
FINAL ENVIRONMENTAL ASSESSMENT

Runway 17R-35L Runway Extension

Valley International Airport
Harlingen, Texas

Prepared for

City of Harlingen Airport Board
and
U.S. Department of Transportation
Federal Aviation Administration

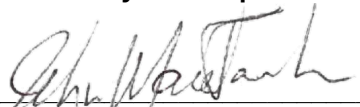
As lead Federal Agency pursuant to the National Environmental Policy Act of 1969

Prepared by:

RS&H, Inc.

June 2021

**This Environmental Assessment becomes a Federal document when evaluated, signed
and dated by the Responsible Federal Official.**



Responsible Federal Official

June 17, 2021
Date

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Acronyms and Abbreviations

A

AC	Advisory Circular
AEDT	Aviation Environmental Design Tool
AIP	Airport Improvement Plan
ALP	Airport Layout Plan
ALS	Approach Lighting System
APE	Area of Potential Effect
ARFF	Aircraft Rescue Fire Fighting
ATCT	Airport Traffic Control Tower

B

BCA	Benefit Cost Analysis
BMP	Best Management Practice

C

CATEX	Categorical Exclusion
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CO	Carbon Monoxide
CDT	Central Daylight Time
CWA	Clean Water Act
CZMA	Coastal Zone Management Area

D

dB	Decibel
DME	Distance Measuring Equipment
DNL	Day-Night Average Sound Level

E

EA	Environmental Assessment
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F

FAA	Federal Aviation Administration
FBO	Fixed Based Operator
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map

G

GA	General Aviation
GAO	Government Accountability Office
GHG	Greenhouse Gas
GIS	Geographical information System

H

HIRL	High Intensity Runway Lights
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I

ICAO	International Civil Aviation Organization
ILS	Instrument Landing System
IPaC	Information for Planning and Consultation

J

K

L

LOC	Localizer
-----	-----------

M

MALSR	Medium Intensity Approach Lighting System with Runway Alignment Indicator Lights
MIRL	Medium Intensity Runway Lights
MTOW	Maximum Takeoff Weight

N

NAVAID	Navigational Aid
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NO ₂	Nitrogen Dioxide

NHD	National Hydrography Dataset
NHPA	National Historic Preservation Act
NPIAS	National Plan of Integrated Airport Systems
NPL	National Priorities List
NRCS	National Resources Conservation Service
NRHP	National Register of Historic Places
NWI	National Wetlands Inventory

O

O ₃	Ozone
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P

PAPI	Precision Approach Path Indicator
Pb	Lead
PFC	Passenger Facility Charge
PM _{2.5}	Particulate Matter-2.5
PM ₁₀	Particulate Matter-10

QR

REIL	Runway End Identification Lights
RVR	Runway Visual Range

S

SAA	Superfund Alternative Approach
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
SO ₂	Sulfur Dioxide
SPCC	Spill Prevention Control and Countermeasure
SWPPP	Stormwater Pollution Prevention Plan

T

TAF	Terminal Area Forecast
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TCEQ	Texas Commission of Environmental Quality
THPO	Tribal Historic Preservation Officer
TCP	Traditional cultural Property
TPDES	Texas Pollution Discharge and Elimination System
TPWD	Texas Parks and Wildlife Department
TRI	Toxic Release Inventory
TSCA	Toxic Substances Control Act

U

USACE	U.S. Army Corps of Engineers
USDOT	U.S. Department of Transportation
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey

VW

WOTUS	Waters of the U.S.
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XYZ

Chapter 1

INTRODUCTION AND PROPOSED ACTION

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1.1 INTRODUCTION

This Environmental Assessment (EA) identifies and evaluates potential environmental effects related to the proposed construction and operation of the Runway 17R-35L¹ extension at Valley International Airport (Airport).

The Federal Aviation Administration (FAA) is the lead federal agency to ensure compliance with the National Environmental Policy Act (NEPA) for airport development actions. This EA is prepared in accordance with FAA Order 1050.1F, *Environmental Impacts: Policies and Procedures*, and FAA Order 5050.4B, *National Environmental Policy Act (NEPA) Implementing Instructions for Airport Actions*, as well as applicable Council on Environmental Quality (CEQ) regulations implementing NEPA, applicable Executive Orders (EOs), and other applicable federal, state, and local requirements.

1.2 AIRPORT OVERVIEW

The Valley International Airport is owned by the City of Harlingen and operated by the City of Harlingen Airport Board (Airport Sponsor). The Airport Board is composed of nine members appointed by the Mayor and approved by the City Commission. The Airport is located in the City of Harlingen (City), which is in Cameron County (County). The Airport is the largest commercial service airport in the Rio Grande Valley and serves residents of the Brownsville-Harlingen metropolitan area. **Figure 1-1** shows the location of the Airport.

In the National Plan of Integrated Airport Systems (NPIAS), the FAA classifies the Airport as a small/non-hub primary commercial service airport.² The primary service classification indicates that the Airport is a public use facility with scheduled air carrier service and has 10,000 or more enplaned passengers per year. There are three runways at the Airport:

- » Runway 13-31 is 7,257 feet long by 150 feet wide;
- » Runway 17L-35R is 5,949 feet long by 150 feet wide; and
- » Runway 17R-35L is 8,301 feet long by 150 feet wide.³

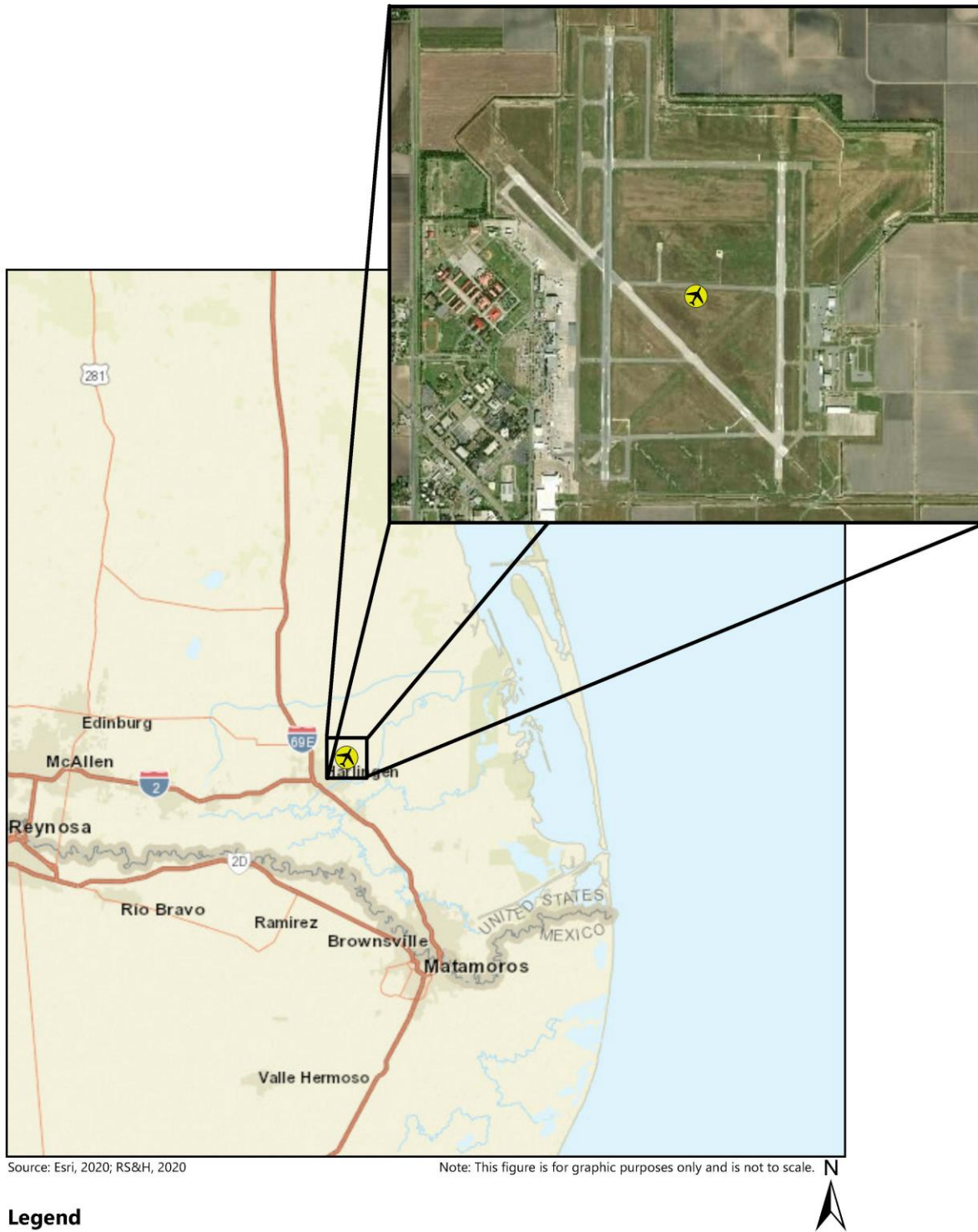
Other facilities at the Airport include taxiways, cargo operators, fixed based operators (FBO) and the terminal building.

¹ According to FAA Advisory Circular (AC) 150/5340-1M, *Standards for Airport Markings*, “the designator number is the whole number nearest the one-tenth of the magnetic azimuth along the runway centerline when viewed from the direction of approach” and according to FAA AC 150/5070-6B, Change 2, *Airport Master Plans*, “Periodic changes in magnetic declination may necessitate renumbering the runways.” The current runway designation is Runway 17R-35L. However, the runway designation will be updated to Runway 18R-36L following the completion of this EA. However, for purposes of this EA, this runway will continue to be referred to as Runway 17R-35L.

² FAA. (2018, September 30). National Plan of Integrated Airport Systems (NPIAS) Report to Congress, 2019-2023. FAA: Washington, D.C. Retrieved June 2020, from FAA: https://www.faa.gov/airports/planning_capacity/npias/reports/.

³ FAA. (2020, June 18). Aeronautical Information Services, Valley International Airport. Retrieved June 2020, from FAA: <https://nfdc.faa.gov/nfdcApps/services/ajv5/airportDisplay.jsp?airportId=HRL>.

**FIGURE 1-1
PROJECT AREA**



1.3 PROPOSED ACTION

The Airport Sponsor proposes to extend Runway 17R-35L and adjacent taxiways by 1,099 feet to the south (Proposed Action). The Proposed Action would additionally require the relocation of the existing Perimeter Road. Connected actions include relocation, replacement, and/or installation of navigational aids (NAVAIDs). Construction of the Proposed Action would occur over a 24-month period and Airport operations would shift to Runway 13-31 and Runway 17L-35R during the construction of the proposed runway extension. The Proposed Action would occur entirely on Airport property.⁴

The components of the Proposed Action, which are shown in **Figure 1-2**, include:

- » **Runway Extension:** Runway 17R-35L would be extended by 1,099 feet to the south.
- » **Taxiway Extension:** Taxiways A and M would be extended by 1,099 feet to the south.
- » **Perimeter Road Relocation:** Perimeter Road would be rerouted around the proposed extensions to Runway 17R-35L and Taxiways A and M.
- » **Medium Intensity Approach Lighting System with Runway Alignment Indicator Lights (MALSR) Installation:** a MALSR for the Runway 35L end would be installed.
- » **Precision Approach Path Indicators (PAPI) Relocation:** the PAPI on the Runway 35L end would be relocated.
- » **PAPI Installation:** a new PAPI on the Runway 17R end would be installed.
- » **Instrument Landing System (ILS):** for Runway 35L approach:
 - Localizer (LOC) Installation: a new LOC for the Runway 35L approach would be installed.
 - Glideslope Installation: a new glideslope for Runway 35L approach would be installed.⁵
- » **Instrument Landing System (ILS):** for Runway 17R approach:
 - LOC Replacement: a LOC for the Runway 17R approach would be upgraded in its existing location.
 - Glideslope Replacement: a glideslope for the Runway 17R approach would be upgraded in its existing location.
 - Distance Measuring Equipment (DME) Upgrade: The existing DME would be upgraded in its existing location.
- » **Runway Visual Range (RVR) Installation:** RVRs would be installed for both the Runway 17R end and the Runway 35L end, as well as a midpoint RVR.

All NAVAIDs associated with the Proposed Action would be purchased by the Airport Sponsor through a reimbursable agreement with the FAA and therefore, all NAVAIDs would be a federal system. Access to the Proposed Action site is depicted on **Figure 1-2** and would be via Rio Hondo Road. The construction staging area would occur on Airport property on previous disturbed ground (see **Figure 1-2**).

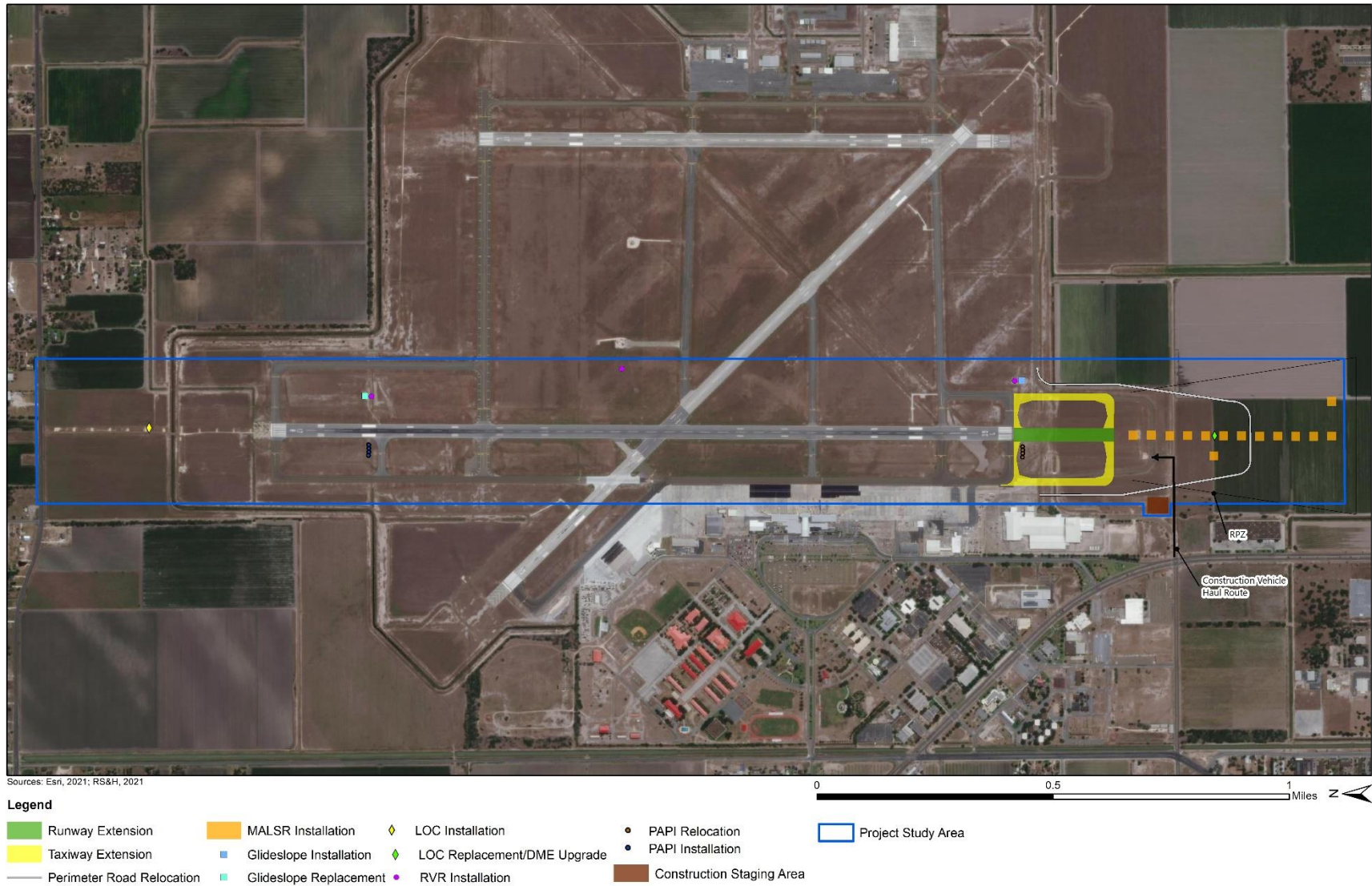
⁴ FAA. (2020, July 14). *Valley International Airport Land Acquisition* Documented Categorical Exclusion (CATEX). A copy of the FAA-signed Documented CATEX can be viewed in Appendix A.

⁵ The new Runway 35L glideslope requires that drainage ditches located in the Glideslope Critical Area to be enclosed with a box culvert.

1.4 REQUESTED FEDERAL ACTIONS

- » Unconditional approval of the Airport Layout Plan to depict the Proposed Action as described in **Section 1.3** of this document pursuant to 49 USC §§ 40103(b) and 47107(a)(16).
- » Determination under 49 USC § 44502(b) that the airport development is reasonably necessary for use in air commerce or in the interests of national defense.
- » Determinations under 49 USC §§ 47106 and 47107 relating to the eligibility of the Proposed Action for federal funding under the Airport Improvement Program (AIP) and/or determinations under 49 USC § 40117, as implemented by 14 CFR § 158.25, to impose and use Passenger Facility Charges (PFCs) collected at the Airport to assist with construction of potentially eligible development items shown on the ALP including the proposed construction of the Proposed Action that may directly or indirectly impact FAA facilities including but not limited to utility relocations.
- » Amend all necessary air traffic procedures to accommodate the Proposed Action, including ILS RWY 35L Special Authorization (SA) Category (CAT) II with three lines of minima, the Straight-in (S)-ILS Decision Altitude (DA), the S-LOC Minimum Descent Altitude (MDA), and Circling.
- » Upgrade Runway 17R ILS.
- » Install new Runway 35L MALSR and ILS and relocate Runway 35L PAPI.
- » Install new Runway 17R, Runway 35L, and midpoint RVRs.

FIGURE 1-2
PROPOSED ACTION



1.5 DOCUMENT ORGANIZATION

This EA is organized into the following chapters:

Chapter 1: Introduction and Proposed Action – This chapter provides an overview of the Airport, describes the Proposed Action that this EA evaluates, and outlines the organization of the EA.

Chapter 2: Purpose and Need – This chapter identifies the problem that the Proposed Action addresses (i.e., need) and describes what the Airport Sponsor is trying to achieve with the Proposed Action (i.e., purpose).

Chapter 3: Alternatives – This chapter identifies and describes the alternatives that this EA considers or eliminates from detailed analysis, including a description of the No Action Alternative.

Chapter 4: Affected Environment, Environmental Consequences, and Mitigation – This chapter provides an overview of the existing environmental conditions in the areas that the Proposed Action may affect. This chapter also identifies past, present, and reasonably foreseeable future actions that may contribute to cumulative impacts when considered in combination with the Proposed Action.

This chapter also describes the potential environmental effects that the Proposed Action and each reasonable alternative would have on the affected environment. In addition, this chapter describes FAA's thresholds of significance for impact categories and any mitigation that must be implemented by the FAA or appropriate authority to minimize harm from the Proposed Action. Pursuant to regulations and CEQ Guidance documents, this chapter also discusses cumulative effects. That discussion focuses on the effects that the Proposed Action would have on environmental resources, in combination with the effects on those resources from past, present, and reasonably foreseeable future actions. Where appropriate, this EA contains figures and tables to clarify the analysis presented in this chapter.

Chapter 5: Agency Coordination and EA Distribution – This chapter describes the coordination process associated with development of the EA.

Chapter 6: List of Preparers – This chapter identifies the individuals who prepared, contributed to, and reviewed this EA.

Chapter 7: References – This chapter lists the references used in the development of this EA.

Appendices – The appendices contain relevant material, analyses, or technical reports used in preparing this EA.

Chapter 2

PURPOSE AND NEED

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2.1 INTRODUCTION

According to Federal Aviation Administration (FAA) Order 1050.1F, Section 6-2.1(c), the purpose and need briefly describes the underlying purpose and need for the federal action and provides the foundation for identifying reasonable alternatives to a Proposed Action. The purpose and need identifies the problem facing the airport sponsor (i.e., the “need” for the project) and describes what would be achieved by the Airport’s Proposed Action (i.e., the “purpose” of the project).

2.2 BACKGROUND

There are three runways at the Airport: Runway 17R-35L, Runway 17L-35R, and Runway 13-31 (see **Figure 1-1**). Runway 17R-35L, which is 8,301 feet long by 150 feet wide, is the primary runway and is oriented in a north-south alignment. This runway is also the longest runway in the Lower Rio Grande Valley, which includes four counties (Hidalgo, Cameron, Willacy, and Starr). Runway 17R-35L has high intensity runway lights (HIRL). Runway 17R has an instrument landing system (ILS) and a medium intensity approach lights with runway alignment indicator lights (MALSR) system and Runway 35L has a PAPI. Runway 17L-35R is 5,949 feet long by 150 feet wide and is the parallel secondary runway, also oriented in a north-south alignment. This runway is equipped with medium intensity runway lights (MIRL) and the Runway 17L end has runway end identification lights (REIL). Runway 13-31, which is 7,257 feet long by 150 feet wide, is the crosswind runway and is oriented in a northwest-southeast alignment. The runway is equipped with PAPIs at both ends, MIRL, and the Runway 13 end has an Airport-owned approach lighting system (ALS).

2.3 AVIATION ACTIVITY

The FAA published the annual Terminal Area Forecast (TAF) for each airport in the federal system.^{6 7} TAF data is reported based on the FAA fiscal year, which is October through September. At airports with FAA Airport Traffic Control Towers (ATCT) like HRL, FAA air traffic controllers provide historical aircraft operations data for the TAF, which count landings and takeoffs. These aircraft operations are recorded as either air carrier, commuter and air taxi, general aviation (GA), or military. Air carrier is defined as an aircraft with seating capacity of more than 60 seats or a maximum payload capacity of more than 18,000 pounds carrying passengers or cargo, for hire or compensation. Commuter and air taxi aircraft are designed to have a maximum seating capacity of 60 seats or less, or a maximum payload capacity of 18,000 pounds carrying passengers or cargo for hire or compensation. GA aircraft include small aircraft ranging from one-seat single-engine planes to long-range corporate jets. GA includes all segments of the aviation industry besides commercial air carriers, air taxis and commuters, and military. The FAA released the 2019 TAF in January 2020, which is the most recent version of the TAF when preparation of this EA began.⁸ The 2019 TAF contains aircraft operations and passenger enplanements data for the Airport for the years 1990 through 2045.

⁶ FAA. (2020). *Federal Aviation Administration Terminal Area Forecast Summary, Fiscal Years 2017-2045*.

⁷ FAA. (2019). Terminal Area Forecast (TAF). Retrieved July 2020, from Federal Aviation Administration: https://www.faa.gov/data_research/aviation/taf/.

⁸ The analysis in this NEPA document uses an aviation forecast prepared before the COVID-19 Pandemic began. This forecast is included to provide a conservative estimate of potential environmental impacts of the Proposed Action. FAA forecast approval was based on the methodology, data, and conclusions at the time the document was prepared. However, it is necessary to acknowledge the impacts of the COVID-19 Pandemic on aviation activity, including reduced confidence in growth projections using currently available data.

Table 2-1 provides the 2019 TAF historical aircraft operations data for years 2010–2019 and the 2019 TAF forecast aircraft operations for 2020 through 2029 (five years after implementation of the Proposed Action). **Figure 2-1** illustrates the historical and forecast TAF aircraft operations data for the Airport. According to the 2019 TAF, aircraft operations peaked in 2011 at 52,016 and declined to 40,687 in 2019, representing an overall decline of about 27 percent. Aircraft operations are forecast at 38,712 in 2024 (the proposed first full year for operation of the Runway 17R-35L extension) and 39,750 in 2029 (five years after the proposed first full year of operation of the Runway 17R-35L extension), which is about five and two percent lower, respectively, than in 2019.

TABLE 2-1
HISTORIC AND FORECAST AIRPORT OPERATIONS AT THE AIRPORT

Historic Aircraft Operations					
TAF Year	Air Carrier	Air Taxi & Commuter	General Aviation	Military	Total Operations
2010	10,437	3,856	15,282	13,113	42,688
2011	9,799	3,877	23,834	14,506	52,016
2012	9,003	4,131	18,981	15,535	47,650
2013	9,280	3,823	18,022	17,160	48,285
2014	7,244	3,724	16,477	16,229	43,674
2015	6,001	3,431	15,975	19,698	45,105
2016	6,115	2,475	16,425	17,021	42,036
2017	7,132	1,488	15,369	13,718	37,707
2018	7,989	1,499	16,288	14,617	40,393
2019 ^{/a/}	7,776	2,663	14,865	15,383	40,687
Forecast Aircraft Operations					
TAF Year	Air Carrier	Air Taxi & Commuter	General Aviation	Military	Total Operations
2020	6,976	6,210	15,207	15,383	43,776
2021	7,125	5,047	15,295	15,383	42,850
2022	7,292	3,303	15,384	15,383	41,362
2023	7,480	931	15,474	15,383	39,268
2024 ^{/b/}	7,609	155	15,565	15,383	38,712
2025	7,713	157	15,657	15,383	38,910
2026	7,821	159	15,749	15,383	39,112
2027	7,933	161	15,842	15,383	39,319
2028	8,052	163	15,935	15,383	39,533
2029 ^{/c/}	8,173	169	16,029	15,383	39,750

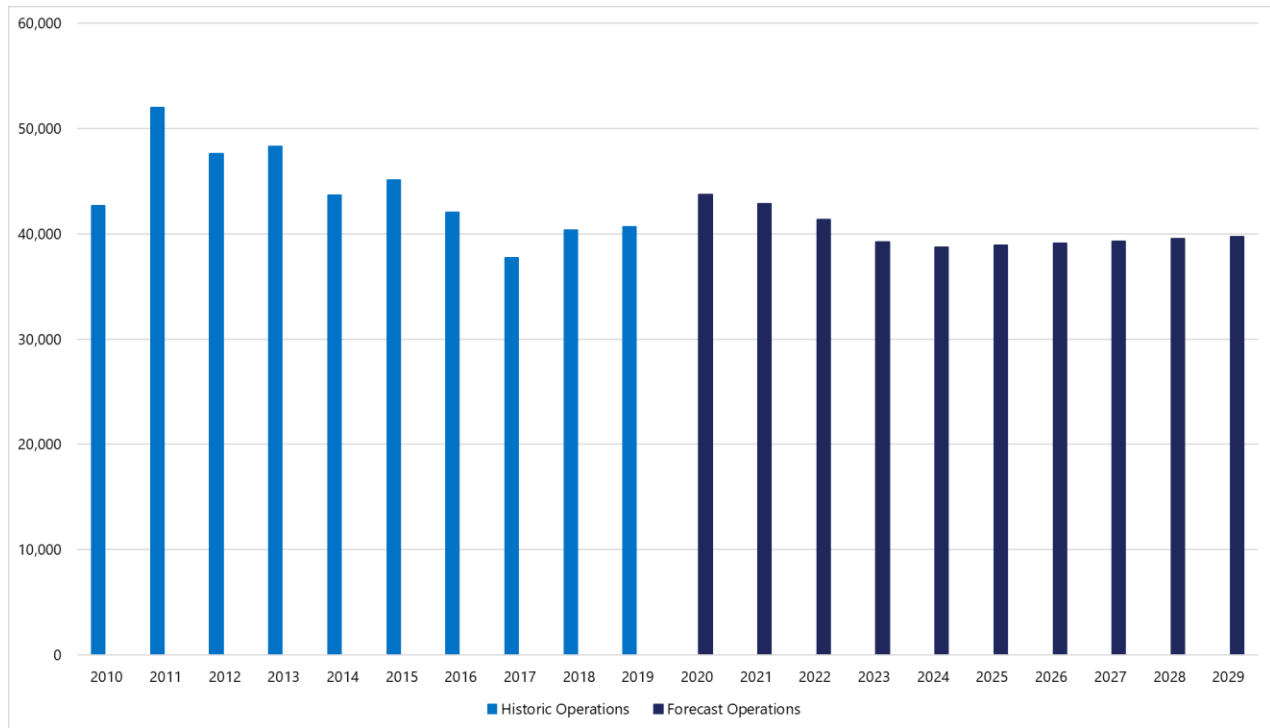
Notes: /a/ - 2019 TAF numbers are actual

/b/ - First full year of implementation of the Proposed Action

/c/ - Five years after implementation of the Proposed Action

Source: FAA, 2020.

FIGURE 2-1
HISTORIC AND FORECAST AIRCRAFT OPERATIONS AT THE AIRPORT



Source: FAA, 2020.

Table 2-2 provides the 2019 TAF historical passenger enplanements data for years 2010–2019 and the 2019 TAF forecast passenger enplanements for 2020 through 2029 (five years after implementation of the Proposed Action). **Figure 2-2** illustrates the historical and forecast TAF passenger enplanements data for the Airport. According to the 2019 TAF, passenger enplanements peaked in 2012 at 368,560 and declined to 334,883 in 2019, representing an overall decline of about 10 percent. Passenger enplanements are forecast to increase to 375,269 in 2024 (the proposed first full year for operation of the Runway 17R-35L extension) and to 397,386 in 2029 (five years after the proposed first full year of operation of the Runway 17R-35L extension), which is about 10 and 15 percent higher, respectively, than in 2019.

TABLE 2-2
HISTORIC AND FORECAST PASSENGER ENPLANEMENTS AT THE AIRPORT

Historic Passenger Enplanements			
TAF YEAR	Air Carrier	Commuter	Total Passenger Enplanements
2010	296,891	65,852	362,743
2011	296,310	65,184	361,494
2012	304,785	63,775	368,560
2013	294,783	59,934	354,717
2014	253,799	54,457	308,256
2015	203,160	60,263	263,423
2016	203,603	54,415	258,018
2017	211,718	59,368	271,086
2018	226,420	71,564	297,984
2019 ^{/a/}	242,688	92,195	334,883
Forecast Passenger Enplanements			
TAF YEAR	Air Carrier	Commuter	Total Passenger Enplanements
2020	231,397	128,476	359,873
2021	234,104	129,901	364,005
2022	236,628	131,232	367,870
2023	239,086	132,512	371,598
2024 ^{/b/}	241,299	133,770	375,269
2025	244,055	135,098	379,153
2026	246,757	136,500	383,257
2027	249,641	137,998	387,639
2028	252,816	139,643	392,459
2029 ^{/c/}	256,063	141,323	397,386

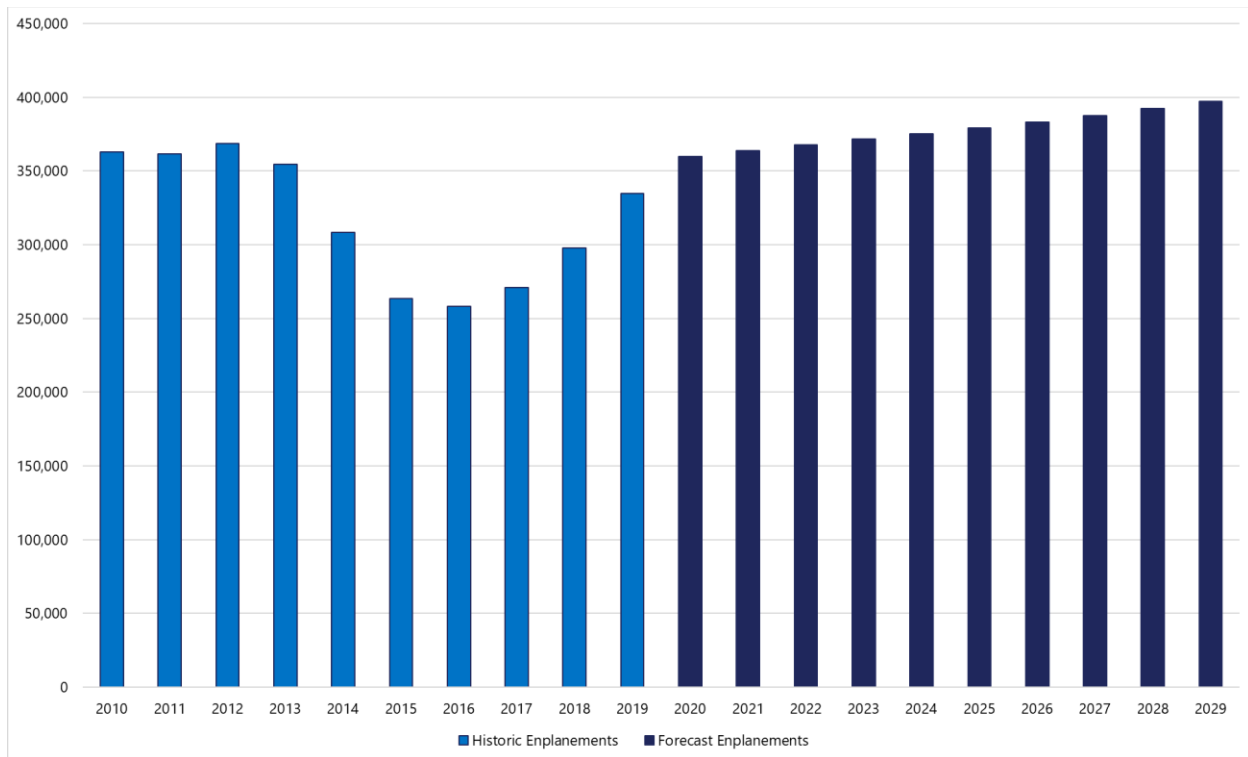
Notes: /a/ - 2019 TAF numbers are actual

/b/ - First full year of implementation of the Proposed Action

/c/ - Five years after implementation of the Proposed Action

Source: FAA, 2020.

FIGURE 2-2
HISTORIC AND FORECAST PASSENGER ENPLANEMENTS AT THE AIRPORT



Source: FAA, 2020.

2.4 PURPOSE AND NEED FOR THE PROPOSED ACTION

The following section discusses the purpose of and need for the Proposed Action.

2.4.1 Purpose for the Proposed Action

The purpose of the Proposed Action is to enable the air carrier and cargo aircraft to operate at or close to full payload during those periods of warmer temperatures.⁹

2.4.2 Need for the Proposed Action

The proposed extension of Runway 17R-35L to the south has been substantiated through separate planning analyses; the 2010 Airport Master Plan Update and the Benefit Cost Analysis (BCA) prepared for the Airport in 2019.¹⁰ The assessment of future runway length was determined using FAA's Advisory Circular (AC) 150/5325-4B, *Runway Length Requirements for Runway Design*.

Runway 17R-35L is the longest runway at the Airport and serves as the primary runway for air carrier and cargo aircraft. About eight percent of the aircraft currently operating at the Airport require a runway

⁹ According to FAA Density Altitude, the warmer the air is, the less dense it becomes, and the density of air has significant effects on an aircraft's performance. According to FAA Pilot's Handbook of Aeronautical Knowledge, "As air becomes less dense, it reduces power because the engine takes in less air, thrust because the propeller is less efficient in this air, and lift because the thin air exerts less force on the airfoils."

¹⁰ Unison Consulting. (2019, June 7). *Valley International Airport, Benefit-Cost Analysis of the Extension of Runway 17R/35L*.

length of more than the existing 8,301-foot runway length when operating at or close to full payload (see **Table 2-3**), especially on days with warmer temperatures. The mean daily maximum temperature for its hottest month (July) is 97 degrees F.¹¹ The Airport has a reference elevation of 36 feet above mean sea level and the gradient of the runway is 0.1 percent.¹²

Warmer air means less dense air, which has significant effects on an aircraft's performance;¹³ affecting the aircraft's power, thrust, and lift.¹⁴ During these warm temperature days, commercial and cargo aircraft must reduce payload (e.g., sell fewer seats or unload cargo) or cancel operations. This could result in aircraft that require longer runway departure lengths to incur payload penalties to serve existing and potential destinations, which, in turn could result in the potential loss of service if the payload penalties results in unprofitable operations for Airport customers. The runway length analysis from the 2010 Airport Master Plan Update recommended an extension to one of the existing runways to provide an overall takeoff length of 9,400 feet. This was based on an analysis using the FAA Airport Design software program. The 2019 BCA analyzed required runway length for the extension to Runway 17R-35L using Airport Planning Manuals for six aircraft types (mainly cargo aircraft), at both maximum takeoff weights (MTOW) and operating takeoff weights based on likely haul routes. The BCA concluded that the proposed runway extension to 9,400 feet "will be sufficient to allow for increased capacity for current airport operations, as well as accommodate the projected future growth of the airport."¹⁵

Table 2-3 below, summarizes the runway length calculations for the aircraft included in the BCA, as well as other aircraft currently operating at the Airport. Runway length for each aircraft was based on their manufacturer Airport Planning Manual's hottest temperature takeoff length graph available, at MTOW, and model and engine type that yielded the longest runway length. As shown in **Table 2-3**, the longest runway needed to allow air carrier and cargo aircraft to operate without payload reductions is about 12,500 feet for the MD DC-10-10 aircraft.

Specifically, cargo operations at the Airport have increased 64 percent between the years of 2014 and 2018,¹⁶ and due to the existing runway length, these cargo operators experience takeoff weight restrictions (see **Table 2-3**). For FedEx, the largest cargo operator at the Airport, the "average cargo payload utilization of 47.3 percent at the Airport for the first two quarters of 2018 is lower than FedEx's systemwide payload utilization factor of 53.9 percent for the entire 2018."¹⁷ FedEx stated that extending Runway 17R-35L to the south for a total runway length of 9,400 feet would result in an increase in cargo payload utilization from 47 percent to 70 percent.¹⁸ As noted in the BCA, a 12,800-foot runway would eliminate operating restrictions for all aircraft operating at the Airport; however, this length of runway might not be the most cost-effective runway length. Additional factors were considered to determine if the proposed 1,099-foot extension from the Master Plan Update and Airport Layout Plan (ALP) was still needed.

¹¹ Unison Consulting. (2019, June 7). *Valley International Airport, Benefit-Cost Analysis of the Extension of Runway 17R/35L*.

¹² Ibid.

¹³ FAA. (2008). *Density Altitude*, FAA-P-8740-2 • AFS-8, HQ-08561.

¹⁴ FAA. (2016). *Pilot's Handbook of Aeronautical Knowledge*, Chapter 11, *Aircraft Performance*, FAA-H-8083-25B.

¹⁵ Unison Consulting. (2019, June 7). *Valley International Airport, Benefit-Cost Analysis of the Extension of Runway 17R/35L*.

¹⁶ Ibid.

¹⁷ Ibid.

¹⁸ Ibid.

TABLE 2-3
ESTIMATED TAKEOFF RUNWAY LENGTH REQUIREMENTS

Aircraft	Model / Engine	Percent of 2019 Forecast Fleet Mix ^{/a/}	Maximum Takeoff Weight (MTOW) in pounds (lbs.)	Current Operating Takeoff Weight in pounds (lbs.)	Percent Reduced Weight/Payload	Estimated Takeoff Runway Length Requirement (in feet) at MTOW ^{/b/}	Estimated Takeoff Weight in pounds (lbs.)
Aircraft Requiring Takeoff Runway Length Less Than or Equal to 8,301 Feet							
A320-200	WV017 / IAE V2500	0.43%	171,961	-	-	7,400	-
A320-neo	WV054 / LEAP 1A	1.02%	174,165	-	-	6,500	-
B737-700	700W / CFM56-7B26	13.28%	153,000	-	-	7,900	-
B767-200		2.17%	315,000	-	-	6,300	-
A300-600R	WV000 / CF6-80C2F	0.32%	377,000	364,801	3.2%	7,950	392,631
EMB 175	LR / CF34 8E5A1	5.32%	85,517	-	-	7,300	-
EMB 170	STD / CF34 8E5A1	0.26%	79,697	-	-	5,000	-
Subtotal		22.80%					
Aircraft Requiring Takeoff Runway Length Greater than 8,301 Feet							
B737-400	CFM56-3B-2	0.09%	150,000	-	-	10,250	-
B737-800	800W / CFM56-7B27-B1	1.26%	174,200	-	-	10,600	-
B757-200	PW 2037	0.79%	255,000	-	-	10,100	-
B767-300	JT9D-7R4D/7R4E	2.03%	400,000	369,840	7.5%	10,750	392,048
MD DC-10-10	10CF/CARGO / CF6-6D	2.62%	440,000	440,000	0%	12,500	440,000
MD DC-10-30 ^{/c/}	30CF/CARGO / CF6-50C	0.45%	555,000	480,055	13.5%	12,300	515,237
CRJ900	CL-600-2D24 (ER)	0.69%	84,500	-	-	11,100	-
Subtotal		7.93%					

Notes: /a/ - Based on the operational fleet mix for 2019. The percentages do not add up to 100% because military, general aviation, and air taxi aircraft are excluded.

/b/ - Actual takeoff runway length requirements vary based on a variety of assumptions, principally weather and aircraft weight.

/c/ - The cargo company that used the DC-10-30 aircraft has phased the aircraft out of its fleet mix at the Airport.

/d/ - Temperatures represent the hottest temperature for which a takeoff field length graph exists in that aircraft's Airport Planning Manual and range from 86 to 122 degrees F.

Sources: FlightAware, 2019; Freese and Nichols; 2019; Unison Consulting, 2019; RS&H, 2021; MHI RJ Aviation ULC, CRJ Series, CRJ900: <https://mhirj.com/en/fleet-solutions/crj-series?crjld=200&langld=en#performance>; Boeing Aircraft Characteristics: https://www.boeing.com/commercial/airports/plan_manuals.page; Airbus Aircraft Characteristics: <https://www.airbus.com/aircraft/support-services/airport-operations-and-technical-data/aircraft-characteristics.html>; Embraer Aircraft Characteristics: <https://embraer.com/global/en>.

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Chapter 3

ALTERNATIVES

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3.1 INTRODUCTION

Section 1502.14 of the Executive Office of the President's Council on Environmental Quality (CEQ) Regulations implementing the National Environmental Policy Act (NEPA)¹⁹ require that agencies shall:

- » evaluate reasonable alternatives to the proposed action, and, for alternatives that the agency eliminated from detailed study, briefly discuss the reasons for their elimination;
- » discuss each alternative considered in detail, including the proposed action, so that reviewers may evaluate their comparative merits;
- » include the no action alternative;
- » identify the agency's preferred alternative or alternatives, if one or more exists, in the draft statement and identify such alternative in the final statement unless another law prohibits the expression of such a preference;
- » include appropriate mitigation measures not already included in the proposed action or alternatives; and
- » limit their consideration to a reasonable number of alternatives.

Following the CEQ regulations, this chapter of the EA summarizes the screening analysis conducted to identify a reasonable range of alternatives for evaluation in this EA. The summary of the alternatives screening analysis presents the following:

- » a list of alternatives considered, including the Proposed Action and the No Action Alternative;
- » an overview of the alternatives screening analysis; and
- » a concise explanation of why some of the initial alternatives considered have been eliminated from further analysis.

FAA Orders 1050.1F and 5050.4B concerning the environmental review process require that a reasonable range of alternatives that are feasible or practical and might accomplish the objectives of a project must be identified and evaluated. Specifically, FAA Order 1050.1F states:

*There is no requirement for a specific number of alternatives or a specific range of alternatives to be included in an EA. An EA may limit the range of alternatives to the proposed action and no action when there are no unresolved conflicts concerning alternative uses of available resources. Alternatives are to be considered to the degree commensurate with the nature of the proposed action and agency experience with the environmental issues involved.*²⁰

3.2 ALTERNATIVES SCREENING PROCESS

The alternatives screening used a two-level screening process. Level 1 screening considered the ability of the alternative to meet the stated Purpose and Need for the Proposed Action. Level 2 screening evaluated

¹⁹ CEQ. (2020). *National Environmental Policy Act Implementing Regulations*, Title 40 CFR Parts 1500-1508.

²⁰ FAA, (2015, July 16). Order 1050.1F, *Environmental Impacts: Policies and Procedures*, Paragraph 6-2.1.d.

alternatives in terms of constructability. Those alternatives that satisfied both Level 1 screening and Level 2 screening criteria were carried forward for detailed evaluation in this EA.

3.2.1 Level 1 Screening: Purpose and Need

The Level 1 screening evaluated each alternative's ability to satisfy the Purpose and Need of the Proposed Action. As part of the evaluation of the Purpose and Need was the ability of the Airport to accommodate air carrier and cargo aircraft without needing to reduce payload on warm weather days.

3.2.2 Level 2 Screening: Constructability and Cost

The Level 2 screening analysis was designed to determine which alternatives would be considered reasonable in terms of constructability. Each alternative that was advanced to Level 2 screening was reviewed to determine the constructability of extending a runway, which requires consideration of land acquisition, construction phasing, and construction impacts including infrastructure improvements.

3.3 COMPARISON OF ALTERNATIVES

Runways are a critical part of an airport. It is important to provide runway lengths that meet existing and future aircraft operational demand. Six alternatives for extending runways at the Airport to achieve the Purpose and Need were identified and taken through the screening process. Each alternative is described in detail below and **Table 3-1** at the end of this chapter provides an overview of the screening process for all alternatives.

3.3.1 Alternative 1: Extend Runway 17R-35L 1,099 feet to the North

Level 1 - This alternative would construct a 1,099-foot runway extension to Runway 17R-35L to the north for a total runway length of 9,400 feet (see **Figure 3-1**). This alternative met the Level 1 screening criteria regarding Purpose and Need (to accommodate air carrier and cargo aircraft at or close to full payload), and as a result, Alternative 1 was advanced to Level 2 screening.

Level 2 – As described in the 2019 Benefit Cost Analysis (BCA) report,²¹ there are challenges with extending the runway this direction. The first being there are both commercial (e.g., gas station, dance hall, etc.) and residential properties that would need to be acquired and relocated to accommodate the runway extension, specifically the runway protection zone (RPZ) (see **Figure 3-1**). Another challenge is the extensive drainage improvements that would need to occur to accommodate the runway extension. An Airport owned and maintained open drainage channel is currently located approximately 225 feet from the end of Runway 17R. This channel is the primary drainage system for the Airport terminal, aircraft rescue and firefighting (ARFF) station, maintenance facility, and rental car service/storage facility. The runway extension would require enclosing the open channel and modifying the system to allow multiple airfield crossings without affecting the capacity of the system. Additionally, the existing MALSR would need to be relocated to accommodate the runway extension, and all of the utilities would also need relocated. Finally, Highway 508 would need to be relocated to accommodate the runway extension and RPZ. As a result of these constructability issues, Alternative 1 was eliminated from further consideration.

²¹ Unison Consulting. (2019, June 7). *Valley International Airport, Benefit-Cost Analysis of the Extension of Runway 17R/35L*.

3.3.2 Alternative 2: Extend Runway 17R-35L 1,099 feet to the South (Proposed Action)

Level 1 - Under Alternative 2, Runway 17R-35L would be extended 1,099 feet to the south for a total runway length of 9,400 feet (see **Figure 3-2**). This alternative met the Level 1 screening criteria regarding Purpose and Need (to accommodate air carrier and cargo aircraft at or close to full payload), and as a result, Alternative 2 was advanced to Level 2 screening.

Level 2 - The extension would occur entirely on land owned by the Airport, including the RPZ. Extensive drainage improvements are also not required with this alternative; however, drainage culverts will be needed for the one open channel in the project area. Due to the lack of constructability issues associated with this alternative, Alternative 2 was retained for further consideration.

3.3.3 Alternative 3: Extend Runway 17R-35L to the North and South

Level 1 – This alternative would extend Runway 17R end by 549.5 feet and Runway 35L end by 549.5 feet for a total runway length of 9,400 feet (see **Figure 3-3**). This alternative met the Level 1 screening criteria regarding Purpose and Need (to accommodate air carrier and cargo aircraft at or close to full payload), and as a result, Alternative 3 was advanced to Level 2 screening.

Level 2 – As described in Alternative 1, there are many constructability challenges with extending the runway to the north. Properties (residences and commercial businesses) and land would need to be acquired and the residences and commercial businesses would need to be relocated to accommodate the runway extension, specifically the RPZ (see **Figure 3-3**). In addition, extensive drainage improvements would need to occur to accommodate the runway extension to the north (see **Section 3.3.1**), as well as the relocation of the existing MALSR, all utilities, and Highway 508. Extending both ends of the runway would result in construction occurring in two phases to preserve the operational capability of the runway. As a result of these constructability issues, Alternative 3 was eliminated from further consideration.

FIGURE 3-1
ALTERNATIVE 1: EXTEND RUNWAY 17R-35L 1,099 FEET TO THE NORTH

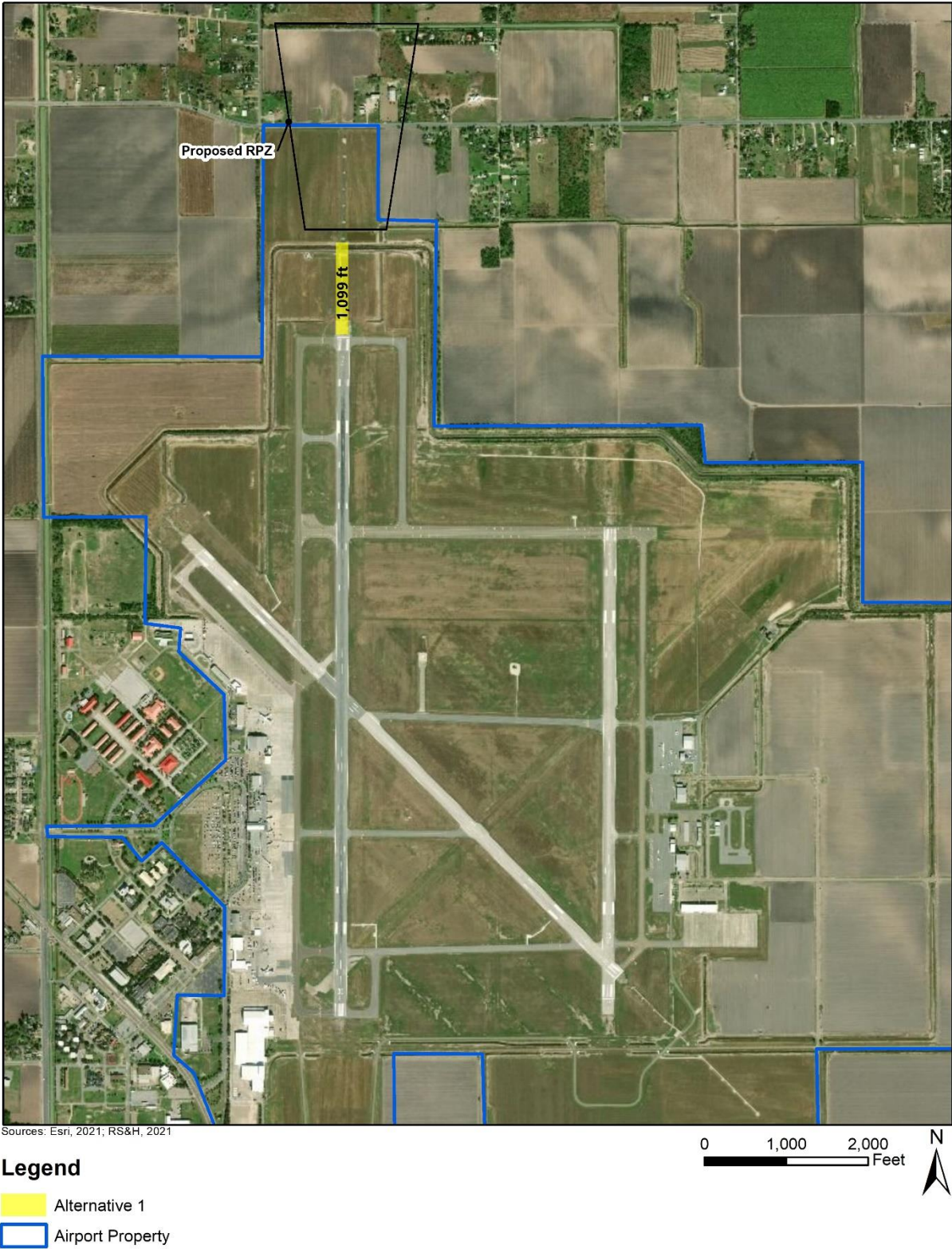
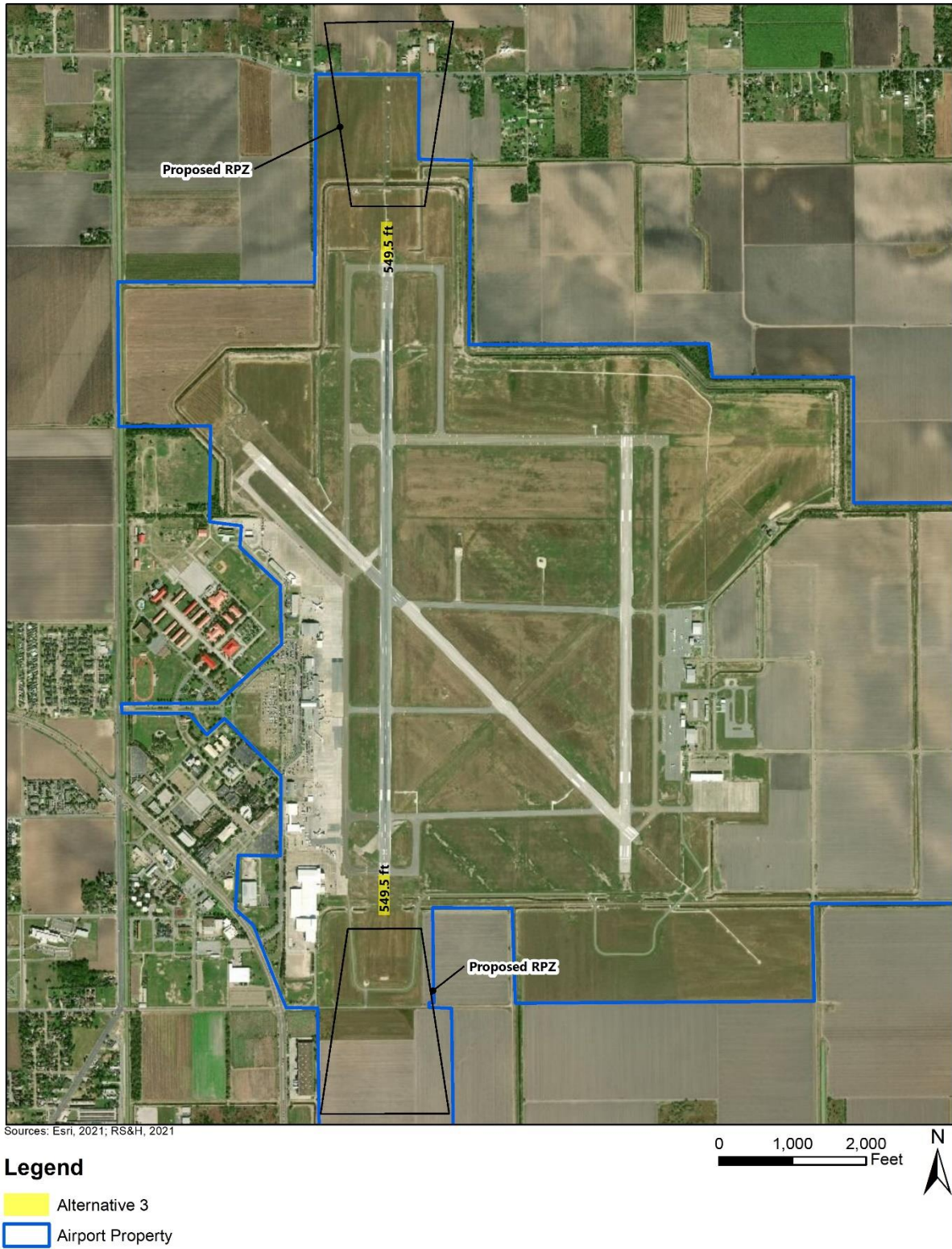


FIGURE 3-2
ALTERNATIVE 2: EXTEND RUNWAY 17R-35L 1,099 FEET TO THE SOUTH



FIGURE 3-3
ALTERNATIVE 3: EXTEND RUNWAY 17R-35L TO THE NORTH AND SOUTH



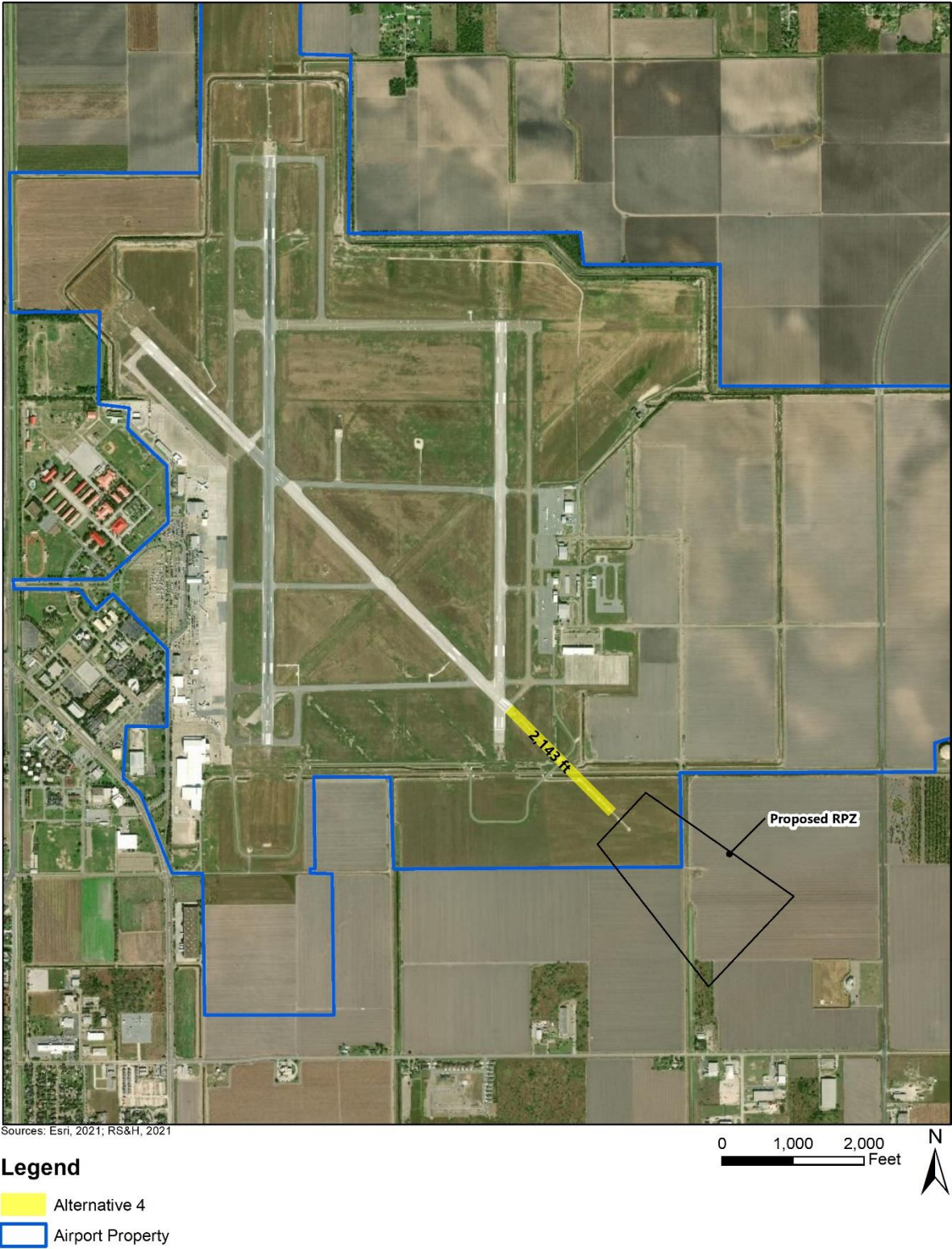
3.3.4 Alternative 4: Extend Runway 13-31 2,143 feet to the Southeast

Level 1 - This alternative would extend Runway 13-31 to the southeast by 2,143 feet for a total runway length of 9,400 feet (see **Figure 3-4**). This alternative met the Level 1 screening criteria regarding Purpose and Need (to accommodate air carrier and cargo aircraft at or close to full payload), and as a result, Alternative 4 was advanced to Level 2 screening.

