



*Envision*  
**PALMDALE 2045**  
a complete community



## Chapter 16

# Noise

The Noise Element outlines the goals and policies related to the noise environment in the Palmdale community.

# Statutory Requirements

The United States Federal Government and the State of California acknowledge the impact that the noise environment can have on public health and wellbeing. Per Government Code 65302, a Noise Element identifies and appraises noise problems in the community. The noise element analyzes and quantifies the projected noise level of the following sources:

- Highways and freeways,
- Primary arterials and major local streets,
- Passenger and freight online railroad operations and ground rapid transit systems,
- Commercial, general aviation, heliport, helistop and military airport operations, aircraft overflights, jet engine test stands, and all other ground facilities and maintenance functions related to airport operation,
- Local industrial plants, including, but not limited to, railroad classification yards, and,
- Other ground stationary noise sources, including, but not limited to, military installations, identified by local agencies as contributing to the community noise environment.

The following State and Federal regulations have been established to mitigate the negative externalities of excessive noise and support healthy noise environments across communities.

## Federal Noise Control Act of 1972

The Federal Noise Control Act establishes a national policy to limit the negative impacts to American health and welfare because of excessive noise. The Act authorizes the establishment of Federal noise level standards for major noise sources in commerce, including motor vehicles and machinery, and directs the EPA to oversee noise research and noise control. The Act establishes local governments as the primary responsible party in addressing noise mitigation.

## California Noise Insulation Standards (California Code of Regulations, Title 24)

The California Noise Insulation Standards are established in Title 24 of the California Code of regulations. The regulation establishes an interior noise limit of 45 dBA CNEL in any habitable room. To facilitate the established noise limit, Title 24 requires an acoustical analysis for any new residential building located in an area where CNEL noise levels exceed 60 dBA.

## California Airport Noise Standards (California Code of Regulations, Title 21)

Title 21 of the California Code of Regulations establishes airport noise standards for airports within the state. Title 21, Section 5012 outlines the standard for the acceptable level of aircraft noise for persons living in the vicinity of airports as 65 dBA CNEL.

## Federal Highway Administration Noise Standards

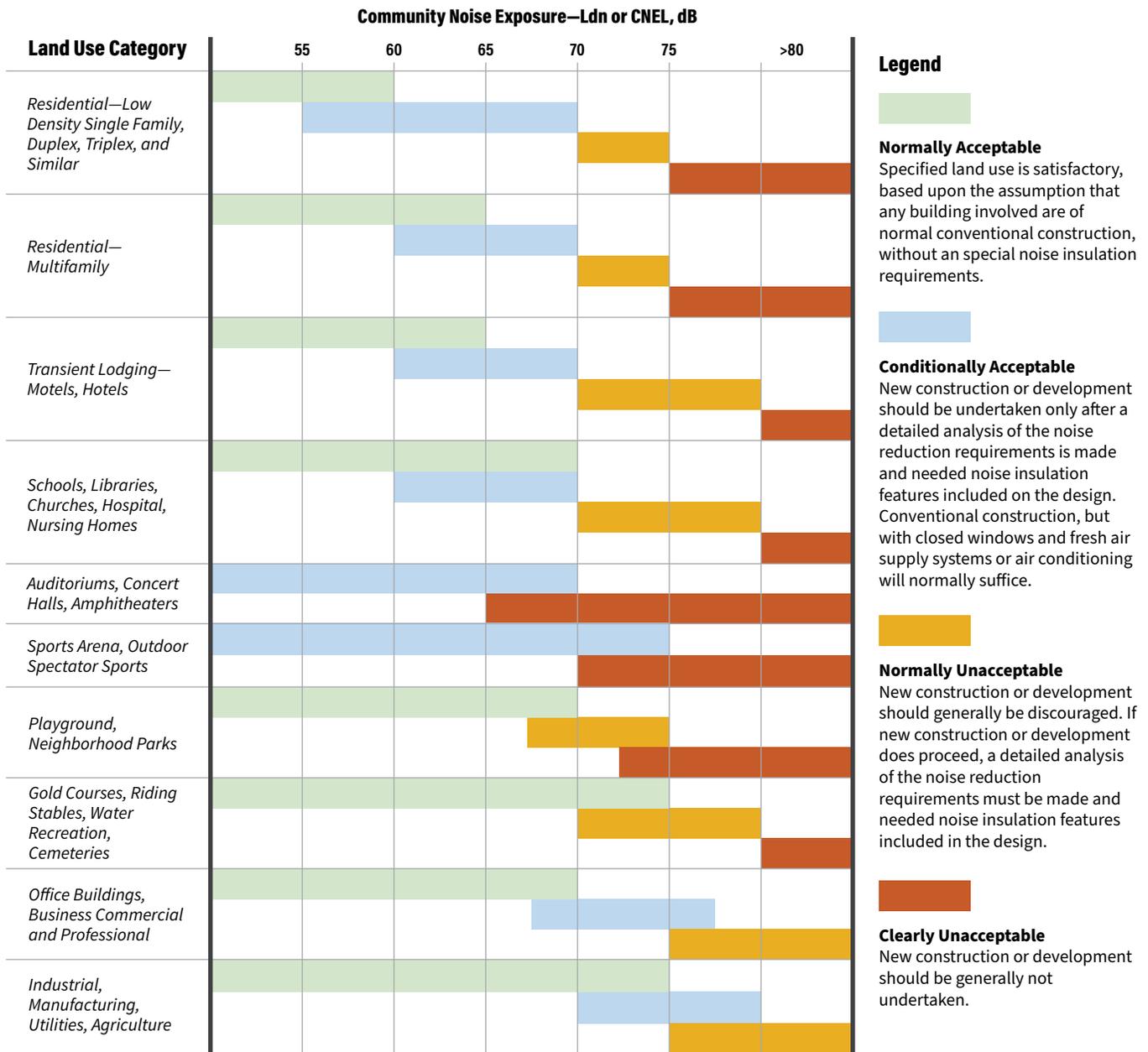
The Federal Highway Administration (FHWA) has established noise standards for noise sourced from highway traffic. The FHWA mandates that each state is responsible for enforcing the standards outlined by the administration. The noise standards consist of noise prediction requirements, noise analyses, noise abatement criteria, and requirements for informing local officials.

