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Laredo International Airport
Noise Compatibility Program

RS&H

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Noise Compatibility Program

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RS&H

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INTRODUCTION

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1.1 INTRODUCTION

The City of Laredo, the owner and operator of Laredo International Airport (LRD or Airport), is undertaking a Title 14 Code of Federal Regulations (CFR) Part 150 Airport Noise Compatibility Planning Study (14 CFR Part 150) for the Airport.[1] This study provides the opportunity for aviation interests, state and local government officials, and the public to address noise and land use compatibility issues related to aircraft operations at the Airport. There are two phases of the study: the first is the Noise Exposure Map (NEM) and the second is the Noise Compatibility Program (NCP). The NEM Report and maps were accepted by the FAA on August 25, 2022. This NCP Report documents the second phase of the 14 CFR Part 150 Study for LRD.

1.2 AIRPORT LOCATION AND SETTING

As shown on **Figure 1-1**, LRD is located in the City of Laredo approximately three miles northeast of downtown Laredo. Interstate 35 is located approximately two miles west of LRD. The main access into the Airport and its facilities from the east are along Bob Bullock Loop, and the primary access to Airport and its facilities from the west are along Maher Avenue.

Figure 1-2 shows the property line marking the Airport Operating Area (AOA). The AOA shown is comprised of an area of approximately 1,800 acres. The Airport's property is surrounded by various land uses, including commercial, recreation, and residential.

1.3 HISTORY OF AIRPORT DEVELOPMENT

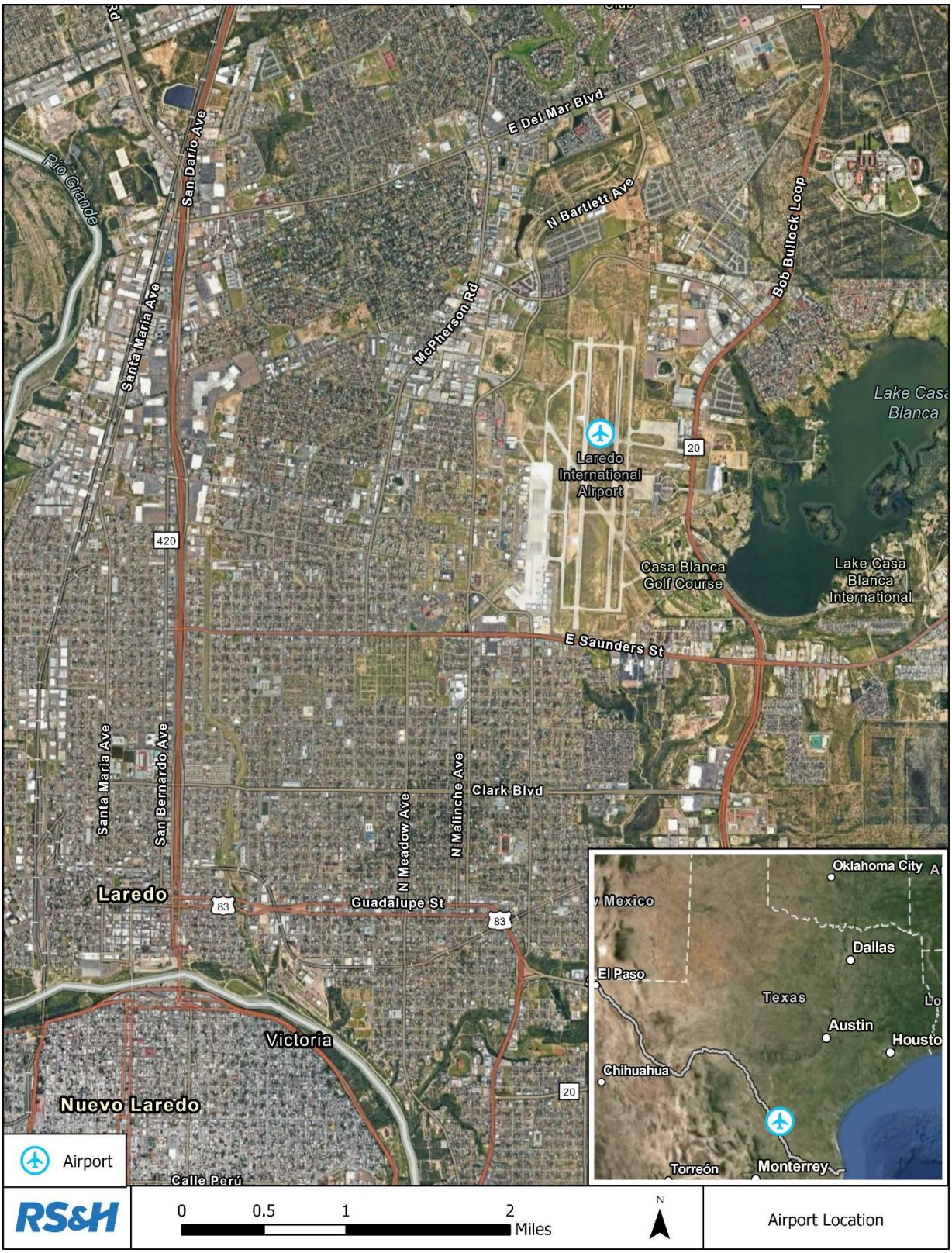
LRD was originally established in the 1940s as part of military wartime training activities. Until 1973, the Airport was used by the United States Air Force and did not open for commercial service until 1975.

Currently, LRD is a public-use airport operated by the City of Laredo and plays an important transportation role in the state of Texas. Its proximity to Mexico makes LRD a major trade and commerce facility as the only airport in the U.S. with an operation of Mexican Customs to reinspect southbound air cargo. As the largest inland port in the U.S., the Port of Laredo provides significant benefits to the community as an employment, trade, and commerce engine for communities all over the United States. This major flow of goods through the region offers opportunities to build the local economy. Because of its important role in commerce, the City recognizes the need to protect the long-term viability of the Airport by ensuring compatible development in the vicinity of the Airport.

LRD serves as a commercial service airport and also provides facilities and services to business jets, law enforcement, life flight, and student training activities.

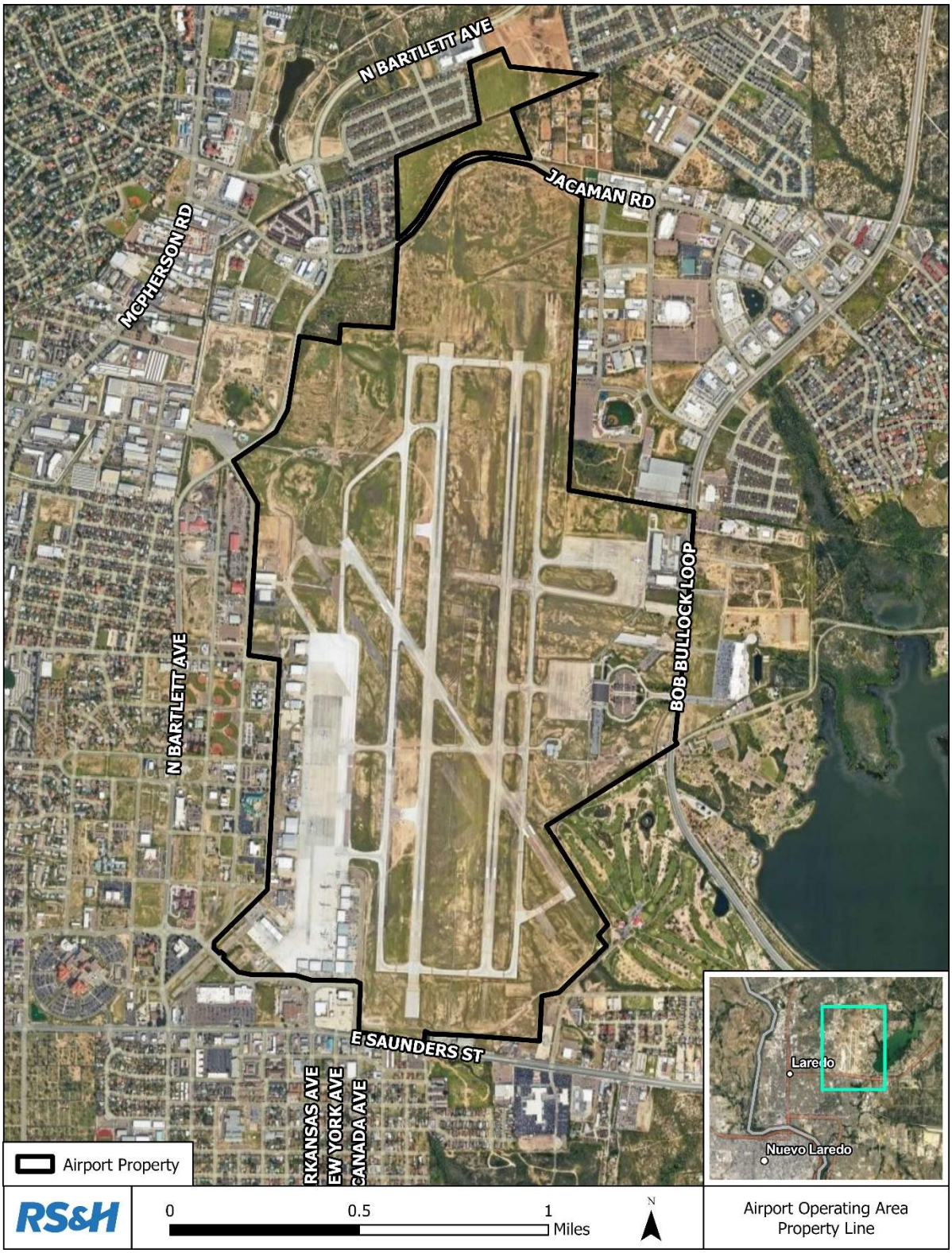
[1] 14 CFR Part 150, https://www.ecfr.gov/current/title-14/part-150, accessed October 2023.

FIGURE 1-1
AIRPORT LOCATION MAP



Source: RS&H, 2024; ESRI, 2024

FIGURE 1-2
AIRPORT OPERATING AREA PROPERTY LINE



Source: RS&H, 2021; ESRI, 2021

1.4 STUDY PROCESS OVERVIEW

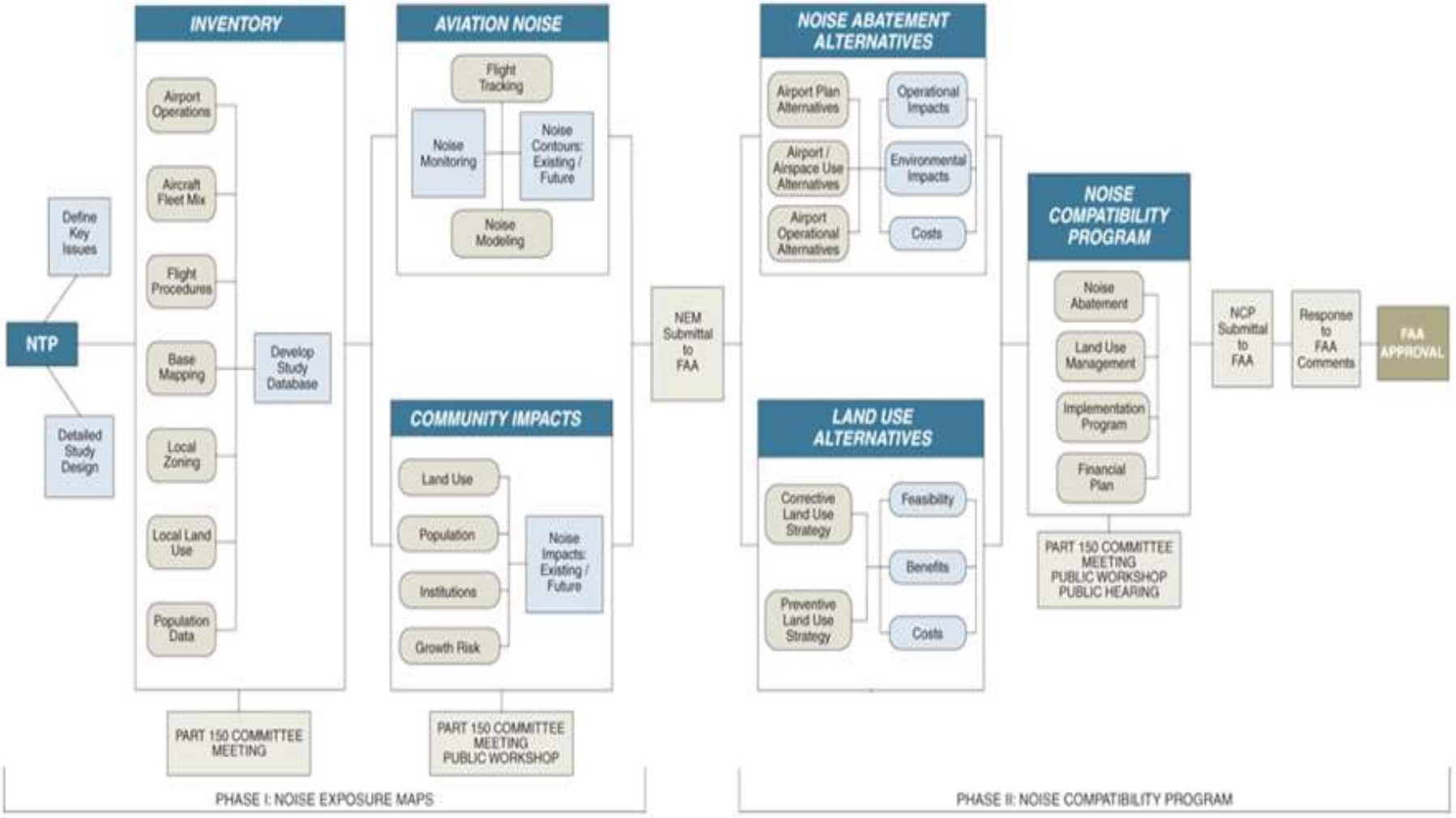
The 14 CFR Part 150 process is designed to identify land uses surrounding an airport that are not compatible with aircraft noise, and to recommend measures to both correct existing noncompatible land uses and prevent future noncompatible land uses. For 14 CFR Part 150 purposes, noncompatible land uses related to noise are defined as residences or public use noise-sensitive facilities (libraries, places of worship, schools, nursing homes, and hospitals) within the 65 Day-Night Average Sound Level (DNL or Ldn) contour.

The preparation of a 14 CFR Part 150 study involves a series of steps that represent two distinct phases. Phase I represents the NEM portion of the study and Phase II represents the NCP portion of the study and are represented on **Figure 1-3**. The NEM phase documents the aircraft noise exposure from the existing and future (five-year) operational environment for the Airport. NEMs for LRD were prepared for existing conditions 2019, and for the future five-year conditions identified as 2026. The NEMs were prepared according to 14 CFR Part 150 regulations with regard to methodology, noise metrics, identification of noncompatible land uses, and public participation. The FAA approved the Phase I NEMs and Report as complying with 14 CFR Part 150 on August 25, 2022. Since the completion of Phase I in 2022, the NEMs remain representative of current and forecast conditions at LRD. The full LRD NEM Report is available for review at: https://flylaredotexas.com/business/development-plans-and-projects/.

