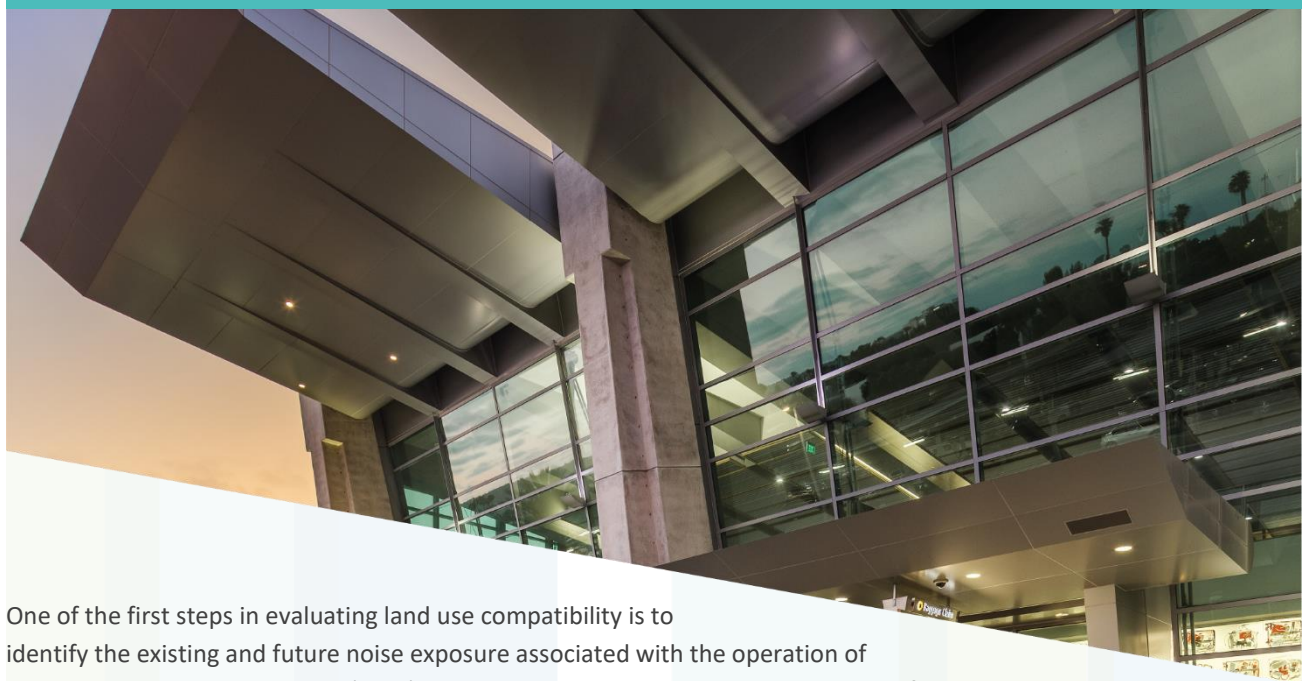


5 | LAND USE ANALYSIS

14 CFR
PART 150
UPDATE



CHAPTER 5. LAND USE ANALYSIS



One of the first steps in evaluating land use compatibility is to identify the existing and future noise exposure associated with the operation of San Diego International Airport (SDIA). This chapter summarizes the compatibility of various land uses with the existing (2018) and future (2026) “Base Case” noise exposure contours. The 2026 contour is the Base Case for comparing alternatives in development of the Noise Compatibility Program (NCP). Noise abatement alternatives and land use compatibility actions described in the following chapters are compared with the information presented in this chapter to gauge the potential success of various alternatives.

