulevard/East Avenue P, Palmdale Boulevard and Sierra Highway are the only streets within the Study Area that cross the Metrolink tracks.

STREET CLASSIFICATIONS

The General Plan includes various street classifications applicable to all streets within City limits. General Plan street classifications, and Study Area streets that belong in each class, are listed below.

- **Regional Arterials** are eight lane arterials connecting to regional destinations inside and outside of the City. These include:
 - Palmdale Boulevard, west of Division Street
 - 10th Street West, north of Palmdale Boulevard
- **Major Arterials** are six lane arterials connecting major destinations, and include:
 - Palmdale Boulevard, east of Division Street
 - West Avenue Q, between Palmdale Boulevard and 5th Street West, and east of SR-14
 - Technology Drive/Avenue P-8
 - Rancho Vista Boulevard/Avenue P
 - 5th Street West, between Technology Drive and Palmdale Boulevard
 - Division Street
 - Sierra Highway
 - 10th Street East
- **Secondary Arterials** are four lane arterials (with or without median), and include:
 - Trade Center Drive between Technology Drive and Palmdale Boulevard
 - Avenue Q between 5th Street West and SR-14
 - 5th Street East
 - 8th Street East, north of Avenue Q

Other street classifications include:

- Residential Entrance Streets: Streets connecting arterials to schools and multiple family residential areas.
- Local Interior Streets
- Industrial and Commercial Streets
- Alleys
- Local Commercial/Industrial Streets

Figure 3-1 maps the existing roadway network, by classification, in the Study Area.

STREET DESIGN STANDARDS

Figure 3-2 shows current design standards for each street classification contained in the City of Palmdale General Plan. These Standard Street Sections include recommended right-of-way widths, curb-to-curb widths, and median widths. These existing standards represent maximum requirements.

The Palmdale Trade and Commerce Center Specific Plan, last amended in 2006, depicts slight modifications to these existing General Plan standards for the Specific Plan area. These modifications include:

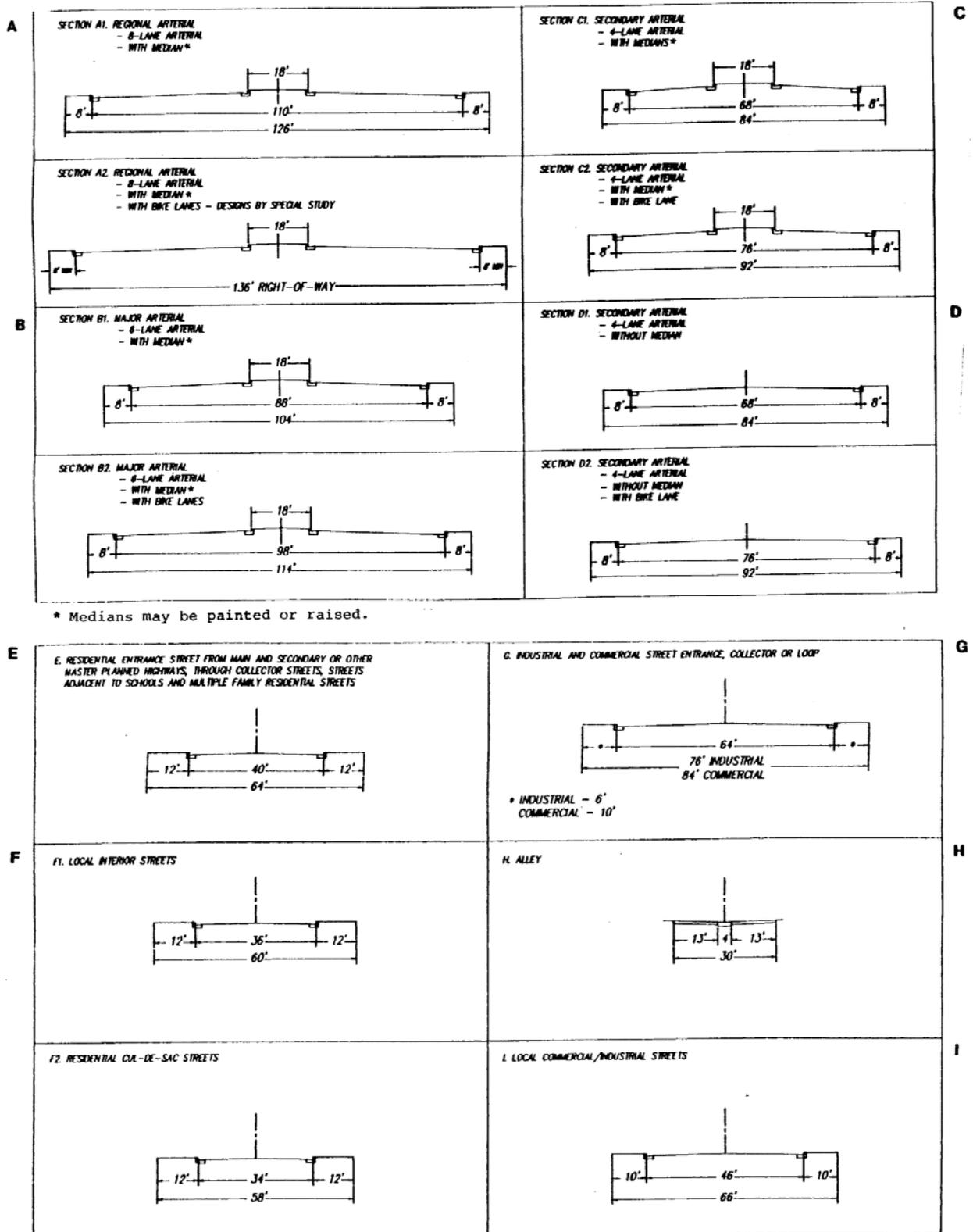
- Secondary arterials and collectors (general): 84' right-of-way maintained with adjustments for wider sidewalks (from 8' to 10') and narrower roadway (from 68' to 64').
- 5th Street West (from Avenue P-8 to Palmdale Boulevard): 100' right-of-way, expanded from the 84' right-of-way shown in the General Plan.
- Division Street (new): 104' right-of-way, as shown in Section B1 in Figure 3-2.
- Division Street (proposed existing): 64' right-of-way, as shown in Section E in Figure 3-2.

PROPOSED ROADWAYS

The largest planned roadway project in the Study Area is the High Desert Corridor, which could include a new expressway or freeway link between SR-14 in Palmdale and SR-18 in San Bernardino County. Current proposals under study include options for a controlled access freeway and rail link. In the Study Area itself, the future freeway option would connect to SR-14, with the proposed high speed rail link connecting to the existing railroad right-of-way at a location north of the Palmdale Transportation Center, likely between Technology Drive and East Avenue P. This conceptual alignment is shown in Figure 3-1.

In addition, a new alignment for Division Street is planned. This new alignment would be a major arterial and would run just west of the existing Division Street, as shown in Figure 3-1. The existing two-lane Division Street would remain in place, as a frontage road to the new arterial, and would continue to provide access to the residences along it.

Figure 3-2: General Plan Standard Street Sections



3.2 Transit

Existing transit service in the Study Area is comprised of a local bus network, commuter bus lines, and commuter rail service. Transit improvement/expansion plans include new high speed rail service to points throughout California and to Las Vegas. Service specifics of both existing and planned transit lines are detailed in the following sections.

LOCAL TRANSIT NETWORK

The Antelope Valley Transit Authority (AVTA) is the main bus transit service provider in Palmdale. Six bus lines serve the Study Area, as shown in Figure 3-3. These lines include:

- **Route 1:** Route 1 is AVTA's highest-ridership route and connects Lancaster and Palmdale via 10th Street West and Avenue S. In Palmdale, Route 1 currently operates on Avenue S, which has few major destinations. This route is proposed for increased service and possible future Bus Rapid Transit service.
- **Route 2:** Provides east-west service within Palmdale, connecting the Antelope Valley Mall to 47th Street East and Avenue S (Walmart). The route serves Palmdale Boulevard and the Palmdale Regional Medical Center. Route 2 has the third-highest ridership of all AVTA routes.
- **Route 3:** Connects the Antelope Valley Mall to 47th Street East and Avenue S via Avenue R, 10th Street East, and Avenue P. The route serves Palmdale High School and the Palmdale Metrolink Station.
- **Route 7:** Operates through Quartz Hill and northwest Lancaster between the Palmdale Transportation Center and Lancaster Metrolink Station. The route currently serves the High Desert Hospital, which is relocating to central Lancaster, and Quartz Hill High School.
- **Route 10:** Provides limited-stop service along the 10th Street West Corridor, which is also served by Route 1, as well as direct service to the University of Antelope Valley and AVTA's offices. In Palmdale, Route 10 operates on Palmdale Boulevard. This is the least productive route in the AVTA system and will likely be consolidated with future increased service on Route 1.
- **Lake LA Express - Palmdale:** Provides hourly service between Lake LA and the Palmdale Transportation Center primarily via East Palmdale Boulevard and East Avenue Q. Another Lake LA route serves Lake LA and Lancaster.

All routes, except Route 2, stop at the Palmdale Transportation Center. Table 3-1 shows route frequency, service hours, and ridership information for AVTA routes servicing the Study Area.

Table 3-1: AVTA Route Frequency and Service Hours

AVTA Route	Peak Headway (min)	Weekday Service Hours	Weekend Service Hours	Weekday Boardings	Boardings per Service Hour
1	30	5:40 AM - 11:45 PM	6:45 AM - 8:05 PM	2,839	40.6
2	30	6:15 AM – 11:55 PM	7:45 AM – 7:15 PM	1,731	33.0
3	30	6:05 AM – 11:05 PM	7:25 AM – 7:35 PM	1,097	21.9
7	75	5:55 AM - 8:50 PM	7:05 AM - 7:35 PM	652	21.5
10	60	6:50 AM - 7:26 PM (full line)	7:30 PM - 10:23 PM (shuttle)	174	10.1
Lake LA Express	60	6:30 AM – 7:20 PM	8:30 AM – 7:40 PM	176	16.5

Source: AVTA, 2014.

Additional bus service in the Study Area includes:

- AVTA express commuter services (Routes 785, 786, and 787) connecting the Palmdale Transportation Center to Downtown Los Angeles, Century City, and the West San Fernando Valley.
- North County TRANSPORTER (operated by AVTA) serving the Palmdale Transportation Center and the Newhall Metrolink station in Santa Clarita, with stops at Vincent Grade/Acton Station northbound by request only; this service operates several trips midday when Metrolink service to the Antelope Valley does not run.
- Amtrak ThruWay Bus Route 12 (Bakersfield – Victorville) with twice daily northbound and southbound service from the Palmdale Transportation Center.
- Greyhound bus service.

REGIONAL AND HIGH-SPEED RAIL

Rail transit to Palmdale is provided by Metrolink, the commuter rail system servicing the greater Los Angeles metropolitan area. The Palmdale Metrolink station, shown on the chapter title page, is part of the Palmdale Transportation Center, which is also served by AVTA buses.

Palmdale Metrolink Station

Palmdale is the second-to-last station along the Antelope Valley line, with service from L.A. Union Station to Lancaster. Some weekday express service is offered on the line, including four inbound AM express runs and five outbound PM express runs. As shown in Table 3-2, there are 28 weekday daily trains (14 inbound and 14 outbound) serving Palmdale, departing as early as 3:58 AM and arriving as late as 11:25 PM. Weekend service includes 12 daily trains (six inbound and six outbound) at varying hours. Special event service is also provided periodically, including service to baseball games and large concerts in downtown Los Angeles. On average, trains complete the Palmdale to L.A. Union Station journey in just less than two hours (local), with

express service making the trip in an hour and 35 minutes. Some runs are completed by Metrolink bus in lieu of Metrolink trains.

Table 3-2: Metrolink Route Frequency and Service Hours

<i>Route</i>	<i>Service Day</i>	<i>Daily Runs Servicing Lancaster</i>	<i>Service Hours</i>
Antelope Valley Line	Weekday	14 inbound, 14 outbound	3:58 AM - 11:25 PM
	Weekend	6 inbound, 6 outbound	6:25 AM - 11:00 PM

Daily Metrolink boardings at the Palmdale station averaged about 456 on weekdays in 2012, and 405 on weekdays in 2013. Ridership fluctuates depending on month of the year, though it has steadily decreased over the past two years, as shown in Table 3-3.

Currently, no high-speed rail service exists in California, but two separate proposed high-speed rail systems include a stop at the Palmdale station, as outlined in the following section.