# Relevant Plans & Documents

## California Land Use and Noise Compatibility Guide

The State of California Office of Noise Control (ONC) has established a set of noise standards based on land use compatibility. These standards are shown in Figure 16.1 below. The noise standards are intended to provide guidelines for the development of municipal noise elements. These basic guidelines may be tailored to reflect the existing noise and land use characteristics of a particular community.

**Figure 16.1** California Noise Land Use Compatibility Standards



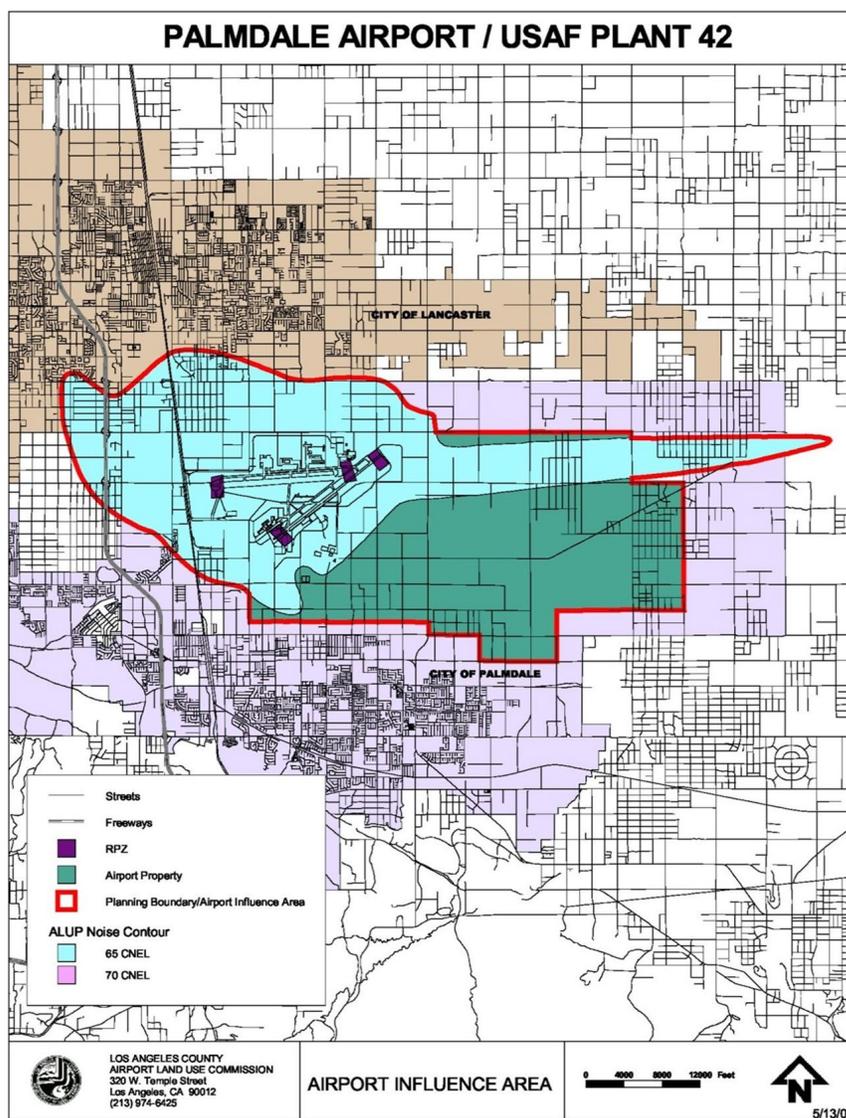
### Los Angeles County Airport Land Use Commission-Palmdale Regional Airport Influence Area

The Los Angeles County Airport Land Use Commission (ALUC) is a county-level agency required by the State to develop a plan for promoting compatibility between local airports and surrounding land uses. The ALUC is responsible for designating an Airport Influence Area (AIA) for every airport within its jurisdiction. An AIA is an airport planning area boundary that consists of all areas in which current or future airport-related noise, over flight, safety, and/or airspace protection factors may significantly affect land uses or necessitate restrictions on those areas. The Palmdale Regional AIA is shown in Figure 16.2. Development within these areas conform with the use, density, and intensity recommendations of the within the Accident Potential Zone (APZ) and Air Installations Compatible Use Zones (AICUZ).

### Palmdale Municipal Code (Noise Standards)

The Palmdale Municipal Code (PMC) establishes a restriction on excessive noise that would disturb neighborhoods or other sensitive uses. The Municipal Code’s Noise Ordinance does not contain any specific limits, but rather states that “It shall be unlawful for any person to willfully make or continue, or cause or to be made or continued, any loud, unnecessary, or unusual noise...” The use of the Noise Ordinance to regulate noise is limited given no specific limits are provided by which to determine if a noise source is excessive or not. PMC Section 8.28.030 addresses construction-related noise by prohibiting earth excavating and similar activities between 8:00 p.m. and 6:30 a.m. and on Sundays in any residential zone or within 500 feet of any residence, hotel, motel, or recreational vehicle park.