The second phase involves the development of an NCP. The NCP sets forth measures intended to mitigate the impacts of significant noise exposure on residential or other noise-sensitive areas near an airport, and to limit, to the extent possible, the introduction of new noncompatible land uses at locations exposed to significant noise levels. The NCP evaluates measures to improve noise compatibility around the Airport through possible modifications to aircraft operational procedures and possible changes to future land use planning and zoning requirements. The NCP would be submitted under 14 CFR Part 150 to the FAA for approval. Certain recommendations that are approved could then become eligible for federal noise abatement funding and for implementation of noise abatement flight procedures.

While development of an NCP is voluntary, airport sponsors must have NEMs accepted by the Federal Aviation Administration (FAA) and NCP measures approved by the FAA in order for those NCP measures to be determined eligible for potential federal funding.

FIGURE 1-3
14 CFR PART 150 STUDY PROCESS



Source: RS&H, 2023

1.5 NCP PURPOSE AND GOALS

The purpose for conducting a 14 CFR Part 150 study is to develop a balanced and cost-effective plan for reducing current noise impacts from an airport's operations, where practical, and to reduce the potential for additional impacts in the future.

Specifically, 14 CFR Part 150 identifies that the purpose of an NCP is:

> *(1) To promote a planning process through which the airport operator can examine and analyze the noise impact created by the operation of an airport, as well as the costs and benefits associated with various alternative noise reduction techniques, and the responsible impacted land use control jurisdictions can examine existing and forecast areas of noncompatibility and consider actions to reduce noncompatible uses.*
>
> *(2) To bring together through public participation, agency coordination, and overall cooperation, all interested parties with their respective authorities and obligations, thereby facilitating the creation of an agreed-upon noise abatement plan especially suited to the individual airport location while at the same time not unduly affecting the national air transportation system.*
>
> *(3) To develop comprehensive and implementable noise reduction techniques and land use controls which, to the maximum extent feasible, will confine severe aircraft YDNL values of Ldn 75 dB or greater to areas included within the airport boundary and will establish and maintain compatible land uses in the areas affected by noise between the Ldn 65 and 75 dB contours*[2]*.*

The goals of the 14 CFR Part 150 are as follows:

- Document current and future noise levels around LRD;
- Review current noise abatement procedures;
- Evaluate additional noise abatement opportunities;
- Provide an opportunity for community input; and
- Develop recommendations for noise abatement and noise mitigation measures;

In accordance with 14 CFR Part 150, the following types of strategies were considered during the preparation of the NCP:

> *1) Acquisition of land and interests therein;*
>
> *2) Construction of barriers and acoustical shielding, including the soundproofing of public and private buildings;*

[2] Appendix B to Part 150, Title 14, https://www.ecfr.gov/current/title-14/part-150/appendix-Appendix B to Part 150, Sec.B150.1, Scope and purpose, accessed, October 2023.

3) Implementation of a preferential runway use program;

4) Implementation of restrictions on the use of the Airport by any type or class of aircraft based on the noise characteristics of those aircraft;

5) The use of flight procedures (including the modifications of flight tracks) to control the operation of aircraft to reduce exposure of individuals (or specific noise-sensitive areas) to noise in the area around the Airport;

6) Other actions or combinations of actions that would have a beneficial noise control or abatement impact on the public; and

7) Other actions recommended for analysis by the FAA for the Airport[3];

In accordance with 14 CFR Part 150, the NCP develops a program which:

(a) Reduces existing noncompatible uses and prevents or reduces the probability of the establishment of additional noncompatible uses;

(b) Does not impose undue burden on interstate and foreign commerce;

(c) Provides for revision in accordance with §150.23 of this part;

(d) Is not unjustly discriminatory;

(e) Does not derogate safety or adversely affect the safe and efficient use of airspace;

(f) To the extent practicable, meets both local needs and needs of the national air transportation system, considering tradeoffs between economic benefits derived from the airport and the noise impact; and

(g) Can be implemented in a manner consistent with all of the powers and duties of the Administrator of FAA[4].

1.6 IMPLEMENTATION STATUS OF PREVIOUS FAA APPROVED NCP MEASURES

The last 14 CFR Part 150 study conducted at LRD was approved by the FAA on June 22, 2007, with an amended NCP that was submitted to the FAA on April 9, 2014. Since then, the City of Laredo has continued to implement recommendations made in the 2014 NCP. The voluntary noise mitigation program offered homeowners a choice of fee simple acquisition, soundproofing (in exchange for an avigation easement), or an avigation easement. Additional details on the mitigation program are included in Chapter 4.

The following includes the FAA approved NCP measures and the status of implementation of each.

[3] Appendix B to Part 150, Title 14, https://www.ecfr.gov/current/title-14/part-150/appendix-Appendix B to Part 150, Sec.B150.7, Analysis of program alternatives, accessed, October 2023.

[4] Appendix B to Part 150, Title 14, https://www.ecfr.gov/current/title-14/part-150/appendix-Appendix B to Part 150, Sec.B150.5, Program standards, Analysis of program alternatives, accessed, October 2023.

1. In Area 1A (10.2.1, page 10-2, Exhibit 10.2), for existing noncompatible land uses, offer property owners their choice of one of the following three voluntary programs:

1. Fee Simple Acquisition Program. Offer to purchase fee simple title from owners of residential dwellings located in Area 1A.
2. Acoustical Treatment Program. Offer to install noise insulation materials in residential dwellings located in Area 1A, in exchange for an Avigation Easement. Dwellings purchased by the City of Laredo in the Fee Simple Acquisition Program would be included in the Acoustical Treatment Program.
3. Avigation Easement Acquisition Program. Offer to purchase an Avigation Easement from owners of residential dwellings located in Area 1A.

Description: Area 1A is the squared-off 70 DNL. Whenever possible, lines were drawn at street boundaries. However, in Eastwoods Subdivision, it was necessary to draw several of the lines between adjacent houses. Homes in the North Heights and Paul Young Ranch subdivisions are not eligible because of existing avigation easements. Since the homes in Area 1A are in the highest noise exposure contour, they would be given first priority in the mitigation program. All homes in Area 1A must be given an opportunity to participate before any homes in Area 1B are offered an opportunity to participate.

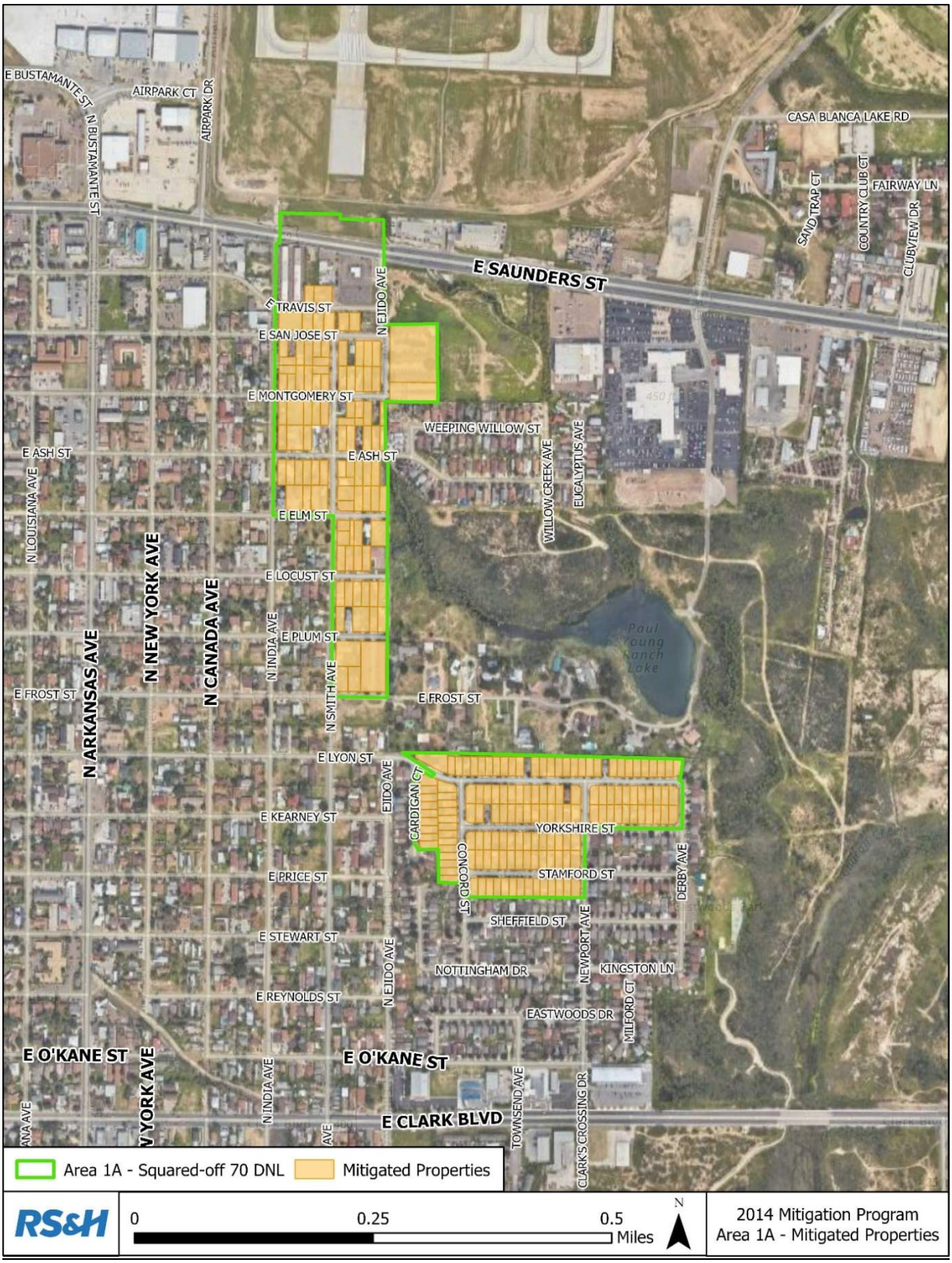
Status: 246 properties have been mitigated to date in area 1A (see **Figure 1-4**).

2. In Area 1B (Pages 10-2 and 10-7, Exhibit 10.2), for existing noncompatible land uses, offer property owners their choice of one of the following three voluntary programs:

1. Fee Simple Acquisition Program. Offer to purchase fee simple title from owners of residential dwellings located in Area 1B.
2. Acoustical Treatment Program. Offer to install noise insulation materials in residential dwellings located in Area IB, in exchange for an Avigation Easement. Dwellings purchased by the City of Laredo in the Fee Simple Acquisition Program would be included in the Acoustical Treatment Program.
3. Avigation Easement Acquisition Program. Offer to purchase an Avigation Easement from owners of residential dwellings located in Area 1B.

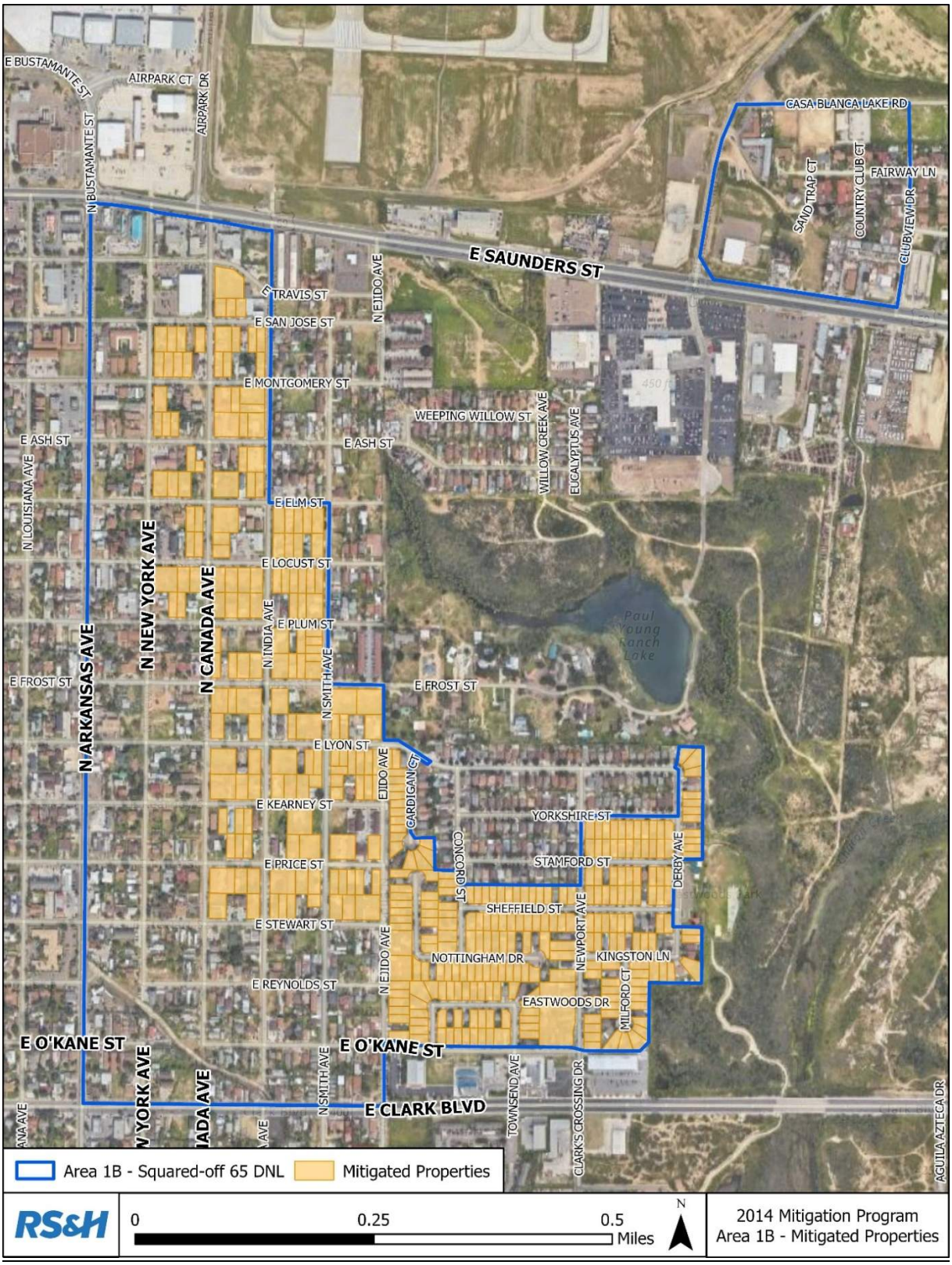
Description: This measure seeks to acquire, acoustically treat, or purchase an avigation easement in Area 1B. Area 1B is the squared-off 65 DNL, north of Clark Boulevard. The western edge of Area 1B is Arkansas Avenue. The southern edge of Area 1B is Clark Boulevard. These streets were selected because they are commercial corridors that provide a natural boundary between neighborhoods.
Status: 402 properties have been mitigated to date in 1B (see **Figure 1-5**).

