CHAPTER 5 Noise Exposure Maps and Effects on Land Use

5.1 Introduction

The effect of aircraft noise on existing and future noise-sensitive land uses is important in relation to the forecast growth of the Airport and its environs. This section includes the existing (2015) conditions noise exposure map and the future (2020) conditions noise exposure map. The noise exposure maps (NEMs) were prepared on the basis of the aviation activity forecasts described in Chapter 2 and the airport operational assumptions and data described in Chapter 4. In addition to the NEMs, this chapter includes a description of existing noise-sensitive land uses that are or may be within areas exposed to aircraft noise levels of CNEL 65 dB and greater.

5.2 Existing Noise Exposure: 2015

The noise exposure map for existing (2015) conditions is presented on **Exhibit 5-1**. The map consists of CNEL contours superimposed on a map of generalized existing land uses in the Airport environs. The CNEL contours represent aircraft operations levels during the last full calendar year for which data were available when this study began – 2013. In accordance with 14 CFR Part 150, the following aircraft noise exposure contours are depicted on the map: CNEL 65, CNEL 70, and CNEL 75.

As shown on Exhibit 5-1, the 2015 CNEL 65 dBA contour extends east across Western Avenue (and almost to Vermont Avenue), north to West Manchester Boulevard, and south across the Imperial Highway. Portions of El Segundo, Inglewood, the City of Los Angeles, and Los Angeles County are exposed to aircraft noise levels greater than CNEL 65 dBA.

5.3 Future Noise Exposure: 2020

The noise exposure map for future (2020) conditions is presented on **Exhibit 5-2**. The noise exposure contours are based on the aircraft fleet mix forecast presented in Table 4-3 and runway use, flight track use, time of day, and departure stage length assumptions presented in Chapter 4.

As shown on Exhibit 5-2, the 2020 CNEL noise exposure contours are slightly larger than the 2015 noise contours. The increase in the size of the CNEL 65, CNEL 70, and CNEL 75 noise contours is attributable to projected growth in the number of annual and daily aircraft operations

performed at LAX between 2015 and 2020. As discussed in Chapter 2, the number of annual aircraft operations performed at LAX is predicted to grow from 631,173 operations in 2015 to 705,254 in 2020, an increase of 74,081 operations. While the fleet of aircraft operating at LAX in 2020 is expected to be newer and quieter than the existing aircraft fleet, noise reduction benefits associated with the improvement in the aircraft fleet mix will be offset by the increase in the number of aircraft operations.

5.4 Land Use Compatibility Guidelines

Estimates of total noise exposure resulting from aircraft operations, as expressed in DNL or CNEL values, can be interpreted in terms of the probable effect on land uses. Suggested compatibility guidelines for evaluating land uses in aircraft noise exposure areas (A-weighted decibels only) have been developed by the FAA and are shown in **Table 5-1**. The FAA's land use compatibility guidelines are presented in Table 1 of the 14 CFR Part 150 regulations. The guidelines are based on the DNL metric and not the CNEL. For the purposes of this report, DNL and CNEL are considered to be equivalent in terms of application of the FAA's suggested compatibility guidelines.

The FAA's guidelines reflect the statistical variability of the responses of large groups of people to noise. Therefore, any particular level might not accurately assess an individual's perception of an actual noise environment. Compatible or incompatible land use is determined by comparing the predicted or measured DNL level at a site with the values given in the table. Each generalized land use listed in Table 5-1 includes a wide range of human activities having various sensitivities to noise intrusions.

DNL values in the table should be interpreted only as indications of the potential effect aircraft noise has on people living and working in areas surrounding an airport. The responsibility for determining the acceptable and permissible land uses and the relationship between specific properties and specific noise contours rests with the local authorities. FAA determinations under Part 150 are not intended to substitute federally determined land uses for those determined to be appropriate by local authorities in response to locally determined needs and values in achieving noise compatible land uses.