**Figure 16.2** Palmdale Airport Influence Area Noise Levels



# Existing Context

## Introduction

The noise environment within a geographic area may have a significant impact on the quality of life for community residents and workers. Excessive noise is defined as sound that is loud, unpleasant, unexpected, or undesired. The effects of excessive noise on humans can include general annoyance, interference with communication, sleep disturbance and hearing impairment. Perceptions of excessive noise can be highly variable and may be impacted by the time of day, distance to noise sources, characteristics of the noise receiver and qualities of the noise source. Therefore, jurisdictions must strategically establish noise standards in a manner that considers all aspects of how noise may be perceived.

Understanding the potential effects and externalities of noise requires an understanding of sound and how sound is measured. Noise is typically described in terms of loudness (amplitude) of the sound and frequency (pitch) of the sound. Noise loudness is measured in decibels (dB). Decibels (dB) are based on a logarithmic scale that condenses range in sound pressure levels to a more usable range of numbers. A 10 dB increase represents a

10-fold increase in sound intensity, a 20 dB change is a 100-fold difference, and so forth.

The human ear is not equally sensitive to all frequencies within the sound spectrum. Therefore, a method called “weighting” is applied to decibel noise measurements and used to filter noise frequencies that are not audible to the human ear. A weighted decibel (dBA) is an adjusted measure of sound loudness that adjusts the sound rating scale to levels consistent with the sensitivity range of the human ear. Typical exterior daytime noise levels range from 50 to 75 dBA.

In California, noise land use compatibility is primarily measured using Community Noise Equivalent Level (CNEL). The CNEL rating is the average sound level over a 24-hour period, with a penalty of 4 dB added between 7pm and 10pm and a penalty of 10 dB added for the nighttime hours of 10 pm to 7 am. The noise levels identified within this chapter are all discussed using dBA CNEL, unless otherwise indicated.

## Noise Generators

Noise generators are major sources of noise within a community that may impact residents or workers. These major sources of noise include motor vehicles, railways, airports, and construction activities. The most distributed and predominant noise source across cities in California is traffic noise, due to the prevalence of motor vehicles driving along area roadways. Traffic noise is of primary concern because it is characterized by a high number of individual events, which often create a sustained noise level over time. In Palmdale, noise levels are the highest adjacent to freeways, highways, and other large roadways.

### Traffic Noise

Traffic noise is the primary noise source in the city. The highest noise levels occur along high traffic volume roadways, including freeways, highways, and arterials. These roadways in Palmdale include Highway 138/ Palmdale Boulevard, SR-14, Sierra Highway, and major streets such as Pearblossom Highway, 5th Street West, 50th Street East, 30th Street East, Avenue S, and Rancho Vista Boulevard. For modeled existing and future noise contours along high-volume roadways, see Figure 16.3 and Figure 16.4.

### Railway Operation Noise

In general, noise from rail operations is under the jurisdiction of the Federal Railroad Administration (FRA). The FRA sets forth and enforces railway noise safety standards, including noise emissions for railroad locomotive cabs, at-grade crossing bells, and locomotive warning horns. Union Pacific and Metrolink, which



transport freight and people, respectively, operate rail lines in Palmdale. These rail line operators must meet any mandates enforced by the FRA.

Currently, the Antelope Valley Station Line of the Metrolink commuter rail system runs through Palmdale adjacent to the Sierra Highway. As a commuter rail service, most weekday trains on the Antelope Valley line run during the peak traffic morning and evening hours, when noise levels are high due to peak traffic amounts.

The California High Speed Rail from San Francisco to the Los Angeles area is proposed to run through Palmdale. According to the Rail Authority, the High-Speed Rail is anticipated to result in moderate to severe impacts to the noise environment in those locations where train speeds and operations are near sensitive land uses. The level of noise impacts associated with the High-Speed Rail in Palmdale will depend on the final rail alignment and the nature and density of nearby sensitive uses.

An additional high-speed rail line, known as Brightline West, is undergoing environmental permitting, and anticipated to run from Las Vegas to Los Angeles through Palmdale. Similar to the High-Speed Rail, noise impacts associated with the rail line will depend on the final rail alignment and the nature and density of nearby sensitive uses.

Freight rail in Palmdale is transported along the Union Pacific Railroad. Most of the freight train traffic occurs between the hours of 1:00 am and 5:00 am. Freight traffic does not have a set schedule. Noise generated by freight trains in Palmdale was previously measured at 64 to 73 dBA. Approximately 10 to 25 freight trains travel through Palmdale per day.



### Mineral Extraction

Sand and gravel mining widely occurs within the city, specifically throughout Littlerock Wash (floodplain within the Littlerock Fan). Active quarries are located within an existing floodplain where no other type of development exists. Consequently, development is not located near noise-generating mineral extraction activities.



### Airport Noise

Plant 42, a US Air Force facility, is located in the northern part of the city near existing industrial uses and undeveloped land that is designated as industrial. The airport currently has two operational runways. Noise levels in this area of the City have been measured at 60.5 – 68.5 dBA depending on proximity to major noise sources. Peak noise levels due to aircraft operations (approaches and landings) have been measured at 85.5 dBA near the USAF Plant 42 runway. Figure 16.2 depicts the noise levels surrounding the Palmdale Regional Airport. Overall community noise levels surrounding the airport are typically around 65 CNEL.