FIGURE 1-4
2014 MITIGATION PROGRAM AREA 1A - MITIGATED PROPERTIES



Source: RS&H, 2021; ESRI, 2021; City of Laredo, 2021

FIGURE 1-5
2014 MITIGATION PROGRAM AREA 1B - MITIGATED PROPERTIES



Source: RS&H, 2021; ESRI, 2021; City of Laredo, 2021

3. In Area 2 (10.2.3, page 10-7, Exhibits 10.3 and 10.4), for existing noncompatible land uses, offer property owners their choice of one of the following three voluntary programs:

1. Fee Simple Acquisition Program. Offer to purchase fee simple title from owners of residential dwellings located in Area 2.
2. Acoustical Treatment Program. Offer to install noise insulation materials in residential dwellings located in Area 2, in exchange for an Avigation Easement. Dwellings purchased by the City of Laredo in the Fee Simple Acquisition Program would be included in the Acoustical Treatment Program.
3. Avigation Easement Acquisition Program. Offer to purchase an Avigation Easement from owners of residential dwellings located in Area 2.

Description: This measure seeks to acquire, acoustically treat, or purchase an avigation easement in Area 2. Area 2 is the squared-off 65 DNL south of Clark Blvd. and the squared-off 65 DNL north of Jacaman Road. South of Clark Blvd., lines were drawn at street boundaries to include the entire block where the 65 DNL contour crossed through each block. If the 65 DNL contour did not cross over any houses in a block, that block was not included. Area 2 also includes the Clark's Crossing apartment complex. Because of the cost to mitigate Areas 1A and 1 B, it appears unlikely that Area 2 would be offered an opportunity to participate prior to the revision of the Part 150 Study, on or about 2013 to 2015, as described in Section 10.3.2. If all homes in Areas 1A and 1B have been offered an opportunity to participate, prior to the program revision on or about 2013 to 2015, homes in Area 2 would be offered an opportunity to participate.

Status: No properties have been mitigated to date in Area 2.

4. Coordinate with the Texas Real Estate Commission to gain approval of an addendum to or modification of the Seller's Disclosure of Property Condition to include location within the boundaries of the FAR Part 150 Noise Exposure Map.

Status: The measure was implemented at the local level but not implemented at the state level.

5. Revise Noise Exposure Maps and Noise Compatibility Program if noise levels significantly increase

Status: Implemented. NEMs were updated in 2014 and 2022. The NCP is being updated in this study.

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CHAPTER 2

NOISE EXPOSURE MAPS AND LAND USE COMPATIBILITY

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2.1 INTRODUCTION

The existing land uses surrounding LRD play a significant role in shaping the Airport's relationship with the adjacent communities and the overall character of the region. Understanding the land uses within the Airport's vicinity is crucial for assessing compatibility with aircraft operations, evaluating potential noise compatibility measures, and identifying opportunities for future compatible development. This chapter includes the metrics and descriptors most commonly used to quantify aircraft noise, the FAA-accepted NEM contours in relation to the land uses around the Airport, and the FAA's land use compatibility guidelines.

2.2 NOISE TERMINOLOGY

While a great deal is known about aircraft noise, the methods used to calculate noise exposure can be difficult to understand. Noise, by definition, is simply unwanted sound. Determining aircraft noise impacts involves logarithmic averages and the noise energy from multiple aircraft events. In 14 CFR Part 150, the FAA-required metric for assessing aircraft noise exposure is the Day-Night Average Sound Level (DNL). The DNL combines the noise energy from all aircraft noise events occurring in one day into a 24-hour average sound level and applies a penalty to nighttime events when people are more negatively affected by noise. The following provides details on what noise is, what metrics exist to measure noise exposure, and how certain metrics relate to one another.

2.2.1 Amplitude and Frequency

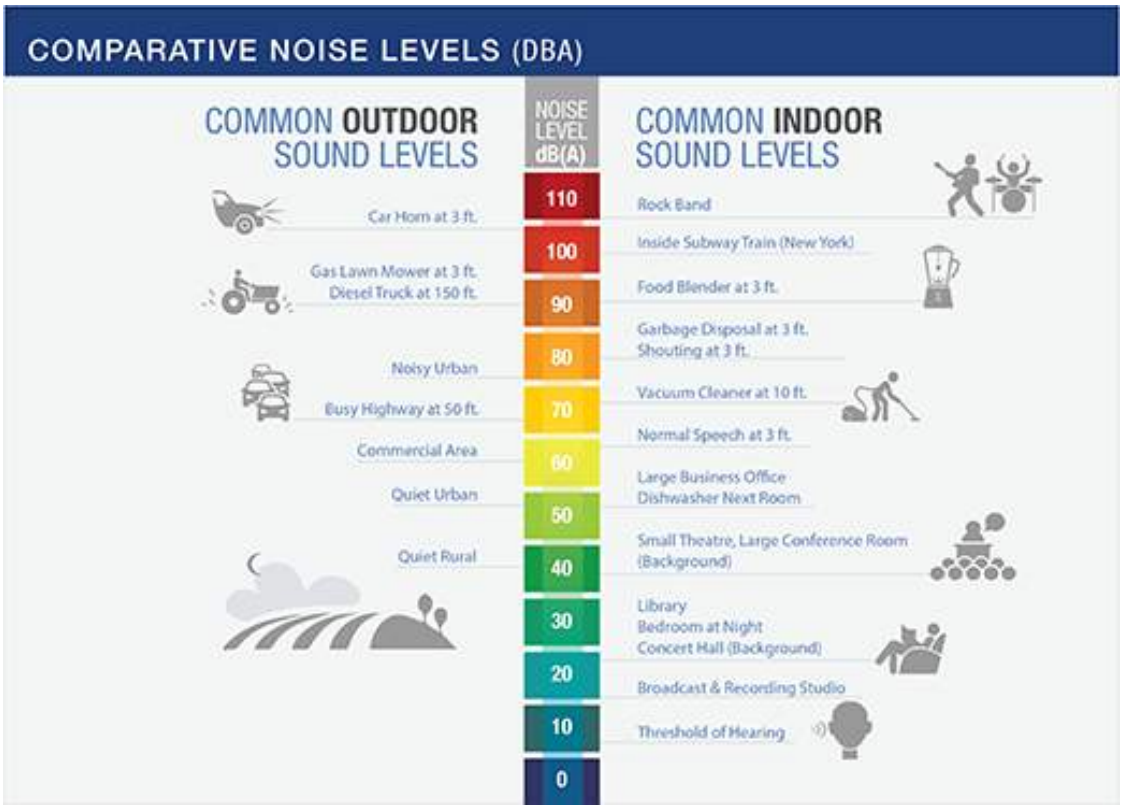
The measurement and human perception of sound involve two basic physical characteristics: amplitude (intensity) and frequency (pitch). Amplitude is a measure of the acoustic energy of sound vibrations expressed in terms of sound pressure. The higher the sound pressure, the more energy carried by the sound and the louder the perception of that sound. The ranges of sound pressures that occur in the environment are so large that they are expressed on a logarithmic scale. The standard unit of measurement of sound is the decibel (dB). On this scale, zero dB corresponds roughly to the threshold of human hearing and 140 dB corresponds to the threshold of pain.

The second important physical characteristic is sound frequency, which is the number of times per second the air vibrates or oscillates. The frequency of sound is expressed as Hertz (Hz) or cycles per second. The normal audible frequency range for adults is 20 Hz to 20,000 Hz. The prominent frequency range for community noise, including aircraft, is between 50 Hz and 5,000 Hz.

2.2.2 Frequency-Weighted Decibels (dBA)

In order to simplify the measurement and computation of sound levels, frequency-weighted metrics have obtained wide acceptance. The most common weighting is the A-weighted noise curve. The A-weighted decibel scale (dBA) performs this compensation by discriminating against frequencies in a manner approximating the sensitivity of the human ear. A-weighting follows an international standard methodology of frequency weighting and is typically applied to community noise analyses. In the A-weighted decibel, everyday sounds normally range from 30 dBA (*very quiet*) to 100 dBA (*very loud*). **Figure 2-1** presents examples of various sound environments expressed in dBA.

FIGURE 2-1
EXAMPLES OF VARIOUS SOUND ENVIRONMENTS



Source: FAA, 2023

2.2.3 Sound Rating Scales

Noise metrics can be categorized as single-event metrics or cumulative metrics. Single-event metrics describe the noise from individual events, such as an aircraft flyover. Cumulative metrics describe the noise in terms of the total noise exposure over a period of time. The primary noise metrics that are used in this study are described below.

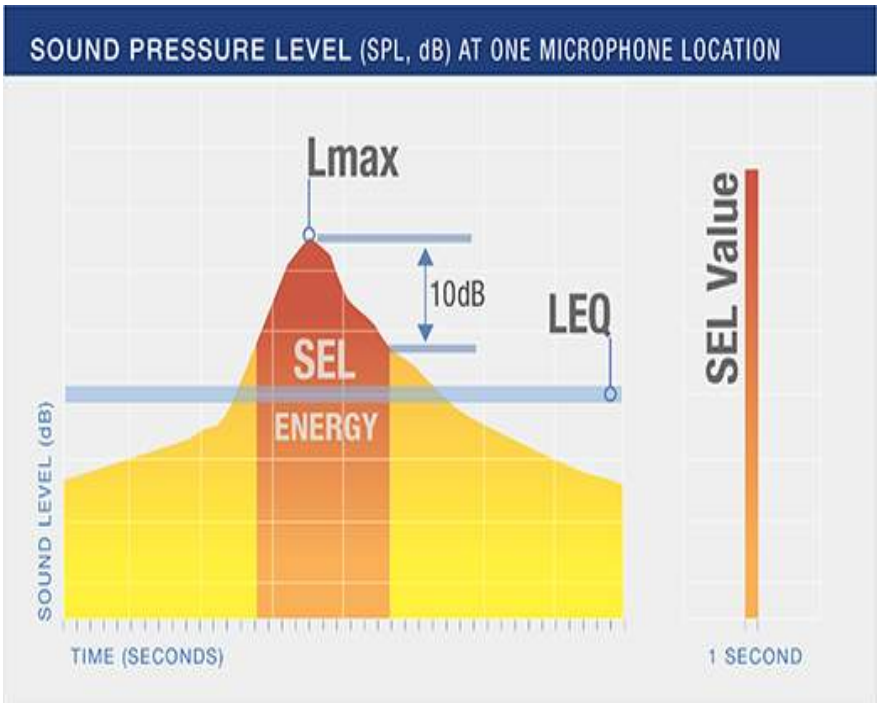
2.2.4 Single Event Metrics

Maximum A-Weighted Sound Level (Lmax) - is the maximum, or peak, sound level during an event. The metric only accounts for the highest A-weighted sound level measured during an event, not for the duration of the event. For example, as an aircraft approaches, the sound of the aircraft begins to rise above ambient levels. The closer the aircraft gets, the louder the sound until the aircraft is at its closest point. As the aircraft passes, the sound level decreases until the sound returns to ambient levels. It is this metric to which people primarily respond to when an aircraft flyover occurs.

Sound Exposure Level (SEL) – This metric considers the maximum sound level of the event and the duration of the event. SEL is a time integrated measure, expressed in decibels, of the sound energy of a single noise event at a reference duration of one second. The sound level is integrated over the period that the level exceeds a threshold. Therefore, SEL accounts for both the maximum sound level and the

duration of the sound. The standardization of sound generating events into a one-second duration allows calculation of the cumulative noise exposure of a series of events that occur over a period of time. For aircraft flyovers, the SEL value is typically about 10 dBA higher than the maximum noise level (see **Figure 2-2**). This metric is useful in that airport noise models contain aircraft noise data based upon the SEL metric.

FIGURE 2-2
SEL ILLUSTRATION



Source: FAA, 2023

2.2.5 Cumulative Metrics

Cumulative noise metrics have been developed to assess community response to noise. These metrics are useful because these scales attempt to include the loudness of the noise, the duration of the noise, the total number of noise events, and the time of day these events occur into one single number rating scale.

Equivalent Noise Level (Leq) – Leq is 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 the "energy" average noise level during the time period of the sample. It is based on the observation that the potential for a noise to affect people is dependent on the total acoustical energy content of the noise. It is the energy sum of all the sound that occurs during that time period. This is graphically illustrated on **Figure 2-3**.

FIGURE 2-3
DNL ILLUSTRATION

Source: FAA, 2023

Day-Night Average Sound Level (DNL) - is expressed in dBA and represents the noise level over a 24-hour period. DNL includes the cumulative effects of several sound events rather than a single event. It also accounts for increased sensitivity to noise during relaxation and sleeping hours. In the calculation of DNL, for each hour during the nighttime period (10:00 p.m. to 6:59 a.m.), the sound levels are increased by a 10 decibel-weighting penalty (equivalent to a 10-fold increase in aircraft operations) before the 24-hour value is computed. The weighting penalty accounts for the more intrusive nature of noise during the nighttime hours. The weighting penalty is illustrated on **Figure 2-3**.

DNL is expressed as an average noise level on the basis of annual aircraft operations for a calendar year. To calculate the DNL at a specific location, the SELs at that location associated with each individual aircraft operation (landing or takeoff) are determined. Using the SEL for each noise event and applying the 10-dB penalty for nighttime operations as appropriate, a partial DNL is then calculated for each aircraft operation. The partial DNLs for each aircraft operation are added logarithmically to determine the total DNL.

The DNL metric is based on an average annual day of aircraft operations, derived from data for a calendar year. An annual-average day (AAD) activity profile is computed by adding all aircraft operations occurring during the course of a year and dividing the result by 365. As such, AAD does not reflect activities on any one specific day but represents average conditions as they occur during the course of the year. Therefore, at a specific location near an airport, the noise exposure on a particular day is likely to be higher or lower than the annual average noise exposure, depending on the specific operations at the airport on that day. DNL is widely accepted as the best available method to describe aircraft noise exposure and is the noise descriptor required for aircraft noise exposure analyses and land use compatibility planning under FAR Part 150 and for federal environmental reviews of airport projects.

2.3 2019 AND 2026 NOISE EXPOSURE MAPS

NEMs provide local communities an opportunity to visualize aircraft noise exposure in order to make better-informed decisions regarding existing and proposed noise-sensitive development in the vicinity of an airport.

