NOISE ELEMENT 8


WELCOME TO
ROLLING HILLS
ESTATES

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Introduction

Introduction

The Noise Element considers existing and potential noise sources and identifies noise exposure associated with major transportation systems within the City's jurisdiction. This information serves as a guide for establishing land use patterns, site design, and development standards and addressing existing or potential noise problems within the jurisdictional area.

Purpose

The purpose of the Noise Element is to provide a framework for controlling noise in the City so as to maintain the desired quality of life and community character through noise compatibility. Overall, the Noise Element's goals and policies are intended to protect public health. As the majority of the City consists of residential uses, it is important to regulate noise sources. The Noise Element examines the characteristics and effects of noise, describes guidelines relating to noise control, evaluates the existing noise environment, and discusses the anticipated future noise environment. The Noise Element also identifies sensitive land uses that require careful consideration in regard to Planning.

This Noise Element satisfies the requirements of State planning law and is a mandated component of the General Plan. Government Code Section 65302(f) establishes the required components of the Noise Element, which include identifying and evaluating noise problems in the community and analyzing and quantifying existing and projected noise levels for applicable noise sources to the extent practicable.

Relationship to Other General Plan Elements

Policies in the Noise Element are designed to protect existing and planned land uses from significant noise impacts. Concurrently, the Land Use Element contains policies to ensure that environmental conditions, including noise, are considered in land use decisions. Adequate Planning for future residential or other noise-sensitive uses can avoid incompatible development, and thus the Land Use Element is closely related to the Noise Element.

Additionally, the Noise Element is linked to transportation policies included in the Mobility Element, as transportation noise is a major contributor to overall noise levels in the City of Rolling Hills Estates. Both the Noise and Mobility Elements contain policies and programs designed to minimize the impact of transportation noise on existing and planned land uses.

To a lesser extent, specific policies in the Noise Element are related to the Conservation, Open Space and Recreation, and Safety Elements. Excessive noise may diminish the enjoyment of parks and recreational spaces or negatively impact sensitive habitats. Additionally, open space areas can be used to separate or buffer noise-sensitive uses from noise producers. Public safety agencies may become involved in enforcing certain noise codes and regulations.

Chapter Organization

This Noise Element chapter comprises four sections:

Introduction summarizes the general intent of the Noise Element as well as its relationship to other General Plan elements.

Existing Conditions describes existing regulations, noise sources, and noise levels.

Future Noise Impacts and Mitigation demonstates the impacts of increased traffic and future land use in a full-built scenario on the noise levels in Rolling Hills Estates; the Noise Reduction Techniques in this section identifies mitigation methods to reduce noise levels and impacts.

Goals and Policies identifies land use, transportation, and technology-related goals and policies to address noise issues.

Existing Conditions

Existing Conditions

Characteristics of Sound

Increasing noise levels can affect the quality of life. Noise is usually defined as unwanted sound and consists of any sound that may produce physiological or psychological damage and/or interferes with communication, work, rest, recreation, and/or sleep.

To the human ear, sound has two significant characteristics: pitch and loudness. Pitch is the number of complete vibrations (or cycles per second) of a wave, resulting in the tone's range from high to low. Abrupt changes in pitch and very high pitches are often perceived as annoyances. Loudness is the strength of a sound and describes a noisy or quiet environment; it is measured by the amplitude of the sound wave. Loudness is determined by the intensity of the sound waves combined with the reception characteristics of the human ear. Sound intensity refers to how hard the sound wave strikes an object, which in turn produces the sound's effect.

Measurement of Sound

The measurement of noise is a science, and it is essential to understand specific terms when discussing noise levels. Below are some terms/ definitions related to the Noise Element.

KEY TERMS

Decibel, dB: A unit of measurement describing the amplitude of sound (see **Figure 8-1**).

A-Weighted Level: The sound level in decibels as measured on a sound level meter using the A-weighting filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the response of the human ear and gives a good correlation with subjective reactions to noise.

L10: The A-weighted sound level that is exceeded 10 percent of the sample time; similarly, L50, L90, etc.

Leq: Equivalent energy level. The sound level corresponding to a steady-state sound level containing the same total energy as a time-varying signal over a given sample period. Leq is typically computed over 1-, 8-, and 24-hour sample periods.

CNEL: Community Noise Equivalent Level. The average equivalent A-weighted sound level during a 24-hour day, obtained after the addition of 5 decibels to sound levels in the evening from 7 p.m. to 10 p.m. and after the addition of 10 decibels to sound levels in the night from 10 p.m. to 7 a.m., to account for increased sensitivity to noise during evening and nighttime hours.

Ldn: Day-Night Average Level. The average equivalent A-weighted sound level during a 24-hour day, obtained after the addition of 10 decibels to sound levels in the night after 10 p.m. and before 7 a.m. (Note: CNEL and Ldn represent daily levels of noise exposure averaged on an annual or daily basis, while Leq represents the equivalent energy noise exposure for a shorter time period, typically one hour.)

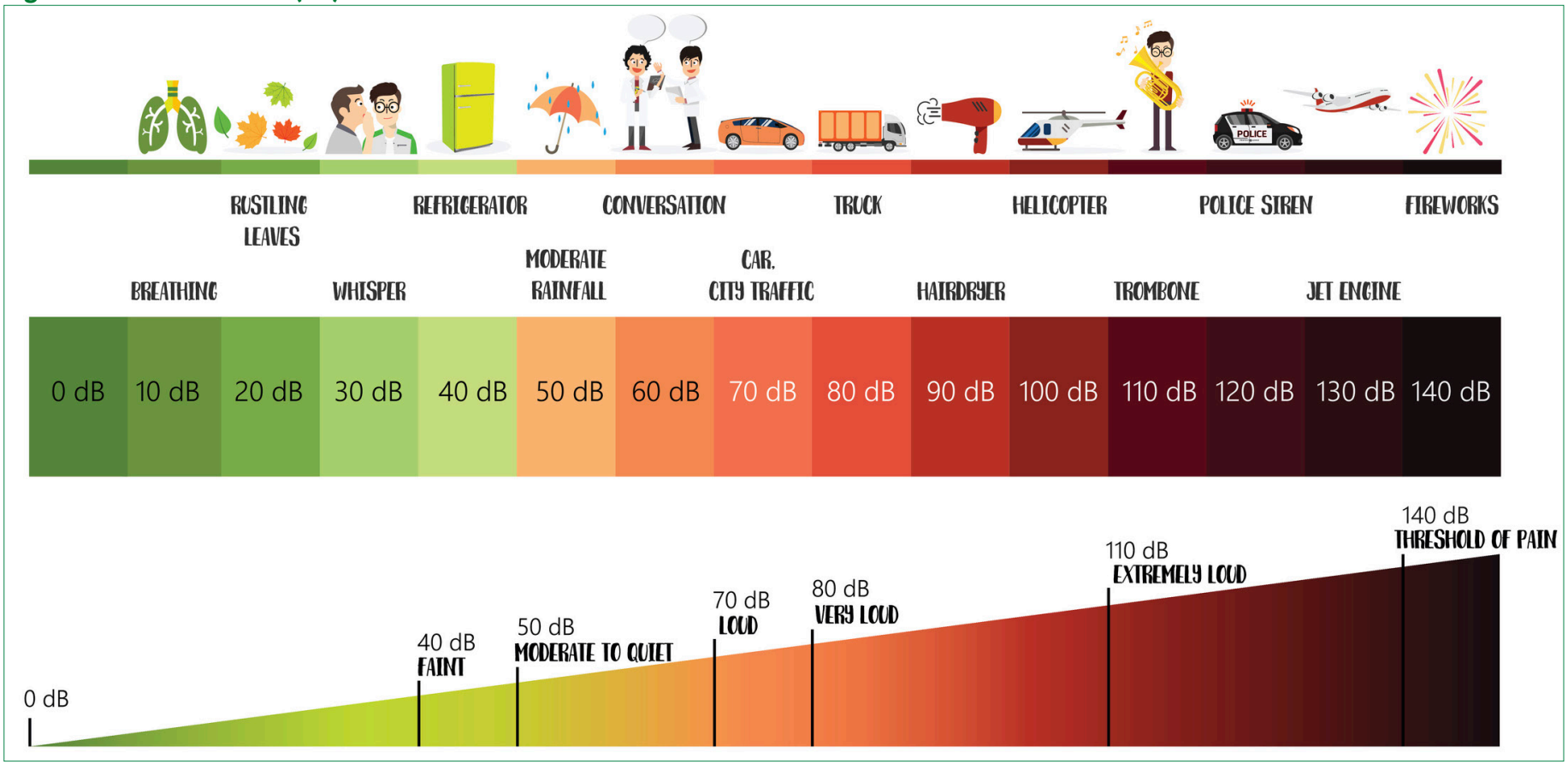
Noise Contours: Lines drawn about a noise source indicating equal levels of noise exposure. CNEL and Ldn are the metrics utilized

herein to describe annoyance due to noise and to establish land use planning criteria for noise.