5.1 METHODOLOGY

The land use and population analysis for both the existing and future “Base Case” noise contours were derived from a variety of sources. The existing and future noise contours were integrated into existing land use maps, utilizing a Geographic Information System (GIS) to determine the number of acres of specific land use types located within each noise contour. GIS data was also used to identify noise sensitive public facilities and supplemented with additional data collected for non-residential non-compatible land uses during a windshield survey conducted in 2020. Housing units and population numbers within the existing and future contours were determined from the 2010 Census using the same GIS software. The number of acres is rounded. The existing 2018 noise contour map will serve as the existing Noise Exposure Map (NEM).

5.2 NON-COMPATIBLE LAND USE

The Federal Aviation Administration (FAA) has developed generalized guidelines for land use compatibility to assist with land use planning. These guidelines were presented in **Figure 3.8, FAA Part 150 Land Use Compatibility Matrix**. Within Title 14, Code of Federal Regulations (CFR) Part 150 (14 CFR Part 150), these land use compatibility guidelines are to be used unless the local communities have adopted local guidelines. The Airport Land Use Compatibility Plan (ALUCP) for SDIA establishes guidelines for aircraft-specific noise for the communities surrounding the airport and has adopted the FAA guidelines (utilizing the 65 Community Noise Equivalent Level, or CNEL, metric) for the purposes of defining noise standards in the plan.

Based on FAA guidelines, residential land uses within the existing 65 CNEL or greater noise contours are not compatible with the aircraft noise exposure unless the residence has sound attenuation features that reduce interior noise to requisite levels. Without such attenuation, the property would be considered non-compatible with the noise exposure.

The Quieter Home Program (QHP), a residential sound insulation program, was established by the San Diego County Regional Airport Authority (SDCRAA) for SDIA. The program's and FAA's ongoing goal is to reduce the internal noise levels within an eligible non-compatible residence located within the 65 CNEL or greater to below 45 CNEL. The SDCRAA just recently completed sound insulation of the 4,000th housing unit.

5.3 EXISTING NOISE CONTOURS LAND USE ANALYSIS (2018)

This section discusses the land use types and population found within the existing noise exposure contours generated using current aircraft operation and noise data. The existing noise exposure is represented by contour bands, the 65 CNEL, 70 CNEL, and 75 CNEL contours.

A 14 CFR Part 150 Study and the NEMs generated as part of the study use the 65 DNL as the threshold of significance for land use analysis, based on the FAA's land use compatibility guidelines. While DNL is the primary metric FAA uses to determine noise impacts, CNEL may be used in lieu of DNL in California per FAA Order 1050.1F. Therefore, the 65 CNEL will be used as the threshold of significance for land use analysis in this study. 14 CFR Part 150 Land Use Guidelines state that residential uses, as well as other noise sensitive uses, are not compatible within the 65 or greater CNEL noise contours.

Approximately 2,640 acres are contained within the existing 65 CNEL or greater contour. Within this contour, there are approximately 508 acres of residential land use with approximately 7,805 permanent housing units consisting of approximately 16,188 persons. The existing 65 CNEL also encompasses a portion of the Marine Corps Recruiting Depot (MCRD); however, housing units at MCRD are considered temporary and excluded from the Census housing unit counts. As such, the associated population of 3,266 military personnel within the 65 CNEL is counted separately from the 16,188 persons in the 65 CNEL who reside in what are considered permanent housing units. Other noise sensitive land uses located within the 65 CNEL or greater contour include a library, hospital/nursing home, religious facilities, schools, and historic sites. **Table 5.1** summarizes the non-residential noise sensitive land uses within the existing noise contours, while **Table 5.2** summarizes acreage of different types of land uses within the contours and includes housing units and population. Of the 7,805 housing units identified in **Table 5.2**, over 4,000 have been sound attenuated.



TABLE 5.1 PUBLIC FACILITIES WITHIN EXISTING NOISE CONTOURS (2018)

Land Use	65 CNEL	70 CNEL	75 CNEL
Schools	14	1	0
Libraries	1	0	0
Places of Worship	7	1	0
Historic Sites	7	1	0
Hospitals/Nursing Homes	3	1	0
Other ¹	1	1	0
TOTAL	33	5	0

SOURCES: Noise Contours: HMMH, Appendix E - Noise, 2020; Public Facilities: SDIA Windshield Survey, 2020; and Land Use Analysis: Mead & Hunt, 2020.