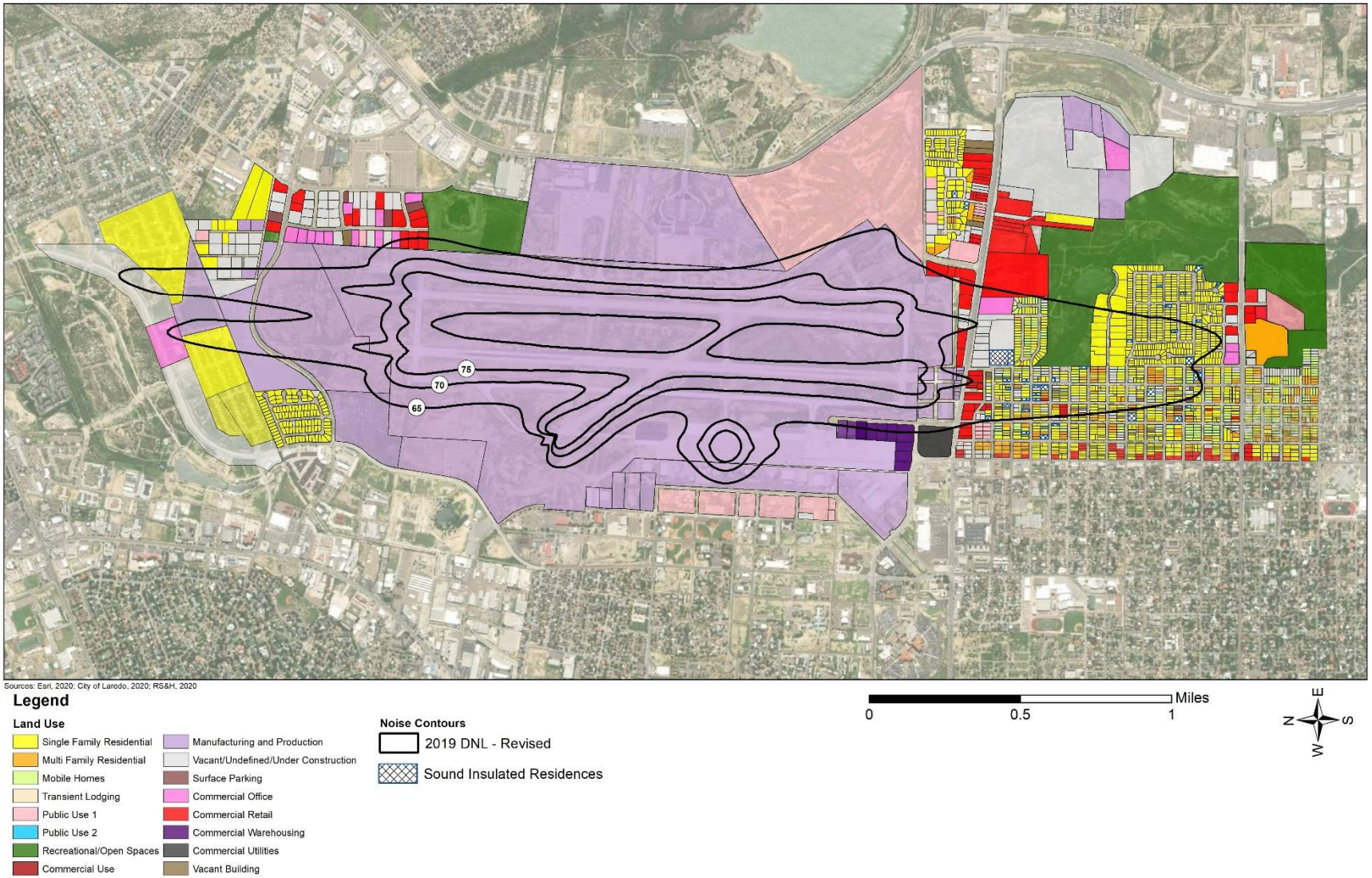
Initial development of the NEMs for LRD included the inventory of existing 2019 operational activity. This involved data collection of the number of aircraft operating at the Airport on an annual basis, the fleet mix (types of aircraft), the time of day in which the aircraft operate, and existing aircraft operational procedures (i.e., runway use, flight tracks, departure, and arrival corridors). In addition to operational data, land use data was collected and reviewed. These data included zoning regulations, subdivision requirements, existing land use maps, future land use plans, and population distribution.

After collecting data, a noise prediction model, the FAA's Aviation Environmental Design Tool (AEDT) Version 3d was used to produce 2019 noise contours (areas of equal noise exposure around the Airport). The FAA requires that these noise contours be prepared for the current year (which was 2019, when the NEM study began) and a projected condition for a future year at the discretion of the Airport Sponsor. For the LRD NEM, the future year of 2025 was chosen to represent five years into the future from the date of submittal. However, the forecast was completed amidst the COVID-19 pandemic. As a result, the FAA and City of Laredo agreed that while the base year should continue to be 2019, the future-year should be adjusted from 2025 to 2026. As a result, the original forecast made for 2025, using the most recent version of the FAA Terminal Area Forecast (TAF) at the time, was adopted as the forecast for 2026. Because the forecast was adjusted one year, the projections, including the anticipated recovery from the COVID-19 pandemic, were validated in a verification memorandum (or addendum) to the Aviation Forecast. Both the verification memorandum and the forecast were approved by the FAA in January 2021.

The future fleet mix was determined using several factors, including the current fleet mix for LRD, national trends in fleet mix change, and overall perception of what the private aircraft industry would look like in the future. The existing and future operational data and assumptions were input into the AEDT to generate the base year and future year DNL contours.

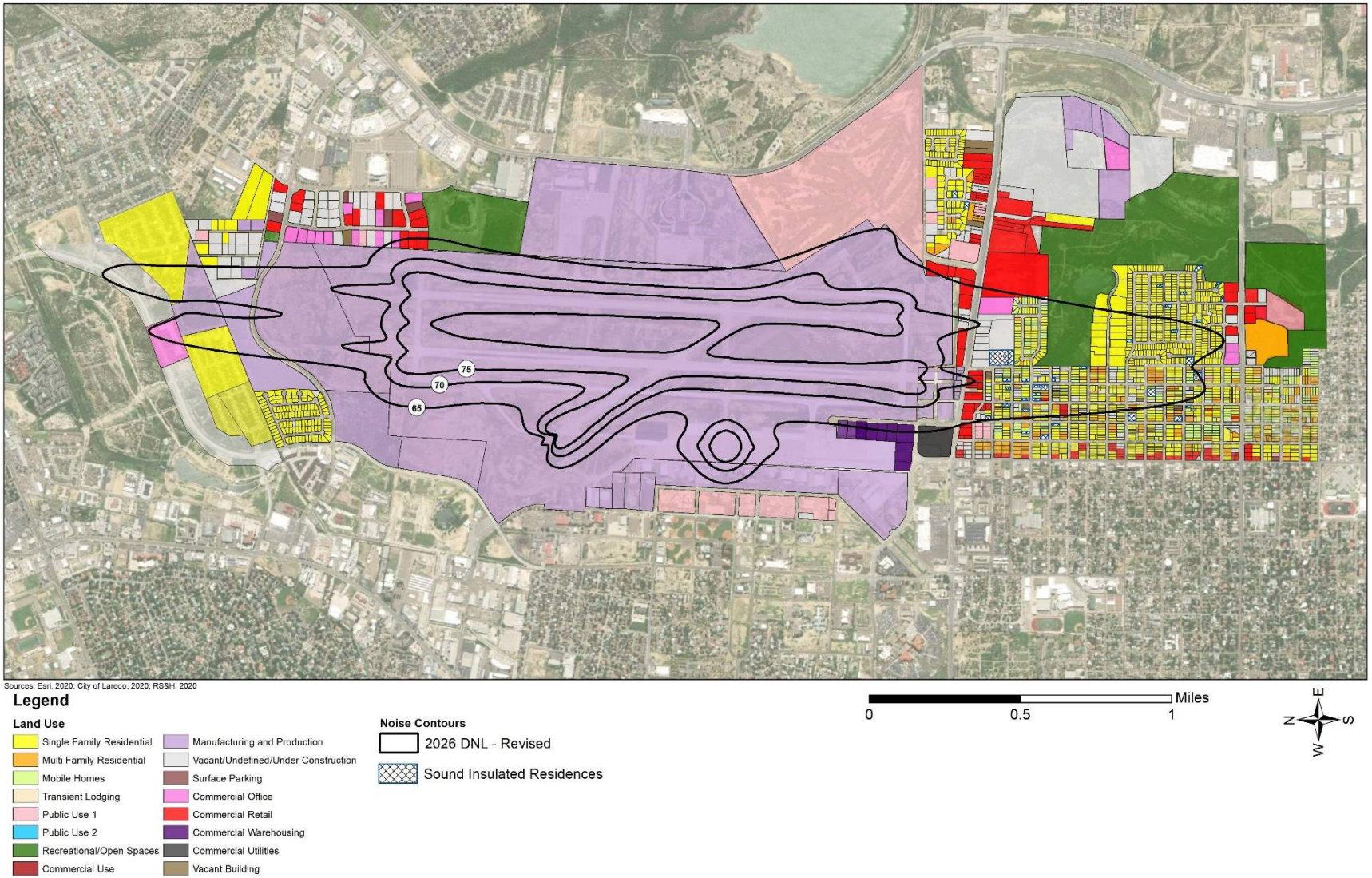
The existing and future noise contours are collectively known as the Airport's NEMs. The NEMs are overlaid on existing land use maps and future land use plans (if available) to identify land uses that are compatible (or noncompatible) with aircraft noise. The results of these analyses are documented in the NEM Report. The NEMs were accepted by the FAA on August 25, 2022, and are available for review or download at https://flylaredotexas.com/business/development-plans-and-projects/. The NEM DNL contours for 2019 and 2026 are shown on **Figure 2-4** and **Figure 2-5**, respectively.

FIGURE 2-4
2019 NEM DNL CONTOURS



Source: RS&H, 2021; City of Laredo, 2021

FIGURE 2-5
2026 NEM DNL CONTOURS



Source: RS&H, 2021; City of Laredo, 2021

To determine the estimated population within the 65 DNL contour, the housing units within the 65 DNL contour were counted and multiplied by the average person per household for their census tract. Within the 2019 65 DNL contour, there were estimated to be 679 housing units with 3.26 average persons per household, and the 2026 65 DNL includes 704 housing units. **Tables 2-1** and **Table 2-2** provide a summary of the housing units and population located within the 2019 and 2026 65 DNL, respectively.

TABLE 2-1
2019 DNL CONTOUR POPULATION SUMMARY

Contour Range	Housing Units	Average Persons per Household	Estimated Population
65-69 DNL	679	3.26	2,214
70-74 DNL	0	0	0
75+ DNL	0	0	0

Source: RS&H, 2020

TABLE 2-2
2026 DNL CONTOUR POPULATION SUMMARY

Contour Range	Housing Units	Average Persons Per Household	Estimated Population
65-69 DNL	704	3.26	2,295
70-74 DNL	0	0	0
75+ DNL	0	0	0

Source: RS&H, 2021

2.4 FAA LAND USE COMPATIBILITY GUIDELINES

The FAA has developed land use guidelines that relate the compatibility of aircraft noise to areas surrounding an airport. Table 1 in 14 CFR FAR Part 150, provided as **Table 2-3**, identifies as a function of annual (365-day average) DNL values the land uses that are compatible and land uses that are noncompatible in the vicinity of an airport. The FAA determined that all the land uses listed in the table are compatible with aircraft noise exposure below the 65 DNL contour.

Noise-sensitive land uses, such as residential and schools, are considered noncompatible with noise levels of 65 DNL or greater unless otherwise determined by local guidelines. Where the community determines that residential or schools must be allowed at DNL levels greater than 65, acoustical treatments designed to achieve indoor levels of 45 dB or less should be incorporated into the structures.

Other noise-sensitive uses such as hospitals, nursing homes, places of worship, auditoriums, and concert halls are compatible with noise levels between the 65 and 75 DNL when measures that achieve an outdoor-to-indoor Noise Level Reduction (NLR) of 25 to 30 dB are incorporated into the structures. Land uses that are less sensitive to noise, such as office buildings, are considered compatible with noise levels of up to 70 DNL without sound insulation and up to 75 DNL with sound insulation.

TABLE 2-3
14 CFR FAR PART 150 LAND USE COMPATIBILITY GUIDELINES

Land Use	DNL Expressed in dB(A)					
	Below 65	65-70	70-75	75-80	70-85	Over 85
Residential						
Residential, other than mobile homes and transient lodgings	Y	N (1)	N (1)	N	N	N
Mobile home parks	Y	N	N	N	N	N
Transient lodgings	Y	N (1)	N (1)	N (1)	N	N
Public Use						
Schools	Y	N (1)	N (1)	N	N	N
Hospitals and nursing homes	Y	25	30	N	N	N
Churches, auditoriums, and concert halls	Y	25	30	N	N	N
Governmental services	Y	Y	25	30	N	N
Transportation	Y	Y	Y (2)	Y (3)	Y (4)	Y (4)
Parking	Y	Y	Y (2)	Y (3)	Y (4)	N
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)	N
Retail trade—general	Y	Y	25	30	N	N
Utilities	Y	Y	Y (2)	Y (3)	Y (4)	N
Communication	Y	Y	25	30	N	N
Manufacturing and Production						
Manufacturing, general	Y	Y	Y (2)	Y (3)	Y (4)	N
Photographic and optical	Y	Y	25	30	N	N
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)	N	N	N
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)	N	N	N
Outdoor music shells, amphitheaters	Y	N	N	N	N	N
Nature exhibits and zoos	Y	Y	N	N	N	N
Amusements, parks, resorts, and camps	Y	Y	Y	N	N	N
Golf courses, riding stables and water recreation	Y	Y	25	30	N	N

Source: 14 CFR Part 150, 2023

Table Notes: 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 compatible; measures to achieve NLR of 25, 30, or 35 dB must be incorporated into design and construction of structure.

(1) Where the community determines that residential or school uses must be allowed, measures to achieve outdoor to indoor Noise Level Reduction (NLR) of at least 25 dB and 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 would not eliminate outdoor noise problems.
(2) Measures to achieve NLR 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 the 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 the normal noise level is low.
(4) Measures to achieve NLR 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 the normal level is low.
(5) Land use compatible provided special sound reinforcement systems are installed.
(6) Residential buildings require an NLR of 25.
(7) Residential buildings require an NLR of 30. (8) Residential buildings not permitted.

2.5 EXISTING LAND USE CONTROLS

Land use planning and the adoption, administration, and enforcement of zoning regulations are an exclusive authority of local government within its jurisdiction. This includes authority for airport-compatible land use planning. While the FAA can encourage compatible land development around airports, it has no regulatory authority for controlling land uses that would protect the airport. The FAA recognizes that state and local governments are responsible for land use planning, zoning, and regulation, including the necessity to provide land use compatibility with airport operations.