Ambient Noise: The composite of noise from all sources near and far. In this context, the ambient noise level constitutes the normal or existing level of environmental noise at a given location.

Sound intensity is measured through the A-weighted scale to correct for the relative frequency response of the human ear. Unlike linear units, such as inches or pounds, decibels (dB) are measured on a logarithmic scale representing points on a sharply rising curve. For example, 10 dB are 10 times more intense than 1 dB, 20 dB are 100 times more intense, and 30 dB are 1,000 times more intense. The decibel system of measuring sound

Figure 8-1 Decibel Scale (dB)



Source: Stock Photos

gives a rough connection between the physical intensity of sound and its perceived loudness to the human ear. A 10 dB increase in sound level is perceived by the human ear as only a doubling of the loudness of the sound. Ambient sounds generally range from 30 A-weighted decibels (dBA) (very quiet) to 100 dBA (very loud). **Figure 8-1** depicts decibel levels of common noises like power tools, objects, and places.

Physiological Effects of Noise

Physical damage to human hearing begins at prolonged exposure to noise levels higher than 85 dBA. Exposure to high noise levels affects the entire system, with prolonged noise exposure in excess of 75 dBA increasing body tension and thereby affecting blood pressure and functions of the heart and the nervous system; extended periods of noise exposure above 90 dBA would result in permanent cell damage. When the noise level reaches 120 dBA, a tickling sensation occurs in the human ear, even with short-term exposure. This level of noise is called the threshold of feeling. As the sound reaches 140 dBA, the tickling sensation is replaced by the feeling of pain in the ear. This is called the threshold of pain. A sound level of 160 to 165 dBA will potentially result in dizziness or loss of equilibrium.

Regulations

Tolerance to noise varies by land use. Commercial and industrial uses are less affected by noise intrusion than hospitals, schools, day-care facilities, and residences. On a broader level, the amount of ambient noise in a community can affect whether the community is perceived as a desirable place to live, work, and play or as a stressful place. Because of this, noise and land use, compatibility relationships are important factors to consider in planning and land use studies.

State of California Building Code

The State of California's noise insulation standards are codified in the California Buildings Standards Code, Title 24, Building Standards Administrative Code, Part 2, California Building Code.[1] These noise standards are applied to new construction in California for the purpose of ensuring that the level of exterior noise transmitted to and received within the interior living spaces of buildings is compatible with their comfortable use. For new residential dwellings, hotels, motels, dormitories, and school classrooms, the acceptable interior noise limit for habitable rooms is 45 dBA CNEL or Ldn. Title 24 requires acoustical studies for residential development in areas exposed to more than 60 dBA CNEL to demonstrate that the structure has been designed to limit interior noise in habitable rooms to acceptable noise levels. Where exterior noise levels are projected to exceed 60 dBA CNEL or Ldn at the facade of a building, a report that describes the noise control measures that have been incorporated into the design of the project to meet the 45 dBA CNEL or Ldn noise limit must be submitted with the building plans.

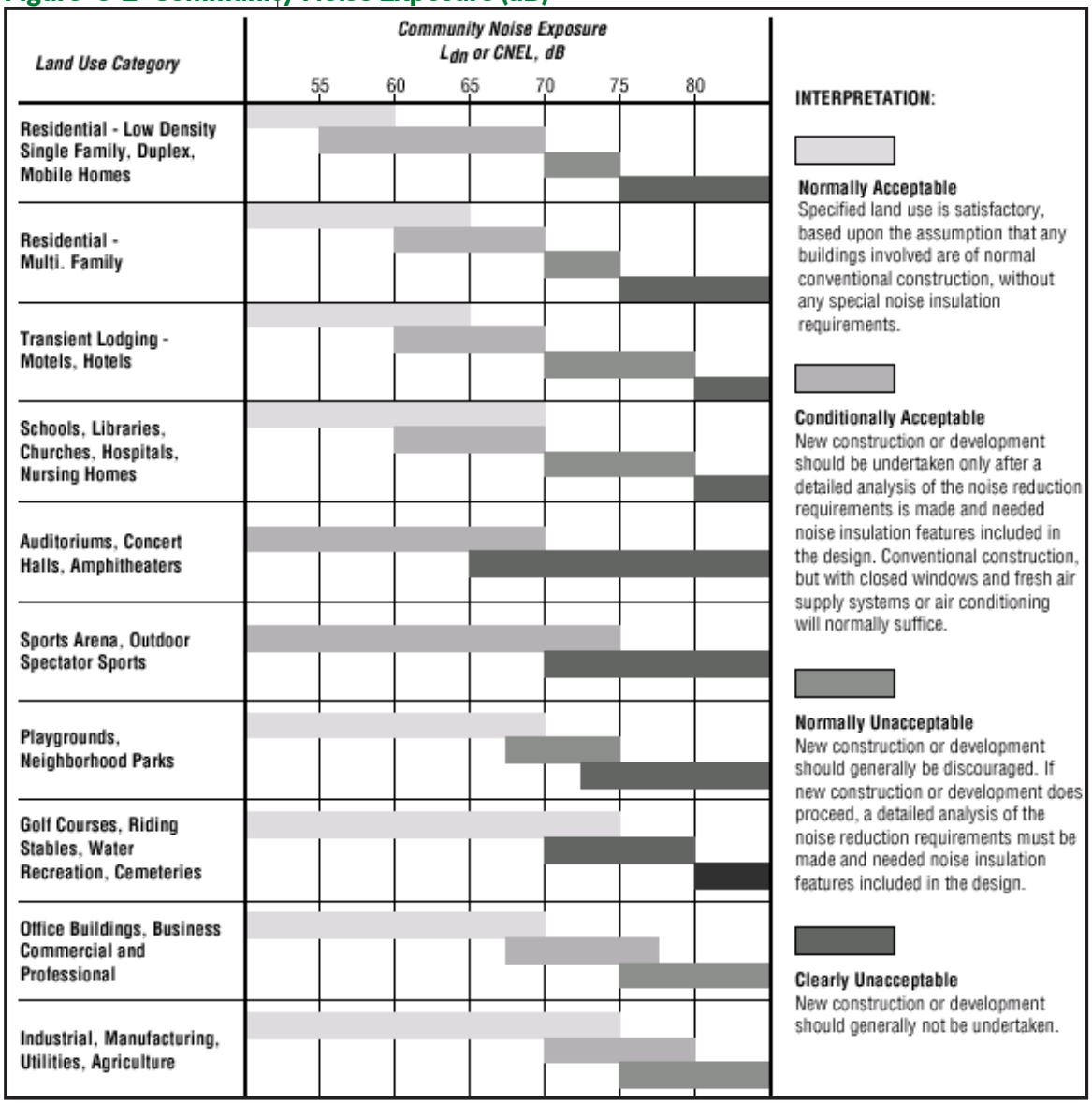
State of California Land Use Compatibility Criteria

The State of California adopts suggested land use noise compatibility levels as part of its General Plan Update Guidelines.[2] These suggested guidelines provide urban planners with an integral tool to gauge the compatibility of land uses relative