SOURCES: LAWA, 2014; ESA Airports, 2014; ESRI ArcGIS Online, 2011; ESRI World Imagery - Aerial; PCR Services Corporation, 2012 NOTES: CNEL = Community Noise Equivalent Level; dB = Decibel.

Los Angeles International Airport 14 CFR Part 150 Study . 130072.03 Exhibit 5-1 2015 Noise Exposure Map (Existing Conditions) - Los Angeles International Airport

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SOURCES: LAWA, 2014; ESA Airports, 2014; ESRI ArcGIS Online, 2011; ESRI World Imagery - Aerial; PCR Services Corporation, 2012 NOTES: CNEL = Community Noise Equivalent Level; dB = Decibel.

Los Angeles International Airport 14 CFR Part 150 Study . 130072.03 Exhibit 5-2 2020 Noise Exposure Map (Future Conditions) - Los Angeles International Airport

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TABLE 5-1 14 CFR PART 150 LAND USE COMPATIBILITY GUIDELINES IN AIRCRAFT NOISE EXPOSURE AREAS

	Yearly Day-Night Noise Level (DNL) in decibel						
	Below					Over	
Land Use	65	65-70	70-75	75-80	80-85	85	
Residential							
Residential, other than mobile homes and transient lodgings	Y	N(1)	N(1)	Ν	Ν	Ν	
Mobile home parks	Y	Ν	Ν	Ν	Ν	Ν	
Transient lodgings	Y	N(1)	N(1)	N(1)	N	N	
Public Use							
Schools	Y	N(1)	N(1)	N	N	Ν	
Hospitals and nursing homes	Y	25	30	Ν	N	Ν	
Churches, auditoriums and concert halls	Y	25	30	N	N	Ν	
Government services	Y	Y	25	30	N	Ν	
Transportation	Y	Y	Y(2)	Y(3)	Y(4)	Y(4)	
Parking	Y	Y	Y(2)	Y(3)	Y(4)	Ν	
Commercial Use							
Offices, business and professional	Y	Y	25	30	N	N	
Wholesale and retail - building materials, hardware and farm equipment	Y	Y	Y(2)	Y(3)	Y(4)	Ν	
Retail trade – general	Y	Y	25	30	Ν	Ν	
Utilities	Y	Y	Y(2)	Y(3)	Y(4)	Ν	
Communication	Y	Y	25	30	N	Ν	
Manufacturing and Production							
Manufacturing general	Y	Y	Y(2)	Y(3)	Y(4)	Ν	
Photographic and optical	Y	Y	25	30	Ν	Ν	
Agriculture (except livestock) and forestry	Y	Y(6)	Y(7)	Y(8)	Y(8)	Y(8)	
Livestock farming and breeding	Y	Y(6)	Y(7)	Ν	N	Ν	
Mining and fishing, resource production and extraction	Y	Y	Y	Y	Y	Y	
Recreational							
Outdoor sports arenas and spectator sports	Y	Y(5)	Y(5)	Ν	Ν	Ν	
Outdoor music shells, amphitheaters	Y	Ν	Ν	Ν	Ν	Ν	
Nature exhibits and zoos	Y	Y	Ν	N	Ν	Ν	
Amusements, parks, resorts and camps	Y	Y	Y	Ν	Ν	Ν	
Golf courses, ridings tables and water recreation	Y	Y	25	30	Ν	Ν	

TABLE 5-1 (Continued) 14 CFR PART 150 LAND USE COMPATIBILITY GUIDELINES IN AIRCRAFT NOISE EXPOSURE AREAS

Numbers in parenthesis refer to notes.

* The designations contained in this table do not constitute a Federal determination that any use of land covered by the program is acceptable or unacceptable under Federal, State or local law. The responsibility for determining the acceptable and permissible land uses and the relationship between specific properties and specific noise contours rests with the local authorities. FAA determinations under Part 150 are not intended to substitute federally determined land uses for those determined to be appropriate by local authorities in response to locally determined needs and values in achieving noise compatible land uses.