Level 2 – This alternative would require land acquisition, specifically for the RPZ (see **Figure 3-4**). This alternative would require a longer extension. As with Alternatives 1 and 3, extensive drainage improvements would need to occur to accommodate the runway extension, as there is an Airport owned and maintained open drainage channel that would need to be closed and modified to allow for multiple airfield crossings without affecting the capacity of the system. Additionally, Runway 13-31 does not currently have any NAVAID equipment and also does not have a full parallel taxiway. All NAVAID equipment would need to be installed with this alternative and a full parallel taxiway would need to be constructed. With the full parallel taxiway, this alternative would result in additional runway crossings²² at the intersections of Runways 17L-35R and 17R-35L. Bob Younker Street would also need to be relocated to accommodate the runway extension and RPZ, which would also result in modification to the adjacent non-Airport owned and maintained irrigation canal. As a result of these constructability issues, Alternative 4 was eliminated from further consideration.

²² FAA. (2014, February 26). FAA Advisory Circular (AC) 150/5300-13A, Change 1, *Airport Design*. Section 401(5) C and D.

FIGURE 3-4
ALTERNATIVE 4: EXTEND RUNWAY 13-31 2,143 FEET TO THE SOUTHEAST



3.3.5 Alternative 5: Extend Runway 13-31 2,143 feet to the Northwest

Level 1 - This alternative would extend Runway 13-31 to the northwest by 2,143 feet for a total runway length of 9,400 feet (see **Figure 3-5**). This alternative met the Level 1 screening criteria regarding Purpose and Need (to accommodate air carrier and cargo aircraft at or close to full payload), and as a result, Alternative 5 was advanced to Level 2 screening.

Level 2 – This alternative would require land acquisition from the Marine Military Academy and Physical Development Complex (see **Figure 3-5**). This alternative requires a longer extension. As with Alternatives 1, 3, 4 and 5, this alternative would also require extensive drainage improvements that would need to occur to accommodate the runway extension as there is an Airport owned and maintained open drainage channel that would need to be closed and modified to allow for multiple airfield crossings without affecting the capacity of the system. Similar to Alternative 4, Runway 13-31 does not have any NAVAID equipment and also does not have a full parallel taxiway. All NAVAID equipment would need to be installed with this alternative and a full parallel taxiway would need to be constructed. With the full parallel taxiway, this alternative would result in an additional runway crossing²³ at the intersections of Runways 17L-35R and 17R-35L. To accommodate the full parallel taxiway, the Marine Military Academy and Physical Development Complex's obstacle training course would need to be relocated. Highway 507 would also need to be relocated to accommodate the runway extension and RPZ, which would also result in the modification to the adjacent non-Airport owned and maintained irrigation canal. As a result of these constructability issues, Alternative 5 was eliminated from further screening.

3.3.6 Alternative 6: No Action Alternative

Under the No Action Alternative, the Airport would not extend Runway 17R-35L. The Airport would continue to operate and serve forecast aviation demands with existing facilities. The No Action Alternative does not meet the project purpose and need (Level 1 screening criteria); however, in addition to being a Council on Environmental Quality/National Environmental Policy Act (CEQ/NEPA) requirement, it does serve as a baseline for a comparison of impacts to the preferred alternative and therefore, retained for analysis.

²³ FAA. (2014, February 26). FAA Advisory Circular (AC) 150/5300-13A, Change 1, *Airport Design*. Section 401(5) C and D.

FIGURE 3-5
ALTERNATIVE 5: EXTEND RUNWAY 13-31 2,143 FEET TO THE NORTHWEST

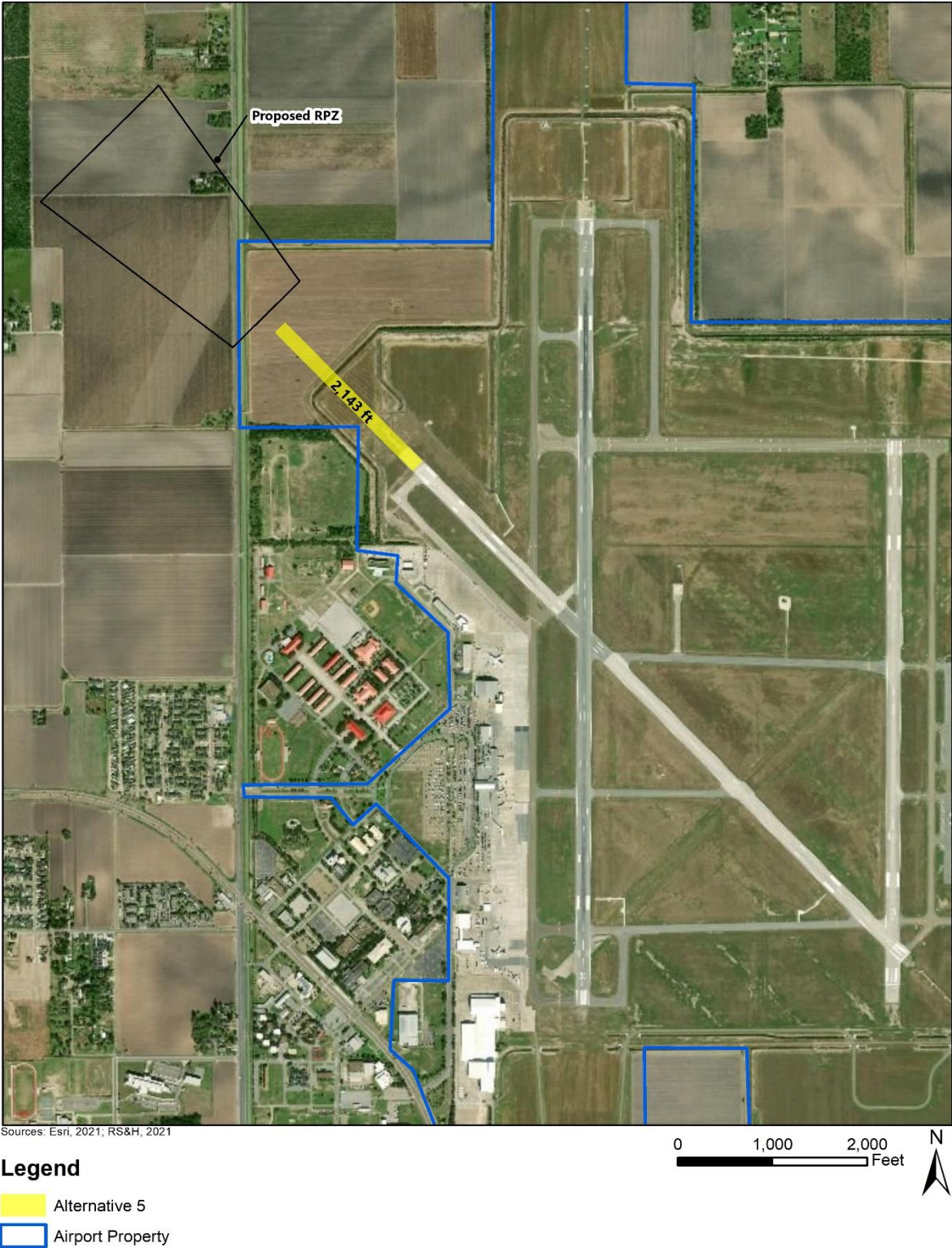


TABLE 3-1
ALTERNATIVES CONSIDERED AND THEIR DISPOSITION

Screening Level and Criteria	Alternative 1 (Extend Runway 17R-35L to the North)	Alternative 2 (Extend Runway 17R-35L to the South)	Alternative 3 (Extend Runway 17R-35L North and South)	Alternative 4 (Extend Runway 13-31 to the Southeast)	Alternative 5 (Extend Runway 13-31 to the Northwest)	Alternative 6 (No Action Alternative)
Level 1: Does the alternative meet the Purpose and Need and accommodate large air carrier and cargo aircraft?	Yes	Yes	Yes	Yes	Yes	No
Proceed to Level 2?	Yes	Yes	Yes	Yes	Yes	No^{/1/}
Level 2: Is there potential for adverse constructability issues?	Yes	No	Yes	Yes	Yes	N/A
<i>Requires land acquisition?</i>	Yes ^{/2/}	No	Yes ^{/2/}	Yes	Yes ^{/2, 3/}	N/A
<i>Requires NAVAIDs Relocation or Installation</i>	Yes	Yes	Yes	Yes	Yes	N/A
<i>Requires Extensive Drainage Improvements</i>	Yes	No	Yes	Yes	Yes	N/A
<i>Requires Off-Airport Road Relocation</i>	Yes	No	Yes	Yes	Yes	N/A
<i>Requires Full Parallel Taxiway Construction</i>	No	No	No	Yes	Yes	N/A
Retain for detailed analysis in EA?	No	Yes	No	No	No	Yes^{/1/}

Notes: /1/ - Required to be included in the EA by 40 CFR §1502.14(d)

/2/ - Land acquisition also includes relocation of commercial businesses and/or residences

/3/ - Land acquisition from the Marine Military Academy and includes relocation of Marine Military Academy and Physical Development Complex's obstacle training course

Sources: Unison Consulting, 2019; URS, 2010; RS&H, 2020.

3.3.7 Selection of the Preferred Alternative (Proposed Action)

The alternatives evaluated in this EA include Alternatives 1 through 6. Impacts to the built and natural environment were considered in the selection of the preferred alternative in conjunction with the Purpose and Need outlined in Chapter 2, *Purpose and Need* of this document. Alternative 2 is recommended as the preferred alternative for the following reasons:

- » Alternative 2 does not require land acquisition or residential/business displacement, as do Alternatives 1, 3, 4, and 5
- » Alternative 2 has no impacts to off-Airport irrigation canals, as do Alternatives 4 and 5
- » Alternative 2 does not require off-Airport road relocation, as do Alternatives 1, 3, 4, and 5

3.4 ALTERNATIVES CARRIED FORWARD FOR ANALYSIS IN THIS EA

The following subsections summarize the alternatives carried forward for analysis in this EA.

3.4.1 Alternative 2: Extend Runway 17R-35L 1,099 feet to the South (Proposed Action)

Alternative 2 is the only runway extension alternative that meets the Level 1 and Level 2 screening criteria. **Chapter 1** provides a detailed description of the project elements for Alternative 2, which **Figure 1-2** also shows.

3.4.2 Alternative 6: No Action Alternative

The No Action Alternative is retained in accordance with CEQ regulations (40 CFR § 1502.14(d)).

Chapter 4

AFFECTED ENVIRONMENT, ENVIRONMENTAL CONSEQUENCES, AND MITIGATION

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4.1 INTRODUCTION

This chapter provides an overview of the existing environmental conditions within the Project Study Area and General Study Area. This chapter also describes the regulations, significance thresholds, methodology used, potential environmental effects that the Proposed Action would have on the affected environment, and any proposed mitigation that would be implemented to minimize impacts from the Proposed Action. As required by Federal Aviation Administration (FAA) Orders 1050.1F and 5050.4B, this Environmental Assessment (EA) considers the following environmental resource categories as outlined in FAA Order 1050.1F, paragraph 4-1:

- » Air quality
- » Biological resources
- » Climate
- » Coastal resources
- » Department of Transportation Act (U.S. DOT), Section 4(f)²⁴
- » Farmlands
- » Hazardous materials, solid waste, and pollution prevention
- » Historical, architectural, archeological, and cultural resources
- » Land use
- » Natural resources and energy supply
- » Noise and noise-compatible land use
- » Socioeconomics, environmental justice, and children's environmental health and safety risks
- » Visual effects
- » Water resources (including wetlands, floodplains, surface waters, groundwater, and wild and scenic rivers)

The Project Study Area and General Study Area are described in **Section 4.2**. Environmental resource categories listed above that are not affected by the Proposed Action are described in **Section 4.3**. Because implementation of the Proposed Action would not result in impacts to these resource categories, they are not described further in this EA.

4.2 STUDY AREAS

Two study areas for the Proposed Action were identified for use in describing existing conditions and potential environmental effects at the Airport. These two areas are identified as the Project Study Area and General Study Area (see **Figure 4-1**).

²⁴ Section 4(f) of the U.S. DOT Act provides protection for special properties, including publicly owned parks, recreation areas, wildlife and waterfowl refuges, or any historic and archaeological sites.

4.2.1 Project Study Area

The Project Study Area, as seen in **Figure 4-1**, encompasses about 545 acres, is entirely within Cameron County, and represents the area where the Proposed Action would occur. The Project Study Area is used to describe the environmental resources that could be directly affected by ground disturbing activities associated with the Proposed Action.

4.2.2 General Study Area

The General Study Area, as seen in **Figure 4-1**, encompasses about 1,390 acres and is entirely within Cameron County. The General Study Area is used to address the resource categories that could be indirectly affected by the Proposed Action. This study area was established on a larger geographic area to assess “indirect” impacts that may occur in the surrounding area, such as impacts to air quality, noise-sensitive land uses, socioeconomic impacts, Department of Transportation Act Section 4(f) resources, and historic and cultural resources. The General Study Area boundary was based on the Airport’s existing Day-Night Average Sound Level (DNL) 65 decibel (dB) noise contour and the boundary lines were squared off to follow natural boundaries and roadways in the Airport vicinity.

4.3 ENVIRONMENTAL RESOURCES NOT AFFECTED

This section describes environmental resources that would not be affected by the Proposed Action. The environmental resources described in the subsections below are not present in either the Project Study Area or General Study Area. Therefore, this EA does not evaluate the potential for impacts for these resources and they are not discussed further in this EA.

4.3.1 Coastal Resources

According to the Texas General Land Office Coastal Zone Boundary Map, the study areas are not within the Coastal Zone Management Area (CZMA).²⁵ The study areas are located 3 miles west of the CZMA. Therefore, the Proposed Action would not affect any coastal resources.

4.3.2 Department of Transportation Section 4(f)

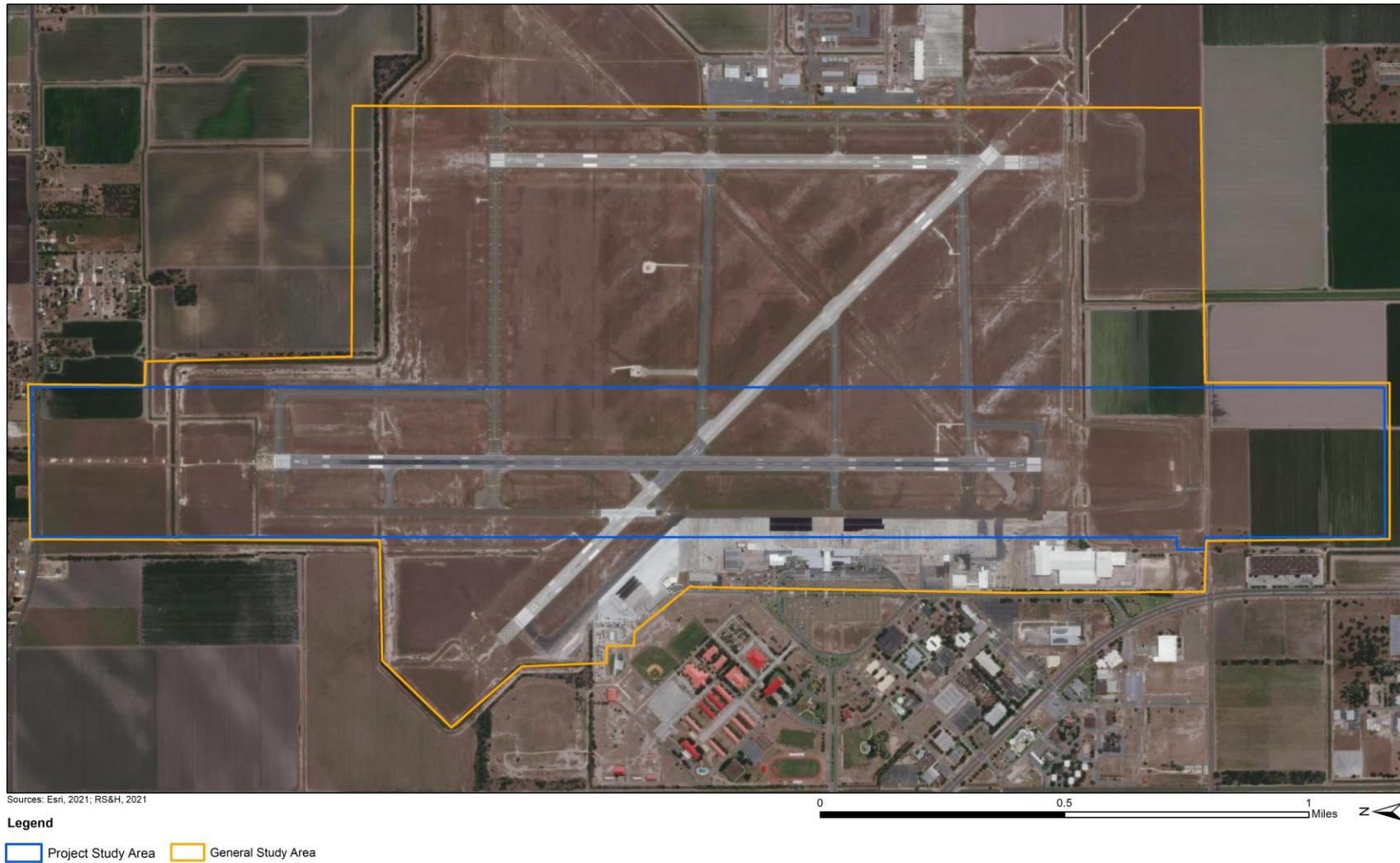
There are no Department of Transportation Section 4(f) resources in either study area. Construction and operation of the Proposed Action would occur entirely on Airport property and would not require the physical use (direct use) of any Section 4(f) resource. Additionally, construction and operation of the Proposed Action would not significantly affect the area’s air quality, climate, natural resources, noise, or water resources. For those reasons, the Proposed Action would not constructively use (indirectly affect) Section 4(f) resources.

4.3.3 Farmlands

Construction of the Proposed Action would occur entirely on Airport property. No farmland would be acquired or converted as a result of the Proposed Action. Under Section 523(10)(B) of the FPPA, land that is committed to urban development is not subject to provisions of the FPPA. As stated in **Section 4.9.2**, Airport property is zoned as transportation/utility, which is considered an urban use. Therefore, there would be no impact to farmlands.

²⁵ Texas General Land Office. Coastal Boundary Map. Retrieved December 2020, from: <https://www.glo.texas.gov/coast/coastal-management/forms/files/CoastalBoundaryMap.pdf>.

FIGURE 4-1
PROJECT STUDY AREA AND GENERAL STUDY AREA



4.3.4 Visual Effects

Construction of the Proposed Action would occur entirely on Airport property. Construction activity is unlikely to occur during the nighttime hours; but if nighttime construction were to occur, it would be restricted to airfield-related construction. Light emissions from any nighttime-related construction would be temporary. Additionally, the closest residence is 2,300 feet northeast of the end of Runway 17R and is partially shielded by existing vegetation.

The Proposed Action would require new runway edge lighting for safety reasons, as required by FAA standards. Runway edge lighting is low to the ground by nature. The closest residential area is about 2,300 feet to the northeast of the end of Runway 17R and is partially buffered from the Airport by existing vegetation. Therefore, there would be no light emissions to any light-sensitive resources as a result of the Proposed Action.

4.3.5 Floodplains

According to Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) 48061C0260F (effective February 16, 2018) there are no floodplains located within the study areas.²⁶ Therefore, the Proposed Action would not affect any Floodplains.

4.3.6 Wild and Scenic Rivers

There are no protected rivers or river segments in either study area. The closest wild and scenic river is a segment of the Rio Grande River, located about 350 miles northwest of the two study areas.²⁷ Therefore, the Proposed Action would not affect any wild and scenic rivers.

4.4 AIR QUALITY

This section describes the regulations, affected environment, significance threshold(s) pertaining to air quality, the methodologies used to determine potential effects, and identifies the potential air quality impacts from the No Action Alternative and Proposed Action, as well as and mitigation measures, if needed.

4.4.1 Regulatory Setting

Appendix B lists the regulations associated with this resource category.

4.4.2 Affected Environment

The U.S. Environmental Protection Agency (USEPA) sets National Ambient Air Quality Standards (NAAQS) for certain air pollutants to protect public health and welfare. The USEPA has identified the following six criteria air pollutants and has set NAAQS for them: Carbon Monoxide (CO), Lead (Pb), Nitrogen Dioxide (NO₂), 8-Hour Ozone (O₃) Particulate Matter (PM₁₀ and PM_{2.5}), and Sulfur Dioxide (SO₂).

²⁶ FEMA. Flood Map Service Center, FIRM 48061C0260F (effective February 16, 2018). Retrieved December 2020, from: <https://msc.fema.gov/portal/search>.

²⁷ NPS. National Wild and Scenic Rivers System, Texas. Retrieved December 2020, from: <https://www.rivers.gov/texas.php>.

Areas found to be in violation of one or more NAAQS of these pollutants are classified as “nonattainment areas.” States with nonattainment areas must develop a State Implementation Plan (SIP) demonstrating how the areas will be brought back into attainment of the NAAQS within designated timeframes. Areas where concentrations of the criteria pollutants are below (i.e., within) these threshold levels are classified as “attainment areas.” Areas with prior nonattainment status that have since transitioned to attainment are known as “maintenance areas.” The General Study Area, which is located in Cameron County, is in attainment for all criteria pollutants.²⁸

4.4.3 Significance Threshold

FAA Order 1050.1F, Exhibit 4-1, provides the FAA’s significance threshold for air quality, which states that a significant impact would occur if “the action would cause pollutant concentrations to exceed one or more of the National Ambient Air Quality Standards (NAAQS), as established by the Environmental Protection Agency under the Clean Air Act, for any of the time periods analyzed, or to increase the frequency or severity of any such existing violations.”

4.4.4 Methodology

As stated in **Section 4.4.2**, the General Study Area, located in Cameron County, is in attainment for all criteria pollutants. The Airport Sponsor coordinated the Proposed Action with the Texas Commission of Environmental Quality (TCEQ), who has oversight for air quality in Texas, on December 16, 2020. The TCEQ determined in a letter dated January 17, 2021 that general conformity requirements²⁹ did not apply to the Proposed Action (see **Appendix C**).

4.4.5 Environmental Consequences

The following sections describe the potential air quality effects from the No Action Alternative and Proposed Action.

4.4.5.1 No Action Alternative

Under the No Action Alternative, the Airport Sponsor would not implement the runway extension. The Airport would continue to operate and serve forecast aviation demands. Future Airport development would be subject to review and approval under the National Environmental Policy Act (NEPA) and is not assumed under this alternative. Therefore, there would be no affect to air quality.

4.4.5.2 Proposed Action

Construction of the Proposed Action would result in temporary construction related emissions; however, Cameron County is in attainment for all NAAQS. Additionally, the Airport Sponsor coordinated the Proposed Project with the TCEQ, who has regulatory oversight for air quality in Texas, who determined that general conformity requirements do not apply to the Proposed Action (see **Appendix C**).

Operation of the Proposed Action would not introduce new aircraft or operations to the Airport but would allow aircraft currently operating at the Airport to operate at or close to full payload during those periods

²⁸ USEPA. Green Book, National Area and County-Level Multi-Pollutant Information, Texas. Retrieved December 2020, from: https://www3.epa.gov/airquality/greenbook/anayo_tx.html.

²⁹ “General Conformity ensures that the actions taken by federal agencies do not interfere with a state’s plans to attain and maintain national standards for air quality.”

of warmer temperatures. Because the General Study Area is in attainment for all criteria pollutants, and the TCEQ determined that the Proposed Action was not subject to general conformity requirements (see **Appendix C**), there would be no affect to air quality.

4.4.6 Mitigation Measures

As described above, the Proposed Action would not affect air quality, and therefore, conforms to the SIP. In the absence of potentially significant effects, mitigation measures are not proposed. Although the Proposed Action would not cause a significant effect to air quality, the construction contractor would conduct construction activities in accordance with FAA Advisory Circular 150/5370-10H, *Standard Specifications for Construction of Airports*. Additionally, best management practices (BMPs) could be implemented to help reduce emissions associated with construction vehicles and equipment during the construction periods.

4.5 BIOLOGICAL RESOURCES

This section describes the regulations, affected environment, significance threshold(s) pertaining to biological resources, the methodologies used to determine potential effects, and identifies the potential biological resource impacts of the No Action Alternative and Proposed, as well as mitigation measures, if needed.

4.5.1 Regulatory Setting

Appendix B lists the regulations associated with this resource category.

4.5.2 Affected Environment

U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC)³⁰ was used to identify federally listed threatened and endangered species with the potential to occur in the Project Study Area and the Texas Parks and Wildlife Department (TPWD) to identify state listed rare, threatened, and endangered species with the potential to occur in Cameron County.³¹ USFWS identified 14 threatened and endangered species with the potential to occur in the Project Study Area and TPWD identified 55 threatened and endangered species with the potential to occur in Cameron County (see **Appendix D** for the list of species). USFWS also identified 15 migratory birds with the potential to occur in the Project Study Area (see **Appendix D**). USFWS's IPaC did not identify any critical habitats located within the Project Study Area.

The majority of the Project Study Area has been heavily disturbed by Airport development and previous grading and clearing activities and is actively maintained by maintenance activities. The Project Study Area does not include the preferred habitats of threatened and endangered species listed in **Appendix D** nor are the habitats unique, rare, or protected. Additionally, suitable habitat for marine species is not present within the Project Study Area due to the distance (i.e., about 30 miles) to the closest coastal area. The USFWS IPaC tool does not identify critical habitat within the Project Study Area. Given the lack of wetland

³⁰ USFWS. Information for Planning and Conservation (IPaC). Retrieved December 2020, from: <https://ecos.fws.gov/ipac/>.

³¹ Texas Parks and Wildlife. Rare, Threatened, and Endangered Species, Cameron County. Retrieved January 2021, from: <https://tpwd.texas.gov/gis/rtest/>.

features (see **Section 4.13.1**), trees, and shrubs, along with the high level of disturbance of land within the Project Study Area, it is unlikely that federal- or state-listed species would be present.

4.5.3 Significance Threshold

FAA Order 1050.1F, Exhibit 4-1, provides the FAA's significance threshold for biological resources, which states that a significant impact would occur if "the U.S. Fish and Wildlife Service (USFWS) or the National Marine Fisheries Service determines that the action would be likely to jeopardize the continued existence of a federally listed threatened or endangered species, or would result in the destruction or adverse modification of federally designated critical habitat." No significance threshold has been developed for non-listed species.

4.5.4 Methodology

As **Section 4.5.2** describes, the USFWS IPaC tool and TPW were used to determine the type of species that may be found in the Project Study Area.

4.5.5 Environmental Consequences

The following sections describe the potential effects to biological resources from the No Action Alternative and the Proposed Action.

4.5.5.1 No Action Alternative

Under the No Action Alternative, the Airport would not implement the runway extension. The Airport would continue to operate and serve forecast aviation demands. Future Airport development would be subject to review and approval under the NEPA and is not assumed under this alternative. Therefore, there would be no affect to biological resources.

4.5.5.2 Proposed Action

The implementation of the Proposed Action would have no effect on biological resources because the Project Study Area has been heavily disturbed and there is a lack of critical habitat and preferred habitats of federal- or state-listed species. Mitigation Measures

4.5.6 Mitigation Measures

As described above, the Proposed Action would not affect biological resources. In the absence of any effects, mitigation measures and BMPs are not proposed.

4.6 CLIMATE

This section describes the regulations, affected environment, significance threshold(s) pertaining to climate, the methodologies used to determine potential effects, and identifies the potential climate impacts of the No Action Alternative and Proposed Action, as well as mitigation measures, if needed.

4.6.1 Regulatory Setting

Appendix B lists the regulations associated with this resource category.

4.6.2 Affected Environment

Greenhouse gases (GHG) are gases that trap heat in the earth's atmosphere. Both naturally occurring and man-made GHGs primarily include water vapor, carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. Activities that require fuel or power are the primary stationary sources of GHGs at airports. Aircraft and ground access vehicles, which are not under the control of an airport, typically generate more GHG emissions than airport-controlled sources.

Research has shown there is a direct correlation between fuel combustion and GHG emissions. In terms of U.S. contribution, the Government Accountability Office (GAO) reports that "domestic aviation contributes about three percent of total carbon dioxide emissions, according to EPA data," compared with other industrial sources, including the remainder of the transportation sector (20%) and power generation (41%). The International Civil Aviation Organization (ICAO) estimates that GHG emissions from aircraft account for roughly three percent of all anthropogenic GHG emissions globally. Climate change due to GHG emissions is a global phenomenon; therefore, the affected environment is the global climate.

4.6.3 Significance Threshold

While FAA 1050.1F does not provide a significance threshold for aviation related GHG emissions, the "Council of Environmental Quality (CEQ) specifically asks agencies to consider the potential effects of a proposed action on climate change as indicated by its GHG emissions and the implications of climate change for the environmental effects of a proposed action." The projected increase in GHG emissions from the Proposed Action is discussed in the context of national and global GHG emissions from all sources.

4.6.4 Methodology

Because the FAA has not established significance thresholds for climate, this section focuses on the qualitative disclosure of GHG emissions, rather than provision of an effect determination.

4.6.5 Environmental Consequences

This section describes the potential climate effects associated with implementation of the No Action Alternative and the Proposed Action.

4.6.5.1 No Action Alternative

Under the No Action Alternative, the Airport would not implement the runway extension. The Airport would continue to operate and serve forecast aviation demands. Future Airport development would be subject to review and approval under the NEPA and is not assumed under this alternative. Therefore, there would be no affect to climate.

4.6.5.2 Proposed Action

Although there are no federal standards for aviation related GHG emissions, it is well established that GHG emissions can affect climate. As noted by the Council on Environmental Quality (CEQ), "it is not useful, for NEPA purposes, to link GHG emissions from a proposal to specific climatological changes to a particular site...When considering the GHG emissions, agencies do not need to calculate a proposal's GHG emissions as a percentage of nationwide or worldwide GHG emissions unless the agency determines that

such information would be helpful to decision makers and the public to distinguish among alternatives and mitigations, or that the emissions and sequestration associated with a proposed action may rise to a significant level.”^{32 33}

Construction of the Proposed Action would result in a temporary increase in emissions at the Airport, lasting only as long as the construction period.

Operation of the Proposed Action would not introduce new aircraft or operations to the Airport but would allow aircraft currently operating at the Airport to operate at or close to full payload during those periods of warmer temperatures. Therefore, the Proposed Action would not have an adverse impact to climate change.

4.6.6 Mitigation Measures

Because the FAA has not established significant thresholds related to GHG emissions, no significant impact has been identified. In the absence of potentially significant impacts, no mitigation measures are proposed. However, to reduce emissions, the Airport’s construction contractor can implement BMPs identified in **Section 4.4.6**.

4.7 HAZARDOUS MATERIALS, SOLID WASTE, AND POLLUTION PREVENTION

This section describes the regulations, affected environment, significance threshold(s) pertaining to hazardous materials, solid waste, and pollution prevention. This section also describes methodologies used to determine potential effects and identifies the potential hazardous material, solid waste, and pollution prevention impacts of the No Action Alternative and Proposed Action, as well as mitigation measures, if needed.

4.7.1 Regulatory Setting

Appendix B lists the regulations associated with this resource category.

4.7.2 Affected Environment

A search of available federal and state environmental database records by property location in the Project Study Area was conducted to identify sites involving storage and use of hazardous waste, substances, or materials and disclose areas with potential for contamination.

USEPA records revealed no sites listed on or under consideration for listing on the National Priorities List (NPL) or the Superfund Alternative Approach (SAA) within the Project Study Area.³⁴ There are no Toxic

³² CEQ. *Final Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in NEPA Reviews*. Retrieved December 2020, from: https://obamawhitehouse.archives.gov/sites/whitehouse.gov/files/documents/nepa_final_ghg_guidance.pdf.

³³ On April 5, 2017, CEQ withdrew the above referenced final guidance. However, the climate analysis included in this EA is pursuant to FAA Order 1050.1F.

³⁴ USEPA. National Priorities List and Superfund Alternative Approach Sites, Texas. Retrieved December 2020, from: <https://www.epa.gov/superfund/search-superfund-sites-where-you-live>.

Release Inventory (TRI) sites,³⁵ and no toxic substances control act (TSCA) facilities within the Project Study Area.³⁶

Activities conducted by the Airport and its tenants involve the storage and use of a variety of hazardous materials. These materials include gasoline, diesel, aircraft fuels, motor oils, lubricants, cleaning solvents, paint, herbicides, pesticides, and fertilizer. Petroleum fuels such as Jet-A, diesel, and gasoline are the primary hazardous materials stored and used at the Airport. The storage systems are designed and operated in accordance with applicable federal and state regulatory requirements. The Airport maintains a Spill Prevention Control and Countermeasure (SPCC) plan for oil storage systems under direct operational control of the Airport, which was updated and approved in June 3, 2019. Airport policy requires that tenants maintain SPCC plans for their oil storage and dispensing systems. SPCC plans require performance of routine equipment inspections and training of oil handling personnel. Solid wastes generated at the Airport are transported to the Harlingen Transfer Station, and then the City of Edinburg Landfill.

4.7.3 Significance Threshold

FAA Order 1050.1F does not provide a significance threshold for hazardous materials, solid waste, and pollution prevention; however, it does provide a number of factors to consider in evaluating the context and intensity of potential environmental impacts. These include when the action would have the potential to:

- » violate applicable federal, state, tribal, or local laws or regulations regarding hazardous materials and/or solid waste management;
- » involve a contaminated site (including but not limited to a site listed on the National Priorities List);
- » produce an appreciably different quantity or type of hazardous waste;
- » generate an appreciably different quantity or type of solid waste or use a different method of collection or disposal and/or would exceed local capacity; or
- » adversely affect human health and the environment.

4.7.4 Methodology

This EA analyzes the potential increase in hazardous materials and waste at the Airport under the Proposed Action, including construction and operation activities. This EA also analyzes how those materials and wastes would be handled and stored at the Airport.

4.7.5 Environmental Consequences

This section describes the potential effects to hazardous materials, solid waste, and pollution prevention associated with implementation of the No Action Alternative and the Proposed Action.

³⁵ USEPA. Toxic Waste Inventory Explorer. Retrieved December 2020, from: https://enviro.epa.gov/triexplorer/tri_factsheet.factsheet?pzip=&pstate=TX&pcity=&pcounty=Cameron&pyear=2019&pParent=TRI&pDataSet=TRIQ1.

³⁶ USEPA. Toxic Substances Control Act, Envirofacts. Retrieved December 2020, from: <https://enviro.epa.gov/facts/multisystem.html>.

4.7.5.1 No Action Alternative

Under the No Action Alternative, the Airport would not implement the runway extension. The Airport would continue to operate and serve forecast aviation demands. Future Airport development would be subject to review and approval under the NEPA and is not assumed under this alternative. Therefore, there would be no affect to hazardous materials, solid waste, and pollution prevention.

4.7.5.2 Proposed Action

Construction of the Proposed Action would result in temporary increases in the storage of hazardous materials at the Airport. This would primarily be in the form of diesel fuel and lubricants for operation and maintenance of construction equipment. The storage and use of these hazardous materials would be at a centralized construction equipment staging area. The materials would be stored in compliance with federal, state, and local regulatory requirements and permit conditions requiring implementation of pollution prevention measures. Additionally, all construction debris and waste would be disposed at the appropriate authorized disposal facility.

Operations resulting from the Proposed Action would not significantly change the type or quantity of hazardous materials stored and used at the Airport. Under the Proposed Action, the materials currently used at the Airport will be stored and used as it currently is today. The Authority would be responsible for continuing to store and use hazardous materials in accordance with the federal, state, and local rules and regulations. The Authority would update its Stormwater Pollution Prevention Permit (SWPPP) and SPCC plan to reflect facility changes and maintain compliance with applicable regulatory requirements.

Because the Proposed Action would comply with all federal, state, and local regulations and permitting conditions, construction and operation of the Proposed Action would not significantly affect hazardous materials, solid waste, or pollution prevention at the Airport.

4.7.6 Mitigation Measures

Construction and operation of the Proposed Action would be in accordance with the permit conditions, including implementation of BMPs to avoid or minimize any potential releases of fuel, oils, sediments, and other contaminants to storm water. In the event of an accidental release of hazardous materials during construction, development activities would cease, and remediation would follow all federal, state, and local requirements.

4.8 HISTORICAL, ARCHITECTURAL, ARCHAEOLOGICAL, AND CULTURAL RESOURCES

This section describes the regulations, affected environment, significance threshold(s) pertaining to historical, architectural, archeological, and cultural resources. This section also describes methodologies used to determine potential effects and identifies the potential historical, architectural, archaeological, and cultural resource impacts of the No Action Alternative and Proposed Action, as well as mitigation measures, if needed.

4.8.1 Regulatory Setting

Appendix B lists the regulations associated with this resource category.

4.8.2 Affected Environment

The Area of Potential Effect (APE) for the Proposed Action is the same as the Project Study Area. The APE is located entirely on Airport property and includes all areas of potential ground disturbance. There are no historic properties with the APE or within the City of Harlingen.^{37 38}

4.8.3 Significance Threshold

FAA Order 1050.1F does not provide a significance threshold for historical, architectural, archaeological, and cultural resources; however, it does provide a factor to consider in evaluating the context and intensity of potential environmental impacts. This would occur when the action would result in a finding of adverse effect through the process outlined in Section 106 of the National Historic Preservation Act (NHPA).

4.8.4 Methodology

For purposes of this EA, historic, archeological, and cultural resources are districts, sites, buildings, structures, objects, landscapes, and Native American Traditional Cultural Properties (TCPs) are those that are on or eligible for listing on the National Register of Historic Places (NRHP). Such “NRHP properties” are nationally important due to their significant and respective roles in American history, prehistory, architecture, archaeology, engineering and culture. Regulations at 36 Code of Federal Regulations (CFR) Part 800 et seq. provide detailed instructions to federal agencies on how to assess and address effects on those historically significant properties.

The FAA evaluates direct and indirect impacts from federal actions on historic, architectural, archaeological, and other cultural resources under Section 106 of the NHPA, the principal statute concerning such resources. Section 106 requires federal agencies to take into account the effects of their undertakings on properties that are listed in or determined eligible for inclusion in the NRHP and to consult with the State Historic Preservation Officer (SHPO), Tribal Historic Preservation Officers (THPO), and other parties to develop and evaluate alternatives or modifications to the undertaking where necessary to avoid, minimize, or mitigate adverse effects on historic properties.

The scale of the undertaking and the extent of FAA involvement define the scope of the Section 106 review, including FAA’s obligation to identify historic properties, assess effects, and develop and evaluate alternatives or modifications to the undertaking that could avoid, minimize, or mitigate adverse effects on historic properties. In this case, FAA’s role is limited to approval or disapproval of an Airport Layout Plan depicting the Airport Sponsor’s proposal, as it may be modified through consultation, and potential approval or disapproval of Federal funding.

This analysis uses information from the NRHP database and the Texas Historical Commission database.

³⁷ NPS, National Register of Historic Places, Cameron County TX. Retrieved January 2021, from: <https://www.nps.gov/subjects/nationalregister/database-research.htm#table>.

³⁸ THC. Historic Sites. Retrieved January 2021, from: <https://www.thc.texas.gov/historicsites>.

4.8.5 Environmental Consequences

This section describes the potential effects to historical, architectural, archaeological, and cultural resources associated with implementation of the No Action Alternative and the Proposed Action.

4.8.5.1 No Action Alternative

Under the No Action Alternative, the Airport would not implement the runway extension. The Airport would continue to operate and serve forecast aviation demands. Future Airport development would be subject to review and approval under the NEPA and is not assumed under this alternative. Therefore, there would be no affect to historical, architectural, archaeological, and cultural resources.

4.8.5.2 Proposed Action

Construction of the Proposed Action would include ground disturbing activities in the APE. However, the ground has been heavily disturbed by previous Airport and agricultural activities. The APE is considered to have low integrity to find buried cultural material. Based on the literature and records review, no significant historic properties should be affected by the construction activities within the APE.

Operation of the Proposed Action would not change the viewshed of the APE or affect air quality, noise, or water quality in a manner that would affect any NRHP-listed or eligible resource.

Consultation with the SHPO was initiated on March 15, 2019 with a no historic properties affected determination for the Proposed Action, and concurrence with that determination was received from the SHPO on March 27, 2019. However, subsequent consultation with the SHPO was initiated by the FAA with a no historic properties affected determination on December 14, 2020 because the APE grew in size due to the addition of navigational aids (NAVAIDs) associated with the Proposed Action. Subsequent concurrence that the increase in size of the APE would not change the original finding of no historic properties present or affected was received from the SHPO on December 15, 2020. This consultation can be seen in **Appendix E**.

4.8.6 Mitigation Measures

The Proposed Action would not cause direct or indirect effects to APE. Therefore, mitigation measures and BMPs are not proposed. However, in the unlikely event that there is an unanticipated discovery of archaeological material during construction, construction activities would stop immediately, and the selected construction contractor would contact the Airport Sponsor. The Airport Sponsor would coordinate with the FAA and SHPO and construction activities would not resume without verbal and/or written authorization.

4.9 LAND USE

This section describes regulations, affected environment, the significance threshold(s) pertaining to land use, the methodologies used to determine potential effects, and identifies the potential effects of the No Action Alternative and Proposed Action on compatible land use, as well as mitigation measures, if needed.

4.9.1 Regulatory Setting

Appendix B lists the regulations associated with this resource category.

4.9.2 Affected Environment

The Airport is located in the City of Harlingen and is entirely within Cameron County. The General Study Area is zoned as planned development where an Airport is an allowable use as “permitted by right.”³⁹ The entirety of Airport property is shown as an institutional land use,⁴⁰ while mostly commercial use and agricultural use surround the Airport (see **Figure 4-2**). The closest residential area is 2,300 feet northeast of Runway end 17R.

4.9.3 Significance Threshold

FAA Order 1050.1F does not provide a significance threshold or specific independent factors to consider for land use impacts; however, it does state that the determination that a significant impact exists in the land use impact category is normally dependent on the significance of other impacts that can be related to land use (i.e., noise).

4.9.4 Methodology

The compatibility of existing and planned land uses with an aviation or aerospace proposal is usually associated with noise impacts, as described in FAA 1050.1F Desk Reference, Chapter 11 *Noise and Noise-Compatible Land Use*. In addition to the impacts of noise on land use compatibility, other potential impacts of FAA actions may also effect use land use compatibility such as the disruption of communities, relocation, induced socioeconomic impacts, and land uses protected under Section 4(f) of the USDOT Act.

The most current land uses designations from the Airport Master Plan Update⁴¹ were obtained for the General Study Area. The land use analysis considered existing land uses within the General Study Area and evaluated the Proposed Action to determine whether it would be compatible with land use guidelines as within the City of Harlingen. An adverse impact or incompatible land use would occur if the Proposed Action does not comply with current land use designations.

4.9.5 Environmental Consequences

This section describes the potential effects to land use associated with implementation of the No Action Alternative and the Proposed Action.

4.9.5.1 No Action Alternative

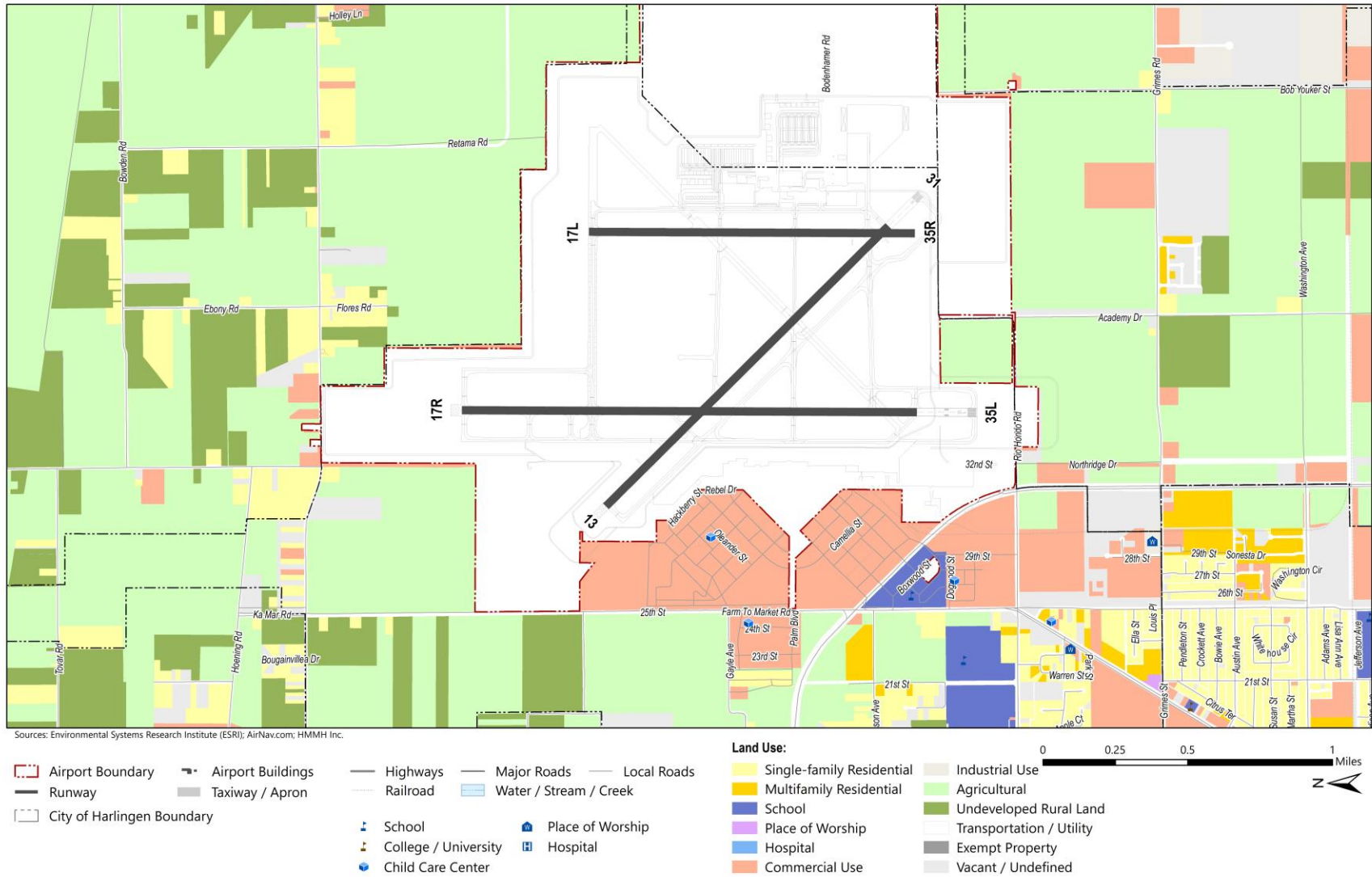
Under the No Action Alternative, the Airport would not implement the runway extension. The Airport would continue to operate and serve forecast aviation demands. Future Airport development would be subject to review and approval under the NEPA and is not assumed under this alternative. Therefore, there would be no affect to land use.

³⁹ City of Harlingen. Zoning Map and Ordinance. Retrieved February 2021, from: http://www.myharlingen.us/upload/page/0683/docs/2020/Zone_Map_06172020.pdf.

⁴⁰ City of Harlingen. Existing Land Use Map. Retrieved February 2021, from: http://www.myharlingen.us/upload/page/0039/docs/PnZ/2016/CompPlan2016/Existing_Land_Use.pdf.

⁴¹ Valley International Airport. Airport Master Plan Update, August 2010.

FIGURE 4-2
EXISTING LAND USE



4.9.5.2 Proposed Action

The construction of the Proposed Action would occur entirely on Airport property and would be compatible with the existing Airport environment. As described in **Section 4.9.2**, the Airport's current land use is designated as "institutional" and the Proposed Action is consistent with that designation.

Operation of the Proposed Action would not introduce new aircraft or operations to the Airport but would allow aircraft currently operating at the Airport to operate at or close to full payload during those periods of warmer temperatures. Additionally, as described in **Section 4.11**, the change to the noise contour would not affect noise sensitive land uses. As described throughout **Chapter 4**, the Proposed Action would not significantly affect other resources that could indirectly affect land use (e.g., the Proposed Action would not disrupt communities, affect Section 4(f) resources, etc.). Therefore, the Proposed Action would not change the land use in or around the General Study Area.

4.9.6 Mitigation Measures

Construction and operation of the Proposed Action would not affect land use. Therefore, no mitigation or BMPs are proposed.

4.10 NATURAL RESOURCES AND ENERGY SUPPLY

This section describes the regulations, affected environment, significance threshold(s) pertaining to natural resources and energy supply. This section also describes the methodologies used to determine potential effects and identifies the potential natural resource and energy supply impacts of the No Action Alternative and Proposed Action, as well as mitigation measures, if needed.

4.10.1 Regulatory Setting

Appendix B lists the regulations associated with this resource category.

4.10.2 Affected Environment

The Airport requires the use of consumable materials to maintain various airside facilities and services. Those materials may include asphalt, concrete, aggregate for sub-base materials, various metals associated with such maintenance, as well as fuel associated with the operation of aircraft and vehicles. Electrical power is necessary to keep the airfield operational and safe. Lighting within the Project Study Area consists of airfield navigational aids and runway and taxiway edge lighting. Gexa Energy supplies the Airport with electricity.

4.10.3 Significance Threshold

FAA Order 1050.1F does not define a significance threshold for natural resources and energy supply; however, it does provide a number of factors to consider in evaluating the context and intensity of potential environmental impacts. Potentially significant effects could occur if the action would have the potential to cause demand to exceed available or future supplies of these resources, which include aviation and surface vehicle fuel, construction material, and electrical power.

4.10.4 Methodology

This section evaluates project-related potential effects on natural resources and energy supplies in the Project Study Area.

4.10.5 Environmental Consequences

The following sections describe the potential effects to natural resources and energy supply from the No Action Alternative and Proposed Action.

4.10.5.1 No Action Alternative

Under the No Action Alternative, the Airport would not implement the runway extension. The Airport would continue to operate and serve forecast aviation demands. Future Airport development would be subject to review and approval under the NEPA and is not assumed under this alternative. Therefore, there would be no affect to natural resources and energy supply.

4.10.5.2 Proposed Action

Construction of the Proposed Action would temporarily increase the use of natural resources used at the Airport. These could include aggregate, sub-base materials, and oils associated with the construction of the Proposed Action. These resources are not rare or in short supply, and the quantity required for development of this size would not place an undue strain on supplies. Construction also would increase the energy demand at the Airport; however, this increase would be temporary and minor, and within the supply capabilities of the City of Harlingen.

Operation of the Proposed Action would not introduce new aircraft or operations to the Airport and therefore, would not increase the use of natural resources at the Airport. A small increase in the required electrical demand at the Airport is anticipated for the extension of runway edge lighting and for operation of newly installed NAVAIDs. This increase would not be significant and would be within the supply capabilities of the City of Harlingen.

4.10.6 Mitigation Measures

Construction and operation of the Proposed Action would not result in a significant impact to natural resources and energy supply. Therefore, no mitigation or BMPs are proposed.

4.11 NOISE AND NOISE-COMPATIBLE LAND USE

This section describes the regulations, affected environment, significance threshold(s) pertaining to noise and noise-compatible land use, the methodologies used to determine potential noise effects, and identifies potential noise impacts of the No Action Alternative and Proposed Action, as well as mitigation measures, if needed.

4.11.1 Regulatory Setting

Appendix B lists the regulations associated with this resource category.

4.11.2 Affected Environment

Figure 4-3 displays the 65 – 75 dB DNL noise contours for the 2019 Existing Conditions over a map of the existing land use in the General Study Area. The map also shows individual noise sensitive locations such as schools and places of worship. The FAA’s guidelines for land use compatibility presented in Appendix A of 14 CFR Part 150 state that all land uses are generally compatible with aircraft noise below 65 dB DNL. Except for the area north of Runway 17L, the 65 dB DNL noise contour is within Airport property. In this area, the 65 dB DNL noise contour extends approximately half a mile into the Cullen-Thompson Reservoir, which is classified as agricultural land. The very tip of the 70 dB DNL noise contour north of Runway 17L also extends into the reservoir area just beyond the Airport boundary. Additionally, south of Runway 35R, the 65 dB DNL noise contour extends just past the southern periphery of the Airport property into agricultural land. The same contour also extends into agricultural land just southeast of the end of Runway 35L.

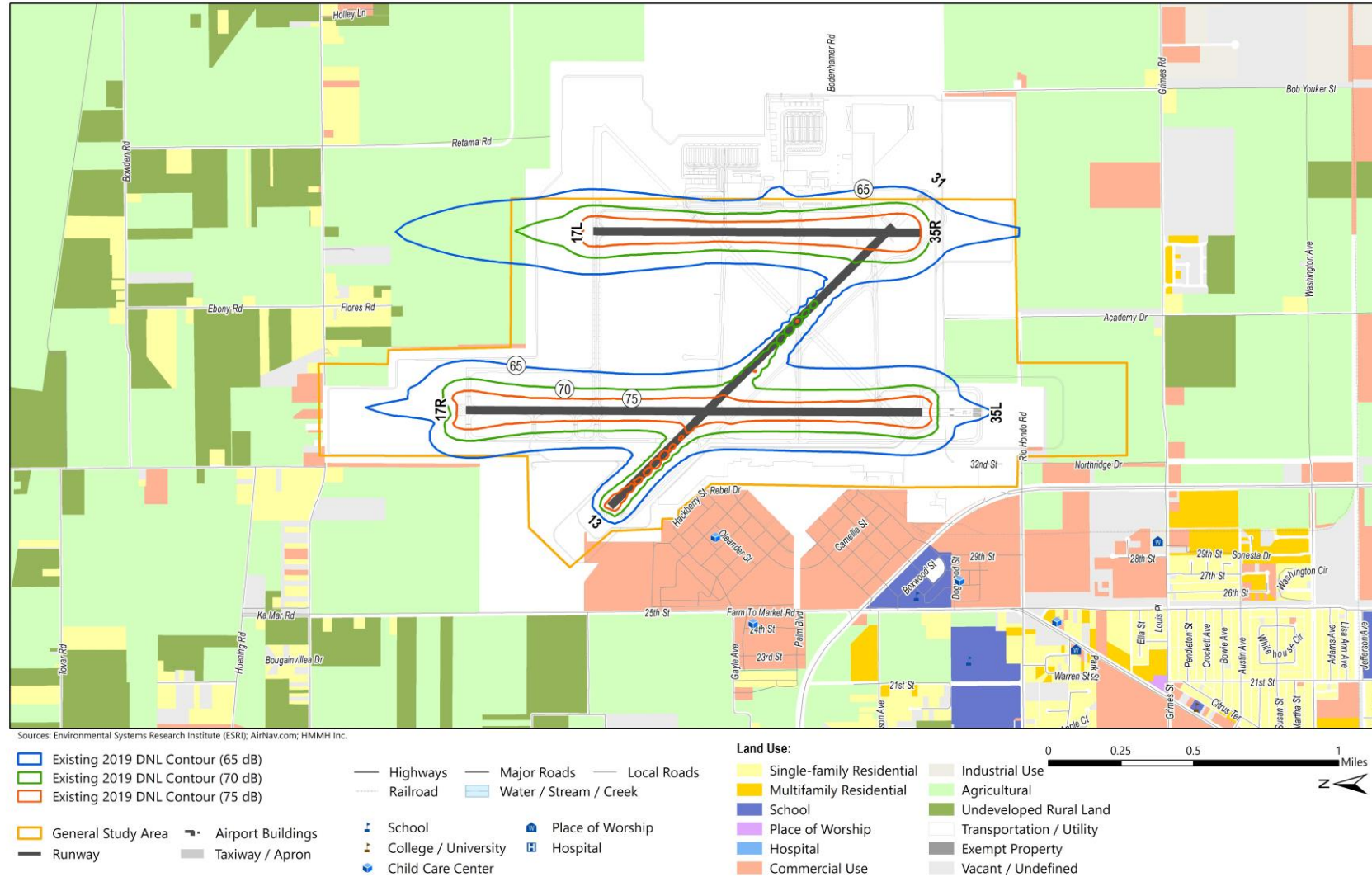
Table 4-1 provides the population exposure, housing unit count, and contour areas for the 2019 DNL noise contours. The 65+ dB DNL noise contours, which cover 695.37 acres, does not include any residents or housing units. In addition, no individual noise sensitive locations, such as schools or houses of worship are within the 2019 65+ dB DNL noise contours.

TABLE 4-1
2019 EXISTING CONDITIONS NOISE CONTOURS POPULATION, HOUSING, AND AREA

DNL (dB) Noise Contour	2010 Population Census	Housing Units	Area (acres)
65 – 70	0	0	364.06
70 – 75	0	0	172.19
> 75	0	0	159.12
Total	0	0	695.37

Sources: HMMH, 2021; U.S. Census Bureau, 2010.