Pursuant to the Federal Airport and Airway Development Act, as a condition to approval of an FAA-funded airport development project, the airport sponsor must provide the FAA with written assurances that *"…appropriate action, including the adoption of zoning laws have been or will be taken, to the extent reasonable, to restrict the use of land adjacent to or in the immediate vicinity of the airport to activities and purposes compatible with normal airport operations including the landing and takeoff of aircraft.[5]"*

The Laredo City Council adopted Ordinance No. 94-0-012 on January 3, 1994. This ordinance amended Chapter 24 of the Zoning Ordinance Handbook of the City of Laredo by adding Section 24-68 establishing the Airport Noise Specific Use Zoning Overlay District and establishing noise attenuation standards for specific uses. The Airport Noise Specific Use Zoning Overlay District is subdivided into three subdistricts. The subdistricts are as follows:

- Subdistrict C - shall include the area within the 65 DNL to 70 DNL noise exposure area.
- Subdistrict B - shall include the area within the 70 DNL to 75 DNL noise exposure area.
- Subdistrict A - shall include the area with noise exposure greater than 75 DNL.

Uses and structures within the Airport Noise Specific Use Zoning Overlay District are subject to the requirements of Section 24.68.4, *Airport Land Use Compatibility – Noise,* and Appendix N,[6] *Noise Attenuation Performance Standards for Structures Located in Airport Noise Specific Use Overlay Zoning*

[5] Public Law 91-258, Title I-Airport and Airway Development Act of 1970, https://www.govinfo.gov/content/pkg/STATUTE-84/pdf/STATUTE-84-Pg219.pdf, accessed October, 2023.

[6] City of Laredo. 2021. Land Development Code Book, Appendix N: Noise Attenuation Performance Standards for Structures Located within Airport Noise Specific Use Zoning Overlay Districts. Retrieved October 30, 2024 from https://www.cityoflaredo.com/home/showpublisheddocument/908/638101091990530000

Districts, of the Laredo Standard Building Code (see **Appendix C**). These define the sound level reduction requirements for new structures in each of the subdistricts of the Airport Noise Specific Use Zoning Overlay.

Avigation easements are also required over all property located within the Airport Noise Specific Use Overlay Zoning District as a condition of the approval of any residential subdivision, residential rezoning application, special use or conditional use permit. Such easements are recorded in the deed or map records of Webb County.

Additionally, all subdivision plats located within the Airport Noise Specific Use Overlay Zoning District contain a note which reads as follows: "*This property (or a part thereof) is located within an area subject to potentially excessive airport noise levels. All uses and construction shall conform to the noise mitigation standards included in Appendix N – Noise Attenuation Performance Standards for Structures Located within the Airport Noise Specific Use Zoning Overlay District of the City of Laredo, incorporated herein and made a part hereof for all purposes*."

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CHAPTER 3

NOISE ABATEMENT PROCEDURES

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3.1 INTRODUCTION

The purpose of this chapter is to document various aircraft and airport operational noise abatement and actions that were considered during this 14 CFR Part 150 study to reduce or eliminate noncompatible land uses (e.g., residences and schools) within the 65 DNL contour. Evaluation of NCP alternatives for LRD adhered to the following criteria:

- Develop a balanced and cost-effective program for reducing noise without limiting airport utility, aviation efficiency, or adversely affecting safety.
- Improve the overall noise environment while not shifting noise from one noncompatible area to another.
- Alternatives for reducing the highest noise levels affecting the greatest number of people, without adversely affecting one community over another, will be given the highest priority.
- Alternatives must be technically and legally feasible, approved by the FAA (flight procedures), and approved by local governments (land use measures).
- Alternatives subject to FAR Part 161 evaluation will not be part of the study recommendations.

3.2 NOISE ABATEMENT ALTERNATIVES

Noise abatement alternatives include airport layout modifications, flight path changes, preferential runway use, and aircraft arrival and departure flight procedures. The following describes the alternatives considered, identifies the responsible implementing authority, and if the alternative is recommended for implementation at LRD.

3.2.1 Alternatives Under the Purview of the FAA or Other Federal Agency

The following presents the noise abatement alternatives considered for which requisite authority is vested in the FAA or other federal agencies.

3.2.1.1 Implementation of a Preferential Runway System

3.2.1.1.1 Purpose

The purpose of implementing a preferential runway system is to shift aircraft operations from a runway that has noncompatible land uses beneath its approach and departure paths to a runway with more compatible land uses beneath its approach and departure paths.

3.2.1.1.2 Description

Preferred runways are identified when the flight patterns associated with that runway extend over noise-compatible land uses, such as commercial, industrial, or vacant land, which decreases the amount of noise exposure to noncompatible land uses (e.g., residences and schools). Airports often establish preferred runways to use for noise abatement when operating conditions permit. Weather conditions, primarily wind speed and direction, dictate which runways are used at airports for arrivals and

departures. In addition to weather conditions, the length of the runway is also important to ensure the aircraft has enough runway length to safely land or takeoff.

3.2.1.1.3 Analysis

A preferential runway system has not been established at LRD. Data included in the LRD NEM Report indicate that about 88 percent of the operations at LRD operate on the two parallel runways, Runway 18L/36R and Runway 18R/36L, which are the two longest runways at LRD, and 12 percent of the operations operate on Runway 14/32. All commercial aircraft operate on Runways 18L/36R and 18R/36L. As identified in Chapter 2, noncompatible land uses (e.g., residences and schools) are present just off the ends of all three runways at LRD. Identifying a preferential runway would simply be shifting noise from one noncompatible area to another. This is inconsistent with the requirements in 14 CFR Part 150 to develop an NCP that *"reduces existing noncompatible uses and prevents or reduces the probability of the establishment of additional noncompatible uses."*

Implementation Authority: FAA

Sponsor's Recommendation: This study does not recommend a preferential runway system at the Airport for noise mitigation purposes.

2025 FAA Action: The Sponsor's recommendation is approved.

3.2.1.2 Flight Procedures to Control the Operation of Aircraft and Reduce Noise Exposure

3.2.1.2.1 Purpose

The purpose of this measure is to reduce noise exposure over noncompatible land uses (e.g., residences and schools) by modifying the path of the aircraft during takeoff, landing, or flight.

3.2.1.2.2 Description

The modification of flight tracks is a method of redirecting aircraft overflights, and their corresponding noise, to areas with compatible or less-sensitive land uses. Any flight track modification considered for implementation cannot compromise safety and must be designed within the realistic capabilities of the aircraft intended to fly the modified flight track.

3.2.1.2.3 Analysis

Flight tracks and procedures have not been previously modified at LRD to reduce noise exposure. For this study, the potential for new flight tracks or modification of current flight tracks over compatible land uses (e.g., non-residential areas, industrial parks, open space, and waterways) was reviewed. There are limited opportunities to move flight tracks in the vicinity of LRD. The opportunities to move aircraft flight tracks over compatible land uses at LRD are beyond the limit of the 65 DNL contour. For the purposes of 14 CFR Part 150, this is inconsistent with the requirements in 14 CFR Part 150 to develop an NCP that *"reduces existing noncompatible uses and prevents or reduces the probability of the establishment of additional noncompatible uses."*

Implementation Authority: FAA

Sponsor's Recommendation: This study does not recommend modifying flight tracks or procedures at the Airport for noise mitigation purposes.

2025 FAA Action: The Sponsor's recommendation is approved.

3.2.2 Alternatives Under the Purview of the Airport Sponsor

The following presents the noise abatement alternatives considered for which the airport operator has adequate implementation authority.

3.2.2.1 Construction of Barriers

3.2.2.1.1 Purpose

The purpose of a noise barrier is to reduce noise exposure over noncompatible land uses (e.g., residences and schools) by obstructing the path of sound transmission from the aircraft.

3.2.2.1.2 Description

Communities located near airports often experience noise exposure from aircraft operating on the airfield. This noise exposure can consist of taxiing aircraft, aircraft located on the ramp running auxiliary power units, or aircraft landing at the airport and using thrust reversers to slow down. Depending on the noise source and receiver locations, noise barriers may provide some relief for the noise exposure caused by the ground operations.

Noise barriers can include walls, earth mounds (or berms), buildings, or extremely dense vegetation. In the case of barriers, areas are shielded from the noise source (aircraft) as long as the barrier is close to the source or receiver, is solid, and sufficiently breaks the line-of-sight from the noise source to the receiver. Barriers can potentially provide noise reduction benefits for residences immediately adjacent to an airport from aircraft ground operations. Once an aircraft becomes airborne and there is a direct line of sight from the aircraft to the receiver, barriers have no further effect on reducing sound levels.

To be effective, a barrier needs to be close to the source of noise and/or close to the receiver. Examples of effective barriers are those used along interstate highways. That is, the barriers are close to the source and the receivers. With respect to aircraft, due to height and safety requirements, barriers cannot be constructed close to the source (aircraft).

3.2.2.1.3 Analysis

Noise barriers have not been previously established in or around LRD. Based on a review of the LRD NEMs, the locations where homes are closest to LRD are at the ends of the runways. These communities experience noise primarily from aircraft in the air on arrival or departure. Therefore, barriers would not reduce this type of noise in these communities.

Implementation Authority: Airport Sponsor

Sponsor's Recommendation: This study does not recommend establishing noise barriers at the Airport.

2025 FAA Action: The Sponsor's recommendation is approved.

3.2.2.2 Use Restrictions on Any Type or Class of Aircraft

3.2.2.2.1 Purpose

The purpose of use restrictions is to minimize noise levels over noncompatible land uses (e.g., residences and schools) by restricting the type, number, or duration of aircraft utilizing the airport.

3.2.2.2.2 Definition

Examples of use restrictions include partial or full curfews, restrictions in use based on the certified noise level of an aircraft, capacity limits on the number of aircraft that can use the facility, landing fees based on noise, or other similar measures.

As a result of the 1990 Airport Noise and Capacity Act, no new use-restrictions at airports can be implemented without a thorough demonstration of need, a detailed analysis of the restriction and its consequences, and approval by the FAA. If any form of use restriction is proposed, compliance with 14 CFR Part 161-Notice and Approval of Airport Noise and Access would need to be demonstrated. The FAR Part 161 process requires that substantial evidence be presented that supports six statutory conditions that include:

- Is reasonable, not arbitrary, or discriminatory;
- Does not create an undue burden on interstate or foreign commerce;
- Maintains safe and efficient use of navigable airspace;
- Does not conflict with any existing Federal statute or regulation;
- Has been adequately provided for public comment; and
- Does not create an undue burden on the national aviation system;

3.2.2.2.3 Analysis

Noise mitigation at LRD has been addressed through other means and noise mitigation techniques to lessen noncompatible uses within the 65 DNL contour over the past 30 years and again during this 14 CFR Part 150 Study.

Implementation Authority: Airport Sponsor

Sponsor's Recommendation: This study does not recommend the establishment of any use restriction at the Airport for noise mitigation purposes.

2025 FAA Action: The Sponsor's recommendation is approved.

CHAPTER 4

LAND USE MEASURES

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4.1 INTRODUCTION

The FAA has developed land use guidelines that relate the compatibility of aircraft activity to areas surrounding an airport. These guidelines, provided previously in Table 2-3, identify land use activities that are acceptable within the 65, 70, and 75 DNL contours. FAA guidance indicates that the majority of land uses below the 65 DNL are considered by the FAA to be compatible with the effects of aircraft noise.

Attention is focused on areas within the 65 DNL because the FAA considers these to be the areas significantly exposed to noise and is the FAA's funding eligibility limit for noise abatement measures. However, it is recognized that noise does not stop at the 65 DNL contour and is heard by those located in close proximity to approach, departure, and training corridors. Thus, the FAA encourages airport sponsors and local governments to work together to establish land use controls within areas beyond the 65 DNL contour.

There are a variety of planning and land use regulatory initiatives available to local governments that can help facilitate land use compatibility with airport operations. Land use compatibility planning techniques are classified as being either preventative or corrective and these are detailed below.

4.2 PREVENTATIVE MEASURES

Preventive land use measures act to preclude the introduction of new noncompatible land uses around an airport. These measures include techniques such as the use of overlay zones and building code enhancements to require noise attenuating construction techniques. The FAA has no regulatory authority to control land uses around airports and recognizes that state and local governments are responsible for land use planning, zoning, and regulation.

4.2.1 Overlay Zones

4.2.1.1 Purpose

Overlay zones are an effective tool for maintaining the compatibility of future development to ensure future land uses are compatible with existing and projected aircraft noise levels.

4.2.1.2 Description

An overlay zone creates one or more specialized zoning districts that are intended to supplement the underlying jurisdictional zoning regulations. Regulations associated with overlay zones could limit the development of noise sensitive uses, could require new development to incorporate sound insulation into the design of buildings, and could require some form of publication (through avigation easement or notification). One example of a publication is the written advisement of future buyers as to the existence of aircraft overflights and noise and/or other measures. The determination as to which of the controls should apply to any given situation is based on the extent of the noise exposure at the proposed development site.

4.2.1.3 Analysis

As discussed in Chapter 2, the Laredo City Council adopted Ordinance No. 94-0-012 on January 3, 1994. This ordinance establishes the Airport Noise Specific Use Zoning Overlay District and establishes noise attenuation standards for specific uses. The current Airport Noise Specific Overlay Zoning District corresponds to the DNL contour lines depicted in **Figure 2-4**; the City does not have an individual map of the Overlay Zoning District. The zones were established to ensure land use compatibility around airports. The Airport Noise Specific Use Zoning Overlay District is subdivided into three subdistricts based on the noise exposure level. The Subdistricts are defined as follows:

- Subdistrict A includes the area with noise exposure greater than 75 Ldn.
- Subdistrict B includes the area within the 70 Ldn to 75 Ldn noise exposure area.
- Subdistrict C includes the area within the 65 Ldn to 70 Ldn noise exposure area.

Additionally, all subdivision plats located within the Airport Noise Specific Use Overlay Zoning District contain a note which reads as follows:

"This property (or a part thereof) is located within an area subject to potentially excessive airport noise levels. All uses and construction shall conform to the noise mitigation standards included in Appendix N[7] *– Noise Attenuation Performance Standards for Structures located within the Airport Noise Specific Use Zoning Overlay District of the City of Laredo, incorporated herein and made a part hereof for all purposes."*

Implementation Authority: Airport Sponsor

Sponsor's Recommendation: Land Use Measure #1

This study recommends expanding Ordinance No. 94-0-012, adopted on January 3, 1994, by extending Subdistrict C out an additional one-half mile of the 65 Ldn noise exposure area. **Figure 4-1** and **Figure 4-2** shows the 2026 NEM 65-75 DNL contours with an additional one-half mile buffer added to the 65 DNL to the north and south of the Airport, respectively. As shown on the figures, the buffer zone extends close to Del Mar Boulevard to the north, past the Bob Bullock Loop to the east, past Bartlett Avenue to the west, and as far as Mier Street to the south.