Table 3-3: Metrolink Average Daily Weekday Boardings at PTC

	<i>2012</i>	<i>2013</i>	<i>2014</i>
January	438	402	347
February	443	443	373
March	465	457	384
April	500	422	372
May	470	422	384
June	466	426	365
July	456	420	372
August	427	391	361
September	437	386	359
October	459	360	356
November	465	373	389
December	450	357	320
Average	456	405	368

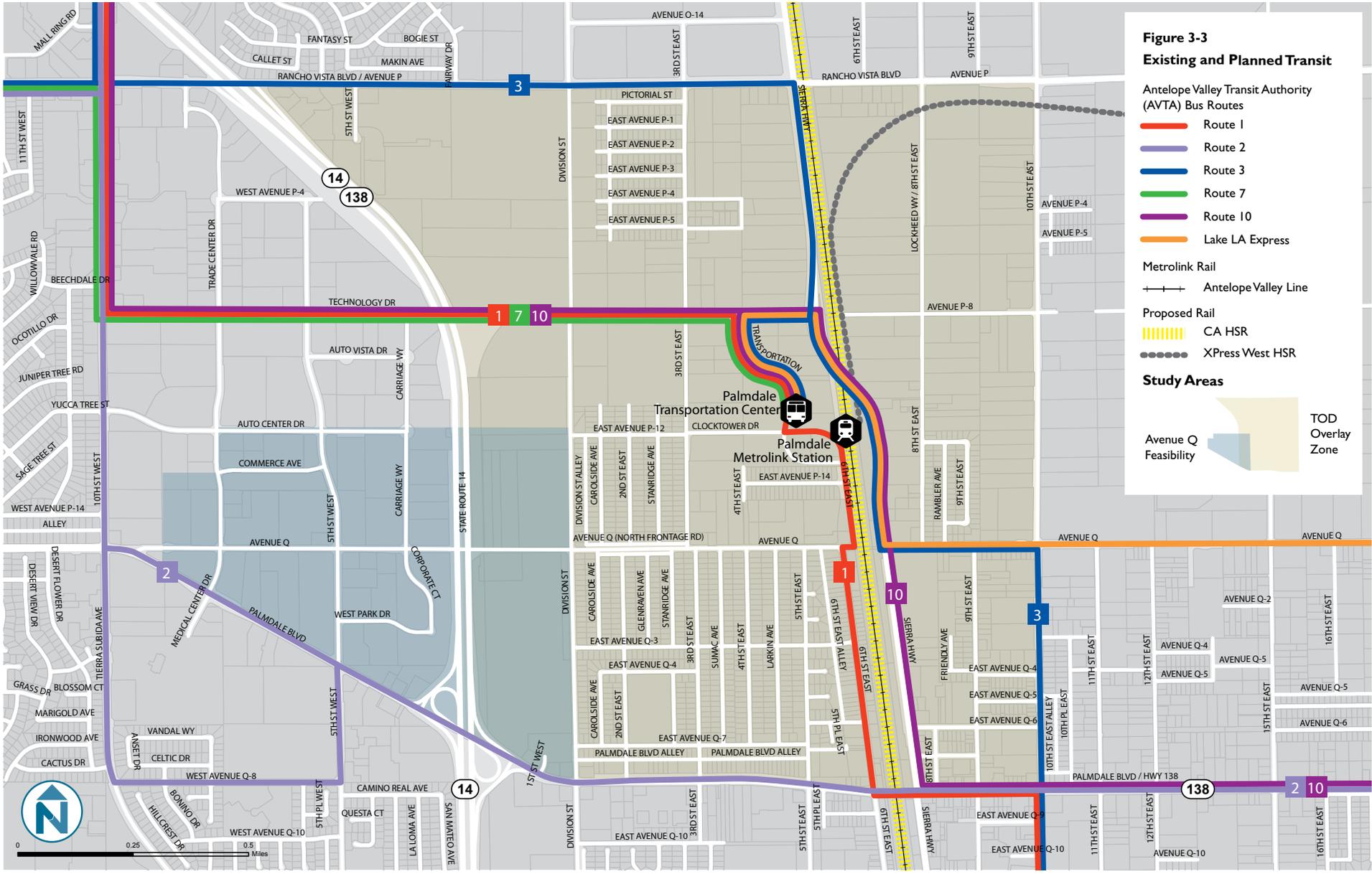
Source: Metrolink, 2014 and 2015 (<http://www.metrolinktrains.com/agency/page/title/facts>)

PLANNED TRANSIT IMPROVEMENTS

Planned transit improvements in the Study Area include the following:

- **AVTA:** The recently-completed draft AVTA Comprehensive Operation Analysis and Ten-Year Plan includes changes to various AVTA routes in the Study Area, including consolidation of Route 1 and Route 10, with increased service on a modified Route 1 alignment. The proposed Route 1 alignment would travel on Palmdale Boulevard instead of Avenue S in Palmdale, serving the Palmdale Transportation Center via 6th Street East. As a long term recommendation for further study, AVTA is considering Bus Rapid Transit (BRT) service along all or part of the proposed Route 1 alignment. The plan also recommends moving Route 3 to Avenue S, with Route 2 operating on Avenue R to 6th Street East, serving the Palmdale Regional Medical Center, and terminating at the Walmart/Sam's Club near the Antelope Valley Mall.
- **Metrolink:** The Antelope Valley Line Infrastructure Improvement Strategic Plan includes various projects and strategies to speed trips between Palmdale and L.A. Union Station with new tracks, grade-separated crossings, and new signaling systems proposed, which when implemented will allow Metrolink trains to reach speeds up to 110 miles per hour.
- **California High Speed Rail:** The California High Speed Rail system will connect Northern California with Southern California via true high speed rail capable of reaching speeds up to 220 miles per hour. While exact alignments have yet to be determined, in the Antelope Valley high speed rail will likely follow the Metrolink tracks and include a stop at or near the existing Palmdale Transportation Center. A proposal exists to move existing platforms south towards Palmdale Boulevard, though an exact station location has yet to be determined. Current plans include the Palmdale Station in the system's Initial Operating Section, slated to open in 2022 with service between Merced and the San Fernando Valley. The new station will be multimodal, with California and Xpress West High-Speed Rail trains (see next paragraph), Metrolink trains, AVTA bus service, and future high-capacity transit to the Palmdale Airport all stopping at the new station, allowing easy transfers between modes. The full San Francisco to Los Angeles line is planned to be in service by 2029, with eventual extensions planned to Sacramento and San Diego.
- **Xpress West High Speed Rail:** The proposed Xpress West High Speed Rail system would run from Las Vegas to Victorville with trains capable of traveling up to 150 miles per hour. As a part of the High Desert Corridor project, environmental work has begun to analyze a rail connection between Victorville and Palmdale to connect Xpress West to the statewide California High Speed Rail system. Xpress West would likely terminate at the Palmdale Transportation Center, where transfers from the California statewide system to Xpress West would occur, but could also potentially continue onwards, using the California High Speed Rail system's tracks, to additional California destinations.

Figure 3-3 maps existing and proposed transit services in the Study Area.



Palmdale TOD Overlay Zone
Existing Conditions and Site Analysis Report
April 2015



Palmdale Transportation Center



Palmdale Regional Airport

3.3 Airport

The Palmdale Regional Airport (PMD) is located to the northeast of the Study Area, accessible via Avenue P. Commercial operations at the airport began in 1971, but were discontinued in 1998. In 2007, public subsidies were provided to encourage airline service to the airport, attracting service to San Francisco from United Airlines. After the subsidies expired in 2008, however, service was again discontinued.

Now managed by the Palmdale Airport Authority, no existing commercial flights service the airport. The Federal Aviation Administration's (FAA) Los Angeles Air Route Traffic Control Center is next to the Airport, which controls traffic en route over southern and central California, southern Nevada, southwestern Utah, and western Arizona.

The City of Palmdale just recently signed a lease agreement with Los Angeles World Airports (LAWA) to transfer the airport building and related parking to the City of Palmdale. The airport building is currently vacant, as there are no commercial flights at this time.

3.4 Pedestrian Accessibility

Pedestrian facilities in the Study Area include sidewalks along some streets and separated bicycle/pedestrian paths. Bicycle and pedestrian pathways include:

- The Sierra Highway Bike Path: A Class I path along Sierra Highway beginning north of the Palmdale Transportation Center and connecting the area to Lancaster and other points to the north.
- A Class I path along the Metrolink rail line between Avenue Q and Avenue R.

While continuous sidewalks exist in some portions of the Study Area, many north-south residential streets lack contiguous sidewalks of any kind. Most notably, Division Street lacks sidewalks throughout the entirety of the Study Area. While some streets provide shade trees, many, including many major thoroughfares, do not. On many major streets, wide thoroughfares, which create long crossing distances for pedestrians, combine with high vehicle speeds, high traffic levels, and long distances between signalized crossings, creating a relatively hostile pedestrian environment.

Planned pedestrian facilities in the Study Area include a potential Class I path extension from the current terminus of the Metrolink path, across the tracks via an overcrossing, and connecting to Desert Sands Park via Avenue Q and 3rd Street East.



Many Study Area streets such as Division (left) and 2nd (right) lack contiguous sidewalks, and many lack shade.

3.5 Bike Network

The bike network of the Study Area is comprised of existing bike paths, bike lanes, and bike routes. Bicycle facilities are typically classified as Class I, Class II, or Class III facilities, as follows:

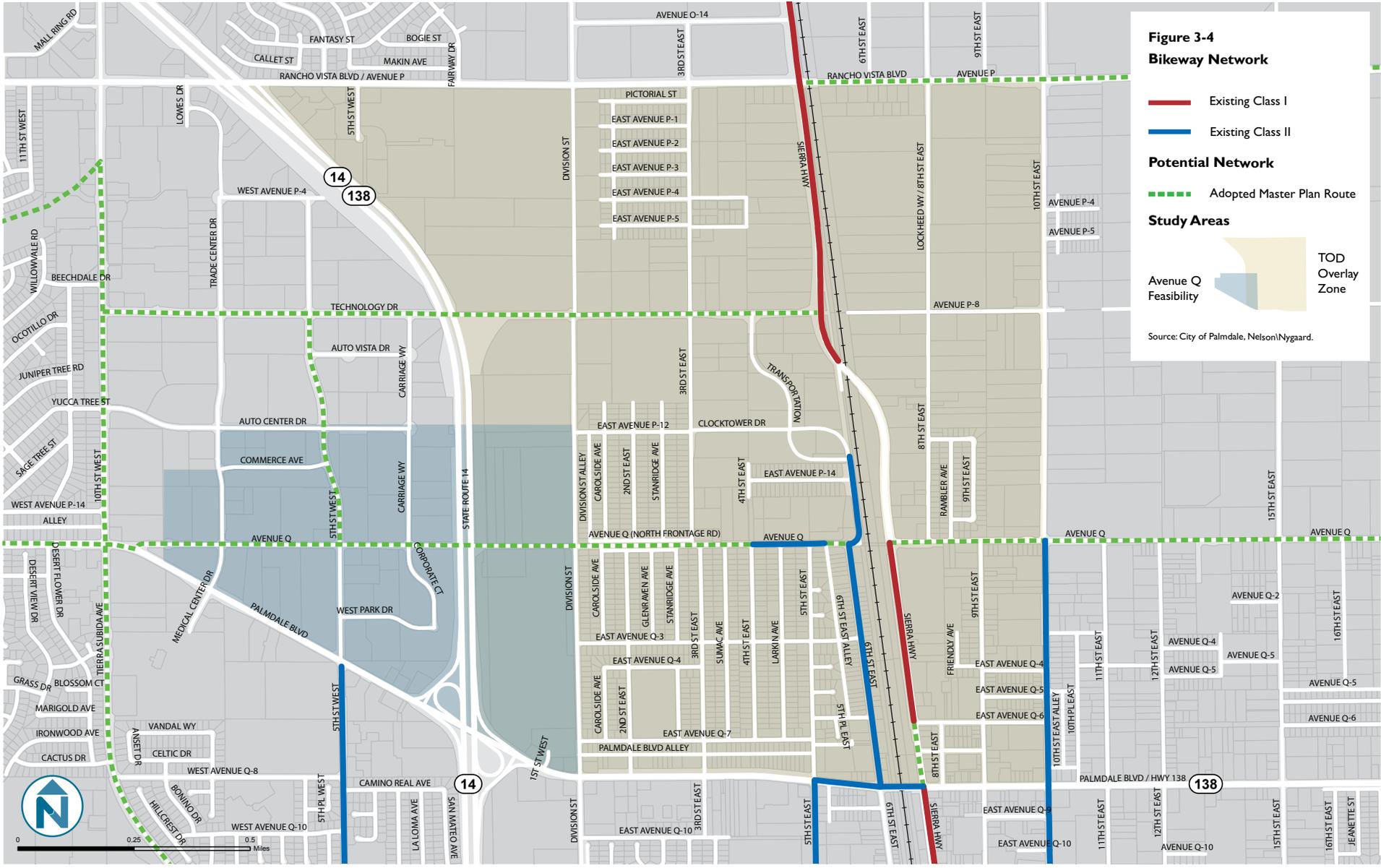
- Class I Bikeway – Bike paths within exclusive right-of-way, sometimes shared with pedestrians.
- Class II Bikeway – Bike lanes for bicycle use only that are striped within the paved area of roadways.
- Class III Bikeway – Bike routes are shared with motor vehicles on the street; Class III bikeways may also be defined by a wide curb lane and/or use of a shared use arrow stencil marking on the pavement, known as a “sharrow”.

As shown in Figure 3-4, there are several existing bicycle facilities within and immediately surrounding the Study Area. These include the following:

- The Sierra Highway Bike Path (pictured below): A Class I path along Sierra Highway beginning north of the Palmdale Transportation Center and connecting the area to Lancaster and other points to the north.
- A Class I path adjacent to Sierra Highway between Avenue Q and 300 feet south of Avenue Q-12.
- Class II lanes along portions of 5th Street West, 5th Street East, 6th Street East, 10th Street East, Avenue Q, and Palmdale Boulevard.

Planned facilities, as outlined in the City of Palmdale Bikeway and Multi-Purpose Trail Plan, include the following:

- Class II lanes along 5th Street West, East Palmdale Boulevard, and Technology Drive (Avenue P-8).
- Class III routes along Avenue Q.
- Additional potential new or expanded routes on 10th Street West, 5th Street West, Rancho Vista Boulevard, Sierra Highway, Technology Drive, and Avenue Q.



**Figure 3-4
Bikeway Network**

- Existing Class I
- Existing Class II
- Potential Network**
- - - Adopted Master Plan Route
- Study Areas**
- Avenue Q Feasibility
- TOD Overlay Zone

Source: City of Palmdale, NelsonNygaard.



Palmdale TOD Overlay Zone
Existing Conditions and Site Analysis Report
April 2015

This page intentionally left blank.

Planned improvements would connect the Study Area to the existing bicycle network, facilitating trips to/from the Palmdale Transportation Center and between various other activity centers such as Desert Sands Park, employment centers west of SR-14, and retail/employment centers along Palmdale Boulevard. Figure 3-4 maps both existing and planned bicycle facilities in the Study Area and its vicinity.



The Sierra Highway Bike Path

Source: Flickr user craigdietrich (Creative Commons)

It should be noted that some existing bicycle facilities are on relatively wide, high-traffic, high-speed arterials such as Sierra Highway. Most bicyclists feel safer bicycling along Class I pathways that are completely separated from the roadway, on protected bicycle lanes (a.k.a cycletracks), or along bicycle lanes and routes provided on low traffic, low speed streets. This is particularly true for novice riders, as well as vulnerable populations such as children and the elderly. Some existing and potential facilities (including the Sierra Highway Bike Path, new Class I bicycle paths along Avenue Q and 3rd Street East, and Class III bicycle routes along various Study Area streets) will provide this type of bicycle experience while improving connection to the PTC. However, other planned facilities (such as Class II lanes along Palmdale Boulevard) will provide a less comfortable ride if existing street dimensions and speeds are maintained.