1 Title 24, Building Standards Administrative Code, Part 2, 2016 California Building Code. California Code of Regulations. Effective January 1, 2017. https://www.dgs.ca.gov/BSC/Codes Accessed May 2021.
2 General Plan Guidelines. Governor's Office of Planning and Research. State of California. October 2003. http://www.opr.ca.gov/planning/general-plan/guidelines.html. Accessed September 2017.

to existing and future noise levels. The guidelines identify normally acceptable, conditionally acceptable, and clearly unacceptable noise levels for various land uses. A conditionally acceptable designation implies that new construction or development should be undertaken after a detailed analysis of the noise reduction requirements for each land use is made, and needed noise insulation features are incorporated into the design. By comparison, a normally acceptable designation indicates that standard construction can occur with no special noise reduction requirements. The office of Planning and research provides guidance on acceptable noise levels by a variety of land uses as depicted in **Figure 8-2.**

Figure 8-2 Community Noise Exposure (dB)



Source: Office of Planning and Research- General Plan Guidelines, Appendix D

City Noise Ordinance

Sections 8.32.050 and 8.32.060 of the City of Rolling Hills Estates Municipal Code establish maximum exterior and interior sound level standards, respectively. Standards vary depending on land use. **Table 8-1** and **Table 8-2** outline these criteria and represent noise limits that no person shall exceed through the sound they create or allow to be created.

Section 8.32.210 of the City's Municipal Code identifies prohibited noise disturbances regarding construction and demolition activities. Construction activity is limited to 7:00 a.m. to 5:00 p.m. on weekdays and 9:00 a.m. to 5:00 p.m. on Saturdays. Construction activities are not allowed at any time on Sundays and holidays (New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, and Christmas Day).

Table 8-1 Exterior Noise Standards

Noise Zone	Time	Noise Standard (dBA)	L_{33} (20 minutes)	L_{16} (10 minutes)	L_2 (1 minute)
Residential and Agricultural	7:00 a.m. to 10:00 p.m.	55	60	65	70
	10:00 p.m. to 7:00 a.m.	45	50	55	60
Commercial Properties	7:00 a.m. to 10:00 p.m.	65	70	75	80
	10:00 p.m. to 7:00 a.m.	55	60	65	70
Industrial – Quarry Properties	7:00 a.m. to 10:00 p.m.	75	80	85	90
	10:00 p.m. to 7:00 a.m.	45	50	55	60

Source: City of Rolling Hills Estates. Municipal Code Section 8.32.050. Accessed December 2020. https://library.municode.com/ca/rolling_hills_estates/codes/code_of_ordinances?nodeId=TIT8HESA_CH8.32NO.
Note: dBA = A-weighted decibels

Table 8-2 Interior Noise Standards

Noise Zone	Time	Noise Standard (dBA)	L_8 (5 minutes)	L_2 (1 minute)
All	7:00 a.m. to 10:00 p.m.	45	60	70
	10:00 p.m. to 7:00 a.m.	40	50	60

Source: City of Rolling Hills Estates. Municipal Code Section 8.32.060. Accessed December 2020. https://library.municode.com/ca/rolling_hills_estates/codes/code_of_ordinances?nodeId=TIT8HESA_CH8.32NO.
Note: dBA = A-weighted decibels

Existing Noise Sources

Major noise sources in the City include traffic noise, aircraft noise, and stationary noise sources. The most important difference between transportation and non-transportation noise sources is that municipalities can generally exercise control on the level and duration of noise at the property line of any non-transportation noise source. Cities can adopt noise exposure standards for noise levels generated from mobile sources, such as trucks, trains, or planes, and then make permitting decisions regarding the sensitivity of land uses in areas with excessive noise. Cities play a role in enforcing the requirement in the California Vehicle Code regarding properly operating mufflers and may also set speed limits or weight restrictions on streets. In general terms, the City's actions are primarily proactive with respect to stationary noise sources versus reactive for those mobile sources beyond the City's control.

Traffic Noise

Automobiles, buses, and trucks are dominant producers of transportation noise in the Planning Area. Traffic moving along streets and freeways produces a sound level that remains relatively constant and is part of the area's minimum ambient noise level. Vehicular noise varies with the volume, speed, and type of traffic. Slower traffic produces lower noise levels than fast-moving traffic. Trucks typically generate higher noise levels than cars. Infrequent or intermittent noise is also associated with vehicles, including sirens, vehicle alarms, slamming of doors, garbage and construction vehicle activity, and honking of horns. These noises add to urban noise and are regulated by a variety of agencies.

Major transportation noise sources include traffic on roadways that traverse the Planning Area. These roadways include Hawthorne Boulevard, Crenshaw Boulevard, Palos Verdes Drive North, Palos Verdes Drive East, Silver Spur Road, and Highridge Road. Large trucks that travel on major arterials contribute to the noise environment in the Planning Area. Traffic noise may also result from buses; bus service is provided on major streets, collectors, and local streets throughout the Planning Area.

Existing traffic noise along these roadways was calculated using the Federal Highway Administration (FHWA) highway traffic noise prediction model (FHWA RD-77-108). This model uses a typical vehicle mix for urban/suburban areas in California and requires parameters, including traffic volumes, vehicle speed, and roadway geometry, to compute typical equivalent noise levels during the daytime, evening, and nighttime hours. The results are shown in **Table 8-3**. These noise levels assume that no shielding is provided between the traffic and the location where the noise contours are drawn. As shown in **Table 8-3**, traffic noise on these roadways range from approximately 51.8 to 66.7 dBA CNEL when measured 100 feet from the roadway centerline.This noise level range is typical for an urban environment. **Figure 8-3** illustrates the noise contours from roadways in the City in the year 2021.