FIGURE 4-3
2019 EXISTING CONDITIONS NOISE CONTOURS



4.11.3 Significance Threshold

FAA Order 1050.1F identifies the threshold of “significant impact” based on the yearly DNL and compatible land-use standards found at 14 CFR Part 150, Airport Noise Compatibility Planning, specifically Table 1 in Appendix A of that regulation. FAA Order 1050.1F, Exhibit 4-1 states that there is a significant noise impact with respect to aircraft noise if a location fulfills all three of the following conditions:

- » Has an incompatible land use as identified in 14 CFR Part 150, Appendix A.
- » Experiences a project-related noise level increase of 1.5 dB DNL or more.
- » Is located within the 65 dB DNL noise contour upon implementation of the action.

For example, an increase from DNL 65.5 dB to 67 dB is considered a significant impact, as is an increase from DNL 63.5 dB to 65 dB. The determination of significance must be obtained using noise contours and/or grid point analysis along with local land use information and general guidance contained in Appendix A of 14 CFR Part 150.

In addition to defining significant impacts, FAA Order 1050.1F includes additional reporting requirements, including:

- » The location and number of noise sensitive uses at or above 65 dB DNL;
- » The disclosure of potentially newly non-compatible land use regardless of whether there is a significant noise impact; and
- » Maps reporting the number of residences or people residing at or above DNL 65 dB for at least the 65-, 70-, and 75-dB exposure levels.

FAA Order 1050.1F states, “Special consideration needs to be given to the evaluation of the significance of noise impacts on noise sensitive areas within Section 4(f) properties (including, but not limited to, noise sensitive areas within national parks; national wildlife and waterfowl refuges; and historic sites, including traditional cultural properties) where the land use compatibility guidelines in 14 CFR Part 150 are not relevant to the value, significance, and enjoyment of the area in question.” For example, the DNL 65 dB threshold does not adequately address the impacts of noise on visitors to areas within a national park or national wildlife and waterfowl refuge where other noise is very low and a quiet setting is a generally recognized purpose and attribute. Levels of changes for noise sensitive locations include:

- » Significant noise impact: DNL increase of 1.5 dB or more in areas of 65 dB DNL and higher
- » Reportable changes:
 - DNL increase of 3 dB or more in areas between 60 and 65 dB DNL
 - DNL increase of 5 dB or more in areas between 45 and 60 dB DNL

4.11.4 Methodology

The potential noise effects associated with the Proposed Action were evaluated using the FAA’s approved noise model, Aviation Environmental Design Tool (AEDT). AEDT uses airport geometry, descriptions of aircraft operations, and an internal database of noise and performance characteristics to compute the noise of individual flights. The software then adds the noise of individual flights together to compute the

cumulative noise levels at a grid of points. These results can be reported at each point (see **Appendix F**) or presented as a set of contours of equal noise exposure. **Appendix F** discusses the inputs and methods used to specify the data used in the modeling and provides a detailed description of the processes used to create the model tracks and their use in noise modeling.

The analysis for this EA compared four future scenarios, the No Action Alternative and the Proposed Action in 2024 (opening year for the Proposed Action) and the No Action Alternative and the Proposed Action in 2029 (five years after opening year).

4.11.5 Environmental Consequences

This section describes the potential noise effects associated with the implementation of the No Action Alternative or the Proposed Action.

4.11.5.1 No Action Alternative (2024)

Under the 2024 No Action Alternative, the Airport would not implement the runway extension. The Airport would continue to operate and serve forecast aviation demands.

Figure 4-4 shows the 65+ dB DNL contours for the 2024 No Action Alternative, including individual noise sensitive locations such as schools and places of worship. The 65 dB DNL noise contour lies primarily within Airport property, though the 65 dB DNL noise contour extends into agricultural land north of Runway end 17L over the Cullen-Thompson Reservoir. Another small portion of the 65 dB DNL noise contour falls just beyond Airport property to the southeast of Runway end 35L, also into agricultural land.

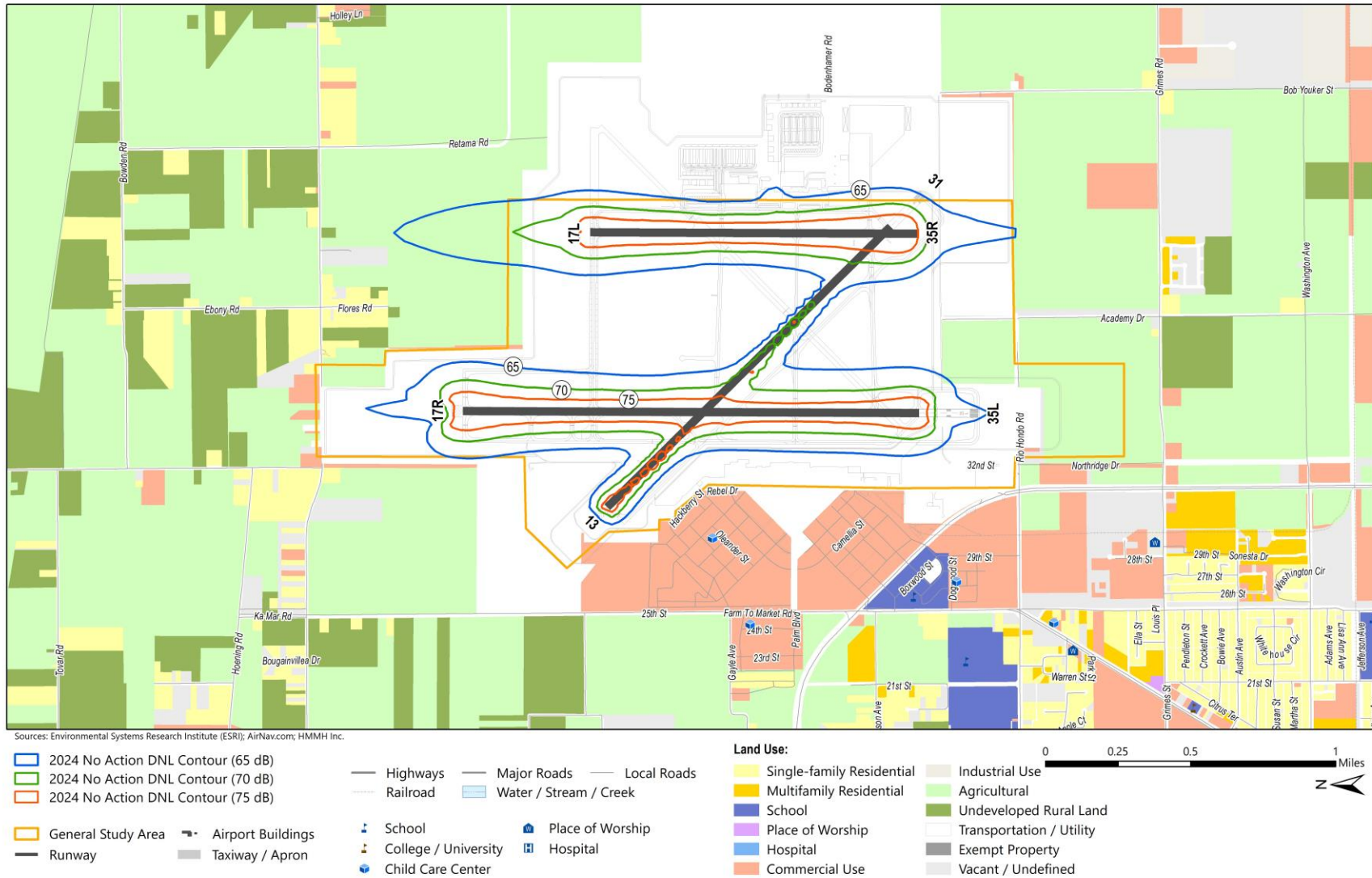
Table 4-2 provides the population exposure, housing unit count, and acreage associated with the 65+ dB DNL noise contours for the 2024 No Action Alternative. No residents or housing units are within the 65+ dB DNL noise contours. The total area of the 65+ DNL noise contours under the 2024 No Action Alternative is 691.33 acres. No individual noise sensitive locations such as schools or houses of worship lie within the 65+ dB DNL noise contours for the 2024 No Action Alternative.

TABLE 4-2
2024 NO ACTION ALTERNATIVE NOISE CONTOURS POPULATION, HOUSING, AND AREA

DNL (dB) Noise Contour	2010 Population Census	Housing Units	Area (acres)
65 – 70	0	0	361.13
70 – 75	0	0	171.39
> 75	0	0	158.81
Total	0	0	691.33

Sources: HMMH, 2021; U.S. Census Bureau, 2010.

FIGURE 4-4
2024 NO ACTION ALTERNATIVE NOISE CONTOURS



4.11.5.2 Proposed Action (2024)

The year 2024 represent the opening year for the Proposed Action. **Figure 4-5** shows the DNL contours for the 2024 Proposed Action. The majority of the 65 dB DNL noise contour lies within Airport property, with an extension north of the end of Runway 17L over the Cullen-Thompson Reservoir. The 65 dB DNL noise contour to the east of the Runway end 35L extension extends to the Airport perimeter road and south almost to Rio Hondo Road.

Table 4-3 provides the population exposure, housing unit count, and acreage associated with 65+ dB DNL noise contours for the 2024 Proposed Action. It shows that there are no residents or housing units in the 65+ dB DNL noise contours. The total area for all the 2024 Proposed Action 65+ dB DNL noise contours is 705.84 acres. No individual noise sensitive locations such as schools or houses of worship are within the 65+ dB DNL noise contours for the 2024 Proposed Action.

TABLE 4-3
2024 PROPOSED ACTION ALTERNATIVE NOISE CONTOURS POPULATION, HOUSING, AND AREA

DNL (dB) Noise Contour	2010 Population Census	Housing Units	Area (acres)
65 – 70	0	0	364.74
70 – 75	0	0	177.57
> 75	0	0	163.53
Total	0	0	705.84

Sources: HMMH, 2021; U.S. Census Bureau, 2010.

The 2024 Proposed Action DNL noise contours overall are narrower and extend farther to the south along the axis of the end of Runway 35L, in accordance with the proposed runway extension, in comparison to the 2024 No Action Alternative. Though the 70- and 75-dB DNL noise contours extend farther south, they still are entirely on Airport property. The 65 dB DNL noise contour, as noted earlier, extends farther east and south of the end of Runway 35L in the 2024 Proposed Action. This contour also shifts slightly southward on the north side of the end of Runway 17R compared to the 2024 No Action alternative. The area of the DNL noise contours would increase by 14.5 acres under the 2024 Proposed Action compared to the 2024 No Action Alternative. No change in population or housing units within the 65 – 75 dB DNL noise contours would occur between the 2024 No Action Alternative and 2024 Proposed Action.

Figure 4-6 shows the grid points that would see a change in DNL when comparing the modeling results for the 2024 No Action Alternative and 2024 Proposed Action. With the implementation of the Proposed Action, 65 grid points within the 65 dB DNL noise contour near the end of Runway 35L would experience an increase of 1.5 dB or more; four of these grid points are located just off the Airport property to the east of the proposed runway extension, along the perimeter road. Two grid points in the 75 dB DNL noise contour would experience an increase of 1.5 dB or more. Two grid points just outside the 65 dB DNL noise

contour would experience a 3 dB increase or more compared to the No Action Alternative. Five grid points within the 75 dB DNL noise contour and two in the 70 dB DNL noise contour would experience a 1.5 dB decrease. None of these affected grid points affect residential or noise sensitive locations. As such, there would not be a significant noise impact as a result of the Proposed Action in 2024.

FIGURE 4-5
2024 PROPOSED ACTION NOISE CONTOURS

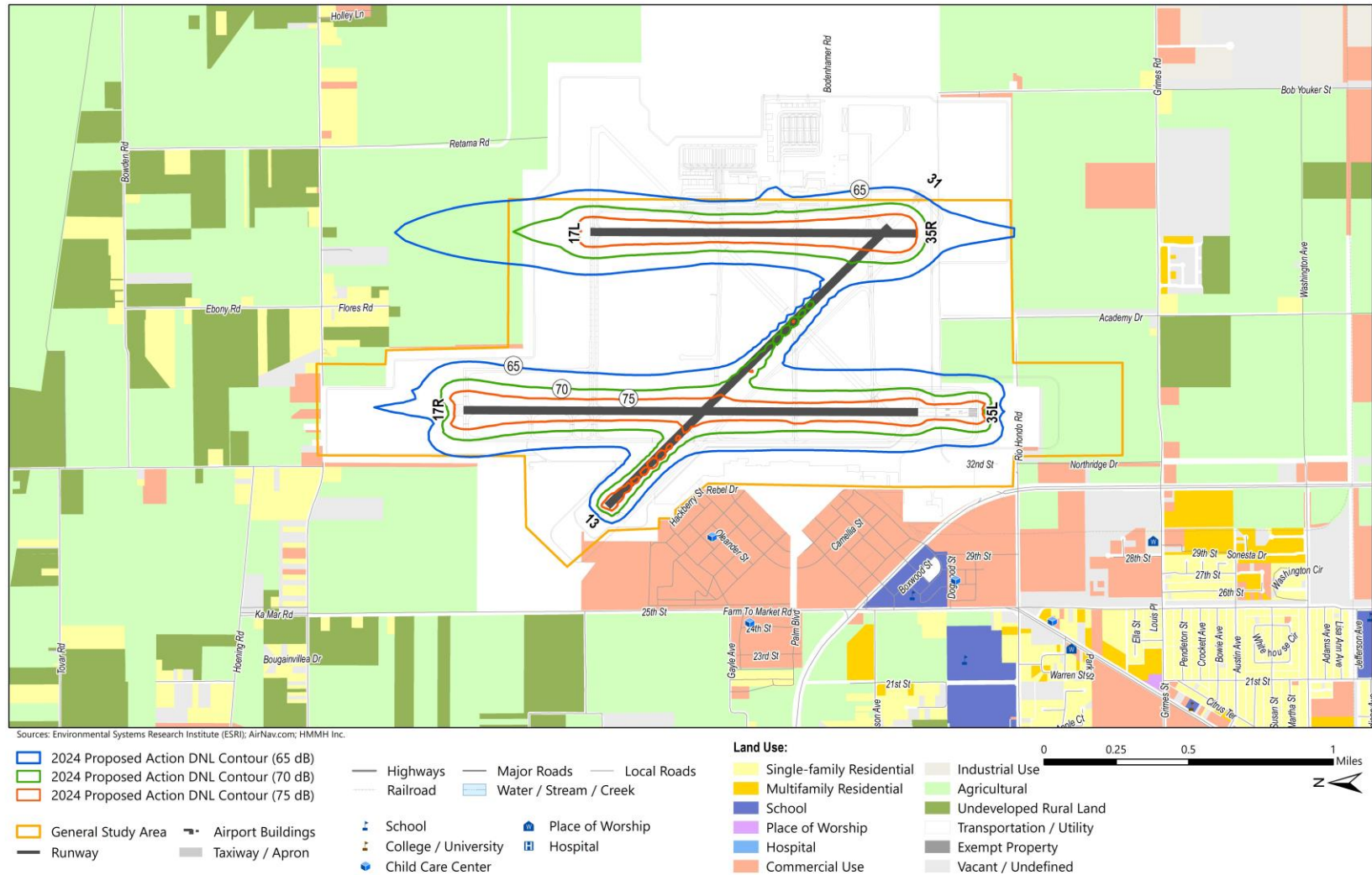
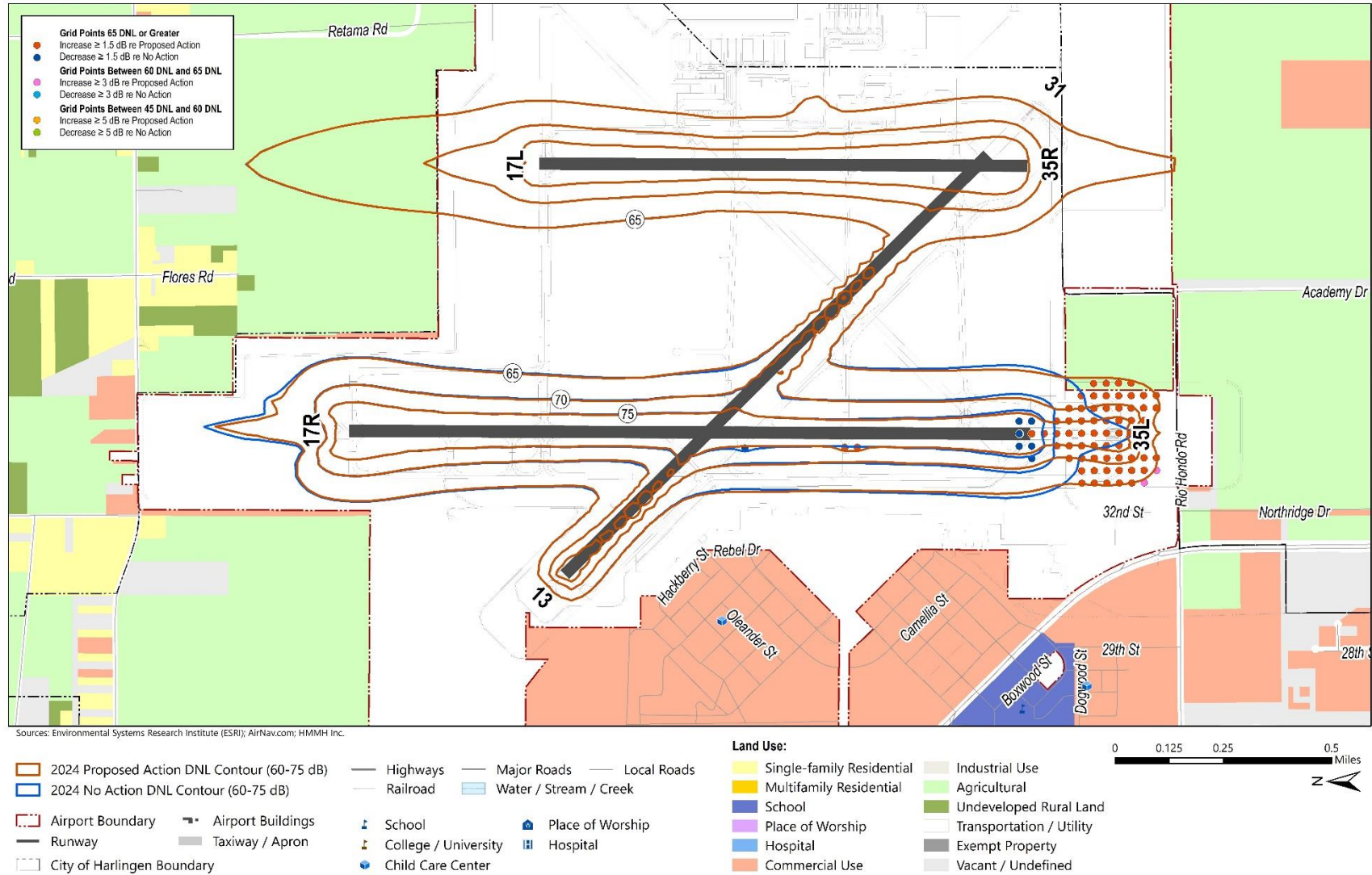


FIGURE 4-6
2024 PROPOSED ACTION AND NO ACTION ALTERNATIVE DNL GRID POINT COMPARISON



4.11.5.3 No Action Alternative (2029)

Under the 2029 No Action Alternative, the Airport would not implement the runway extension. The Airport would continue to operate and serve forecast aviation demands.

Figure 4-7 shows the 65+ dB DNL noise contours for the 2029 No Action Alternative, including individual noise sensitive locations such as schools and places of worship. The 65 dB DNL noise contour lies primarily within Airport property, though the 65 dB DNL noise contour extends into the agricultural land north of Runway end 17L over the Cullen-Thompson Reservoir. Another small portion of the 65 dB DNL noise contour falls just beyond Airport property to the southeast of Runway end 35L, also into agricultural land, and the southernmost tip of the 65 dB DNL noise contour extends into agricultural land south of Runway end 35R. No individual noise sensitive locations such as schools or houses of worship lie within the 65+ dB DNL noise contours for the 2029 No Action Alternative.

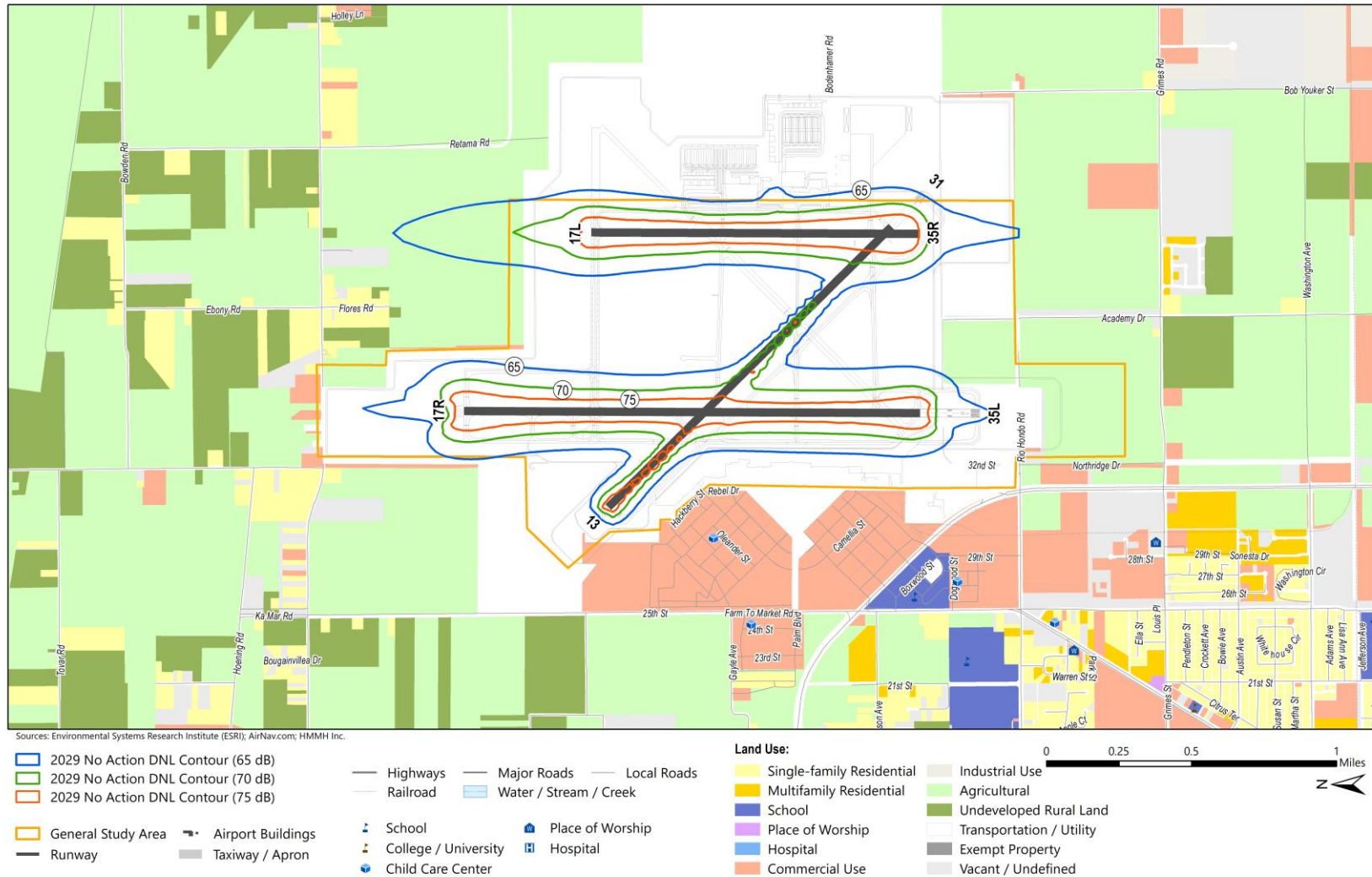
Table 4-4 provides the population exposure, housing unit count, and acreage associated with the 65+ dB DNL noise contours for the 2029 No Action Alternative. It shows that there are no residents or housing units in the 65+ dB DNL noise contours. The total area for all the 2029 No Action Alternative 65+ dB DNL noise contours is 703.67 acres.

TABLE 4-4
2029 NO ACTION ALTERNATIVE NOISE CONTOURS POPULATION, HOUSING, AND AREA

DNL (dB) Noise Contour	2010 Population Census	Housing Units	Area (acres)
65 – 70	0	0	368.65
70 – 75	0	0	173.88
> 75	0	0	161.14
Total	0	0	703.67

Sources: HMMH, 2021; U.S. Census Bureau, 2010.

FIGURE 4-7
2029 NO ACTION ALTERNATIVE NOISE CONTOURS



4.11.5.4 Proposed Action (2029)

The year 2029 represents five years after opening year for the Proposed Action. **Figure 4-8** shows the 2029 Proposed Action DNL noise contours. The majority of the 65 dB DNL noise contour lies within Airport property, with an extension north of Runway end 17L over the reservoir. The 65 dB DNL noise contour to the east of the Runway end 35L extension extends east out to the Airport perimeter road and south almost to Rio Hondo Road and the 65 dB contour extends just past the Airport property south of Runway end 35R.

Table 4-5 provides the population exposure, housing unit count, and acreage associated with 65+ dB DNL noise contours for the 2029 Proposed Action. It shows that there are no residents or no housing units in the 65+ dB DNL noise contours. The total area for all the 2029 Proposed Action DNL noise contours is 718.10 acres. No individual noise sensitive locations such as schools or houses of worship lie within the 65+ dB DNL noise contours for the 2029 Proposed Action.

TABLE 4-5
2029 PROPOSED ACTION NOISE CONTOURS POPULATION, HOUSING, AND AREA

DNL (dB) Noise Contour	2010 Population Census	Housing Units	Area (acres)
65 – 70	0	0	371.96
70 – 75	0	0	180.19
> 75	0	0	165.95
Total	0	0	718.10

Sources: HMMH, 2021; U.S. Census Bureau, 2010.

With the 2029 Proposed Action DNL noise contours, the area would increase by 14.4 acres compared to the 2029 No Action Alternative. No change in population within the 65 – 75 dB DNL noise contours would occur. No individual noise sensitive locations such as schools or houses of worship are within the 65+ dB DNL contours for either the 2029 No Action Alternative or the 2029 Proposed Action. As such, there would not be a significant noise impact as a result of the Proposed Action in 2029.

Figure 4-9 shows the grid points that would see a change in DNL when comparing the modeling results for the 2029 No Action Alternative and 2029 Proposed Action. With the implementation of the 2029 Proposed Action, 60 grid points within the 65 dB DNL or greater noise contours near the end of Runway 35L would experience an increase of 1.5 dB or more; four of these grid points are located just off the Airport property to the east of the proposed runway extension. Two grid points in the 60 dB DNL noise contour would experience a 3 dB increase or more compared to the No Action alternative. Seven grid points within the 75 dB DNL noise contour and two in the 70 dB DNL noise contour would experience a 1.5 dB decrease.

FIGURE 4-8
2029 PROPOSED ACTION NOISE CONTOURS

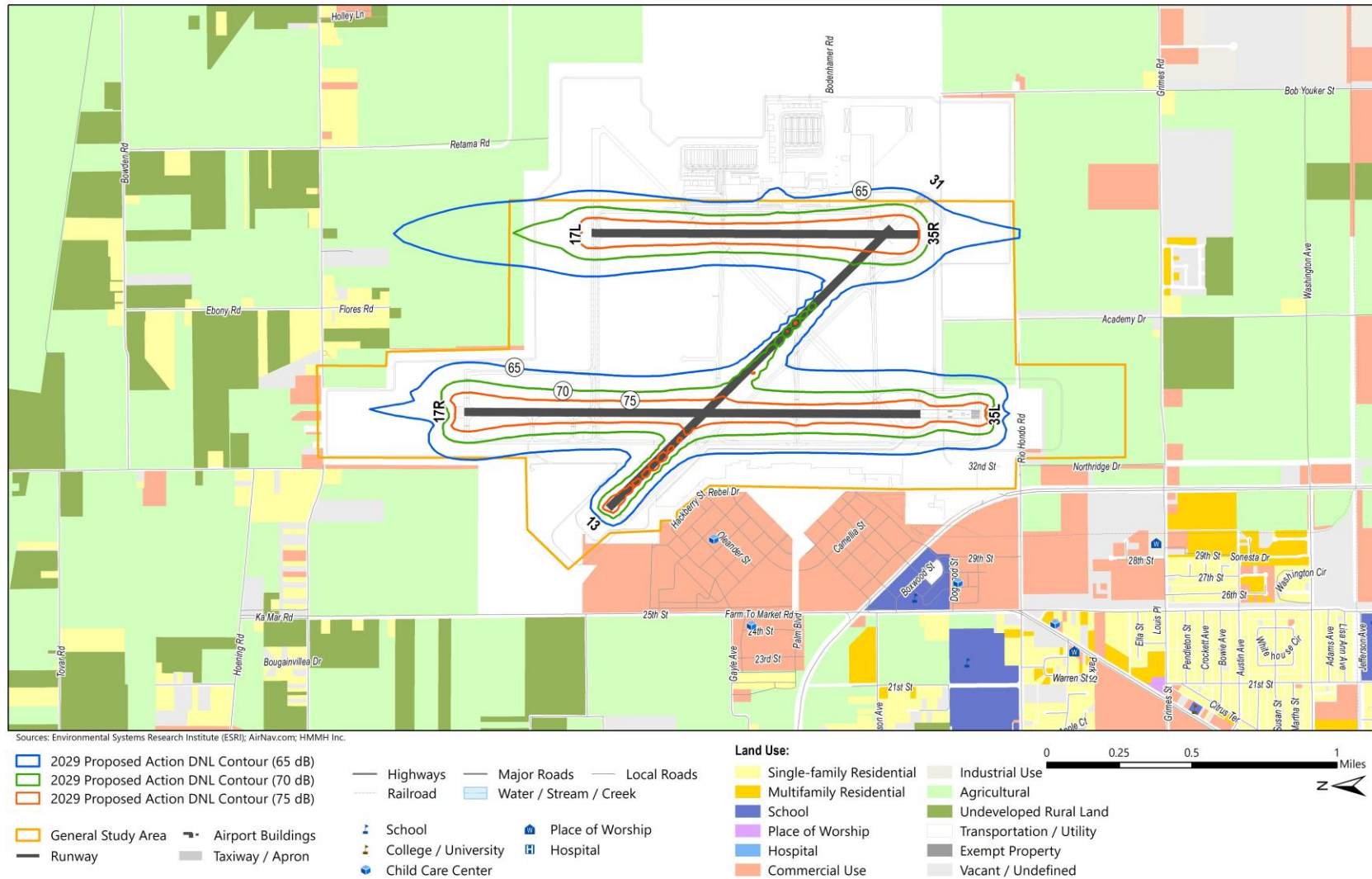
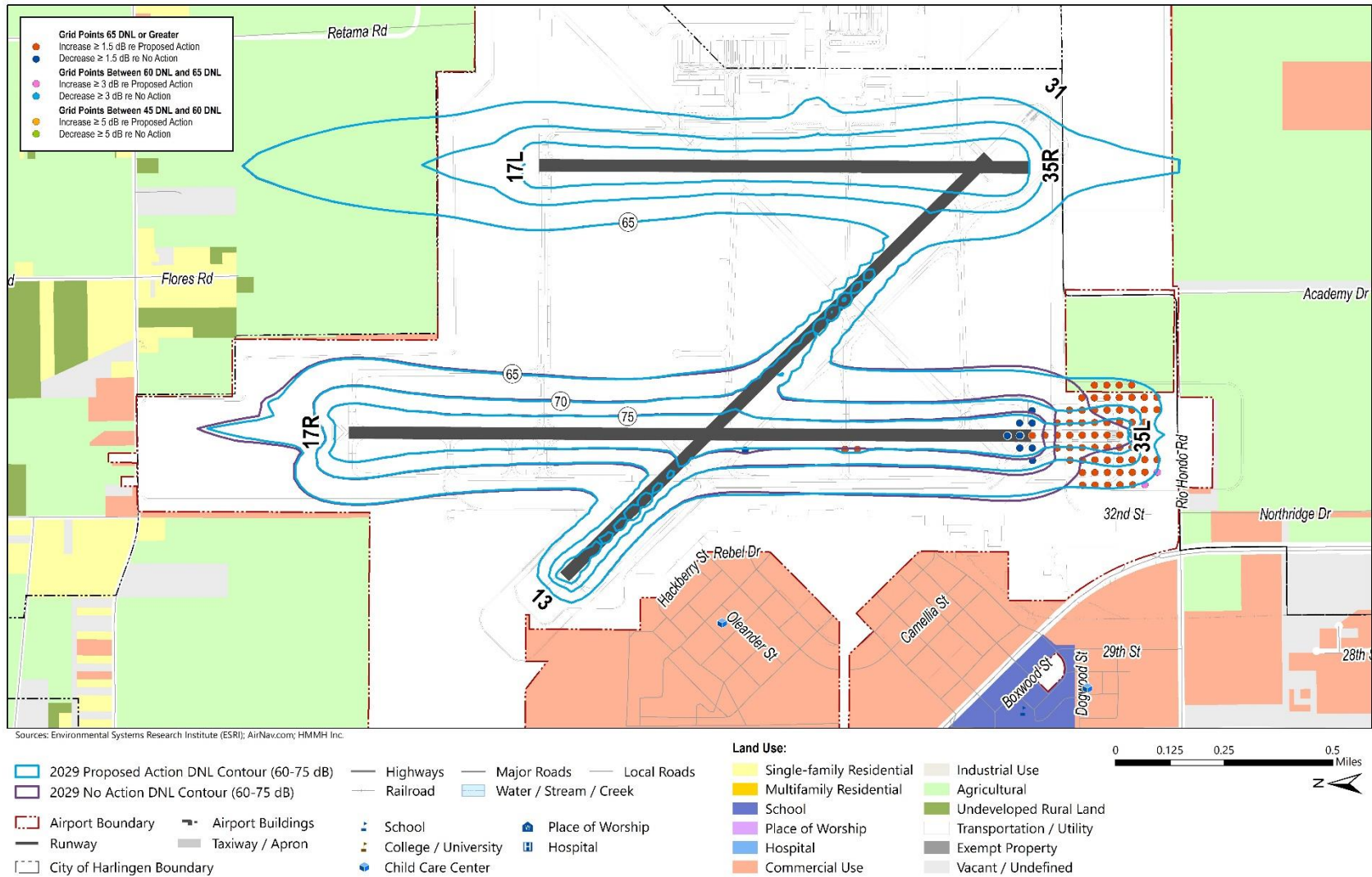


FIGURE 4-9
2029 PROPOSED ACTION AND NO ACTION ALTERNATIVE DNL GRID POINT COMPARISON



4.11.6 Mitigation Measures

The area that would experience an increase in noise level due to the Proposed Action falls nearly entirely within the Airport property lines, with only a small area east of the extension lying outside of Airport property. Additionally, no noise sensitive sites fall within the 65+ dB DNL noise contours and there are no residents or housing units affected by the Proposed Action in either 2024 or 2029. Therefore, no noise mitigation measures are necessary for the Proposed Action.

4.12 SOCIOECONOMICS, ENVIRONMENTAL JUSTICE, AND CHILDREN'S ENVIRONMENTAL HEALTH AND SAFETY RISKS

This section describes the regulations, affected environment, and significance threshold(s) pertaining to socioeconomics, environmental justice, and children's environmental health and safety risks. This section also describes methodologies used to determine potential effects and identifies the potential socioeconomic effects of the No Action Alternative and Proposed Action, as well as mitigation measures, if needed.

4.12.1 Socioeconomics

4.12.1.1 Regulatory Setting

Appendix B lists the regulations associated with this resource category.

4.12.1.2 Affected Environment

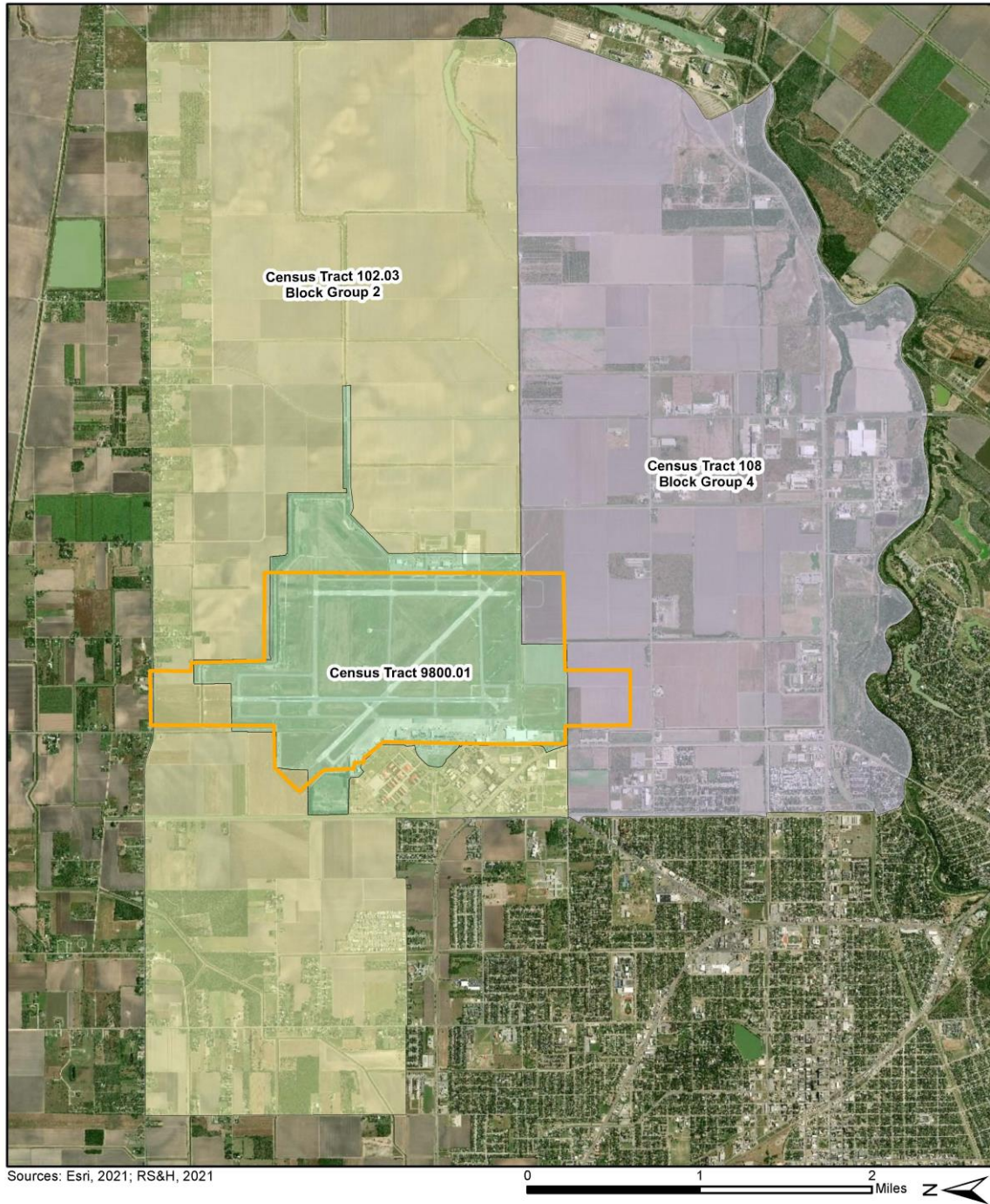
The General Study Area is within three census tracts: Census Tract 9800.01, Census Tract 102.03 Block Group 2, and Census Tract 108 Block Group 4 (see **Figure 4-10**). It should be noted that not all block groups within a census tract were included in the analysis. Only if all or a portion of a block group was within the General Study Area was it then included in the analysis. It should also be noted that census tract and block group boundaries are determined by the U.S. Census Bureau and cannot be changed to exactly fit the General Study Area. Therefore, analysis presented in this EA includes the three census tracts for which the General Study Area falls within.

Population and Housing

Table 4-6 shows the population and housing data⁴² for the census tracts that are within the General Study Area. Data from these census tracts, the City of Harlingen, and Cameron County were included for comparison purposes. The General Study Area does not contain a high-density residential area. About eight percent of the total population of the City of Harlingen and about one percent of the total population of Cameron County lives within in these census tracts. A total of 5,687 people live in these census tracts. There are about 1,702 households, 86.43 percent of which are occupied, for an average of 2.85 persons per household.

⁴² U.S. Census Bureau. 2018: ACS 5-Year Estimates, Population. Retrieved January 2021, from: <https://data.census.gov/cedsci/table?q=population&g=1500000US480610102032,480610108004,480619800011&tid=ACSDT5Y2018.B01003&hidePreview=true>.

FIGURE 4-10
CENSUS TRACTS IN GENERAL STUDY AREA



Legend

- | | |
|--|---|
|  General Study Area |  Census Tract 102.03 Block Group 2 |
|  Census Tract 108 Block Group 4 |  Census Tract 9800.01 |

TABLE 4-6
POPULATION AND HOUSING CHARACTERISTICS

Population and Housing Characteristic	Census Tracts	City of Harlingen	Cameron County
Total Population	5,687	65,129	423,163
Total Households	1,702	22,901	154,022
Average Persons per Household	2.85	2.34	2.74
Percent Housing Occupied	86.43%	85.11%	83.95%

Sources: U.S. Census Bureau, 2018; RS&H, 2021.

Employment

Table 4-7 shows that the General Study Area has the highest unemployment rate (6.93%) when compared to the City of Harlingen (6.24%) and Cameron County (4.41%).⁴³

TABLE 4-7
EMPLOYMENT CHARACTERISTICS

Employment Characteristic	Census Tracts	City of Harlingen	Cameron County
Percent Unemployed	6.93%	6.24%	4.41%

Sources: U.S. Census Bureau, 2018; RS&H, 2021.

Surface Traffic

The major roadways serving the Airport are Iwo Jima Boulevard, Rebel Drive, and Airport Drive.

4.12.1.3 Significance Threshold

FAA Order 1050.1F does not provide a significance threshold for socioeconomics; however, it does provide a number of factors to consider in evaluating the context and intensity of potential environmental impacts. These include when the action would have the potential to:

- » "Induce substantial economic growth in an area, either directly or indirectly (e.g., through establishing project in an undeveloped area);
- » Disrupt or divide the physical arrangement of an established community;
- » Cause extensive relocation when sufficient replacement housing is unavailable;
- » Cause extensive relocation of community businesses that would cause severe economic hardship for affected communities;
- » Disrupt local traffic patterns and substantially reduce the levels of service of roads serving an airport and its surrounding communities; or

⁴³ U.S. Census Bureau. 2018: ACS 5-Year Estimates, Labor Force Status. Retrieved January 2021, from: <https://data.census.gov/cedsci/table?q=Labor%20Force%20Status&g=1500000US480610102032.480610108004.480619800011&tid=ACSDT5Y2019.B23025&hidePreview=true>.

- » Produce a substantial change in the community tax base.”

4.12.1.4 Methodology

The analysis in this section, consistent with FAA requirements, considers the potential for the Proposed Action to:

- » move people from their homes;
- » move businesses;
- » divide or disrupt established communities;
- » disrupt orderly, planned development; or
- » create a notable change in employment

4.12.1.5 Environmental Consequences

This section describes the potential socioeconomic affects associated with implementation of the No Action Alternative and the Proposed Action.

No Action Alternative

Under the No Action Alternative, the Airport would not implement the runway extension. The Airport would continue to operate and serve forecast aviation demands. Future Airport development would be subject to review and approval under the NEPA and is not assumed under this alternative. Therefore, there would be no affect to socioeconomics (population, housing, employment, and surface traffic).

Proposed Action

The construction of the Proposed Action would result in the short-term employment of construction workers. Because the construction of the Proposed Action is temporary, this would not cause a shift in population growth or change population growth patterns. Additionally, it is likely that construction workers would be from the City of Harlingen or Cameron County and would not require temporary housing or affect the housing environment in the area. Workers employed for the construction of the Proposed Action would most likely be of those already in the construction occupation. As such, construction of the Proposed Action would not affect the labor force in the area. Construction surface traffic could access the project site by N Loop 499 and Rio Hondo Road, which would ensure that construction vehicles are not comingling with passengers accessing the Airport. Additionally, there are no road closures, either permanent or temporary, or a decrease in level of service as a result of the Proposed Action.

Operation of the Proposed Action would not result in any physical changes to the surface roadway system providing access to the Airport. Additionally, the Proposed Action would not change the number of employees at the Airport or induce an increase in the number of enplanements at the Airport compared to the No Action Alternative.

4.12.1.6 Mitigation Measures

The Proposed Action would not result in any significant off-airport impacts and would not significantly affect population, housing, employment, or surface traffic. Therefore, no mitigation or BMPs are proposed.

4.12.2 Environmental Justice

This section describes the regulations, affected environment, significance threshold(s), methodology of analysis, and identifies the potential effects of the No Action Alternative and Proposed Action regarding environmental justice populations.

4.12.2.1 Regulatory Setting

Appendix B lists the regulations associated with this resource category.

4.12.2.2 Affected Environment

The General Study Area includes Census Tract 9800.01, Census Tract 102.03 Block Group 2, and Census Tract 108 Block Group 4 (see **Figure 4-10**). As stated in **Section 4.12.1.2**, census tract and block group boundaries are determined by the U.S. Census Bureau and cannot be changed to exactly fit the General Study Area. Therefore, analysis presented in this EA includes the three census tracts for which the General Study Area falls within. **Table 4-8** shows the total minority presence⁴⁴ and the population living in poverty⁴⁵ in the General Study Area, the City of Harlingen, and Cameron County, based on the U.S. Census Bureau 2012-2016 American Community Survey 5-Year Estimates. The General Study Area, City of Harlingen, and Cameron County are predominantly white with the highest minority population located in the General Study Area (12.55%). However, the minority population in the General Study Area is not considered a significant proportion of minorities. **Table 4-8** also shows that the General Study Area has the highest percent of the population living below the poverty line (38.99%) when compared to the City of Harlingen (29.08%) and Cameron County (25.64%); however, the population living below the poverty line in the General Study Area is not considered a significant proportion of a low-income population.

TABLE 4-8
ENVIRONMENTAL JUSTICE CHARACTERISTICS

Environmental Justice Characteristic	Census Tracts	City of Harlingen	Cameron County
Percent Minority	12.55%	8.61%	6.26%
Percent Living Below Poverty Line	38.99%	29.08%	25.64%

Source: U.S. Census Bureau, 2018; RS&H, 2021.

4.12.2.3 Significance Threshold

FAA Order 1050.1F does not provide a significance threshold for environmental justice; however, it does provide a number of factors to consider in evaluating the context and intensity of potential environmental impacts. These include when “the action would have the potential to lead to a disproportionately high and adverse impact to an environmental justice population (i.e., a low-income or minority population) due to:

- » Significant impacts in other environmental impact categories; or

⁴⁴ U.S. Census Bureau. 2018: ACS 5-Year Estimates, Race. Retrieved January 2021, from: <https://data.census.gov/cedsci/table?q=race&g=1500000US480610102032,480610108004,480619800011&tid=ACSDT5Y2018.B02001&hidePreview=true>.

⁴⁵ U.S. Census Bureau. 2018: ACS 5-Year Estimates, Poverty. Retrieved January 2021, from: <https://data.census.gov/cedsci/table?q=Poverty&g=1500000US480610102032,480610108004,480619800011&tid=ACSDT5Y2018.B17021&hidePreview=true>.

- » Impacts on the physical or natural environment that affect an environmental justice population in a way that the FAA determines are unique to the environmental justice population and significant to that population.”

4.12.2.4 Methodology

The analysis in this section, consistent with FAA requirements, considers the potential for the Proposed Action to disproportionately affect environmental justice populations.

4.12.2.5 Environmental Consequences

This section describes the potential impact on environmental justice populations associated with implementation of the No Action Alternative and the Proposed Action.

No Action Alternative

Under the No Action Alternative, the Airport would not implement the runway extension. The Airport would continue to operate and serve forecast aviation demands. Airport development would be subject to review and approval under the NEPA and is not assumed under this alternative. Therefore, there would be no affect to environmental justice populations.

Proposed Action

As shown in **Section 4.12.2.2**, there are no environmental justice populations within the General Study Area. The construction and operation of the Proposed Action would occur entirely on Airport property and would not require the relocation of residents or businesses. As described throughout this chapter, the Proposed Action would not cause significant environmental effects (e.g., air quality, noise, water quality) and therefore, the potential effects from the Proposed Action would not disproportionately affect any population surrounding the Airport.

4.12.2.6 Mitigation Measures

Because there are no identified environmental justice populations within the Study Area, the Proposed Action would not affect these populations. Therefore, no mitigation is proposed.

4.12.3 Children’s Environmental Health and Safety Risks

This section describes the regulations, affected environment, significance threshold(s), and methodology of determining potential effects. In addition, this section identifies the impacts associated children’s environmental health and safety risks of the No Action Alternative and Proposed Action, as well as mitigation measures, if needed.

4.12.3.1 Regulatory Setting

Appendix B lists the regulations associated with this resource category.

4.12.3.2 Affected Environment

Areas of particular concern for children’s environmental health risks and safety include schools, day cares, children’s health clinics, and child friendly recreational facilities. There are no schools, day cares, children’s health clinics, or child friendly recreational facilities within the General Study Area; the closest school is Harlingen Early College High School, located 1,700 feet east of the General Study Area. The closest day

care is the Magic Kingdom Learning Center, located 3,300 feet southeast of the General Study Area. The closest children's health clinic is the Harlingen Pediatrics Associates facility, located two miles southeast of the General Study Area. The closest child friendly recreational facility is Pendleton park, located one mile southeast of the General Study Area. **Table 4-9** shows children age distribution of the three census tracts for which the General Study Area falls within compared to the City of Harlingen and Cameron County.⁴⁶

TABLE 4-9
CHILDREN AGE DISTRIBUTIONS

Child Age Group	Census Tracts	City of Harlingen	Cameron County
Population Under 5	500	4,453	32,802
Population ages 5-9	359	5,620	33,355
Population ages 10-14	528	6,113	38,141
Population ages 15-17	840	3,701	22,323
Total	2,227	19,887	126,621

Source: U.S. Census Bureau, 2018; RS&H, 2021.

4.12.3.3 Significance Threshold

FAA Order 1050.1F does not provide a significance threshold for children's environmental health and safety risks; however, it does provide a factor to consider in evaluating the context and intensity of potential environmental impacts. This would occur when the action would have the potential to lead to a disproportionate health or safety risk to children.

4.12.3.4 Methodology

The analysis in this section, consistent with FAA requirements, considers the potential for the Proposed Action to disproportionately increase the health or safety risk to children.

4.12.3.5 Environmental Consequences

This section describes the potential affects to children's environmental health and safety associated with implementation of the No Action Alternative and the Proposed Action.

No Action Alternative

Under the No Action Alternative, the Airport would not implement the runway extension. The Airport would continue to operate and serve forecast aviation demands. Airport development would be subject to review and approval under the NEPA and is not assumed under this alternative. Therefore, there would be no affect to children's environmental health and safety risks.

⁴⁶ U.S. Census Bureau. 2018: ACS 5-Year Estimates, Race. Retrieved January 2021, from: <https://data.census.gov/cedsci/table?q=children%20age&g=0500000US48061.150000&tid=ACSDT5Y2019.B09002&hidePreview=false>.

Proposed Action

The construction and operation of the Proposed Action would occur entirely on Airport property and would not require the acquisition or relocation of any residences, schools, childcare centers, or similar facilities. The Proposed Action would not increase environmental health and safety risks or exposure of environmental contaminants to children in the surrounding community. Construction emissions resulting from the Proposed Action would be temporary and would occur over the duration of construction activities. As discussed in **Section 4.11.5**, the Proposed Action noise contours would remain almost entirely on Airport property. Therefore, there are no health and safety risks to children associated with the implementation of the Proposed Action.

4.12.3.6 Mitigation Measures

The Proposed Action would not disproportionately affect children's health and safety. Therefore, no mitigation or BMPs are proposed.

4.13 WATER RESOURCES

This section describes the regulations, affected environment, significance threshold(s) pertaining to water resources, including wetlands, floodplains, surface water, and groundwater. This section also describes methodologies used to determine potential effects and identifies the potential water resource impacts of the No Action Alternative and Proposed Action, as well as mitigation measures, if needed. As **Section 4.3** describes, there are no floodplains or protected river segments in the Project Study Area; therefore, this section does not discuss those resource categories.

4.13.1 Wetlands

Wetlands provide a wide range of ecological functions and benefits. Some of these functions can include flood storage and abatement, groundwater recharge, biogeochemical cycling, sediment trapping, and provision of habitat.

The US Army Corps of Engineers (USACE) 1987 *Wetland Delineation Manual*⁴⁷ describes wetlands as "areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas."

A wetland may be jurisdictional and considered a Waters of the U.S. (WOTUS) under federal regulations due to the wetland's connection to navigable waters or due to the contribution to the watershed (including the downstream navigable water). In other cases, a wetland may be "non-jurisdictional" because it has no such connection and would not be considered a WOTUS. For a wetland to be regulated under the Clean Water Act (CWA), that wetland would have to qualify as a WOTUS, whereas the other applicable statutes, regulations, Executive Orders, and Acts (see **Appendix B**) apply to both jurisdictional and non-jurisdictional wetlands.

⁴⁷ USACE. *Wetlands Delineation Manual 1987*. Retrieved February 2021, from: <https://usace.contentdm.oclc.org/digital/collection/p266001coll1/id/4532/>.

4.13.1.1 Regulatory Setting

Appendix B lists the regulations associated with this resource category.

4.13.1.2 Affected Environment

Several unique types of wetlands occur in the region and include resacas (isolated oxbows of the Rio Grande delta that support freshwater wetlands), wind-tidal algal flats (tidal wetlands that are only inundated during annual high tides or storm events), and extensive tidal wetlands due to extremely low and flat elevation of the region. The unique features in the region are driven by geomorphology of the Rio Grande delta, low elevations and flat topography, and the hypersaline inputs from the adjacent Laguna Madre. The USFWS National Wetland Inventory (NWI) mapper shows that there is one riverine wetland located in the Project Study Area near the end of Runway 35L and one freshwater emergent wetland located near the end of Runway 17R (see **Figure 4-11**).⁴⁸

4.13.1.3 Significance Threshold

FAA Order 1050.1F, Exhibit 4-1, defines the FAA's significance threshold for wetlands, which states that a significant impact would occur if "The action would:

- » Adversely affect a wetland's function to protect the quality or quantity of municipal water supplies, including surface waters and sole source and other aquifers;
- » Substantially alter the hydrology needed to sustain the affected wetland system's values and functions or those of a wetland to which it is connected;
- » Substantially reduce the affected wetland's ability to retain floodwaters or storm runoff, thereby threatening public health, safety or welfare (the term welfare includes cultural, recreational, and scientific resources or property important to the public);
- » Adversely affect the maintenance of natural systems supporting wildlife and fish habitat or economically important timber, food, or fiber resources of the affected or surrounding wetlands;
- » Promote development of secondary activities or services that would cause the circumstances listed above to occur; or
- » Be inconsistent with applicable state wetland strategies."

⁴⁸ USFWS. National Wetland Inventory. Retrieved February 2021, from: <https://www.fws.gov/wetlands/data/mapper.HTML>.

FIGURE 4-11
POTENTIAL WETLANDS (AS DESIGNATED BY THE NATIONAL WETLAND INVENTORY) IN PROJECT STUDY AREA



4.13.1.4 Methodology

To evaluate the presence of potential wetlands, within the Project Study Area, a desktop analysis was performed using a Geographical Information System (GIS). The GIS desktop analysis reviewed readily available spatial data that included USFWS NWI, FEMA floodplain maps, NRCS soils data, U.S. Geological Survey's (USGS) National Hydrography Dataset (NHD), USGS 7.5-minute topographic maps, USGS watershed maps, and recent and past aerial imagery.

Following the desktop effort, a field survey was performed on July 29, 2020 within the Project Study Area to confirm information gathered during the desktop analysis. This effort followed guidance from the 1987 USACE Wetland Delineation Manual, Atlantic and Gulf Coast Plains Regional Supplement, and various regulatory guidance.

4.13.1.5 Environmental Consequences

This section describes the potential effects of the Proposed Action on wetlands when compared to the No Action Alternative.

No Action Alternative

Under the No Action Alternative, the Airport would not implement the runway extension. The Airport would continue to operate and serve forecast aviation demands. Future Airport development would be subject to review and approval under the NEPA and is not assumed under this alternative. Therefore, there would be no affect to wetlands.

Proposed Action

The Project Study Area has been subjected to agriculture and industry, and wetlands have been long converted or filled if they existed. Although the NWI shows two potential wetlands in the Project Study Area, only upland drainage ditches were present in the Project Study Area, and these ditches would not be considered wetlands, nor would they be regulated as WOTUS⁴⁹ (see **Section 4.13.2.5** for more details). Additionally, both the desktop analysis and the field survey found no wetlands within the Project Study Area. Review of historical imagery going back to 1950s did not depict any wetlands within the Project Study Area either. Historic imagery also indicates that these ditches were constructed in uplands, and do not connect two or more WOTUS, and are not tidally influenced. The irrigation and drainage ditches in the Project Study Area do not meet these criteria and would not be regulated under the CWA. Because no wetlands occur within the Project Study Area, no impacts to wetlands are anticipated as a result of the Proposed Action.

4.13.1.6 Mitigation Measures

Because no wetlands occur within the Project Study Area, no mitigation measures for wetland impacts are proposed; however, typical avoidance and minimization measures to maintain water quality, such as stormwater BMPs and a SWPPP, would be implemented during construction activities under Texas Stormwater Construction General Permit TXR150000. Revegetation would also be part of the project plans, which will also avoid and minimize impacts.

⁴⁹ Federal Register / Vol. 85, No. 77 / Tuesday, April 21, 2020.

4.13.2 Surface Waters

This section describes regulations, affected environment, significance threshold(s), and methodologies used to determine potential effects, and identifies the impacts to surface waters from the Proposed Action and the No Action Alternative.

4.13.2.1 Regulatory Setting

Appendix B lists the regulations associated with this resource category.

4.13.2.2 Affected Environment

Streams, rivers, lakes, ponds, bays and oceans are considered types of surface waters.⁵⁰ Although most of these types of surface waters are regulated by various applicable statutes, regulations, it should be noted that most off-channel (or isolated) ponds are not regulated. Similarly, drainage ditches are generally not regulated as WOTUS unless the ditch relocates a tributary (e.g., stream or river), is constructed in a tributary, or is constructed in an adjacent wetland.⁵¹ The region is within the South Laguna Madre watershed.⁵² This watershed is largely dominated by the Arroyo Colorado, which is the primary freshwater source for the hypersaline Laguna Madre. Since agriculture is the primary land use in the region, irrigation ditches and canals are a common surface water type. Isolated stock ponds, resacas, and tidal sub-bays are also common surface water features of the region. Two upland drainage ditches and one irrigation ditch were identified in the Project Study Area.