79. The Littlerock Fan is a 12 square mile area extending from the north flank of the San Gabriel Mountains for about 8 miles, which includes the Littlerock Wash floodplain and the fan area to the west

The City is considering the construction of a new passenger airport terminal, which would promote an increase in commercial flights. Proposed commercial flights would not increase noise levels beyond those observed historically. In addition to the Palmdale Regional Airport, there are several airports adjacent to the city that may impact the noise environment. Airports in the vicinity of Palmdale include:

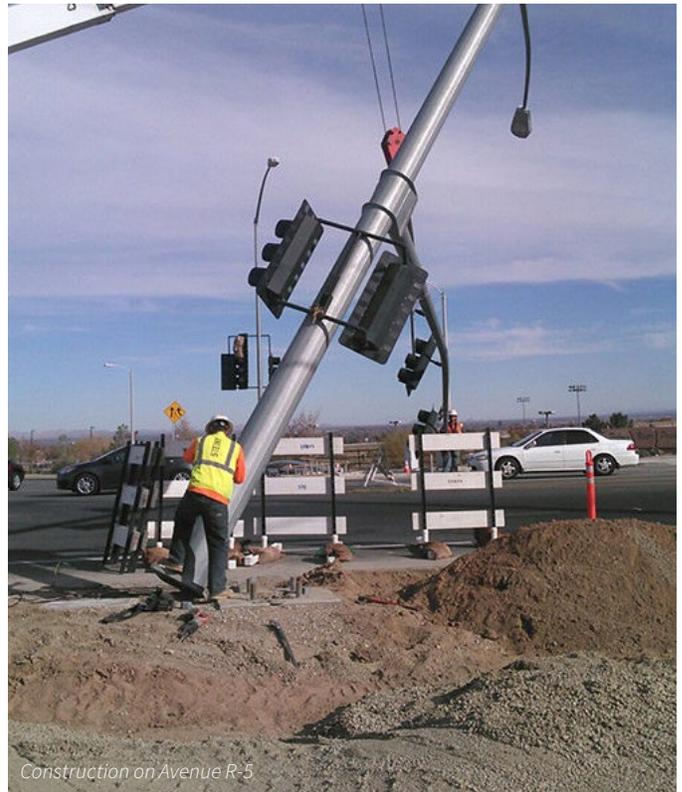
- Agua Dulce Airpark in Agua Dulce located approximately four miles from Palmdale City limits.
- Bohunk's Airpark in Lancaster located approximately five miles from Palmdale City limits.
- Nichols Farms airport located in the unincorporated area of Los Angeles County approximately 5 miles from the Palmdale City limits.
- General William J. Fox Airfield in the Lancaster located approximately 7 miles from Palmdale.

### Stationary Noise

Whereas mobile-source noise affects many receptors along an entire length of roadway, stationary noise sources affect only their immediate areas. Stationary sources of noise may occur within all types of land uses. Generally, residential uses generate noise from landscaping, maintenance activities, and air conditioning systems. Commercial uses tend to generate higher levels of noise, sourced from building operations such as heating, ventilation, air conditioning (HVAC) systems, loading docks, as well as activity from restaurants, bars, outdoor dining, parking garages/lots, etc. Consequently, potential noise concerns can arise when new developments with a mix of uses (i.e., residential, commercial, office) are proposed.

Industrial uses may generate noise from HVAC systems, loading docks, and machinery; all of which may be on a more continual basis due to the nature of the particular activities. Industrial activity is typically the generator of the highest levels of stationary source noise. However, Palmdale's industrial uses (e.g., Air Force Plant 42, Northrop Grumman, and Boeing) are geographically insulated from noise sensitive land uses. The major industrial uses in Palmdale are primarily located in the northeastern section of the city.