NOTES:

Some properties may not be eligible for sound attenuation for various reasons (if zoned commercial or do not meet other eligibility requirements).

¹ Public facility land use in Other category is a fire station.



TABLE 5.2 EXISTING LAND USE WITHIN EXISTING NOISE CONTOURS (2018)

Population and Units	65 CNEL	70 CNEL	75 CNEL
<i>Housing Units</i> ¹	7,805	1,236	131
<i>Population (Civilian)</i>	16,188	1,907	178
<i>Population (Military)</i> ²	3,266	1,255	0
Land Use (Acres)	65 CNEL	70 CNEL	75 CNEL
Residential	508	54	3
Hotel/Motel	5	<1	0
Mixed Use	2	<1	0
Commercial/Office	129	46	4
Industrial	77	48	18
Agricultural	0	0	0
Parks and Recreation	224	53	<1
Golf	56	11	0
Public Service	92	25	<1
Education	74	<1	0
Military Use	255	136	29
Airport	493	362	232
Transport/Comm/Utility	<1	<1	0
Under Construction	<1	<1	<1
Vacant/Undeveloped	20	3	1
Water	50	30	0
Transportation/ROW	655	208	32
TOTAL ACRES	2,640	976	320

SOURCES: Contours: HMMH, Appendix E - Noise, 2020; Land Use Analysis: Mead & Hunt, 2020; and Population/Housing Data: US Census, 2010.

NOTES:

Numbers may not add due to rounding.

¹ Over 4,000 of these units have been sound attenuated. Unit counts exclude temporary military housing units located at MCRD, as temporary housing units are not eligible to receive federal funding for sound attenuation.

² Because the temporary housing units at MCRD are not eligible to receive federal funds for sound attenuation, military population associated with these units is listed separately from civilian population.



5.4 FUTURE BASE CASE NOISE CONTOURS LAND USE ANALYSIS (2026)

A review was conducted of the existing population and the housing units that could be affected by airport noise five years into the future (from date of submittal of this report). The previous chapter, *Existing and Future Base Case Noise Conditions*, discusses the noise exposure contour prepared for the year 2026. The constrained forecast from **Chapter 2** was used to develop the 2026 Base Case noise contour. Other than aircraft operations and fleet mix, the Base Case assumes no other operational changes will occur. The Base Case also assumes no physical airside or landside facility modification will occur that will influence operations. The future 65 CNEL or greater contours are larger than the existing noise contours as a result of an increase in aircraft operations forecast to be operating in the year 2026. The 65 CNEL increases in size from approximately 2,640 acres in 2018 to 3,881 acres by 2026.

Approximately 15,149 homes consisting of 30,976 persons are projected to be within the 65 CNEL or greater noise contour in 2026. Other noise sensitive land uses located within the future 65 CNEL or greater contour include a library, religious facilities, schools, hospital/nursing homes, and historic sites. **Figure 5.1** illustrates a map of these non-compatible uses for 2026. **Appendix G - 2026 Non-Residential Land Uses** lists the specific locations within the 2026 65 CNEL or greater contour at the time this analysis was conducted. **Table 5.3** summarizes the non-residential noise sensitive land uses within the future noise contours, while **Table 5.4** summarizes the population, housing units, and acreage of different types of land uses within the contours. Of the 15,149 housing units within the future 65 CNEL, as identified in **Table 5.4**, over 4,000 have been sound attenuated. As previously explained, housing units at MCRD are considered temporary and excluded from the Census housing unit counts. As such, the associated population of 3,324 military personnel within the future base case 65 CNEL is counted separately from the 30,976 persons in the within the future base case 65 CNEL who reside in what are considered permanent housing units. All alternatives will be evaluated based on this information for non-compatible land uses within the 65 CNEL for 2026.