4.13.2.3 Significance Threshold

FAA Order 1050.1F, Exhibit 4-1, defines the FAA's significance threshold for surface waters, which states, "The action would:

- » Exceed water quality standards established by Federal, state, local, and tribal regulatory agencies; or
- » Contaminate public drinking water supply such that public health may be adversely affected."

4.13.2.4 Methodology

Potential surface water impacts were assessed from a desktop analysis and a field survey and evaluated the potential adverse short-term construction and long-term operational impacts that could result from the Proposed Action. Factors considered included existing regulatory requirements, location, results of preliminary planning, and the intended function of the Proposed Action.

4.13.2.5 Environmental Consequences

This section describes the potential effects of the Proposed Action on surface waters when compared to the No Action Alternative.

No Action Alternative

Under the No Action Alternative, the Airport would not implement the runway extension. The Airport would continue to operate and serve forecast aviation demands. Future Airport development would be

⁵⁰ FAA. *1050.1F Desk Reference*, February 2020.

⁵¹ Federal Register / Vol. 85, No. 77 / Tuesday, April 21, 2020.

⁵² USGS. Science in Your Watershed, Locate Your Watershed. Retrieved November 2020, from: https://water.usgs.gov/wsc/map_index.html.

subject to review and approval under the NEPA and is not assumed under this alternative. Therefore, there would be no affect to surface waters.

Proposed Action

The construction and operation of the Proposed Action could potentially affect surface waters due to the increase in impervious surface and presence of potentially hazardous materials. As stated in **Section 4.13.2.2**, a desktop analysis and a field survey identified two upland drainage ditches and one irrigation ditch. None of the ditches meet the definition of WOTUS and would not be regulated under Section 404 of the CWA.⁵³ It should be noted although CWA interpretation is constantly challenged in courts, both drainage ditches and irrigation ditches are rarely regulated as a WOTUS. Irrigation and drainage ditches were not intended to be regulated by the CWA, and thus activities associated with irrigation and drainage ditches are exempt from regulation by Section 404(f) of the CWA. Further, rarely irrigation and drainage ditches may be regulated by the CWA if the ditches were excavated out of a regulated stream or through a regulated wetland, connect two or more regulated waters, or are tidally influenced. The Proposed Action would fill or enclose the non-jurisdictional ditches with box culverts; however, no impacts to WOUS would occur. Other than the ditches, no other surface waters were observed in the Project Study Area. The Airport Sponsor would be responsible for obtaining a SWPPP prior to the start of ground disturbing activities and complying with or amending its existing Texas Pollutant Discharge and Elimination System (TPDES) permit to reflect the addition of the Proposed Action. Construction and operation of the Proposed Action would not affect water quality in any manner that would affect the quality of the public drinking water supply. In addition, the Proposed Action would not increase the use of public water supplies in a manner that would affect the overall supply of public water. Therefore, the Proposed Action would not significantly affect surface waters.

4.13.2.6 Mitigation Measures

Compliance with the existing or amending the TPDES permit would minimize the potential water quality effects from construction and operation of the Proposed Action. This permit would include the establishment of BMPs to limit pollutant discharges to the surface waters. The flagging of any non-affected surface water that are within 50 feet of any clearing, grading, or filling activities is encouraged for the duration of the construction. Revegetation would also be part of the Proposed Action, which would also avoid and minimize impacts.

4.13.3 Groundwater

This section describes regulations, affected environment, significance threshold(s), and methodologies used to determine potential effects. In addition, this section identifies the groundwater impacts of the Proposed Action and the No Action Alternative, as well as mitigation measures, if needed.

4.13.3.1 Regulatory Setting

Appendix B lists the regulations associated with this resource category.

⁵³ Federal Register / Vol. 85, No. 77 / Tuesday, April 21, 2020.

4.13.3.2 Significance Threshold

FAA Order 1050.1F, Exhibit 4-1, defines the FAA's significance threshold for groundwater, which states that a significant impact would occur if "The action would:

- » Exceed groundwater quality standards established by federal, state, local, and tribal regulatory agencies; or
- » Contaminate an aquifer used for public water supply such that public health may be adversely affected."

4.13.3.3 Methodology

Spatial data from TCEQ were evaluated including information on aquifers, groundwater contamination, and water wells in the project area. Potential groundwater effects were assessed based on location, preliminary planning results, and intended function of the Proposed Action.

4.13.3.4 Affected Environment

Groundwater is subsurface water that occupies the space between sand, clay, and rock formations. The term aquifer is used to describe the geologic layers that store or transmit groundwater to wells, springs, and other water sources.⁵⁴ The Project Study Area is in the Gulf Coast Aquifer⁵⁵ and in Groundwater Management District #16.⁵⁶ No Groundwater Conservation Districts occur in Cameron County.⁵⁷ There are no sole source aquifers in the Project Study Area.⁵⁸

4.13.3.5 Environmental Consequences

This section describes the potential effects to groundwater associated with implementation of the Proposed Action compared to the No Action Alternative.

No Action Alternative

Under the No Action Alternative, the Airport would not implement the runway extension. The Airport would continue to operate and serve forecast aviation demands. Future Airport development would be subject to review and approval under the NEPA and is not assumed under this alternative. Therefore, there would be no affect to groundwater.

Proposed Action

Construction of the Proposed Action could minimally affect groundwater due to the increase in stormwater runoff from the proposed increase in the impervious surface area. Any effects on the groundwater would be considered minimal and not affect the overall operations of the system and not exceed any water quality standards that are set forth by any local, state, or federal jurisdictions or contaminate the aquifer that is used for the public water supply. Construction activities associated with the Proposed Action would require that BMPs be implemented to ensure the maintenance of water

⁵⁴ FAA. 1050.1F Desk Reference, February 2020.

⁵⁵ TWDB. Groundwater. Retrieved November 2020, from: <https://www.twdb.texas.gov/groundwater/index.asp>.

⁵⁶ TWDB. Groundwater Management Districts. Retrieved November 2020, from: https://www.twdb.texas.gov/groundwater/management_areas/index.asp.

⁵⁷ TWDB. Groundwater Conservation Districts. Retrieved November 2020, from: https://www.twdb.texas.gov/groundwater/conservation_districts/index.asp.

⁵⁸ USEPA. NEPAAssist, Valley International Airport. Retrieved January 2021, from: <https://nepassisttool.epa.gov/nepassist/nepamap.aspx?wherestr=valley+international+airport>.

quality standards. Construction activities would also be carried out in accordance with an SWPPP. Additionally, no wells would be affected because no wells occur in the Project Study Area.

Operation of the Proposed Action would require that a SPCC plan be developed in the event of a fuel spill. Because the Proposed Action would not affect any wells, would implement BMPs, comply with a SWPPP, and a SPCC plan, no impacts to groundwater resources are anticipated as a result of the Proposed Action compared to the No Action Alternative.

4.13.3.6 Mitigation Measures

Since the Proposed Action is not anticipated to affect any groundwater resources, no mitigation measures are proposed. Typical avoidance and minimization measures to maintain water quality, such as stormwater BMPs and a SWPPP would be implemented during construction activities. Additionally, a SPCC plan would be developed and executed in the event of a spill of contaminants. BMPs to reduce the possibility of accidental spills, improve the response time if a spill occurs, and reduce safety hazards. Examples include, but are not limited to:

- » Neat and orderly storage of any chemical or fuels being stored at the site.
- » Regular garbage, rubbish, and waste disposal.
- » Prompt cleanup of any spills of hydraulic fluids, liquid, or dray materials.
- » Performance of regular preventative maintenance on all equipment to prevent leaks

Chapter 5

AGENCY AND PUBLIC INVOLVEMENT

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5.1 INTRODUCTION

The Environmental Assessment (EA) coordination process described in this chapter provided interested agencies and the public the opportunity to comment on potential effects of the construction and operation of the Proposed Action.

5.2 AGENCY COORDINATION

Agencies listed in **Table 5-1** were sent an initial agency coordination package that provided details on the individual components of the Proposed Action and provided the opportunity to comment (see **Appendix C**). The agency comments received in response to the initial coordination letters are reflected in the applicable section of the EA.

TABLE 5-1
AGENCY COORDINATION

Agency	Coordination Effort	Coordination Initiated	Date of Response
Texas State Historic Preservation Officer	Section 106	December 14, 2020	December 15, 2020
Texas Council of Environmental Quality	Scoping	December 16, 2020	January 14, 2021
Texas State Historic Preservation Officer	Scoping	December 16, 2020	None
U.S. Army Corps of Engineers	Scoping	December 16, 2020	None
U.S. Department of Agriculture	Scoping	December 16, 2020	None
U.S. Environmental Protection Agency	Scoping	December 16, 2020	None
U.S. Fish and Wildlife Service	Scoping	December 16, 2020	None

Sources: RS&H, 2021.

5.3 DISTRIBUTION OF DRAFT EA

The Airport Sponsor published a notice of availability for the Draft EA in Valley Morning Star on Monday, April 26, 2021. As **Table 5-2** shows, the Draft EA was made available to the public and agencies for a 30-day review period (30 days after the notice of availability advertisement) at the Airport Administration Office during normal business hours, on the Airport website (<http://www.flythevalley.com/>), and at a local library. Agency and public comments were due no later than 5:00 PM Central Daylight Time (CDT) on May 26, 2021. Written comments on the Draft EA were submitted to Ms. Julie Barrow, on behalf of the Airport, via email at julie.barrow@rsandh.com or via U.S. Mail at 4582 South Ulster Street, Suite 1100, Denver, CO 80237. The Airport received a total of three comment submissions on the Draft EA. A copy of the comments and responses to those comments are provided in **Appendix G**.

TABLE 5-2
DRAFT EA AVAILABLE LOCATIONS

Location Name	Address	Draft EA Copy Type
Airport Administration Office	Valley International Airport Airport Terminal, 3 rd Floor 3002 Heritage Way Harlingen, TX 78550	Hard Copy
Harlingen Public Library	410 76 Drive, Harlingen, TX 78550	Hard Copy
Airport Website	http://www.flythevalley.com/	Electronic

Sources: RS&H, 2021.

5.4 FINAL EA

The Final EA will be made available at the Airport's Administration Office (Valley International Airport Airport Terminal, 3rd Floor, 3002 Heritage Way, Harlingen, TX 78550) and on the Airport website (<http://www.flythevalley.com/>).

Chapter 6
LIST OF PREPARERS

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6.1 INTRODUCTION

The following sections present the list of agencies, firms, and individuals that were primarily responsible for the preparation of this Environmental Assessment (EA).

6.2 LEAD AGENCY

The FAA is the lead agency for the preparation of this EA. Responsibility for review and approval of this EA rests with the FAA. The following FAA Staff Members were involved in the preparation of this EA.

John MacFarlane. Environmental Protection Specialist, Office of Airports.

Marcelino Sanchez. Program Manager.

6.3 PRINCIPAL PREPARERS

Responsibility for preparation of this EA rests with the City of Harlingen Airport Board. Listed below are the persons responsible for the preparation of this EA.

6.3.1 City of Harlingen Airport Board

Bryan Wren. Assistant Director of Aviation.

6.3.2 RS&H, Inc.

David Full, AICP. M.U.P., Urban Planning. Project Officer. Responsible for contractual oversight of the EA preparation and quality assurance/quality control of the EA.

Julie Barrow. M.S., Environmental Science. Project Manager. Responsible for oversight of the EA preparation, and client/subconsultant coordination.

Will Davidson. B.S. Environmental Restoration Science, B.S. Water Science. Environmental Specialist. Responsible for research and technical writing.

John Bush, P.E. B.S., Civil Engineering. Senior Civil Airfield Engineer. Responsible for project description.

Carrie French, P.E. B.S., Civil Engineering. Civil Airfield Engineer. Responsible for project description.

6.3.3 HMMH

Sarah Yenson. MS, Civil Engineering/Transportation; SB, Aeronautical/Astronautical Engineering. HMMH Project Manager. Responsible for oversight of noise analysis and noise documentation.

Justin Cook. BS, Mathematics. HMMH Principal in Charge. Responsible for technical oversight and subject matter expertise.

Vincent Ma. BS, Environmental Biology. Consultant. Responsible for noise modeling and analysis.

Scott McIntosh. BS, Physics. Consultant. Responsible for noise modeling subject matter expertise and quality assurance.

Michael Hamilton. MA, Geographic Information Systems and Cartology; AS, Survey Information Systems and Technology. Senior Geographic Information Specialist. Responsible for GIS development.

Justin Divens. BS, Aeronautical and Mechanical Engineering. Responsible for database and data processing support.

David Crandall. BS, Aeronautical Engineering. Principal Consultant. Responsible for data analysis and quality assurance.

6.3.4 Freese & Nichols, Inc.

Kara Marks. MS, Environmental Management. Project Manager. Responsible for oversight of preparation of the wetlands and surface water sections of EA, and client coordination.

Tom Dixon. MS, Wildlife Ecology. Senior Environmental Scientist. Responsible for site visit and preparation of the wetlands and surface water sections of the EA.

Chapter 7

REFERENCES

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7.1 INTRODUCTION

The following section lists the references used in order of their appearance in each chapter of the Environmental Assessment (EA). If a reference was used more than once in a chapter of the EA, only the first occurrence appears.

7.2 INTRODUCTION AND PROPOSED ACTION

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7.5 AFFECTED ENVIRONMENT, ENVIRONMENTAL CONSEQUENCES, AND MITIGATION

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APPENDIX A

*VALLEY INTERNATIONAL AIRPORT LAND
ACQUISITION DOCUMENTED CATEX*

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APPENDIX A. DOCUMENTED CATEX

Airport sponsors may use this form for projects eligible for a categorical exclusion (CATEX) that have greater potential for extraordinary circumstances or that otherwise require additional documentation, as described in the Environmental Orders (FAA Order 1050.1F and FAA Order 5050.4B).

To request a CATEX determination from the FAA, the sponsor should review potentially affected environmental resources, review the requirements of the applicable special purpose laws, and **consult with the Airports District Office or Regional Airports Division Office staff** about the type of information needed. The form and supporting documentation should be completed in accordance with the provisions of FAA Order 5050.4B, paragraph 302b, and submitted to the appropriate FAA Airports District/Division Office. The CATEX cannot be approved until all information/documentation is received and all requirements have been fulfilled.

Name of Airport, LOC ID, and location:

Valley International Airport / HRL / Harlingen, Texas

Project Title:

Valley International Airport Land Acquisition

Give a brief, but complete description of the proposed project, including all project components, justification, estimated start date, and duration of the project. Include connected actions necessary to implement the proposed project (including but not limited to moving NAVAIDs, change in flight procedures, haul routes, new material or expanded material sources, staging or disposal areas).

Attach a sketch or plan of the proposed project. Photos can also be helpful.

The Valley International Airport (HRL or the Airport) is located in Cameron County, Texas. HRL is owned by the City of Harlingen (Airport Sponsor) and operated by a nine-member board appointed by the Mayor. HRL is a public use airport located approximately three miles northeast of downtown Harlingen. The Airport is at an elevation of 36.3 feet above sea level and covers 2,428 acres. The Airport has three asphalt runways 17R/35L (8,301 feet by 150 feet), 13/31 (7,257 feet by 150 feet), and 17L/35R (5,949 feet by 150 feet) [1]. As shown in **Figure 1**, the Airport is accessible by North Loop 499 and Rebel Drive.

The Airport Sponsor proposes to acquire about 95.5 acres of land for the purposes of land preservation and land use compatibility (Proposed Project) on the south and north sides of Rio Hondo Road, which is a permanently-closed road between North Loop 499 and Academy Drive (see **Figure 1**). The Proposed Project would protect areas adjacent to the Airport from future development that could affect the Airport's long-range growth needs.

The Harlingen Comprehensive Plan identifies seven key strengths that promote the vision of the City of Harlingen. Identified as the second key strength, the Valley International Airport provides a strong engine for economic growth, with excellent service, facilities, and expansion capabilities [2]. The Airport Sponsor's Proposed Project would meet the Harlingen Comprehensive Plan's vision and

goals by preserving land and enhancing the expansion capabilities of HRL.

The Airport Sponsor is seeking federal funding for the Proposed Project through the Federal Aviation Administration (FAA) Airport Improvement Program (AIP) program and will require FAA approval of the revised Airport Layout Plan (ALP) reflecting the Proposed Project. The Proposed Project meets the Airport Sponsor's need to ensure safe and efficient operations at the Airport and to preserve existing Airport infrastructure, including land use compatibility.

Give a brief, but complete, description of the proposed project area. Include any unique or natural features within or surrounding airport property.

The project area is the same as the 95.5 acres of land proposed for acquisition located on undeveloped land as shown in **Figure 1**. The project area is located south and east of existing Airport property, directly south of Runway 17R/35L, and has been farmed land with no previous structures. Land use surrounding the project area includes industrial uses (e.g., the Airport, manufacturing, and storage), general retail, and vacant land. The project area is located in an Airport Overlay District designated by the City of Harlingen. The purpose of this Airport Overlay District is to accommodate the operations of the Airport through regulation of the development of noise sensitive land uses, to protect the Airport from incompatible development, and to promote the health, safety, and general welfare of property users [3].

Identify the appropriate CATEX paragraph(s) from Order 1050.1F (paragraph 5-6.1 through 5-6.6) or 5050.4B (Tables 6-1 and 6-2) that apply to the project. Describe if the project differs in any way from the specific language of the CATEX or examples given as described in the Order.

The Proposed Project is listed as a Categorical Exclusion (CATEX) in FAA Order 1050.1F under Section 5-6.4(b), which states:

"Acquisition of land and relocation associated with a categorically excluded action."

The circumstances one must consider when documenting a CATEX are listed below along with each of the impact categories related to the circumstance. Use FAA Environmental Orders 1050.1F, 5050.4B, and the Desk Reference for Airports Actions, as well as other guidance documents to assist you in determining what information needs to be provided about these resource topics to address potential impacts. Keep in mind that both construction and operational impacts must be included.

Indicate whether or not there would be any effects under the particular resource topic and, **if needed**, cite available references to support these conclusions. Additional analyses and inventories can be attached or cited as needed.

5-2.b(1) National Historic Preservation Act (NHPA) resources**YES NO**

<p>Are there historic/cultural resources listed (or eligible for listing) on the National Register of Historic Places located in the Area of Potential Effect? If yes, provide a record of the historic and/or cultural resources located therein and check with your local Airports Division/District Office to determine if a Section 106 finding is required.</p> <p>For purposes of this CATEX, the Area of Potential Effect (APE) is the same as the project area previously described. The APE was assessed for potential archeological and historic resources through a thorough desktop-level background study. The background study determined that no significant historic or archeological resources were likely present on the property and resulted in a <i>no historic properties affected</i> determination (see Appendix A). Section 106 consultation with the Texas Historic Preservation Officer (SHPO) was initiated for a portion of the property proposed for acquisition on March 15, 2019 and on June 26, 2020 for the remainder of the property proposed for acquisition (see Appendix A). The SHPO concurred with the <i>no historic properties affected</i> determination on March 27, 2019 and July 13, 2020.</p> <p>The Old Lyford High is the closest National Register of Historic Places (NRHP)-listed resource to the project area, located over 17 miles northwest of the project area [4].</p>	☐	☒
<p>Does the project have the potential to cause effects? If yes, describe the nature and extent of the effects.</p> <p>As stated above, there are no NRHP-listed resources located in the project area. Additionally, consultation with the SHPO resulted in concurrence with the <i>no historic properties affected</i> determination on March 27, 2019 and July 13, 2020 (see Appendix A). The Proposed Project would not result in changes to aircraft activity levels that would alter the off-Airport noise environment. Therefore, the Proposed Project would not directly or indirectly affect NRHP-listed or eligible resources.</p>	☐	☒
<p>Is the project area undisturbed? If not, provide information on the prior disturbance (including type and depth of disturbance, if available).</p> <p>The project area consists of previously disturbed land as a result of past agricultural activities. Although the project area remains undeveloped, past agricultural activities (i.e., tilling) have disturbed those areas.</p>	☐	☒
<p>Will the project impact tribal land or land of interest to tribes? If yes, describe the nature and extent of the effects and provide information on the tribe affected. Consultation with their THPO or a tribal representative along with the SHPO may be required.</p> <p>According to the U.S. Department of Urban Housing and Urban Development Tribal Directory Assessment Tool, there are four Native American Tribes that may have an interest in projects within Cameron County [5]. Since the Proposed Project would</p>	☐	☒

YES NO

occur on previously disturbed land as a result of agricultural activities and does not involve any NRHP-listed or NRHP-eligible resources, it would not affect tribal land and is unlikely to be of interest to tribes.		
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5-2.b(2) Department of Transportation Act Section 4(f) and 6(f) resources

YES NO

<p>Are there any properties protected under Section 4(f) (as defined by FAA Order 1050.1F) in or near the project area? This includes publicly owned parks, recreation areas, and wildlife or waterfowl refuges of national, state or local significance or land from a historic site of national, state or local significance.</p> <p>There are no Section 4(f) properties in the project area [4] [6]. The closest Section 4(f) property to the project area is the Bonham Park, located about 4,000 feet west of the project area.</p>	☐	☒
<p>Will project construction or operation physically or constructively “use” any Section 4(f) resource? If yes, describe the nature and extent of the use and/or impacts, and why there are no prudent and feasible alternatives. See 5050.4B Desk Reference Chapter 7.</p> <p>The Proposed Project would not require the acquisition of any Section 4(f) property. In addition, the Proposed Project would not lead to an increase in aircraft operations that could result in constructive use of Section 4(f) properties. No construction noise would be associated with the Proposed Project. Given the distance to the closest Section 4(f) resource and the lack of development associated with the Proposed Project, no physical or constructive use of Section 4(f) properties would occur as a result of the Proposed Project.</p>	☐	☒
<p>Will the project affect any recreational or park land purchased with Section 6(f) Land and Water Conservation Funds? If so, please explain, if there will be impacts to those properties.</p> <p>There are no Section 6(f) resources within the project area [7]. The closest Section 6(f) resource to the project area is the Lower Rio Grande National Wildlife Refuge, about 19 miles southeast of the project area. Therefore, the Proposed Project would not affect recreational or park land purchased with Section 6(f) Land and Water Conservation Funds.</p>	☐	☒

5-2.b(3) Threatened or Endangered Species

YES NO

Are there any federal or state listed endangered, threatened, or candidate species or designated critical habitat in or near the project area? This includes species protected by individual statute, such as the Bald Eagle.	☒	☐
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YES NO

There are 14 federally listed species with the potential to occur in the project area [8] and 164 state-listed species with the potential to occur in Cameron County [9]. The project area is not located within an area classified as critical habitat [10].		
Does the project affect or have the potential to affect, directly or indirectly, any federal or state-listed, threatened, endangered or candidate species, or designated habitat under the Endangered Species Act? If yes, Section 7 consultation between the FAA and the US Fish & Wildlife Service, National Marine Fisheries Service, and/or the appropriate state agency will be necessary. Provide a description of the impacts and how impacts will be avoided, minimized, or mitigated. Provide the Biological Assessment and Biological Opinion, if required. There is no development associated with the Proposed Project; therefore, there would be no impact to federally or state listed species.	☐	☒
Does the project have the potential to take birds protected by the Migratory Bird Treaty Act? Describe steps to avoid, minimize, or mitigate impacts (such as timing windows determined in consultation with the US Fish & Wildlife Service). There is the potential for 15 migratory bird species to occur in the project area [8]. However, the Proposed Project would occur entirely on previously disturbed land as a result of agricultural activities and does not include the removal of trees or alteration of the surrounding environmental characteristics. Therefore, the Proposed Project is not likely to affect birds protected by the Migratory Bird Treaty Act.	☐	☒

5-2.b (4) Other Resources

Items to consider include:

a. Fish and Wildlife Coordination Act	YES	NO
Does the project area contain resources protected by the Fish and Wildlife Coordination Act? If yes, describe any impacts and steps taken to avoid, minimize, or mitigate impacts. The U.S. Fish and Wildlife Coordination Act protects species that use water features or wetlands. The U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) indicates that there are no resources protected by the Fish and Wildlife Coordination Act within the project area [11]. The Proposed Project is located on previously disturbed land as a result of agricultural activities and is not suitable habitat for resources protected by the Fish and Wildlife Coordination Act. Therefore, no water features or wetlands that support species that use such features exist in the project area and the Proposed Project would have no effect on any such species.	☐	☒
b. Wetlands and Other Waters of the U.S.	YES	NO

<p>Are there any wetlands or other waters of the U.S. in or near the project area?</p> <p>The NWI shows that no wetlands exist in the project area [11]. A 4.18-acre freshwater emergent wetland is adjacent to the west of the project area, off Airport property.</p>	☐	☒
<p>Has wetland delineation been completed within the proposed project area? If yes, please provide U.S. Army Corps of Engineers (USACE) correspondence and jurisdictional determination. If delineation was not completed, was a field check done to confirm the presence/absence of wetlands or other waters of the U.S.? If no to both, please explain what methods were used to determine the presence/absence of wetlands.</p> <p>A wetland delineation has not been completed for this CATEX because there are no wetlands or Waters of the U.S. in the project area [11] and development would not occur under the Proposed Project.</p>	☐	☒
<p>If wetlands are present, will the project result in impacts, directly or indirectly (including tree clearing)? Describe any steps taken to avoid, minimize or mitigate the impact.</p> <p>As previously mentioned, no wetlands exist in the project area. The project area consists of previously disturbed land as a result of agricultural activities and development would not occur under the Proposed Project; therefore, the Proposed Project would not affect wetlands or Waters of the U.S.</p>	☐	☒
<p>Is a USACE Clean Water Act Section 404 permit required? If yes, does the project fall within the parameters of a general permit? If so, which general permit?</p> <p>The Proposed Project would not involve the discharge of dredged or fill materials into Waters of the United States. Therefore, a United States Army Corps of Engineers Clean Water Act Section 404 permit is not required for the Proposed Project.</p>	☐	☒
c. Floodplains	YES	NO
<p>Will the project be located in, encroach upon or otherwise impact a floodplain? If yes, describe impacts and any agency coordination or public review completed including coordination with the local floodplain administrator. Attach the FEMA map if applicable and any documentation.</p> <p>The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) panel 48061C0260F, effective February 16, 2018, shows that the project area is not located in or near a floodplain [12]. Therefore, the Proposed Project would not encroach upon or impact any floodplains.</p>	☐	☒
d. Coastal Resources	YES	NO

<p>Will the project occur in or impact a coastal zone as defined by the State's Coastal Zone Management Plan? If yes, discuss the project's consistency with the State's CZMP. Attach the consistency determination if applicable.</p> <p>According to the Texas General Land Office Coastal Management Program, the Airport is not within a coastal zone. The Texas Coastal Zone is located approximately three miles east of the project area [13]. Additionally, development would not occur under the Proposed Project. Therefore, the Proposed Project would not occur in or affect a coastal zone.</p>	☐	☒
<p>Will the project occur in or impact the Coastal Barrier Resource System as defined by the US Fish and Wildlife Service?</p> <p>There are no Coastal Barrier Resource System (CBRS) segments within the project area. The closest CBRS segment is approximately 24 miles east of the project area [14]. The Proposed Project would not affect any CBRS segments.</p>	☐	☒
e. National Marine Sanctuaries	YES	NO
<p>Is a National Marine Sanctuary located in the project area? If yes, discuss the potential for the project to impact that resource.</p> <p>The project area is not located in or near a National Marine Sanctuary (NMS). Flower Garden Banks NMS is the closest NMS to the project area, located approximately 260 miles northeast of the project area [15]. Therefore, the Proposed Project would not affect any NMS.</p>	☐	☒
f. Wilderness Areas	YES	NO
<p>Is a Wilderness Area located in the project area? If yes, discuss the potential for the project to impact that resource.</p> <p>The project area is not located in a wilderness area. The Little Lake Creek Wilderness area is the closest wilderness area to the project area, located approximately 380 miles northeast of the project area [16]. Therefore, the Proposed Project would not affect any wilderness areas.</p>	☐	☒
g. Farmland	YES	NO

<p>Is there prime, unique, state, or locally important farmland in/near the project area? Describe any significant impacts from the project.</p> <p>The Natural Resource Conservation Service (NRCS) Web Soil Survey shows that the project area consists of Mercedes clay with 0 to 1 percent slopes and Raymondville clay loam, both of which are considered to be prime farmland if irrigated [17]. The land proposed for acquisition has been farmed land, although the Harlingen Comprehensive Plan has designated the project area as an undeveloped land use and is zoned for light industrial [18]. However, development would not occur under the Proposed Project; therefore, the Proposed Project will not affect prime, unique, or locally important farmland.</p>	☒	☐
<p>Does the project include the acquisition and conversion of farmland? If farmland will be converted, describe coordination with the US Natural Resources Conservation and attach the completed Form AD-1006.</p> <p>The Proposed Project would include the acquisition of farmland; however, the Proposed Project would not convert the farmland to non-agricultural uses. Therefore, a Form ADO-1006 is not needed.</p>	☒	☐
h. Energy Supply and Natural Resources	YES	NO
<p>Will the project change energy requirements or use consumable natural resources either during construction or during operations?</p> <p>The Proposed Project would not change the energy requirements of or use of natural resources at the Airport.</p>	☐	☒
<p>Will the project change aircraft/vehicle traffic patterns that could alter fuel usage either during construction or operations?</p> <p>The Proposed Project would not change aircraft and/or vehicle traffic patterns that could alter fuel usage.</p>	☐	☒
i. Wild and Scenic Rivers	YES	NO
<p>Is there a river on the Nationwide Rivers Inventory, a designated river in the National System, or river under State jurisdiction (including study or eligible segments) near the project?</p> <p>There are no Wild and Scenic Rivers or Nationwide Rivers Inventory (NRI) segments, or eligible segments, in the vicinity of the project area. The Rio Grande Wild and Scenic River is the closest river to the project area and is located over 300 miles northwest of the project area [19]. The closest NRI segment is the Sabinal River, which is located over 200 miles northwest of the project area [20].</p>	☐	☒
<p>Will the project directly or indirectly affect the river or an area within ¼ mile of its ordinary high water mark?</p>	☐	☒

There are no Wild or Scenic Rivers or Nationwide Inventory segments, or eligible segments, in the vicinity of the project area [19] [20]; therefore, the Proposed Project would not directly or indirectly affect protected rivers.		
j. Solid Waste Management	YES	NO
Does the project (either the construction activity or the completed, operational facility) have the potential to generate significant levels of solid waste? If so, discuss how these will be managed. Construction activity is not anticipated as a result of the Proposed Project. The Proposed Project involves the acquisition of 95.5 acres of land and does not propose any development. The Proposed Project does not have the potential to generate significant levels of solid waste.	☐	☒

5-2.b(5) Disruption of an Established Community**YES NO**

Will the project disrupt a community, planned development or be inconsistent with plans or goals of the community? The Proposed Project is located south and east of Airport property and would not change the characteristics of the community. The Proposed Project would not disrupt any nearby communities or any planned development, nor would it be inconsistent with the plans or goals of the community.	☐	☒
Are residents or businesses being relocated as part of the project? The Proposed Project would occur south and east of Airport property and would not require the relocation of residents or businesses.	☐	☒

5-2.b(6) Environmental Justice**YES NO**

Are there minority and/or low-income populations in/near the project area?	☒	☐
Will the project cause any disproportionately high and adverse impacts to minority and/or low-income populations? Attach census data if warranted. The project area is within U.S. Census Tract 9801, Block Group 1 and Census Tract 108, Block Group 4 [21]. There is a population of 0 and therefore, no minority or low-income populations in Census Tract 9801, Block Group 1. There is an 80 percent minority population and 68.38 percent low-income population in Census Tract 108, Block Group 4. Development would not occur under the Proposed Project and would not result in significant off-Airport impacts in other categories that would disproportionately affect minority and/or low-income populations.	☐	☒

5-2.b(7) Surface Transportation

	YES	NO
<p>Will the project cause a significant increase in surface traffic congestion or cause a degradation of level of service provided?</p> <p>The Proposed Project would not generate additional Airport activity that could increase surface traffic volumes in the area. Therefore, the Proposed Project would not result in an increase in surface traffic congestion or cause a degradation of level of service provided.</p>	☐	☒
<p>Will the project require a permanent road relocation or closure? If yes, describe the nature and extent of the relocation or closure and indicate if coordination with the agency responsible for the road and emergency services has occurred.</p> <p>The Proposed Project would not require any temporary or permanent road relocations or closures. Development would not occur under the Proposed Project.</p>	☐	☒

5-2.b(8) Noise

	YES	NO
<p>Will the project result in an increase in aircraft operations, nighttime operations, or change aircraft fleet mix?</p> <p>The Proposed Project would not increase aircraft operations, nighttime operations, or change aircraft fleet mix.</p>	☐	☒
<p>Will the project cause a change in airfield configuration, runway use, or flight patterns either during construction or after the project is implemented?</p> <p>The Proposed Project would not cause a change in airfield configuration, runway use, or flight patterns. The Proposed Project would have no effect on runway use or flight patterns.</p>	☐	☒
<p>Does the forecast exceed 90,000 annual propeller operations, 700 annual jet operations or 10 daily helicopter operations or a combination of the above? If yes, a noise analysis may be required if the project would result in a change in operations.</p> <p>The FAA Terminal Area Forecast (TAF) does not exceed the operations stated above [22]. Additionally, the Proposed Project would not alter flight patterns or result in a change in operations; therefore, a noise analysis is not required.</p>	☐	☒
<p>Has a noise analysis been conducted, including but not limited to generated noise contours, a specific point analysis, area equivalent method analysis, or other screening method. If yes, provide that documentation.</p>	☐	☒

	YES	NO
<p>Could the project have a significant impact (DNL 1.5 dB or greater increase) on noise levels over noise sensitive areas within the 65+ DNL noise contour?</p> <p>The closest noise sensitive area, Memorial Middle School, located one mile west of the project area, is separated from the project area by roadways, open areas, and some vegetation. The Proposed Project would have no effect on runway use or flight patterns. In addition, development would not occur under the Proposed Project. Therefore, the Proposed Project would not have a significant impact on noise levels over noise sensitive areas.</p>	☐	☒

5-2.b(9) Air Quality

	YES	NO
Is the project located in a Clean Air Act non-attainment or maintenance area?	☐	☒
<p>If yes, is it listed as exempt, presumed to conform or will emissions (including construction emissions) from the project be below <i>de minimis</i> levels (provide the paragraph citation for the exemption or presumed to conform list below, if applicable) Is the project accounted for in the State Implementation Plan or specifically exempted? Attach documentation.</p> <p>Not applicable [23].</p>	☐	☒
<p>Does the project have the potential to increase landside or airside capacity, including an increase of surface vehicles?</p> <p>The Proposed Project would not increase landside or airside capacity or increase surface vehicle activity.</p>	☐	☒
<p>Could the project impact air quality or violate local, State, Tribal or Federal air quality standards under the Clean Air Act Amendments of 1990 either during construction or operations?</p> <p>The Proposed Project would not increase aircraft operations at the Airport; therefore, the Proposed Project would not adversely affect air quality in Cameron County.</p>	☐	☒

5-2.b (10) Water Quality

	YES	NO
<p>Are there water resources within or near the project area? These include groundwater, surface water (lakes, rivers, etc.), sole source aquifers, and public water supply. If yes, provide a description of the resource, including the location (distance from project site, etc.).</p> <p>There are no water resources located within the project area [24]. The project area is located in the Line V Canal-Arroyo Colorado Watershed.</p>	☐	☒
<p>Will the project impact any of the identified water resources either during construction or operations? Describe any steps that will be taken to protect water resources during and after construction.</p> <p>As previously stated, there are no water resources located within the project area. No development would occur under the Proposed Project; therefore, no best management practices (BMPs) are proposed.</p>	☐	☒
<p>Will the project increase the amount or rate of stormwater runoff either during construction or during operations? Describe any steps that will be taken to ensure it will not impact water quality.</p> <p>The Proposed Project would not result in any new impervious surfaces nor any stormwater runoff as no development would occur under the Proposed Project. The Airport Sponsor would submit all relevant federal, state, and local environmental applications for licenses, permits, and certificates associated with the Proposed Project, if applicable.</p>	☐	☒
<p>Does the project have the potential to violate federal, state, tribal or local water quality standards established under the Clean Water and Safe Drinking Water Acts?</p> <p>The Proposed Project would not result in any new impervious surfaces nor any stormwater runoff as no development would occur under the Proposed Project. Therefore, the Proposed Project would not violate federal, state, tribal, or local water quality standards.</p>	☐	☒
<p>Are any water quality related permits required? If yes, list the appropriate permits.</p> <p>The Airport Sponsor would ensure that the Proposed Project is covered under its existing Texas Pollutant Discharge Elimination System (TPDES) General Permit to accommodate the Proposed Project, if applicable. In addition, the Airport Sponsor would obtain any water quality permits from Cameron County, if applicable.</p>	☒	☐

5-2.b(11) Highly Controversial on Environmental Grounds

	YES	NO
<p>Is the project highly controversial? The term “highly controversial” means a substantial dispute exists as to the size, nature, or effect of a proposed federal action. The effects of an action are considered highly controversial when reasonable disagreement exists over the project’s risks of causing environmental harm. Mere opposition to a project is not sufficient to be considered highly controversial on environmental grounds. Opposition on environmental grounds by a federal, state, or local government agency or by a tribe or a substantial number of the persons affected by the action should be considered in determining whether or not reasonable disagreement exists regarding the effects of a proposed action.</p> <p>The Proposed Project would occur south and east of Airport property on undeveloped land and would not cause off-Airport environmental effects or substantially affect local residents. Therefore, opposition on environmental grounds by interested parties is very unlikely.</p>	☐	☒

5-2.b(12) Inconsistent with Federal, State, Tribal or Local Law

	YES	NO
<p>Will the project be inconsistent with plans, goals, policy, zoning, or local controls that have been adopted for the area in which the airport is located?</p> <p>The Proposed Project would be consistent with plans, goals, policies, zoning, and local controls of the City of Harlingen and Cameron County [3].</p>	☐	☒
<p>Is the project incompatible with surrounding land uses?</p> <p>The project area is located in an Airport Overlay District, a zone designated by the City of Harlingen. The purpose of this Airport Overlay District is to accommodate the Valley International Airport through regulation of the development of noise sensitive land uses, to protect the Airport from incompatible development, and to promote the health, safety, and general welfare of property users [3]. Therefore, the Proposed Project would be compatible with surrounding land uses.</p>	☐	☒

5-2 .b (13) Light Emissions, Visual Effects, and Hazardous Materials

a. Light Emissions and Visual Effects	YES	NO
<p>Will the proposed project produce light emission impacts?</p> <p>The Proposed Project would not introduce new sources of light emissions in the vicinity of the project area. As a result, the Proposed Project would not significantly affect light-sensitive land uses.</p>	☐	☒
Will there be visual or aesthetic impacts as a result of the proposed project and/or	☐	☒

<p>have there been concerns expressed about visual/aesthetic impacts?</p> <p>The Proposed Project would be compatible with the existing visual and aesthetic character of the Airport and would not alter the visual and aesthetic environment. Construction activity is not anticipated as a result of the Proposed Project. As such, there have been no concerns expressed about visual/aesthetic impacts of the Proposed Project as it would be consistent with the existing visual and aesthetic character of the Airport and surrounding land uses</p>		
b. Hazardous Materials	YES	NO
<p>Does the project involve or affect hazardous materials?</p> <p>The Proposed Project would not result in any changes to the current storage and handling procedures of hazardous materials at the Airport, which would continue to follow applicable federal and state regulations for storage and use of hazardous materials.</p>	☐	☒
<p>Will construction take place in an area that contains or previously contained hazardous materials?</p> <p>No known hazardous materials exist in the project area [24] and construction is not anticipated under the Proposed Project.</p>	☐	☒
<p>If the project involves land acquisition, is there a potential for this land to contain hazardous materials or contaminants?</p> <p>No known hazardous materials or contaminants exist in the project area [24]. On March 13, 2020 and June 17, 2020, a Phase I Environmental Site Assessment of the project area was conducted (reports available upon request). The Phase I ESA revealed no evidence of recognized environmental conditions in connection with the project area. Therefore, there is low potential for this land acquisition to contain hazardous materials or contaminants.</p>	☐	☒
<p>Will the proposed project produce hazardous and/or solid waste either during construction or after? If yes, how will the additional waste be handled?</p> <p>Construction activity is not anticipated as a result of the Proposed Project. Implementation of the Proposed Project would not produce hazardous or solid waste.</p>	☐	☒

5-2 .b (14) Public Involvement

	YES	NO
<p>Was there any public notification or involvement? If yes, provide documentation.</p> <p>No public notification or involvement has been undertaken because the Proposed Project would not involve any special purpose law requiring public involvement. Additionally, the Proposed Project would not have any significant environmental</p>	☐	☒

impacts in the project area or in the surrounding community.		
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5-2 .b (15) Indirect/Secondary/Induced Impacts

	YES	NO
<p>Will the project result in indirect/secondary/induced impacts?</p> <p>Construction activity is not anticipated as a result of the Proposed Project. The Proposed Project is not expected to cause a significant secondary (induced) impact to the surrounding area.</p>	☐	☒
<p>When considered with other past, present, and reasonably foreseeable future projects, on or off airport property and regardless of funding source, would the proposed project result in a significant cumulative impact?</p> <p>The Proposed Project has very little potential to contribute to potentially significant cumulative impacts. Construction activity is not anticipated as a result of the Proposed Project. Therefore, no significant cumulative impacts are anticipated.</p>	☐	☒

Permits

List any permits required for the proposed project that have not been previously discussed. Provide details on the status of permits.

The Airport Sponsor has a TPDES permit, which it would modify to include the Proposed Project, if applicable. The Airport Sponsor would also submit all relevant state environmental applications for license, permits, and certificates associated with the Proposed Project, where applicable.

Environmental Commitments

List all measures and commitments made to avoid, minimize, mitigate, and compensate for impacts on the environment, which are needed for this project to qualify for a CATEx.

The Proposed Project is on the list of categorically excluded actions in FAA Order 1050.1F, Paragraph 5-6.4(b). The Proposed Project would not cause significant environmental effects to the resources protected under special purpose laws. Additionally, development is not proposed under the Proposed Project. Therefore, the Airport Sponsor has not proposed environmental commitments relating to the Proposed Project.

Preparer Information

Point of Contact: Julie Barrow		
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Phone: 303-409-7940	Email Address: Julie.Barrow@rsandh.com	

Signature: Julie BarrowDate: July 13, 2020**Airport Sponsor Information and Certification** (may not be delegated to consultant)

Provide contact information for the designated sponsor point of contact and any other individuals requiring notification of the FAA decision.

Point of Contact: Bryan Wren, Assistant Director of Aviation		
Address: 3002 Heritage Way, 3rd Floor,		
City: Harlingen	State: TX	Zip Code: 78550
Phone Number: 956-430-8600	Email Address: bryan@flythevalley.com	
Additional Name(s):	Additional Email Address(es):	

I certify that the information I have provided above is, to the best of my knowledge, correct. I also recognize and agree that no construction activity, including but not limited to site preparation, demolition, or land disturbance, shall proceed for the above proposed project(s) until FAA issues a final environmental decision for the proposed project(s) and until compliance with all other applicable FAA approval actions (e.g., ALP approval, airspace approval, grant approval) has occurred.

Signature: Bryan Wren : by cpDate: July 14, 2020

FAA Decision

Having reviewed the above information, it is the FAA's decision that the proposed project (s) or development warrants environmental processing as indicated below.

Name of Airport, LOC ID, and location:

Project Title:

☒ No further NEPA review required. Project is categorically excluded per (cite applicable 1050.1.F CATEX that applies: _____)

☐..An Environmental Assessment (EA) is required.

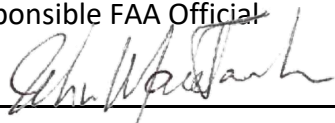
☐..An Environmental Impact Statement (EIS) is required.

☐..The following additional documentation is necessary for FAA to perform a complete environmental evaluation of the proposed project.

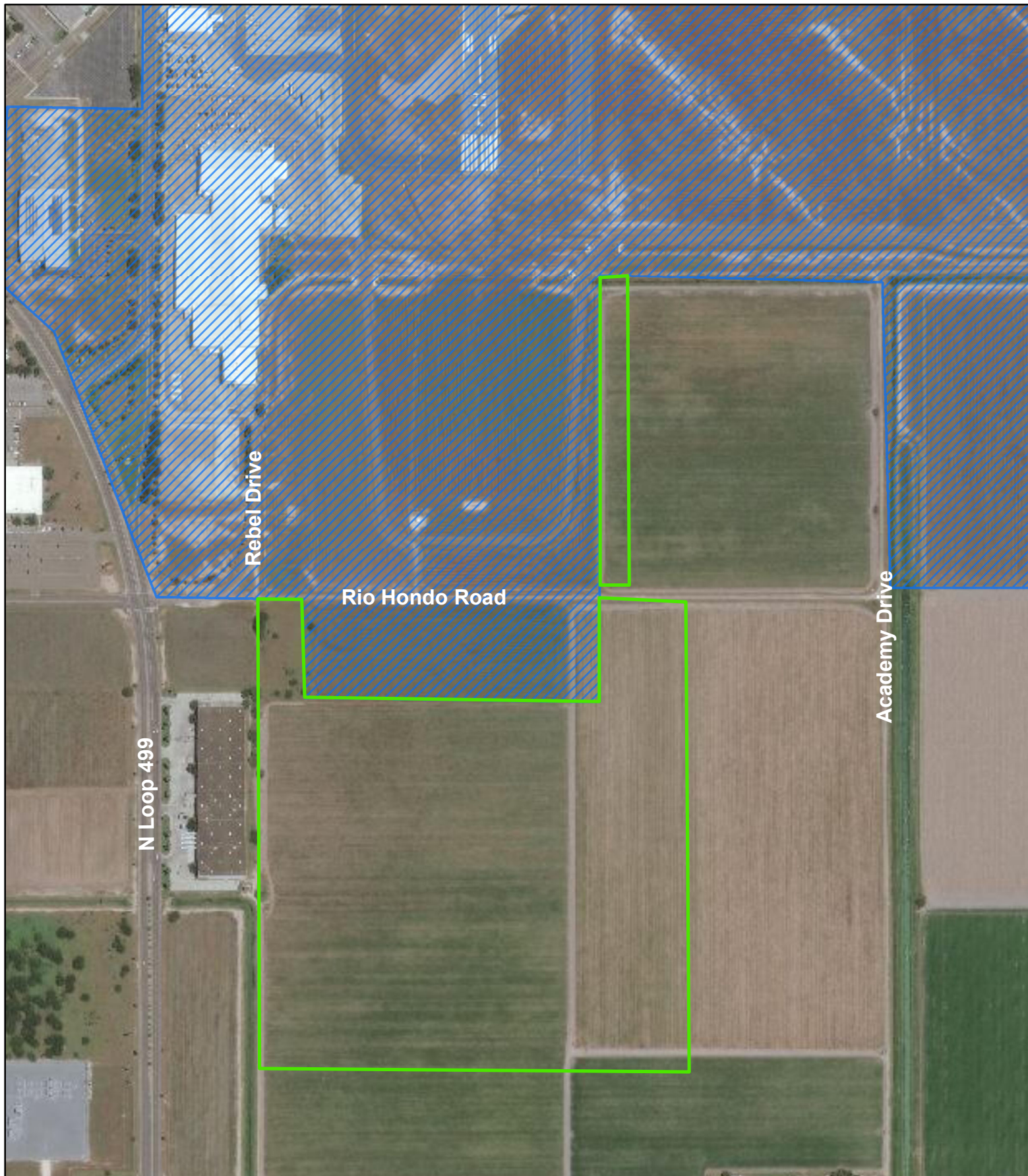
Name: John MacFarlane
Responsible FAA Official

Title: EPS, TX ADO

Signature: _____



Date: 7/14/2020



Sources: Esri, 2020; RS&H, 2020.

0 750 1,500 Feet



Legend

-  Airport Property
-  Proposed Project and Project Area

Figure 1
Proposed Project and Project Area

References

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APPENDIX A

Cultural Resources

This Correspondence sent to crm@amaterra.com on 07-13-2020

Re: Project Review under Section 106 of the National Historic Preservation Act and/or the Antiquities Code of Texas

THC Tracking #202014909

Valley Int'l Airport Land Preservation Acquisition Project
3002 Heritage Way
Harlingen, TX 78550

Dear AmaTerra Cultural Resources Team:

Thank you for your submittal regarding the above-referenced project. This response represents the comments of the State Historic Preservation Officer, the Executive Director of the Texas Historical Commission (THC), pursuant to review under Section 106 of the National Historic Preservation Act and the Antiquities Code of Texas.

The review staff led by Emily Dylla and Justin Kockritz has completed its review and has made the following determinations based on the information submitted for review:

Above-Ground Resources

- THC/SHPO concurs with information provided.
- No historic properties are present or affected by the project as proposed. However, if historic properties are discovered or unanticipated effects on historic properties are found, work should cease in the immediate area; work can continue where no historic properties are present. Please contact the THC's History Programs Division at 512-463-5853 to consult on further actions that may be necessary to protect historic properties.

Archeology Comments

- THC/SHPO concurs with information provided.

We have the following comments: The THC concurs future ground-disturbing activities on this property should be coordinated with this agency, given the Holocene alluvium underlying this area.

We look forward to further consultation with your office and hope to maintain a partnership that will foster effective historic preservation. Thank you for your cooperation in this review process, and for your efforts to preserve the irreplaceable heritage of Texas. If you have any questions concerning our review or if we can be of further assistance, please email the following reviewers: emily.dylla@thc.texas.gov, justin.kockritz@thc.texas.gov

This response has been sent through the electronic THC review and compliance system (eTRAC). Submitting your project via eTRAC eliminates mailing delays and allows you to check the status of the review, receive an electronic response, and generate reports on your submissions. For more information, visit

<http://thc.texas.gov/etrac-system>.

Sincerely,

A handwritten signature in black ink, appearing to read "William A. Martin". The signature is fluid and cursive, with a long horizontal stroke at the end.

For Mark Wolfe, State Historic Preservation Officer
Executive Director, Texas Historical Commission

Please do not respond to this email.

June 26, 2020

Cherise Bell
Sr. Architectural Historian

Garrett Wheaton
Project Archeologist

Mark Wolfe
State Historic Preservation Officer
Texas Historical Commission
11511 Colorado Avenue
PO Box 12276
Austin, TX 78711-2276

RE: Antiquities Code of Texas and Section 106 of the National Historic Preservation Act Coordination Letter for the proposed Valley International Airport Land Preservation Acquisition, Cameron County, Texas.

Dear Mr. Wolfe,

This letter is intended to inform the Texas Historical Commission (THC) of the City of Harlingen's proposed land acquisition for the Valley International Airport in Cameron County, Texas. The proposed land acquisition (proposed project) is for the purposes of land preservation and land use compatibility. The intention is to purchase approximately 50 acres to protect areas adjacent to the airport from development that might affect the airport's long-range growth needs. No immediate work is planned for the property. The land is located between Rio Hondo Road and East Grimes Road, just to the east of North Ed Carey Drive (**Figures 1 and 2**).

Most of the northern portion of the project area overlaps with the Airport's proposed runway extension project, which was previously coordinated with the THC in a letter by Freese and Nichols, Inc. on March 15, 2019.

As the City of Harlingen is a political subdivision of the State of Texas, it is subject to the Antiquities Code of Texas (ACT). Additionally, the airport sponsor is seeking federal funding through the Federal Aviation Administration (FAA) Airport Improvement Program. The FAA must also consider the proposed project's broader environmental effects through a National Environmental Policy Act Categorical Exclusion (NEPA-CE) that is being generated. As such, the project is also subject to Section 106 of the National Historic Preservation Act (Section 106).

AmaTerra Environmental, Inc., has identified cultural resource constraints and, with this letter, is coordinating with your office with regards for the need of field investigations prior to project implementation. The following sections provide a brief background into the project setting, identifies known cultural resources within the project vicinity, assesses the potential for National Register of Historic Places (NRHP) eligible historic properties and archeological resources within the project area, and provides recommendations for regulatory compliance based upon the information available.

Physical Setting

The project area is in the northeastern quadrant of the City of Harlingen, east of Loop 499, also known as

11842 Rim Rock Trail
Austin TX 78737

Environmental Services

Tel: (512) 329-0031
Fax: (512) 329-0012

North Ed Carey Drive. Harlingen is in western Cameron County. Land use currently consists of the Valley International Airport to the north, commercial and residential areas to the west of Loop 499, and agricultural fields within and adjacent to the project area.

The project area is an upland underlain by Holocene-aged alluvial deposits associated with the Rio Grande (BEG 2018). Two soil series define the project area: the southern section of the project area is defined by Mercedes clay (0-1 percent slopes) which derives from calcareous clayey alluvium (**Figure 3**). The northern portion of the project area consists of Raymondville clay loam, which is derived from calcareous clayey alluvium (USDA-NRCS 2020). The nearest reliable water source is over two kilometers to the south.

Texas Historical Commission Atlas Review

Background research for this project consisted of an online search through the THC's Archeological Sites Atlas (Atlas) and a review of historic period maps and aerial photographs. Research focused on the identification of archeological sites, Recorded Texas Historic Landmarks (RTHLs), sites listed on the National Register of Historic Places (NRHP), sites listed as State Antiquities Landmarks (SALs), cemeteries, and historical markers within one kilometer (0.62 mile) of the proposed project location (**Figure 4**). The search revealed no previous surveys, recorded archeological sites, or NHRP properties within one kilometer of the project area. Three Texas Historical Markers are located between 700 meters and a kilometer northwest of the project area. These markers include Harlingen Army Airfield and Harlingen Air Force Base (No. 12954), the Lon C. Hill Home (No. 3113; RTHL), and the Harlingen Hospital (No. 2382; RTHL). None of the markers will be impacted by the proposed project, nor are any potential resources they commemorate.

Historic Aerials and Maps

An aerial image from 1947 shows agricultural disturbances throughout the project area (**Figure 5**), indicating that the project area has been utilized for agricultural purposes for at least 70 years. It is unlikely that any shallow intact archeological deposits exist within the area. The 1932 and 1959 Harlingen USGS 7.5-minute series topographic maps (**Figures 6 and 7**) depict historic structures clustered at the corner of Grimes Road and a canal southeast of the project area, however, review of recent aerial photographs demonstrated that the buildings were demolished and/or developed over. However, the canal system is still extant and discussed further in relation to known above-ground historic resources (see below). No structures were identified within the project area during the review of historic maps and aerial photographs.

Regulatory Recommendations for Archeology

The overall potential for shallow intact archeological deposits within the project area is low due to disturbances by agricultural practices over the years. As the area is within the sand sheet, there is potential for intact, deeply buried prehistoric archeological deposits within the project area. Historic images show no evidence of historic structures within the project location, and no known archeological resources are present within the project area. Since the proposed project plan is limited to land acquisition and preservation and protection from future development, the current proposed work should not impact intact and/or NRHP eligible archaeological deposits potentially deeply buried in the project area. At this time, no further archeological work is recommended. Though none are proposed or anticipated as of this writing, any future groundbreaking activities should be coordinated on a case by case basis with the THC.

Regulatory Recommendations for Historic Resources

The desktop survey identified two historic-age resources within the project APE. The APE for above ground historic resources is defined as the parcels immediately adjacent to the project area.

1. A historic-age bridge on Loop 499 (**Figure 8**), NBI 21310113702077, was constructed in 1976 and reconstructed in 2008. The Texas Department of Transportation's (TxDOT's) historic-age bridge database lists this resource as not eligible for the NRHP. Based on the common design and method of construction, and the loss of integrity of design, material and workmanship caused by the

reconstruction, the bridge is recommended *not eligible* for NRHP listing.

2. Hidalgo Irrigation District Cameron County 1 (HIDCC1) ditches and pipelines are located within the APE. Number 4 Canal is outside of the APE. Harlingen Irrigation District was established in 1914 and currently irrigates about 38,000 acres. TxDOT's "*A Field Guide to Irrigation in the Lower Rio Grande Valley*" states determination of NRHP eligibility should be based on the entire property or resource rather than its individual parts" (Knight 2009:5). Although determination of the irrigation features within the APE cannot be determined at the desktop review level, comparative examples of irrigation systems in the Lower Rio Grande Valley exist. The Louisiana-Rio Grande Canal Company Irrigation System is a NRHP listed irrigation system in Hidalgo County. In addition, Cameron County Irrigation District 2 was determined eligible for NRHP designation under TxDOT project CSJ 0921-06-217. These two irrigation systems provide examples of intact systems. Because the proposed project is to purchase land to *prevent* development, the proposed project would not impact the function of the irrigation components, the proposed project is anticipated to not have an effect. Any future development of this parcel may require evaluation of the irrigation system for NRHP eligibility.

Through this letter, AmaTerra requests the THC's concurrence that the proposed Valley International Airport Land Preservation Acquisition project should proceed with no adverse effect to Historic Properties or SALs anticipated and no further cultural resource coordination or fieldwork required at this time. Future development and/or construction plans within the proposed project will require additional coordination with the THC.

Thank you for your time in reviewing this submittal. If you have any questions or wish to discuss this further, please feel free to contact me at 512-329-0031 or mmiller@amaterra.com.

Sincerely,



Cherise Bell
Sr. Architectural Historian



Garrett Wheaton
Project Archeologist

Cc: John MacFarlane, Federal Aviation Administration; Bryan Wren, Valley International Airport; Julie Barrow, RS&H

References Cited

Bureau of Economic Geology (BEG)

2018 Geologic Atlas of Texas, McAllen-Brownsville Sheet. Electronic document, <http://www.twdb.state.tx.us/groundwater/aquifer/gat/>, accessed May 2020.

Knight, Lila

2009 Texas Department of Transportation, Environmental Affairs Division, Historical Studies Branch. "A Field Guide to Irrigation in the Lower Rio Grande Valley." Historical Studies Report No. 2009-01.

National Park Service

2019 National Register Bulletin: How to Apply the National Register Criteria for Evaluation. Washington, D.C., https://www.nps.gov/nr/publications/bulletins/nrb15/nrb15_8.htm

Texas Historical Commission (THC)

2019 Texas Archeological Sites Atlas Online. Electronic document, <http://nueces.thc.state.tx.us/>, accessed May 2020.

Valley International Airport (VIA)

2020 History of VIA. Established 1941. Website <http://www.flythevalley.com/history/>, accessed on May 2020

United States Department of Agriculture, Natural Resources Conservation Service (USDA-NRCS)

2020 Cameron County, Texas – Web Soil Survey. Electronic document, <http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.asp>, accessed on May 2020.