2025 FAA Action: The Sponsor's recommendation is approved.

[7] City of Laredo. 2021. Land Development Code Book, Appendix N: Noise Attenuation Performance Standards for Structures Located within Airport Noise Specific Use Zoning Overlay Districts. Retrieved October 30, 2024 from https://www.cityoflaredo.com/home/showpublisheddocument/908/638101091990530000

4.2.2 Building Codes

4.2.2.1 Purpose

Building codes are an effective tool to ensure new construction or alterations of existing structures within a specific overlay zone, meet structural requirements to reduce interior noise levels to 45 dB or less.

4.2.2.2 Description

Building codes are established to regulate the construction of structures by setting the standards for materials and construction techniques to protect the health and safety of future occupants of those structures. Most building codes address items such as the structural requirements of the building as well as the ventilation and insulation requirements. All three requirements directly affect the sound attenuation performance of the structure. By establishing comprehensive building codes, a municipality can ensure that any new construction, or alterations to existing structures, can have sound attenuation properties incorporated into the building to ensure the building is compatible with noise for aircraft operations.

4.2.2.3 Analysis

As mentioned previously, the City of Laredo's Land Development Code, Appendix N[8] – *Noise Attenuation Performance Standards for Structures Located in Airport Noise Specific Use Overlay Zoning Districts* define the sound level reduction requirements for new structures in each of the subdistricts. Specifically, Appendix N outlines building performance standards required for exterior walls (i.e., surface weight, thickness, materials, sealing, and insulation), windows (i.e., thickness, sealing, and total area), doors (i.e., thickness, materials, sealing), roofs (i.e., surface weight, thickness, materials, sealing, and insulation), floors (i.e., materials, carpeting, sealing), and ventilation (i.e., location, type, size, ducts, and lining) for development within the 65 Ldn, or to achieve a minimum noise reduction of 25 dB or 30 dB. A copy of Appendix N of the City of Laredo Land Development Code is located in **Appendix C** of this document. The building requirements outlined in the City of Laredo Land Development Code are based off of the sound insulation program established south of the airport. That program includes testing to ensure the homes meet the 45 DNL interior sound level upon completion of work. It should be noted that the homes south of the airport are older, draftier structures compared to the new construction ongoing north of the airport. Application of the building requirements outlined in the Land Development Code to all new homes located north of the airport will ensure they meet the 45 DNL interior noise requirements. Any new construction, reconstruction, remodeling, or additions to existing buildings for noncompatible land uses within the Overlay Zoning Districts must comply with the building code criteria; this includes construction within the extended one-half-mile buffer added to the 65 DNL to the north and south of the Airport as a part of Land Use Measure #1 in **Section 4.2.1**.

8 City of Laredo. 2021. Land Development Code Book, Appendix N: Noise Attenuation Performance Standards for Structures Located within Airport Noise Specific Use Zoning Overlay Districts. Retrieved October 30, 2024 from https://www.cityoflaredo.com/home/showpublisheddocument/908/638101091990530000

Implementation Authority: Airport Sponsor

Sponsor's Recommendation: Land Use Measure #2

This study recommends maintaining the implementation of the City of Laredo's Land Development Code, Appendix N, via Ordinance No. 94-0-012, adopted on January 3, 1994.

2025 FAA Action: The Sponsor's recommendation is approved.

FIGURE 4-1
HALF MILE BUFFER FROM 65 DNL NORTH OF THE AIRPORT

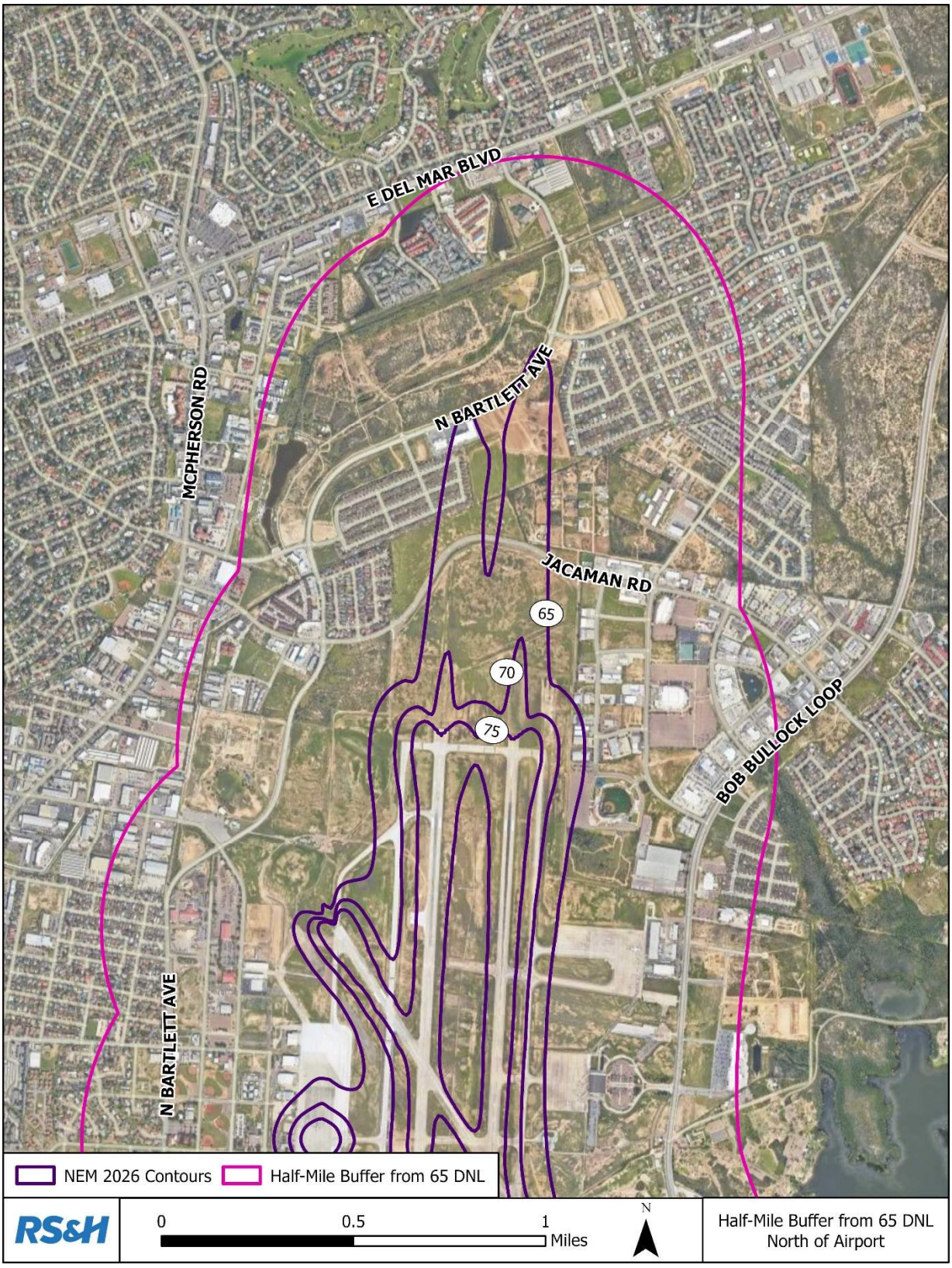
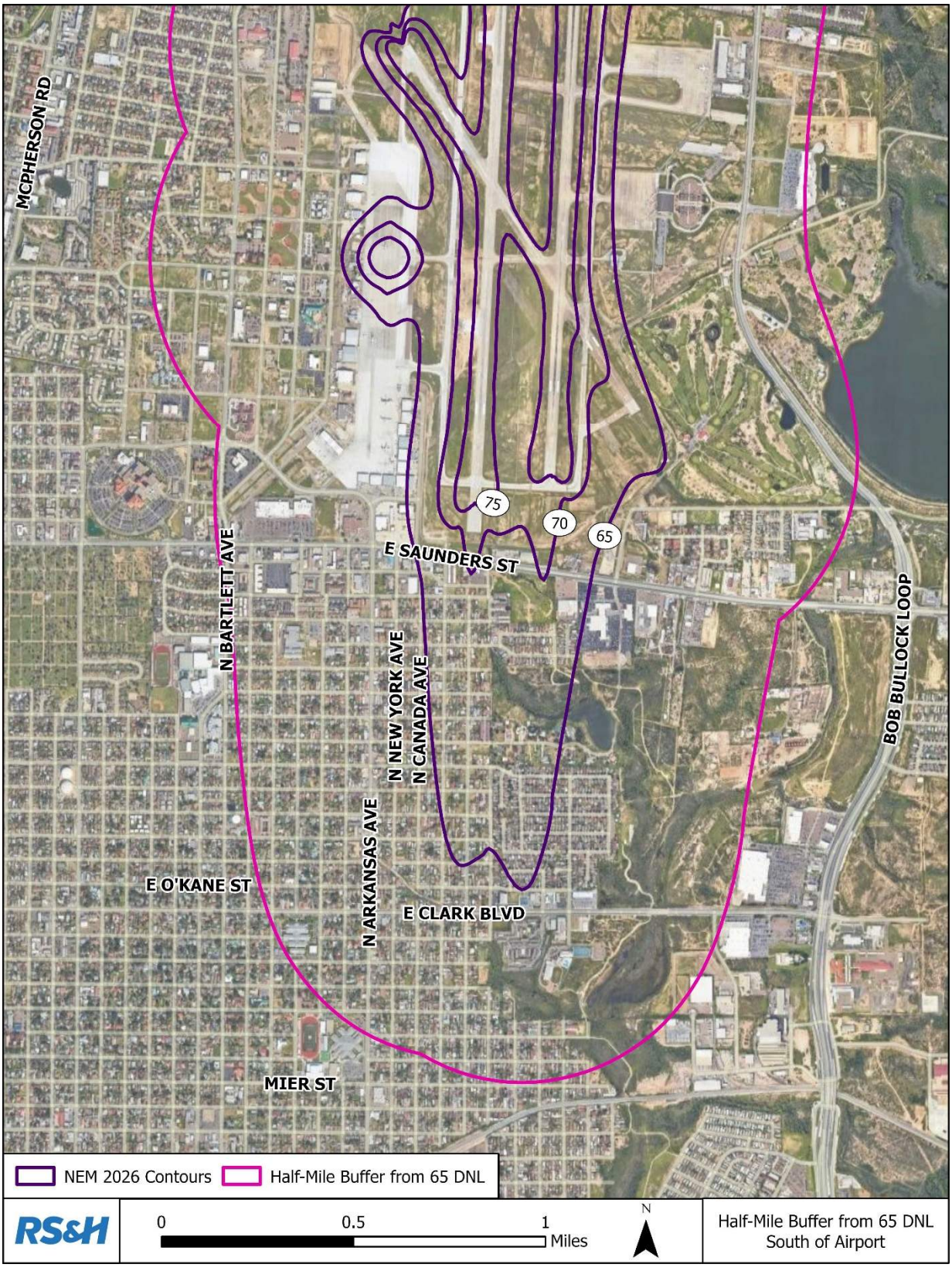


FIGURE 4-2
HALF-MILE BUFFER FROM 65 DNL SOUTH OF THE AIRPORT



4.3 CORRECTIVE MEASURES

Corrective land use measures seek to remedy existing noise impacts to existing residential and other noncompatible land uses that have already been developed within the existing and/or future 65 DNL and higher contours. Such measures include property acquisition and sound insulation treatments of structures to reduce the interior level of noise.

4.3.1 Property Acquisition

4.3.1.1 Purpose

Acquiring land for noise compatibility is the most definitive way to ensure compatibility with aircraft noise levels.

4.3.1.2 Description

With the fee simple acquisition of property, the Airport operator is given sole authority on converting the noncompatible land uses to compatible land uses. Once purchased, the airport operator has the option of demolishing the noncompatible land uses and leaving the property empty or offering the property for resale with covenants in place to ensure future uses are compatible with existing and projected aircraft noise levels.

4.3.1.3 Analysis

In the past, the City of Laredo has acquired properties within the 65 DNL contour. Available land within the 65 DNL contour is limited and costly.

Implementation Authority: Airport Sponsor

Sponsor's Recommendation: This study does not recommend continuing fee simple property acquisition as a land use measure in this NCP.

2025 FAA Action: The Sponsor's recommendation is approved.

4.3.2 Sound Insulation and Eligibility

4.3.2.1 Purpose

The purpose of a sound insulation program is to reduce interior noise levels in a home to 45 dB or less.

4.3.2.2 Description

Sound insulation is accomplished by applying acoustical treatments designed to reduce aircraft noise. The treatments typically include but are not limited to, upgrading windows, doors, attic insulation, and ventilation systems. The goal of providing sound insulation is to reduce the interior noise levels from aircraft operations to an acceptable level, so that noise no longer interferes with the resident's indoor activities. As established by FAA, the sound insulation must provide a reduction of at least five decibels (dB) and bring the average interior noise level below 45 dB. Additionally, an easement may be conveyed

by the property owner in exchange for the sound insulation improvements provided. Avigation easements are rights sought by airports that allow the operation of aircraft over a specific property with a guarantee the homeowners not pursue legal remedies in the future related to noise impacts.

A residence is not eligible for federally-funded sound insulation just by virtue of its location inside the 65 DNL contour. Rather, to be eligible, the dwelling unit must meet the following criteria:

- It must be located within the 65 DNL contour of an FAA-approved NEM.
- Dwelling units constructed in the vicinity of LRD after October 1, 1998 are not eligible for federally funded sound insulation.
- It must have an average noise level in *habitable* rooms above DNL 45 (with windows closed).
- Per FAA policy, if the sponsor proposes to expand noise mitigation just beyond the 65 DNL contour to include parcels contiguous to the project area (referred to as block rounding), the FAA Airports District Office (ADO) has the option to approve this request.

Implementation Authority: Airport Sponsor

Sponsor's Recommendation: Land Use Measure #3

This study recommends continuing the sound insulation and eligibility program.

2025 FAA Action: The Sponsor's recommendation is approved.

4.4 MITIGATION PROGRAM AREA

4.4.1.1 Purpose

The purpose of the Noise Mitigation Program Area is to identify residences eligible for sound insulation that would reduce interior noise levels in a home to 45 dB or less.

4.4.1.2 Description

The Noise Mitigation Program Area boundary is generally defined by the 65 DNL contour of an FAA-approved NEM. The last NCP amendment was prepared in 2014. The areas eligible for mitigation were modified based on the size and shape of the 2019 65 DNL contours prepared in that 2014 amended NCP.

4.4.1.3 Analysis

Updated NEMs for the years 2019 and 2026 were prepared during the first phase of this 14 CFR Part 150 study. The NEMs were accepted by the FAA on August 25, 2022. With these updated NEMs, a review was made to determine if a modification to the Noise Mitigation Program Area boundary was needed.

Figure 4-3 shows the 2026 NEM 65-75 DNL contours superimposed on the 2014 NCP Mitigation Program Area boundary. As shown on the figure, the 2026 65 DNL contour extends beyond the 2014 boundary near East Reynolds Street. Based on the 2026 DNL contours, modifications to the boundary are being recommended.