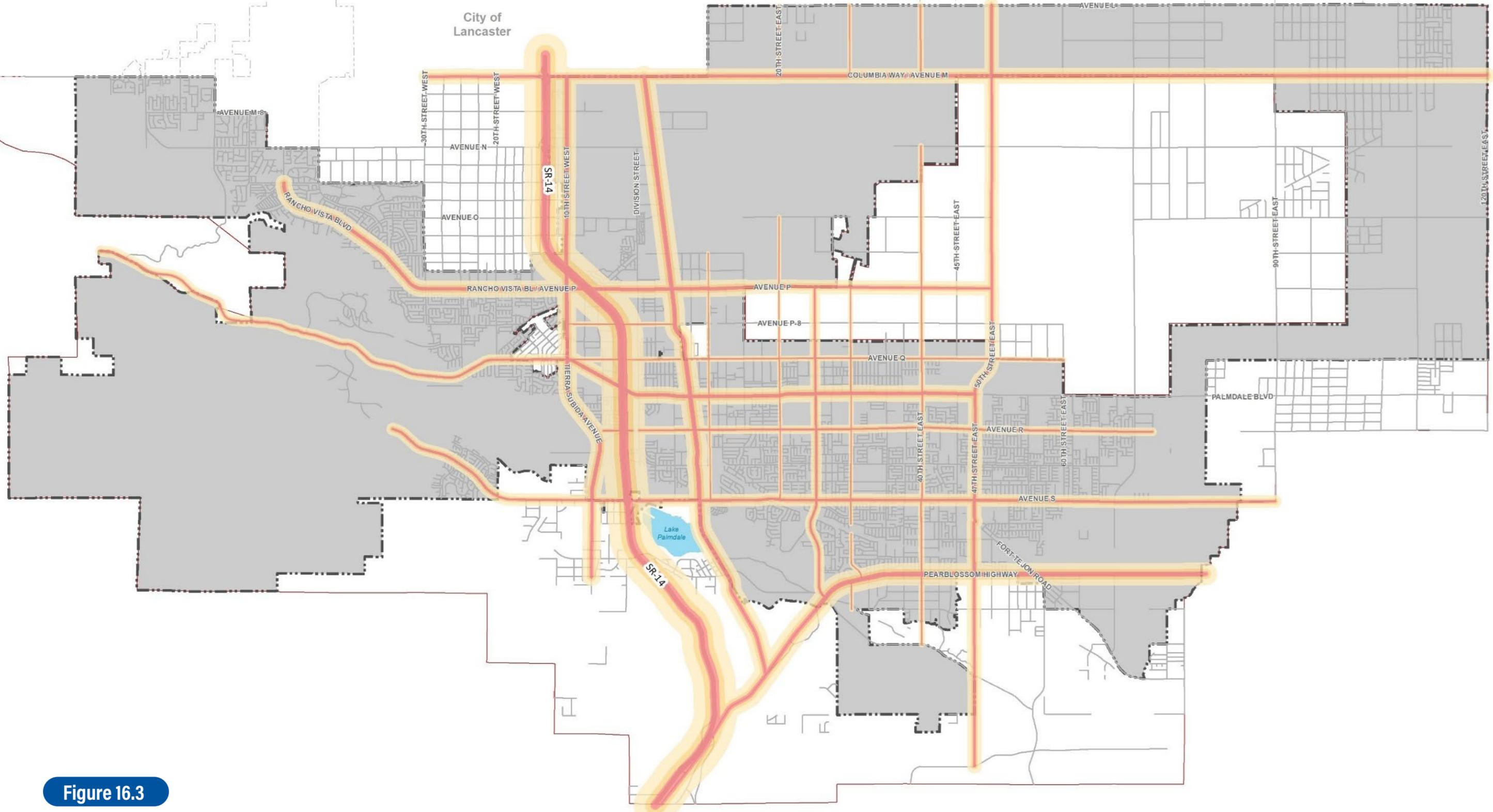
A notable source of stationary noise comes from construction-related activity. Construction of new development could result in stationary noise from various types of construction equipment, such as backhoes, dump trucks, and paving machines, all of which can cause substantial short-term increases in noise in the vicinity of construction sites.



## Sensitive Land Uses

Noise sensitive land uses are considered sensitive to noise impacts. Noise exposure goals for various types of land uses reflect the varying noise sensitivities associated with each of these uses. Noise sensitive land uses include residences, schools, libraries, hospitals/medical facilities, and assisted living facilities. These uses are considered the most sensitive to noise intrusion and, therefore have more stringent noise exposure standards than manufacturing or agricultural uses that are not subject to impacts such as sleep disturbance. The sensitive noise land uses in Palmdale are shown in Figure 16.3.

**This page intentionally left blank.**

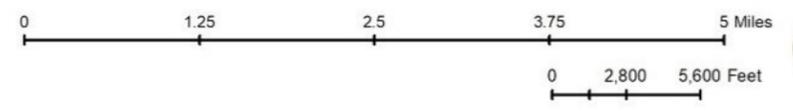


**Figure 16.3**

**Existing Noise Contours**

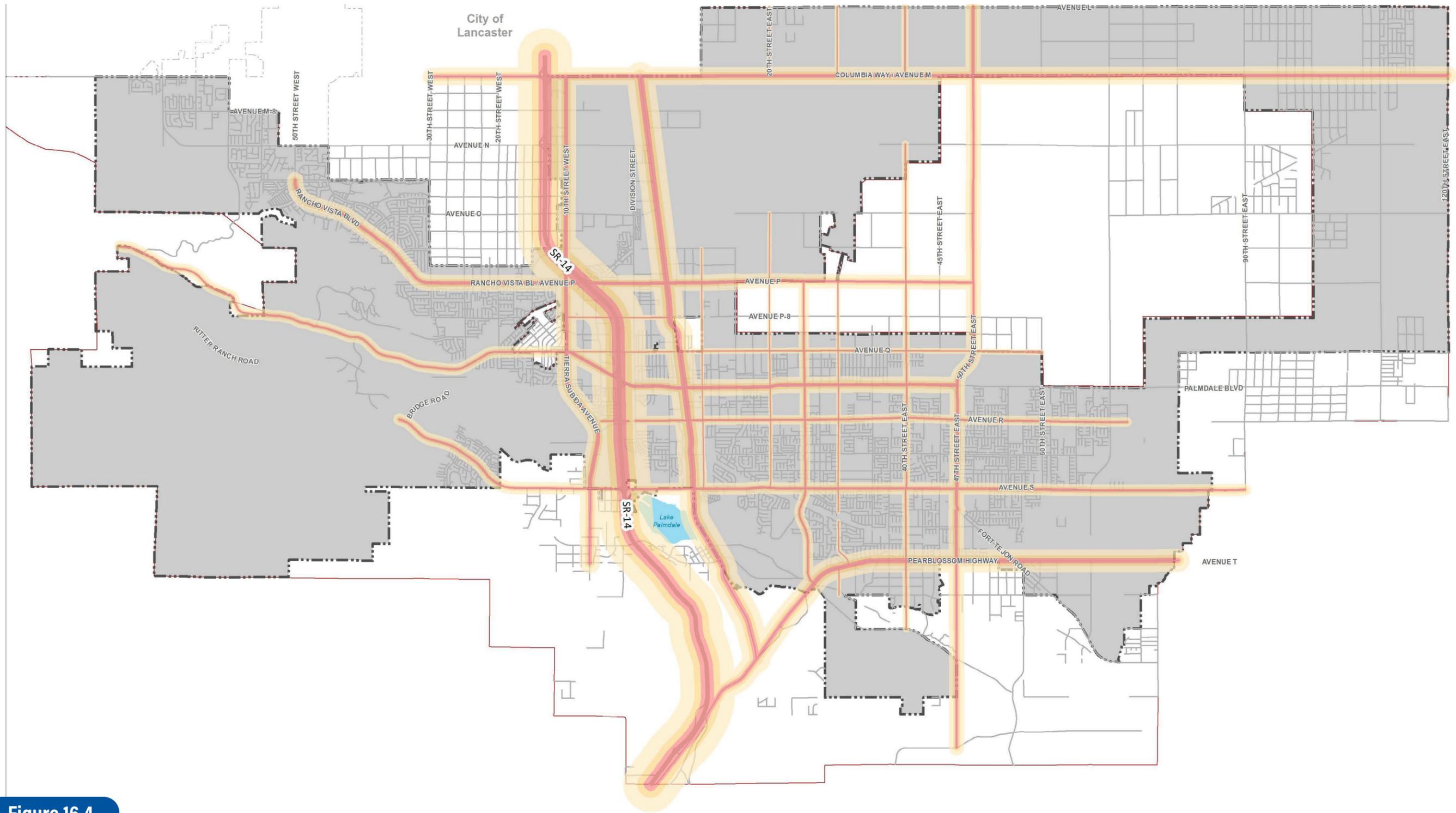
-  City Boundary
-  Sphere of Influence
-  Major Arterials
-  Highway
-  Railroad