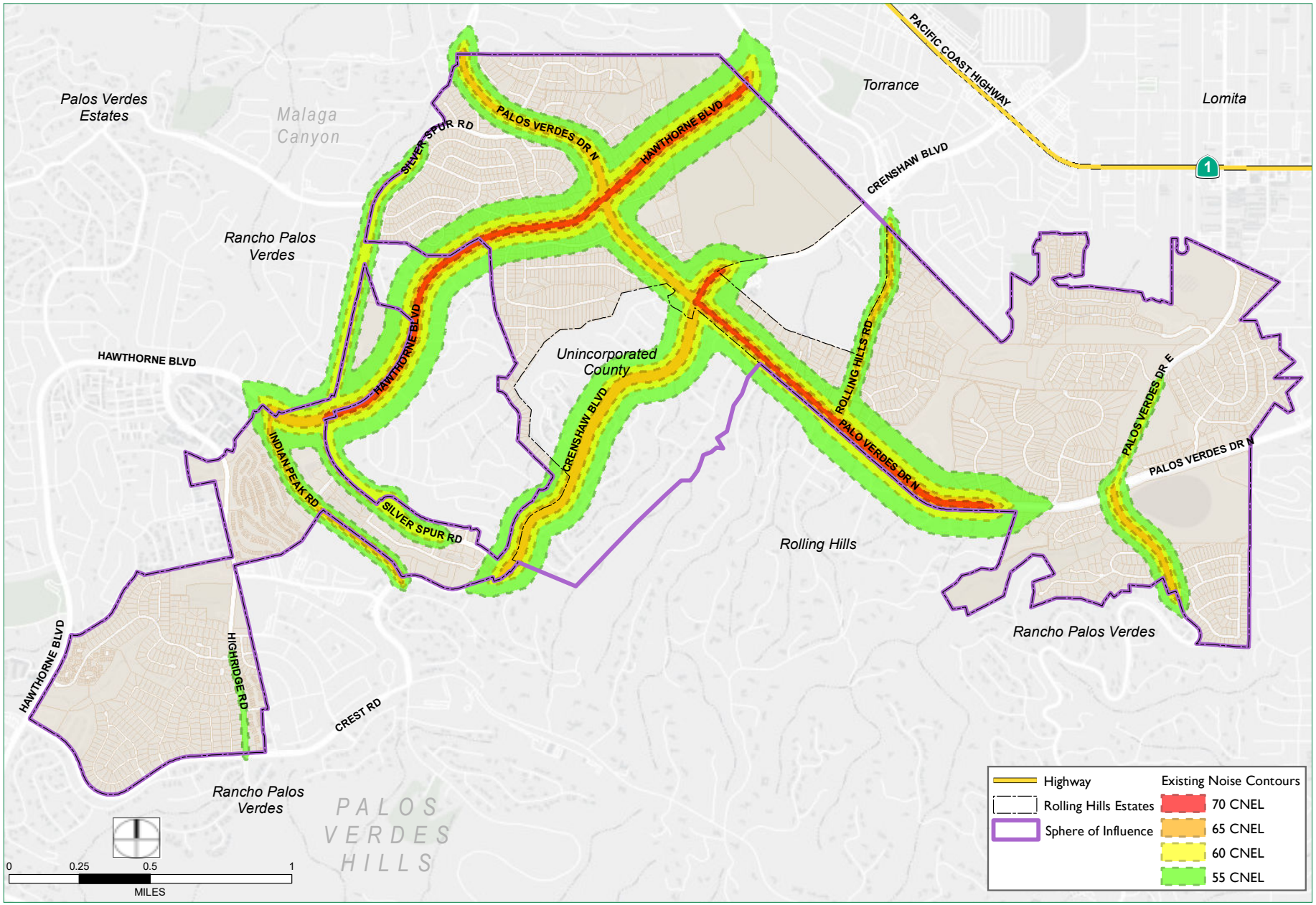
Table 8-3 Existing Traffic Noise Levels

Roadway Segment	Existing					
	ADT	dBA@100Feet from Roadway Centerline	Distance from Roadway Centerline to: (Feet) [1]			
			70 CNEL Noise Contour	65 CNEL Noise Contour	60 CNEL Noise Contour	55 CNEL Noise Contour
Silver Spur Road south of Kingspine Road	13,431	59.2	-	-	89	192
Palos Verdes Drive North west of Hidden Valley Road	18,688	61.6	-	59	128	276
Hawthorne Blvd south of Rolling Hills Road	30,300	66.4	57	124	266	574
Hawthorne Blvd south of Palos Verdes Drive North	30,006	66.3	57	123	265	570
Palos Verdes Drive North west of Crenshaw Blvd	21,626	63.6	-	80	173	372
Crenshaw Blvd north of Palos Verdes Drive North	26,688	65.9	53	114	245	529
Palos Verdes Drive North east of Eastvale Road	26,660	64.5	43	92	198	428
Rolling Hills Road north of Palomino Lane	9,988	58.9	-	39	84	181
Palos Verdes Drive East south of Club View Lane	10,758	55.0	-	-	46	100
Palos Verdes Drive North west of Strawberry Lane	33,727	66.7	60	130	279	602
Palos Verdes Drive East south of Palos Verdes Drive North	14,482	61.8	-	61	132	284
Hawthorne Blvd between Indian Peak Road & Silver Spur Road	31,311	65.3	-	105	226	487

Indian Peak Road south of Hawthorne Blvd	7,382	58.9	-	39	84	182
Silver Spur Road north of Roxcove Drive	12,651	60.1	-	-	101	218
Crenshaw Blvd north of Silver Spur Road	30,873	65.3	-	104	224	483
Highridge Road south of Country Lane	3,450	51.8	-	-	-	61

Source: Michael Baker International, 2021.
Notes:
ADT = average daily trips; dBA = A-weighted decibels; CNEL = community noise equivalent level.
"-" = contour is located within the roadway right-of-way.
Note:Roadwaynoiselevelsandcontourswerecalculatedusingthe FederalHighwayAdministration(FHWA)highwaytrafficnoisepredictionmodel(FHWARD-77-108)withCaliforniaVehicleNoise(CALVENO)EmissionLevels.

Figure 8-3 Existing Traffic Noise Contours



Source: City of Rolling Hills Estates GIS, 2017; Los Angeles County GIS Data, 2017

Aircraft Noise

Aircraft noise within the City is predominantly influenced by operations at the Torrance Municipal Airport in the City of Torrance, operating approximately 1 mile north of the City. Operations at the Torrance Municipal Airport provide regional aviation access to recreational pilots, businesses, and emergency services flights. Due to the length and weight capacity of the runways, air carrier type aircraft is not recommended for operations. Noise from aircraft may be occasionally audible within the City; however, the City of Torrance has created a Noise Abatement office to reduce aircraft noise in the community by enforcing the City of Torrance's Municipal Code. In addition, the City of Rolling Hills Estates does not fall within the airport's influence area and is beyond the airport's 65 CNEL noise contour.[3] The nearest international airport would be the Los Angeles International Airport (LAX) in the City of Los Angeles, which is located approximately 9.8 miles north of the City. Operations at LAX include commercial air carriers, commuter flights, industrial planes, charter flights, and other general aviation. Noise from the aircraft generates a relatively minor contribution to the overall noise environment because the City is located well beyond the 65 dBA CNEL noise contour of LAX.[4]

Stationary Noise Sources

Stationary noise sources generated in the City include residential, recreational, commercial, retail, and business activities. Residential noise sources include garden watering, garage opening, piano playing, doors closing, birds singing, peacocks and other animals, horses, barnyard animals, and human conversation. Recreational noise sources include human activity and children playing. Commercial, retail, and business noise sources include vehicular traffic and pedestrian activity.

Existing Noise Measurements

Long-term and short-term noise measurements were conducted to document the actual existing noise levels at various locations throughout the City. The noise measurements represent a snapshot of the current noise environment in the City. Several criteria were used in the site selection process, including, but not limited to, the proximity of a measurement site to sensitive land uses as well as its proximity to significant noise generators. Significant noise generators within the City are traffic on Hawthorne Boulevard, Crenshaw Boulevard, and Palos Verdes Drive North due to high traffic volumes on these roadways.

Noise measurement sites were selected within the confines of the City to provide noise measurement coverage, and a series of long-term 24-hour, and short-term 15-minute noise measurements were conducted at the selected sites. The long-term noise level measurement locations are shown in **Table 8-4**. The short-term noise level measurement locations are shown in **Table 8-5**. All noise measurement locations are shown in **Figure 8-4**.

3 Los Angeles County Airport Land Use Commission. *Torrance Airport Influence Area*. May 2003.
4 California State Airport Noise Standards Quarterly Report, First Quarter 2017. Los Angeles World Airports and Los Angeles International Airport. May 2017.

Table 8-4 Existing Long-Term Noise Level Measurements

Monitor No.	Start Date	Location	Daytime Noise Level Range (dBA L_{eq})	Evening Time Noise Level Range (dBA L_{eq})	Nighttime Noise Level Range (dBA L_{eq})	Daily Noise Level (dBA CNEL)	Noise Source
LT-1	12/12/17	26 Sorrell Lane	48.7 - 53.4	50.1 - 50.5	40.8 - 51.2	55	Traffic on Palos Verdes Drive North and Palos Verdes Drive East.
LT-2	12/12/17	1 Pony Lane	44.8 - 50.7	47.4 - 48.4	41.0 - 49.9	53	Traffic on Palos Verdes Drive North and Rolling Hills Road and aircraft.
LT-3	12/12/17	25851 Hawthorne Boulevard, Ernie Howlett Park	61.9 - 64.3	59.1 - 61.8	46.6 - 59.6	64	Traffic on Hawthorne Boulevard.
LT-4	12/12/17	1 Masongate Drive	52.2 - 58.5	49.3 - 51.5	39.7 - 49.8	55	Traffic on Palos Verdes Drive North.
LT-5	12/13/17	Silver Saddle Lane and Shady Vista Road	61.1 - 64.0	59.3 - 61.2	48.1 - 61.5	65	Traffic on Hawthorne Boulevard.
LT-6	12/13/17	9 Via De La Vista	48.9 - 51.4	47.9 - 48.4	38.4 - 48.8	52	Traffic on Silver Spur Road.
LT-7	12/13/17	837 Silver Spur Road	56.6 - 61.1	53.9 - 55.5	48.0 - 55.2	60	Traffic on Silver Spur Road.
LT-8	12/13/17	49 Oaktree Lane	44.1 - 55.6	44.7 - 45.0	42.6 - 49.2	53	Traffic on Indian Peak Road.
LT-9	12/13/17	8 Coraltree Lane	46.8-48.5	45.6-47.6	41.5-45.3	51	Traffic on Hawthorne Boulevard