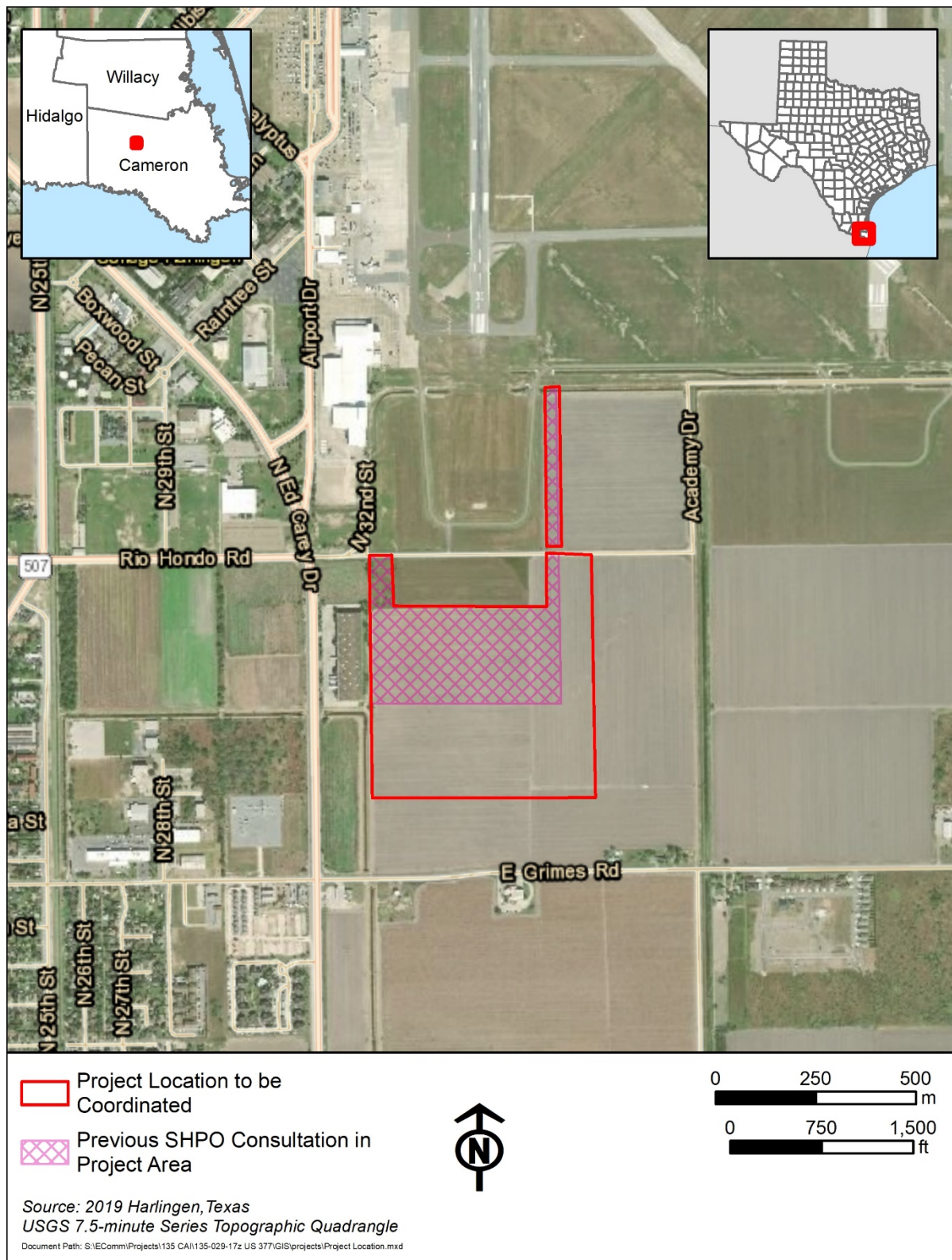


Figure 1. Project area on a recent aerial image.

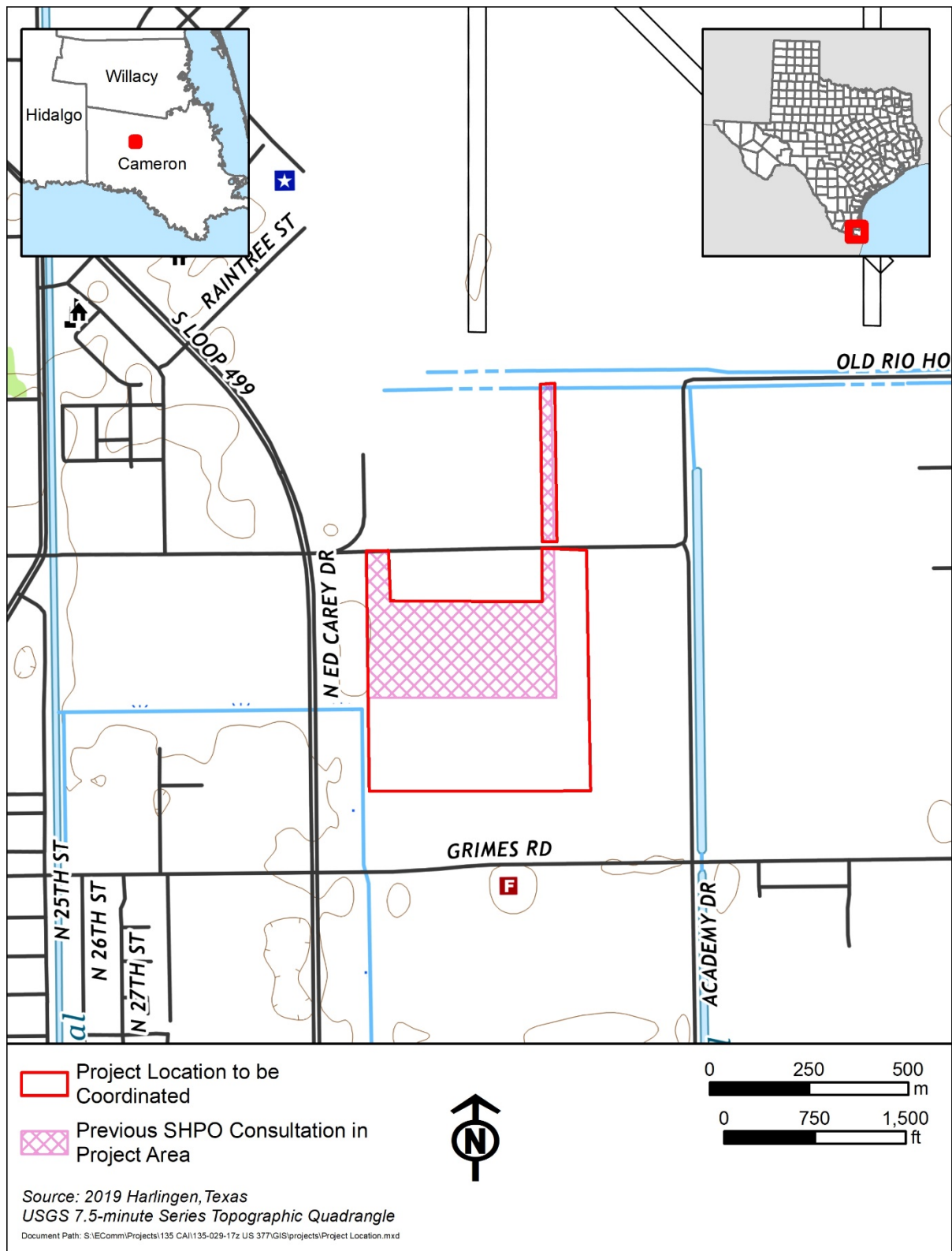


Figure 2. Project area on the 2019 Harlingen, Texas USGS 7.5-minute Series Topographic Quadrangle.

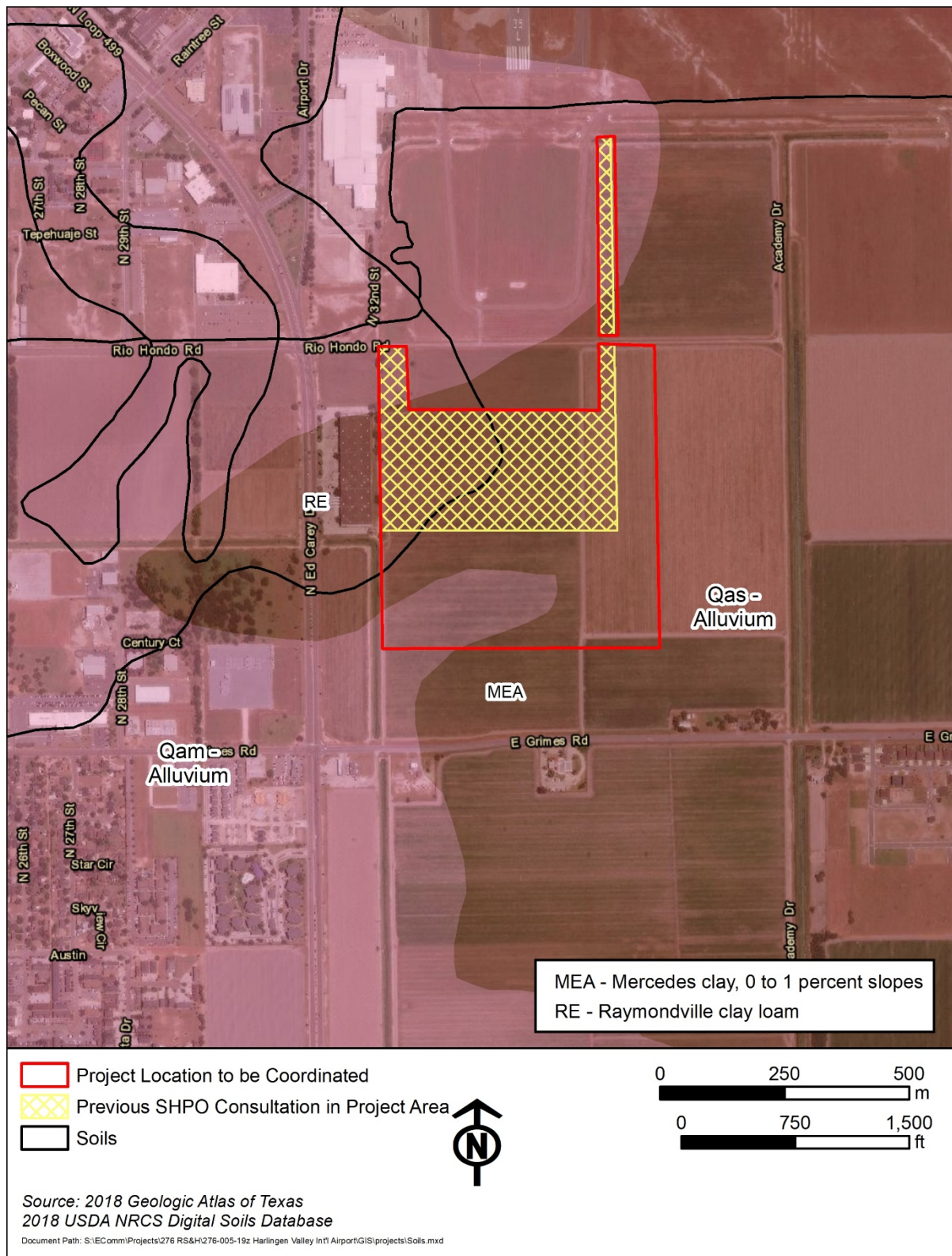


Figure 3. Soils and geological unit within the project area.

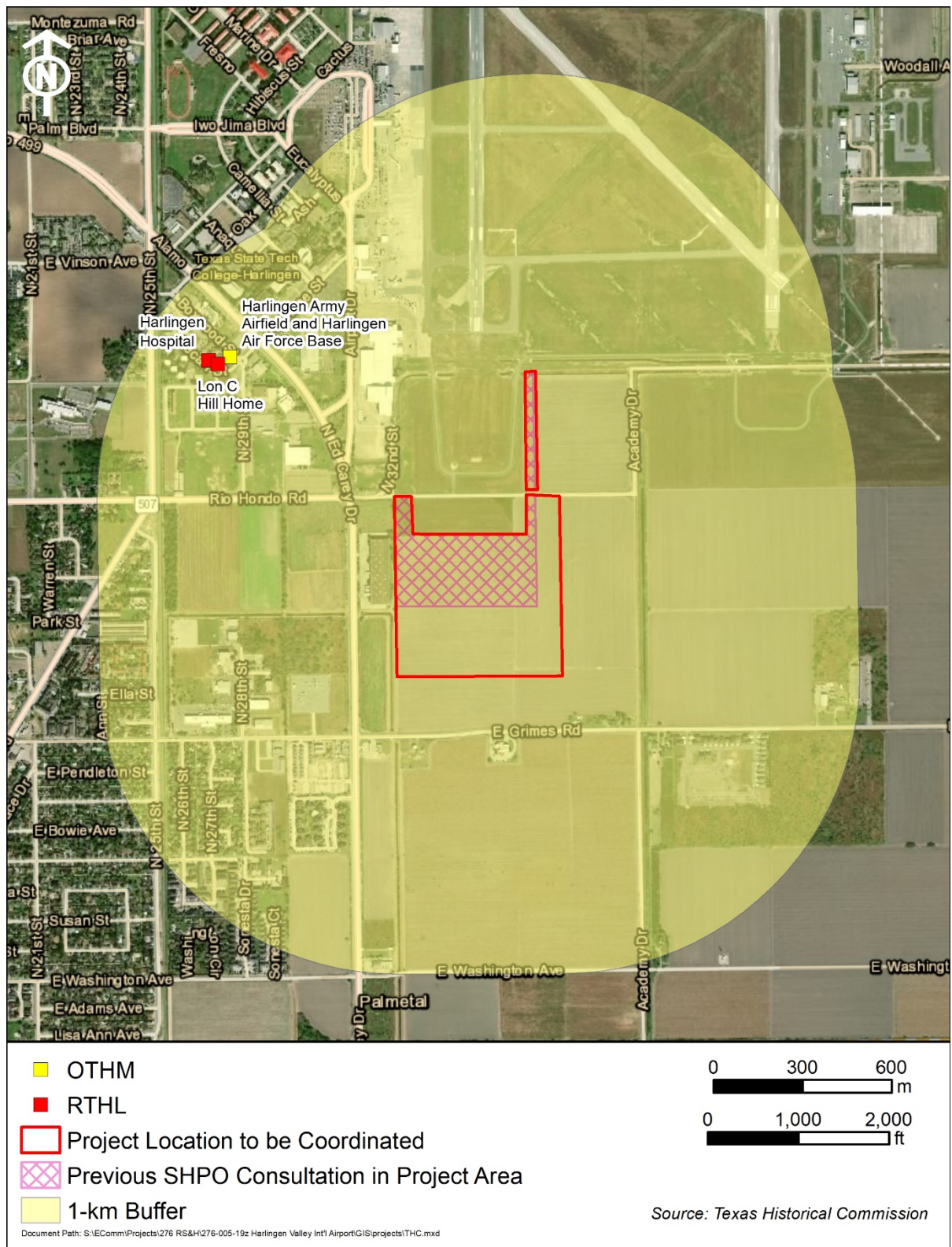


Figure 4. Map depicting known archeological sites, surveys, and cultural resources within a kilometer of the project area.

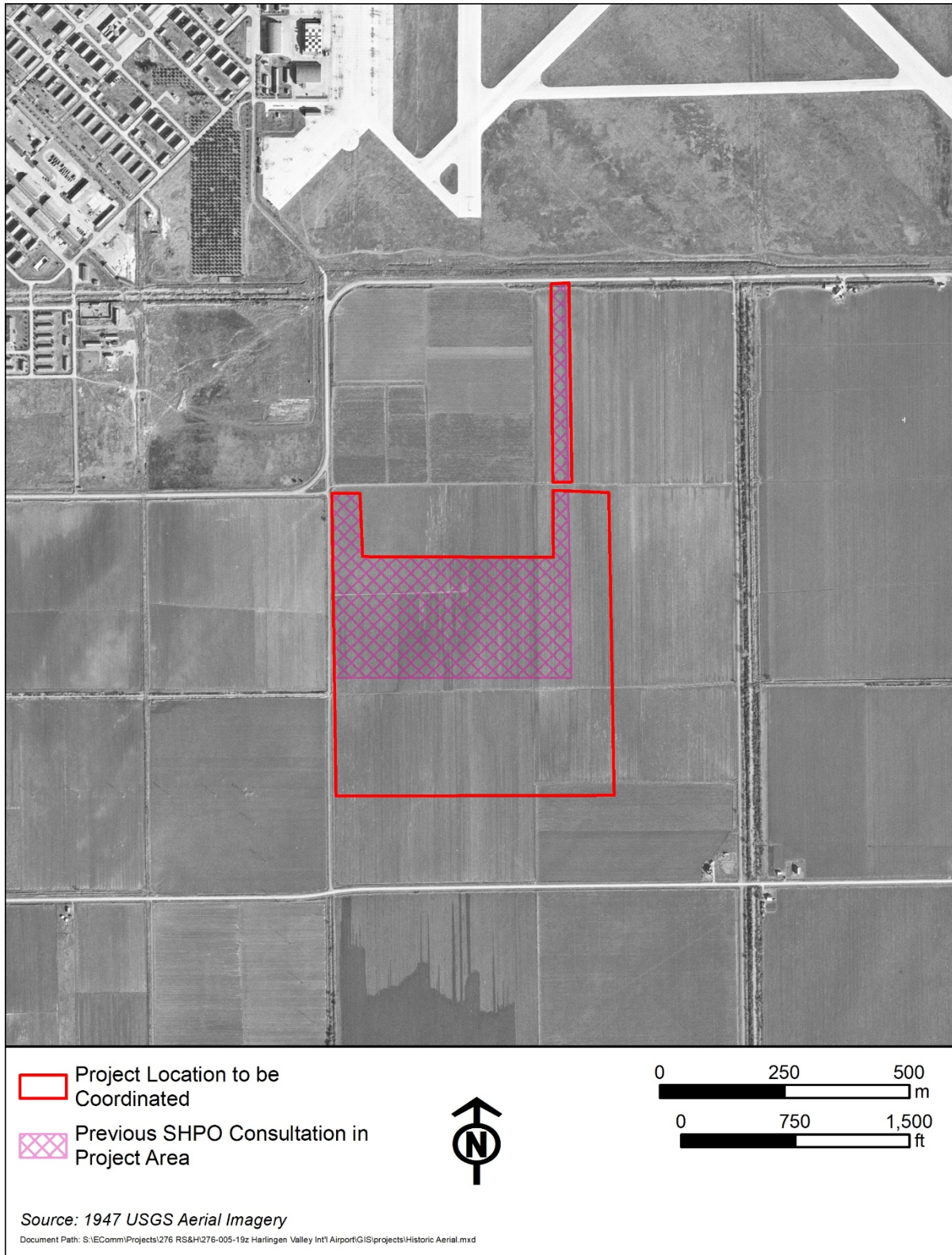


Figure 5. Project area overlain on a 1947 historic aerial image.

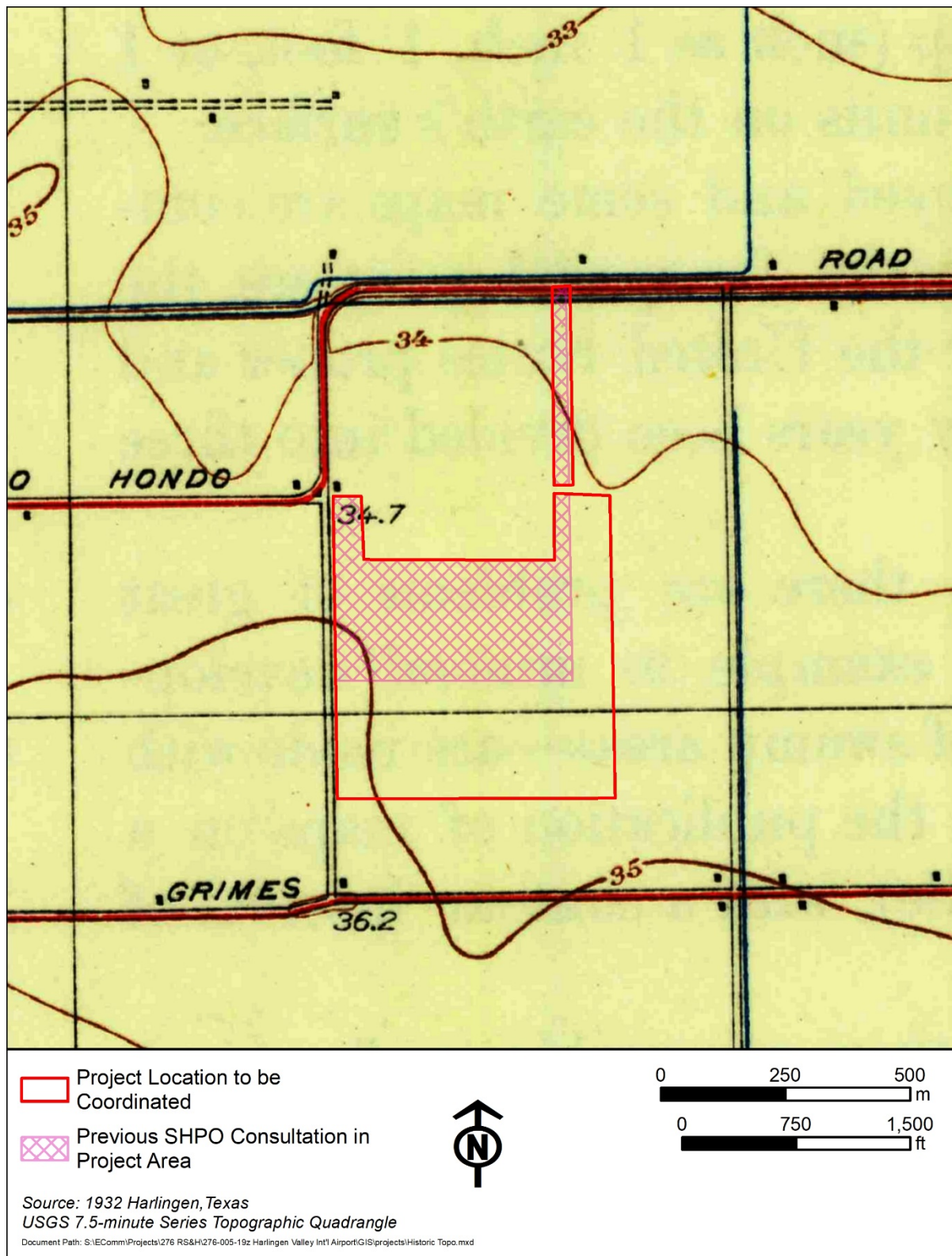


Figure 6. Project area on the 1932 Harlingen, Texas USGS 7.5-minute Series Topographic Quadrangle.

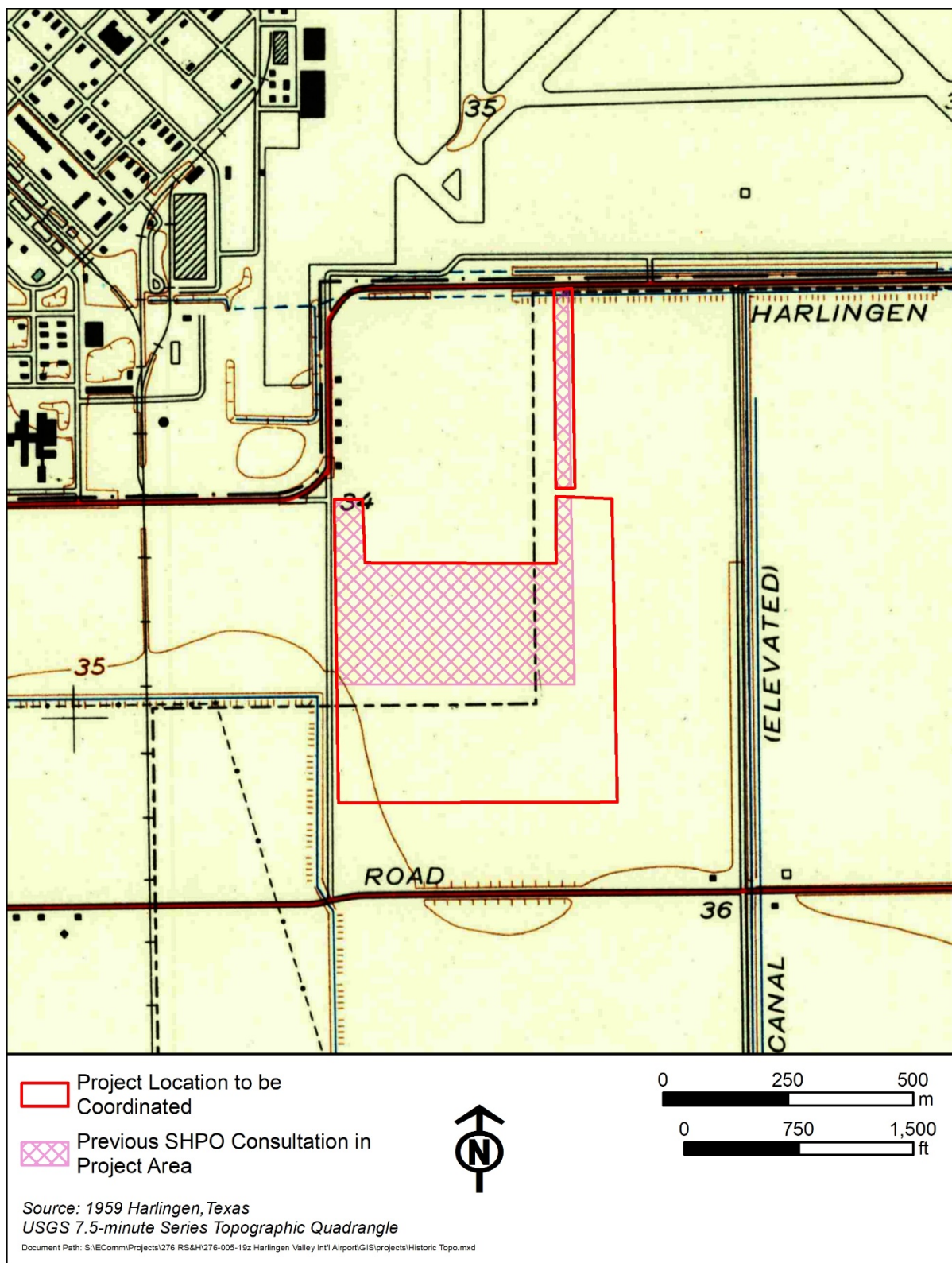


Figure 7. Project area on the 1959 Harlingen, Texas USGS 7.5-minute Series Topographic Quadrangle.

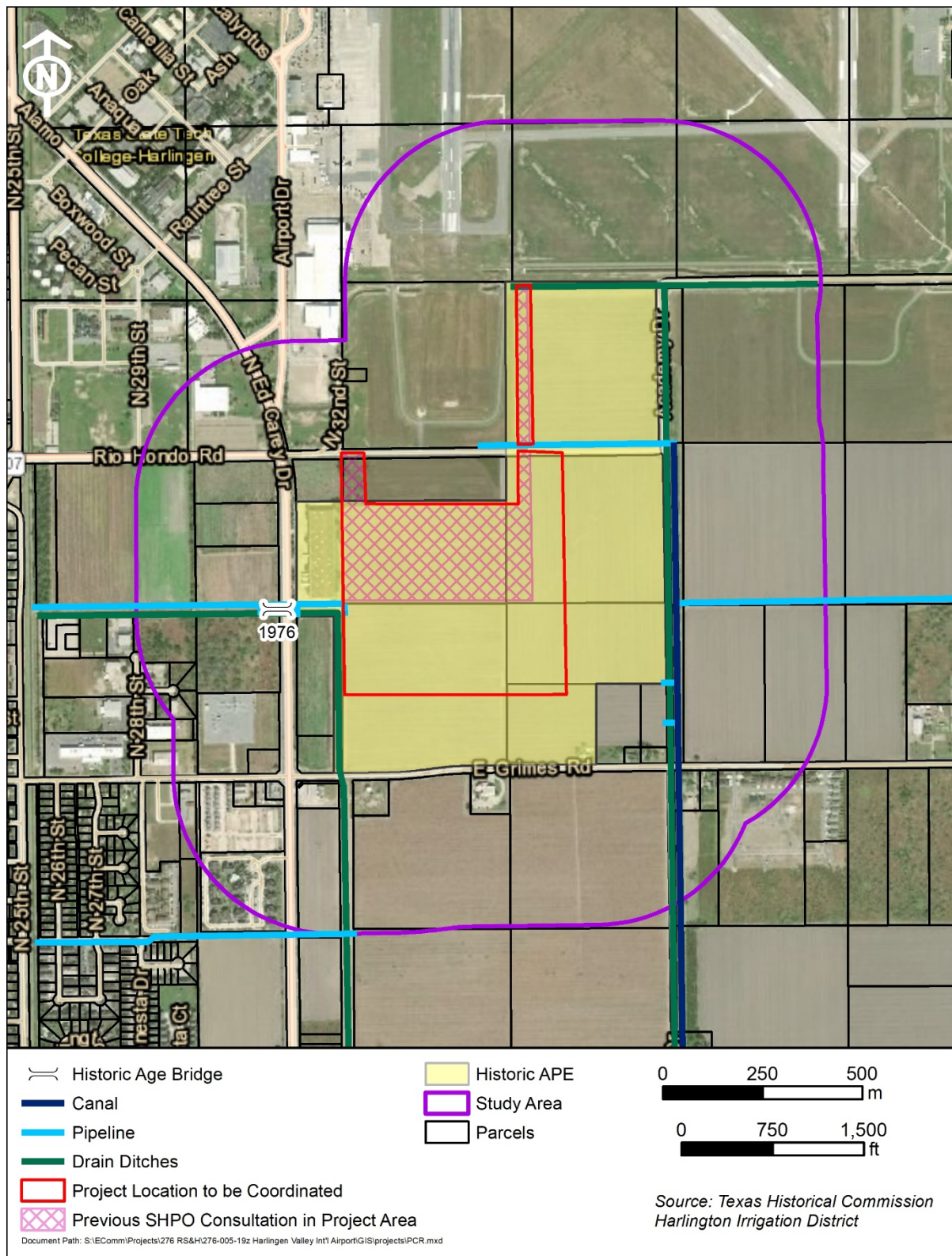


Figure 8. Map depicting historic resources within the project area.

Kara Marks

From: Brian King
Sent: Wednesday, March 27, 2019 1:50 PM
To: Kara Marks; Dan Gise
Subject: FW: Project Review: 201905985

Read below.

Brian King, GISP, RPA, CFM
Business Technology
GIS Analyst V / Archeologist

Freese and Nichols, Inc.
10431 Morado Circle
Suite 300
Austin, Texas 78759
W: 512-617-3175
F: 512-617-3101

www.freese.com

From: noreply@thc.state.tx.us <noreply@thc.state.tx.us>
Sent: Wednesday, March 27, 2019 1:48 PM
To: Brian King <Brian.King@freese.com>; reviews@thc.state.tx.us
Subject: Project Review: 201905985



TEXAS HISTORICAL COMMISSION
real places telling real stories

Re: Project Review under Section 106 of the National Historic Preservation Act and/or the Antiquities Code of Texas
201905985

Valley International Airport Project Number: VAL18687
Harlingen, Texas
Harlingen, TX 78550

Dear BRIAN KING:

Thank you for your submittal regarding the above-referenced project. This response represents the comments of the State Historic Preservation Officer, the Executive Director of the Texas Historical Commission (THC), pursuant to review under Section 106 of the National Historic Preservation Act and the Antiquities Code of Texas.

The review staff led by Casey Hanson and Justin Kockritz has completed its review and has made the following determinations based on the information submitted for review:

Above-Ground Resources

- THC/SHPO concurs with information provided .

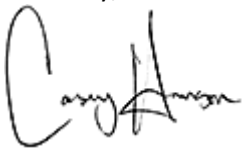
- No historic properties are present or affected by the project as proposed. However, if historic properties are discovered or unanticipated effects on historic properties are found, work should cease in the immediate area; work can continue where no historic properties are present. Please contact the THC's History Programs Division at 512-463-5853 to consult on further actions that may be necessary to protect historic properties.

Archeology Comments

- No historic properties present or affected. However, if buried cultural materials are encountered during construction or disturbance activities, work should cease in the immediate area; work can continue where no cultural materials are present. Please contact the THC's Archeology Division at 512-463-6096 to consult on further actions that may be necessary to protect the cultural remains.
- THC/SHPO concurs with information provided

We look forward to further consultation with your office and hope to maintain a partnership that will foster effective historic preservation. Thank you for your cooperation in this review process, and for your efforts to preserve the irreplaceable heritage of Texas. If you have any questions concerning our review or if we can be of further assistance, please email the following reviewers: casey.hanson@thc.texas.gov, justin.kockritz@thc.texas.gov.

Sincerely,

A handwritten signature in cursive script, appearing to read "Casey Hanson".

For Mark Wolfe, State Historic Preservation Officer
Executive Director, Texas Historical Commission

Please do not respond to this email.

March 15, 2019

Mark Wolfe
State Historic Preservation Officer
Texas Historical Commission
108 West 16th Street
Austin, TX 78701

RE: Runway 35 L Extension, Valley International Airport, Cameron County, Texas
FNI Project Number VAL18687

Dear Mr. Wolfe:

Introduction:

Freese and Nichols, Inc. (FNI), on behalf of the City of Harlingen (City), requests Antiquities Code of Texas concurrence from the Texas Historical Commission (THC) for the above referenced project in Cameron County, Texas. Valley International Airport is proposing to extend Runway 35L approximately 1,100 feet to the south, including the relocation of an existing access road, and drainage ditch (**Figures 1 and 2**). A portion of the ditch will be culverted for safety. **Figure 1** is a USGS topographic map depicting the Area of Potential Effects (APE). **Figure 2** depicts a large image of the proposed runway extension layout with ancillary facilities. The project area is located on the south side of runway 35L of Valley International Airport in Cameron County, Texas. The proposed APE area is located in an area that has been previously disturbed from past airport construction and agricultural activities.

Federal Involvement:

The Federal Aviation Administration (FAA) will review the proposed action and an Environmental Assessment is being prepared in accordance with FAA Guidelines as required under the National Environmental Policy Act (NEPA).

State Involvement:

The proposed project could affect a cumulative area greater than five acres or disturb more than 5,000 cubic yards. In accordance with Section 191.0525 (d) of the Antiquities Code of Texas, Valley International Airport is notifying the THC of the proposed project.

Area of Potential Effects

The APE for archeological resources is defined as the area where construction activities will cause ground disturbance. The APE is defined in three dimensions, including the project limits, width, acreage, and depth of impacts. The APE encompasses the entirety of the project area to the maximum area of construction. The APE measures approximately between 1445-feet by 3030-feet for the main area, totaling 94.6 acres. The main portion of the project is extending the runway to the south. The vertical depth of impact is anticipated to be between 12 to 18-inches in depth. The undeveloped portion of the APE is in previous farmland that has been previously disturbed from agricultural activities.

Soils

The online United States Department of Agriculture Web Soil Survey (USDA, 2018) database was utilized to create a custom soil report for the APE (**Attachment A: Custom Soil Resource Report for Cameron County, Texas**). The Web Soil Survey identifies the Mercedes clay, 0 to 1 percent slopes (72.4% / 68.5 acres), Mercedes-Urban land complex (7.6% / 7.2 acres), Raymondville clay loam (19.4% / 18.3 acres), and Raymondville-Urban land complex (0.6% / 0.6 acres) in the APE area (**Figure 3**).

Texas Archeological Sites Atlas Review

The archeological records available on the THC Texas Archeological Sites Atlas (TASA) were reviewed on March 9, 2018 to determine if any previously recorded archeological sites or historic properties listed in the National Register of Historic Places (NRHP), State Antiquities Landmarks (SAL), and Recorded Texas Historic Landmarks (RTHL) are located within or adjacent to the proposed APE within a one-kilometer radius (Texas Historical Commission (THC) 2018). The records review revealed no historic standing structures or historic properties listed in the NRHP, SAL's, historic cemeteries or RTHL's within the APE. The TASA review revealed three historic markers (No. 12954 Harlingen Army Airfield and Harlingen Air Force Base, No. 3113 Lon C. Hill, Home, and No. 2382 Harlingen Hospital) outside of the proposed APE but in the 1-kilometer buffer area, west of the project area. The APE has been previously disturbed by airport and agricultural activities.

Historical USGS Topographic Map Review

USGS (2018) topographic maps were obtained for the project area. The project area is depicted on the 1932, 1956, 1992 Harlingen historic topographic maps. These maps were reviewed concurrently with other historical land use information on the site. The topographic maps show no potential historical buildings or structures found within or near the proposed APE during the historical topographic map records review.

Conclusion

The proposed APE is situated in an area that has been previously disturbed from past airport construction and agricultural activities (**Figures 1 and 2**). The TASA records review revealed no previously recorded archeological sites within the proposed APE and one-kilometer records search. The proposed APE area is considered to have low integrity to find buried cultural material. Based on the literature and records review, no significant historic properties should be affected by the construction activities within the proposed APE area. Please review the proposed project to identify issues relative to any cultural resources that should be considered by the City of Harlingen, Cameron County in the development of this project. If possible, we would like to receive your comments within 30 days. If you have

any questions or need additional information regarding the archeological records review, please feel free to contact me at (512) 617-3175 or bck@freese.com.

Sincerely,



Brian King, RPA, GISP, CFM
Archeologist / GIS Analyst V

Attachments

Figure 1: USGS Topographic Map

Figure 2: APE Map

Figure 3: Soils Map

Figure 4: TASA Atlas Review Map

Attachment A: City of Harlingen, Cameron County Soils Report

References

Texas Historical Commission (THC) 2018 Texas Archaeological Site Atlas restricted database. Available at <http://nueces.thc.state.tx.us/>. Accessed March 9, 2018.

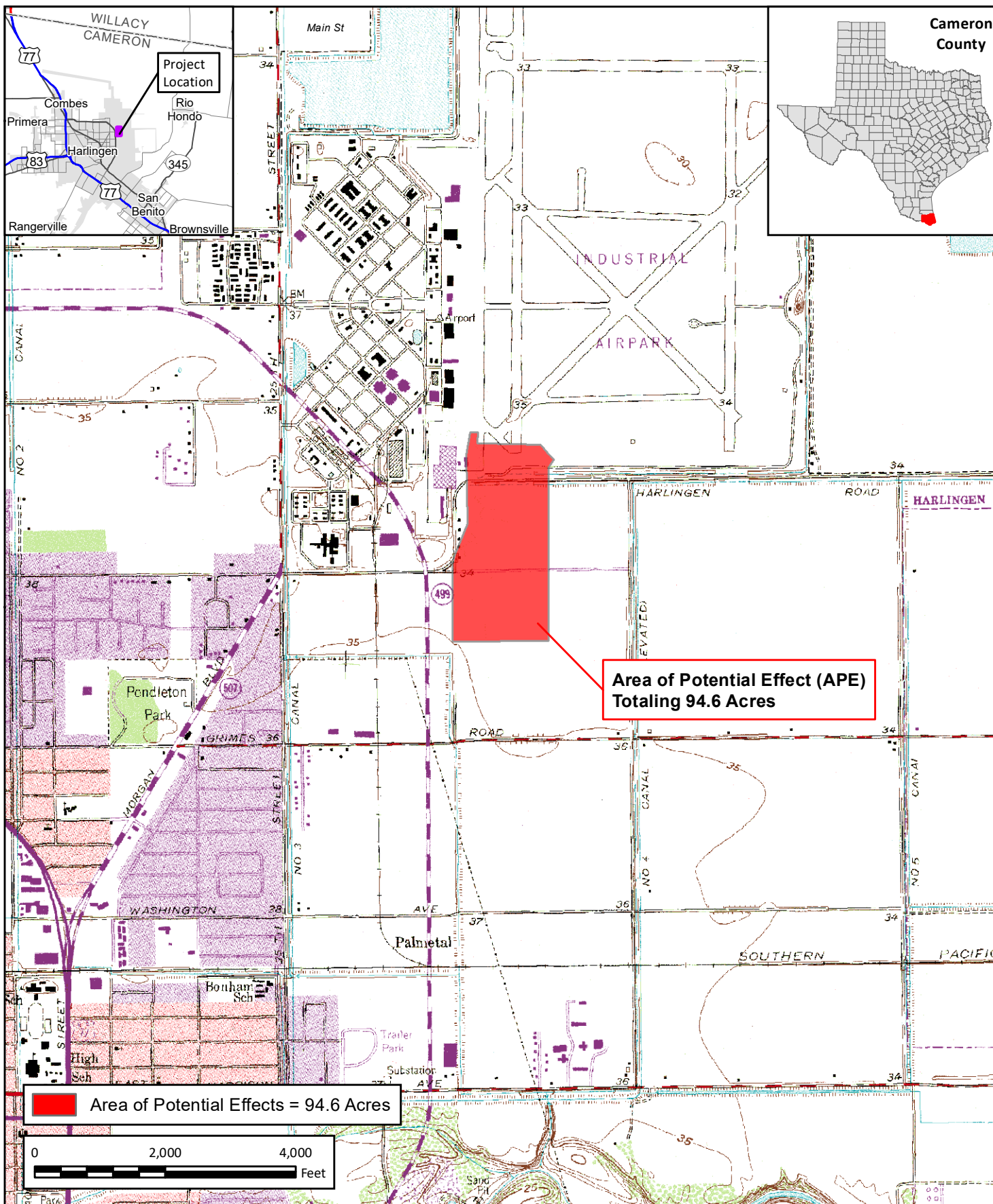
U.S. Department of Agriculture, Soil Conservation Service (USDA). Web Soil Survey – Soil Survey of Cameron County, Texas. Data Obtained March 2019.

U.S. Geological Survey (USGS) 2018 USGS Historical Topographic Map Explorer. Available at <http://historicalmaps.arcgis.com/usgs/>. Accessed March 2019.

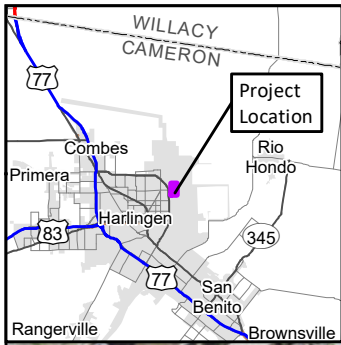
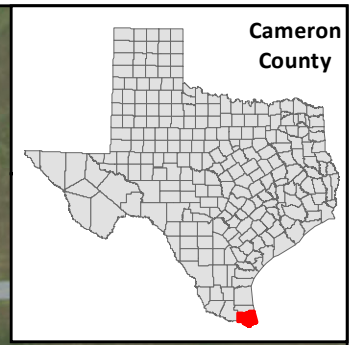
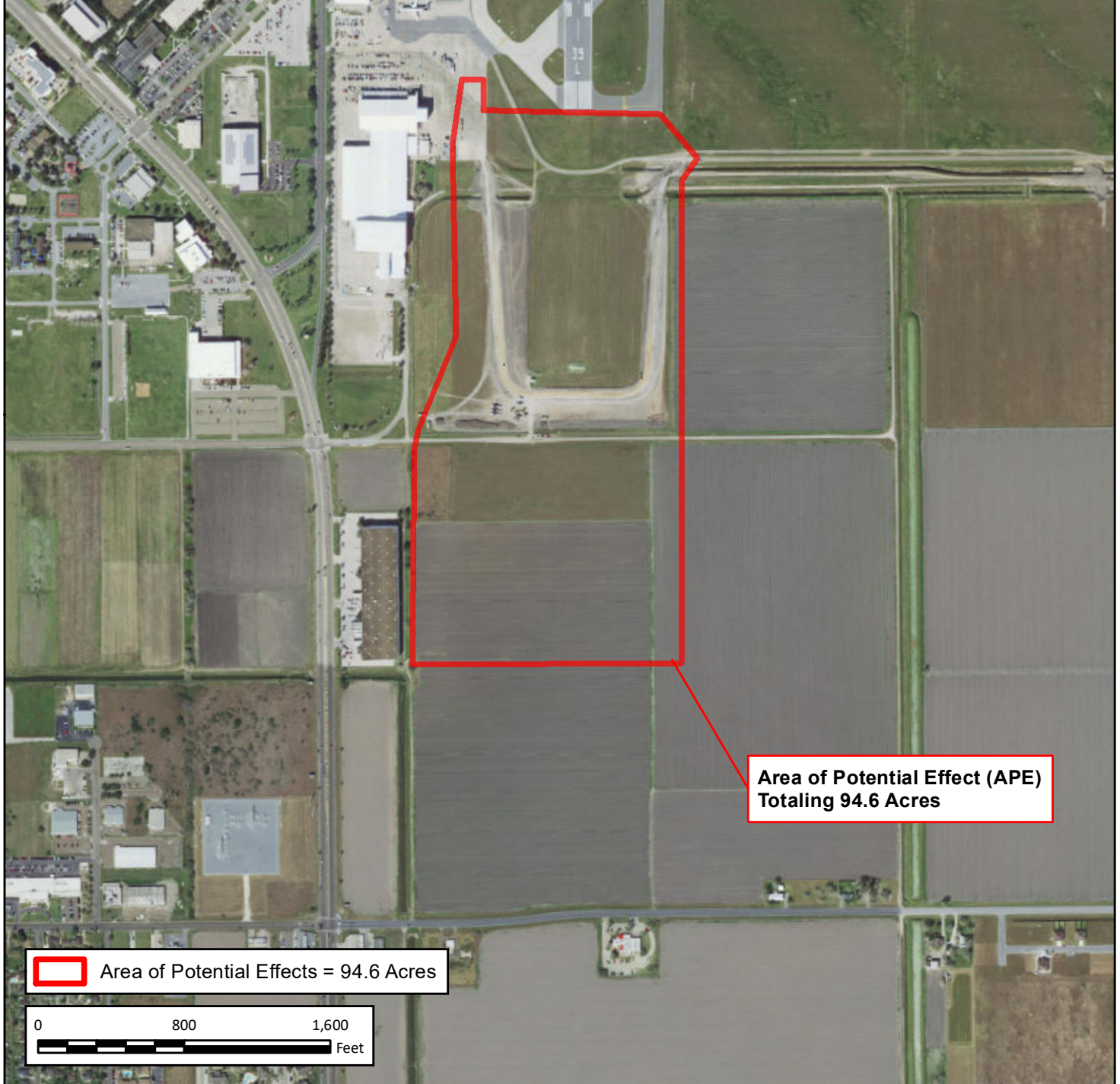
U.S. Geologic Survey (USGS). 7.5' Series Topographic Map – Harlingen, Texas Quadrangle. 1932.

U.S. Geologic Survey (USGS). 7.5' Series Topographic Map – Harlingen, Texas Quadrangle. 1956.

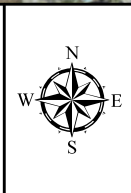
U.S. Geologic Survey (USGS). 7.5' Series Topographic Map – Harlingen, Texas Quadrangle. 1992



<p>FREES & NICHOLS 4055 International Plaza, Suite 200 Fort Worth, TX 76109 - 4895 Phone - (817) 735 - 7300</p>		<p>VALLEY INTERNATIONAL AIRPORT Runway 35-L Extension EA</p>		<p>1 FIGURE</p>
		<p>USGS Topographic Map</p>		
		<p>FN JOB NO VAL18687</p>	<p>FILE NAME 1_Topo.mxd</p>	
		<p>DATE 3/14/2019</p>	<p>SCALE 1:24,000</p>	
		<p>DESIGNED BCK</p>	<p>DRAFTED BCK</p>	



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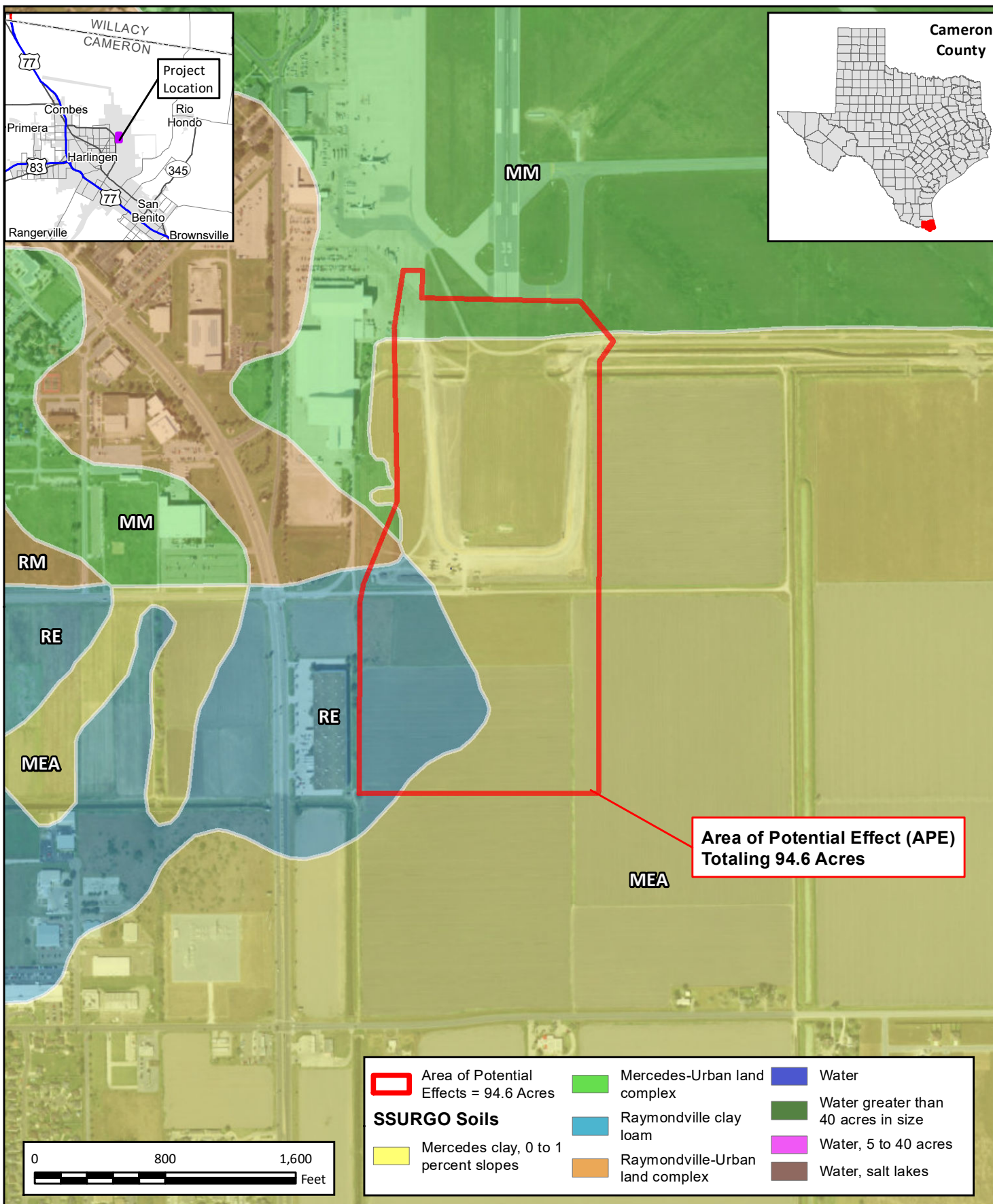
VALLEY INTERNATIONAL AIRPORT
Runway 35-L Extension EA

Area of Potential Effects (APE)

FN JOB NO	VAL18687
FILE NAME	2_APE.mxd
DATE	3/15/2019
SCALE	1:9,600
DESIGNED	BCK
DRAFTED	BCK

2

FIGURE



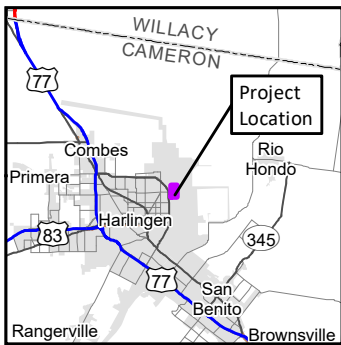
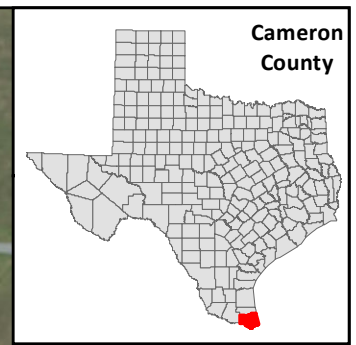
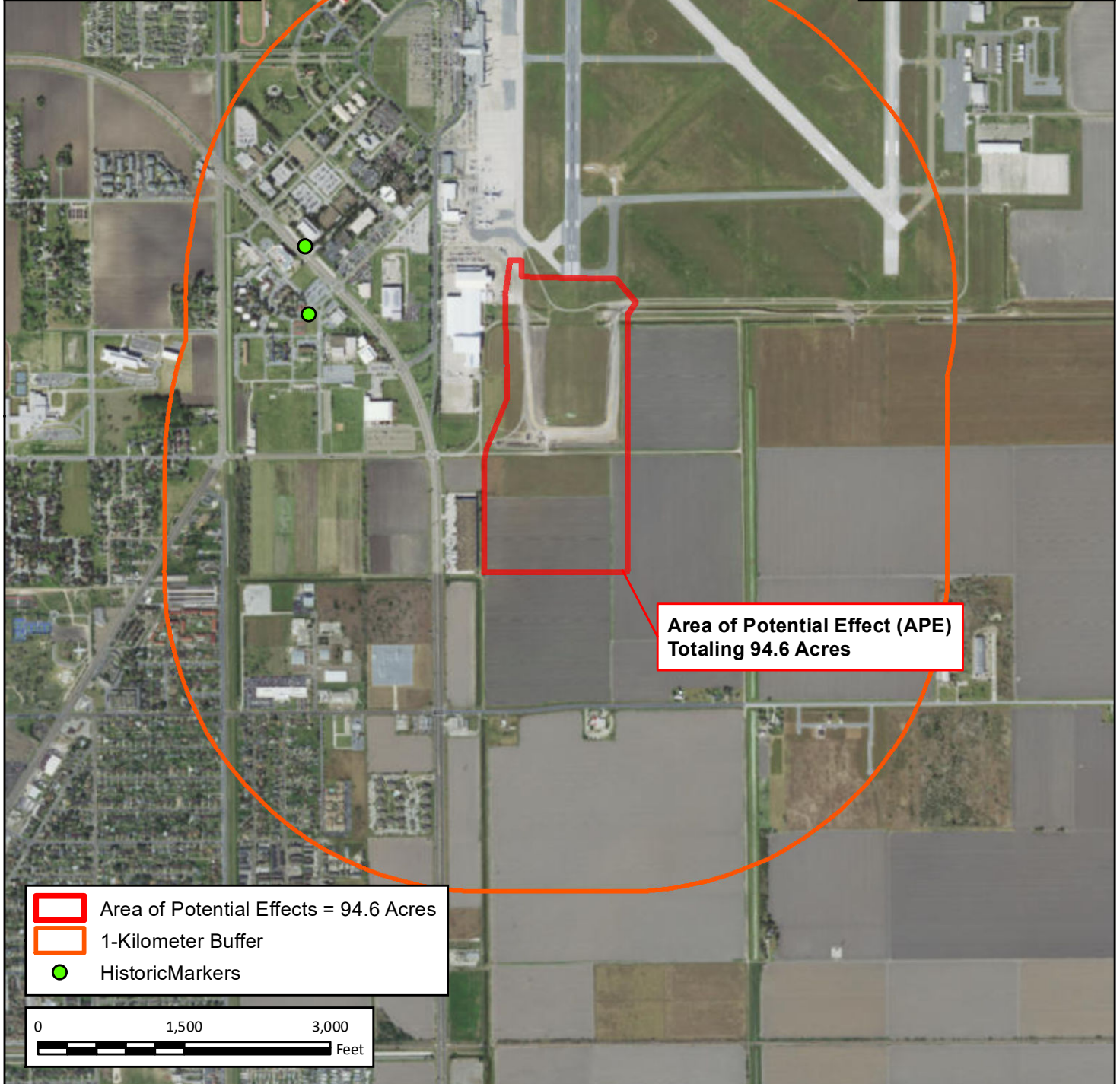
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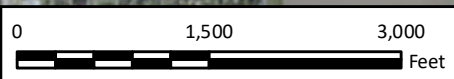
VALLEY INTERNATIONAL AIRPORT
 Runway 35-L Extension EA
NRCS SSURGO Soils Map

FN JOB NO	VAL18687
FILE NAME	3_Soils.mxd
DATE	3/15/2019
SCALE	1:9,600
DESIGNED	BCK
DRAFTED	BCK

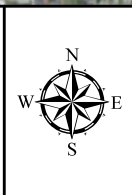
3
FIGURE



- Area of Potential Effects = 94.6 Acres
- 1-Kilometer Buffer
- HistoricMarkers



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VALLEY INTERNATIONAL AIRPORT
Runway 35-L Extension EA

TASA Map

FN JOB NO	VAL18687
FILE NAME	4_TASA.mxd
DATE	3/15/2019
SCALE	1:18,000
DESIGNED	BCK
DRAFTED	BCK

4

FIGURE



United States
Department of
Agriculture

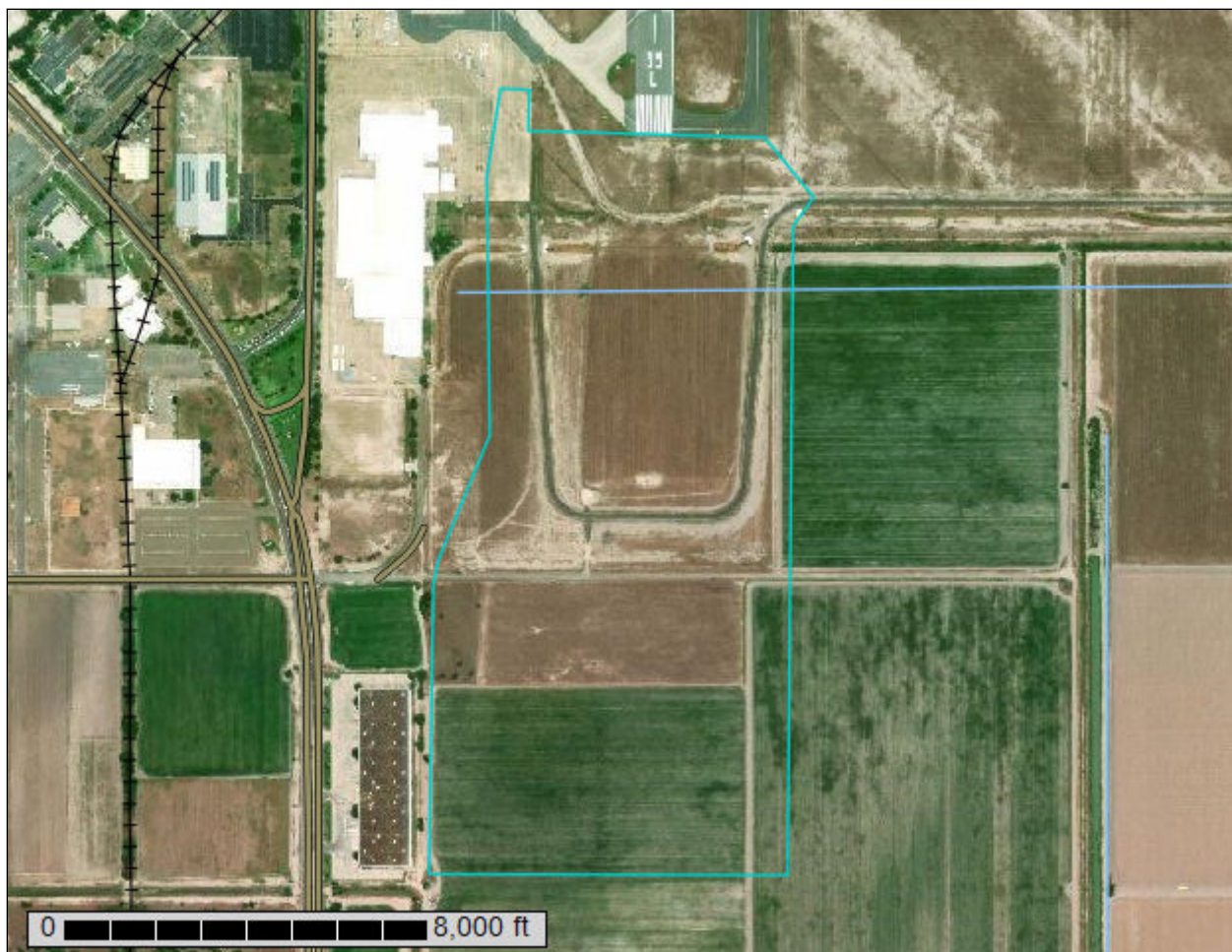
NRCS

Natural
Resources
Conservation
Service

A product of the National
Cooperative Soil Survey,
a joint effort of the United
States Department of
Agriculture and other
Federal agencies, State
agencies including the
Agricultural Experiment
Stations, and local
participants

Custom Soil Resource Report for **Cameron County, Texas**

**Attachment A: Valley
International Airport Project
Project No. VAL18687**



Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

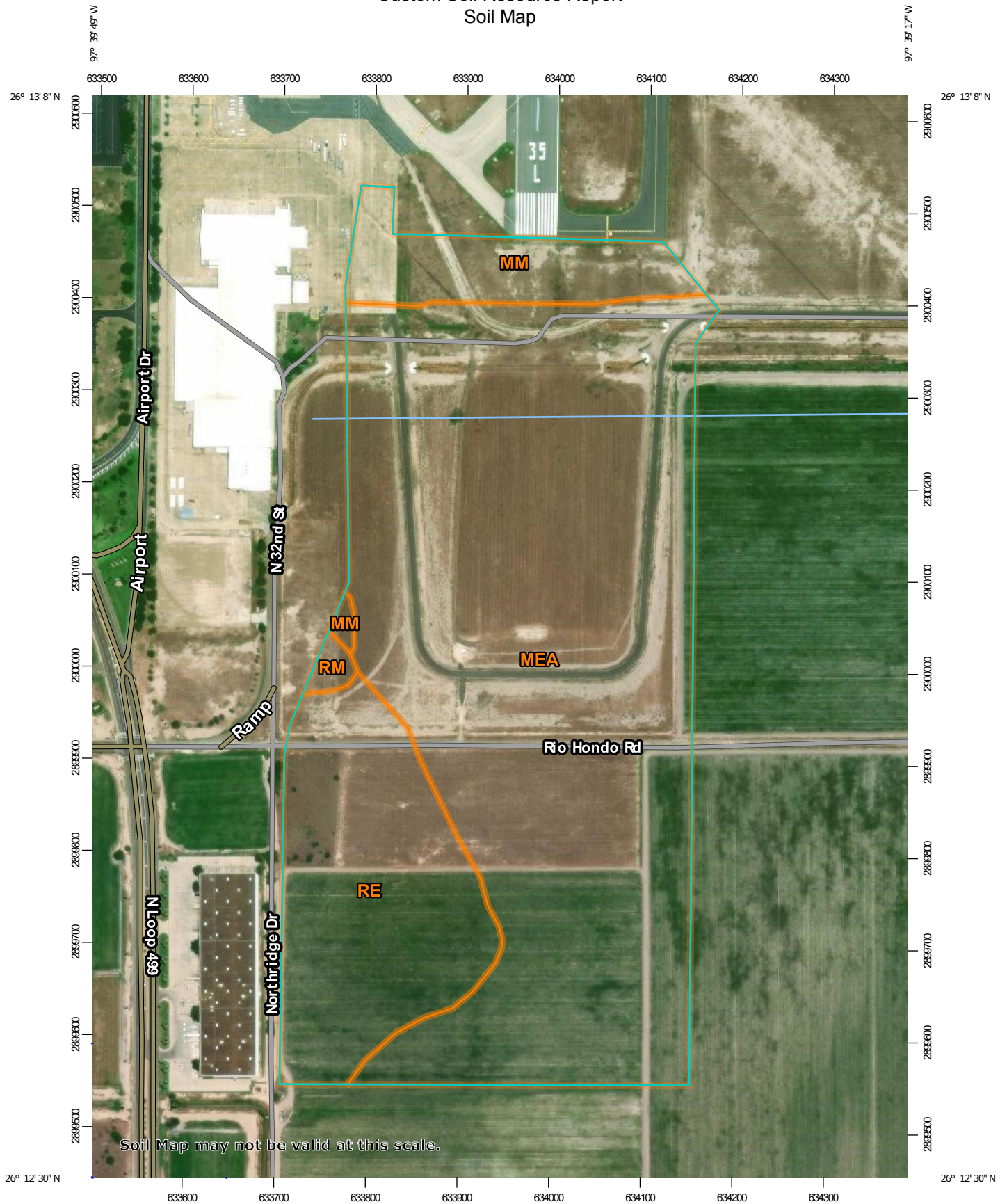
Custom Soil Resource Report

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report Soil Map



Map Scale: 1:5,740 if printed on A portrait (8.5" x 11") sheet.