- Decibels (dBA)**
-  60 dBA
  -  65 dBA
  -  70+ dBA



Data Sources: City of Palmdale GIS data.

Produced by Rincon Consultants, Inc.  
May 2022

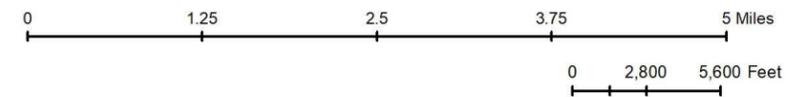


**Figure 16.4**

**Future Noise Contours**

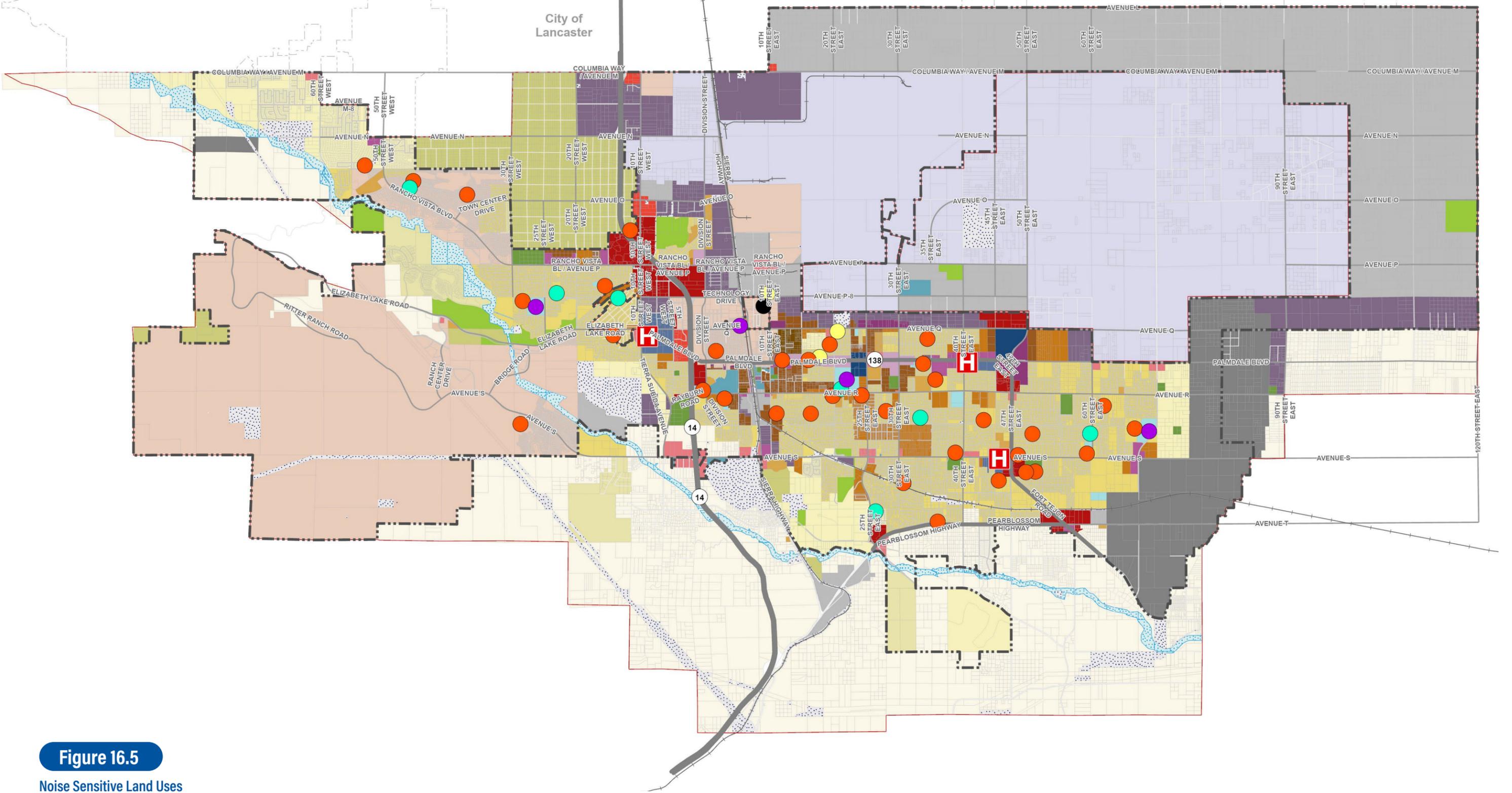
- City Boundary
- Sphere of Influence
- Major Arterials
- Highway
- Railroad

- Decibels (dBA)**
- 60 dBA
  - 65 dBA
  - 70+ dBA



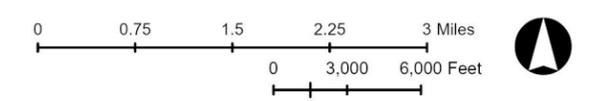
Data Sources: City of Palmdale GIS data.