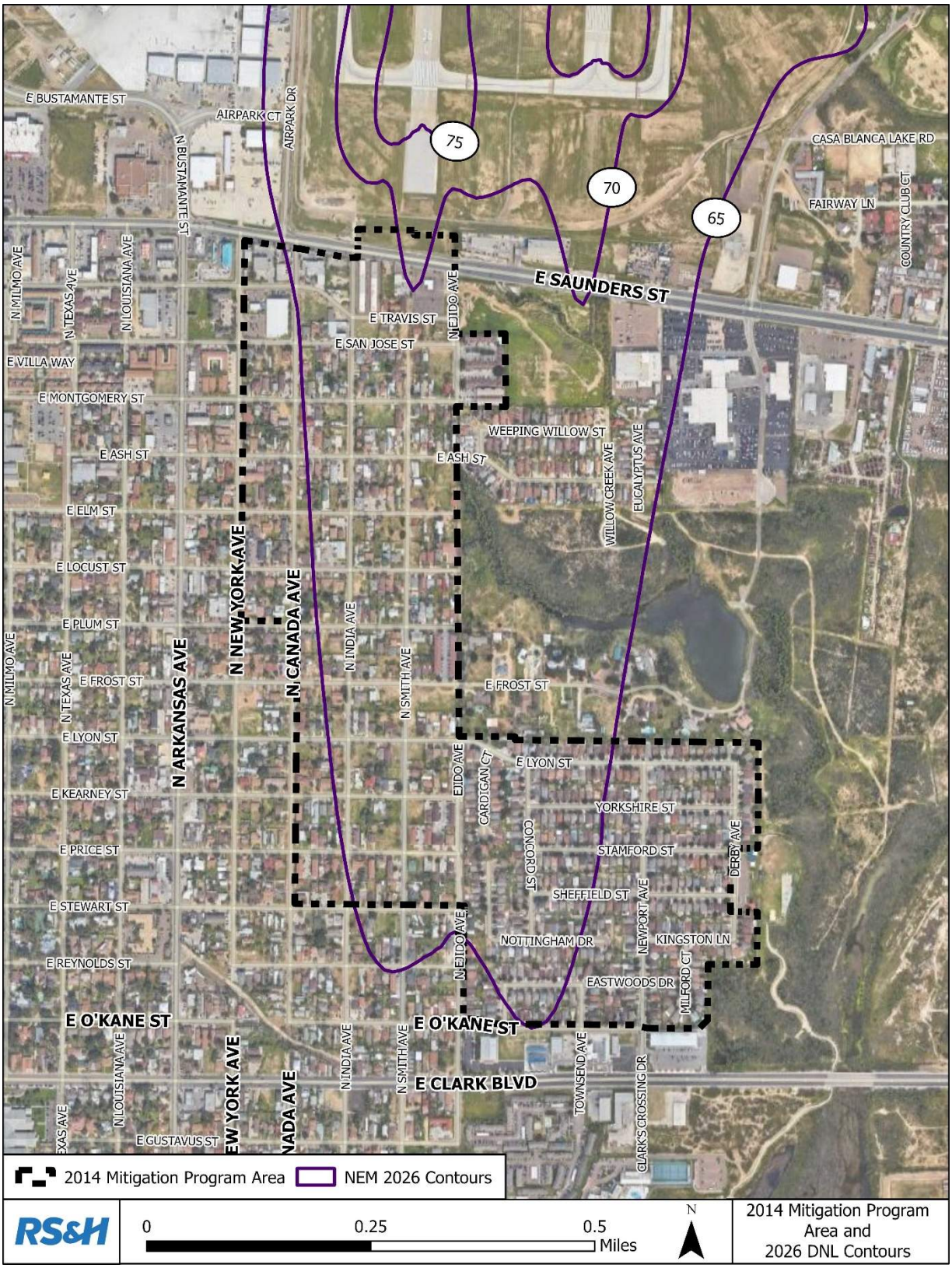
Implementation Authority: Airport Sponsor

Sponsor's Recommendation: Land Use Measure #4

This study recommends updating the mitigation program area based on the 2026 DNL contours. The area being proposed in this NCP is shown on **Figure 4-4.** The modified boundary is being identified as the proposed 2026 Noise Mitigation Program Area. There are 139 unmitigated properties in the proposed 2026 Noise Mitigation Program Area that may qualify for federally-funded sound insulation based on the requirements described in **Section 4.3.2**. These properties are shown on **Figure 4-5.**

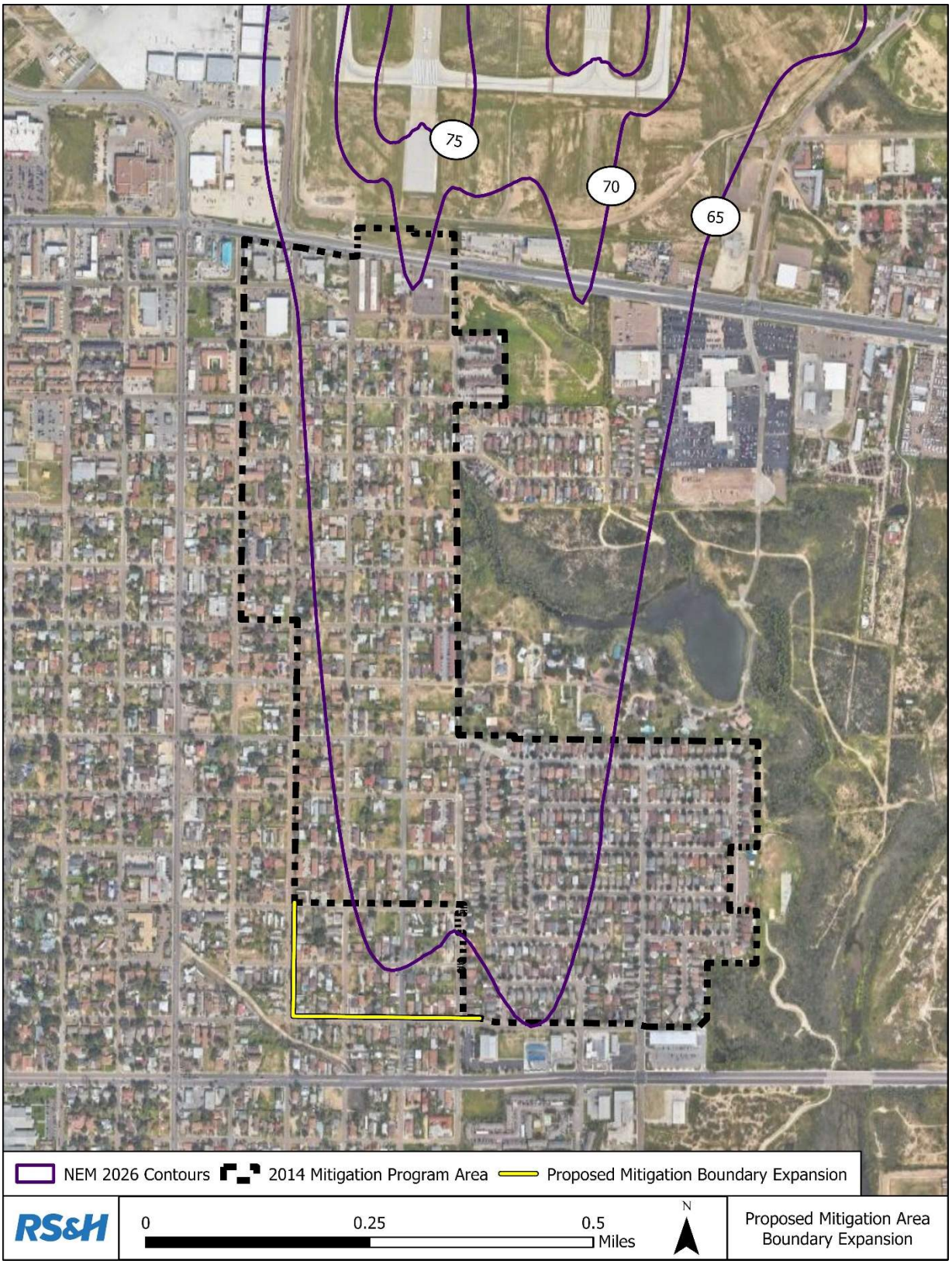
2025 FAA Action: The Sponsor's recommendation is approved.

FIGURE 4-3
2014 MITIGATION PROGRAM BOUNDARY WITH 2026 NEM CONTOURS



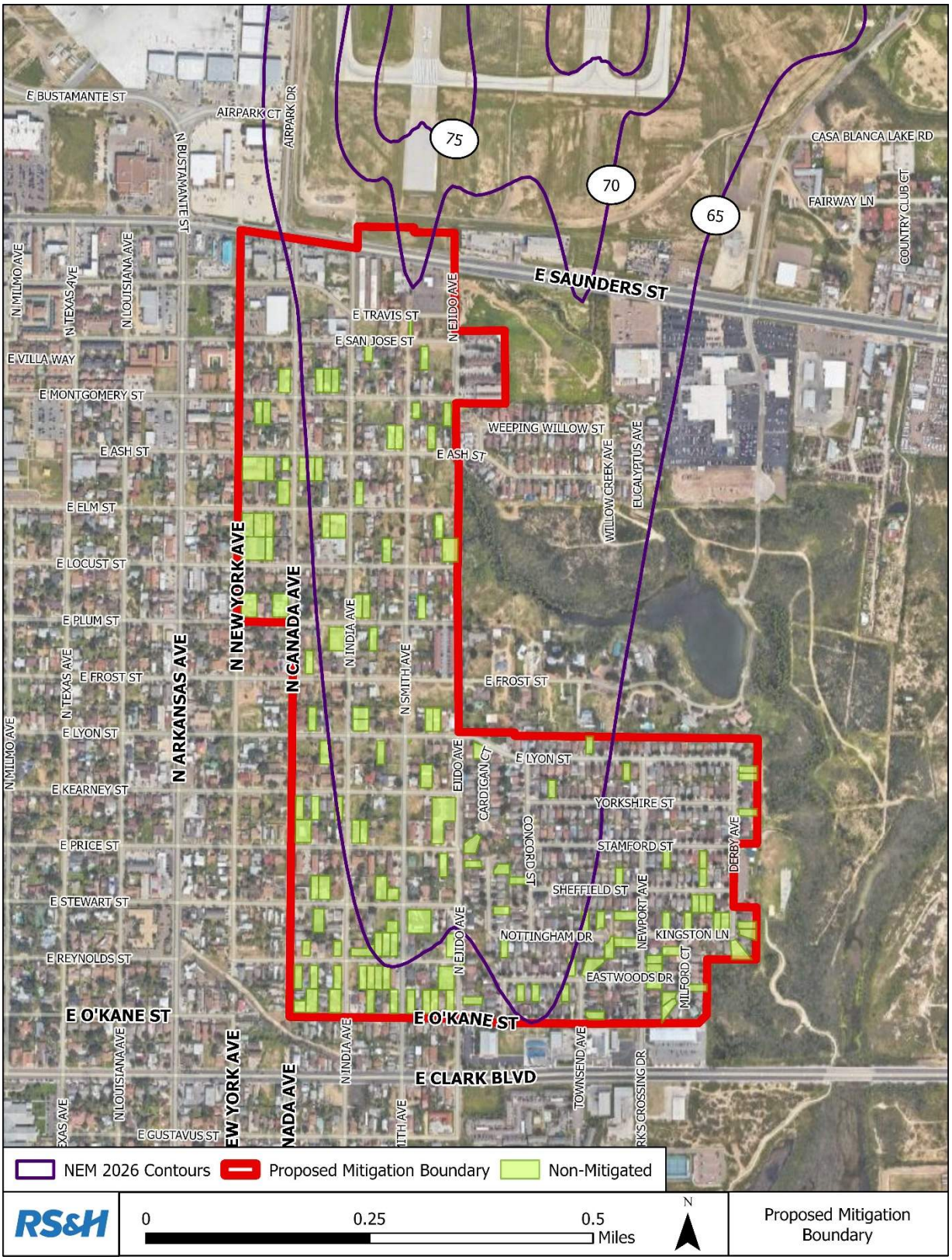
Source: RS&H, 2023; ESRI, 2021; City of Laredo, 2021

FIGURE 4-4
PROPOSED MITIGATION PROGRAM BOUNDARY EXPANSION



Source: RS&H, 2023; ESRI, 2021; City of Laredo, 2021

FIGURE 4-5
UNMITIGATED PROPERTIES WITHIN THE PROPOSED 2026 NOISE MITIGATION PROGRAM AREA



Source: RS&H, 2023; ESRI, 2021; City of Laredo, 2021

CHAPTER 5

ADMINISTRATIVE MEASURES

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5.1 INTRODUCTION

This chapter details the administrative measures recommended for inclusion in this NCP.

The City of Laredo, as the Airport Sponsor, is recommending the following measures and is responsible for implementing these measures.

5.2 ADMINISTRATIVE MEASURES

5.2.1 Noise Management Process

5.2.1.1 Purpose

The logging of noise complaint data enables the Airport staff to efficiently respond to noise complaints and gain insights and trends from noise complaint data over time.

5.2.1.2 Description

Noise complaint data is categorized, and the information and data include but is not limited to complaint location, time of day, and information on the flight (arrival, departure, jet, propeller, military), and is recorded in a database that is maintained by the Airport staff.

5.2.1.3 Analysis

The airport staff should continue to receive and log noise complaints. In addition, the Airport should design and implement a comprehensive noise property management system. Over the past 15 years, the City of Laredo has continued to implement recommendations made in the 2007 NCP. The voluntary mitigation program offered homeowners a choice of fee simple acquisition, soundproofing (in exchange for an avigation easement), or just an avigation easement. Hundreds of individual properties have participated in the program with one of the three methods identified above, or a combination of two of the three. As required by the FAA, an airport sponsor must document the management of its noise land acquisition, disposal, and retention through the Noise Land Inventory and Noise Land Reuse Plan. This noise property management system allows the Airport to be able to formally develop a Noise Land Inventory and Noise Land Reuse Plan for all properties that have participated in the program. This study should be updated in conjunction with the NCP.

Implementation Authority: Airport Sponsor

Sponsor's Recommendation: Administrative Measure #1

This study recommends maintaining and logging noise complaints, maintaining a comprehensive noise property management system, and updating the Noise Land Inventory and Reuse Plan.

2025 FAA Action: The Sponsor's recommendation is approved.

5.2.2 Aircraft Operations and Flight Tracking System

5.2.2.1 Purpose

The purpose of flight track monitoring is to provide accurate data regarding aircraft operations, flight tracks, and flight profiles to aid in the calculation of aircraft noise contours.