TABLE 5.3 PUBLIC FACILITIES WITHIN FUTURE NOISE CONTOUR (2026)

Land Use	65 CNEL	70 CNEL	75 CNEL
Schools	26	4	0
Library	1	0	0
Places of Worship	14	2	0
Historic Sites	8	4	1
Hospitals/Nursing Homes	4	1	0
Other ¹	3	1	0
TOTAL	56	12	1

SOURCES: Noise Contours: HMMH, Appendix E - Noise, 2020; Public Facilities: SDIA Windshield Survey, 2020; and Land Use Analysis: Mead & Hunt, 2020.

NOTES:

Some properties may not be eligible for sound attenuation for various reasons (if zoned commercial or do not meet other eligibility requirements).

¹ Public facility land uses in Other category are two fire stations and the San Diego Rescue Mission.



TABLE 5.4 LAND USE WITHIN FUTURE NOISE CONTOURS (2026)

Population and Units	65 CNEL	70 CNEL	75 CNEL
<i>Housing Units</i> ¹	15,149	2,642	515
<i>Population (Civilian)</i>	30,976	5,173	699
<i>Population (Military)</i> ²	3,324	2,876	112
Land Use (Acres)	65 CNEL	70 CNEL	75 CNEL
Residential	902	224	12
Hotel/Motel	19	2	<1
Mixed Use	2	1	0
Commercial/Office	205	75	11
Industrial	93	68	30
Agricultural	0	0	0
Parks and Rec	346	87	4
Golf	66	17	0
Public Service	145	52	3
Education	92	16	0
Military Use	343	199	88
Airport	507	440	301
Transport/Comm/Utility	3	<1	<1
Under Construction	2	1	<1
Vacant/Undeveloped	36	10	1
Water	101	39	18
Transportation/ROW	1,019	362	70
TOTAL	3,881	1,594	540

SOURCES: HMMH, Appendix E - Noise, 2020 Land Use Analysis: Mead & Hunt, 2020; and Population/Housing Data: US Census, 2010.

NOTES:

Numbers may not add due to rounding.

¹ Over 4,000 of these units have been sound attenuated. Unit counts exclude temporary military housing units located at MCRD, as temporary housing units are not eligible to receive federal funding for sound attenuation.

² Because the temporary housing units at MCRD are not eligible to receive federal funds for sound attenuation, military population associated with these units is listed separately from civilian population.