Produced by Rincon Consultants, Inc.  
May 2022



**Figure 16.5**  
Noise Sensitive Land Uses

- |                     |                             |                         |                             |                               |
|---------------------|-----------------------------|-------------------------|-----------------------------|-------------------------------|
| City Boundary       | Equestrian Residential      | Mixed Use 1             | Industrial                  | Preschool                     |
| Sphere of Influence | Low Density Residential     | Mixed Use 2             | Aerospace Industrial        | Elementary; K-8; 6-12 Schools |
| Major Arterials     | Single Family Residential 1 | Mixed Use 3             | Mineral Resource Extraction | Middle Schools                |
| Highway             | Single Family Residential 2 | Employment Flex         | Specific Plan               | High Schools                  |
| Railroad            | Single Family Residential 3 | Neighborhood Commercial | Open Space                  | School District Office        |
| Water Body/Aqueduct | Residential Neighborhood 1  | Visitor Commercial      | Public Facility-Park        | Hospitals                     |
|                     | Residential Neighborhood 2  | Regional Commercial     | Public Facility-School      |                               |
|                     | Residential Neighborhood 3  | Health and Wellness     | Public Facility-Civic       |                               |
|                     | Residential Neighborhood 4  | Educational Flex        | Utilities                   |                               |



Data Sources: City of Palmdale GIS data; World Terrain Base, 2015 ESRI, USGS, NOAA.

Produced by Rincon Consultants, Inc.  
October 2022

**This page intentionally left blank.**

# Desired Outcomes, Indicators, and Targets

The following section includes goals and policies for the Noise Element. Goals and policies are followed by implementation actions. Some Noise policies are woven throughout the General Plan, including in the Land Use Element, among others.

## Top Key Outcomes

**OUTCOME:** Minimize noise exposure and noise generation near noise sensitive uses.

**KPI:**

- Noise sensitive uses near major noise generators

**TARGET:**

- **No noise sensitive uses (e.g., residences, schools, hospitals) in areas where noise from freeways, high traffic volume roads, rail activity, or the airport exceeds 65 dBA CNEL**

**OUTCOME:** Noise levels for all new development are within the “Normally Acceptable” range or the “Conditionally Acceptable” range.

**KPI’s:**

- Acceptable noise levels
- Construction and operational noise exposure for noise-sensitive land uses

**TARGETS:**

- **Ensure that noise levels for all new development are within the “Normally Acceptable” or the “Conditionally Acceptable” range by ensuring design features can achieve the applicable interior and exterior noise standards**
- **Minimize exposure of noise-sensitive land uses to excessive construction and operational noise.**

# Goals and Policies

The following section includes goals and policies for the Noise Element. Goals and policies are followed by implementation actions. Some Noise policies are woven throughout the General Plan, including in the Circulation and Mobility, Equitable and Healthy Communities, and Land Use and Community Design Elements, among others.

## NOISE EXPOSURE

### Goal N-1

Minimize resident exposure to excessive noise.

**N-1.1 Future Noise Levels.** Use the state-recommended noise level guidelines shown in Figure 16.1 to determine the compatibility of proposed land uses with the existing and future noise environment of each proposed development site.

**N-1.2 Restrict Land Uses.** Restrict noise sensitive land uses near existing or future air, rail, or highway transportation noise sources unless mitigation measures have been incorporated into the design of the project to reduce the noise levels at the noise sensitive land use to less than 65 dBA CNEL at all exterior living spaces including but not limited to, single-family yards and multi-family patios, balconies, pool areas, cook-out areas and related private recreation areas.

**N-1.3 Acoustical Analysis for Stationary Noise Sources.** When proposed stationary noise sources could exceed an exterior noise level of 65 dBA CNEL at the property line or could impact future noise sensitive land uses, require preparation of an acoustical analysis and mitigation measures to reduce exterior noise levels to no more than 65 dBA CNEL at the property line.

**N-1.4 Noise Abatement Strategies.** Explore the use of noise abatement strategies such as natural barriers, sound walls, and other buffers to mitigate excessive noise.

**N-1.5 Quiet Zones.** Where deemed appropriate, restrict train horn noise by establishing quiet zones within Palmdale based on Train Horn Rule (49 CFR Part 222).

---

## Goal N-2

Maintain acceptable noise environments throughout the City.

**N-2.1 Extreme Noise Sources.** Avoid locating new extreme noise sources adjacent to noise sensitive land uses unless mitigation measures can mitigate noise impacts to the sensitive uses.

### **N-2.2 Restrict Construction**

**Activities.** Restrict construction activities in the vicinity of sensitive receptors during the evening, early morning, and weekends and holidays.