Key to Table

- SLUCM Standard Land Use Coding Manual
- Y (Yes) Land use and related structures compatible without restrictions.
- N (No) Land use and related structures are not compatible and should be prohibited.
- NLR Noise Level Reduction (outdoor to indoor) to be achieved through incorporation of noise attenuation into the design and construction of the structure.
- 25, 30 or 35 Land Use and related structures generally compatible; measures to achieve NLR of 25, 30 or 35 dB must be incorporated into design and construction of structure.

Notes:

- (1) Where the community determines that residential or school uses must be allowed, measures to achieve outdoor to indoor NLR of at least 25 dB to 30 dB should be incorporated into building codes and be considered in individual approvals. Normal residential construction can be expected to provide a NLR of 20 dB, thus, the reduction requirements are often stated as 5, 10, or 15 dB over standard construction and normally assume mechanical ventilation and closed windows year round. However, the use of NLR criteria will not eliminate outdoor noise problems.
- (2) Measures to achieve NLR of 25 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas or where normal noise level is low.
- (3) Measures to achieve NLR of 30 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas or where normal noise level is low.
- (4) Measures to achieve NLR of 35 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas or where normal noise level is low.
- (5) Land use compatible provided that special sound reinforcement systems are installed.
- (6) Residential buildings require an NLR of 25 dB.
- (7) Residential buildings require an NLR of 30 dB.
- (8) Residential buildings not permitted.

5.5 Noise Effects on Existing Land Uses

As described above, suggested land compatibility standards in aircraft noise exposure areas, as originally developed by the FAA, are shown in Table 5-1. The standards differentiate between noise-sensitive land uses, which are considered incompatible with or require noise attenuation to be acceptable in areas with specified ranges of aircraft noise exposure, and other land uses that are considered to be compatible with certain levels of aircraft noise.

Table 5-2 presents the estimated effects of existing and future noise exposure on residential and other noise-sensitive land uses in the airport environs. As shown in Table 5-2, the overall area exposed to CNEL 65 dB and higher in 2015 is 11,391 acres. The area exposed to aircraft noise of CNEL 65 dB and higher is expected to grow to 12,035.6 acres by 2020. The population and households exposed to aircraft noise of CNEL 65 dB and higher were estimated to have been 37,803 and 11,416, respectively in 2015 and are expected to increase to 42,959 and 13,045, respectively by 2020.

SOURCE: U.S. Department of Transportation, Federal Aviation Administration, Federal Aviation Regulations Part 150, *Airport Noise Compatibility Planning*, Code of Federal Regulations, Title 14, Chapter I, Subchapter I, Part 150, January 18, 1985, as amended.

Noise Level	Area	Households	Population	Place of Worship	School	Hospital	Historic Structure
NOISE Level	(acres)	nousenoius	Population	worship	301001	поѕрпа	Structure
2015						-	
CNEL 65-70	6,581.1	9,323	29,585	32	19	2	1
CNEL 70-75	3,017.5	2,047	7,968	1	5	0	3
CNEL 75+	1,792.5	46	250	0	0	0	1
Total	11,391.0	11,416	37,803	33	24	2	5
2020							
CNEL 65-70	6,876.4	10,399	32,507	42	21	3	1
CNEL 70-75	3,229.9	2,575	10,068	1	5	0	3
CNEL 75+	1,929.4	71	384	0	0	0	1
Total	12,035.6	13,045	42,959	43	26	3	5

TABLE 5-2EFFECTS OF NOISE EXPOSURE IN THE AIRPORT ENVIRONS – 2015 AND 2020

NOTES:

The households and population counts presented above do not include noise mitigated properties.

CNEL = Community Noise Equivalent Level

Values may not sum to totals shown due to rounding.

SOURCES: Los Angeles World Airports, 2014; ESA Airports, 2014; PCR Services Corporation, 2012.