Currently, the City of Palmdale Zoning Code requires the provision of bicycle parking within any new non-residential development containing 20 or more automobile parking spaces at a rate of two bicycle rack spaces for the first 50 car parking spaces, and one additional bicycle space for each additional 50 parking spaces. The 2013 California Green Building Standards Code establishes short-term (non-residential) bicycle parking requirements as 5 percent of new visitor motorized vehicle parking spaces being added, with a minimum of one two-bike capacity rack.¹

¹ California Building Standards Commission. 2013 *California Green Building Standards Code (CALGreen)* Section 5.106.4.1.1. Sacramento, 2013.

3.6 Travel Patterns and Traffic Conditions

TRAVEL PATTERNS AND MODE SPLIT

The U.S. Census Bureau’s American Community Survey (ACS), which asks Americans about their journey to work, provides the best available data on travel choices by residents of the Study Area. According to ACS estimates, overall, about 70 percent of Study Area residents commute to work by driving alone, while 16 percent commute via a carpool of two or more persons. Transit represents the next most prevalent mode, with 9 percent of Study Area residents taking some form of public transportation to work. Approximately 2 percent of the Study Area population work at home, with another 2 percent walking to work. Estimates indicate that no Study Area residents bike to work, likely a result of jobs-housing location, street design, and the lack of alternative transportation infrastructure and amenities.

The Study Area contains approximately 1,600 employed residents, 1,120 of whom drive alone to work. Of these residents, 16.3 percent carpool and 9 percent commute by bus or Metrorail. Nearly equal numbers of people commute by walking and work from home (about 30 each), while 13 people commute by other means. Table 3-4 shows journey to work travel mode splits for the Study Area.

Table 3-4: Travel Mode Split (Journey to Work)

	<i>Drove Alone</i>	<i>Carpooled</i>	<i>Public Transportation</i>	<i>Bicycle</i>	<i>Walked</i>	<i>Other</i>	<i>Worked at Home</i>
Study Area	70.1%	16.3%	9.0%	0.0%	1.9%	0.8%	2.0%

Source: U.S. Census Bureau, 2008-2012 American Community Survey

EXISTING TRAFFIC CONDITIONS

The most recent automobile traffic counts in the Study Area were conducted in 2014, 2012, and 2006, and include average daily traffic (ADT) volumes for the roadway system, level-of-service analysis for key intersections, and future forecasts of traffic conditions on the network. Level-of-service (LOS) analysis provides a letter-based grading system of intersection performance at the AM and PM peak hours of congestion, with LOS A signifying minimal delay for motor vehicle drivers and LOS F signifying considerable delay. Note that the LOS grading system only reflects traffic performance from the point of view of motor vehicle delay—in other words, an intersection with very few vehicles passing through can perform at LOS A (minimal automobile delays), but this does not mean the intersection necessarily supports the safety and mobility of all of its users or its surrounding land uses.

Table 3-5: Summary of Existing Intersection Vehicle Level-of-Service Analysis

#	Intersection	AM Peak Hour	PM Peak Hour
1	Sierra Hwy/Palmdale Blvd (SR-138)	C ³	C ³
2	SR-14 SB Off-Ramp/Palmdale Blvd (SR-138)	A ³	A ³
3	SR-14 NB Off-Ramp/Palmdale Blvd (SR-138)	A ³	A ³
4	Division St/Avenue Q	B ⁴	B ⁴
5	Division St/Palmdale Blvd (SR-138)	C ³	B ³
6	5 th St West/Palmdale Blvd (SR-138)	B ⁴	B ⁴
7	5 th St East/Palmdale Blvd (SR-138)	B ³	B ³
8	6 th St East/Palmdale Blvd (SR-138)	B ³	B ³
9	9 th St East/Palmdale Blvd (SR-138)	A ³	B ³
10	10 th St East/ Palmdale Blvd (SR-138)	B ³	B ³
11	11 th St East/ Palmdale Blvd (SR-138)	D ^{1,3}	F ^{1,3}
12	12 th St East/ Palmdale Blvd (SR-138)	C ³	E ^{1,3}
13	15 th St East/ Palmdale Blvd (SR-138)	C ³	E ^{1,3}

Note:

- 1 **(Bold)** Intersection LOS score is performing below standards set by the City of Palmdale's Circulation Element or another governing body
- 2 As of 2014
- 3 As of 2012
- 4 As of 2006

Source: Palmdale Housing Element Project Traffic Analysis, 2012; Palmdale Transit Village Final EIR, 2007

While not necessarily an immediate concern, intersections that are deficient according to policies set forth by the City's Circulation Element or another governing body would require mitigation. In 2012, the Study Area contained no deficient intersections, though there were three such intersections (11th Street East/Palmdale Boulevard, 12th Street East/Palmdale Boulevard, and 15th Street East/Palmdale Boulevard) beyond Study Area boundaries (see Table 3-5).

Average daily traffic volumes were measured in 2012 and available for select roadway segments in the Study Area. These ADT counts are depicted in Table 3-6 and Figure 3-5.

Palmdale TOD Overlay Zone
Existing Conditions and Site Analysis Report
April 2015

This page intentionally left blank.

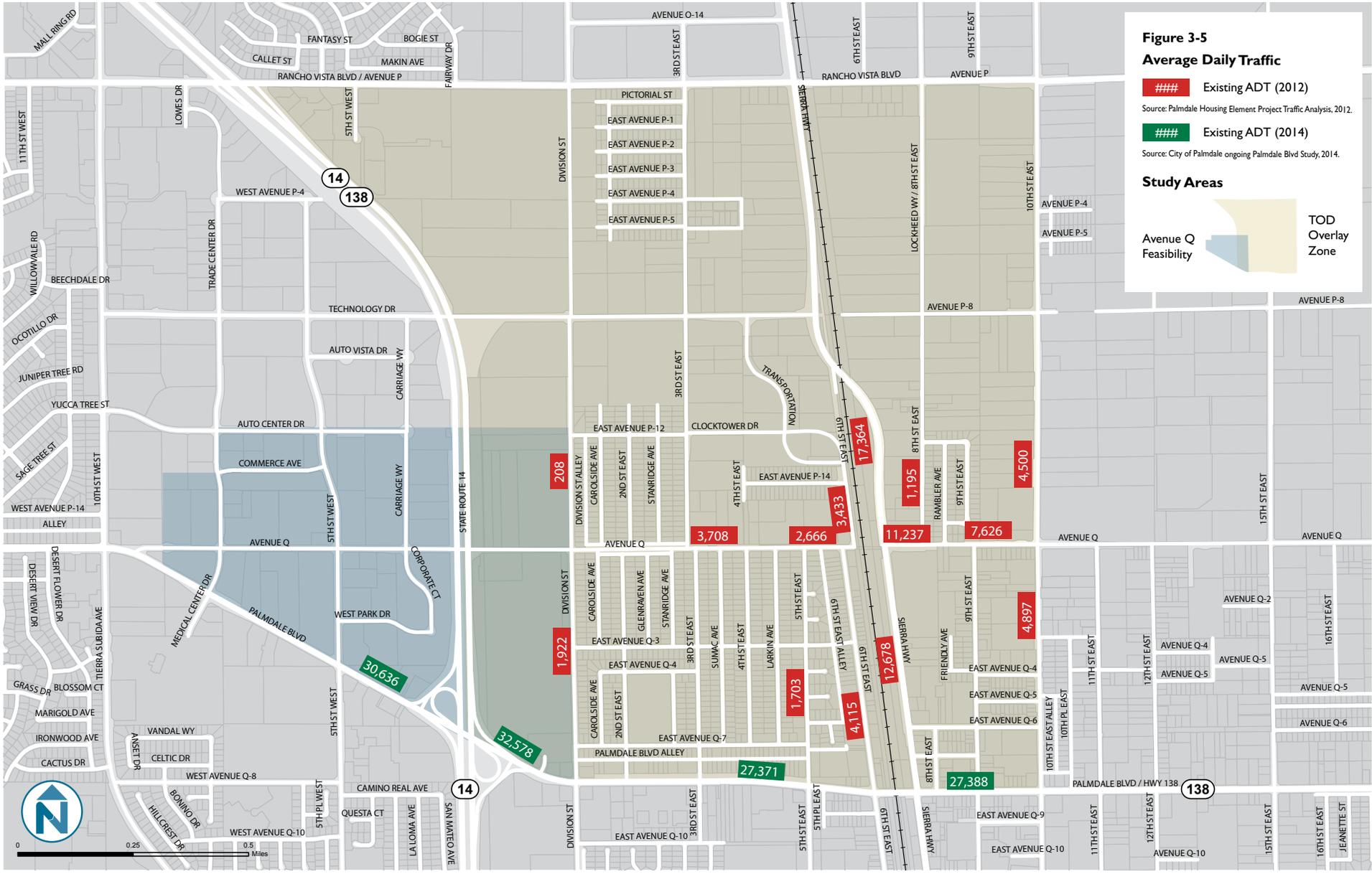


Table 3-6: Summary of 24-Hour Vehicle Traffic Volume and Roadway Segment LOS

#	Roadway Segment	LOS E Capacity	ADT	LOS
1	Division St n/o Ave Q	18,000	208	A
2	Division St btwn Ave Q and Palmdale Blvd	18,000	1,922	A
3	Division St btwn Palmdale Blvd and Ave R	18,000	8,198	A
4	5th St East btwn Ave Q and Palmdale Blvd	18,000	1,703	A
5	5th St East btwn Palmdale Blvd and Ave R	18,000	6,258	A
6	5th St East btwn Ave R and Ave R-8	18,000	5,190	A
7	6th St East n/o of Ave Q	18,000	3,433	A
8	6th St East btwn Ave Q and Palmdale Blvd	18,000	4,115	A
9	6th St East btwn Palmdale Blvd and Ave R	18,000	3,578	A
10	Sierra Hwy n/o Ave Q	36,000	17,364	A
11	Sierra Hwy btwn Ave Q and Palmdale Blvd	36,000	12,678	A
12	Sierra Hwy btwn Palmdale Blvd and Ave R	36,000	11,852	A
13	Sierra Hwy btwn Ave R and Ave R-8	36,000	7,947	A
14	8th St East n/o Ave Q	18,000	1,195	A
15	10th St East n/o Ave Q	18,000	4,500	A
16	10th St East btwn Ave Q and Palmdale Blvd	18,000	4,897	A
17	10th St East btwn Palmdale Blvd and Ave R	18,000	6,112	A
18	10th St East btwn Ave R and Ave R-8	18,000	5,779	A
19	15th St East n/o Ave R	18,000	2,802	A
20	15th St East btwn Ave Q and Palmdale Blvd	18,000	1,683	A
21	15th St East btwn Palmdale Blvd and Ave R	18,000	1,549	A
22	Ave Q btwn Division St and 5th St East	18,000	3,708	A
23	Ave Q btwn 5th St East and 6th St East	18,000	2,666	A
24	Ave Q btwn Sierra Hwy and 8th St East	18,000	11,237	B
25	Ave Q btwn 8th St East and 10th St East	18,000	7,626	A
26	Ave Q btwn 10th St East and 15th St East	18,000	8,619	A
27	Palmdale Blvd btwn Division St and 5th St East	54,000	33,064	B
28	Palmdale Blvd btwn 5th St East and 6th St East	54,000	27,389	A
29	Palmdale Blvd btwn 6th St East and 10th St East	36,000	25,257	B
30	Palmdale Blvd btwn 10th St East and 15th St East	36,000	26,264	C
31	Ave R btwn Division St and 5th St East	18,000	8,374	A
32	Ave R btwn 5th St East and 6th St East	18,000	12,867	C
33	Ave R btwn Sierra Hwy and 10th St East	36,000	17,455	A
34	Ave R btwn 10th St East and 15th St East	36,000	18,350	A

Source: Palmdale Housing Element Project Traffic Analysis, 2012

3.7 Circulation Opportunities and Constraints

There are several opportunities and constraints related to circulation in the Study Area. The opportunities include:

- **Proximity to existing rail service to the region's core, as well as planned high speed rail service to destinations within and outside of California.** Commuter rail service to downtown Los Angeles is a valuable asset; during peak times, the 95 minute Metrolink express trip to the region's core is time-competitive with driving, given levels of traffic congestion. Furthermore, current high speed rail plans would create a major high speed rail hub at or near the Palmdale Transportation Center, affording easy rail access to major employment and activity centers in Southern California, Northern California, the Central Valley, and (if the Xpress West High Speed Rail system were completed) to Nevada. The California High Speed Rail project would also notably improve rail travel times between Palmdale and downtown Los Angeles.
- **The Study Area is located near a major transfer point in the AVTA system, offering good connectivity to various bus routes serving the Antelope Valley.** While frequencies are relatively low, many existing routes converge in the Study Area, allowing for robust transfer activity.
- **Additional development proposed in and around the Study Area may warrant the study of increased bus service,** including increased headways, reroutings, and potentially the addition of new routes.
- **The TOD Overlay Zone planning process will ultimately propose or result in the construction of new streets and changes to the configuration of some existing streets.** This presents a good opportunity to design streets for all modes of travel, including bicycles, and connect a future network of bikeways to existing and proposed facilities in the vicinity of the Study Area. Particular importance should be placed on connections to and from the Palmdale Transportation Center and existing Class I paths, as Class I pathways, along with protected bicycle lanes (a.k.a. cycletracks), have been shown to be the bikeways that are most likely to encourage individuals to bicycle.
- **The proximity to important current and planned arterials,** such as Sierra Highway, Palmdale Boulevard, SR-14, and the planned High Desert Corridor indicate future development in the Study Area will enjoy easy vehicular access.
- **Planned bicycle improvements would close various gaps in the existing bicycle network,** facilitating trips to/from the Palmdale Transportation Center and between various other activity centers such as Desert Sands Park, R. Rex Parris High School, Palmdale City Library, employment centers west of SR-14, and retail/employment centers along Palmdale Boulevard.