5.2.2.2 Description

The Airport should establish a flight track monitoring program and acquire a system with the capability to identify aircraft operations, display their flight tracks and altitude, and provide a method to store and analyze the collected data. The aircraft operations and flight track data collected would be extremely valuable for responding to public inquiries, as well as providing detailed flight data when updating noise contours. The objectives are as follows:

- Provide accurate operations data to aid in the calculation of aircraft noise contours;
- Provide accurate flight track and profile data aid in the calculation of aircraft noise contours;
- Provide data to concerned citizens, local officials, and aircraft operators regarding aircraft operations at LRD; and
- Respond to noise complaints by correlating flight and flight track information with aircraft data and accurately determining the circumstances leading to complaints.

5.2.2.3 Analysis

The flight track monitoring system would allow for a better assessment of proposed changes relative to existing conditions and help to identify minor adjustments to procedures that might enhance noise compatibility. The information gathered by a flight tracking system would not be used for any future mandatory noise abatement flight procedures. The purchase and installation of a flight track monitoring system can cost up to $1,000,000 but depends on the vendor and specific system features. The final cost will be determined at a future date when the specific vendor and features are selected. Costs associated with ongoing operation and maintenance of the system after installation would be the responsibility of the Airport.

Implementation Authority: Airport Sponsor

Sponsor's Recommendation: Administrative Measure #2

This study recommends the purchase and installation of an aircraft operations and flight tracking system.

2025 FAA Action: The Sponsor's recommendation is approved.

5.2.3 Update the Noise Exposure Map

5.2.3.1 Purpose

The purpose of periodically updating Noise Exposure Maps is to ensure map accuracy based on the most up-to-date aircraft operations forecast and land use maps.

5.2.3.2 Description

The FAA requires that an airport operator maintain NEMs that reflect current or reasonably projected conditions in order to obtain FAA funding for noise programs. Specifically, 14 CFR Part 150, Sec. 150.21(d), states that the airport operator shall promptly prepare and submit a revised noise exposure map if any of the four criteria below are met.

> *"(1) If, after submission of a noise exposure map under paragraph (a) of this section, any change in the operation of the airport would create any "substantial, new noncompatible use" in any area depicted on the map beyond that which is forecast for a period of at least five years after the date of submission, the airport operator shall, in accordance with this section, promptly prepare and submit a revised noise exposure map. A change in the operation of an airport creates a substantial new noncompatible use if that change results in an increase in the yearly day-night average sound level of 1.5 dB or greater in either a land area which was formerly compatible but is thereby made noncompatible under Appendix A (Table 1), or in a land area which was previously determined to be noncompatible under that Table and whose noncompatibility is now significantly increased.*
>
> *(2) If, after submission of a noise exposure map under paragraph (a) of this section, any change in the operation of the airport would significantly reduce noise over existing noncompatible uses that is not reflected in either the existing conditions or forecast noise exposure map on file with the FAA, the airport operator shall, in accordance with this section, promptly prepare and submit a revised noise exposure map. A change in the operation of the airport creates a significant reduction in noise over existing noncompatible uses if that change results in a decrease in the yearly day-night average sound level of 1.5 dB or greater in a land area which was formerly noncompatible but is thereby made compatible under Appendix A (Table 1).*
>
> *(3) Such updating of the map shall include a reassessment of those areas excluded under section A150.101(e)(5) of Appendix A because of high ambient noise levels.*
>
> *(4) If the forecast map is based on assumptions involving recommendations in a noise compatibility program which are subsequently disapproved by the FAA, a revised map must be submitted if revised assumptions would create a substantial, new noncompatible use not indicated on the forecast map. Revised noise exposure maps*

are subject to the same requirements and procedures as initial submissions of noise exposure maps under this part.[9]*"*

5.2.3.3 Analysis

Consistent with 14 CFR Part 150 requirements, the City of Laredo will evaluate any changes in the noise environment and notify the FAA whether the NEMs continue to be a reasonable representation of current and/or forecast conditions or submit updated NEMs to the FAA for acceptance.

Implementation Authority: Airport Sponsor

Sponsor's Recommendation: Administrative Measure #3

This study recommends updating the NEMs to reflect any change in aircraft operations that would create any "substantial, new noncompatible use," create a "significant reduction" in noise over existing noncompatible uses, or after a period of five years after the date of submission.

2025 FAA Action: The Sponsor's recommendation is approved.

5.2.4 Update the Noise Compatibility Program

5.2.4.1 Purpose

Updating the Noise Compatibility Program following revisions to the Noise Exposure Maps allows for noise impacts, noise abatement, and noise mitigation measures to be reassessed based on current data.

5.2.4.2 Description

14 CFR Part 150, Sec. 150.23(e)(9), states that NCPs must include a *"[p]rovision for revising the program if made necessary by revision of the noise exposure map*." This may occur if a significant change is identified that results in a revision to the NEMs. The NCP does not require an update with each NEM update.

5.2.4.3 Analysis

The City of Laredo anticipates updating the NCP only when additional measures and/or modified measures are available to reduce noncompatible land use.

Implementation Authority: Airport Sponsor

Sponsor's Recommendation: Administrative Measure #4

This study recommends updating the NCP per 14 CFR Part 150, Sec. 150.23(e)(9) if a significant change is identified that results in a revision to the NEMs.

2025 FAA Action: The Sponsor's recommendation is approved.

[9] 14 CFR 150.21(d), https://www.ecfr.gov/current/title-14/part-150/section-150.21#p-150.21(d), accessed October, 2023.

CHAPTER 6

RECOMMENDED NOISE COMPATIBILITY PROGRAM, BENEFITS, COST, TIMING

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6.1 INTRODUCTION

This chapter presents the eight NCP measures that are recommended for approval. Since there are no new or modified runway use or aircraft flight procedures that would affect the operating conditions at LRD, implementation of the recommended NCP would not change the size or shape of the DNL contours on the FAA-accepted 2026 NEM. All NCP measures being recommended are those of the Airport Sponsor (City of Laredo).

6.2 RECOMMENDED NCP MEASURES

6.2.1 Recommended NCP Land Use Measure 1: Modify Overlay Zone

Description: Expand Ordinance No. 94-0-012, adopted on January 3, 1994, by extending Subdistrict C out an additional one-half mile of the 65 Ldn noise exposure area.

Noise Exposure and Land Use Compatibility: This measure prevents the construction of new noncompatible land uses within Subdistrict C that are not compatible with aircraft noise levels.

Effects on Other Programs/Measures: This measure is not expected to affect other measures. The existing Subdistrict C in Ordinance No. 94-0-012 would be updated and expanded with this measure.

Essential Government Actions: Airport staff would be required to work with the City of Laredo to update Ordinance No. 94-0-012.

6.2.2 Recommended NCP Land Use Measure 2: Building Codes

Description: This study recommends maintaining the implementation of the City of Laredo's Land Development Code, Appendix N[10] (**Appendix C**), via Ordinance No. 94-0-012, adopted on January 3, 1994.

Noise Exposure and Land Use Compatibility: This measure prevents the construction of new noncompatible land uses within Subdistrict C that are not compatible with aircraft noise levels.

Effects on Other Programs/Measures: By continuing to enforce this measure, the building code's reach would be extended with the implementation of Land Use Measure 1. The specific building code language would not change.

Essential Government Actions: Airport staff would be required to work with the City of Laredo to update Ordinance No. 94-0-012. This measure would not require a change to the building code language.

6.2.3 Recommended NCP Land Use Measure 3: Sound Insulation and Eligibility

Description: Maintain and continue the sound insulation and eligibility program.

[10] City of Laredo. 2021. Land Development Code Book, Appendix N: Noise Attenuation Performance Standards for Structures Located within Airport Noise Specific Use Zoning Overlay Districts. Retrieved October 30, 2024 from https://www.cityoflaredo.com/home/showpublisheddocument/908/638101091990530000

Noise Exposure and Land Use Compatibility: This measure converts noncompatible land uses to uses that are compatible with aircraft noise levels.

Effects on Other Programs/Measures: This measure is not expected to affect other measures. The existing noise mitigation program would be maintained.

Essential Government Actions: The City would allocate the required matching funds when FAA funds are made available.

6.2.4 Recommended NCP Land Use Measure 4: Modify Noise Mitigation Program Area

Description: Modify the 2014 Noise Mitigation Program Area based on the 2026 NEM and offer sound insulation to eligible properties within the updated area.

Noise Exposure and Land Use Compatibility: This measure converts noncompatible land uses to uses that are compatible with aircraft noise levels.

Effects on Other Programs/Measures: This measure is not expected to affect other measures. The existing noise mitigation program area would be updated and expanded with this measure.

Essential Government Actions: The City would allocate the required matching funds when FAA funds are made available.

6.2.5 Recommended NCP Administrative Measure 1: Noise Management Process

Description: Maintain and log noise complaints, maintain a comprehensive noise property management system, and update the Noise Land Inventory and Reuse Plan.

Noise Exposure and Land Use Compatibility: Logging of noise complaints does not directly improve land use compatibility; rather, it provides the airport with additional resources to monitor potential or emerging noise issues, to determine the effectiveness of potential future noise abatement measures, and to respond to public inquiries about noise and airport operations. The noise property management system allows the airport to document the management of its noise land acquisition, disposal, and retention plan.

Effects on Other Programs/Measures: This measure is not expected to affect other measures or programs.

Essential Government Actions: No essential government actions are required for this measure; rather it would be accomplished through the regular administrative duties of Airport staff.

6.2.6 Recommended NCP Administrative Measure 2: Aircraft Operations and Flight Tracking System

Description: Purchase and install an aircraft operations and flight tracking system.

Noise Exposure and Land Use Compatibility: This measure does not directly improve land use compatibility; rather, the data collected would be valuable for responding to public inquiries, as well as providing detailed flight data in the future when updating DNL contours.

Effects on Other Programs/Measures: This measure is not expected to affect other measures or existing programs.

Essential Government Actions: The City would allocate the required matching funds when FAA funds are made available.

6.2.7 Recommended NCP Administrative Measure 3: Update Noise Exposure Maps

Description: Perform updates to the NEMs as needed.

Noise Exposure and Land Use Compatibility: This measure does not directly improve land use compatibility; rather, it provides for periodic review and update of the NEMs.

Effects on Other Programs/Measures: This measure is not expected to affect other measures or programs; it is intended to bring programs up to date when needed.

Essential Government Actions: The city would allocate the required matching funds when FAA funds are made available.

6.2.8 Recommended NCP Administrative Measure 4: Update Noise Compatibility Program

Description: Perform updates to the NCP when needed.

Noise Exposure and Land Use Compatibility: This measure does not directly improve land use compatibility; rather, it provides the airport opportunities to identify potential future noise abatement measures, and land use compatibility initiatives.

Effects on Other Programs/Measures: This measure is not expected to affect other measures or programs; it is intended to bring programs up to date when needed.

Essential Government Actions: The city would allocate the required matching funds when FAA funds are made available.

6.3 SUMMARY OF RECOMMENDED NCP MEASURES

No. summarizes the recommended NCP measures.

TABLE 6-1
RECOMMENDED NCP SUMMARY

No.	Description	Measure History	Implementing Authority	Timing	Estimated Cost	Funding Source (s)
Land Use Measure #1	Modify Overlay Zone	Modified from 2007 NCP	Airport and City	2025-2026	N/A	N/A
Land Use Measure #2	Maintain Building Codes	Maintained from 2007 NCP	Airport and City	Ongoing	N/A	N/A
Land Use Measure #3	Maintain Sound Insulation and Eligibility Program	Maintained from 2007 NCP	Airport	Ongoing	N/A	N/A
Land Use Measure #4	Modify Noise Mitigation Program Area	Modified from 2007 NCP	Airport	2025-2030	up to $8 million	FAA AIP Grant Funds and Local Matching Funds.
Administrative Measure #1	Modify Noise Management Process	Modified from 2007 NCP	Airport	Ongoing	N/A	N/A
Administrative Measure #2	Aircraft Operations and Flight Tracking System	New Measure	Airport	2025	$300,000 to $1 million	FAA AIP Grant Funds and Local Matching Funds.
Administrative Measure #3	Update NEMs	Updated from 2007 NCP	Airport	As needed when criteria are met	Up to $350,000	FAA AIP Grant Funds and Local Matching Funds.
Administrative Measure #4	Update NCP	Updated from 2007 NCP	Airport	As needed when criteria are met	Up to $350,000	FAA AIP Grant Funds and Local Matching Funds.

CHAPTER 7

CONSULTATION AND PUBLIC INVOLVEMENT

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7.1 INTRODUCTION

14 CFR Part 150 Sec. 150.23(c) requires an NCP to be developed:

> *"in consultation with FAA regional officials, the officials of the state and of any public agencies and planning agencies whose area, or any portion or whose area, of jurisdiction within the Ldn 65 dB noise contours is depicted on the noise exposure map, and other Federal officials having local responsibility of land uses depicted on the map. Consultation with FAA regional officials shall include, to the extent practicable, informal agreement from FAA on proposed new or modified flight procedures. For air carrier airports, consultation must include any air carriers and, to the extent practicable, other aircraft operators using the airport. For other airports, consultation must include, to the extent practicable, aircraft operators using the airport.[11]"*

14 CFR Part 150 also requires that the airport sponsor afford adequate opportunity for the public to to submit their views, data, and comments on the formulation and adequacy of the program and provide for provide notice and the opportunity for a public hearing. The following summarizes the public involvement and consultation that occurred during the LRD 14 CFR Part 150 study.

7.2 PUBLIC MEETINGS

The LRD 14 CFR Part 150 Study included two public open-house meetings during the first phase of the Study and one public open-house meeting during the second phase (NCP) of the Study. The public meetings served as an important platform for community engagement in the study process. The meeting materials and public comments are included in the LRD NEM Report available at https://flylaredotexas.com/business/development-plans-and-projects/.

7.3 CONSULTATION

During the NCP phase of the LRD 14 CFR Part 150 study, consultation occurred through the LRD Noise Compatibility Program Committee. Committee members represented organizations that included the Airport, airlines, cargo operators, U.S. Customs and Border Protection, general aviation, chamber of commerce, city council, real estate, city planning and zoning department, and citizens at large. The full list of the LRD NCP Committee and meeting materials are included in **Appendix A**.

7.4 PUBLIC HEARING

A public hearing was held on February 22, 2024 at the Joe A. Guerra Laredo Public Library from 5:30 p.m. to 7:00 p.m. to solicit public comment on the Draft NCP. The public was afforded the opportunity to provide comments at the hearing and during a 30-day period following the hearing. One person attended the hearing. One comment was received during the 30-day comment period following the hearing,

[11] 14 CFR 150.23(c), https://www.ecfr.gov/current/title-14/part-150#p-150.23(c), Accessed October, 2023.

A Notice of Availability of the LRD Draft NCP was published in local newspapers in English and Spanish 30-days prior to the public hearing.

Copies of the notice of availability, hearing advertisement, sign-in sheets, presentation, and handout are provided in **Appendix A**. The public comments and responses are included in **Appendix B.**