The number of people and households exposed to aircraft noise of CNEL 65 dB and higher were estimated using a land use database developed by PCR Services Corporation in 2012, geographic information system (GIS) layers provided by LAWA including information regarding the aircraft noise mitigation programs at LAX, and the noise contours depicted on Exhibits 5-1 and 5-2. For the purposes of the household and population counts, residential parcels that were partially inside a noise contour were treated as being entirely within the noise contour.

Table 5-2 also presents information regarding structures on or eligible for the National Register of Historic Places and noise sensitive facilities (e.g., schools, places of worship, hospitals, etc.) exposed to aircraft noise of CNEL 65 dB and higher. ¹ Five structures/buildings on or eligible for the National Register of Historic Places were exposed to aircraft noise of CNEL 65 dB and higher in 2015 and will be exposed to aircraft noise of CNEL 65 dB and higher in 2020. These structures include: a WWII Munitions Storage Bunker (Eligible for National Register), the Theme Building (Eligible for National Register), Hangar One (Listed on National Register), the Merle Norman Complex (Eligible for National Register), and the Academy Theater (Eligible for National Register).

As shown in Table 5-2, it is estimated that there were 24 schools and 33 places of worship exposed to aircraft noise of CNEL 65 dB and higher in 2015 and there will be 26 schools and 43 places of worship exposed to aircraft noise of CNEL 65 dB and higher in 2020. Two hospitals were exposed to aircraft noise of CNEL 65 dB and higher in 2015 and three hospitals will be

¹ The historic structures data were derived from environmental impact reports prepared for LAX including the *Final Environmental Impact Report for Los Angeles International Airport (LAX) Proposed Master Plan Improvements* (April 2004). The noise sensitive facilities data are based on information assembled by PCR Services Corporation in 2012 which were updated by LAWA in 2014.

exposed to aircraft noise of CNEL 65 dB and higher in 2020. While not presented in Table 5-2, it is estimated that seven parks and one library were exposed to aircraft noise of CNEL 65 dB and higher in 2015 and there will be nine parks and two libraries exposed to aircraft noise of CNEL 65 dB and higher in 2020. **Table 5-3** provides additional information regarding the schools located in areas exposed to aircraft noise of CNEL 65 dB and higher in 2015 and 2020. **Table 5-4** provides additional information regarding places of worship located in areas exposed to aircraft noise of CNEL 65 dB and higher in 2015 and 2020.

Table 5-5 provides acreage data for land uses that were exposed to aircraft noise of CNEL 65 dB and higher in 2015 and that will be exposed to aircraft noise of CNEL 65 dB and higher in 2020. The figures provided in Table 5-5 were calculated using parcel level land use data provided by LAWA and PCR Services Corporation. As shown in Table 5-5, approximately 376 acres of land developed with single family residential land uses were exposed to aircraft noise of CNEL 65 dB and higher in 2015 and approximately 457 acres of land developed with single family residential land uses will be exposed to aircraft noise of CNEL 65 dB and higher in 2020.

Approximately 420 acres of land developed with multi-family residential land uses were exposed to aircraft noise of CNEL 65 dB and higher in 2015 and approximately 470 acres of land developed with multi-family residential land uses will be exposed to aircraft noise of CNEL 65 dB and higher in 2020. As shown in Table 5-5, most of the area exposed to aircraft noise of CNEL 65 dB and higher in 2015 is airport property (approximately 3,618 acres) or water/beach (approximately 4,263 acres). In 2020, approximately 3,632 acres of airport land and approximately 4,410 acres of water/beach will be exposed to aircraft noise of CNEL 65 dB and higher.