Source: Measured by LSA Assocates,Inc in 2017
Notes:
Leq = average noise level
CNEL = Community Noise Equivalent Level
dB = decibel(s)
dBA = A-weighted decibel(s)

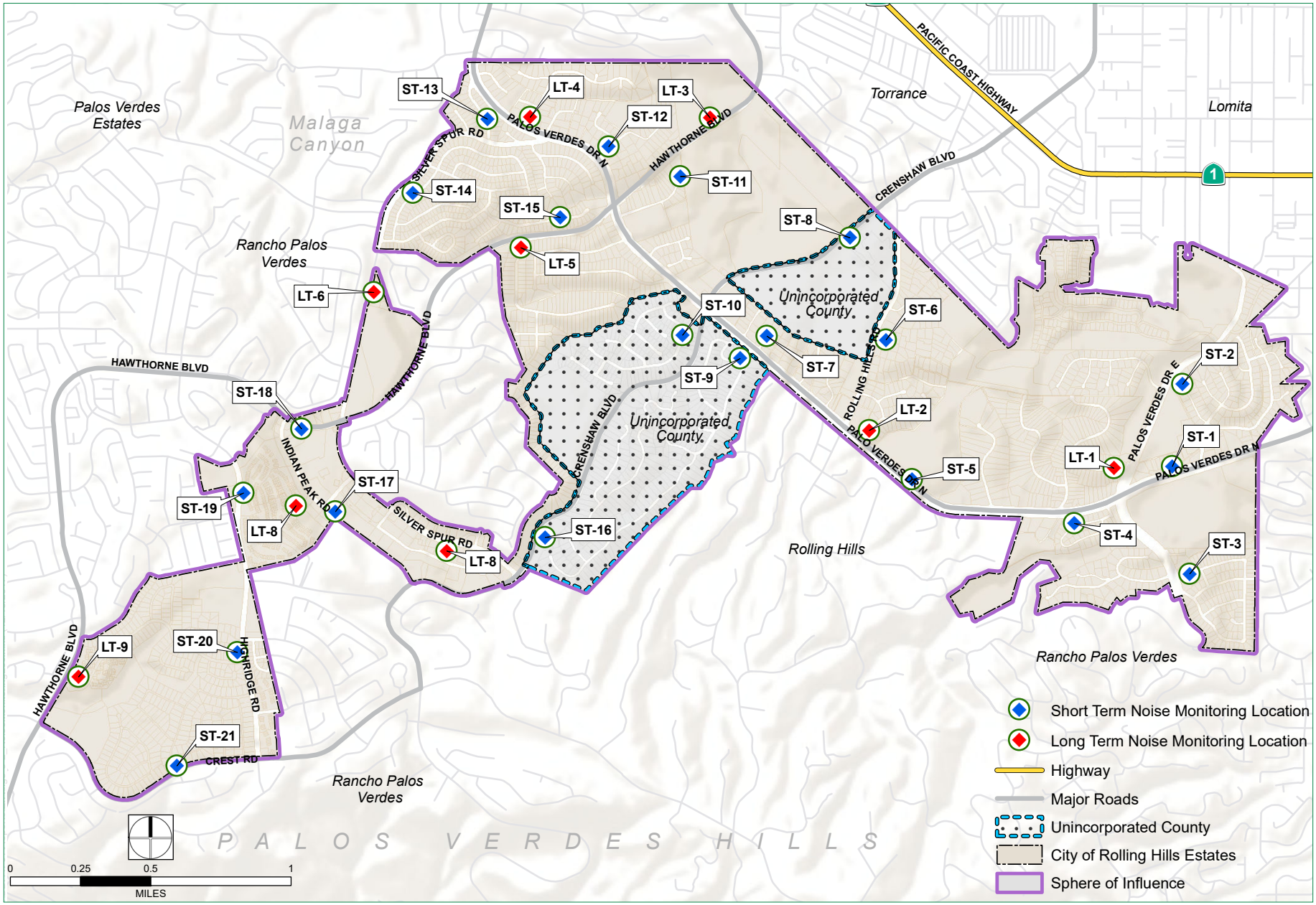
Table 8-5 Existing Short-Term Noise Level Measurements

Monitor No.	Date	Start Time	Duration	dBA L_{eq}	Location Description	Noise Sources
ST-1	12/12/17	9:30 a.m.	15 minutes	56.6	5 Casaba Road. In front of the residence.	Traffic on Palos Verdes Drive North.
ST-2	12/12/17	10:30 a.m.	15 minutes	41.6	21 Vista Real Drive. In front of the residence.	Wind, birds, traffic on Palos Verdes Drive East.
ST-3	12/12/17	11:00 a.m.	15 minutes	45.4	2325 Carriage Drive. In front of the residence.	Wind, birds, traffic on Palos Verdes Drive East.
ST-4	12/12/17	11:30 a.m.	15 minutes	50.8	15 Hitching Post Drive. In front of the residence.	Traffic on Palos Verdes Drive North and light traffic on Hitching Post Drive.
ST-5	12/12/17	12:00 p.m.	15 minutes	58.2	3011 Palos Verdes Drive North. Near the baseball field of Dapplegrey Elementary School.	Traffic on Palos Verdes Drive North.
ST-6	12/12/17	12:25 p.m.	15 minutes	51.9	3 Singletree Lane. In front of the residence.	Traffic on Rolling Hills Road, light traffic on Singletree Lane, and bird noise.
ST-7	12/12/17	12:50 p.m.	15 minutes	43.1	6 Rawhide Lane. In front of the residence.	Traffic on Palos Verdes Drive North.
ST-8	12/12/17	1:15 p.m.	15 minutes	54.4	3603 Hidden Lane. In front of the residence.	Traffic on Crenshaw Boulevard and light traffic on Hidden Lane.
ST-9	12/12/17	12:32 p.m.	15 minutes	61.5	26708 Eastvale Road. In front of the residence.	Traffic on Palos Verdes Drive North and faint aircraft noise.
ST-10	12/12/17	11:41 a.m.	15 minutes	48.1	4018 Rosseau Lane. In front of the residence.	Traffic on Crenshaw Boulevard and Palos Verdes Drive North. Faint aircraft noise.
ST-11	12/12/17	9:34 a.m.	15 minutes	48.1	41 Moccasin Lane. In front of the residence.	Traffic on Hawthorne Boulevard and some aircraft noise.
ST-12	12/13/17	10:33 a.m.	15 minutes	50.2	4 Hidden Valley Road. In front of the residence.	Traffic on Palos Verdes Drive North and bird noise.
ST-13	12/13/17	10:06 a.m.	15 minutes	42.7	4941 Rolling Meadows Road. In front of the residence.	Traffic on Palos Verdes Drive North.
ST-14	12/13/17	11:36 a.m.	15 minutes	50.7	26361 Dunwood Road. In front of the residence.	Traffic on Silver Spur Road.
ST-15	12/13/17	11:01 a.m.	15 minutes	54.8	4703 Rockbluff Drive. In front of the residence.	Traffic on Hawthorne Boulevard. Distant construction noise at the cul-de-sac of Rockbluff Drive. Street cleaning 11:06 a.m. to 11:11 a.m.