0 50 100 200 300 Meters

0 250 500 1000 1500 Feet

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 14N WGS84

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Map Unit Polygons

Soil Map Unit Lines

Soil Map Unit Points

Special Point Features

Blowout

Borrow Pit

Clay Spot

Closed Depression

Gravel Pit

Gravelly Spot

Landfill

Lava Flow

Marsh or swamp

Mine or Quarry

Miscellaneous Water

Perennial Water

Rock Outcrop

Saline Spot

Sandy Spot

Severely Eroded Spot

Sinkhole

Slide or Slip

Sodic Spot

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

Spoil Area

Stony Spot

Very Stony Spot

Wet Spot

Other

Special Line Features

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Cameron County, Texas
Survey Area Data: Version 15, Sep 14, 2018

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Dec 31, 2009—Dec 11, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
MEA	Mercedes clay, 0 to 1 percent slopes	68.5	72.4%
MM	Mercedes-Urban land complex	7.2	7.6%
RE	Raymondville clay loam	18.3	19.4%
RM	Raymondville-Urban land complex	0.6	0.6%
Totals for Area of Interest		94.6	100.0%

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or

landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Cameron County, Texas

MEA—Mercedes clay, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: d6f0
Elevation: 10 to 150 feet
Mean annual precipitation: 24 to 34 inches
Mean annual air temperature: 73 to 75 degrees F
Frost-free period: 300 to 365 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Mercedes and similar soils: 95 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Mercedes

Setting

Landform: Delta plains
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Calcareous clayey alluvium

Typical profile

H1 - 0 to 18 inches: clay
H2 - 18 to 47 inches: clay
H3 - 47 to 74 inches: clay

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 5 percent
Gypsum, maximum in profile: 10 percent
Salinity, maximum in profile: Slightly saline to strongly saline (4.0 to 16.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 12.0
Available water storage in profile: Moderate (about 7.9 inches)

Interpretive groups

Land capability classification (irrigated): 3s
Land capability classification (nonirrigated): 3s
Hydrologic Soil Group: D
Ecological site: Saline Clay (R083DY015TX)
Hydric soil rating: No

Minor Components

Raymondville

Percent of map unit: 3 percent

Ecological site: Clay Loam (R083DY025TX)

Hydric soil rating: No

Hidalgo

Percent of map unit: 2 percent

Hydric soil rating: No

MM—Mercedes-Urban land complex

Map Unit Setting

National map unit symbol: d6f3

Elevation: 10 to 150 feet

Mean annual precipitation: 24 to 34 inches

Mean annual air temperature: 73 to 75 degrees F

Frost-free period: 300 to 365 days

Farmland classification: Not prime farmland

Map Unit Composition

Mercedes and similar soils: 55 percent

Urban land: 35 percent

Minor components: 10 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Mercedes

Setting

Landform: Delta plains

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Calcareous clayey alluvium

Typical profile

H1 - 0 to 18 inches: clay

H2 - 18 to 47 inches: clay

H3 - 47 to 74 inches: clay

Properties and qualities

Slope: 0 to 1 percent

Depth to restrictive feature: More than 80 inches

Natural drainage class: Moderately well drained

Runoff class: High

Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Custom Soil Resource Report

Calcium carbonate, maximum in profile: 5 percent
Gypsum, maximum in profile: 10 percent
Salinity, maximum in profile: Slightly saline to strongly saline (4.0 to 16.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 12.0
Available water storage in profile: Moderate (about 7.9 inches)

Interpretive groups

Land capability classification (irrigated): 3s
Land capability classification (nonirrigated): 3s
Hydrologic Soil Group: D
Ecological site: Saline Clay (R083DY015TX)
Hydric soil rating: No

Description of Urban Land

Typical profile

H1 - 0 to 40 inches: variable

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8s
Hydrologic Soil Group: D
Hydric soil rating: No

Minor Components

Hidalgo

Percent of map unit: 5 percent
Hydric soil rating: No

Raymondville

Percent of map unit: 5 percent
Ecological site: Clay Loam (R083DY025TX)
Hydric soil rating: No

RE—Raymondville clay loam

Map Unit Setting

National map unit symbol: d6ff
Elevation: 20 to 200 feet
Mean annual precipitation: 23 to 33 inches
Mean annual air temperature: 72 to 73 degrees F
Frost-free period: 300 to 340 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Raymondville and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Raymondville

Setting

Landform: Delta plains
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Calcareous clayey alluvium

Typical profile

H1 - 0 to 14 inches: clay loam
H2 - 14 to 37 inches: clay
H3 - 37 to 78 inches: clay

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 10 percent
Salinity, maximum in profile: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 8.0
Available water storage in profile: Moderate (about 9.0 inches)

Interpretive groups

Land capability classification (irrigated): 2s
Land capability classification (nonirrigated): 2s
Hydrologic Soil Group: C
Ecological site: Clay Loam (R083DY025TX)
Hydric soil rating: No

Minor Components

Hidalgo

Percent of map unit: 5 percent
Hydric soil rating: No

Racombes

Percent of map unit: 5 percent
Ecological site: Clay Loam (R083DY025TX)
Hydric soil rating: No

Willacy

Percent of map unit: 5 percent
Hydric soil rating: No

RM—Raymondville-Urban land complex

Map Unit Setting

National map unit symbol: d6fh
Elevation: 20 to 200 feet
Mean annual precipitation: 23 to 33 inches
Mean annual air temperature: 72 to 73 degrees F
Frost-free period: 300 to 340 days
Farmland classification: Not prime farmland

Map Unit Composition

Raymondville and similar soils: 55 percent
Urban land: 35 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Raymondville

Setting

Landform: Delta plains
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Calcareous clayey alluvium

Typical profile

H1 - 0 to 14 inches: clay loam
H2 - 14 to 37 inches: clay
H3 - 37 to 78 inches: clay

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 10 percent
Salinity, maximum in profile: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 8.0
Available water storage in profile: Moderate (about 9.0 inches)

Interpretive groups

Land capability classification (irrigated): 2s
Land capability classification (nonirrigated): 2s
Hydrologic Soil Group: C
Ecological site: Clay Loam (R083DY025TX)
Hydric soil rating: No

Description of Urban Land

Typical profile

H1 - 0 to 40 inches: variable

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 8s

Hydrologic Soil Group: D

Hydric soil rating: No

Minor Components

Racombes

Percent of map unit: 4 percent

Ecological site: Clay Loam (R083DY025TX)

Hydric soil rating: No

Willacy

Percent of map unit: 3 percent

Hydric soil rating: No

Hidalgo

Percent of map unit: 3 percent

Hydric soil rating: No

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APPENDIX B
REGULATORY CONTEXT

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B.1 INTRODUCTION

This appendix contains the federal, state, and local regulations that apply to the Proposed Action for each resource category that may have potential impacts associated with the Proposed Action or alternatives as identified in FAA Order 1050.1F.

B.2 AIR QUALITY

The Clean Air Act (CAA) is the primary statute related to air quality. The CAA regulates air pollutant emissions from stationary and mobile sources and authorizes the U.S. Environmental Protection Agency (USEPA) to establish National Ambient Air Quality Standards (NAAQS) for criteria pollutants. The CAA also gives the USEPA authority to regulate Hazardous Air Pollutants.

B.3 BIOLOGICAL RESOURCES

Relevant federal laws, regulations, Executive Orders (EOs) and other guidance relevant to the protection of biological resources include:

- » Endangered Species Act (ESA) (16 United States Code (U.S.C.) §§ 1531-1544)
- » Bald and Golden Eagle Protection Act (16 U.S.C. §§ 668 et seq.)
- » Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. § 1801 et seq.)
- » Fish and Wildlife Coordination Act of 1980 (16 U.S.C. § 661-667)
- » EO 13112, Invasive Species (64 Federal Register (FR) 6183)
- » Marine Mammal Protection Act (16 U.S.C. § 1361 et seq.)
- » Migratory Bird Treaty Act (MBTA) (16 U.S.C. §§ 703 et seq.)
- » EO 13186, *Responsibilities of Federal Agencies to Protect Migratory Birds* (66 FR 3853)
- » Incorporating Biodiversity Considerations into Environmental Impact Analysis under NEPA (CEQ, 1993)
- » Memorandum of Understanding to Foster the Ecosystem Approach (CEQ, 1995)

The following regulations implement the federal acts that protect biotic communities:

- » 50 Code of Federal Regulation (CFR) Parts 17 and 402 implement the ESA
- » 50 CFR Part 22 implements the Bald and Golden Eagle Protection Act
- » 50 CFR Part 600 implements the Magnuson-Stevens Fishery Conservation and Management Act
- » 50 CFR Parts 18 and 216 implement the Marine Mammal Protection Act
- » 50 CFR Part 21 implements the MBTA

B.4 CLIMATE

Relevant federal laws, regulations, and EOs that relate to climate include:

- » CAA (42 U.S.C. §§ 7408, 7521, 7571, 7661 et seq.)
- » EO 13514, *Federal Leadership in Environment Energy and Economic Performance* (74 FR 52117)
- » EO 13653, *Preparing the United States for the Impacts of Climate Change* (78 FR 66817)

- » EO 13693, *Planning for Federal Sustainability* (80 FR 15869)

The following regulations implement the federal acts related to climate.

- » 40 CFR Parts 60, 85, 86, and 600 implement the CAA

B.5 COASTAL RESOURCES

Relevant federal laws, regulations, Executive Orders (EOs) and other guidance relevant to the protection of coastal resources include:

- » Coastal Barrier Resources Act (CBRA)
- » Coastal Zone Management Act (CZMA)
- » National Marine Sanctuaries Act
- » EO 13089, Coral Reef Protection (63 FR 32701)
- » EO 13547, Stewardship of the Ocean, Our Coasts, and the Great Lakes (75 FR 43023)

B.6 DEPARTMENT OF TRANSPORTATION ACT, SECTION 4(f)

Relevant federal laws, regulations, and EOs that relate to Department of Transportation Act, Section 4(f) (Section 4(f)) resources include:

- » U.S. Department of Transportation (USDOT) Act – Section 4(f) (49 U.S.C. § 303)
- » Land and Water Conservation Fund Act (LWCFA) of 1965 (16 U.S.C. §§ 4601-4604 et seq.)
- » Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) – Section 6009 (49 U.S.C. § 303)
- » U.S. Department of Defense Reauthorization (Public Law (P.L.) 105-185, Division A, Title X, Section 1079, November 18, 1997, 111 Stat. 1916)

The following regulations implement the federal acts related to Section 4(f) resources.

- » 23 CFR Part 774 et seq. implements USDOT Act – Section 4(f) and SAFETEA-LU – Section 6009
- » 36 CFR Part 59 et seq. implements the Land and Water Conservation Fund Act of 1965

B.7 FARMLANDS

Relevant federal laws, regulations, and EOs that relate to farmlands include:

- » Farmland Protection Policy Act (FPPA) (7 U.S.C. §§ 3034201-4209)

B.8 HAZARDOUS MATERIALS, SOLID WASTE, AND POLLUTION PREVENTION

Relevant federal laws, regulations, and EOs that relate hazardous materials, solid waste, and pollution prevention include:

- » Comprehensive Environmental Response, Compensation, and Liability Act (42 U.S.C. §§ 9601-9765)
- » Emergency Planning and Community Right to Know Act (42 U.S.C. §§ 11001-11050)
- » Federal Facilities Compliance Act (42 U.S.C. § 6961)

- » Hazardous Materials Transportation Act (49 U.S.C. §§ 5101-5128)
- » Oil Pollution Prevention Act of 1990 (33 U.S.C. §§ 2701-2762)
- » Pollution Prevention Act (42 U.S.C. §§ 13101-13109)
- » Toxic Substances Control Act (TSCA) (15 U.S.C. §§ 2601-2697)
- » Resource Conservation and Recovery Act (RCRA) (42 U.S.C. §§ 6901-6992k)
- » EO 12088, *Federal Compliance with Pollution Control Standards* (43 FR 47707)
- » EO 12580, *Superfund Implementation* (52 FR 2923), (63 CFR 45871), and (68 CFR 37691)
- » EO 13423, *Strengthening Federal Environmental, Energy, and Transportation Management* (72 FR 3919)
- » EO 13514, *Federal Leadership in Environmental, Energy, and Economic Performance* (74 FR 52117)
- » Council on Environmental Quality Memorandum on Pollution Prevention and the National Environmental Policy Act

The following regulations implement the federal acts related to hazardous materials, solid waste, and pollution prevention:

- » 40 CFR Parts 300, 311, 355, 370, and 373 implement CERCLA
- » 40 CFR Parts 350-372 implement the Emergency Planning and Community Right to Know Act
- » 40 CFR Part 22 implements the Federal Facilities Compliance Act
- » 49 CFR Parts 100-185 implement the Hazardous Materials Transportation Act
- » 40 CFR Parts 109-116 implement the Oil Pollution Act
- » 40 CFR Parts 240-299 implements RCRA
- » 40 CFR Parts 745, 761, and 763 implements TSCA

In a regulatory context, the terms "hazardous wastes," "hazardous substances," and "hazardous materials" have very specific meanings as described below.

- » **Hazardous Wastes:** Subpart C of RCRA defines hazardous wastes (sometimes called characteristic wastes) as solid wastes that are ignitable, corrosive, reactive, or toxic. Examples include waste oil, mercury, lead or battery acid. In addition, Subpart D of RCRA contains a list of specific types of solid wastes that the USEPA has deemed hazardous (sometimes called listed wastes). Examples include degreasing solvents, petroleum refining waste, or pharmaceutical waste.
- » **Hazardous Substances:** Section 101(14) of CERCLA defines this term broadly. It includes hazardous wastes, hazardous air pollutants, or hazardous substances designated as such under the Clean Water Act (CWA) and TSCA and elements, compounds, mixtures, or solutions, or substances listed in 40 CFR Part 302 that pose substantial harm to human health or environmental resources. Pursuant to CERCLA, hazardous substances do not include any petroleum or natural gas substances and materials. Examples include ammonia, bromine, chlorine, or sodium cyanide.
- » **Hazardous Materials:** According to 49 CFR Part 172, hazardous materials are any substances commercially transported that pose unreasonable risk to public health, safety, and property.

These substances include hazardous wastes and hazardous substances as well as petroleum and natural gas substances and materials. As a result, hazardous materials represent hazardous wastes and substances. Examples include household batteries, gasoline, or fertilizers.

B.9 HISTORICAL, ARCHITECTURAL, ARCHAEOLOGICAL, AND CULTURAL RESOURCES

The National Historic Preservation Act (NHPA) (54 U.S.C. §§300101 et seq.) establishes the Advisory Council on Historic Preservation (ACHP). The ACHP oversees federal agency compliance with the NHPA. The NHPA also established the National Register of Historic Places (NRHP), which the National Park Service (NPS) oversees. Other applicable statutes and EOs include:

- » American Indian Religious Freedom Act (42 U.S.C. § 1996)
- » Antiquities Act of 1906 (54 U.S.C. §§320301-320303)
- » Archeological and Historic Preservation Act (54 U.S.C. §§ 312501-312508)
- » Archeological Resources Act (16 U.S.C. §§ 470aa-470mm)
- » USDOT Act, Section 4(f) (49 U.S.C. § 303)
- » Historic Sites Act of 1935 (16 U.S.C. §§ 461-467)
- » Native American Graves Protection and Repatriation Act (25 U.S.C. §§ 3001-3013)
- » National Historic Preservation Act
- » Public Building Cooperative Use Act (40 U.S.C. §§ 601a, 601a1, 606, 611c, and 612a4)
- » EO 11593, *Protection and Enhancement of the Cultural Environment* (36 FR 8921)
- » EO 13006, *Locating Federal Facilities on Historic Properties in Our Nation's Central Cities* (61 FR 26071)
- » EO 13007, *Indian Sacred Sites* (61 FR 26771)
- » EO 13175, *Consultation and Coordination with Indian Tribal Governments* (65 FR 67249)
- » Executive Memorandum, Government-to-Government Relations with Native American Tribal Governments (April 29, 1994)
- » Executive Memorandum on Tribal Consultation (Nov. 5, 2009) (65 FR 67249)
- » USDOT Order 5650.1, *Protection and Enhancement of the Cultural Environment*

The following regulations implement the federal acts related to historical, architectural, archaeological, and cultural resources:

- » 36 CFR Parts 60, 62.1, 65, 68, 73, 78, 79, and 800 implement the NHPA
- » 43 CFR §§ 7.7 and 7.32, and 25 CFR Part 262.7 implement the American Indian Religious Freedom Act
- » 43 CFR Part 3 implements the Antiquities Act of 1906
- » 36 CFR Parts 68 and 79 implements the Archeological and Historic Preservation Act
- » 43 CFR Part 7, 36 CFR Part 79, and 25 CFR Part 262 implement the Archaeological Resources Protection Act
- » 23 CFR Part 774 implements the USDOT Act – Section 4(f)

- » 36 CFR Part 65 implements the Historic Sites Act of 1935
- » 43 CFR Part 10 and 25 CFR § 262.8 implement the Native American Graves Protection and Repatriation Act
- » 41 CFR Parts 101-117 implement the Public Building Cooperative Use Act

B.10 LAND USE

Various statutes, regulations, and EOs relevant to the Proposed Action include:

- » the Airport and Airway Improvement Act of 1982, and subsequent amendments (49 U.S.C. 47107(a)(10))
- » the Airport Improvement Program (49 U.S.C. 47106(a)(1))
- » the Airport Safety, Protection of Environment, Criteria for Municipal Solid Waste Landfills (40 CFR § 258.10)
- » state and local regulations

B.11 NATURAL RESOURCES AND ENERGY SUPPLY

Statutes and EOs that are relevant to natural resources and energy supply impacts include:

- » Energy Independence and Security Act (42 U.S.C. § 17001 et seq.)
- » Energy Policy Act (42 U.S.C. § 15801 et seq.)
- » EO 13423, *Strengthening Federal Environmental, Energy, and Transportation Management* (72 FR 3919)
- » EO 13514, *Federal Leadership in Environmental, Energy, and Economic Performance* (74 FR 52117)

B.12 NOISE AND NOISE-COMPATIBLE LAND USE

Statutes and EOs that are relevant to noise and noise-compatible land use impacts include:

- » The Control and Abatement of Aircraft Noise and Sonic Boom Act of 1968 (49 U.S.C. § 44715)
- » The Noise Control Act of 1972 (42 U.S.C. §§ 4901-4918)
- » Aviation Safety and Noise Abatement Act of 1979 (49 U.S.C. § 47501 et seq.)
- » Airport and Airway Improvement Act of 1982 (49 U.S.C. § 47101 et seq.)
- » Airport Noise and Capacity Act of 1990 (49 U.S.C. §§ 47521-47534, §§ 106(g))
- » Section 506 of the FAA Modernization and Reform Act of 2012, *Prohibition on Operating Certain Aircraft Weighing 75,000 Pounds or Less Not Complying with Stage 3 Noise Levels* (49 U.S.C. §§ 47534)
- » state and local noise laws and ordinances

The following regulations implement the federal acts related to noise and noise-compatible land use:

- » 49 CFR Part 821 and 14 CFR Parts 21, 36, 91, 119, 135, and 150 implement The Control and Abatement of Aircraft Noise and Sonic Boom Act of 1968
- » 40 CFR Part 209 implements The Noise Control Act of 1972
- » 14 CFR Part 150 implements the Aviation Safety and Noise Abatement Act of 1979

- » 14 CFR Part 161 implements the Airport Noise and Capacity Act of 1990
- » 14 CFR Part 91 implements Section 506 of the FAA Modernization and Reform Act of 2012

B.13 SOCIOECONOMICS, ENVIRONMENTAL JUSTICE, AND CHILDREN'S ENVIRONMENTAL HEALTH AND SAFETY RISKS

B.13.1 Socioeconomics

The Uniform Relocation Assistance and Real Property Acquisitions Policy Act of 1970 (42 U.S.C. § 61 et seq.), implemented by 49 CFR Part 24, is the primary statute related to socioeconomic impacts.

B.13.2 Environmental Justice

Relevant statutes, EOs, memorandums, and guidance include:

- » Title VI of the Civil Rights Act, as amended (42 U.S.C. §§ 2000d-2000d-7)¹
- » EO 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (59 FR 7629)
- » Memorandum of Understanding on Environmental Justice and EO 12898
- » USDOT Order 5610.2(a), Environmental Justice in Minority and Low-Income Populations (77 FR 27534)
- » CEQ Guidance: Environmental Justice: Guidance Under the NEPA
- » Revised USDOT Environmental Justice Strategy (77 FR 18879)

The following regulation implements the federal acts related to environmental justice:

- » 28 CFR §42.401 implements Title VI of the Civil Rights Act, as amended.

B.13.3 Children's Environmental Health and Safety Risks

The following regulation implements the federal acts related to children's environmental health and safety risks:

- » EO 13045 Protection of Children from Environmental Health Risks and Safety Risks (62 FR 19885).

B.14 VISUAL EFFECTS

There is no federal statutory or regulatory requirement for adverse effects resulting from light emissions or visual impacts.

B.15 WATER RESOURCES

Water resources includes the following subsections, wetlands, floodplains, surface waters, groundwater, and wild and scenic rivers.

¹ Title VI and its implementing regulations are not specific to environmental justice; it is a broader statutory prohibition on discrimination.

B.15.1 Wetlands

Statutes and EOs that are relevant to wetlands include:

- » EO 11990, *Protection of Wetlands* (42 FR 26961)
- » CWA (33 U.S.C. §§ 1251-1387)
- » Fish and Wildlife Coordination Act (16 U.S.C. § 661-667d)
- » USDOT Order 660.1A, Preservation of the Nation's Wetlands
- » state statutes protecting wetlands

The following regulation implements the federal act related to wetlands:

- » 33 CFR Parts 320-332 and 40 CFR Parts 230-233 implement the Clean Water Act as it pertains to wetlands.

B.15.2 Floodplains

Relevant statutes and EOs pertaining to floodplains include:

- » EO 11988, *Floodplain Management* (42 FR 26951)
- » National Flood Insurance Act (42 U.S.C. § 4001 *et seq.*)
- » USDOT Order 5650.2, Floodplain Management and Protection
- » State and local statutes protecting floodplains

The following regulation implements the federal act related to floodplains.

- » 44 CFR Part 60 implements the National Flood Insurance Act.

B.15.3 Surface Waters

Relevant regulations and statutes pertaining to surface waters include:

- » CWA (33 U.S.C. §§ 1251-1387)
- » Fish and Wildlife Coordination Act (16 U.S.C. § 661-667d)
- » Rivers and Harbors Act (33 U.S.C. § 401 and 403)
- » Safe Drinking Water Act (42 U.S.C. §§ 300(f)-300j-26)
- » State statutes protecting surface waters

The following regulations implement the federal acts related to surface water.

- » 40 CFR Parts 110-112, 116, 117, 122, 125, 129-131, 136 and 403 implement the Clean Water Act.
- » 33 CFR Parts 114-118 and 320-332 implement the Rivers and Harbors Act.
- » 40 CFR Parts 141-149 implement the Safe Drinking Water Act.

B.15.4 Groundwater

Relevant regulations and statutes pertaining to groundwater include:

- » Safe Drinking Water Act (42 U.S.C. §§ 300(f)-300j-26)
- » state statutes protecting surface waters

The following regulation implements the federal act related to groundwater.

- » 40 CFR Parts 141-149 implement the Clean Water Act as it pertains to groundwater.

B.15.5 Wild and Scenic Rivers

The Wild and Scenic Rivers Act of 1968 90-542; 16 U.S.C. 1271 et seq, is the primary statute related to wild and scenic rivers.

APPENDIX C
AGENCY AND PUBLIC INVOLVEMENT

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TABLE OF CONTENTS

Appendix C.1 Agency Scoping Letters

Only the first agency scoping letter contains attachments to show the complete agency scoping package that was sent to each agency. However, the remaining agencies shown in Appendix C.1 also received the attachments in their scoping package.

Appendix C.2 Agency Response Letters

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APPENDIX C.1
Agency Scoping Letters

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December 16, 2020

Ms. Donna F. Huff, MC 206
TCEQ Deputy Director
Air Quality Division
P.O. Box 13087
Austin, TX 78711-3087

**RE: National Environmental Policy Act Agency Coordination
Valley International Airport – Runway 17R-35L Extension Environmental Assessment
Harlingen, Texas**

Dear Ms. Huff,

The Valley International Airport (Airport), through the City of Harlingen, has identified a need for an extension to Runway 17R-35L to properly serve the needs of the community and continue to serve as an economic engine for regional prosperity. In coordination with the Federal Aviation Administration (FAA), the Airport intends to undertake the following Proposed Action (see **Attachment A**):

- » **Runway Extension:** Runway 17R-35L would be extended by 1,099 feet to the south.
- » **Taxiway Extension:** Taxiways A and M would be extended by 1,099 feet to the south.
- » **Perimeter Road Relocation:** Perimeter Road would be rerouted around the proposed extensions to Runway 17R-35L and Taxiways A and M.
- » **Medium Intensity Approach Lighting System with Runway Alignment Indicator Lights (MALSR) Installation:** the MALSR for the Runway 35L end would be installed in order to accommodate the proposed runway extension. The MALSR will be a non-federal system.
- » **MALSR Replacement:** the MALSR for the Runway 17R end would be replaced in its existing location. The MALSR will be a non-federal system.
- » **Precision Approach Path Indicators (PAPI) Relocation:** the PAPI on the Runway 35L end would be relocated.
- » **Localizer (LOC) Installation:** the LOC for the Runway 35L end would be installed.
- » **LOC Replacement:** the LOC for the Runway 17R end would be replaced in its existing location.
- » **Runway Visual Range (RVR) Installation:** RVRs would be installed for both the Runway 17R end and the Runway 35L end.
- » **Glideslope Installation:** the glideslope for the Runway 35L end would be installed.

- » **Glideslope Replacement:** the glideslope for the Runway 17R end will be replaced in its existing location.

An environmental assessment (EA) is being prepared in accordance with the National Environmental Policy Act (NEPA) that will analyze the physical, social, community, and natural effects of the Proposed Action. The EA will be prepared for review and determination by the FAA and will follow FAA guidelines for NEPA (see **Attachment B**). The Airport selected RS&H, Inc. (RS&H) to prepare the EA for FAA review and determination.

The purpose of this initial coordination letter is to:

- » Advise your agency of the preparation of the EA
- » Request any relevant information that your agency may have regarding the project site or environs
- » Solicit early comments regarding potential environmental, social, and economic issues for consideration during the preparation of the EA.

Input is a necessary step in the overall EA process. If your agency has any information relating to potential adverse environmental effects within the categories listed in **Attachment C**, please provide this information to me within 30 days of the date of this letter at the address above. For your information, **Attachment D** lists the agencies contacted as part of this initial coordination request. **Attachment E** presents the general schedule for the EA and ways for your agency to be involved in the EA process.

Thank you in advance for your assistance with the preparation of this EA. Please feel free to contact Julie Barrow of RS&H, our environmental consultant, at (303) 409-7940 or by email at julie.barrow@rsandh.com, if you have any questions or comments regarding the EA.

Sincerely,



Bryan Wren
Assistant Director of Aviation

Copy: Julie Barrow, RS&H
John MacFarlane, FAA Southwest Region

Attachments: A – Proposed Action
B – NEPA and FAA Guidance
C – FAA Order 1050.1F Environmental Resource Categories
D – Agency Coordination List
E – General EA Schedule and How to Stay Involved

ATTACHMENT A
PROPOSED ACTION



ATTACHMENT B

NEPA AND FAA GUIDANCE

What is NEPA?

The Environmental Policy Act of 1969 (NEPA) is one of the federal laws passed to protect the Nation's environment. As 40 Code of Federal Regulations (CFR) 15001(a) notes:

*"The National Environmental Policy Act (NEPA) is our basic national charter for protecting the environment. It establishes policy, sets goals (section 101), and provides means for carrying out the policy. Section 102(2) [of 5050.4B] contains 'action-forcing' provisions to make sure that federal agencies act according to the letter and spirit of the Act."*¹

NEPA Objectives

NEPA requires each federal agency to disclose to the interested public a clear, accurate description of potential environmental effects that proposed federal actions and reasonable alternatives to those actions would cause. Through NEPA, Congress directed federal agencies to integrate environmental factors in their planning and decision-making processes. This provides the public with a fair, open opportunity to review and comment on those alternatives and effects and other important environmental matters related to the proposed federal action. In approving the federal actions necessary to support an airport development proposal, the approving Federal Aviation Administration (FAA) official must consider environmental effects as fully and fairly as it does technical, economic, and other non-environmental considerations.

FAA Order 1050.1F: *Environmental Impacts: Policies and Procedures*

This order updates the FAA agency-wide policies and procedures for compliance with NEPA and implementing regulations issued by the Council on Environmental Quality (CEQ) (40 CFR 1500-1508). The provisions of this order and the CEQ regulations apply to actions directly undertaken by the FAA and where the FAA has sufficient control and responsibility to condition the license or project approval by a non-federal entity. The requirements in this order apply to, but are not limited to, the following: all grants, loans, contracts, leases, construction, research activities, rulemaking and regulatory actions, certifications, licensing, permits, plans submitted to the FAA by state and local agencies that require FAA approval, and legislation proposed by the FAA. The order was last revised July 16, 2015.

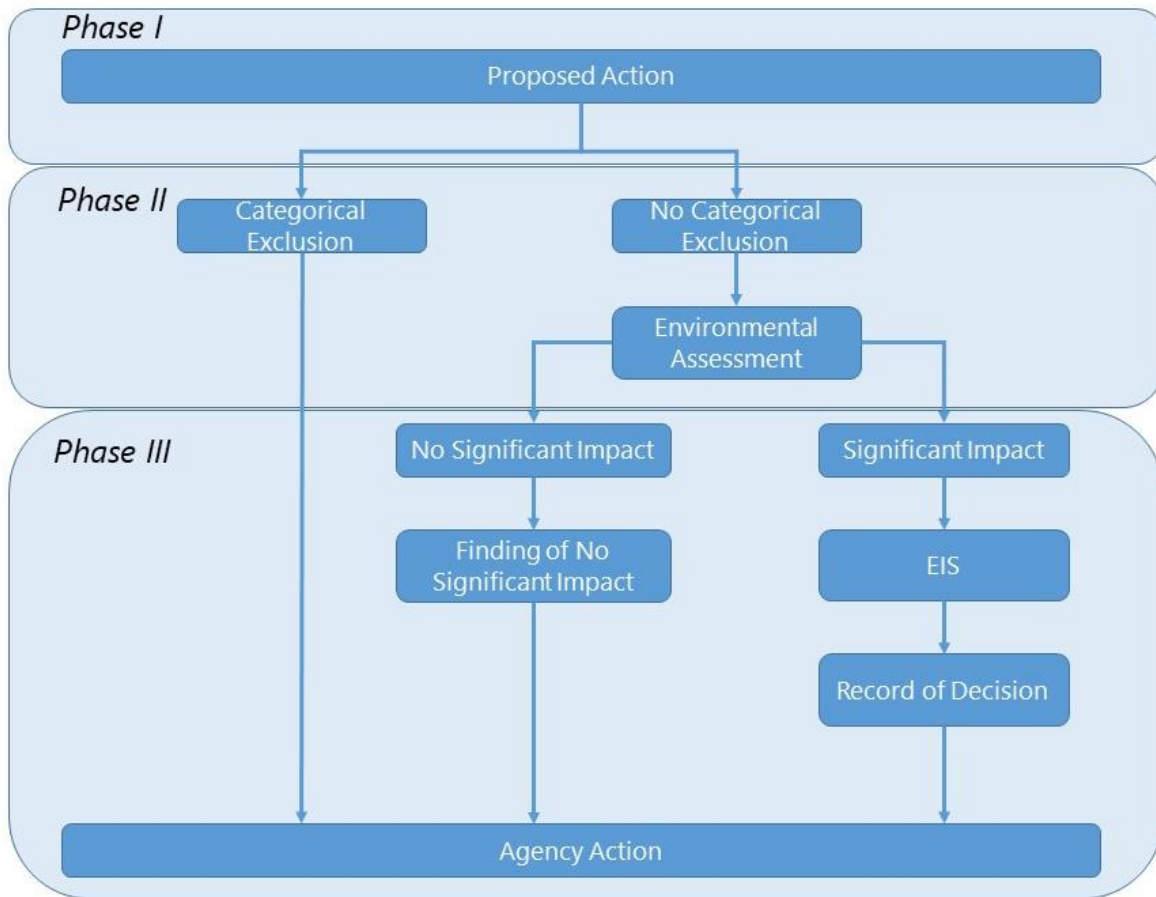
FAA Order 5050.4B: *National Environmental Policy Act Implementing Instructions for Airport Actions*

Order 5050.4B supplements FAA Order 1050.1F, which provides all FAA organizations with policies and procedures for complying with NEPA and the implementing regulations CEQ has issued. Order 5050.4B provides information to personnel interested in fulfilling NEPA requirements for airport actions under FAA's authority. This order is part of FAA's effort to ensure its personnel have clear instructions to address potential environmental effects from major airport actions.

¹ FAA. (2006, April). Order 5050.4B, *Implementing Instructions for Airport Actions*, Chapter 1, Section 1.

NEPA Process

The following flowchart depicts the NEPA process.



FAA Environmental Objectives

Provisions in 49 United States Code (U.S.C.) § 40101 describes FAA's multiple missions. In proposing actions to carry out its mission to maintain safety and efficiency of air commerce and to consider the requirements of national defense and commercial and general aviation, FAA must comply with NEPA. To do this, FAA must consider ways to enhance environmental quality and avoid or minimize adverse environmental effects from proposed FAA actions and their reasonable alternatives. The FAA has developed specific guidance with respect to NEPA compliance in the form of FAA Orders 1050.1F and 5050.4B.

ATTACHMENT C

FAA ORDER 1050.1F ENVIRONMENTAL RESOURCE CATEGORIES

The environmental resource categories that will be evaluated in the EA are described in FAA Order 1050.1F and include the following:

Air Quality

Cameron County, where the Valley International Airport (Airport) is located, has been designated by the U.S. Environmental Protection Agency (USEPA) as in attainment area for all of the National Ambient Air Quality Standards (NAAQS) pollutants. However, a construction emissions inventory will be conducted to ensure that construction emissions do not exceed *de minimis* thresholds. The EA will also examine the FAA's Presumed to Conform List (72 Federal Register 41576) to determine if the Proposed Action and reasonable alternatives are presumed to conform to the Clean Air Act requirements and any State Implementation Plan.

Biological Resources

The EA will describe potential impacts of the Proposed Action and reasonable alternatives on biological resources, including any state-protected species, if they occur in the Project Study Area. In describing the potential impacts and mitigation measures, the EA will rely on acceptable supporting biological documentation previously completed for the Airport and surrounding vicinity. This section of the EA will contain narrative accounts of the biological resources with particular attention to threatened or endangered species and their habitats.

Climate

The analysis in the EA will follow the FAA Green House Gases (GHG) guidance in accordance with FAA Guidance Memo #3, dated January 12, 2012.

Coastal Resources

The Airport is not within the Texas coastal zone. The EA will document that no coastal resources could be affected by the Proposed Action.

Department of Transportation, Section 4(f)

The EA will identify any publicly owned park, recreation area, wildlife refuge, or historic site (use the information developed for the Historical, Architectural, Archaeological, and Cultural Resources section) within the General Study Area. The EA will include a map showing each of these Section 4(f) properties, if applicable.

For each Section 4(f) property in the General Study Area, a determination will be made by the FAA as to whether a direct use, *de minimis* use, constructive use, or no use of the Section 4(f) property would occur. For any Section 4(f) property where physical or constructive use could occur, the EA will identify if the resource is significant. If the affected resource is significant, the EA will identify mitigation measures that will result in a reduction in the impact to the Section 4(f) property. As part of this, the EA will determine if

any Section 4(f) property that is being affected by the project has received any Land and Water Conservation Funds under Section 6(f) from the Department of the Interior.

Farmlands

The EA will identify all prime farmlands, unique farmlands, and farmlands of statewide importance in the Project Study Area. However, because the Proposed Action or reasonable alternatives would occur within the Airport's property boundary, and the Proposed Action does not propose irrigation, effects any protected farmlands are not anticipated. The EA will note that fact.

Hazardous Materials, Solid Waste, and Pollution Prevention

On the basis of existing records and documentation, the EA will identify any hazardous materials or wastes that exist in the Project Study Area that the Proposed Action or reasonable alternatives would disturb.

The EA will describe the existing disposal and transport of hazardous materials at the Airport. In general, hazardous materials are associated with fuel, solvents, and other materials used for aircraft operation and maintenance.

The EA will document the fact that hazardous materials and hazardous waste are heavily regulated by all levels of government and that all use of such materials and disposal of such waste will follow all of the rules and regulations that have been developed to ensure that these materials are handled, used, and disposed of in a safe manner. The EA will evaluate the Proposed Action's and reasonable alternatives' effects on the use, disposal, or transport of hazardous materials or wastes. The EA will identify the regulations that must be followed to ensure that no impacts related to hazardous materials or waste would occur.

The EA will determine whether any sites within the Project Study Area are listed or under consideration for listing on the National Priorities List (NPL) established by USEPA. If an NPL site would be affected by the Proposed Action or reasonable alternatives, documentation will be prepared to discuss the impact and how the impact would be mitigated. The EA will indicate that in the event that previously unknown contaminants are discovered during construction activities or that a reportable spill occurs during construction, work should stop in the vicinity of the found contaminants until the National Response Center (NRC) is notified and it provides measures allowing work to continue.

Changes in the amount of solid waste due to the Proposed Action and each reasonable alternative will be assessed. Provisions to handle any project-induced increases in solid waste will be identified. If appropriate, the EA will document the capacity of the landfill that accepts the solid waste and determine whether the Proposed Action and reasonable alternatives would adversely affect the capacity of the landfill.

Historical, Architectural, Archeological, and Cultural Resources

An Area of Potential Effect (APE) for historic, architectural, archeological, and cultural resources will be identified and all provisions of the process outlined in Section 106 of the National Historic Preservation Act will be followed.

Land Use

The land use analysis will address the effects of project-related changes on land use compatibility near the Airport. This will help ensure those uses do not adversely affect safe aircraft operations. It will also assist the Airport to address its obligation pursuant to Sponsor Assurance.

The EA will analyze the consistency of the Proposed Action with local adopted plans and policies within the surrounding Airport vicinity and governmental jurisdictional areas, including the City of Harlingen and Cameron County. Consistency between existing development and land use policies will be evaluated and documented.

Natural Resources and Energy Supply

The EA will describe the energy consumption that will occur from construction. The EA will describe any change in energy consumption that would occur upon completion of the construction. The EA will discuss the sustainable practices that are currently used by the Airport or that the Airport would employ.

Noise and Noise-Compatible Land Use

It is anticipated that the Proposed Action or reasonable alternatives would change the future noise contours (opening year) associated with the operation of the Airport because the Proposed Action would change a runway end point. The EA will document future noise contours in increments of five day-night average sound level (DNL) (65, 70, and 75) for the opening year of the new runway end point. The EA will also document the compatibility of land use by comparing the aircraft DNL values to the values in the land use compatibility guidelines in 14 CFR Part 150, Appendix A, Table 1. The noise study will disclose newly non-compatible land use regardless of whether there is a significant noise impact (see FAA Order 1050.1 F, Paragraph B-1.5).

Socioeconomics, Environmental Justice, and Children's Environmental Health and Safety Risks

Socioeconomics

The EA will identify the census tracts within the General Study Area. The EA will describe any potential effects from the Proposed Action to the surrounding residents and businesses in the General Study Area. The EA will estimate the numbers and characteristics of those affected by any alternative being considered.

It is anticipated that the Proposed Action will not change the surface traffic level of service and the EA will document that.

Environmental Justice

It is not anticipated that the Proposed Action will result in an effect to minority and low-income populations. The EA will document demographic data for the census tracts (such as racial data, data regarding percentage of the population below the poverty level, and overall population levels) and whether the population the Proposed Action would affect are disproportionately affected.

Children's Environmental Health and Safety Risks

The EA will determine whether the impacts of the Proposed Action and reasonable alternatives could disproportionately affect children's health and safety. These types of impacts are generally associated with air quality, hazardous materials, noise, and water quality. In addition, the EA will determine whether there are any facilities that could be affected within the General Study Area where children congregate (e.g., schools, playgrounds, day care facilities, etc.).

Visual Effects

The EA will describe the change in visual impacts that would occur with the Proposed Action and reasonable alternatives and determine whether impacts to public view would occur.

The EA will describe the sources of light emissions from the Airport. The EA will describe the extent to which any lighting associated with the Proposed Action and reasonable alternatives would create an annoyance for people in the General Study Area or interfere with their normal activities.

Water Resources

Wetlands

The EA will summarize existing non-jurisdictional and jurisdictional wetlands within the Project Study Area and will describe potential impacts on those resources due to the Proposed Action and reasonable alternatives. The analysis will contain narrative accounts and maps of wetlands. The EA will identify suitable mitigation measures and evaluate the practicability of such measures to reduce all unavoidable wetland impacts.

Floodplains

The EA will review and document the existing conditions related to floodplains. This will include reviewing the existing documentation available from the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRMs). The EA will evaluate the effect of the Proposed Action and each reasonable alternative on potential flooding impacts.

Surface Waters

The EA will review and document existing water quality conditions at the Airport. The EA will summarize the governing regulations related to water quality at the Airport including state and federal regulations and existing water quality permits that apply to activities at the Airport.

The EA will identify the potential impacts to water quality associated with the Proposed Action and reasonable alternatives. The EA will review the potential impacts to water quality from stormwater runoff. For normal rain events, the EA will review potential impacts of the Proposed Action and reasonable alternatives with regard to the conventional pollutants that can exist in normal runoff from paved airport surfaces. These will be reviewed in reference to the existing water quality permits that regulate these types of discharges at the Airport and the benchmarks that have been established to protect adjacent surface waters. The EA will also review impacts associated with stormwater runoff from construction activities.

Groundwater

The EA will identify the potential impacts to groundwater associated with the Proposed Action and reasonable alternatives.

Wild and Scenic Rivers

There are no wild and scenic rivers or study rivers within the vicinity of the Airport. The EA document will describe this fact.

ATTACHMENT D

AGENCY COORDINATION LIST

Federal Agencies

USEPA

Mr. Robert Houston, Staff Director
Office of Communities, Tribes and Environmental
Assessment
U.S. Environmental Protection Agency, Region 6
1201 Elm Street, Suite 500
Dallas, TX 75270
(214) 665-8565
houston.robert@epa.gov

USDA

Ms. Jessica Benavides-Paradez, Soil
Conservationist
U.S. Department of Agriculture
Natural Resources Conservation Service
Administrative Zone 3 – Corpus Christi
13434 Leopard Street, A-14
Corpus Christi, TX 78410-4466
(361) 241-0609
Jessica.Benavides-paredes@tx.usda.gov

USACE

Attn: NEPA Coordination
Planning and Environmental Branch
U.S. Army Corps of Engineers
Galveston District
2000 Fort Point Road
Galveston, TX 77550
(409) 766-3899
swgpao@usace.army.mil

USFWS

Ms. Dawn Gardiner, Asst. Field Supervisor
Texas Coastal Ecological Services Field Office
U.S. Fish and Wildlife Service
4444 Corona Drive, Suite 215
Corpus Christi, TX 78411
(361) 994-9005
dawn_gardiner@fws.gov

State Agencies

Texas Office of Historic Preservation

Mr. Mark Wolfe, State Historic Preservation
Officer, Executive Director
Texas Historical Commission
P.O. Box 12276
Austin, TX 78711
(512) 463-6100
mark.wolfe@thc.texas.gov

Texas Commission of Environmental Quality

Ms. Donna F. Huff, MC 206
TCEQ Deputy Director
Air Quality Division
P.O. Box 13087
Austin, TX 78711-3087
(512) 239-1459

ATTACHMENT E

GENERAL EA SCHEDULE AND HOW TO STAY INVOLVED

General EA Schedule

The following table presents the general EA schedule for informational purposes.

Task	Date
Technical Analysis	4th Quarter 2020 through 1st Quarter 2021
Draft EA Released	1st Quarter 2021
30-Day Review Period	1st Quarter 2021
Final EA Published	2nd Quarter 2021
FAA Decision Document	2nd Quarter 2021

How Agencies Can Stay Involved

Agencies will be contacted for comment during the initial coordination process, which will include disclosure of the Proposed Action for analysis in the EA, project components, and other preliminary details that are available (i.e., this informational package). In addition, all agencies will have the opportunity to provide comments on the Draft EA during the 30-day Review Period (1st Quarter 2021).



December 16, 2020

Mr. Mark Wolfe, State Historic Preservation Officer, Executive Director
Texas Historical Commission
P.O. Box 12276
Austin, TX 78711

**RE: National Environmental Policy Act Agency Coordination
Valley International Airport – Runway 17R-35L Extension Environmental Assessment
Harlingen, Texas**

Dear Mr. Wolfe,

The Valley International Airport (Airport), through the City of Harlingen, has identified a need for an extension to Runway 17R-35L to properly serve the needs of the community and continue to serve as an economic engine for regional prosperity. In coordination with the Federal Aviation Administration (FAA), the Airport intends to undertake the following Proposed Action (see **Attachment A**):

- » **Runway Extension:** Runway 17R-35L would be extended by 1,099 feet to the south.
- » **Taxiway Extension:** Taxiways A and M would be extended by 1,099 feet to the south.
- » **Perimeter Road Relocation:** Perimeter Road would be rerouted around the proposed extensions to Runway 17R-35L and Taxiways A and M.
- » **Medium Intensity Approach Lighting System with Runway Alignment Indicator Lights (MALSR) Installation:** the MALSR for the Runway 35L end would be installed in order to accommodate the proposed runway extension. The MALSR will be a non-federal system.
- » **MALSR Replacement:** the MALSR for the Runway 17R end would be replaced in its existing location. The MALSR will be a non-federal system.
- » **Precision Approach Path Indicators (PAPI) Relocation:** the PAPI on the Runway 35L end would be relocated.
- » **Localizer (LOC) Installation:** the LOC for the Runway 35L end would be installed.
- » **LOC Replacement:** the LOC for the Runway 17R end would be replaced in its existing location.
- » **Runway Visual Range (RVR) Installation:** RVRs would be installed for both the Runway 17R end and the Runway 35L end.
- » **Glideslope Installation:** the glideslope for the Runway 35L end would be installed.
- » **Glideslope Replacement:** the glideslope for the Runway 17R end will be replaced in its existing location.

An environmental assessment (EA) is being prepared in accordance with the National Environmental Policy Act (NEPA) that will analyze the physical, social, community, and natural effects of the Proposed Action. The EA will be prepared for review and determination by the FAA and will follow FAA guidelines for NEPA (see **Attachment B**). The Airport selected RS&H, Inc. (RS&H) to prepare the EA for FAA review and determination.

The purpose of this initial coordination letter is to:

- » Advise your agency of the preparation of the EA
- » Request any relevant information that your agency may have regarding the project site or environs
- » Solicit early comments regarding potential environmental, social, and economic issues for consideration during the preparation of the EA.

Input is a necessary step in the overall EA process. If your agency has any information relating to potential adverse environmental effects within the categories listed in **Attachment C**, please provide this information to me within 30 days of the date of this letter at the address above. For your information, **Attachment D** lists the agencies contacted as part of this initial coordination request. **Attachment E** presents the general schedule for the EA and ways for your agency to be involved in the EA process.

Thank you in advance for your assistance with the preparation of this EA. Please feel free to contact Julie Barrow of RS&H, our environmental consultant, at (303) 409-7940 or by email at julie.barrow@rsandh.com, if you have any questions or comments regarding the EA.

Sincerely,



Bryan Wren
Assistant Director of Aviation

Copy: Julie Barrow, RS&H
John MacFarlane, FAA Southwest Region

Attachments: A – Proposed Action
B – NEPA and FAA Guidance
C – FAA Order 1050.1F Environmental Resource Categories
D – Agency Coordination List
E – General EA Schedule and How to Stay Involved



December 16, 2020

Attn: NEPA Coordination
Planning and Environmental Branch
U.S. Army Corps of Engineers
Galveston District
2000 Fort Point Road
Galveston, TX 77550

**RE: National Environmental Policy Act Agency Coordination
Valley International Airport – Runway 17R-35L Extension Environmental Assessment
Harlingen, Texas**

Dear NEPA Coordinator,

The Valley International Airport (Airport), through the City of Harlingen, has identified a need for an extension to Runway 17R-35L to properly serve the needs of the community and continue to serve as an economic engine for regional prosperity. In coordination with the Federal Aviation Administration (FAA), the Airport intends to undertake the following Proposed Action (see **Attachment A**):

- » **Runway Extension:** Runway 17R-35L would be extended by 1,099 feet to the south.
- » **Taxiway Extension:** Taxiways A and M would be extended by 1,099 feet to the south.
- » **Perimeter Road Relocation:** Perimeter Road would be rerouted around the proposed extensions to Runway 17R-35L and Taxiways A and M.
- » **Medium Intensity Approach Lighting System with Runway Alignment Indicator Lights (MALSR) Installation:** the MALSR for the Runway 35L end would be installed in order to accommodate the proposed runway extension. The MALSR will be a non-federal system.
- » **MALSR Replacement:** the MALSR for the Runway 17R end would be replaced in its existing location. The MALSR will be a non-federal system.
- » **Precision Approach Path Indicators (PAPI) Relocation:** the PAPI on the Runway 35L end would be relocated.
- » **Localizer (LOC) Installation:** the LOC for the Runway 35L end would be installed.
- » **LOC Replacement:** the LOC for the Runway 17R end would be replaced in its existing location.
- » **Runway Visual Range (RVR) Installation:** RVRs would be installed for both the Runway 17R end and the Runway 35L end.
- » **Glideslope Installation:** the glideslope for the Runway 35L end would be installed.

- » **Glideslope Replacement:** the glideslope for the Runway 17R end will be replaced in its existing location.

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Sincerely,

Bryan Wren
Assistant Director of Aviation

Copy: Julie Barrow, RS&H
John MacFarlane, FAA Southwest Region

Attachments: A – Proposed Action
B – NEPA and FAA Guidance
C – FAA Order 1050.1F Environmental Resource Categories
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E – General EA Schedule and How to Stay Involved



December 16, 2020

Ms. Jessica Benavides-Paradez, Soil Conservationist
U.S. Department of Agriculture
Natural Resources Conservation Service
Administrative Zone 3 – Corpus Christi
13434 Leopard Street, A-14
Corpus Christi, TX 78410-4466

**RE: National Environmental Policy Act Agency Coordination
Valley International Airport – Runway 17R-35L Extension Environmental Assessment
Harlingen, Texas**

Dear Ms. Benavides-Paradez,

The Valley International Airport (Airport), through the City of Harlingen, has identified a need for an extension to Runway 17R-35L to properly serve the needs of the community and continue to serve as an economic engine for regional prosperity. In coordination with the Federal Aviation Administration (FAA), the Airport intends to undertake the following Proposed Action (see **Attachment A**):

- » **Runway Extension:** Runway 17R-35L would be extended by 1,099 feet to the south.
- » **Taxiway Extension:** Taxiways A and M would be extended by 1,099 feet to the south.
- » **Perimeter Road Relocation:** Perimeter Road would be rerouted around the proposed extensions to Runway 17R-35L and Taxiways A and M.
- » **Medium Intensity Approach Lighting System with Runway Alignment Indicator Lights (MALSR) Installation:** the MALSR for the Runway 35L end would be installed in order to accommodate the proposed runway extension. The MALSR will be a non-federal system.
- » **MALSR Replacement:** the MALSR for the Runway 17R end would be replaced in its existing location. The MALSR will be a non-federal system.
- » **Precision Approach Path Indicators (PAPI) Relocation:** the PAPI on the Runway 35L end would be relocated.
- » **Localizer (LOC) Installation:** the LOC for the Runway 35L end would be installed.
- » **LOC Replacement:** the LOC for the Runway 17R end would be replaced in its existing location.
- » **Runway Visual Range (RVR) Installation:** RVRs would be installed for both the Runway 17R end and the Runway 35L end.
- » **Glideslope Installation:** the glideslope for the Runway 35L end would be installed.