5.6 Aircraft Noise Mitigation Program Summary

LAWA has established an Aircraft Noise Mitigation Program (ANMP) at LAX to fund the mitigation of existing incompatible land uses within the CNEL 65 dB contour. LAWA provides funding and program supervision for the Cities of Inglewood and El Segundo, and the County of Los Angeles. These jurisdictions implement the mitigation programs in accordance with LAWA and FAA requirements while retaining authority in the design, conduct and progress of their programs and in the choice of mitigation methods (sound insulation and/or property acquisition). LAWA directly manages the mitigation programs for the properties within the jurisdiction of the City of Los Angeles.

LAWA is responsible for reporting the progress of all of the mitigation programs as required under the Noise Variance issued by the State of California, in accordance with California Code of Regulations (CCR) Title 21, State Noise Standards. The latest annual information was included in the second quarter 2014 Quarterly Noise Report LAWA prepared for the County of Los Angeles and the California Department of Transportation with the following statistics:

- 18,011 dwelling units have been made compatible through LAWA's ANMP.
- 15,345 dwelling units remain to be treated.

TABLE 5-3
SCHOOLS EXPOSED TO AIRCRAFT NOISE OF CNEL 65 dB AND HIGHER – 2015 AND 2020

Name	Street Address	Jurisdiction	Within CNEL 65+ 2015 NEM	Within CNEL 65+ 2020 NEM
A Bright Beginning Preschool	2440 W. Manchester Blvd.	City of Inglewood	Yes	Yes
Animo Inglewood Charter High School	3245 W. Manchester Blvd.	City of Inglewood	Yes	Yes
Animo Leadership Charter High School	1155 W. Arbor Vitae Street	City of Inglewood	Yes	Yes
Anthony's Preschool	8708 Crenshaw Blvd	City of Inglewood	Yes	Yes
Buford Elementary School	4919 West 109 th Street	County of Los Angeles	Yes	Yes
California Technical High School	1717 W. Century Blvd.	City of Los Angeles	Yes	Yes
Century Academy for Excellence	2400 W. 85 th Street	City of Inglewood	Yes	Yes
Children's Enrichment Center	3209 W. Manchester Blvd.	City of Inglewood	Yes	Yes
Clyde Woodworth Elementary School	3200 W. 104 th Street	City of Inglewood	Yes	Yes
Dolores Huerta Elementary School	4125 W. 105 th Street	County of Los Angeles	Yes	Yes
El Segundo High School	640 Main Street	City of El Segundo	Yes	Yes
Faith Lutheran Church and Preschool	3320 W. 85 th Street	City of Inglewood	Yes	Yes
Felton Elementary School	10417 Felton Ave.	County of Los Angeles	Yes	Yes
Hillcrest High School	441 W. Hillcrest Blvd.	City of Inglewood	Yes	Yes
Inglewood Christian School	215 East Hillcrest Blvd.	City of Inglewood	Yes	Yes
Jefferson Elementary School	10322 Condon Ave.	County of Los Angeles	Yes	Yes
Kelso Elementary School	809 E. Kelso Street	City of Inglewood	Yes	Yes
Morningside High School	10500 Yukon Ave. S.	City of Inglewood	Yes	Yes
Oak Street Elementary School	633 S. Oak Street	City of Inglewood	Yes	Yes
Richmond Street Elementary	615 Richmond Street	City of El Segundo	No	Yes
St. Bernard High School	9100 Falmouth Ave.	City of Los Angeles	Yes	Yes
Stella Middle Charter Academy	5431 W. 98 th Street	City of Los Angeles	Yes	Yes
Tijay Renee Academy	8722 Crenshaw Blvd.	City of Inglewood	Yes	Yes
Training and Research Foundation – Inglewood Southside	3937 W. 104 th Street	City of Inglewood	Yes	Yes
Westchester-Emerson Community Adult School ^a	8810 Emerson Ave.	City of Los Angeles	Yes	Yes
Wish Charter Elementary School	8740 La Tijera Blvd.	City of Los Angeles	No	Yes

NOTES: ^a Not considered a noise sensitive education facility for the purposes of 14 CFR Part 150. CNEL = Community Noise Equivalent Level NEM = Noise Exposure Map

SOURCES: Los Angeles World Airports, 2014; ESA Airports, 2014; PCR Services Corporation, 2012.