The constraints include:

- **A lack of east-west railway crossings**, which inhibit easy travel to and from the Study Area and the PTC. While the PTC and Palmdale Metrolink station is located within close proximity to many parts of the Study Area, the rail tracks themselves hinder easy connectivity between the station and eastern neighborhoods, acting as a circulation barrier to automobiles, transit vehicles, and most acutely, to bicyclists and pedestrians.
- **Bus service frequency is relatively low** considering the area's proximity to activity centers and the general connectivity to other transit service.
- **Very wide intersections**, particularly at major streets such as Sierra Highway and Palmdale Boulevard, present long pedestrian crossing distances and allow vehicles to dominate the streetscape, posing barriers to creating a pedestrian-friendly, mixed use environment.
- **Long blocks that lack frequent, comfortable pedestrian crossings**, particularly along West Palmdale Boulevard, Sierra Highway, and Avenue Q.
- **A general lack of sidewalks and shade for pedestrians** in the Focus Area, including along East Avenue Q.
- **A lack of bicycle and pedestrian wayfinding**, particularly between the Focus Area and the Metrolink Station, as well as connecting bus service.
- **A general lack of bicycle facilities and amenities**, especially east-west connections through the Study Area and to the Palmdale Transportation Center, and bicycle parking facilities at the Metrolink station. The current network of bikeways includes large gaps, and the railway right of way heightens the need for east-west bicycle facilities. Most existing bicycle facilities exist on relatively wide, high-trafficked, high-speed arterials such as Sierra Highway, which many cyclists (particularly the young and the elderly) will find uncomfortable for cycling.
- **Lengthy commute times that are the highest in the Los Angeles area and among the highest in the country**, exacerbated by relatively higher fuel and insurance costs. This is impacted by the limited range of high quality multimodal transportation options currently available to the city's growing population. Palmdale commuters spend an average of 40.4 minutes traveling to work, more than 12 minutes longer than the Los Angeles regional average.²

Please note that the forthcoming traffic impact analysis for the study will provide updated traffic and circulation information.

² "Southern California's Worst Commutes: More Gas, Higher Insurance and Wasted Time," Nerdwallet Home / Vehicle Insurance, last modified September 30, 2014, accessed March 24, 2015, <http://www.nerdwallet.com/blog/insurance/2014/09/30/worst-commutes-los-angeles-insurance-gas-time/>.

4 Community Character and Livability



This section presents an analysis of the community character and general livability of the Study Area and Focus Area. Topics addressed include urban form, building type and scale, street and sidewalk character, and street trees, and landscape. Findings from a livability audit conducted by local high school youth, and from interviews with community stakeholders, are also presented.

4.1 Community Character

URBAN FORM

The Study Area primarily consists of low-intensity development and vacant land, with the most density occurring in the Focus Area. Figure 4-1 shows a community character diagram that illustrates the activity nodes, edges and gateways in the Study Area. Figure 4-2 illustrates the physical setting of the area, highlighting the breakdown of developed and undeveloped land.

Nodes

The Study Area boasts several activity nodes that serve as anchors for the community. These are major transportation, retail, and civic centers that function as key destinations for both Palmdale residents and regional visitors.

The Palmdale Transportation Center (PTC) anchors the Study Area, serving as a key transportation hub for local, commuter and regional bus and rail service. With the planned development of California High Speed Rail, this node will become of increasing import to the region. The Downtown Civic Core, located less than a mile south of the PTC just outside of the Study Area, is another significant activity node. City Hall, the Palmdale Public Library, and several other civic buildings are situated around Poncitlán Square, which hosts numerous events. A major retail center located at the northwest corner of the Study Area acts as another activity node. Anchored by the Antelope Valley Mall and several big box retail chains, this retail center draws visitors from across the region. The area is additionally bolstered by the Palmdale Regional Medical Center, located just west of the Study Area.

Edges and Barriers

Highways and railroad tracks serve as distinct boundaries that divide the Study Area and limit east-west movement across the site. SR-14 delineates the western edge of the Study Area, and there are four crossings where traffic can pass underneath at Rancho Vista Boulevard, Technology Drive, Avenue Q, and Palmdale Boulevard. However, the dark underpasses make for an unfriendly pedestrian experience below, causing SR-14 to function as a psychological barrier to areas to the west.

The Union Pacific and Metrolink railroad tracks act as a prominent dividing line between the east and west portions of the Study Area. This division is emphasized by the fact that there are few places to cross the tracks. Pedestrians and cyclists have only three locations within the Study Area where they can cross, situated at Rancho Vista Boulevard, Sierra Highway, and Palmdale Boulevard. Given that these crossings are, at times, located nearly a mile apart, this lack of permeability creates a barrier between the east and west sides of the tracks.

Gateways

Crossings of the railroad tracks and SR-14 are important gateways to different parts of the Study Area. When these crossings are at the locations of highway on- and off-ramps, they also become major entrances to the community from other parts of the city and further destinations.

Along Palmdale Boulevard, the underpass at SR-14 and the at-grade crossing at Sierra Highway and railroad tracks are both key gateways to the Study Area. The SR-14 underpass functions as an entry way to the Palmdale Boulevard retail corridor, while the crossing at the Sierra Highway acts as a gateway to the Downtown Civic Core.

Block and Lot Pattern

The Study Area features a variety of block and lot patterns ranging from fine-grain residential blocks to large-scale industrial and commercial superblocks. This allows for a wide range of development types and scales. Although blocks and lots vary in size, they are largely arranged in an orthogonal grid pattern, which differs from the more curvilinear streets of residential districts to the south and west.

In the Study Area, blocks and parcels located in the Focus Area are generally smaller than the superblocks and parcels located north and east of the Palmdale Transportation Center. Most residential blocks are approximately 220 to 270 feet wide and 800 to 1,000 feet long. Commercial blocks along the Palmdale Boulevard retail corridor vary in size and shape, ranging from small, nearly square blocks that are roughly 220 feet by 250 feet to long, narrow blocks that measure around 150 feet by 800 feet. Surrounding the Focus Area to the north and west are a number of superblocks that are largely industrial or vacant. These blocks generally measure about 1,200 feet by 2,500 feet. Figure 4-3 highlights the block and lot pattern of the Study Area.

BUILDING TYPE AND SCALE

Most development in the Study Area is non-contiguous and single-story, creating a low, spread-out character that is typical of communities in the High Desert. Vacant and underutilized parcels along key corridors such as Palmdale Boulevard, Avenue Q, and Sierra Highway, create gaps in development that detract from the public realm. Representative building types in the Study Area are shown in Figure 4-4.

Over three quarters of Palmdale's current housing stock has been built since the 1980s. In the Study Area, single-family residences and low-density multifamily housing (such as duplexes and triplexes) are largely one story with enclosed garages. Some newer developments, such as the Palmdale Transit Village, have taken on a more urban style with residential floors over ground floor parking and community spaces.

Commercial and industrial development in the Study Area tends to be set back from the street with parking lots and landscaping often placed along the street frontage. Key public facilities in the Study Area, including the Palmdale Transportation Center and the Sheriff Station, employ a Spanish Mediterranean architectural style that reflects Palmdale's Civic Core.

STREET AND SIDEWALK CHARACTER

Street Types

Streets in the Study Area are generally broad and open, with wide lanes and ample gutters. The railroad tracks bisect the site with only three points of connectivity, one at Palmdale Boulevard, a second where Sierra Highway crosses the tracks north of the Palmdale Transportation Center, and a third at Avenue P/Rancho Vista Boulevard. The four perimeter streets have different qualities. West Rancho Vista Boulevard, the northern boundary, takes various forms. It transitions from a six-lane road with landscaped medians, sidewalks, and street lights through a residential sector to a four-lane rural road with no sidewalks through vacant areas.



West Rancho Vista Boulevard

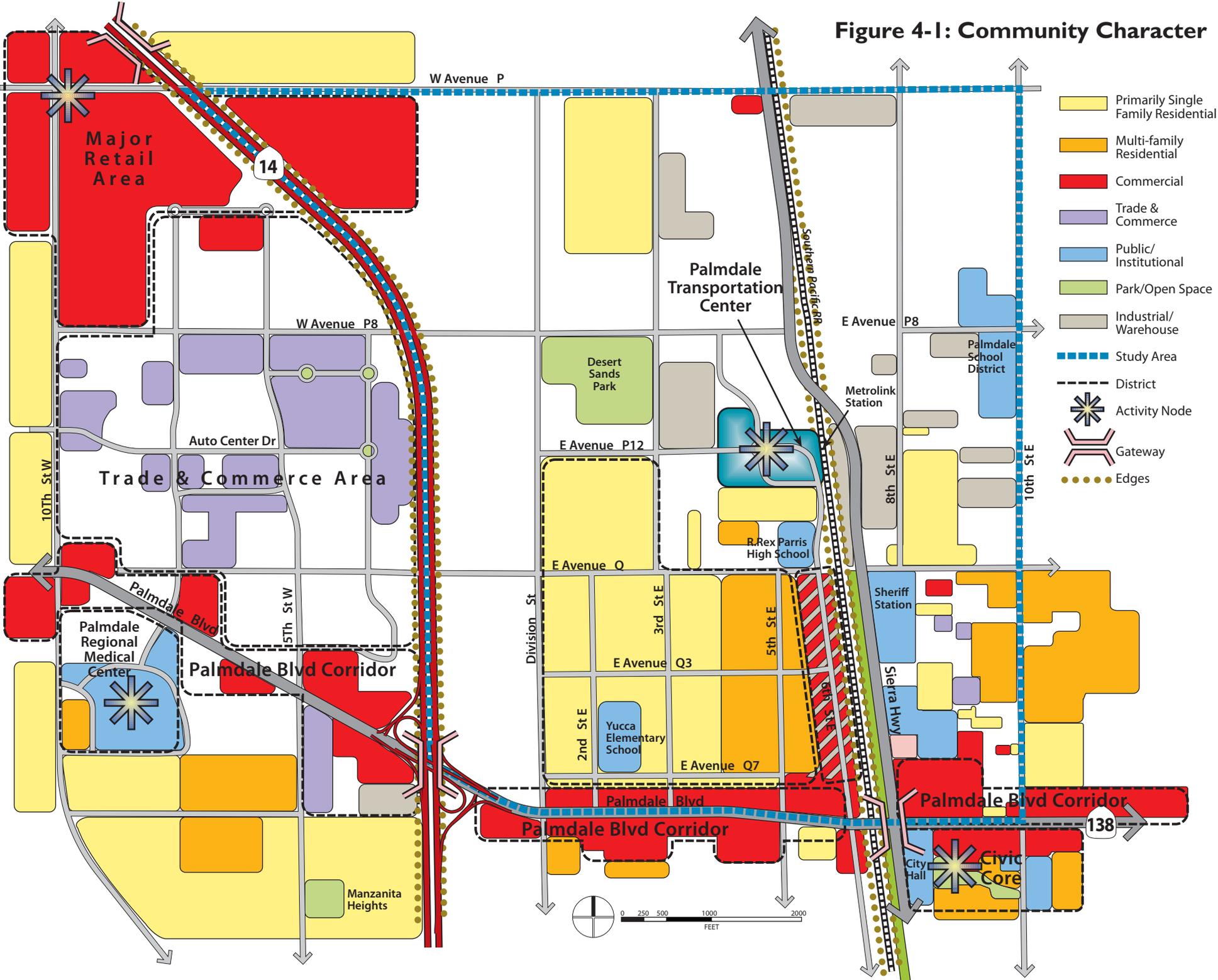
The edge conditions along 10th Street East also vary, from sections that lack curbs and sidewalks to sections with sidewalks and sporadic trees in a parkway that buffers the sidewalk from the curb. This is one of two places in the Study Area that has street trees in a parkway along the sidewalk.

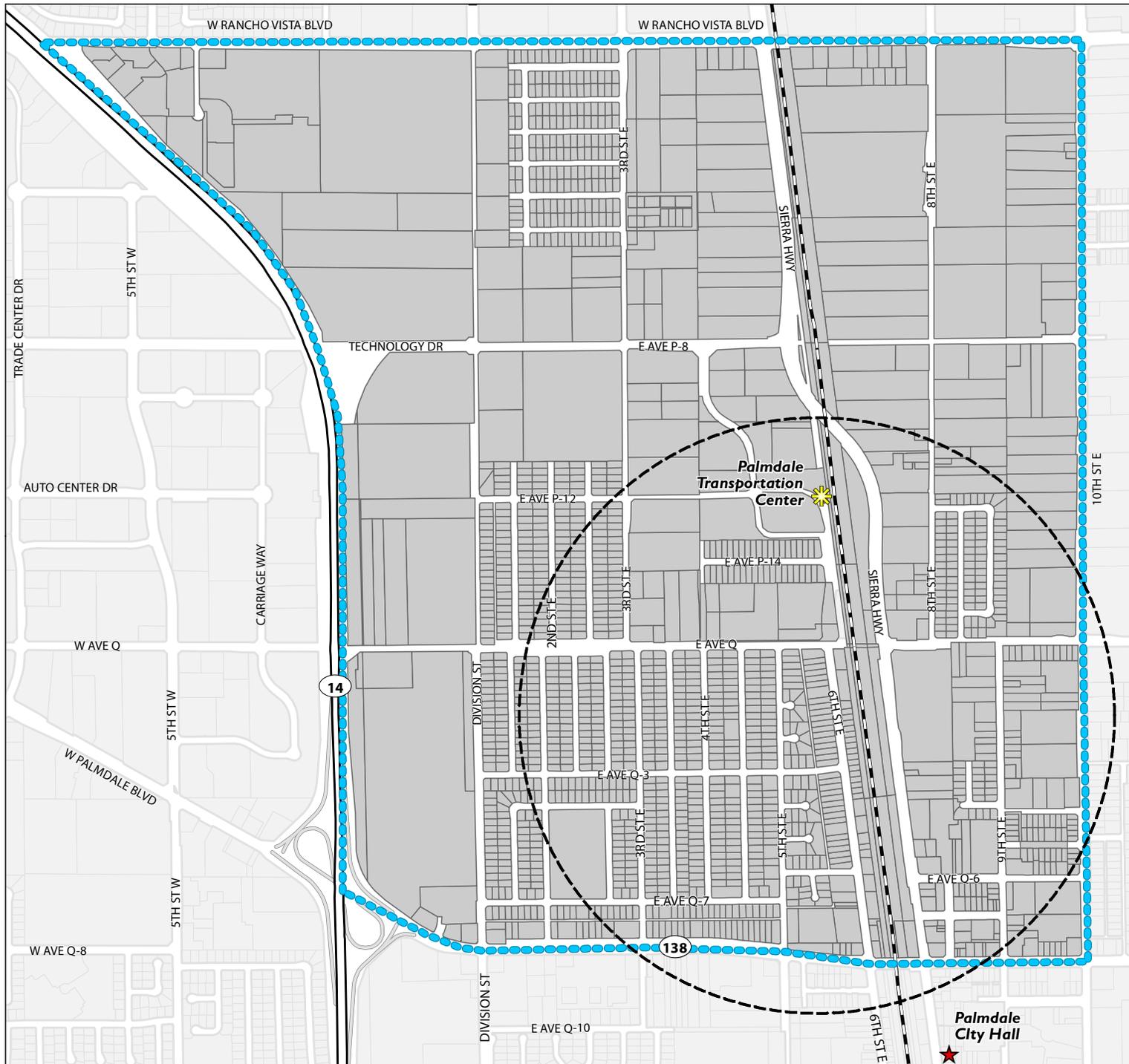


10th Street East

Palmdale Boulevard, the southern Study Area boundary, is a developed six-lane commercial strip with landscaped medians in some sections that buffer the boulevard from parallel service roads and residential properties. These medians have few trees, scattered boulders, and little thriving plant material. Trees were planted at very small sizes and do not provide significant shade or aesthetic value. This is unlikely to change, even at maturity, given the narrow width of the medians they are planted in.