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An environmental assessment (EA) is being prepared in accordance with the National Environmental Policy Act (NEPA) that will analyze the physical, social, community, and natural effects of the Proposed Action. The EA will be prepared for review and determination by the FAA and will follow FAA guidelines for NEPA (see **Attachment B**). The Airport selected RS&H, Inc. (RS&H) to prepare the EA for FAA review and determination.

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Sincerely,



Bryan Wren
Assistant Director of Aviation

Copy: Julie Barrow, RS&H
John MacFarlane, FAA Southwest Region

Attachments: A – Proposed Action
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December 16, 2020

Mr. Robert Houston, Staff Director
Office of Communities, Tribes and Environmental Assessment
U.S. Environmental Protection Agency, Region 6
1201 Elm Street, Suite 500
Dallas, TX 75270

**RE: National Environmental Policy Act Agency Coordination
Valley International Airport – Runway 17R-35L Extension Environmental Assessment
Harlingen, Texas**

Dear Mr. Houston,

The Valley International Airport (Airport), through the City of Harlingen, has identified a need for an extension to Runway 17R-35L to properly serve the needs of the community and continue to serve as an economic engine for regional prosperity. In coordination with the Federal Aviation Administration (FAA), the Airport intends to undertake the following Proposed Action (see **Attachment A**):

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Sincerely,



Bryan Wren
Assistant Director of Aviation

Copy: Julie Barrow, RS&H
John MacFarlane, FAA Southwest Region

Attachments: A – Proposed Action
B – NEPA and FAA Guidance
C – FAA Order 1050.1F Environmental Resource Categories
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E – General EA Schedule and How to Stay Involved



December 16, 2020

Ms. Dawn Gardiner, Asst. Field Supervisor
Texas Coastal Ecological Services Field Office
U.S. Fish and Wildlife Service
4444 Corona Drive, Suite 215
Corpus Christi, TX 78411

**RE: National Environmental Policy Act Agency Coordination
Valley International Airport – Runway 17R-35L Extension Environmental Assessment
Harlingen, Texas**

Dear Ms. Gardiner,

The Valley International Airport (Airport), through the City of Harlingen, has identified a need for an extension to Runway 17R-35L to properly serve the needs of the community and continue to serve as an economic engine for regional prosperity. In coordination with the Federal Aviation Administration (FAA), the Airport intends to undertake the following Proposed Action (see **Attachment A**):

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Thank you in advance for your assistance with the preparation of this EA. Please feel free to contact Julie Barrow of RS&H, our environmental consultant, at (303) 409-7940 or by email at julie.barrow@rsandh.com, if you have any questions or comments regarding the EA.

Sincerely,



Bryan Wren
Assistant Director of Aviation

Copy: Julie Barrow, RS&H
John MacFarlane, FAA Southwest Region

Attachments: A – Proposed Action
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APPENDIX C.2

Agency Response Letters

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Jon Niermann, *Chairman*
Emily Lindley, *Commissioner*
Bobby Janecka, *Commissioner*
Toby Baker, *Executive Director*



TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

January 14, 2021

Julie Barrow
Environmental Consultant
Valley International Airport

Via: E-mail

Re: TCEQ NEPA Request #2020-286. Runway 17R-35L Extension. Cameron County.

Dear Ms. Barrow,

The Texas Commission on Environmental Quality (TCEQ) has reviewed the above-referenced project and offers the following comments:

In accordance with the general conformity regulations in 40 CFR Part 93, this proposed action was reviewed for air quality impact. The proposed action is located in Cameron County, which is currently designated as attainment/unclassified for the National Ambient Air Quality Standards for all six criteria air pollutants. General conformity requirements do not apply.

We recommend the environmental assessment address actions that will be taken to prevent surface and groundwater contamination.

Any debris or waste disposal should be at an appropriately authorized disposal facility.

Thank you for the opportunity to review this project. If you have any questions, please contact the agency NEPA coordinator at (512) 239-0010 or NEPA@tceq.texas.gov

Sincerely,

A handwritten signature in black ink, appearing to read "R. Vise".

Ryan Vise,
Division Director
External Relations

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APPENDIX D
BIOLOGICAL RESOURCES

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D.1 INTRODUCTION

Table D-1 lists the federally¹ and state² listed threatened and endangered species with the potential to occur in the Project Study Area and in Cameron County, respectively. **Table D-2** lists the migratory birds with the potential to occur in the Project Study Area.³

TABLE D-1
FEDERALLY AND STATE LISTED THREATENED AND ENDANGERED SPECIES

GROUP	COMMON NAME	SCIENTIFIC NAME	STATUS ^{a/}
Bird	Northern Aplomado Falcon	<i>Falco femoralis septentrionalis</i>	FE, SE
Bird	Piping Plover	<i>Charadrius melodus</i>	FT, ST
Bird	Red Knot	<i>Calidris canutus rufa</i>	FT, ST
Bird	Eastern Black Rail	<i>Laterallus jamaicensis ssp. jamaicensis</i>	FT
Bird	Black Rail	<i>Laterallus jamaicensis</i>	ST
Bird	Eskimo Curlew	<i>Numenius borealis</i>	SE
Bird	Reddish Egret	<i>Egretta rufescens</i>	ST
Bird	White-faced Ibis	<i>Plegadis chihi</i>	ST
Bird	Wood Stork	<i>Mycteria americana</i>	ST
Bird	Swallow-tailed Kite	<i>Elanoides forficatus</i>	ST
Bird	White-tailed Hawk	<i>Buteo albicaudatus</i>	ST
Bird	Zone-tailed Hawk	<i>Buteo albonotatus</i>	ST
Bird	Gray Hawk	<i>Buteo plagiatus</i>	ST
Bird	Sooty Tern	<i>Onychoprion fuscatus</i>	ST
Bird	Red-crowned Parrot	<i>Amazona viridigenalis</i>	ST
Bird	Northern Breadless-tyrannulet	<i>Camptostoma imberbe</i>	ST
Bird	Rose-throated Becard	<i>Pachyramphus aglaiae</i>	ST
Bird	Tropical Parula	<i>Setophaga pitiayumi</i>	ST
Bird	Texas Botteri's Sparrow	<i>Peucaea botterii texana</i>	ST
Mammal	Gulf Coast Jaguarundi	<i>Herpailurus yagouaroundi cacomitli</i>	FE
Mammal	Ocelot	<i>Leopardus pardalis</i>	FE, SE
Mammal	West Indian Manatee	<i>Trichechus manatus</i>	FT, ST
Mammal	Sperm Whale	<i>Physeter macrocephalus</i>	SE
Mammal	Sei Whale	<i>Balaenoptera borealis</i>	SE
Mammal	Blue Whale	<i>Balaenoptera musculus</i>	SE

¹ USFWS. Information for Planning and Conservation (IPaC). Retrieved December 2020, from: <https://ecos.fws.gov/ipac/>.

² Texas Parks and Wildlife. Rare, Threatened, and Endangered Species, Cameron County. Retrieved January 2021, from: <https://tpwd.texas.gov/gis/rtest/>.

³ USFWS. Information for Planning and Conservation (IPaC). Retrieved December 2020, from: <https://ecos.fws.gov/ipac/>.

GROUP	COMMON NAME	SCIENTIFIC NAME	STATUS ^{/a/}
Mammal	Gulf of Mexico Bryde's Whale	<i>Balaenoptera edeni</i>	SE
Mammal	North Atlantic Right Whale	<i>Eubalaena glacialis</i>	SE
Mammal	Coues' Rice Rat	<i>Oryzomys couesi aquaticus</i>	ST
Mammal	White-nosed Coati	<i>Nasua narica</i>	ST
Reptile	Green Sea Turtle	<i>Chelonia mydas</i>	FT, ST
Reptile	Hawksbill Sea Turtle	<i>Eretmochelys imbricata</i>	FE, SE
Reptile	Kemp's Ridley Sea Turtle	<i>Lepidochelys kempii</i>	FE, SE
Reptile	Leatherback Sea Turtle	<i>Dermochelys coriacea</i>	FE, SE
Reptile	Loggerhead Sea Turtle	<i>Caretta caretta</i>	FT, ST
Reptile	Texas Tortoise	<i>Gopherus berlandieri</i>	ST
Reptile	Texas Horned Lizard	<i>Phrynosoma cornutum</i>	ST
Reptile	Black-striped Snake	<i>Coniophanes imperialis</i>	ST
Reptile	Speckled Racer	<i>Drymobius margaritiferus</i>	ST
Reptile	Northern Cat-eyed Snake	<i>Leptodeira septentrionalis septentrionalis</i>	ST
Mollusks	Salina Mucket	<i>Potamilus metnecktayi</i>	ST
Mollusks	Mexican Fawnsfoot	<i>Truncilla cognata</i>	ST
Fish	Smalltooth Sawfish	<i>Pristis pectinate</i>	SE
Fish	Rio Grande Shiner	<i>Notropis jemezianus</i>	ST
Fish	River Goby	<i>Awaous banana</i>	ST
Fish	Mexican Goby	<i>Ctenogobius claytonii</i>	ST
Fish	Shortfin Mako Shark	<i>Isurus oxyrinchus</i>	ST
Fish	Oceanic Whitetip Shark	<i>Carcharhinus longimanus</i>	ST
Flowering Plant	South Texas Ambrosia	<i>Ambrosia cheiranthifolia</i>	FE, SE
Flowering Plant	Texas Ayenia	<i>Ayenia limitaris</i>	FE, SE
Flowering Plant	Star Cactus	<i>Astrophytum asterias</i>	SE
Amphibian	Black-spotted Newt	<i>Notophthalmus meridionalis</i>	ST
Amphibian	South Texas Siren (large form)	<i>Siren sp. 1</i>	ST
Amphibian	Mexican Treefrog	<i>Smilisca baudinii</i>	ST
Amphibian	White-lipped Frog	<i>Leptodactylus fragilis</i>	ST
Amphibian	Sheep Frog	<i>Hypopachus variolosus</i>	ST

Notes:

/a/ - FE – Federally endangered, FT – Federally threatened, SE – State endangered, ST – State threatened

Source: USFWS, 2021; TPW, 2021; RS&H, 2021.

TABLE D-2
MIGRATORY BIRDS

COMMON NAME	SCIENTIFIC NAME
Altamira Oriole	<i>Icterus gularis</i>
American Golden-plover	<i>Pluvialis dominica</i>
Audubon's Oriole	<i>Icterus graduacauda</i>
Bald Eagle	<i>Haliaeetus leucocephalus</i>
Buff-breasted Sandpiper	<i>Calidris subruficollis</i>
Curve-billed Thrasher	<i>Toxostoma curvirostre</i>
Elf Owl	<i>Micrathene whitneyi</i>
Gull-billed Tern	<i>Gelochelidon nilotica</i>
Harris's Hawk	<i>parabuteo unicinctus</i>
Hooded Oriole	<i>Icterus cucullatus</i>
Lesser Yellowlegs	<i>Tringa flavipes</i>
Long-billed Curlew	<i>Numenius americanus</i>
Mountain Plover	<i>Charadrius montanus</i>
Semipalmated Sandpiper	<i>Calidris pusilla</i>
Sprague's Pipit	<i>Anthus spragueii</i>

Sources: USFWS, 2021; RS&H, 2021.

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APPENDIX E

*ARCHAEOLOGICAL, ARCHITECTURAL,
HISTORICAL, AND CULTURAL RESOURCES*

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From: [MacFarlane, John \(FAA\)](#)
To: [Barrow, Julie](#)
Cc: [Bryan Wren](#)
Subject: FW: Section 106 Submission
Date: Tuesday, December 15, 2020 9:42:19 AM

That was quick!

From: noreply@thc.state.tx.us <noreply@thc.state.tx.us>
Sent: Tuesday, December 15, 2020 10:08 AM
To: MacFarlane, John (FAA) <John.MacFarlane@faa.gov>; reviews@thc.state.tx.us
Subject: Section 106 Submission



Re: Project Review under Section 106 of the National Historic Preservation Act and/or the Antiquities Code of Texas
THC Tracking #202104026
Valley International Airport Runway 35 L Extension
3002 Heritage Way
Harlingen, TX 78550

Description: VIA is proposing to extend Runway 35L, including the relocation of an existing access road and installation of navigational aids. This submission revises the original project area.

Dear John MacFarlane:

Thank you for your submittal regarding the above-referenced project. This response represents the comments of the State Historic Preservation Officer, the Executive Director of the Texas Historical Commission (THC), pursuant to review under Section 106 of the National Historic Preservation Act and the Antiquities Code of Texas.

The review staff, led by Justin Kockritz, Emily Dylla, has completed its review and has made the following determinations based on the information submitted for review:

Above-Ground Resources

- THC/SHPO concurs with information provided.
- No historic properties are present or affected by the project as proposed. However, if historic properties are discovered or unanticipated effects on historic properties are found, work should cease in the immediate area; work can continue where no historic properties are present. Please contact the THC's History Programs Division at 512-463-5853 to consult on further actions that may be necessary to protect historic properties.

Archeology Comments

- No identified historic properties, archeological sites, or other cultural resources are present or affected. However, if cultural materials are encountered during project activities, work should cease in the immediate area; work can continue where no cultural materials are present. Please contact the THC's Archeology Division at 512-

463-6096 to consult on further actions that may be necessary to protect the cultural remains.

We look forward to further consultation with your office and hope to maintain a partnership that will foster effective historic preservation. Thank you for your cooperation in this review process, and for your efforts to preserve the irreplaceable heritage of Texas. If the project changes, or if new historic properties are found, please contact the review staff. If you have any questions concerning our review or if we can be of further assistance, please email the following reviewers: justin.kockritz@thc.texas.gov, emily.dylla@thc.texas.gov.

This response has been sent through the electronic THC review and compliance system (eTRAC). Submitting your project via eTRAC eliminates mailing delays and allows you to check the status of the review, receive an electronic response, and generate reports on your submissions. For more information, visit <http://thc.texas.gov/etrac-system>.

Sincerely,



for Mark Wolfe, State Historic Preservation Officer
Executive Director, Texas Historical Commission

Please do not respond to this email.



U.S. Department
of Transportation
**Federal Aviation
Administration**

Federal Aviation Administration
Southwest Region, Airports Division
Texas Airports District Office

FAA-ASW-650
10101 Hillwood Parkway
Fort Worth, Texas 76177

December 14, 2020

Mr. Mark Wolfe
State Historic Preservation Officer
Texas Historical Commission
P.O. Box 12276
Austin, TX 78711-2276

RE: Section 106 Revised Submittal, Original Tracking Number 201905985, Valley International Airport, Harlingen, TX

Dear Mr. Wolfe:

The Federal Aviation Administration (FAA) is initiating the process for the approval of the Airport Layout Plan at Valley International Airport (HRL) for the proposed extension of Runway 35L approximately 1,100 feet to the south, including the relocation of an existing access road and installation of navigational aids, which has been determined to be an 'undertaking' subject to the National Historic Preservation Act (NHPA) and its implementing regulations under Section 106 of 36 CFR Part 800 (as amended).

Project documentation was originally submitted on March 15, 2019 and received concurrence on March 27, 2019 of no historic properties present or affected (see attachment). Since then, the project area has increased slightly to the south because of the proposed installation of Medium Intensity Approach Lighting System with Runway Alignment Indicator Lights (MALSR). The installation of the MALSR was not anticipated at the time of original submittal. Please see exhibit below delineating the original project area submitted on March 15, 2019 (red box) and the new project study area (blue box).

If you have any comments or questions on this undertaking, please contact me directly at 817-222-5681 or at john.macfarlane@faa.gov.

Sincerely,

John MacFarlane
Environmental Protection Specialist
Texas Airports District Office

Enclosure



Sources: Esri, 2020; RS&H, 2020

Age Group	Yes (Proportion)
18-24	0.45
25-34	0.55
35-44	0.65
45-54	0.75
55-64	0.85
65-74	0.95
75-84	0.98
85+	0.99



Legend

- | Runway Extension | Taxiway Extension | Perimeter Road Relocation | MALSR Installation | MALSR Replacement | Glideslope Installation | Glideslope Replacement | RVR Installation | Previous THC Consultation Area |
|---|---|---|---|---|---|---|---|---|
|  |  |  |  |  |  |  |  |  |
| | | | MALSR Installation | MALSR Replacement | LOC Installation | LOC Replacement | PAPI Relocation | Project Study Area |

March 15, 2019

Mark Wolfe
State Historic Preservation Officer
Texas Historical Commission
108 West 16th Street
Austin, TX 78701

RE: Runway 35 L Extension, Valley International Airport, Cameron County, Texas
FNI Project Number VAL18687

Dear Mr. Wolfe:

Introduction:

Freese and Nichols, Inc. (FNI), on behalf of the City of Harlingen (City), requests Antiquities Code of Texas concurrence from the Texas Historical Commission (THC) for the above referenced project in Cameron County, Texas. Valley International Airport is proposing to extend Runway 35L approximately 1,100 feet to the south, including the relocation of an existing access road, and drainage ditch (**Figures 1 and 2**). A portion of the ditch will be culverted for safety. **Figure 1** is a USGS topographic map depicting the Area of Potential Effects (APE). **Figure 2** depicts a large image of the proposed runway extension layout with ancillary facilities. The project area is located on the south side of runway 35L of Valley International Airport in Cameron County, Texas. The proposed APE area is located in an area that has been previously disturbed from past airport construction and agricultural activities.

Federal Involvement:

The Federal Aviation Administration (FAA) will review the proposed action and an Environmental Assessment is being prepared in accordance with FAA Guidelines as required under the National Environmental Policy Act (NEPA).

State Involvement:

The proposed project could affect a cumulative area greater than five acres or disturb more than 5,000 cubic yards. In accordance with Section 191.0525 (d) of the Antiquities Code of Texas, Valley International Airport is notifying the THC of the proposed project.

Area of Potential Effects

The APE for archeological resources is defined as the area where construction activities will cause ground disturbance. The APE is defined in three dimensions, including the project limits, width, acreage, and depth of impacts. The APE encompasses the entirety of the project area to the maximum area of construction. The APE measures approximately between 1445-feet by 3030-feet for the main area, totaling 94.6 acres. The main portion of the project is extending the runway to the south. The vertical depth of impact is anticipated to be between 12 to 18-inches in depth. The undeveloped portion of the APE is in previous farmland that has been previously disturbed from agricultural activities.

Soils

The online United States Department of Agriculture Web Soil Survey (USDA, 2018) database was utilized to create a custom soil report for the APE (**Attachment A: Custom Soil Resource Report for Cameron County, Texas**). The Web Soil Survey identifies the Mercedes clay, 0 to 1 percent slopes (72.4% / 68.5 acres), Mercedes-Urban land complex (7.6% / 7.2 acres), Raymondville clay loam (19.4% / 18.3 acres), and Raymondville-Urban land complex (0.6% / 0.6 acres) in the APE area (**Figure 3**).

Texas Archeological Sites Atlas Review

The archeological records available on the THC Texas Archeological Sites Atlas (TASA) were reviewed on March 9, 2018 to determine if any previously recorded archeological sites or historic properties listed in the National Register of Historic Places (NRHP), State Antiquities Landmarks (SAL), and Recorded Texas Historic Landmarks (RTHL) are located within or adjacent to the proposed APE within a one-kilometer radius (Texas Historical Commission (THC) 2018). The records review revealed no historic standing structures or historic properties listed in the NRHP, SAL's, historic cemeteries or RTHL's within the APE. The TASA review revealed three historic markers (No. 12954 Harlingen Army Airfield and Harlingen Air Force Base, No. 3113 Lon C. Hill, Home, and No. 2382 Harlingen Hospital) outside of the proposed APE but in the 1-kilometer buffer area, west of the project area. The APE has been previously disturbed by airport and agricultural activities.

Historical USGS Topographic Map Review

USGS (2018) topographic maps were obtained for the project area. The project area is depicted on the 1932, 1956, 1992 Harlingen historic topographic maps. These maps were reviewed concurrently with other historical land use information on the site. The topographic maps show no potential historical buildings or structures found within or near the proposed APE during the historical topographic map records review.

Conclusion

The proposed APE is situated in an area that has been previously disturbed from past airport construction and agricultural activities (**Figures 1 and 2**). The TASA records review revealed no previously recorded archeological sites within the proposed APE and one-kilometer records search. The proposed APE area is considered to have low integrity to find buried cultural material. Based on the literature and records review, no significant historic properties should be affected by the construction activities within the proposed APE area. Please review the proposed project to identify issues relative to any cultural resources that should be considered by the City of Harlingen, Cameron County in the development of this project. If possible, we would like to receive your comments within 30 days. If you have

any questions or need additional information regarding the archeological records review, please feel free to contact me at (512) 617-3175 or bck@freese.com.

Sincerely,



Brian King, RPA, GISP, CFM
Archeologist / GIS Analyst V

Attachments

Figure 1: USGS Topographic Map

Figure 2: APE Map

Figure 3: Soils Map

Figure 4: TASA Atlas Review Map

Attachment A: City of Harlingen, Cameron County Soils Report

References

Texas Historical Commission (THC) 2018 Texas Archaeological Site Atlas restricted database. Available at <http://nueces.thc.state.tx.us/>. Accessed March 9, 2018.

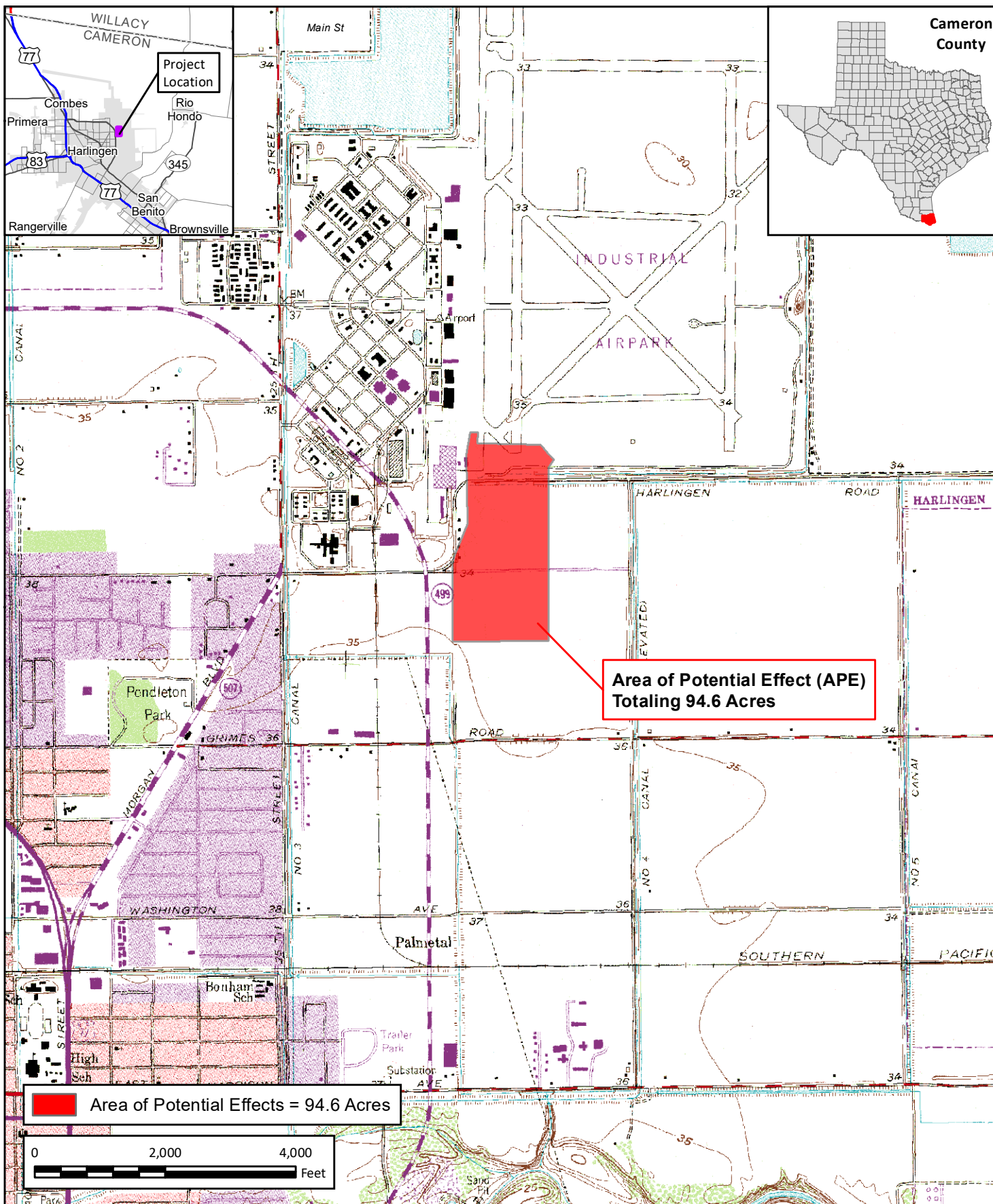
U.S. Department of Agriculture, Soil Conservation Service (USDA). Web Soil Survey – Soil Survey of Cameron County, Texas. Data Obtained March 2019.

U.S. Geological Survey (USGS) 2018 USGS Historical Topographic Map Explorer. Available at <http://historicalmaps.arcgis.com/usgs/>. Accessed March 2019.

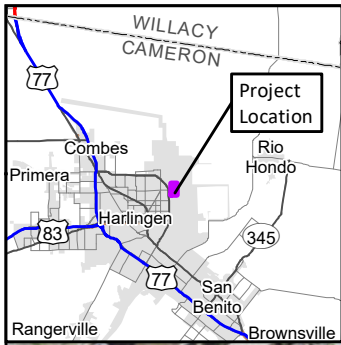
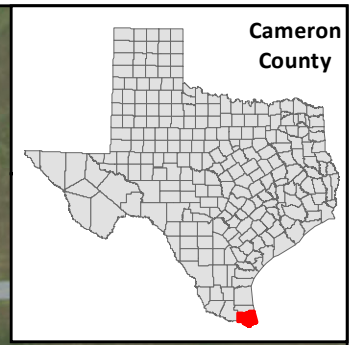
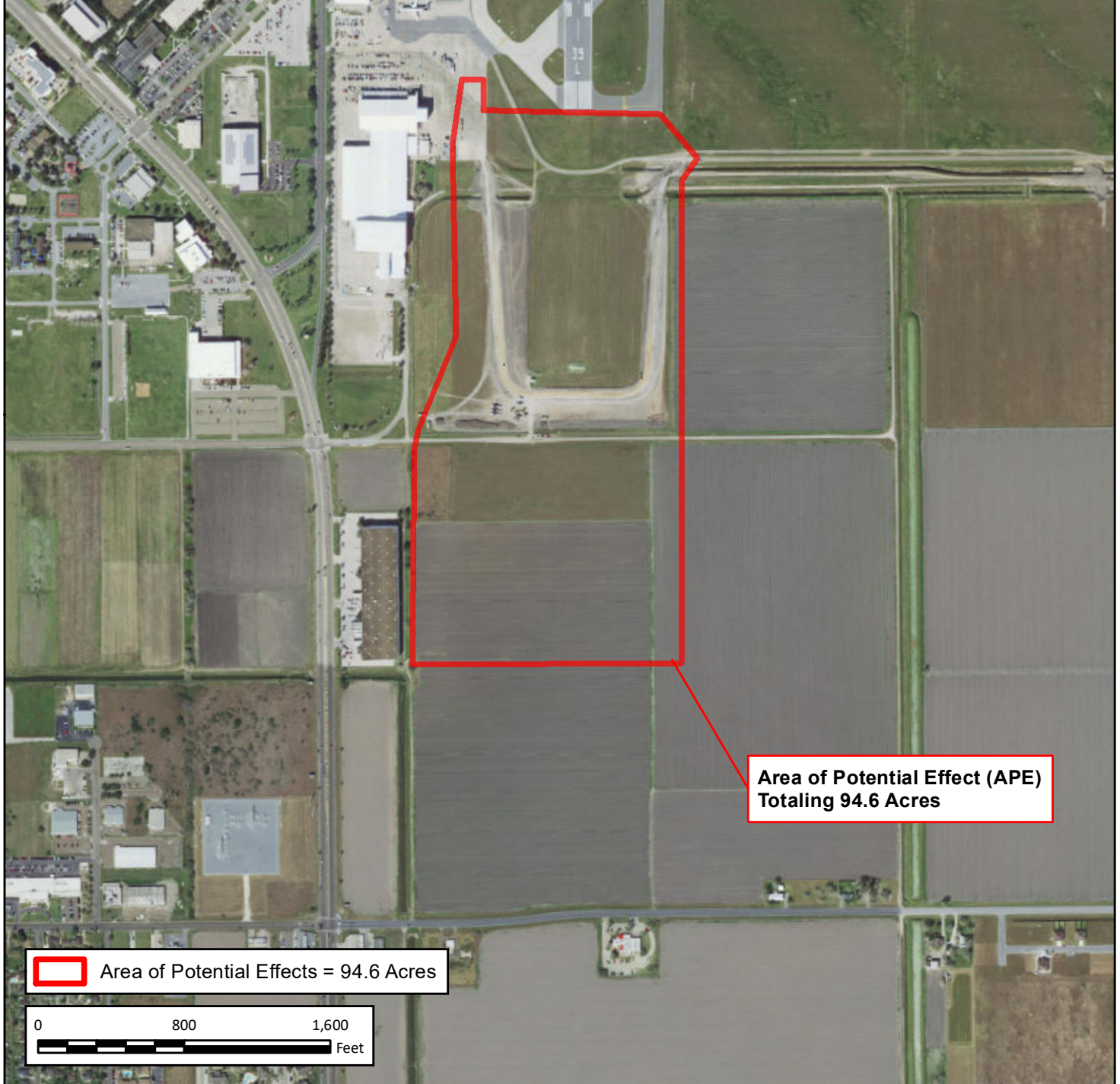
U.S. Geologic Survey (USGS). 7.5' Series Topographic Map – Harlingen, Texas Quadrangle. 1932.

U.S. Geologic Survey (USGS). 7.5' Series Topographic Map – Harlingen, Texas Quadrangle. 1956.

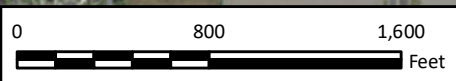
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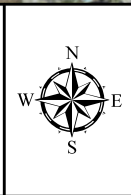
<p>FREES & NICHOLS 4055 International Plaza, Suite 200 Fort Worth, TX 76109 - 4895 Phone - (817) 735 - 7300</p>		<p>VALLEY INTERNATIONAL AIRPORT Runway 35-L Extension EA</p>		<p>1 FIGURE</p>
		<p>USGS Topographic Map</p>		
		<p>FN JOB NO VAL18687</p>	<p>FILE NAME 1_Topo.mxd</p>	
		<p>DATE 3/14/2019</p>	<p>SCALE 1:24,000</p>	
		<p>DESIGNED BCK</p>	<p>DRAFTED BCK</p>	



 Area of Potential Effects = 94.6 Acres



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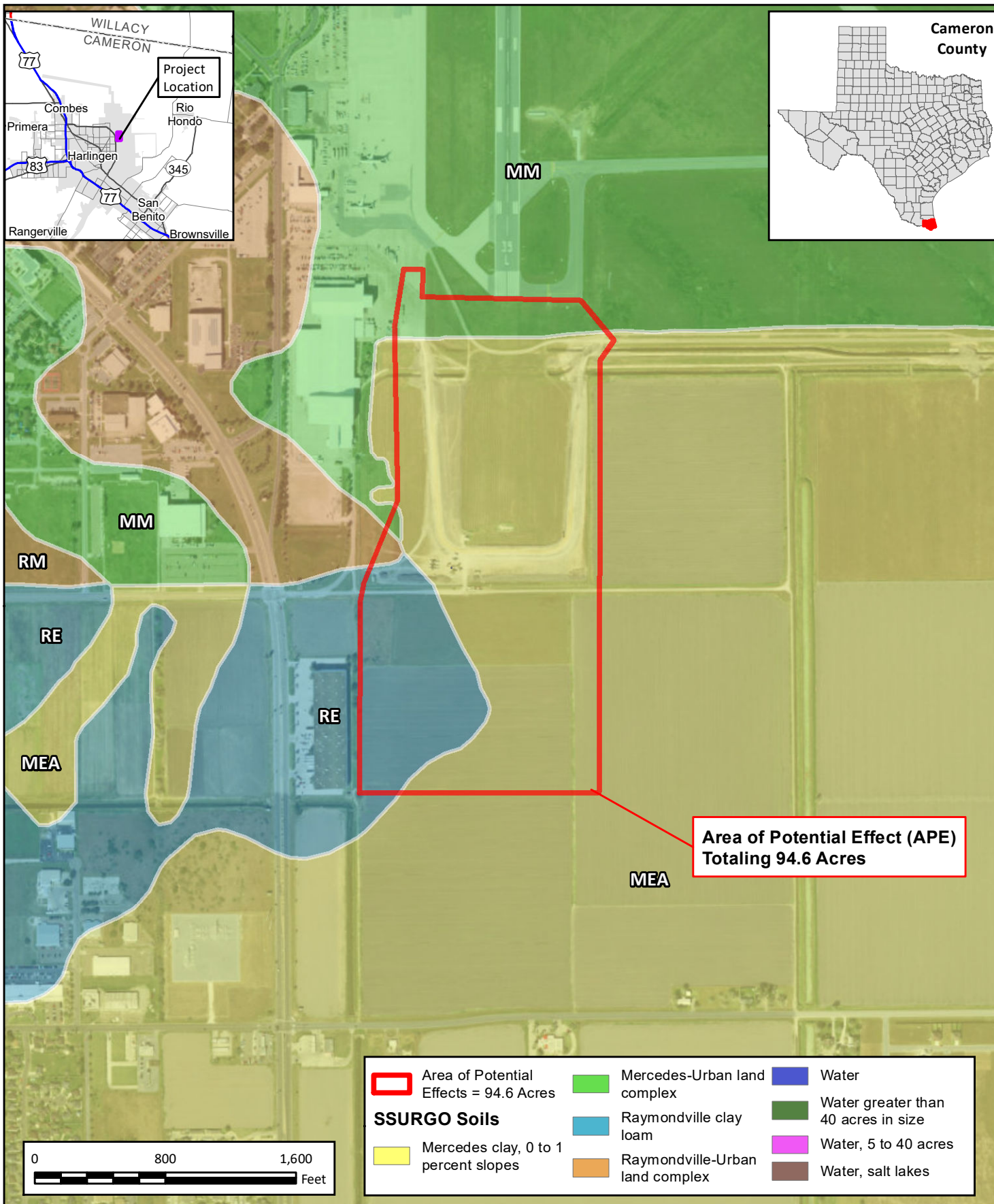
VALLEY INTERNATIONAL AIRPORT
 Runway 35-L Extension EA

Area of Potential Effects (APE)

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DATE	3/15/2019
SCALE	1:9,600
DESIGNED	BCK
DRAFTED	BCK

2

FIGURE



FREESSE & NICHOLS
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 Fort Worth, TX 76109 - 4895
 Phone - (817) 735 - 7300



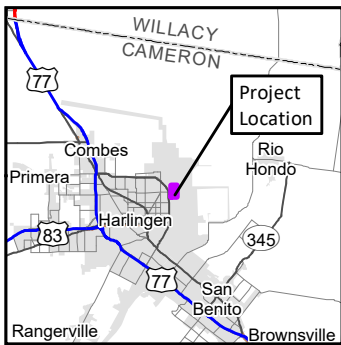
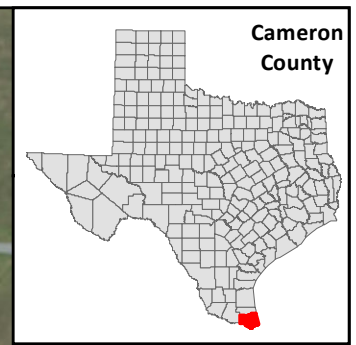
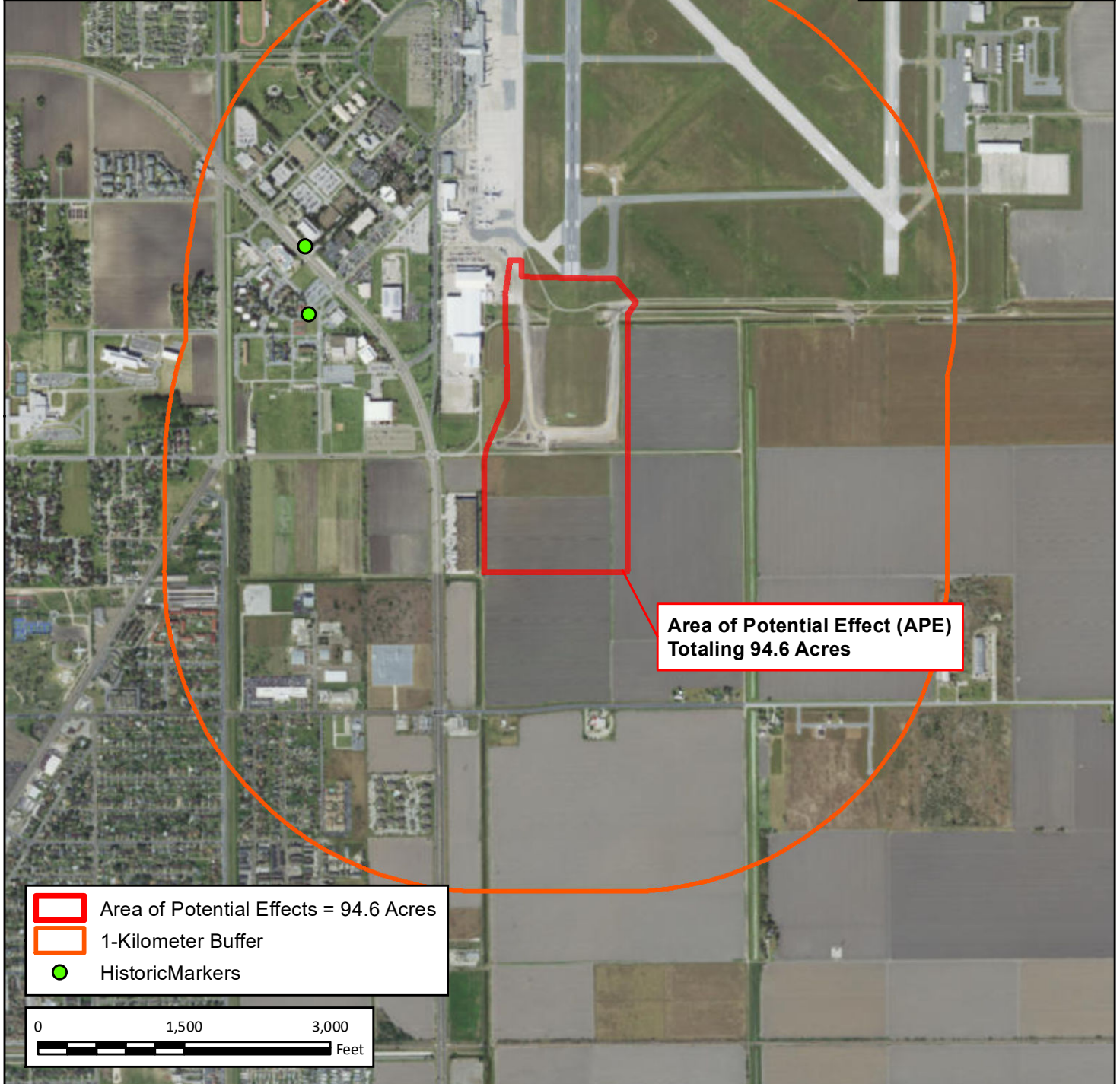
VALLEY INTERNATIONAL AIRPORT
 Runway 35-L Extension EA

NRCS SSURGO Soils Map

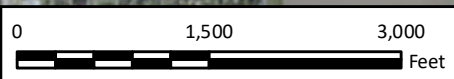
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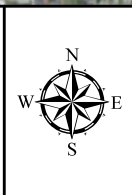
FIGURE



- Area of Potential Effects = 94.6 Acres
- 1-Kilometer Buffer
- HistoricMarkers



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 Phone - (817) 735 - 7300



VALLEY INTERNATIONAL AIRPORT
Runway 35-L Extension EA

TASA Map

FN JOB NO	VAL18687
FILE NAME	4_TASA.mxd
DATE	3/15/2019
SCALE	1:18,000
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4

FIGURE



United States
Department of
Agriculture

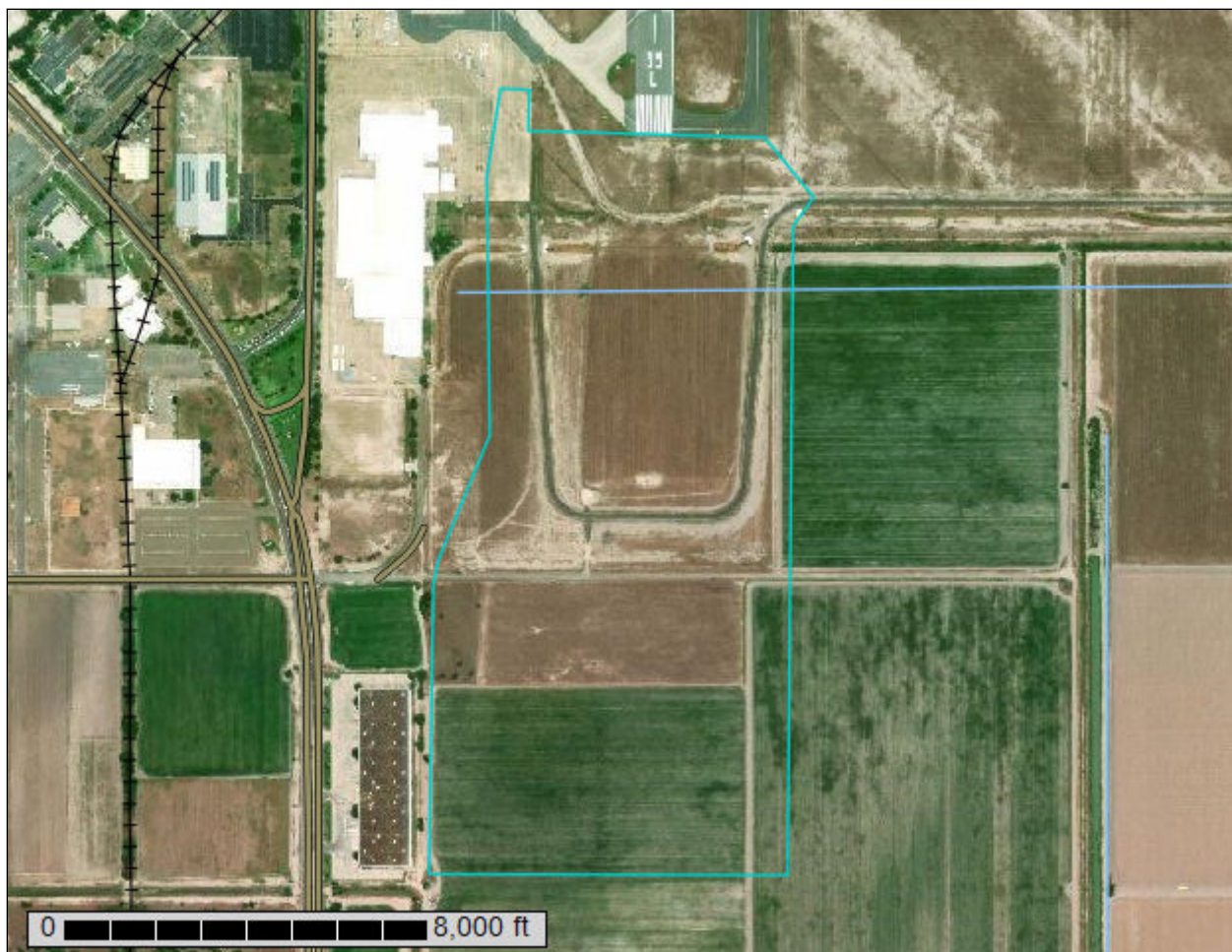
NRCS

Natural
Resources
Conservation
Service

A product of the National
Cooperative Soil Survey,
a joint effort of the United
States Department of
Agriculture and other
Federal agencies, State
agencies including the
Agricultural Experiment
Stations, and local
participants

Custom Soil Resource Report for **Cameron County, Texas**

**Attachment A: Valley
International Airport Project
Project No. VAL18687**



Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

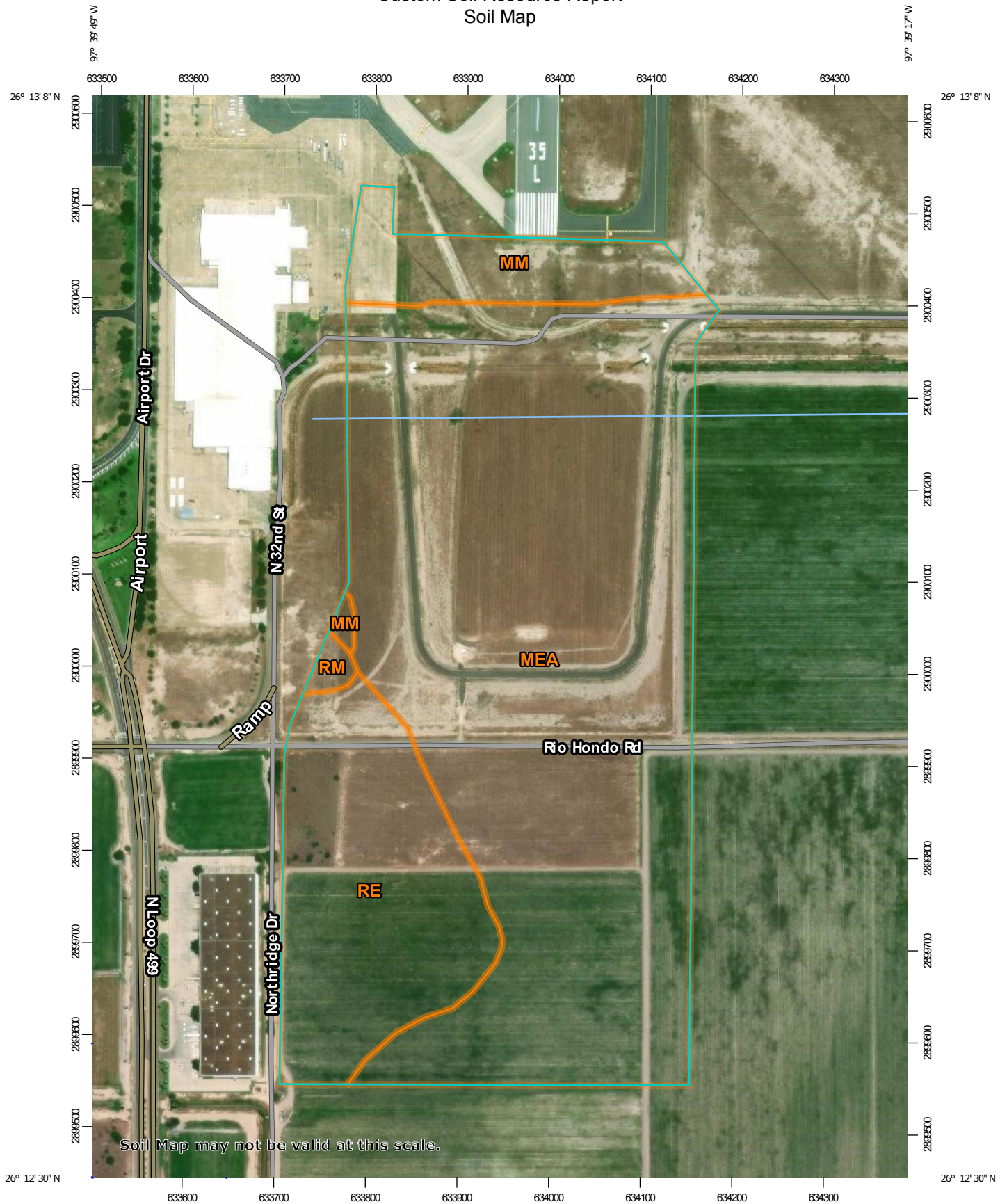
Custom Soil Resource Report

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report Soil Map



Map Scale: 1:5,740 if printed on A portrait (8.5" x 11") sheet.

0 50 100 200 300 Meters

0 250 500 1000 1500 Feet

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 14N WGS84

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
MEA	Mercedes clay, 0 to 1 percent slopes	68.5	72.4%
MM	Mercedes-Urban land complex	7.2	7.6%
RE	Raymondville clay loam	18.3	19.4%
RM	Raymondville-Urban land complex	0.6	0.6%
Totals for Area of Interest		94.6	100.0%

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or

landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Cameron County, Texas

MEA—Mercedes clay, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: d6f0
Elevation: 10 to 150 feet
Mean annual precipitation: 24 to 34 inches
Mean annual air temperature: 73 to 75 degrees F
Frost-free period: 300 to 365 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Mercedes and similar soils: 95 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Mercedes

Setting

Landform: Delta plains
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Calcareous clayey alluvium

Typical profile

H1 - 0 to 18 inches: clay
H2 - 18 to 47 inches: clay
H3 - 47 to 74 inches: clay

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 5 percent
Gypsum, maximum in profile: 10 percent
Salinity, maximum in profile: Slightly saline to strongly saline (4.0 to 16.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 12.0
Available water storage in profile: Moderate (about 7.9 inches)

Interpretive groups

Land capability classification (irrigated): 3s
Land capability classification (nonirrigated): 3s
Hydrologic Soil Group: D
Ecological site: Saline Clay (R083DY015TX)
Hydric soil rating: No

Minor Components

Raymondville

Percent of map unit: 3 percent

Ecological site: Clay Loam (R083DY025TX)

Hydric soil rating: No

Hidalgo

Percent of map unit: 2 percent

Hydric soil rating: No

MM—Mercedes-Urban land complex

Map Unit Setting

National map unit symbol: d6f3

Elevation: 10 to 150 feet

Mean annual precipitation: 24 to 34 inches

Mean annual air temperature: 73 to 75 degrees F

Frost-free period: 300 to 365 days

Farmland classification: Not prime farmland

Map Unit Composition

Mercedes and similar soils: 55 percent

Urban land: 35 percent

Minor components: 10 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Mercedes

Setting

Landform: Delta plains

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Calcareous clayey alluvium

Typical profile

H1 - 0 to 18 inches: clay

H2 - 18 to 47 inches: clay

H3 - 47 to 74 inches: clay

Properties and qualities

Slope: 0 to 1 percent

Depth to restrictive feature: More than 80 inches

Natural drainage class: Moderately well drained

Runoff class: High

Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

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Calcium carbonate, maximum in profile: 5 percent
Gypsum, maximum in profile: 10 percent
Salinity, maximum in profile: Slightly saline to strongly saline (4.0 to 16.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 12.0
Available water storage in profile: Moderate (about 7.9 inches)

Interpretive groups

Land capability classification (irrigated): 3s
Land capability classification (nonirrigated): 3s
Hydrologic Soil Group: D
Ecological site: Saline Clay (R083DY015TX)
Hydric soil rating: No

Description of Urban Land

Typical profile

H1 - 0 to 40 inches: variable

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8s
Hydrologic Soil Group: D
Hydric soil rating: No

Minor Components

Hidalgo

Percent of map unit: 5 percent
Hydric soil rating: No

Raymondville

Percent of map unit: 5 percent
Ecological site: Clay Loam (R083DY025TX)
Hydric soil rating: No

RE—Raymondville clay loam

Map Unit Setting

National map unit symbol: d6ff
Elevation: 20 to 200 feet
Mean annual precipitation: 23 to 33 inches
Mean annual air temperature: 72 to 73 degrees F
Frost-free period: 300 to 340 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Raymondville and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Raymondville

Setting

Landform: Delta plains
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Calcareous clayey alluvium

Typical profile

H1 - 0 to 14 inches: clay loam
H2 - 14 to 37 inches: clay
H3 - 37 to 78 inches: clay

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 10 percent
Salinity, maximum in profile: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 8.0
Available water storage in profile: Moderate (about 9.0 inches)

Interpretive groups

Land capability classification (irrigated): 2s
Land capability classification (nonirrigated): 2s
Hydrologic Soil Group: C
Ecological site: Clay Loam (R083DY025TX)
Hydric soil rating: No

Minor Components

Hidalgo

Percent of map unit: 5 percent
Hydric soil rating: No

Racombes

Percent of map unit: 5 percent
Ecological site: Clay Loam (R083DY025TX)
Hydric soil rating: No

Willacy

Percent of map unit: 5 percent
Hydric soil rating: No

RM—Raymondville-Urban land complex

Map Unit Setting

National map unit symbol: d6fh
Elevation: 20 to 200 feet
Mean annual precipitation: 23 to 33 inches
Mean annual air temperature: 72 to 73 degrees F
Frost-free period: 300 to 340 days
Farmland classification: Not prime farmland

Map Unit Composition

Raymondville and similar soils: 55 percent
Urban land: 35 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Raymondville

Setting

Landform: Delta plains
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Calcareous clayey alluvium

Typical profile

H1 - 0 to 14 inches: clay loam
H2 - 14 to 37 inches: clay
H3 - 37 to 78 inches: clay

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 10 percent
Salinity, maximum in profile: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 8.0
Available water storage in profile: Moderate (about 9.0 inches)

Interpretive groups

Land capability classification (irrigated): 2s
Land capability classification (nonirrigated): 2s
Hydrologic Soil Group: C
Ecological site: Clay Loam (R083DY025TX)
Hydric soil rating: No

Description of Urban Land

Typical profile

H1 - 0 to 40 inches: variable

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 8s

Hydrologic Soil Group: D

Hydric soil rating: No

Minor Components

Racombes

Percent of map unit: 4 percent

Ecological site: Clay Loam (R083DY025TX)

Hydric soil rating: No

Willacy

Percent of map unit: 3 percent

Hydric soil rating: No

Hidalgo

Percent of map unit: 3 percent

Hydric soil rating: No

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Kara Marks

From: Brian King
Sent: Wednesday, March 27, 2019 1:50 PM
To: Kara Marks; Dan Gise
Subject: FW: Project Review: 201905985

Read below.

Brian King, GISP, RPA, CFM
Business Technology
GIS Analyst V / Archeologist

Freese and Nichols, Inc.
10431 Morado Circle
Suite 300
Austin, Texas 78759
W: 512-617-3175
F: 512-617-3101

www.freese.com

From: noreply@thc.state.tx.us <noreply@thc.state.tx.us>
Sent: Wednesday, March 27, 2019 1:48 PM
To: Brian King <Brian.King@freese.com>; reviews@thc.state.tx.us
Subject: Project Review: 201905985



TEXAS HISTORICAL COMMISSION
real places telling real stories

Re: Project Review under Section 106 of the National Historic Preservation Act and/or the Antiquities Code of Texas
201905985

Valley International Airport Project Number: VAL18687
Harlingen, Texas
Harlingen, TX 78550

Dear BRIAN KING:

Thank you for your submittal regarding the above-referenced project. This response represents the comments of the State Historic Preservation Officer, the Executive Director of the Texas Historical Commission (THC), pursuant to review under Section 106 of the National Historic Preservation Act and the Antiquities Code of Texas.

The review staff led by Casey Hanson and Justin Kockritz has completed its review and has made the following determinations based on the information submitted for review:

Above-Ground Resources

- THC/SHPO concurs with information provided .

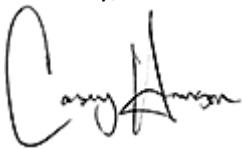
- No historic properties are present or affected by the project as proposed. However, if historic properties are discovered or unanticipated effects on historic properties are found, work should cease in the immediate area; work can continue where no historic properties are present. Please contact the THC's History Programs Division at 512-463-5853 to consult on further actions that may be necessary to protect historic properties.

Archeology Comments

- No historic properties present or affected. However, if buried cultural materials are encountered during construction or disturbance activities, work should cease in the immediate area; work can continue where no cultural materials are present. Please contact the THC's Archeology Division at 512-463-6096 to consult on further actions that may be necessary to protect the cultural remains.
- THC/SHPO concurs with information provided

We look forward to further consultation with your office and hope to maintain a partnership that will foster effective historic preservation. Thank you for your cooperation in this review process, and for your efforts to preserve the irreplaceable heritage of Texas. If you have any questions concerning our review or if we can be of further assistance, please email the following reviewers: casey.hanson@thc.texas.gov, justin.kockritz@thc.texas.gov.

Sincerely,

A handwritten signature in black ink, appearing to read "Casey Hanson". The signature is fluid and cursive, with the first name "Casey" written in a larger, more prominent script than the last name "Hanson".

For Mark Wolfe, State Historic Preservation Officer
Executive Director, Texas Historical Commission

Please do not respond to this email.

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APPENDIX F
NOISE ANALYSIS

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F.1 INTRODUCTION

Sound is a physical phenomenon consisting of pressure fluctuations that travel through a medium, such as air, and are sensed by the human ear. Noise is generally considered unwanted sound that may interfere with ordinary daily activities, such as communication or sleep, or cause annoyance. A person's reaction to noise varies according to the duration, type, and characteristics of the source; distance between the source and receiver; receiver's sensitivity; background noise level; and time of day. Noise may be intermittent or continuous, steady or impulsive, and may be generated by stationary or mobile sources. Although aircraft are not the only source of noise in any area, they are readily identifiable to those affected by their noise emissions and are routinely singled out for special attention and criticism. Aviation noise primarily results from the operation of fixed and rotary wing aircraft, including departures, arrivals, overflights, taxiing, and engine run-ups.

Noise is represented by a variety of metrics. The Day-Night Average Sound Level (DNL) describes the cumulative noise exposure from all events occurring during a 24-hour period; as aircraft operations increase, with all else remaining constant, DNL values increase proportionally. DNL accounts for the noise levels of all individual aircraft events, the number of occurrences, and the times at which they occur. This noise metric logarithmically averages aircraft sound levels at a location over a complete 24-hour period, with a 10-decibel (dB) adjustment added to those noise events occurring from 10:00 p.m. and up to 7:00 a.m. the following morning. The 10-dB penalty has been added to represent increased sensitivity to noise during normal nighttime hours and because ambient sound levels during nighttime are typically about 10-dB lower than during daytime hours.¹ In practice, DNL is computed for an average annual day (AAD) of operations for the year of interest. DNL provides a quantitative basis for identifying potential noise impacts and is used in this EA when describing noise from aircraft.