**N-2.3 Maintain Acceptable Noise Environments.** Utilize any or all the following measures to maintain acceptable noise environments throughout the city:

- Control of noise at its source, including noise barriers and other muffling devices built into the noise source.
- Provision of buffer areas and/or wide setbacks between the noise source and other development.
- Reduction of densities, where practical, adjacent to the noise source (freeway, airport, railroad).
- Use of sound insulation, blank walls, double paned windows and other design or architectural techniques to reduce interior noise levels.
- Designation of appropriate land uses adjacent to known noise sources.

**N-2.4 Acoustical Analysis for Noise Sensitive Land Uses.** Where deemed appropriate based upon available information, require acoustical analysis and appropriate mitigation for noise-sensitive land uses proposed in areas that may be adversely impacted by significant intermittent noise sources. Such noise sources may include but not be limited to railroads, racetracks, stadiums, aircraft overflights and similar uses.

**N-2.5 High Speed Rail and Palmdale Airport.** As necessary, participate in future planning for the High-Speed Rail and the Palmdale Airport expansion to ensure that neither facility creates noise conditions that adversely affect residents, businesses, or visitors.

## COMPATIBLE LAND USES

### Goal N-3

Promote noise compatible land uses within the 65 dBA CNEL contour and the Frequent Overflight Area of Air Force Plant 42.

**N-3.1 Frequent Overflight Area.** Designate and permit employment flex, industrial, aerospace industrial, and similar uses within the 65 dBA CNEL contour and the Frequent Overflight Area.

**N-3.2 Areas Within 65 dBA CNEL.** Restrict noise sensitive land uses (such as residential uses, religious institutions, schools, assisted living facilities, or similar uses) within areas designated within both the 65 dBA CNEL contour and the Frequent Overflight Area, unless mitigation measures prevent adverse health impacts from high noise emissions.

**N-3.3 Areas Outside 65 dBA CNEL.** In areas outside of the 65 dBA CNEL contours but within the Frequent Overflight Area, encourage land uses that are not noise-sensitive, to the extent feasible.

**N-3.4 Require Disclosure Statement.** Through the development review process, require a disclosure statement indicating that the property is subject to frequent overflight and aircraft noise upon sale of property within the Accident Potential Zone (APZ) and Air Installations Compatible Use Zones (AICUZ).

**N-3.5 Aviation Easement.** Through conditions of approval, require that any owner of property within the 65 dBA CNEL noise contour or the low altitude overflight area of Plant 42 seeking a land use action from the City to provide an aviation easement to the Los Angeles Department of Airports, the U.S. Air Force, and the City of Palmdale.

## CIRCULATION

### Goal N-4

Minimize adverse noise impacts associated with transportation.

**N-4.1 Coordinate with Caltrans.** Coordinate with Caltrans to implement noise mitigation measures, such as sound barrier walls, in the design, improvement, or expansion of freeways and major roadways.

**N-4.2 Assess Noise Environment in Residential Areas.** Regularly assess the noise environment in residential areas related to heavy vehicle traffic to determine if adjustments should be made to transportation routes.

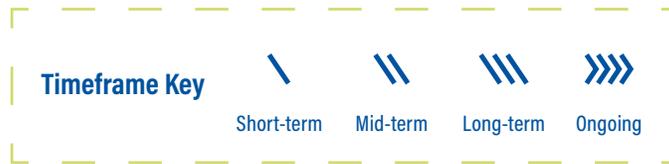
**N-4.3 Insulate Sensitive Receivers.** Implement traffic calming and traffic diversion measures across the City to insulate sensitive land uses from freeway and roadway noise.

**N-4.4 Protect Disadvantaged Community Members.** Prohibit new high noise generating uses in disadvantaged communities, as feasible.

# Implementation Actions

The table below identifies programs, planning efforts, coordination efforts, and other actions that will help implement the General Plan’s Noise goals and policies. Programs are consistent with this chapter’s goals and policies.

The table provides a description of each Implementation Action and lists the correlating policies. Each action also identifies a timeframe for implementation with Short-term representing a 1–3-year timeframe, Medium-term is 4-7 years, Long-term is 8+ years and Ongoing represents an action that the City should continue. Additionally, the table includes the City department that should function as the lead for implementing the actions.



Correlating Goals	Action	Timeframe	Responsible Department
N-1, N-2, N-3	<b>Noise Standards:</b> Establish numeric noise standards within the Palmdale Municipal Code consistent with the State recommended noise level guidance.	Short-term	Economic and Community Development
N-1, N-2, N-3	<b>Municipal Code Update:</b> Update the Palmdale Municipal Code to include noise regulations consistent with all policies outlined within this Noise chapter.	Short-term	Economic and Community Development
N-1, N-2, N-3, N-4	<b>Noise Reporting Platform:</b> Develop a noise reporting platform in collaboration with existing City applications or webpages to allow for easy noise reporting for community members.	Mid-term	Economic and Community Development and Public Works
N-1, N-4	<b>Quiet Zones:</b> Meet and coordinate with railroad operators to install Quiet Zones at rail crossings near sensitive uses.	Short-term	Economic and Community Development
N-1, N-2, N-4	<b>Regional High-Speed Rail:</b> Meet and coordinate with regional high-speed rail operators to implement the best practices for noise reduction and mitigation within the city.	Mid-term	Economic and Community Development
N-1, N-2, N-4	<b>Traffic Calming/Diversion:</b> Evaluate the need for the insulation of sensitive land uses from freeway and roadway noise throughout the city and include the development of insulation measures into the Capital Improvements Plan.	Mid-term	Economic and Community Development and Public Works



**City of Palmdale**  
**General Plan**  
Effective October 22, 2022

*Envision*  
**PALMDALE 2045**  
a complete community