Figure 4-I: Community Character





**Figure 4-3:
Block and Lot Pattern**

-  Focus Area
-  Study Area

Source: City of Palmdale, 2014

0 375 750 1,500



FEET

Figure 4-4: Representative Building Types

RESIDENTIAL



Single Family Detached House



Multifamily Townhomes



TOD Multifamily Apartments

COMMERCIAL



Shopping Center



Office Commercial



Service Commercial

INDUSTRIAL



Warehousing Complex



Manufacturing



Storage

PUBLIC FACILITIES



Palmdale Transportation Center



Sheriff Station



City Hall (adjacent to Study Area)



Palmdale Boulevard

The western limit of the Study Area is State Route (SR) 14. This road is open, stark, and contains few access points, effectively disconnecting the Study Area from development to the west.



State Route 14

Of the major and local streets within the Study Area that have a similar character, few have landscaped medians, street trees, or other enhancements that bring shade or celebrate the environment. In residential areas, streets lack continuity in their streetscape characteristics. Sidewalks are sometimes discontinuous, and there are few street trees and little consistency in terms of species or placement.



Portions of 2nd Street East (left) lack sidewalks. Larkin Avenue (right) has few street trees.

The Dr. Robert C. St. Clair Parkway along Sierra Highway is an exceptional asset for Palmdale. The City has invested money in both the development and continued maintenance of this almost 100-foot wide, mile long linear parkway. Residents and visitors can stroll on a meandering, paved sidewalk with benches and other amenities. The scale of the parkway matches the scale of the adjacent five-lane road, creating a pedestrian-scale corridor that balances the vehicular area.



Dr. Robert C. St. Clair Parkway

The landscaping at the Palmdale Transportation Center is also thoughtfully developed and carefully maintained. Trees were planted at small sizes to ameliorate the paved parking lots, with turf and planted separating beds. However, tree canopy coverage is minimal at present, as it is not fully grown, and plant material fails to reflect the climatic conditions of Palmdale.



Palmdale Transportation Center

The Focus Area exhibits in microcosm all of the diversity found in the Study Area. Some streets, like Sumac Street and 4th Street East, have discontinuous or no sidewalks, while others, like Avenue P-14, have continuous sidewalks and other infrastructure elements. Regardless of how one approaches the PTC, streets are fairly undifferentiated in scale, as all are wide, two-lane streets with a center median. However, there is a landscaping hierarchy as the streets that closely feed into the PTC are destination-oriented and have been developed with planting and trees. 6th Street East is the most direct route from Palmdale Boulevard to the Civic Center and all points south and east. However, it is a local street with light industrial and auto-related businesses that offer little appeal to pedestrian retail shoppers.



6th Street East

STREET TREES AND LANDSCAPE

In the Study Area, some areas currently have streetscape treatments. Treatments include landscaped medians or parkway medians, and streets with parkway trees. Examples of each of these streetscape types are listed below and shown in Figure 4-5.

Landscaped Medians/Parkway 'Median'

1. Palmdale Boulevard
2. Dr. Robert C. St. Clair Parkway: Sierra Highway, north of Palmdale Boulevard
3. The Palmdale Transportation Center
4. Avenue Q, east of Division Street
5. Rancho Vista Boulevard at SR-14

Street/Parkway Trees

1. Sierra Highway, south of Avenue Q (to match trees in St. Clair Parkway across the street)
2. 10th Street East, north of Palmdale Boulevard (1 block)
3. An occasional tree around Criss Air on 10th Street East

The St. Clair Parkway contains trees that are matched in species and size along the parkway to the trees along the other side of Sierra Highway. This design move sets Sierra Highway between two landscaped corridors, which makes for a pleasant journey. The work around the Transportation Hub is also well designed, but not well maintained. Plant material is not sustainable and does not reflect growing conditions in Palmdale.

The median treatment on Avenue Q at Division Street is less successful. Here, there are two medians that separate Avenue Q from service roads. The medians are paved and planted with various types of trees, some of which are missing or in poor condition. The median treatment on Rancho Vista Boulevard is also less successful. Trees were planted at small sizes, and have limited value for shade or visual appeal, while other plant material is unhealthy.

Streetscape improvements in other areas also appear to be uncoordinated and sparse. The most significant improvement areas fall within the Focus Area. These include parts of the St. Clair Parkway, the PTC, and street trees on Avenue Q at Division Street. Nevertheless, these improvements are disconnected and have limited ability to generate an overall character in the area.

Figure 4-5: Examples of Landscaped Medians and Street Trees

Landscaped Medians



Palmdale Boulevard



Palmdale Transportation Center



Avenue Q, east of Division Street



Rancho Vista Boulevard at SR-14

Street Trees



Sierra Highway, south of Avenue Q



10th Street East in front of Criss Air

4.2 Livability Audit

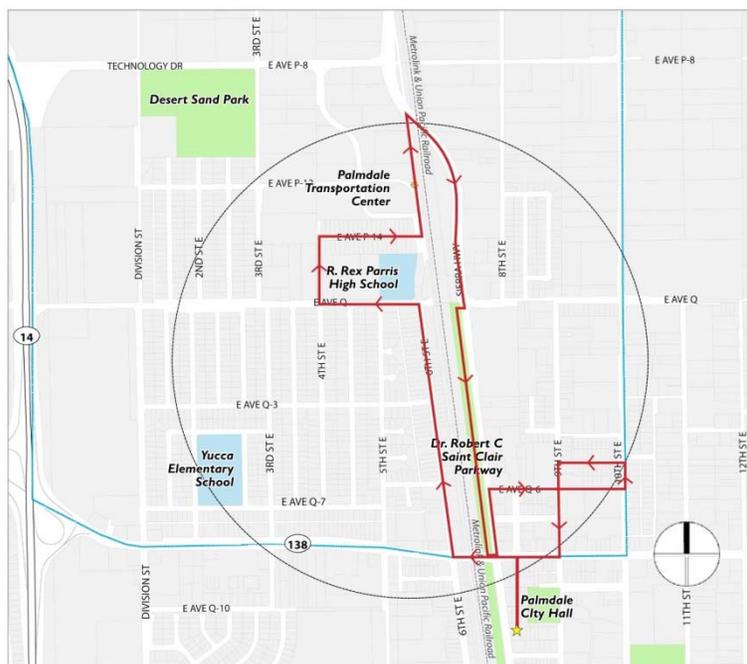
OVERVIEW

One of the primary goals of the TOD Overlay Zone project is to increase the livability of the area around the Palmdale Transportation Center. Livability is a measure of how safe, healthy, and comfortable a place feels. A place might be considered “livable” if people feel comfortable getting around and have easy access to the services they need and the places they enjoy. To promote livability around the PTC, the project aims to make it easier and more enjoyable for people to live, work, and get around the area.

In order to collect data on the existing conditions of livability in the project’s Focus Area, seven students and two teachers from the Antelope Valley YouthBuild, Advancing Communities Together (ACT) program conducted a Livability Audit. During the audit, students documented and categorized public transit routes, bike facilities, pedestrian facilities, recreation areas, community resources and services, wayfinding elements, and landmarks found in the Focus Area.

ROUTE

Data collection for the Livability Audit took place on Monday, October 6th, between 10:00 a.m. and 12:30 p.m. Participants followed the route shown on the map below. While not all streets and parcels in the Focus Area were examined, the chosen route included a representative sample of street types located in the Focus Area, including all significant streets, such as Palmdale Boulevard, Avenue Q, Sierra Highway and 10th Street East. The route largely focused on the center “spine” of the Focus Area formed by the Metrolink/Union Pacific Railroad tracks and Sierra Highway.



Livability Audit route

FINDINGS

The following data and observations were collected during the Livability Audit. These findings are in no way an exhaustive account of all resources, services, and amenities found in the Focus Area. However, they do provide a good snapshot of the current state of livability in each of the following categories.

Public Transportation

As shown in Figure 4-6, buses were observed running along key corridors, such as Palmdale Boulevard, Sierra Highway, 10th Street East, 6th Street East, and portions of East Avenue Q. Additionally, Metrolink trains were observed traveling to and from the PTC. However, it was noted that the relatively infrequent headways of these options would make public transit inconvenient as a primary transportation option. As one participant explained, “I usually have to be 30 minutes early or 30 minutes late due to the lack of transportation.”

Bike Infrastructure

Though there were some bicyclists spotted throughout the Focus Area, participants agreed that there is a lack of adequate bike infrastructure in the area. Few designated bike lanes were identified during the audit, though one notably traveled directly to the PTC by way of 6th Street East. Bike lanes were also observed to be discontinuous, often with faded paint lines and/or poor signage marking them. Bike racks were noticed at several key locations, such as the PTC, R. Rex Parris High School, the Sheriff’s Station, and the library. However, for bicyclists traveling to other destinations, safe and secure bike parking is lacking in the area. The locations of observed designated bike lanes, shared lanes, and bike racks are shown in Figure 4-6.

Pedestrian Facilities

In terms of walkability, a couple of places stood out to participants as providing a great pedestrian experience. First, the PTC offers a good pedestrian environment as a result of its landscaping, seating, and public restrooms. Second, many participants pointed to the Dr. Robert C. St. Clair Parkway as a particularly enjoyable pedestrian experience. The parkway is well shaded, landscaped, and completely separated from cars. It also provides seating options with several benches and picnic tables.

However, many other parts of the Focus Area were observed to be potentially unsafe for pedestrians due to a lack of infrastructure or safety concerns. As shown in Figure 4-7, discontinuous sidewalks and a lack of crosswalks make for difficult and unsafe pedestrian experiences in several locations. Additionally, participants identified the crossings of the railroad tracks at Sierra Highway and Palmdale Boulevard as particularly dangerous intersections for pedestrians. The intersection at Sierra Highway lacks both crosswalks and sidewalks, making it difficult and unsafe for pedestrians coming from the east side of Sierra Highway to reach the PTC.

Community Resources and Services

Participants identified a number of community resources and services, which are listed in Table 4-1 and shown in Figure 4-8. In addition to the PTC, the Sheriff’s Station, and public schools found in the Focus Area, South Valley WorkSource Center and Planned Parenthood offer

important services to Palmdale residents. Also, while not in the project Study Area, the Palmdale City Library is located in the Focus Area and was identified by multiple participants as an important community resource, as it is the only public library in the city.

Table 4-1: Community Resources and Services Identified by Students

#	Resource/Service	Location	Description
1	Palmdale Transportation Center	39000 Clock Tower Plaza Dr	Transit hub
2	R. Rex Harris High School	38801 Clock Tower Plaza Dr	Public high school
3	Palmdale Sheriff Station	750 E Avenue Q	Substation for LA County
4	Yucca Elementary School	38440 2 nd St E	Public elementary school
5	Palmdale Dream Center	385185 5 th St E	Transitional housing for homeless young adults
6	South Valley WorkSource Center	38510 Sierra Hwy	Assistance for job seekers
7	Planned Parenthood	553 E Palmdale Blvd #533	Sexual and reproductive health services
8	Palmdale City Library	700 E Palmdale Blvd	Public library

Recreation Areas

Within the Focus Area, the Dr. Robert C. St. Clair Parkway and the Hammack Activity Center were noted as the primary opportunities for recreation. As discussed earlier, participants viewed the parkway as a great addition to the city. Several participants expressed a desire for it to be extended and to include additional amenities, such as water fountains. On the other hand, while the Hammack Activity Center provides recreation opportunities, its run down appearance makes it look somewhat abandoned. Many participants said they did not realize that the building was still in use and feared that residents would not take advantage of it due to a lack of signage.

In addition to these recreation opportunities, participants observed a private gymnastics studio in close proximity to the Hammack Activity Center and acknowledged Desert Sands Park, located just outside the Focus Area. A desire for more recreation areas was expressed, especially ones that would accommodate people of all ages. As one participant pointed out, “More recreational places will help our youth as well as our elderly.”

Recreation areas observed during the Livability Audit are listed in Table 4-2 and shown in Figure 4-8.