Monitor No.	Date	Start Time	Duration	dBA L_{eq}	Location Description	Noise Sources
ST-16	12/13/17	12:08 p.m.	15 minutes	46.3	4347 Canyon View Lane, between the residences at the cul-de-sac.	Traffic on Crenshaw Boulevard and bird noise.
ST-17	12/13/17	12:38 p.m.	15 minutes	59.7	550 Deep Valley Drive, at the southwest corner of the parking structure top level.	Traffic on Indian Peak Road and HVAC noise from the office building.
ST-18	12/13/17	12:59 p.m.	15 minutes	60.8	Near 27440 Hawthorne Boulevard, at the center of the north edge of the parking lot.	Traffic on Hawthorne Boulevard and parking lot activity.
ST-19	12/14/17	3:49 p.m.	15 minutes	52.8	9 Cottonwood Circle, in front of the residence.	Traffic on Highridge Road and loud motorcycle noise.
ST-20	12/13/17	2:42 p.m.	15 minutes	51.6	Northwest of Highridge Road and Country Lane, in a park associated with Rolling Hills Parks Estates.	Traffic on Highridge Road and pedestrians talking.
ST-21	12/13/17	3:23 p.m.	15 minutes	60.6	66 Misty Acres Road, west of the residence.	Traffic on Crest Road and some aircraft noise.

Source: Measured by LSA Assocates,Inc in 2017
Notes:
L_{eq} = average noise level
dB = decibel(s)
dBA = A-weighted decibel(s)
HVAC = Heating Ventilation Air Conditioning

Figure 8-4 Noise Monitoring Locations



Source: City of Rolling Hills Estates GIS, 2017; Los Angeles County GIS Data, 2017

Future Noise Impacts and Mitigation

Future Noise Impacts and Mitigation

Future Noise Impact

The Noise study conducted for the low range and high range scenarios per land use element found that the factors that are likely to have some impact on noise levels in the City are project construction and the increase in traffic. As a conservative analysis, shielding features, including topography and intervening buildings, were not considered in the model. Other sources such as residential uses, commercial uses, mechanical equipment, parking areas, and landscape maintenance will have less than significant impact on noise levels.

Construction Impact

Typical activities associated with construction are a highly noticeable temporary noise source. Two primary sources generate noise from construction activities:

- Transporting workers and equipment to construction sites
- The noise from to active construction equipment

These noise sources can be a nuisance to local residents and businesses or unbearable to sensitive receptors (i.e., residences, hospitals, senior centers, schools, daycare facilities, etc.). Construction of individual developments associated with the implementation of the GPU could temporarily increase the ambient noise environment in the vicinity of each individual project. Construction would be localized and would occur intermittently for varying periods. Because specific project-level information is not available at this time, it is not possible to quantify the construction noise impacts at specific sensitive receptors.

Pursuant to the RHEMC Section 8.32.210, construction of future projects would be limited to occur between the hours of 7:00 a.m. and 5:00 p.m. Mondays through Fridays and between 9:00 a.m. and 5:00 p.m. on Saturdays. In addition, construction activities are prohibited from violating the noise standards set forth in RHEMC Sections 8.32.050, 8.32.060, 8.32.070, or 8.32.085. Development projects would be subject to environmental review, and specific construction noise attenuation techniques would be utilized to reduce noise generation during construction to ensure compliance with RHEMC requirements. Therefore, compliance with RHEMC Section 8.32.210 would reduce short-term construction noise impacts to less than significant levels.

Development Impact

Existing and future noise levels have been calculated for various roadway segments within the City. The following is a summary of the calculated traffic noise levels associated with development under the GPU for both high range and low range buildout scenarios:

- Five of the roadway segments modeled (along Hawthorne Boulevard, Crenshaw Boulevard, Palos Verdes Drive North) would generate noise levels between 65 dBA CNEL and 70 dBA CNEL at 100 feet from the roadway centerline.
- Five modeled roadway segments (along Palos Verdes Drive North, Palos Verdes Drive East, and Silver Spur Road) would generate noise levels between 60 dBA CNEL and 65 dBA CNEL at 100 feet from the centerline.

It is noted that the computer noise model used to project the potential ambient noise levels with the implementation of the

GPU does not consider the existing noise attenuating features such as sound walls, buildings, landscaping, or topography. As such, the roadway noise contours may not reflect true noise conditions and may be conservative in such aspects. Intervening structures or other noise-attenuating obstacles between the roadway and sensitive receptors may reduce roadway noise levels at the receiving receptor. However, there would almost certainly be receptors that would experience roadway noise levels very similar to those indicated by the noise contours. **Table 8-6** and **Table 8-7** compare the "Existing" scenario to the "General Plan Year 2040" buildout scenarios and outline the anticipated noise level changes adjacent to specific roadways in the City as a direct result of the implementation of the GPU. These are dipicted in **Figure 8-5** and **Figure 8-6**.

With the implementation of the GPU, some residential uses would experience noise levels that would exceed the City's Noise and Land Use Criteria Compatibility Criteria due to the increase in roadway noise. However, compared to existing conditions, future noise levels would not increase by 3 dBA or more under both the low range and high range buildout scenarios. Since a 3 dBA change in noise levels is generally not perceptible, noise levels that do not exceed 3 dBA are considered less than significant.

When considering the representative projects, there are no additional or different mobile source noise impacts beyond those described above resulting from the overall buildout of the proposed GPU. As the total buildout of the proposed GPU has been determined to result in a less-than-significant impact related to mobile source noise, the representative projects themselves would also result in less-than-significant impacts since the representative projects are a subset of the buildout of the proposed GPU.

Noise Mitigation Techniques

Noise impacts can be mitigated in three basic ways:

- Reduce the sound level at the source
- Increase the distance between the source and receiver
- Insulate the source and/or receiver

Several techniques can be used to mitigate noise impacts.

Building and Site Design

- Location of openings (doors, windows, vents, and so on) as far as reasonably possible from noise generators such as traffic, HVAC units, and so on
- Location of queiter areas such as bedrooms farther from noise generators
- Use of sound-rated windows (extra thick or multi-paned) and wall insulation
- Proper fitting of doors and windows, sealing of opening, caulked joints, and adequately insulated plumbing from structural members
- Use of solid barrier with a mass of at least four pounds per square foot of surface area, e.g., landscaped berms and sound walls
- Use of appropriate landscaped buffers

Land Uses Location

- Location of housing, shopping, and employment into the same project or area to enable alternative modes of travel
- Location of noise-sensitive uses such as schools, libraries, hospitals, and care homes in areas with noise levels below 65 dBA

Traffic and Transportation

- Signal synchronization to enable the flow of traffic
- Reduction of congestion by techniques such as proper channelization of turning movements and so on
- Reduction of traffic volumes by promoting alternative modes such as biking, walking, riding, and the use of high-occupancy vehicles
- Proper roadway maintenance and use of quieter pavement strategies
- Use of sound barriers, e.g., landscaped berms or sound walls

Table 8-6 Year 2040 Low Range Scenario Traffic Noise Levels

Roadway Segment	ADT	Year 2040 Low Range Scenario					Existing	Difference Between Existing and Year 2040
		dBA@100 Feet from Roadway Centerline	Distance from Roadway Centerline to: (Feet) 1				dBA@100 Feet from Roadway Centerline	
			70 CNEL Noise Contour	65 CNEL Noise Contour	60 CNEL Noise Contour	55 CNEL Noise Contour		
Silver Spur Road south of Kingspine Road	14,390	59.5	-	-	93	201	59.2	0.3
Palos Verdes Drive North west of Hidden Valley Road	20,022	61.9	-	62	134	289	61.6	0.3
Hawthorne Blvd south of Rolling Hills Road	32,462	66.7	60	129	279	601	66.4	0.3
Hawthorne Blvd south of Palos Verdes Drive North	32,148	66.6	60	129	277	597	66.3	0.3
Palos Verdes Drive North west of Crenshaw Blvd	23,170	63.9	39	84	181	389	63.6	0.3
Crenshaw Blvd north of Palos Verdes Drive North	28,593	66.1	55	119	257	554	65.9	0.2
Palos Verdes Drive North east of Eastvale Road	28,564	64.8	45	96	208	448	64.5	0.3
Rolling Hills Road north of Palomino Lane	10,701	59.2	-	41	88	189	58.9	0.3
Palos Verdes Drive East south of Club View Lane	11,527	55.3	-	-	49	105	55.0	0.3
Palos Verdes Drive North west of Strawberry Lane	36,135	67.0	63	136	293	630	66.7	0.3
Palos Verdes Drive East south of Palos Verdes Drive North	15,517	62.1	-	64	138	298	61.8	0.3
Hawthorne Blvd between Indian Peak Road & Silver Spur Road	33,546	65.6	51	110	237	510	65.3	0.3