TABLE 5-4
PLACES OF WORSHIP EXPOSED TO AIRCRAFT NOISE OF CNEL 65 dB AND HIGHER – 2015 AND
2020

Name	Street Address	Jurisdiction	Within CNEL 65+ 2015 NEM	Within CNEL 65+ 2020 NEM	
Academy Cathedral	3141 W. Manchester Blvd.	City of Inglewood	Yes	Yes	
Arabic of Evangelical Church	320 E. Hillcrest Blvd.	City of Inglewood	Yes	Yes	
Asamblea Apostolica Amor Viviente	10906 S. Inglewood Ave.	County of Los Angeles	Yes	Yes	
Bible Enrichment Fellowship International Church	400 E. Kelso Street	City of Inglewood	Yes	Yes	
Breath of Life Worship Center	425 S. La Brea Ave.	City of Inglewood	Yes	Yes	
Century Boulevard Church	1711 W. Century Blvd.	City of Los Angeles	Yes	Yes	
Chosen Temple Christian	2222 W. Manchester Blvd.	City of Inglewood	No	Yes	
Christs Community Church in Los Angeles	10216 S. Denker Ave.	County of Los Angeles	Yes	Yes	
Church of Christ	10536 S. Grevillea Ave.	County of Los Angeles	Yes	Yes	
Church Of God Pentecostal	733 S. Grevillea Ave.	City of Inglewood	Yes	Yes	
Church Of The Living God	9800 S. Western Ave.	City of Los Angeles	Yes	Yes	
Congregation Of Jehovah's Witnesses	3223 W. Century Blvd.	City of Inglewood	Yes	Yes	
Crossroads Christian Center ^a	2615 W. Manchester Blvd.	City of Inglewood	Yes	Yes	
Crusade Christian Faith Center	801 S. La Brea Ave.	City of Inglewood	No	Yes	
DO Right Christian Church	9815 S. Vermont Ave.	County of Los Angeles	No	Yes	
Eternal Promise Baptist Church	2057 W. Century Blvd.	City of Los Angeles	Yes	Yes	
Faith Christian Church	1406 W. 98th Street	County of Los Angeles	Yes	Yes	
First Baptist Church	591 E. Palm Ave.	City of El Segundo	No	Yes	
First United Methodist Church	411 E. Kelso Street	City of Inglewood	Yes	Yes	
God's Rivers Of Living Waters ^a	3220 W. 85th Street	City of Inglewood	Yes	Yes	
Greater True Vine Church of God in Christ	9616 S. Normandie Ave.	County of Los Angeles	No	Yes	
Harvest Christian Center	2225 W. Manchester Blvd.	City of Inglewood	Yes	Yes	
Heavenly Rainbow Baptist Church ^ª	10223 S. Western Ave.	City of Los Angeles	Yes	Yes	
Holy Light Missionary Baptist Church	1404 W. 96th Street	County of Los Angeles	No	Yes	
Iglesia De Cristo Ministerios ^a	8451 Crenshaw Blvd.	City of Inglewood	Yes	Yes	
Iglesia Nuevas de Gozo	4454 Lennox Blvd.	County of Los Angeles	Yes	Yes	
Inglewood Church of Christ	323 S. Eucalyptus Ave.	City of Inglewood	Yes	Yes	