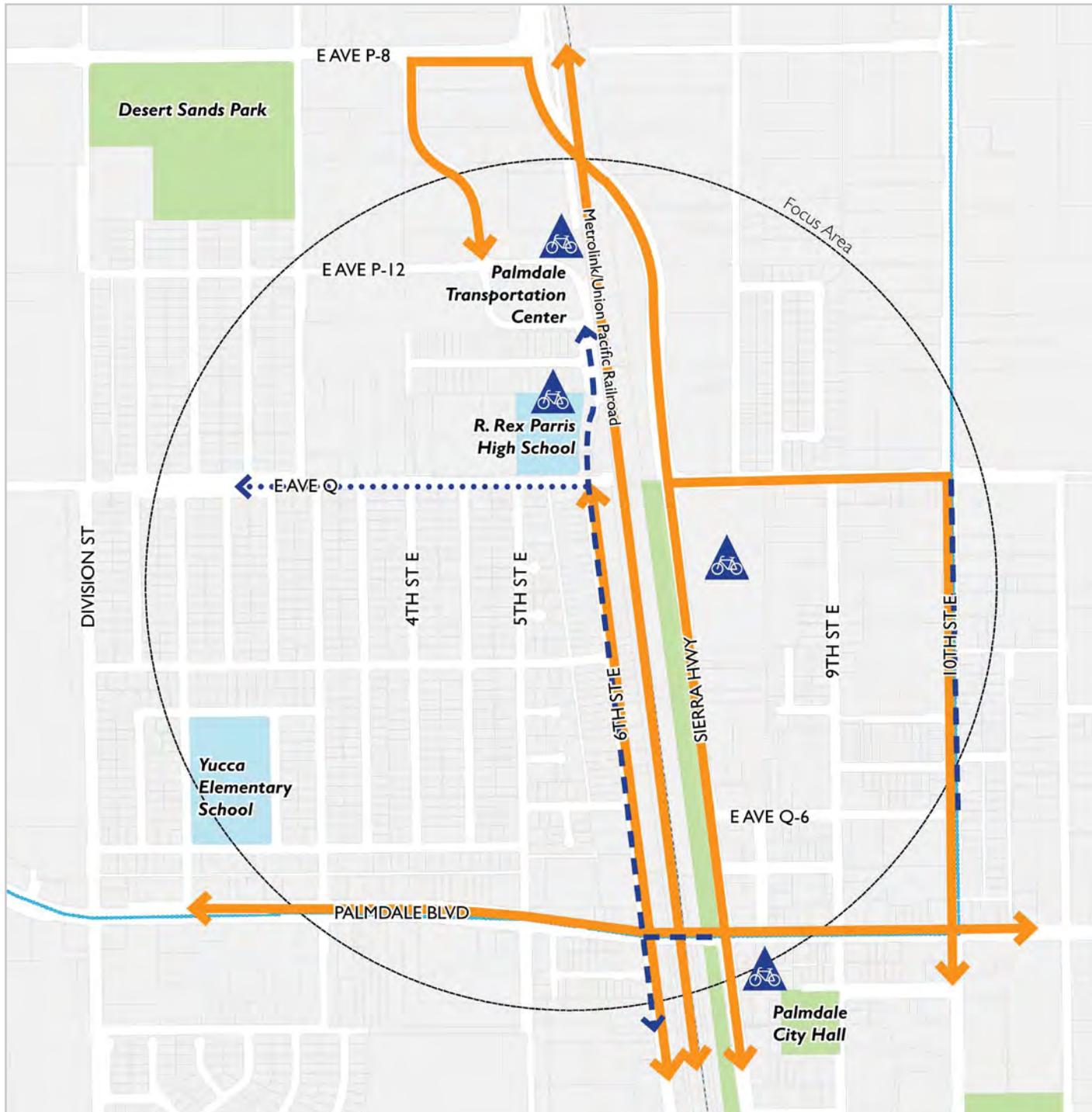
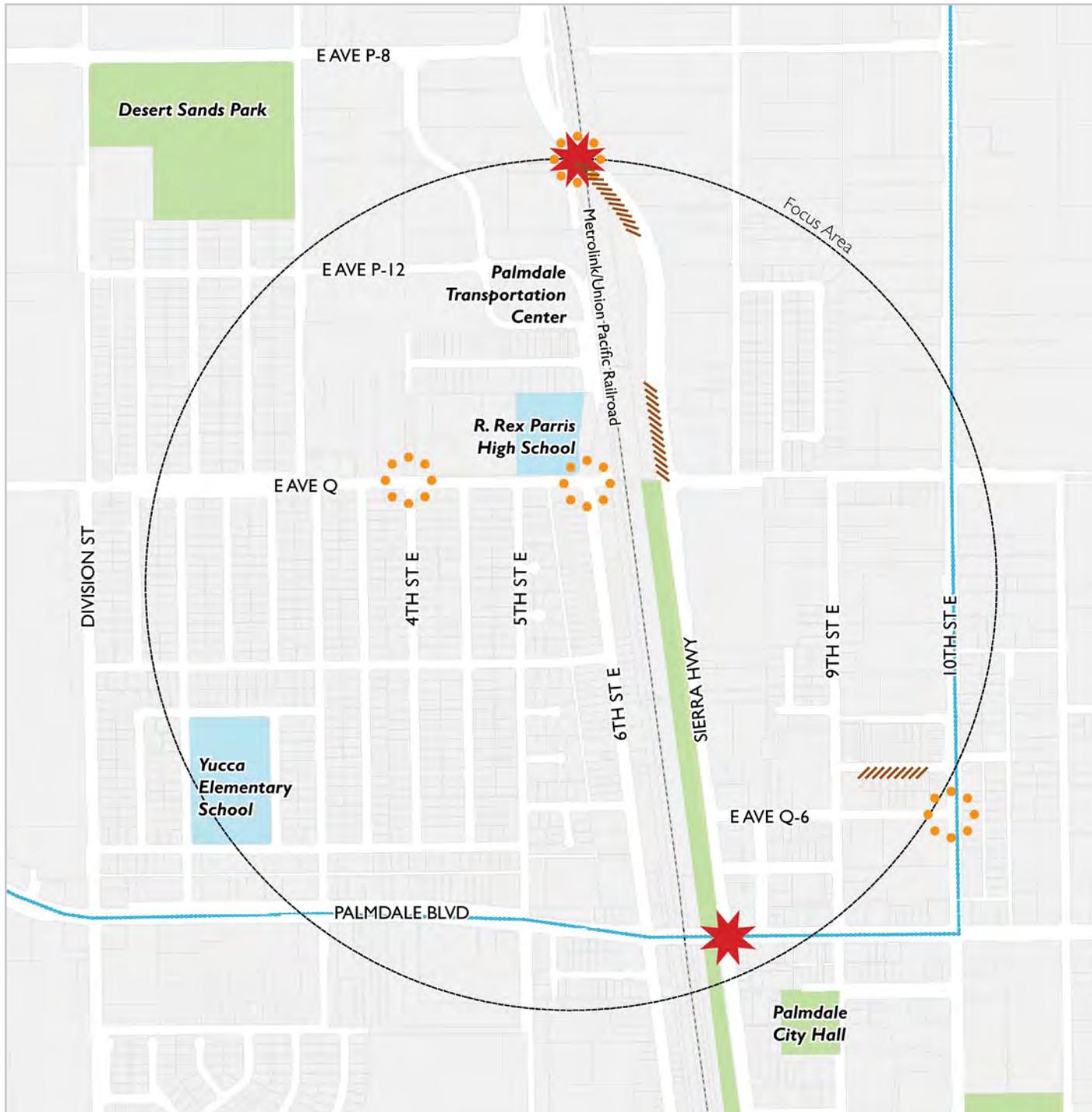


Figure 4-6:
Observed Public Transit and Bike Infrastructure

-  Public transit route
-  Designated bike lane (*bikes only*)
-  Shared lane (*bikes and cars together*)
-  Bike rack



**Figure 4-7:
Observed Pedestrian Hindrances**

-  Discontinuous sidewalk
-  Crosswalks needed
-  Intersection perceived as unsafe for pedestrians

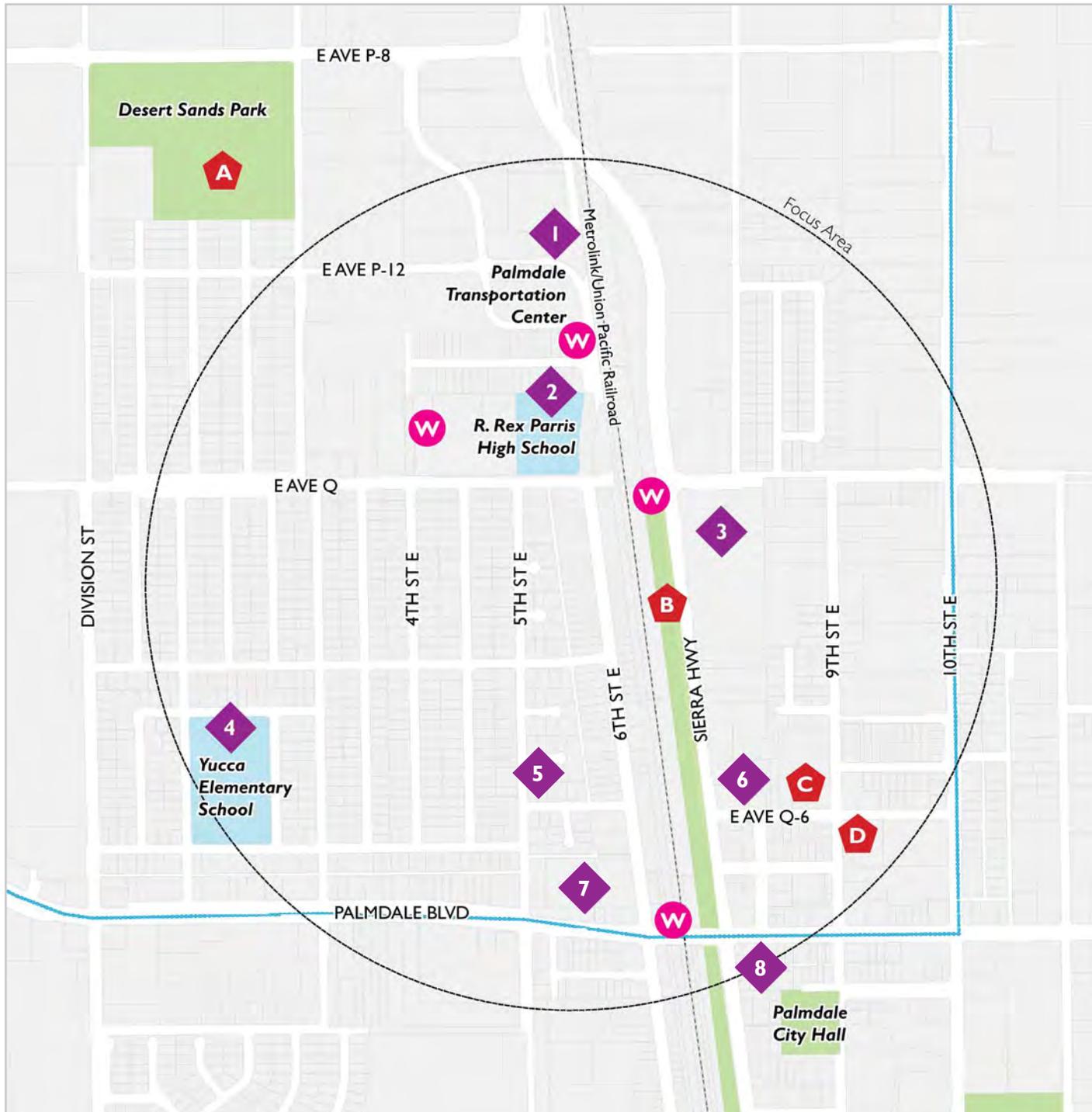


Figure 4-8:
Observed Community Resources,
Services, Recreation Areas and
Wayfinding Elements

-  Resource or service
-  Recreation area
-  Wayfinding element

This page intentionally left blank.

Table 4-2: Recreation Areas

<i>Recreation Area</i>	<i>Location</i>	<i>Description</i>
A Desert Sands Park	39000 Clock Tower Plaza Dr	Public park with picnic facilities, sports fields and a playground
B Dr Robert C St Clair Parkway	Sierra Highway, between E Avenue Q and Palmdale Blvd	Bike/pedestrian greenway
C Hammack Activity Center	815 E Avenue Q-6	Recreation center that houses the AV Boys and Girls Club
D AV Twisters Gymnastics Academy	902 E Avenue Q-6	Private gymnastics studio

Wayfinding

In general, participants found signage and wayfinding elements in the Focus Area to be lacking. Although the orthogonal street grid pattern helps with orientation and navigation, participants observed few signs that directed people where to go. Beyond the signage at the entrance to the PTC, only one additional sign indicating its location was spotted during the audit. Despite its prime location on Palmdale Boulevard near the intersection of Sierra Highway, this sign was small, and many participants said they had never noticed it before. The only other observed wayfinding elements were the signage marking the start of the Dr. Robert C St Clair Parkway and a wayfinding map for a new multifamily residential complex located on 4th Street East. The locations of these wayfinding elements are shown in Figure 4-7.

Landmarks

The PTC and library were both identified as potential landmarks located in the Focus Area. However, it was noted that the entrances of both places were not easily visible from major streets. Participants expressed that the Focus Area lacks a recognizable and visible landmark that “makes Palmdale stand out.”

4.3 Stakeholder Interviews

As part of the community outreach effort for the TOD Overlay Zone project, the Planning team interviewed 19 stakeholders on October 6, 2014. The interviews were done in groups of one to five. One hour was allotted for each interview session. Stakeholders included local business owners; property owners; real estate brokers; representatives of community organizations and advocacy groups; representatives from City agencies; and political representatives.

The interviewers had a set of questions to spur conversation, including:

- What do you think are the greatest challenges facing Palmdale today? What do you feel will be the key challenges the City will face in the next 10 to 20 years?
- What aspects of Palmdale do you like most? What do you like about living, working, or otherwise being involved here? What are the community assets that should be built on?

- What, if anything, would you like to see change about development patterns in Palmdale?
- The plans will also look to create a circulation system that supports travel by car as well as by bike, bus, and on foot. What do you think are the big-picture circulation issues in Palmdale?
- Are there any other issues or concerns I should have asked about?

KEY THEMES

Several themes emerged that help to guide the planning efforts. Stakeholders supported the City's goals of bringing about new, higher-intensity, and mixed-use development associated with a future High Speed Rail station, and they felt the larger community would also be supportive if the City reached out to inform and inspire. People spoke of the potential for upscale multifamily housing, entertainment uses, and neighborhood gathering places to find a foothold in Palmdale, and make the city a better place to live. The Palmdale TOD Study Area was seen as being a challenging environment for development, with a population in need of better sidewalks, parks, and public safety. Following is a list of major themes heard during the stakeholder interviews. A comprehensive list of the comments received, organized by topic, follows.

1. Transit-oriented development could make Palmdale attractive to young, well-employed residents, and stimulate economic development while improving quality of life in the community.
2. The Station Area itself could feature the highest scale of development, but the TOD Overlay Study Area presents a challenging existing physical and social environment.
3. Palmdale lacks a connected bicycle network; improving this network will benefit existing residents and will be important in attracting the type of residents who would live in a "TOD" area.
4. Future transit infrastructure and surrounding public spaces and facilities need to be designed in a way that provides safety, comfort, and 21st Century convenience.
5. Palmdale residents want to feel a stronger connection to their community, and residents in the TOD Study Area in particular would benefit from a greater sense of investment. Including residents in the process and presenting a positive vision of the future are important.
6. Realization of the potential that major transportation investments bring to Palmdale will require good planning, good timing, and patience.