Indian Peak Road south of Hawthorne Blvd	7,910	59.2	-	41	88	190	58.9	0.3
Silver Spur Road north of Roxcove Drive	13,554	60.4	-	-	106	228	60.1	0.3
Crenshaw Blvd north of Silver Spur Road	33,077	65.6	-	109	235	506	65.3	0.3
Highridge Road south of Country Lane	3,696	52.1	-	-	-	64	51.8	0.3

Source: Michael Baker International, 2021.
Notes:
ADT = average daily trips; dBA = A-weighted decibels; CNEL = community noise equivalent level.
"-" = contour is located within the roadway right-of-way.
Note: Roadway noise levels and contours were calculated using the Federal Highway Administration (FHWA) highway traffic noise prediction model (FHWA RD-77-108) with California Vehicle Noise (CALVENO) Emission Levels.

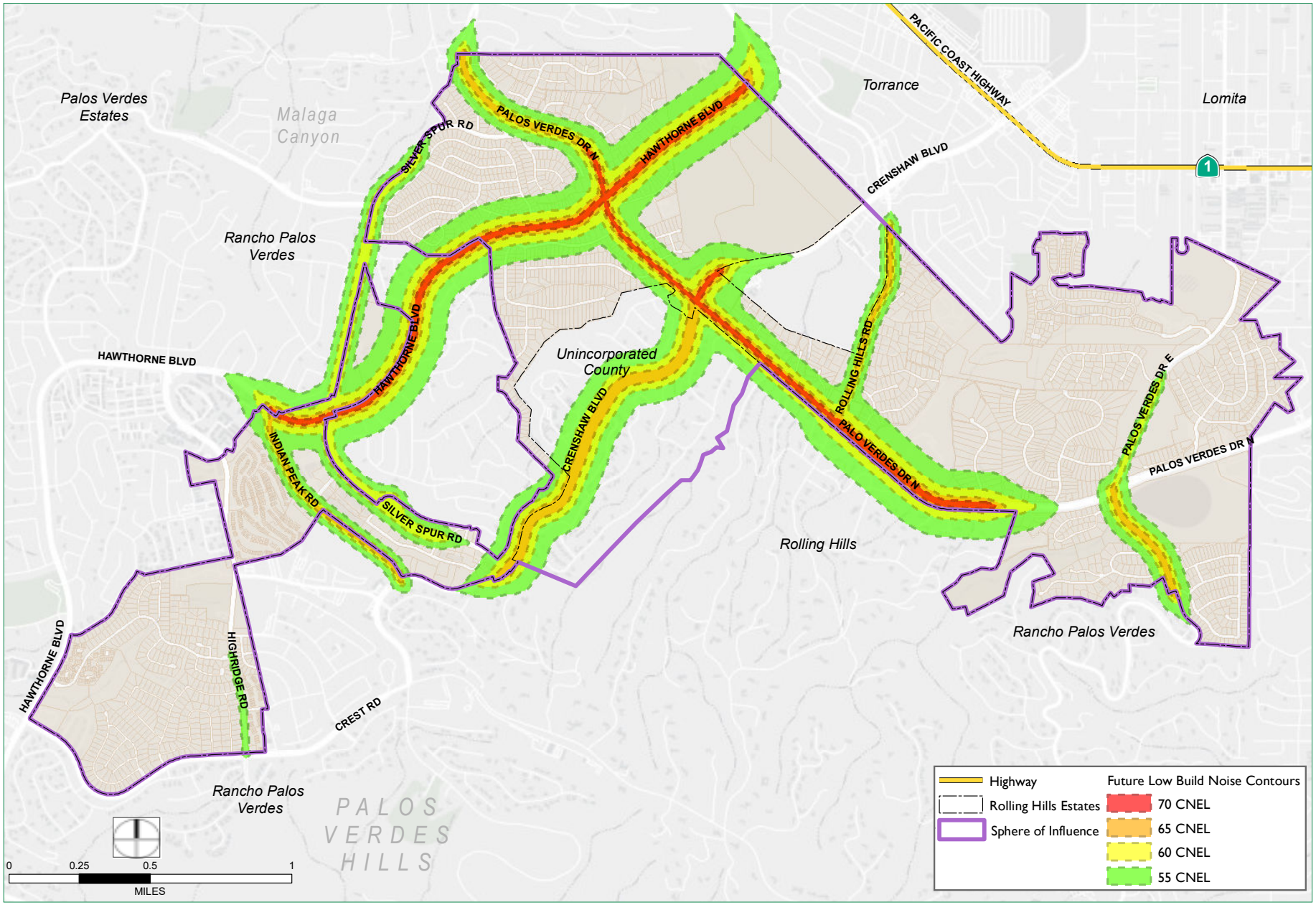
Table 8-7 Year 2040 High Range Scenario Traffic Noise Levels

	Year 2040 High Range Scenario						Existing	
Roadway Segment	ADT	dBA@100 Feet from Roadway Centerline	Distance from Roadway Centerline to: (Feet) 1				dBA@100 Feet from Roadway Centerline	Difference Between Existing and Year 2040
			70 CNEL Noise Contour	65 CNEL Noise Contour	60 CNEL Noise Contour	55 CNEL Noise Contour		
Silver Spur Road south of Kingspine Road	14,598	59.6	-	-	94	203	59.2	0.4
Palos Verdes Drive North west of Hidden Valley Road	20,313	62.0	-	63	135	292	61.6	0.4
Hawthorne Blvd south of Rolling Hills Road	32,934	66.7	61	131	282	607	66.4	0.4
Hawthorne Blvd south of Palos Verdes Drive North	32,613	66.7	60	130	280	603	66.3	0.4
Palos Verdes Drive North west of Crenshaw Blvd	23,506	63.9	39	85	182	393	63.6	0.4
Crenshaw Blvd north of Palos Verdes Drive North	29,008	66.2	56	120	260	559	65.9	0.4

Palos Verdes Drive North east of Eastvale Road	28,978	64.8	45	97	210	452	64.5	0.4
Rolling Hills Road north of Palomino Lane	10,857	59.2	-	41	89	191	58.9	0.4
Palos Verdes Drive East south of Club View Lane	11,694	55.4	-	-	49	106	55.0	0.4
Palos Verdes Drive North west of Strawberry Lane	36,659	67.1	64	137	295	636	66.7	0.4
Palos Verdes Drive East south of Palos Verdes Drive North	15,742	62.2	-	65	140	301	61.8	0.4
Hawthorne Blvd between Indian Peak Road & Silver Spur Road	34,033	65.7	51	111	239	515	65.3	0.4
Indian Peak Road south of Hawthorne Blvd	8,025	59.3	-	41	89	192	58.9	0.4
Silver Spur Road north of Roxcove Drive	13,751	60.4	-	-	107	230	60.1	0.4
Crenshaw Blvd north of Silver Spur Road	33,557	65.6	51	110	237	511	65.3	0.4
Highridge Road south of Country Lane	3,750	52.1	-	-	-	64	51.8	0.4