TABLE 5-4 (Continued) PLACES OF WORSHIP EXPOSED TO AIRCRAFT NOISE OF CNEL 65 dB AND HIGHER – 2015 AND 2020

Name	Street Address	Jurisdiction	Within CNEL 65+ 2015 NEM	Within CNEL 65+ 2020 NEM
Inglewood Friends Church	800 S. Oak Street	City of Inglewood	Yes	Yes
Jehovah's Witnesses	3406 W. Manchester Blvd.	City of Inglewood	Yes	Yes
Joy Ministry for Christ	1459 W. 102nd Street	County of Los Angeles	Yes	Yes
Lennox United Methodist Church	4556 Lennox Blvd.	County of Los Angeles	Yes	Yes
Morningside United Church of Christ	8722 Crenshaw Blvd.	City of Inglewood	Yes	Yes
Mount Hebron Baptist Church ^a	10219 S. Western Ave.	City of Los Angeles	Yes	Yes
Mt Lebanon Missionary Baptist	9620 S. Western Ave.	City of Los Angeles	No	Yes
New Mount Pleasant Missionary Baptist Church	434 S. Grevillea Ave.	City of Inglewood	Yes	Yes
New Providence Baptist Church	10200 S. Normandie Ave.	County of Los Angeles	No	Yes
Pacific Baptist Church	859 Main Street	City of El Segundo	Yes	Yes
Praise Fellowship Community Church ^a	8471 S. Van Ness Ave.	City of Inglewood	No	Yes
Progressive Memorial COGIC	2112 W. Manchester Ave.	City of Los Angeles	No	Yes
Rehoboth Christian Church	226 E. Spruce Ave.	City of Inglewood	Yes	Yes
Son Shine Bible Church	1719 W. Century Blvd.	City of Los Angeles	Yes	Yes
Strait-Way Church	102 E. Kelso Street	City of Inglewood	Yes	Yes
Visitation Catholic Church	6561 W. 88th Street	City of Los Angeles	Yes	Yes

NOTES: ^a Not considered a noise sensitive religious facility for the purposes of 14 CFR Part 150. CNEL = Community Noise Equivalent Level NEM = Noise Exposure Map

SOURCES: Los Angeles World Airports, 2014; ESA Airports, 2014; PCR Services Corporation, 2012.

	Area Exposed to Aircraft Noise in 2015 (acres)				Area Exposed to Aircraft Noise in 2020 (acres)			
Land Use	CNEL 65-70	CNEL 70-75	CNEL 75+	Total	CNEL 65-70	CNEL 70-75	CNEL 75+	Total
Single family residential	303.9	69.8	2.0	375.7	370.4	84.4	2.4	457.2
Multiple family residential	349.7	68.2	2.0	419.9	383.0	82.5	4.0	469.5
Mobile Home	0.9	0.0	0.0	0.9	0.9	0.0	0.0	0.9
Public/Quasi-Public	145.9	24.5	0.0	170.3	165.1	31.1	0.0	196.1
Recreation/Open Space	79.9	38.1	4.7	122.8	87.5	41.8	2.0	131.3
Commercial	330.5	67.6	5.1	403.2	350.5	97.3	10.6	458.4
Industrial	217.5	123.5	12.2	353.2	218.3	132.0	21.7	371.9
Cemetery	22.2	0.0	0.0	22.2	33.4	0.0	0.0	33.4
Noise Mitigated Parcel	566.8	118.5	1.6	686.9	630.0	150.2	4.1	784.2
Airport	504.4	1,375.4	1,737.8	3,617.5	400.0	1,380.5	1,851.8	3,632.4
Water/Beach	3,338.8	918.3	5.6	4,262.8	3,429.6	973.5	6.4	4,409.5
Vacant	56.3	21.1	0.3	77.6	60.1	23.4	0.3	83.8
Transportation/Other	664.4	192.4	21.2	878.0	747.6	233.3	26.1	1,007.1
Total	6,581.1	3,017.5	1,792.5	11,391.0	6,876.4	3,229.9	1,929.4	12,035.6

TABLE 5-5 LAND USE EVALUATION - 2015 AND 2020 NOISE EXPOSURE MAPS LOS ANGELES INTERNATIONAL AIRPORT

NOTES: CNEL = Community Noise Equivalent Level Values may not sum to totals shown due to rounding.

SOURCES: Los Angeles World Airports, 2014; ESA Airports, 2014; PCR Services Corporation, 2012.