The TOD Overlay project will result in regulatory changes related to land use, circulation, streetscape, and urban design. Input received from stakeholders covered a wide variety of topics and issues, all related to planning and livability, but not all related specifically to the charge of this project. All of the comments are included in this report because they are vital and reflect stakeholders concerns; they are important for the City to consider for other efforts. However, it is important to note that not all of the issues identified by stakeholders are directly related to the limited purposes of the TOD Overlay project which is to update land use regulations and identify circulation and streetscape improvements in support of TOD.

5 Infrastructure

This section presents an analysis of the existing utility infrastructure throughout the Study Area, providing context for examining development opportunities and constraints. The primary focus is on the water, wastewater, and stormwater facilities that serve the Study Area. Information regarding floodplains is also included.

5.1 Water

POTABLE WATER INFRASTRUCTURE

Palmdale Water District (PWD) provides water supply to the Study Area. According to PWD's 2010 *Urban Water Management Plan* (UWMP), sources of water supply are primarily from groundwater extraction and imported water from the State Water Project (SWP). GIS data and shapefiles of existing water system pipeline alignments, sizes, and the locations of various appurtenances within the Study Area were provided by the City of Palmdale. Existing water conveyance facilities within the study area are shown in Figure 5-1.

As shown in Figure 5-1, water mains exist throughout most of the Study Area; however, the data provided does not identify facilities west of Division Street. Pipeline diameters range from 6-inch to 18-inch, and lateral diameters range from 1-inch to 4-inch. Storage facilities exist in most pressure zones, which supply system demands for operations, fire flow, and emergencies. Depending on the current demand conditions within the Study Area's pressure zone(s), upgrades to existing infrastructure may be required to accommodate development. This includes, but is not limited to, the upsizing of water mains, installation of new water mains and laterals, installation of fire hydrants, and construction of additional pumping and storage facilities.

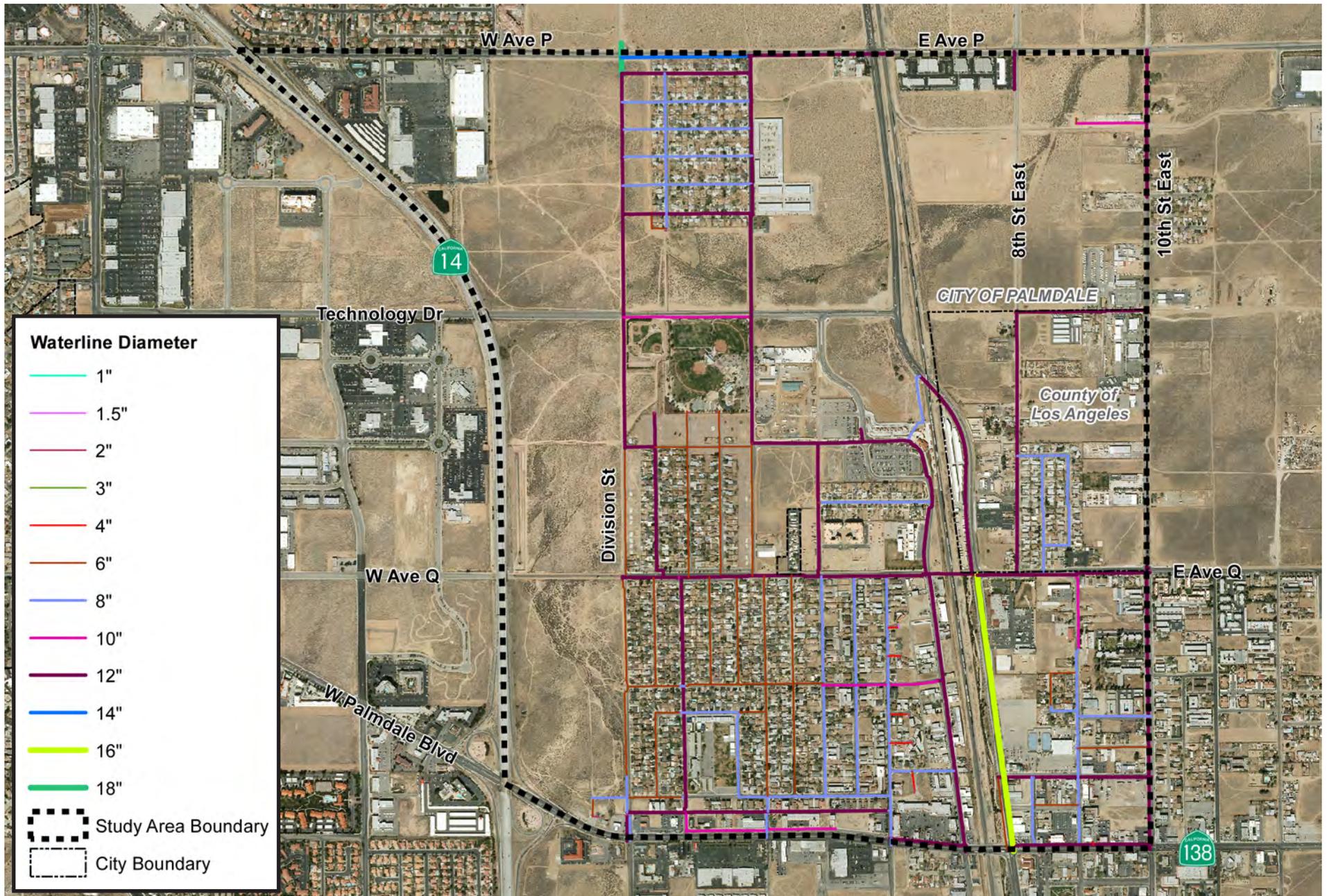
RECYCLED WATER INFRASTRUCTURE

PWD and the City of Palmdale jointly created the Palmdale Recycled Water Authority (PRWA) in September 2012. PRWA acts as a separate agency from PWD and the City and it manages local recycled water resources. Recycled water supplies are available from the Palmdale Water Reclamation Plant (PWRP), which is located in the City of Palmdale and is owned and operated by Sanitation Districts of Los Angeles County (LACSD). Currently, the PWRP has a treatment capacity of 12 million gallons per day (MGD). Recycled water supplies are expected to grow over time with gradually increasing influent sewerage flows. Prior to the creation of PRWA, PWD prepared its own *Recycled Water Facilities Plan* in February 2010 detailing the existing and potential infrastructure to develop, convey, and store recycled water in the area. GIS data and shapefiles of existing recycled system pipeline alignments, sizes, and the locations of various appurtenances within the Study Area were provided by the City of Palmdale. Existing facilities are shown in Figure 5-2.

Palmdale TOD Overlay Zone
Existing Conditions and Site Analysis Report
April 2015

This page intentionally left blank.

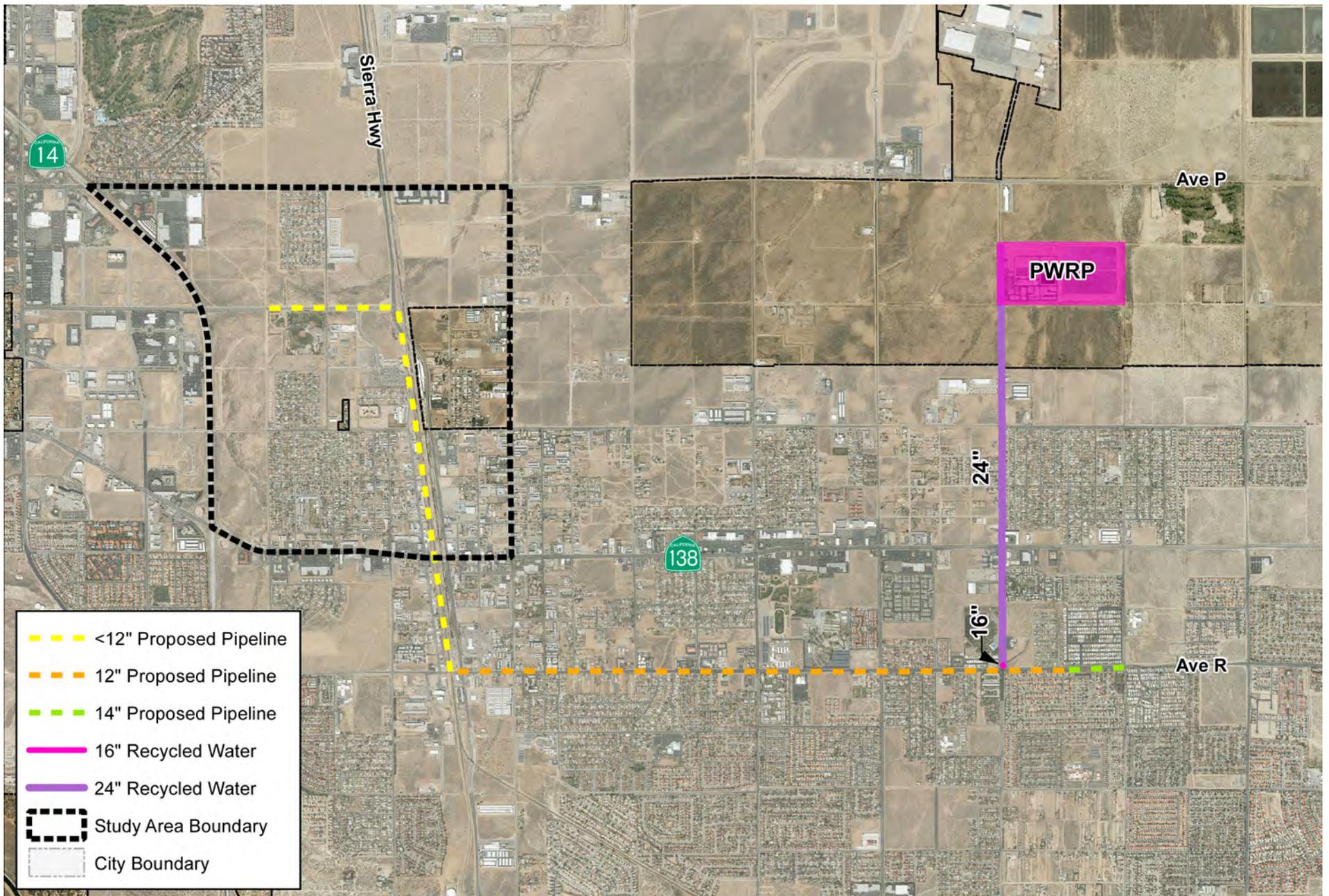
Figure 5-1: Water System



Source: Eagle Aerial, 2013.

NOT TO SCALE

Figure 5-2: Recycled Water System



Source: Eagle Aerial, 2013.

NOT TO SCALE

As shown in Figure 5-2, current infrastructure does not provide recycled water service in the Study Area. However, the potential for use within the Study Area exists based upon recommendations within the *Recycled Water Facilities Plan*. The *Recycled Water Facilities Plan* recommends the future installation of a smaller diameter (less than 12-inch) recycled water pipeline in Sierra Highway from north of Avenue R to Avenue P-8, and west along Avenue P-8 to Desert Sands Park. The potential exists for future installation of a service connection to serve a portion of water demands.

5.2 Wastewater

WASTEWATER INFRASTRUCTURE

Wastewater infrastructure in the Study Area consists of sewer gravity mains that route flows to LACSD trunk sewers. The Study Area is mostly within County Sanitation District No. 20 of Los Angeles County (LACSD-20), and sewage flows are routed to PWRP through the LACSD trunk sewers. LACSD owns and maintains the trunk sewers, and the City owns and maintains the smaller diameter sewer pipelines. GIS data and shapefiles of existing wastewater system pipeline alignments, sizes, and the location of manholes within the Study Area were provided by the City of Palmdale. Existing facilities within the Study Area are shown in Figure 5-3.

As shown in Figure 5-3, sewer pipelines within the Study Area range from 8-inch to 42-inch in diameter. All sewers 12-inch and greater in diameter are LACSD trunk sewers, which collect the flows from the City's network of 8-inch sewers in the area. Depending on the existing sewage flows and pipeline depth to diameter (d/D) ratios, upgrades to existing infrastructure may be required to accommodate development. This includes, but is not limited to, the construction of new City sewer mains and laterals, construction of new connections to the LACSD trunk sewers, and upsizing of portions of the LACSD and/or City sewers.

5.3 Stormwater

WATERSHED

An extensive portion of the City of Palmdale is subject to flooding because of its relatively flat topography and the lack of a developed flood control system. The prevalent pattern of drainage in the City is overland flow in a northerly direction to Rosamond Dry Lake. This flooding is caused by uncontrolled runoff from the San Gabriel and Sierra Pelona mountains to the south. As shown in Figure 5-4, the Study Area lies primarily in the Anaverde Creek watershed with a small portion (south-east) located within the Lake Palmdale watershed. GIS data identifying the watershed areas was obtained from the United States Geological Survey (USGS) National Hydrography Dataset.

STORMWATER INFRASTRUCTURE

There are a number of existing local and regional flood control facilities in the City, including channels and storm drains. Existing facilities within the Study Area are shown on Figure 5-4. GIS data and shapefiles of the existing storm drain system and catch basins locations within the

Study Area were provided by the City of Palmdale. The natural tributaries within and adjacent to the Study Area include Amargosa and Anaverde Creeks.

Flow originating in the developed portions of the City is generally within the existing street. Typically, storm drains are designed to accommodate 10-year and/or 25-year storm flows within the right-of-way. Where storm drains do not occur or are deficient, storm water runoff floods the existing streets and infrastructure. Within the Study Area, there is a very limited storm drain network. Storm drain locations (alignments) within the Study Area have been identified; however, storm drain attributes (pipe diameter, pipe material, etc.) could not be verified. There are limited catch basin inlets within the Study Area. Similar to the storm drains, catch basin locations have been identified; however, attribute data (capacity) could not be verified.

The City of Palmdale Municipal Code states that regional and local drainage facilities are required in order to mitigate the flooding problems caused by current development and to prevent future development from creating additional flooding problems. The City requires every person who develops land to mitigate the impacts of that development on the City's drainage facilities. The City will, therefore, require developers to construct drainage facilities in accordance with the City of Palmdale Master Drainage Plan and/or pay drainage fees that will be used to construct drainage facilities pursuant to the Master Drainage Plan. The amount of the drainage fees collected is limited to the cost of drainage facilities attributable to new development.