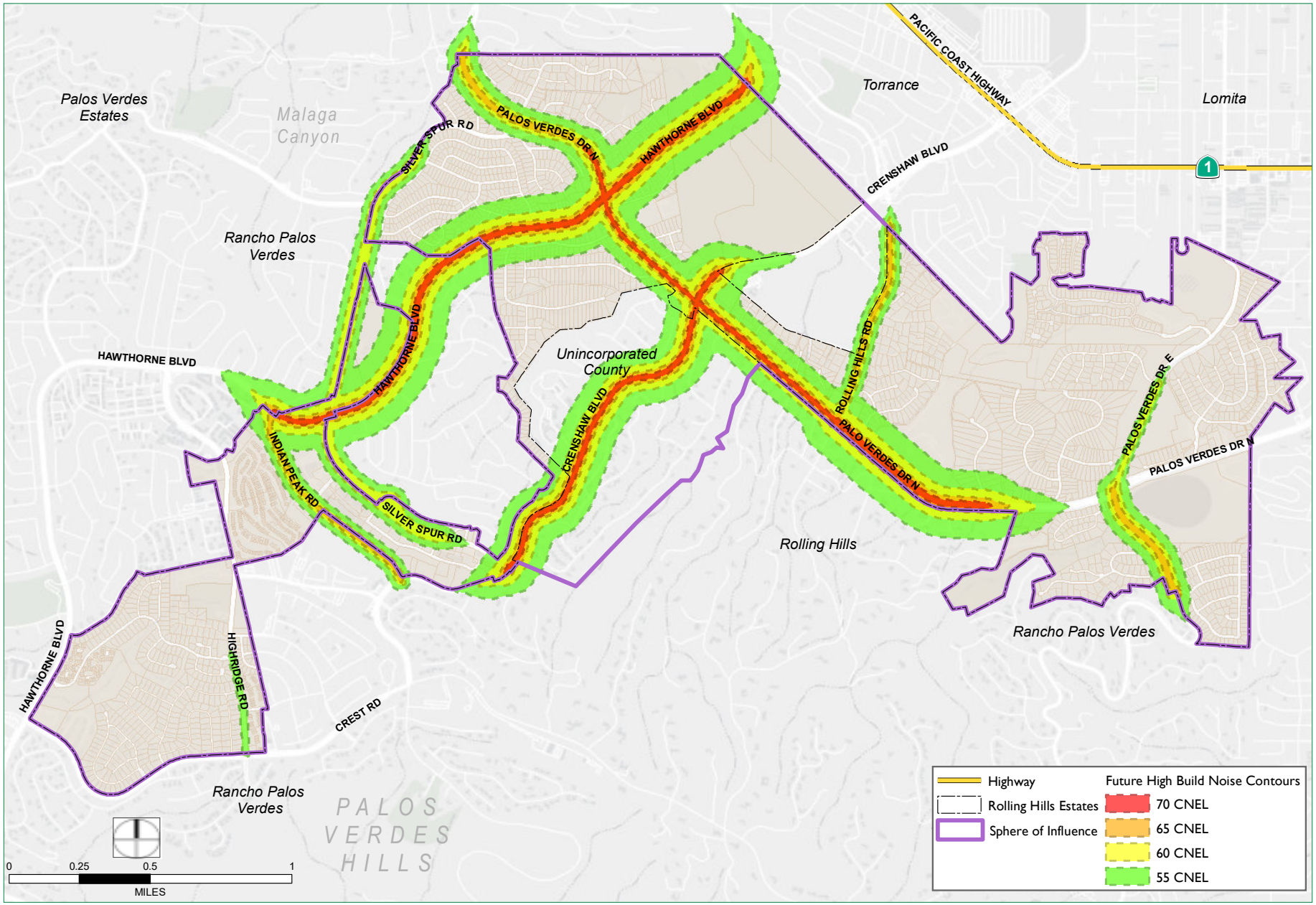
Source: Michael Baker International, 2021.
Notes:
ADT = average daily trips; dBA = A-weighted decibels; CNEL = community noise equivalent level.
"-" = contour is located within the roadway right-of-way.
Note: Roadway noise levels and contours were calculated using the Federal Highway Administration (FHWA) highway traffic noise prediction model (FHWA RD-77-108) with California Vehicle Noise (CALVENO) Emission Levels

Figure 8-5 Future(2040)LowBuildNoiseContours



Source: City of Rolling Hills Estates GIS, 2017; Los Angeles County GIS Data, 2017

Figure 8-6 Future(2040)HighBuildNoiseContours



Source: City of Rolling Hills Estates GIS, 2017; Los Angeles County GIS Data, 2017

Goals, Policies, and Implementation Measures

Goals, Policies, and Implementation Measures

This section introduces the goals, policies, and implementation measures proposed for the Noise Element of the General Plan for Rolling Hills Estates. Goals, policies, and implementation measures are defined as:

- **Goals:** Topical statements of broad direction and philosophy
- **Policies:** Reinforcing statements of the overarching goals of the General Plan
- **Implementation Measures (IM):** Action-oriented statements to help Rolling Hills Estates actualize their goals and policies

Noise Levels

Goal 8.1	**The City will maintain acceptable noise levels for each land use category.**
Policy 8.1.1	**Maintain acceptable noise levels for land uses per the City's Noise Ordinance.**
IM 8.1.1.1	Update the Noise Ordinance as needed to reflect the standards established by the California Department of Public Health and as adopted by the City of Rolling Hills Estates in the Noise Element.
IM 8.1.1.2	Update the Noise Ordinance as necessary to establish design guidelines and criteria to encourage good acoustical design for noise reduction.
Policy 8.1.2	**Maintain acceptable noise levels for construction per the City's Noise Ordinance.**
IM 8.1.2.1	Issue specific construction hours for each development permit with consideration for surrounding land uses.
IM 8.1.2.2	Review the time limits designed to reduce construction noise impacts to ensure they are consistent with other regulations and ordinances.
Policy 8.1.3	**Ensure that land uses are located with consideration to their sensitivity to noise levels as defined by the City's Noise Element.**
IM 8.1.3.1	Refer to the noise contour map in identifying future development locations.

IM 8.1.3.2	Locate noise-sensitive land uses such as schools and medical facilities within areas subject to ambient outdoor noise levels below 65 dBA unless effective mitigation can be identified. The acceptable noise level should not exceed 55 dBA, where no mitigation is possible.
IM 8.1.3.3	Review future residential development based on noise standards regulating exterior ambient noise levels as defined by the California Department of Public Health.
Policy 8.1.4	**Preserve the natural ambient noise environment as much as possible.**
IM 8.1.4.1	Review development proposals as part of the environmental review process to determine the nature and extent of potential stationary and mobile noise impacts.
IM 8.1.4.2	Monitor California Environmental Quality Act review of all projects to ensure that noise impacts are identified and adequately addressed to minimize potential noise impacts.

Control and Reduce Noise

Goal 8.2	**The City will promote the control and reduction of noise created by transportation and technologies.**
Policy 8.2.1	**Work with surrounding jurisdictions to limit excessive noise due to aircraft operations by reviewing established flight corridors and new development proposals that will involve aircraft operations.**
IM 8.2.1.1	Designate a staff person to review projects, which could result in significant increases to ambient noise levels due to aircraft/helicopter operations.
IM 8.2.1.2	Generally oppose projects that result in a significant adverse impact on the environment due to increased noise levels unless the impact can be mitigated.
Policy 8.2.2	**Strive to control the noise impact of airborne delivery technologies such as drone deliveries.**
IM 8.2.2.1	Initiate a study to explore the impacts and countermeasures for airborne delivery. At a minimum, the study will include acceptable noise levels, the acceptable height of the flight, adequate routes and ways of delivery, and hours of delivery.
IM 8.2.2.2	Update the Noise Ordinance to reflect the findings of the airborne delivery study.
Policy 8.2.3	**Control the movement of heavy construction vehicles through the City.**
IM 8.2.3.1	Coordinate with the Los Angeles County Sheriff's Department to enforce regulations related to the speed and weight of vehicles on City roadways.
IM 8.2.3.2	Coordinate with the Los Angeles County Sheriff's Department to enforce regulations related to the hours of operation on City roadways.
Policy 8.2.4	**Respond to residential noise complaints in a timely manner.**
IM 8.2.4.1	Continue to coordinate with the Los Angeles County Sheriff's Department to ensure prompt response to noise complaints such as noise from household equipment, disruptive gatherings, excessive motorcycle and vehicle activity (i.e. street racing and modified exhaust vehicles).