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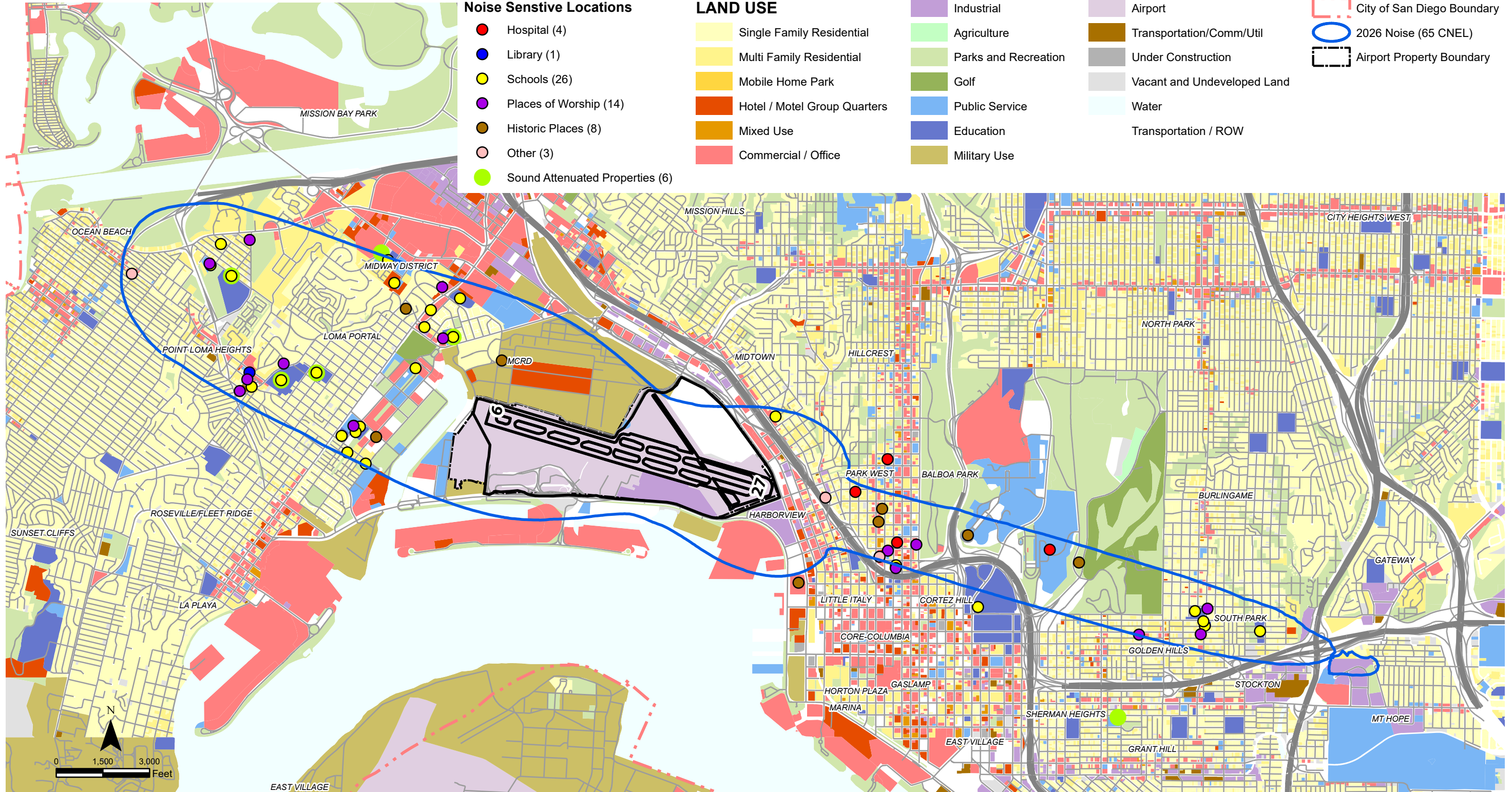
Noise Sensitive Locations

- Hospital (4)
- Library (1)
- Schools (26)
- Places of Worship (14)
- Historic Places (8)
- Other (3)
- Sound Attenuated Properties (6)

LAND USE

- | | | | |
|--|---|--|---|
| Single Family Residential | Agriculture | Industrial | Airport |
| Multi Family Residential | Parks and Recreation | Transportation/Comm/Util | Under Construction |
| Mobile Home Park | Golf | Public Service | Vacant and Undeveloped Land |
| Hotel / Motel Group Quarters | Education | Water | Transportation / ROW |
| Mixed Use | Military Use | | |
| Commercial / Office | | | |

- City of San Diego Boundary
- 2026 Noise (65 CNEL)
- Airport Property Boundary



SOURCE: 1. SANDAG Technical Services - GIS, SANDAG Land Layers Inventory Mapping Source: SanGIS landbase (i.e. parcels), SANDAG, County Assessor's Master Property Records file, Cleveland National Forest, Bureau of Land Management (BLM), State Parks, other public agency contacts, and local agency review.
 2. HMMH Technical Report, Noise Appendix, 2020.

FIGURE 5.1 WINDSHIELD SURVEY OF NOISE SENSITIVE LOCATIONS (WITHIN FUTURE 65 CNEL)



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