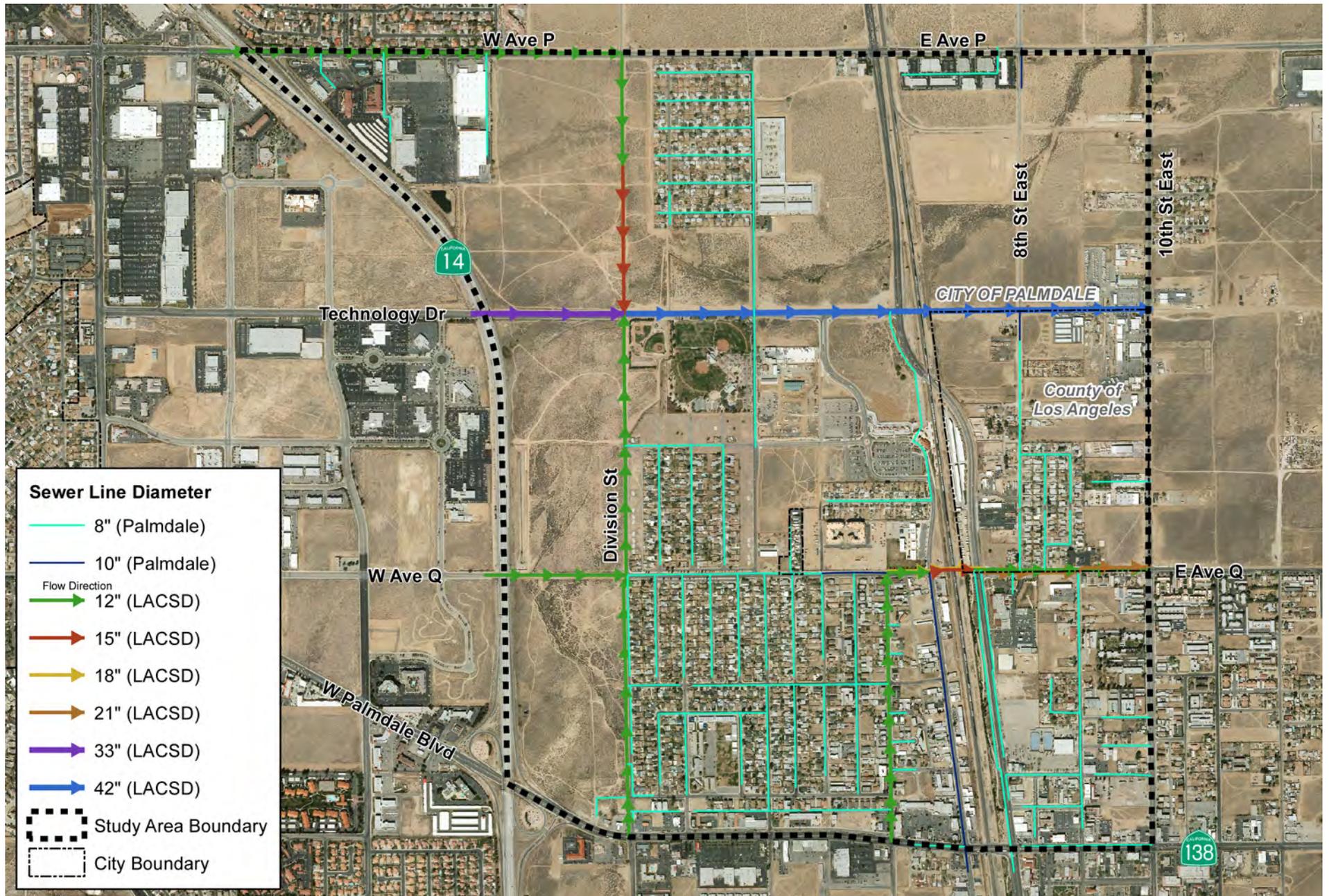
FEMA FLOODPLAIN

The City of Palmdale is a participant in the National Flood Insurance Program (NFIP). Communities participating in the NFIP must adopt and enforce minimum floodplain management standards, including identification of flood hazards and flooding risks. The published Flood Insurance Rate Maps (FIRMs) for the Study Area are included in Community Panel No. 06037C0657F, 06037C0659F and 06037C0700F, effective September 26, 2008, obtained from the Federal Emergency Management Agency (FEMA). Figure 5-5, shows portions of the study area are located in Zone AO, D (X-shaded), and 500-year floodplain (0.2 percent).

- Zone AO – 100-year shallow flooding where depths average between 1 and 3 feet.
- Zone D (X-Shaded) – Unstudied areas where flood hazards are undetermined, but possible.
- 500-year (0.2 percent annual chance flood hazard) – Areas outside the 1-percent-annual chance floodplain.

Any development within a defined FEMA flood zone requires a Conditional Letter of Map Revision (CLOMR) prior to preparing a Letter of Map Revision (LOMR). A CLOMR is FEMA's comment on a proposed project that would, upon construction, affect the hydrologic or hydraulic characteristics of a flooding source and result in the modification of the existing floodway, the effective Base Flood Elevations (BFEs), or the Special Flood Hazard Area (SFHA). The letter does not revise an effective NFIP map; it indicates whether the project, if built as proposed, would be recognized by FEMA. Once a project has been completed, the community must request a revision to the FIRM to reflect the project.

Figure 5-3: Wastewater System



Source: Eagle Aerial, 2013.

NOT TO SCALE

Figure 5-4: Stormwater System

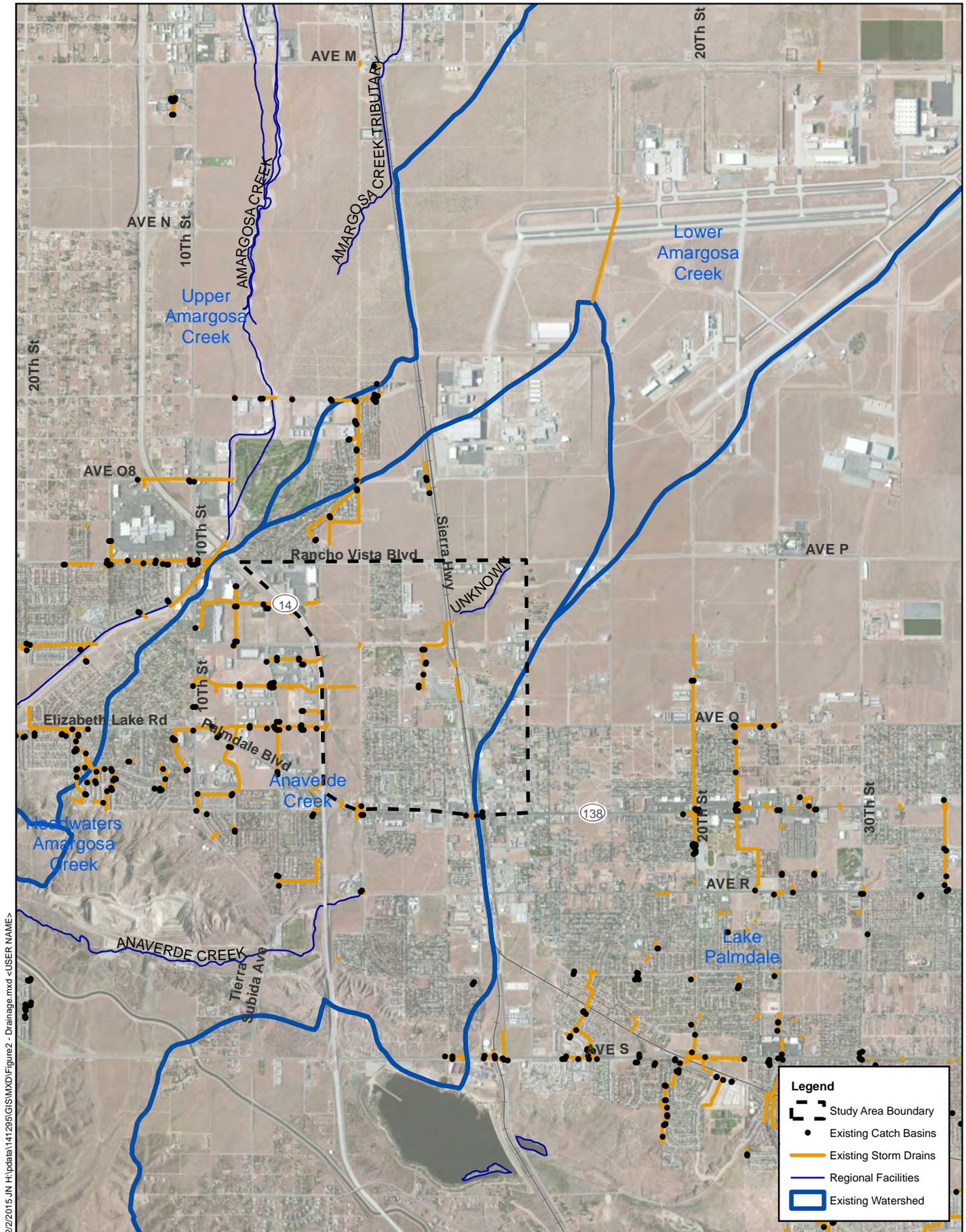
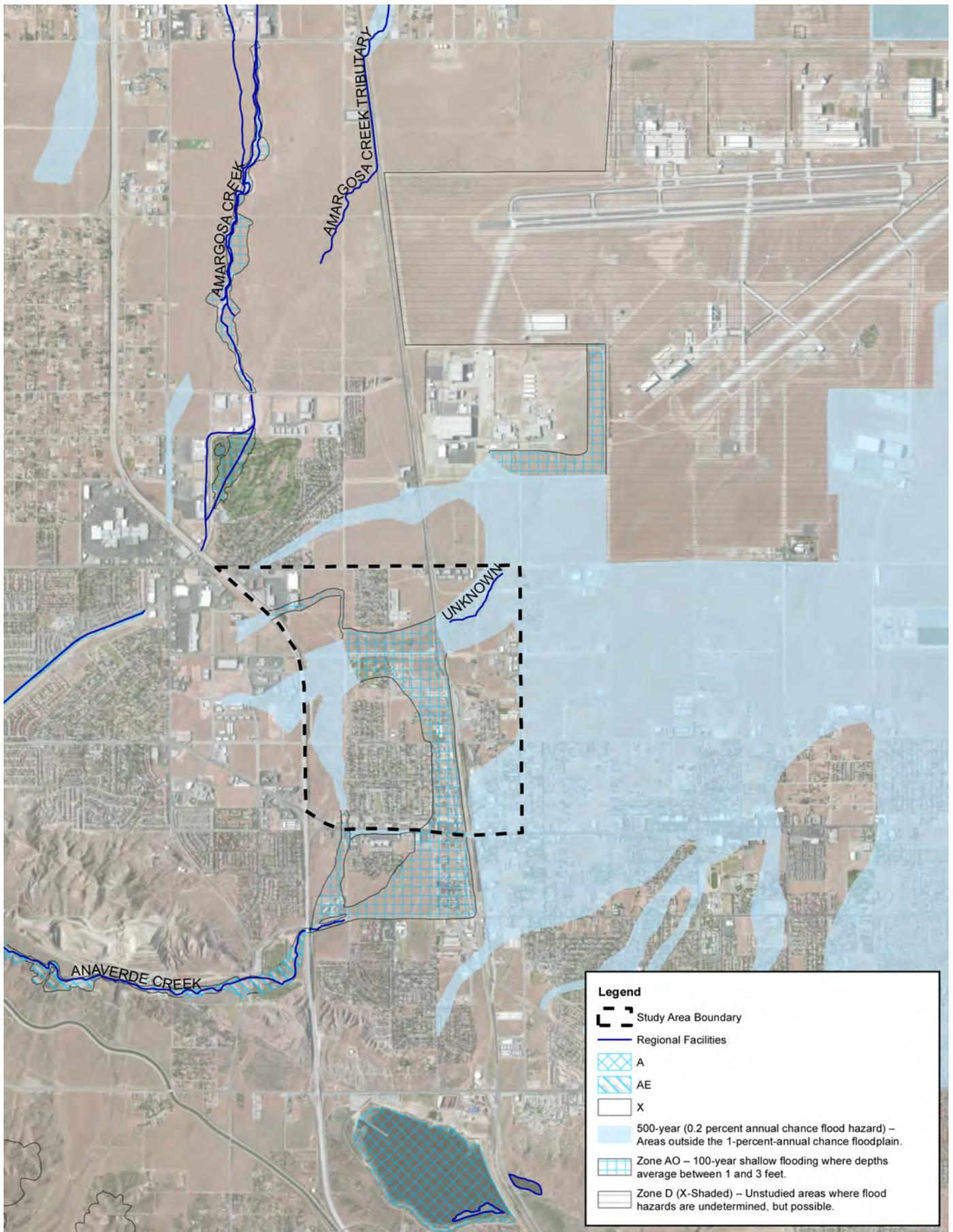


Figure 5-5: Floodplain



Source: Eagle Aerial, 2013.

NOT TO SCALE

Palmdale TOD Overlay Zone
Existing Conditions and Site Analysis Report
April 2015

This page intentionally left blank.

5.4 Electricity and Gas

Southern California Edison (SCE) maintains the electrical distribution lines and supplies power in the region that includes Palmdale. The electricity distributed by SCE is generated both by SCE-owned power facilities as well as through contracts with other energy suppliers in the region. Palmdale is served by SCE from its Vincent Substation, mainly across above-ground utility poles. SCE's improvement plans to meet increased demand in Palmdale include upgrading substations and conductors, extending power lines, and replacing poles. A new substation was built at Ritter Ranch on the west side of Palmdale in 2008-09.

The Southern California Gas Company (SCGC) provides natural gas to most of the region, including the Antelope Valley. The City of Palmdale is within the boundaries of the Foothill Distribution Division and the North Basin Transmission Division. Gas is delivered through lines laid in City streets, including in the Study Area. Natural gas is used to provide heating, air conditioning, and a power source for cooking appliances. New development in the Study Area may require the concurrent laying of additional gas lines.

Palmdale TOD Overlay Zone
Existing Conditions and Site Analysis Report
April 2015

This page intentionally left blank.

DYETT & BHATIA
Urban and Regional Planners

755 Sansome Street, Suite 400
San Francisco, California 94111
☎ 415 956 4300 📠 415 956 7315