In the 1970s, the U.S. Environmental Protection Agency (USEPA) identified DNL as the most appropriate means of evaluating airport noise in the 1970s and reaffirmed its appropriateness for this uses in 1992. Currently, most federal agencies dealing with noise have formally adopted DNL as the primary metric for airport noise. In particular, the Federal Aviation Administration (FAA) requires that the cumulative noise energy exposure of individuals to noise resulting from aviation activities must be established in terms of Yearly Day Night Average Sound Level, the FAA's primary noise metric.² Noise levels discussed in this document will be described using DNL.

F.2 LAND USE COMPATIBILITY

Aircraft noise emissions, inherent to the operation of an airport, can adversely impact land use compatibility between an airport and surrounding properties, particularly in the presence of noise-sensitive receptors. Residences, places of worship, hospitals, schools, parks, and amphitheaters are receptors that are sensitive to elevated noise levels. Noise levels accompanying airport operations are generally compatible with most industrial, commercial, and agricultural land uses. Therefore, it is important to measure or model existing noise levels and then predict future noise levels to determine if impacts would occur to any noise-sensitive land uses near the airport. Once these predictions are known,

¹ FAA. (2020, February). *1050.1F Desk Reference*.

² FAA. (2015, July). Order 1050.1F, *Environmental Impacts: Policies and Procedures*, Appendix B.

abatement measures can be incorporated into airport development plans to avoid or minimize the impacts.

Noise compatibility or non-compatibility of land use is determined by comparing the aircraft DNL values at a site to the values in the land use compatibility guidelines in 14 CFR part 150, Appendix A, Table 1. The FAA generally considers all land uses exposed to less than 65 dB DNL to be compatible with all land uses. However, the FAA recognizes that noise sensitive areas within Section 4(f) properties (including but not limited to noise sensitive areas within national parks; national wildlife and waterfowl refuges; and historic sites, including traditional cultural properties) require special consideration, as the land use compatibility guidelines in 14 CFR part 150 are not necessarily relevant to the value, significance, and enjoyment of the area in question. For example, the land use categories in the guidelines are not sufficient to determine the noise compatibility of areas within a national park or national wildlife refuge where other noise is very low and a quiet setting is a generally recognized purpose and attribute.

The current guidance within FAA Order 1050.1F calls for the identification of noise sensitive areas within the DNL 60 dB contour that are exposed to aircraft noise at or above DNL 60 dB but below DNL 65 dB and are projected to experience a noise increase of DNL 3 dB or more, only when DNL 1.5 dB increases are documented within the DNL 65 dB contour. For air traffic airspace and procedure actions where the study area is larger than the immediate vicinity of an airport, incorporates more than one airport, and/or includes actions above 3,000 feet above ground level, noise changes of 5 dB or more between levels of DNL 45 dB to less than 60 dB should be reported. Levels of changes for noise sensitive locations are summarized below.

- » Significant noise impact: DNL increase of 1.5 dB or more in areas of 65 dB DNL and higher
- » Reportable changes:
 - DNL increase of 3 dB or more in areas between 60 and 65 dB DNL
 - DNL increase of 5 dB or more in areas between 45 and 60 dB DNL

F.3 METHODOLOGY

The Aviation Environmental Design Tool (AEDT), FAA's approved noise model, uses airport geometry, descriptions of aircraft operations, and an internal database of noise and performance characteristics to compute the noise of individual flights. The software then adds the noise of individual flights together to compute the cumulative noise levels at a grid of points. These results can be reported at each point or presented as a set of contours of equal noise exposure.

The Affected Environment noise contours reflect aircraft flight operations for 2019 (see **Section F.4**). The AEDT for 2019 was based on a twelve-month sample of data within a 30-nautical mile (nmi) radius of Valley International Airport (HRL). This data was prepared for noise modeling input by assigning individual radar flight tracks to operation types (i.e. arrivals, departures, touch and goes) and runways using the flight track geometry. The aircraft type, registration, and airline for flights with associated flight plans were used to match these flights to the appropriate representative noise and performance aircraft type in AEDT. All radar flight tracks that could be matched to a valid operation type, runway, and AEDT aircraft type were used in the noise modeling.

Model tracks were developed for each geometrically similar group. For example, Runway 35L departures with a northerly destination were split into a geometrically similar group, and a 'backbone' track was developed. Each of these backbone tracks were then assigned one or two 'dispersion' subtracks on either side of the backbone, for a total of three or five tracks (one backbone and two or four dispersion) for each geometrically similar group. The model tracks used in this noise analysis are depicted in **Figures F-1** through **F-4**. Please see **Attachment 1** for the noise modeling methodology memo.

F.4 AFFECTED ENVIRONMENT

In 2019, the FAA Terminal Area Forecast (TAF) counted 40,687 aircraft operations at HRL. The 2019 AEDT noise model inputs included 19,358 individual aircraft flight tracks representing the full spectrum of aircraft flight track dispersion, runway utilization, and fleet mix. The operations on these flight tracks were scaled to the 2019 TAF to represent all operations at HRL in 2019. **Table F-1** summarizes the noise modeling input data sources used to model the 2019 Affected Environment at HRL.

TABLE F-1
2019 AFFECTED ENVIRONMENT NOISE MODELING INPUT SOURCES

Input Type	Input Data Source	Notes
Runway layout	FAA Form 5010	
Runway utilization	FlightAware 12-month radar sample	January 2019 – December 2019
Flight track geometry	FlightAware 12-month radar sample	19,358 individual flight tracks
Fleet mix	FlightAware 12-month radar sample	
Day-night splits	FlightAware 12-month radar sample	
Total Operations	FAA 2019 Terminal Area Forecast	40,687 operations

Source: HMMH, 2019.

FIGURE F-1
2019 AFFECTED ENVIRONMENT AEDT ARRIVAL MODEL TRACKS

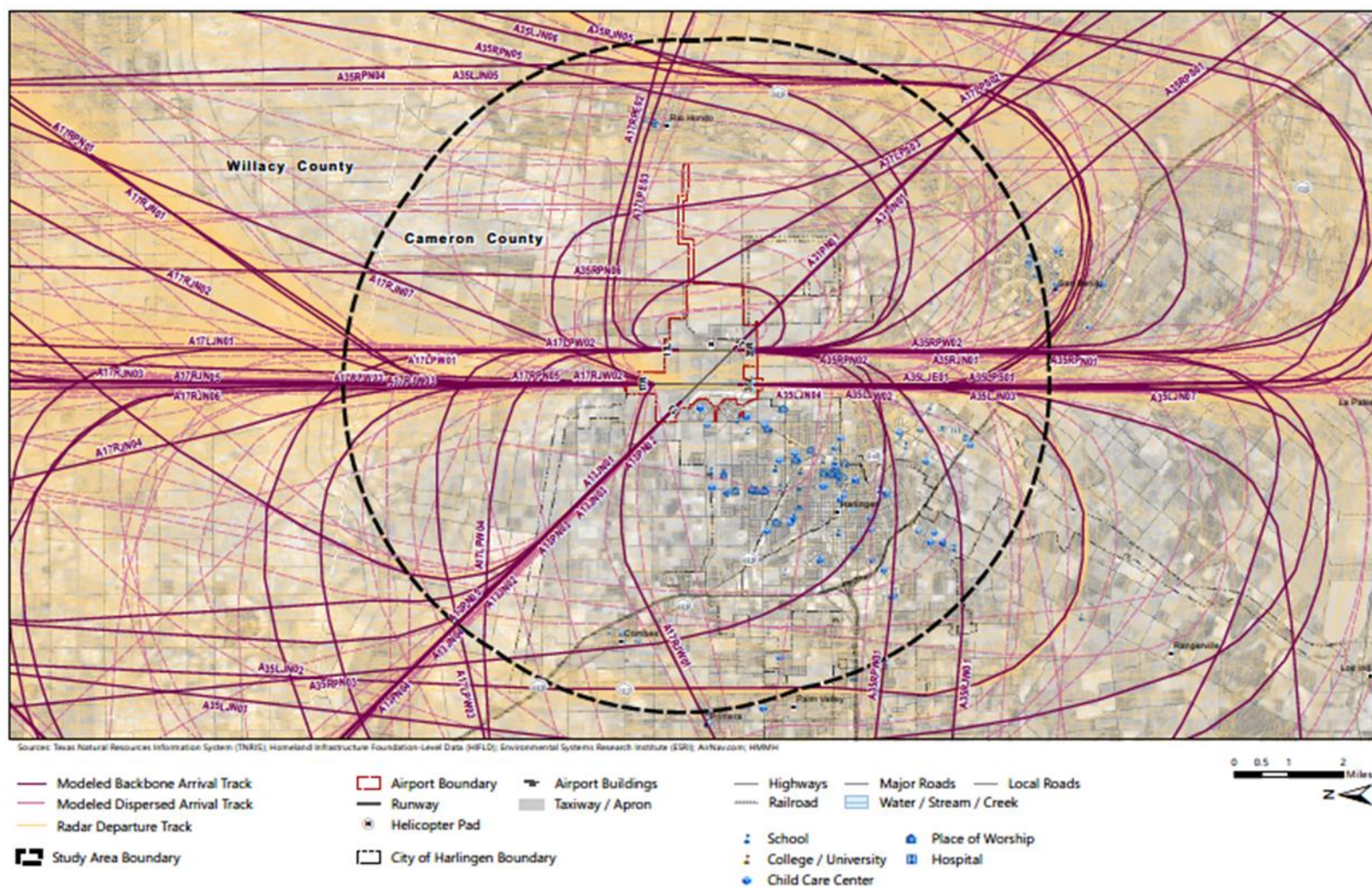


FIGURE F-2
2019 AFFECTED ENVIRONMENT AEDT DEPARTURE MODEL TRACKS

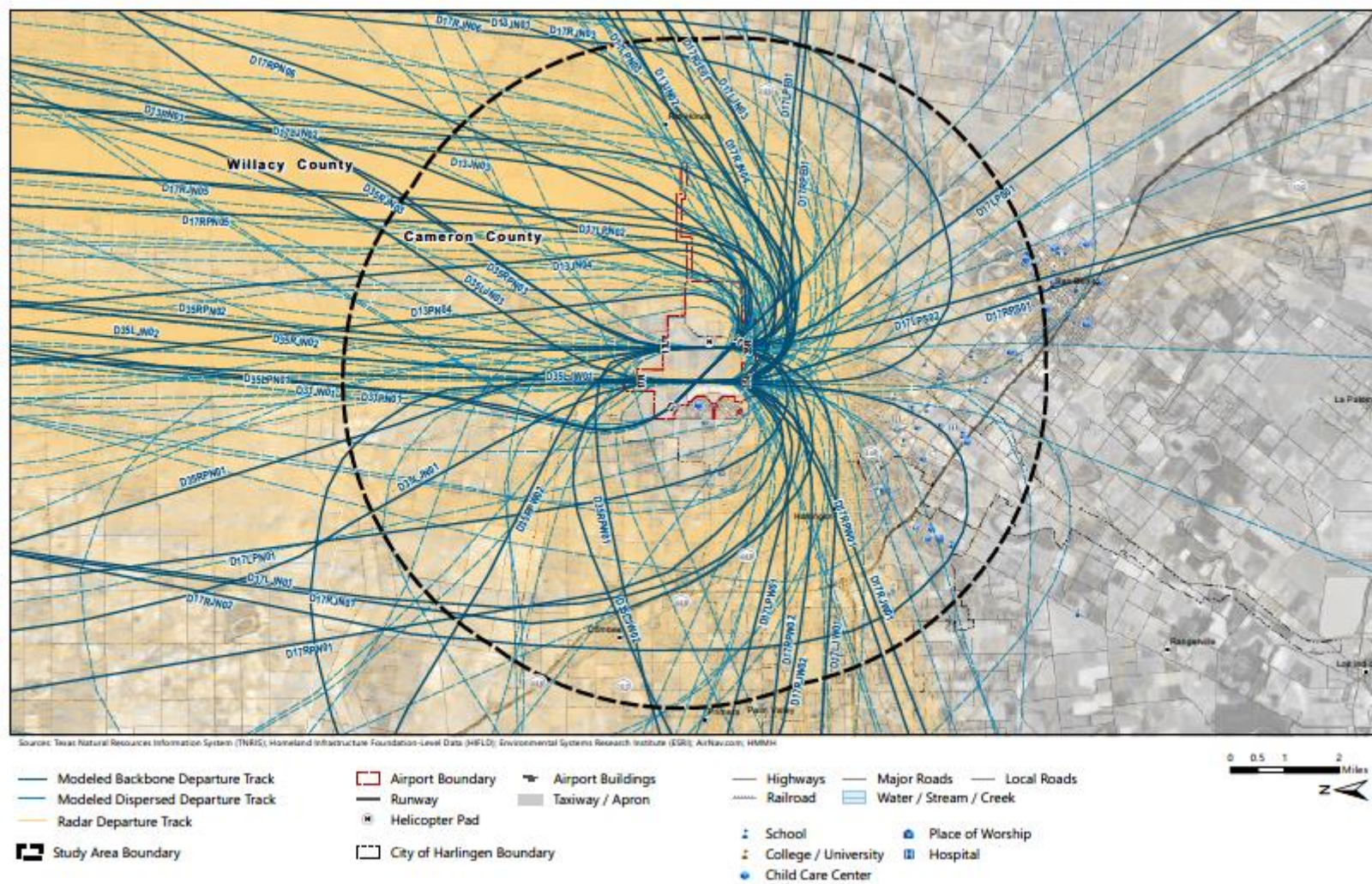


FIGURE F-3
2019 AFFECTED ENVIRONMENT AEDT TOUCH AND GO MODEL TRACKS

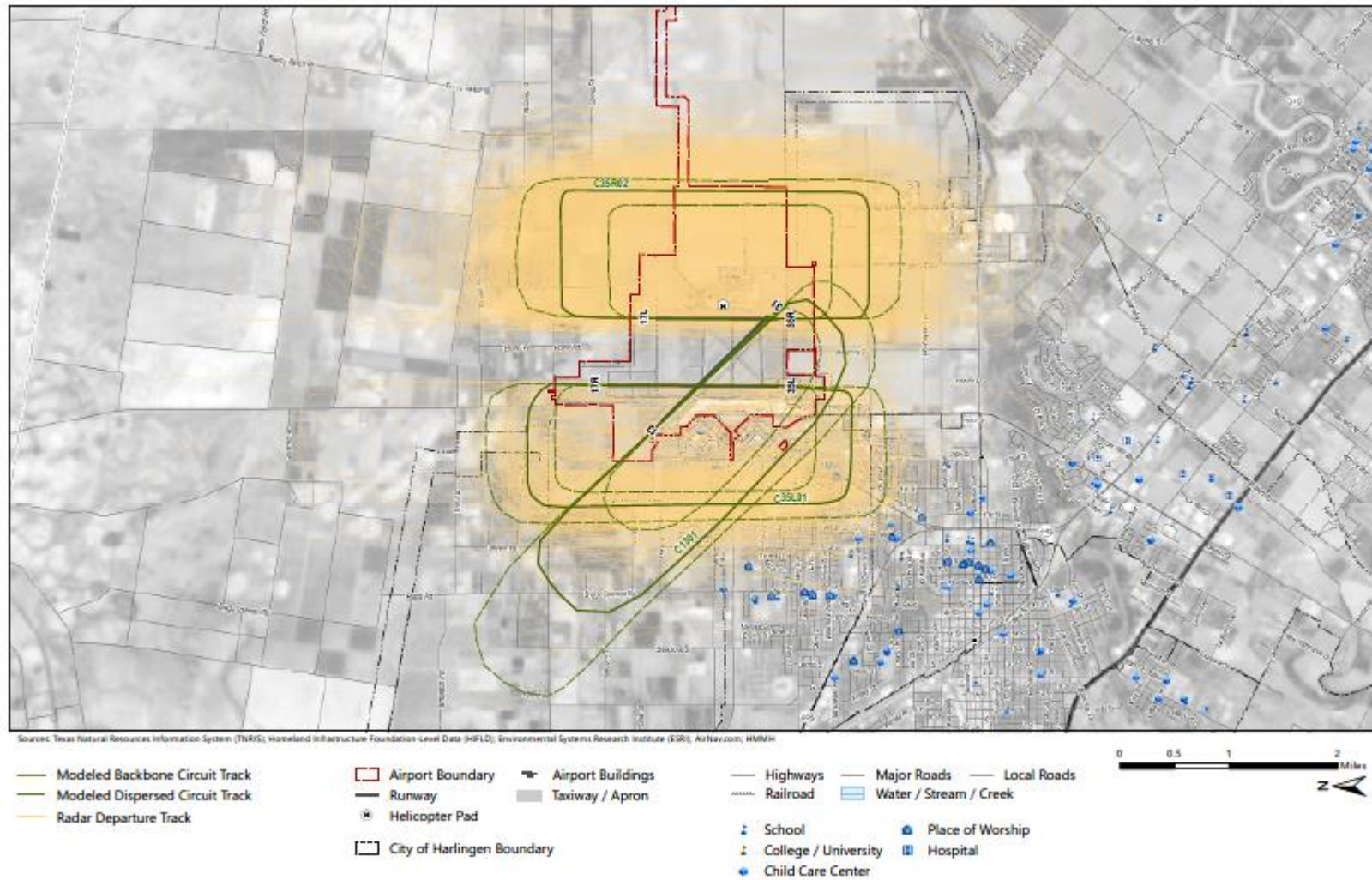
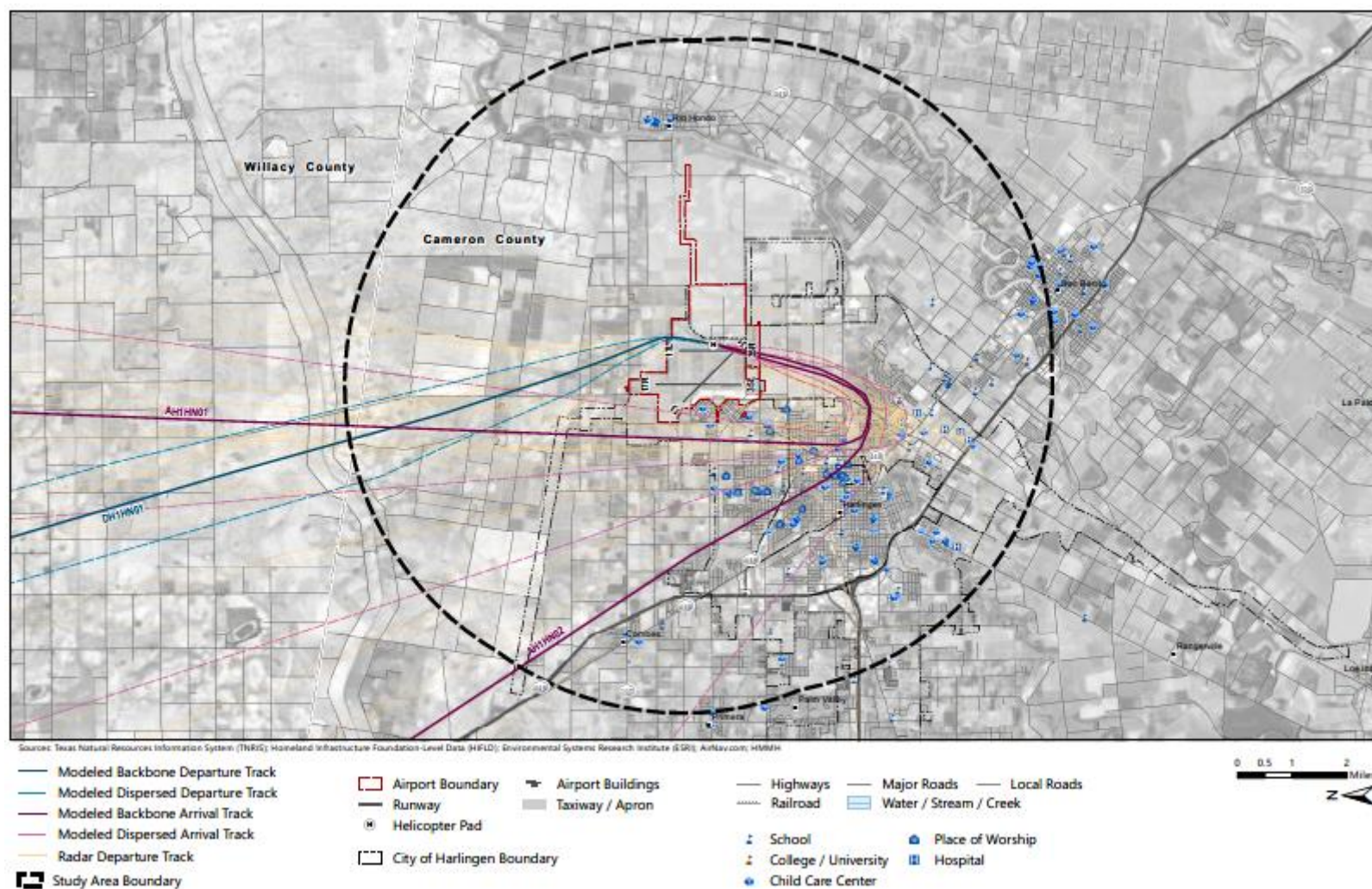


FIGURE F-4
2019 AFFECTED ENVIRONMENT AEDT HELICOPTER MODEL TRACKS



The HRL fleet mix includes commercial passenger, charter, local and itinerant general aviation, and military aircraft operations. The fleet mix was derived from 2019 radar data obtained from FlightAware in July 2020. The modeled aircraft operations data includes the number of arrivals and departures, each split between day and night. Day is defined as 07:00 to 21:59, and night is defined as 22:00 to 06:59.

Table F-2 summarizes the scaled aircraft operations for the 2019 Affected Environment AEDT noise modeling. The operations are organized by the tower group (air carrier, air taxi, general aviation, and military) and reported separately for itinerant (arrivals and departures) and local (touch and go) operations. The table lists the five aircraft with the greatest number of total operations for each grouping in descending order.

TABLE F-2
2019 EXISTING CONDITIONS NOISE MODELING OPERATIONS SUMMARY

Tower Category	Aircraft	AEDT Type	Annual Operations		
			Day	Night	Total
Itinerant Air Carrier	Boeing 737-700	737700	2,964	397	3,361
	Embraer 175	EMB175	805	540	1,345
	McDonnell Douglas DC-10	DC1010	458	205	663
	Boeing 767-200	767CF6	394	156	550
	Boeing 767-300	767300	334	180	514
	All other Itinerant Air Carrier (10 operations)		1,186	157	1,343
	<i>Subtotal</i>		<i>6,141</i>	<i>1,635</i>	<i>7,776</i>
Itinerant Air Taxi	Embraer 135	EMB14L	993	341	1,334
	Embraer 145	EMB14L	796	90	885
	Embraer 145XR	EMB145	296	-	296
	Cessna 172	CNA172	56	-	56
	Cessna 182	CNA182	45	-	45
	All other Itinerant Air Taxi (2 operations)		47	-	47
	<i>Subtotal</i>		<i>2,233</i>	<i>430</i>	<i>2,663</i>
Itinerant General Aviation	Pilatus PC-12	CNA208	1,491	294	1,785
	Beech King Air	DHC6	820	54	874
	Cessna 172	CNA172	683	-	683
	Beech Bonanza	GASEPV	481	22	503
	British Aerospace Jetstream 31	DHC6	490	-	490
	All other Itinerant General Aviation (37 operations)		4,409	19	4,427
	<i>Subtotal</i>		<i>7,904</i>	<i>389</i>	<i>8,294</i>
	Beech King Air	BE9L	1,853	152	2,004

Tower Category	Aircraft		AEDT Type	Annual Operations		
				Day	Night	Total
Itinerant Military	Beechcraft T-6 Texan		CNA208	709	56	764
	Raytheon T-1 Jayhawk		BE40	258	20	278
	Northrop Grumman T-38 Talon		T38	137	10	147
	Subtotal			2,956	238	3,194
Local Air Taxi	Cessna 172		CNA172	336	-	336
	Cessna 182		CNA182	299	-	299
	Subtotal			635	-	635
Local General Aviation	Cessna 172		CNA172	2,968	-	2,968
	Cessna 150		GASEPF	837	-	837
	Cessna 182		CNA182	356	-	356
	Pilatus PC-12		CNA208	243	-	243
	Piper PA-28A		PA28	190	-	190
	All other Local General Aviation (9 operations)			873	-	873
	Subtotal			5,467	-	5,467
Local Military	Beech King Air		BE9L	7,409	-	7,409
	Beechcraft T-6 Texan		CNA208	3,023	-	3,023
	Raytheon T-1 Jayhawk		BE40	1,139	-	1,139
	Northrop Grumman T-38 Talon		T38	618	-	618
	Subtotal			12,189	-	12,189
Total				37,995	2,692	40,687

Source: HMMH, 2019.

F.5 PROPOSED ACTION

FAA Order 1050.1F evaluates the environmental consequences of a proposed action's noise impacts by comparing them to the no action alternative of the same time frame. This section describes the potential noise impacts associated with the No Action Alternative and Proposed Action scenarios. The evaluation of this alternative includes two future years, 2024 and 2029.

Table F-4 presents the average daily operations for these years, as well as for 2019. It is assumed that operations will not change between 2019, the No Action Alternative, and the Proposed Action scenarios.

TABLE F-3
FORECAST OF AIRCRAFT OPERATIONS: 2019, 2024, AND 2029; PROPOSED ACTION AND NO ACTION ALTERNATIVE SCENARIOS

Scenario	Aircraft Category	2019 Operations	2024 Operations	2029 Operations
No Action Alternative	Air Carrier	7,776	7,609	8,173
	Air Taxi/Charter	2,663	155	165
	General Aviation	8,763	9,112	9,476
	Military	3,194	3,194	3,194
	Local	18,291	18,642	18,742
Total		40,687	38,712	39,750
Proposed Action	Air Carrier	-	7,609	8,173
	Air Taxi/Charter	-	155	165
	General Aviation	-	9,112	9,476
	Military	-	3,194	3,194
	Local	-	18,642	18,742
Total		-	38,712	39,750

Source: HMMH, 2020; FAA Terminal Area Forecast, 2019.

F.5.1 Proposed Action 2024

Figure F-5 compares the 2024 No Action Alternative and Proposed Action and **Figure F-6** shows the grid points that would see a change in DNL when comparing the modeling results for the 2024 No Action Alternative and Proposed Action. With the implementation of the Proposed Action, 65 grid points within the 65 dB contour along the proposed Runway 35L would experience an increase of 1.5 dB or more; four of these grid points are located just off the Airport property to the east of the proposed runway extension, along the perimeter road. Two grid points in the 75 dB contour would experience an increase of 1.5 dB or more. Two grid points just outside the 65 dB contour would experience a 3 dB increase or more compared to the No Action Alternative. Five grid points within the 75 dB contour and two in the 70 dB contour would experience a 1.5 dB decrease. None of these affected grid points affect residential or noise sensitive locations.

FIGURE F-5
2024 PROPOSED ACTION AND NO ACTION ALTERNATIVE DNL CONTOUR COMPARISON

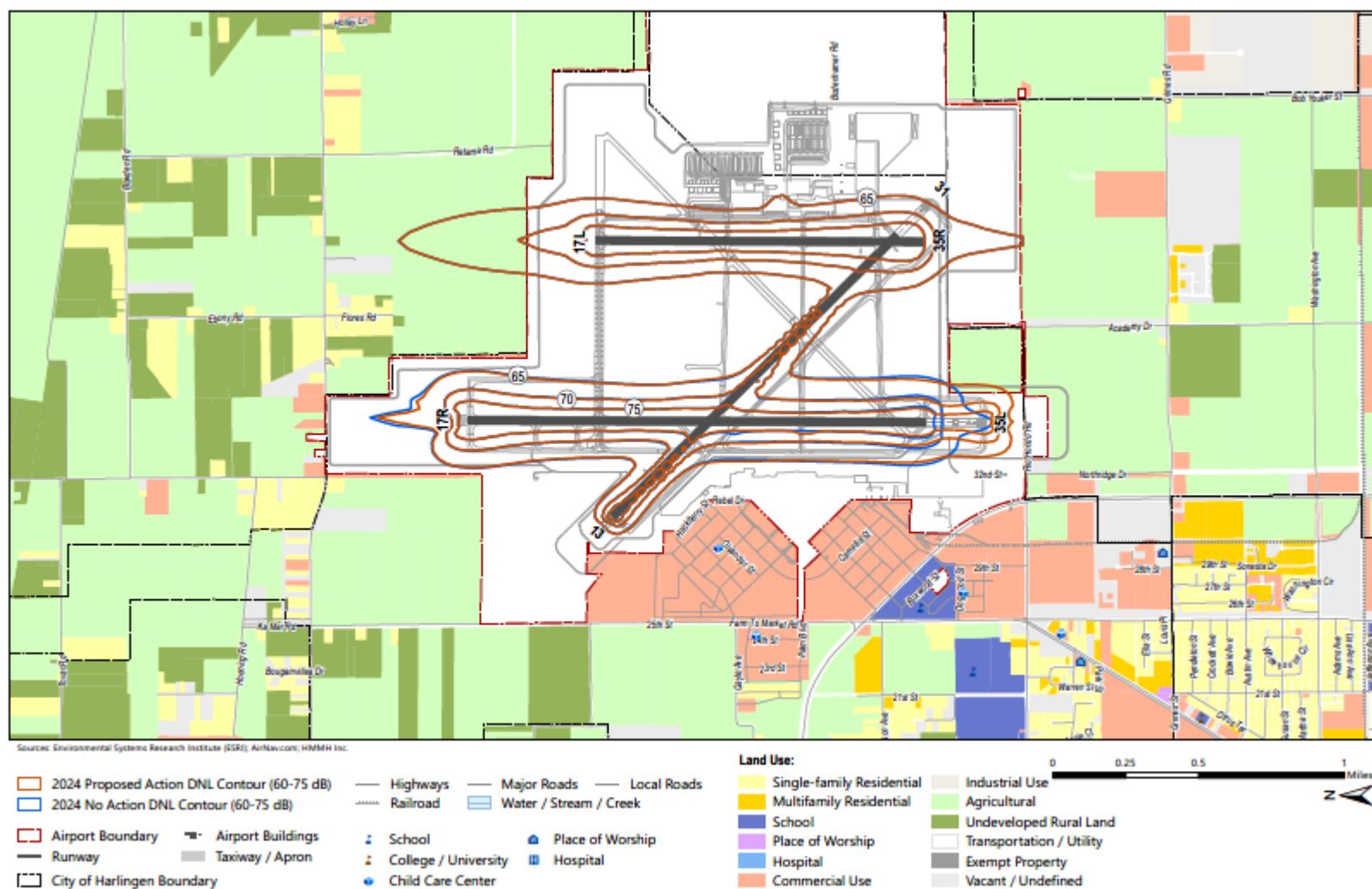
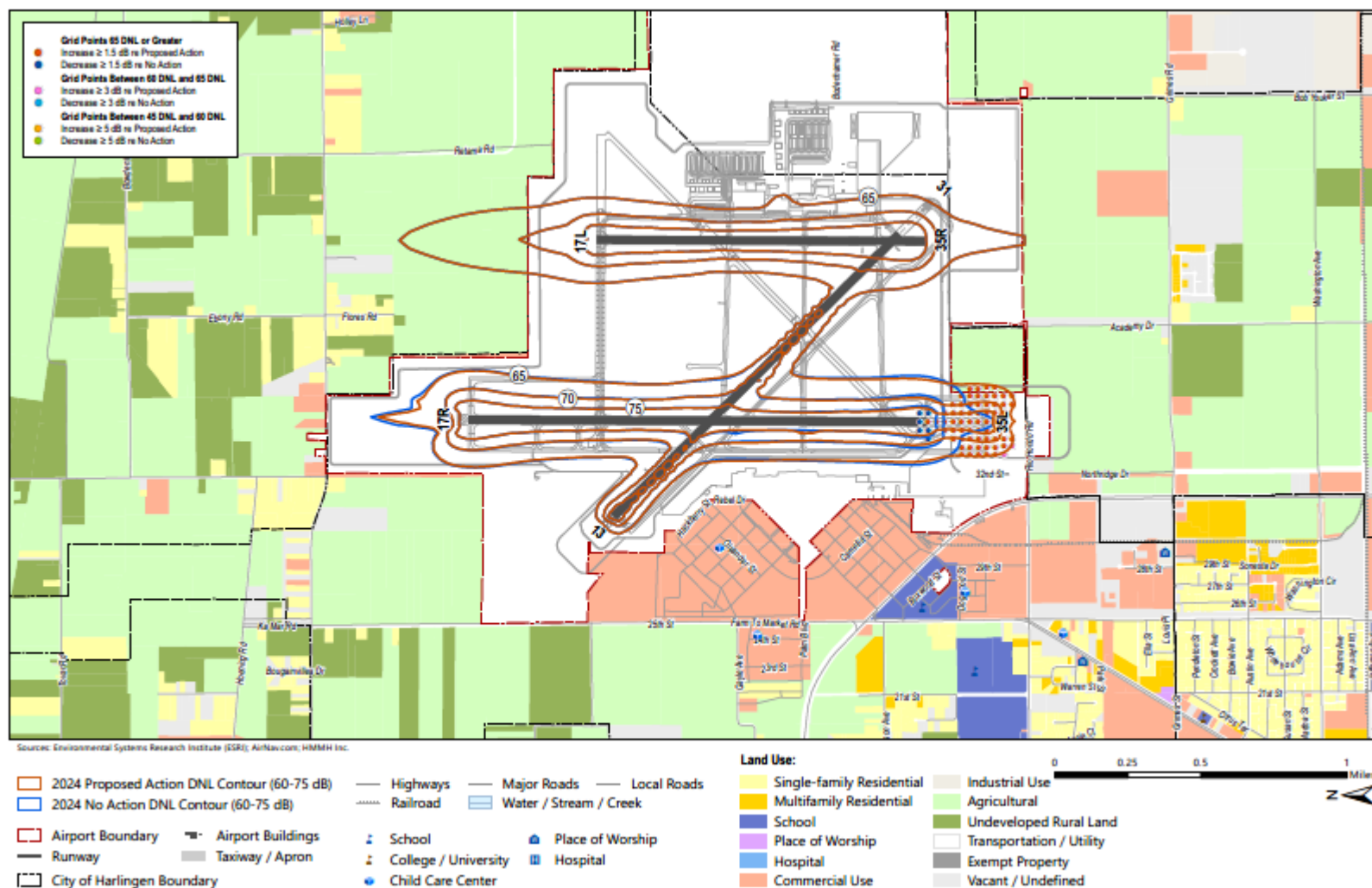


FIGURE F-6
2024 PROPOSED ACTION AND NO ACTION ALTERNATIVE DNL GRID POINT COMPARISON



F.5.2 Proposed Action 2029

Figure F-7 compares the 2029 No Action Alternative and Proposed Action and **Figure F-8** shows the grid points that would see a change in DNL when comparing the modeling results for the 2029 No Action Alternative and Proposed Action. With the implementation of the 2029 Proposed Action, 60 grid points within the 65 dB or greater contours along the proposed Runway 35L would experience an increase of 1.5 dB or more; four of these grid points are located just off the Airport property to the east of the proposed runway extension. Two grid points in the 60 dB contour would experience a 3 dB increase or more compared to the No Action alternative. Seven grid points within the 75 dB contour and two in the 70 dB contour would experience a 1.5 dB decrease.

FIGURE F-7
2029 PROPOSED ACTION AND NO ACTION ALTERNATIVE DNL CONTOUR COMPARISON

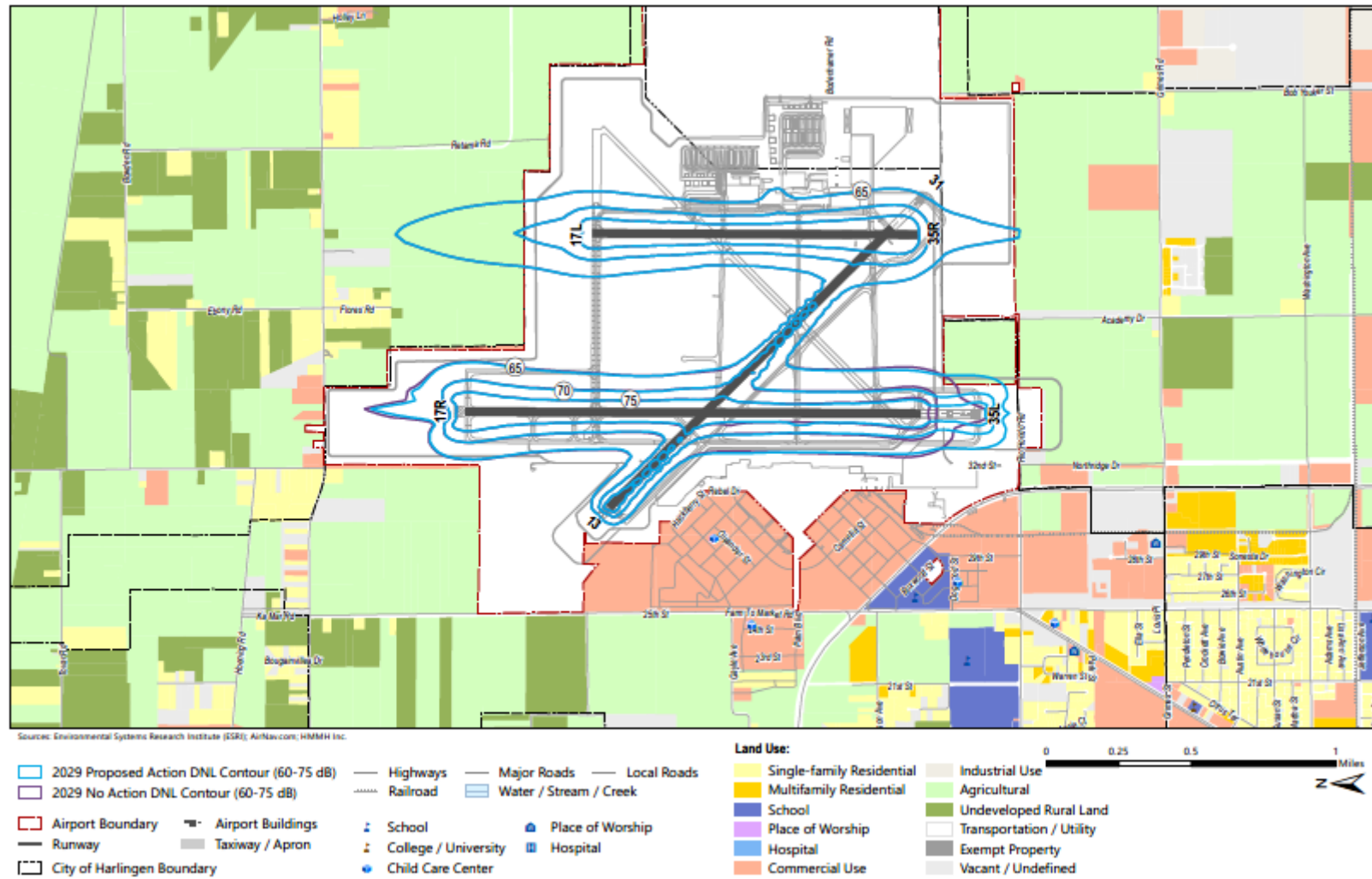
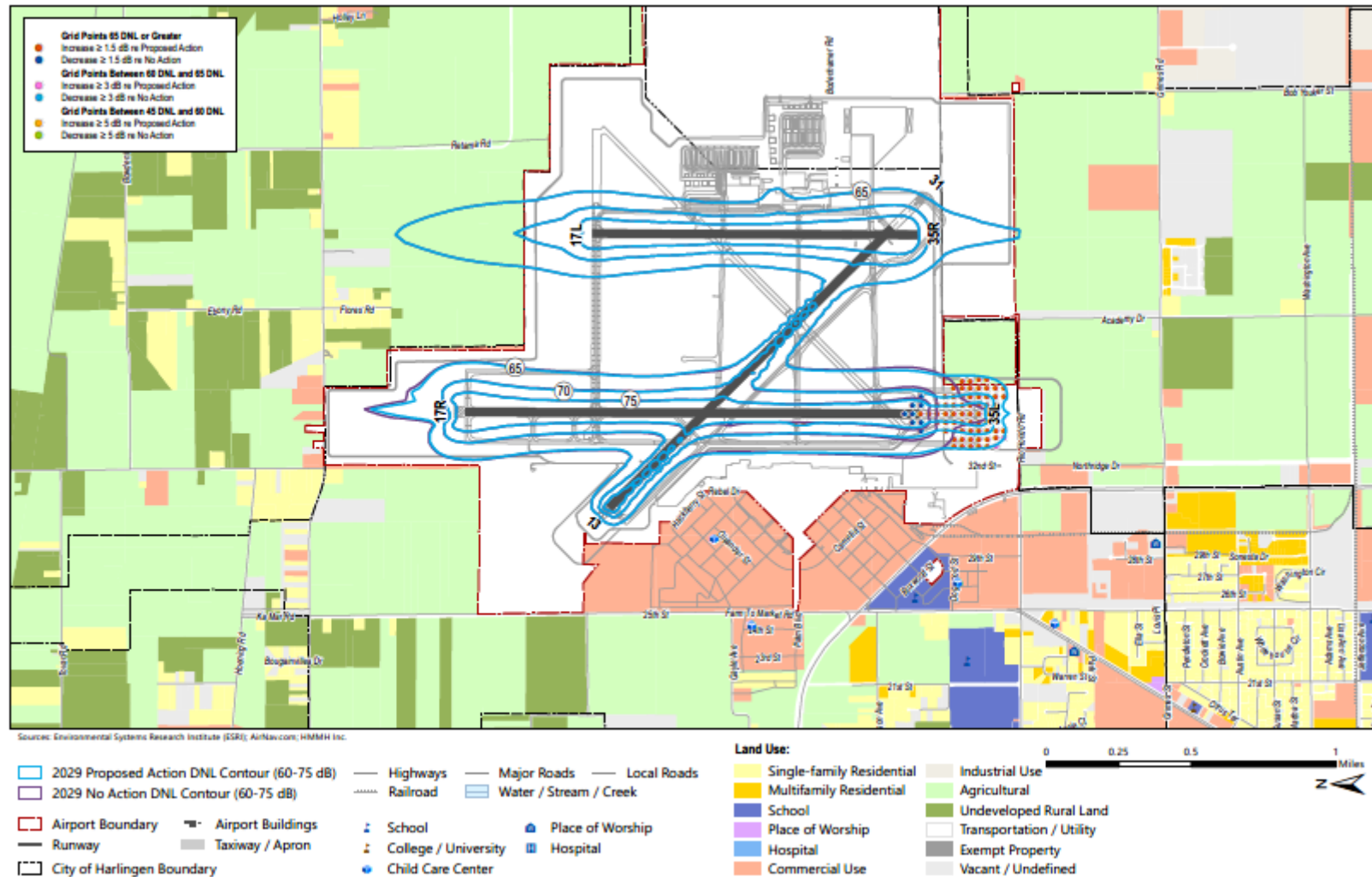


FIGURE F-8
2029 PROPOSED ACTION AND NO ACTION ALTERNATIVE DNL GRID POINT COMPARISON



ATTACHMENT 1

Noise Modeling Methodology Memo

HMMH

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TECHNICAL MEMORANDUM

To: Julie Barrow
RS&H
4582 S Ulster St, Suite 1100
Denver, CO 80237

From: Sarah Yenson, Senior Consultant
Vincent Ma, Staff Consultant

Date: February 3, 2021

Subject: Valley International Airport (HRL) Runway 35L Environmental Assessment (EA) – Noise Modeling Approach and Input Assumptions

Reference: HMMH Project Number 311680

1. BACKGROUND

HMMH is assisting RS&H and Valley International Airport (HRL) in Harlingen, TX, in the preparation of noise analyses for the Environmental Assessment (EA) of the HRL Runway 35L Extension. This technical memorandum discusses our noise modeling approach and input assumptions for these analyses. HMMH requests that RS&H review this document to ensure that our approach and input assumptions remain consistent across team members and to provide written approval prior to commencing modeling.

In accordance with the scope of work, the noise analyses for the Runway 35L Extension will include a baseline study year (2019) plus two forecast years both with and without the runway extension for a total of five modeling scenarios. The scenarios in which the project is not implemented are referred to as No Action alternatives, while scenarios where the project is implemented are referred to as Proposed Action alternatives. The two forecast years represent the first full year following the completion of the runway extension construction (2024) and five years after the extension completion. Therefore, the resulting contours and analyses will represent 2019, 2024, and 2029.

The subsequent sections address the data HMMH obtained and developed as inputs to the Federal Aviation Administration's (FAA) Aviation Environmental Design Tool (AEDT),¹ Version 3c, for the following categories:

- Physical description of the airport layout
- Aircraft operations
- Aircraft noise and performance characteristics
- Runway utilization
- Flight track geometry and use
- Meteorological conditions
- Terrain data

2. PHYSICAL DESCRIPTION OF THE AIRPORT LAYOUT

HRL is located within Cameron County, TX and is owned by the City of Harlingen. Figure 1 depicts the HRL airfield layout. As shown in the figure, it includes three 150-foot wide runways: two parallel runways oriented in a north to south direction, and one "crosswind" runway that crosses through the parallel runways roughly southeast to northwest.

Each runway end is designated by a number that, with the addition of a trailing "0," reflects the magnetic heading of the runway to the nearest 10 degrees, as seen by the pilot. Thus, "Runway 13-31" has the designation "13" at the west end of the pavement looking eastward, indicating that it is aligned on a magnetic

¹ <https://aedt.faa.gov/>

heading of approximately 130 degrees, while the opposite end of the same piece of pavement has the designation "31" indicating its orientation on an approximate heading of 310 degrees. Runway 13-31 is 7,257 feet long. The two parallel runways, 17L-35R and 17R-35L, are oriented on approximate magnetic headings of 170 and 350 degrees and are 5,949 feet and 8,301 feet long, respectively. The parallel runways are distinguished from each other with letter endings "L", meaning left, and "R", meaning right, as seen by the pilot.

Runway length, runway width, instrumentation, and declared distances do not directly affect noise calculations. However, these parameters may affect which aircraft might use a particular runway and under what conditions, and therefore how often a runway would be used relative to the other runways at the airport.

Table 1 provides the detailed parameters for each runway end.



Figure 1. Existing Airport Diagram

Source: FAA, effective 5 Nov 2020 to 03 Dec 2020

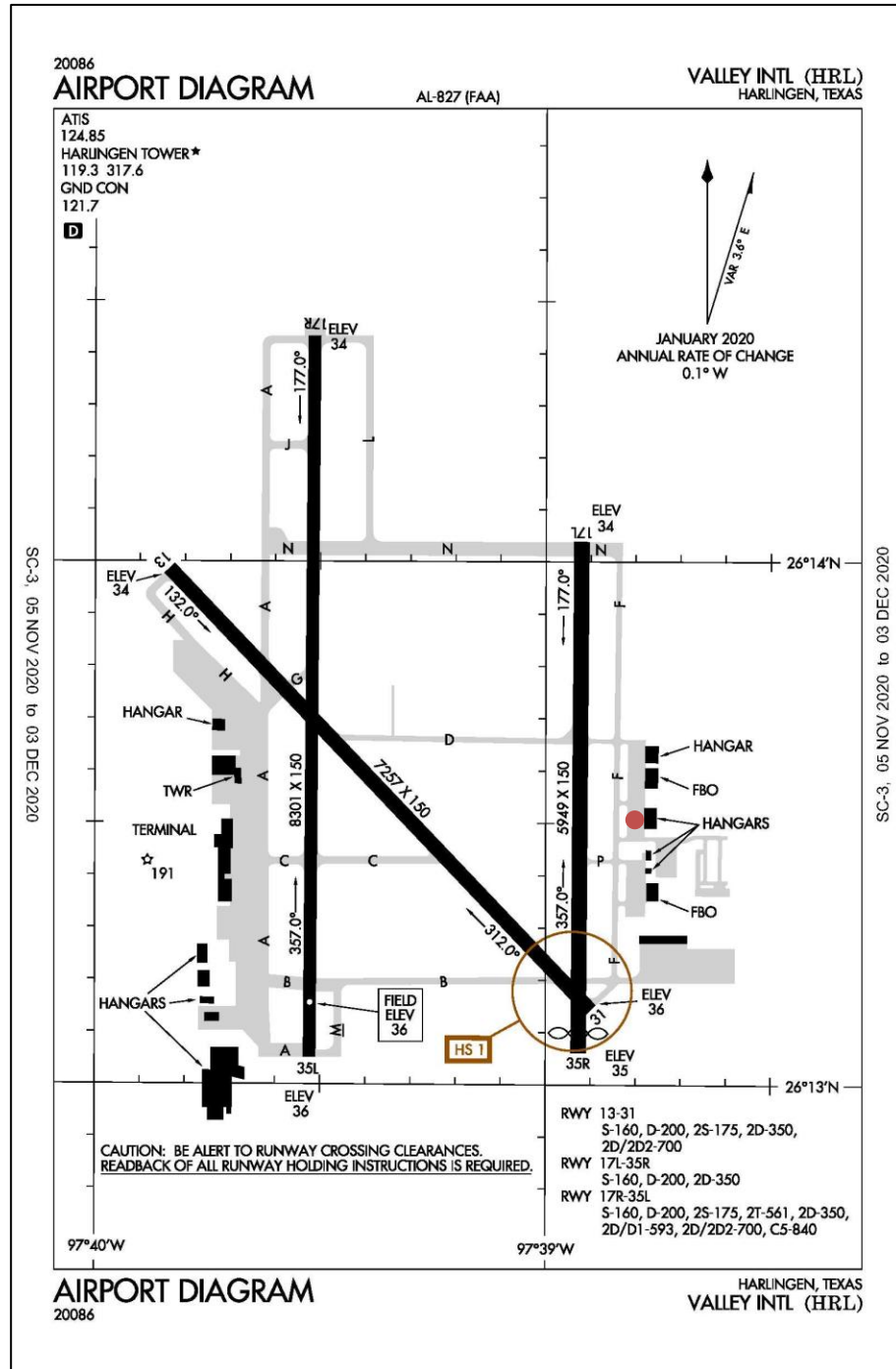


Table 1. HRL Runway Data

Runway/ Helipad	Latitude	Longitude	Elevation (ft. MSL)	Length (ft.)	Approach Angle (degrees)	Threshold Crossing Height (ft)
13	26.233185	-97.663968	34.4	7,257	3.0	59
17L	26.233951	-97.648692	33.8	5,949	3.0	
17R	26.240383	-97.658571	34.0	8,301	3.0	
31	26.218915	-97.648486	35.7	7,257	3.0	55
35L	26.217547	-97.658854	35.7	8,301	3.0	
35R	26.217586	-97.648894	35.0	5,949	3.0	
H1*	26.224841	-97.646889	35.0	N/A		
Source: FAA Form 5010						
* Helipad location split between two FBOs in accordance with HRL information on helicopter arrival/departure location.						

3. AIRCRAFT OPERATIONS

Title 14 of the Code of Federal Regulations Part 150 (14 CFR Part 150) and its table of noise and land use compatibility guidelines require the calculation of “yearly Day-Night Average Sound Level (DNL)” values. AEDT produces these values of exposure by utilizing an “average annual day” of airport operations.

The HRL fleet mix includes commercial passenger, charter, local and itinerant general aviation, military aircraft, and local operations. The fleet mix was derived from 2019 radar data obtained from FlightAware in July 2020. The aircraft operations data to be entered into AEDT includes the number of arrivals and departures, each split between day and night. Day is defined as 07:00 to 21:59, and night is defined as 22:00 to 06:59. The number of operations is expressed in terms of an annual average day, determined by dividing the annual operations by 365 days for 2019, 2024 No Action and Proposed Action, and 2029 No Action and Proposed Action alternatives. Table 2 lists the modeled annual average day operations by aircraft type at HRL for the modeled scenarios. It is assumed that operations will not change between the base year, the No Action, and the Proposed Action scenarios.

Table 2. Forecast of Aircraft Operations – 2019, 2024, and 2029; Both Scenarios

Source: HMMH, FAA Terminal Area Forecast

Scenario	Aircraft Category	2019 Operations	2024 Operations	2029 Operations
No Action	Air Carrier	7,776	7,609	8,173
	Air Taxi/Charter	2,663	155	165
	General Aviation	8,763	9,112	9,476
	Military	3,194	3,194	3,194
	Local	18,291	18,642	18,742
Total		40,687	38,712	39,750
Proposed Action	Air Carrier	-	7,609	8,173
	Air Taxi/Charter	-	155	165
	General Aviation	-	9,112	9,476
	Military	-	3,194	3,194
	Local	-	18,642	18,742
Total		-	38,712	39,750

The aircraft operations format for entering data into AEDT includes day and night arrivals, departures, and pattern/touch-and-go operations (as appropriate) expressed in terms of an annual average day. The annual average day operations are determined by dividing the annual operations by 365 days. Table 3 through Table 5 list the average annual daily operations by aircraft type, operation mode, and time of day for each scenario.



Table 3. Modeled Average Daily Aircraft Operations for 2019

Category	Aircraft Type	ANP_Type	Arrivals		Departures		Total	Local		Total	Total
			Day	Night	Day	Night		Day	Night		
AC	A20N	A320-271N	0.3547	0.0000	0.3547	0.0000	0.7095	0.0000	0.0000	0.0000	0.7095
	A306	A300-622R	0.1123	0.0000	0.1123	0.0000	0.2246	0.0000	0.0000	0.0000	0.2246
	A320	A320-211	0.1480	0.0000	0.1480	0.0000	0.2960	0.0000	0.0000	0.0000	0.2960
	B734	737400	0.0306	0.0000	0.0306	0.0000	0.0612	0.0000	0.0000	0.0000	0.0612
	B737	737700	4.3894	0.2144	3.7310	0.8728	9.2076	0.0000	0.0000	0.0000	9.2076
	B738	737800	0.4364	0.0000	0.4364	0.0000	0.8728	0.0000	0.0000	0.0000	0.8728
	B752	757PW	0.0000	0.1531	0.1250	0.0281	0.3062	0.0000	0.0000	0.0000	0.3062
	B752	757RR	0.0255	0.0944	0.0893	0.0306	0.2399	0.0000	0.0000	0.0000	0.2399
	B762	767CF6	0.6865	0.0664	0.3930	0.3598	1.5057	0.0000	0.0000	0.0000	1.5057
	B763	767300	0.5870	0.1174	0.3292	0.3751	1.4087	0.0000	0.0000	0.0000	1.4087
	CRJ9	CRJ9-ER	0.2399	0.0000	0.2399	0.0000	0.4798	0.0000	0.0000	0.0000	0.4798
	DC10	DC1010	0.3879	0.5206	0.8677	0.0408	1.8170	0.0000	0.0000	0.0000	1.8170
	DC10	DC1030	0.1046	0.0510	0.1557	0.0000	0.3113	0.0000	0.0000	0.0000	0.3113
	E170	EMB170	0.0561	0.0332	0.0485	0.0408	0.1786	0.0000	0.0000	0.0000	0.1786
	E75L	EMB175	1.1280	0.7146	1.0769	0.7656	3.6851	0.0000	0.0000	0.0000	3.6851
AT	C172	CNA172	0.0774	0.0000	0.0774	0.0000	0.1547	0.9195	0.0000	0.9195	1.0743
	C182	CNA182	0.0614	0.0000	0.0614	0.0000	0.1229	0.8198	0.0000	0.8198	0.9427
	CL35	CL600	0.0250	0.0000	0.0250	0.0000	0.0501	0.0000	0.0000	0.0000	0.0501
	E135	EMB14L	1.4200	0.4074	1.3017	0.5257	3.6548	0.0000	0.0000	0.0000	3.6548
	E145	EMB14L	1.1060	0.1070	1.0741	0.1388	2.4259	0.0000	0.0000	0.0000	2.4259
	E45X	EMB145	0.4051	0.0000	0.4051	0.0000	0.8101	0.0000	0.0000	0.0000	0.8101
GA	E55P	CNA55B	0.0387	0.0000	0.0387	0.0000	0.0774	0.0000	0.0000	0.0000	0.0774
	AEST	BEC58P	0.0000	0.0000	0.0000	0.0000	0.0000	0.4321	0.0000	0.4321	0.4321
	ATST	GASEPv	0.1071	0.0000	0.1071	0.0000	0.2143	0.0000	0.0000	0.0000	0.2143
	AT6T	GASEPv	0.0512	0.0000	0.0512	0.0000	0.1025	0.0000	0.0000	0.0000	0.1025
	B350	DHC6	0.1025	0.0000	0.1025	0.0000	0.2050	0.0000	0.0000	0.0000	0.2050
	B407	B407	0.1724	0.0000	0.1724	0.0000	0.3447	0.0000	0.0000	0.0000	0.3447
	BE20	DHC6	0.6428	0.0000	0.6428	0.0000	1.2857	0.0000	0.0000	0.0000	1.2857
	BE35	GASEPv	0.1304	0.0000	0.1304	0.0000	0.2609	0.2548	0.0000	0.2548	0.5157
	BE36	GASEPv	0.6894	0.0000	0.6289	0.0606	1.3788	0.1440	0.0000	0.1440	1.5228
	BE40	MU3001	0.0932	0.0000	0.0932	0.0000	0.1863	0.0000	0.0000	0.0000	0.1863
	BE58	BEC58P	0.1211	0.0000	0.1211	0.0000	0.2422	0.0000	0.0000	0.0000	0.2422
	BE9L	DHC6	1.1226	0.0745	1.1226	0.0745	2.3943	0.1662	0.0000	0.1662	2.5605
	C150	GASEPf	0.3261	0.0000	0.3261	0.0000	0.6521	2.2933	0.0000	2.2933	2.9454
	C172	CNA172	0.9363	0.0000	0.9363	0.0000	1.8726	8.1318	0.0000	8.1318	10.0044
	C177	CNA172	0.0466	0.0000	0.0466	0.0000	0.0932	0.0000	0.0000	0.0000	0.0932
	C182	CNA182	0.3727	0.0000	0.3727	0.0000	0.7453	0.9749	0.0000	0.9749	1.7202
	C206	CNA206	0.2981	0.0512	0.3494	0.0000	0.6987	0.4210	0.0000	0.4210	1.1197
	C210	GASEPv	0.1304	0.0000	0.1304	0.0000	0.2609	0.2105	0.0000	0.2105	0.4714
	C340	BEC58P	0.0978	0.0000	0.0978	0.0000	0.1956	0.0000	0.0000	0.0000	0.1956
	C414	BEC58P	0.3820	0.0000	0.3820	0.0000	0.7639	0.0000	0.0000	0.0000	0.7639
	C421	BEC58P	0.1630	0.0000	0.1630	0.0000	0.3261	0.0000	0.0000	0.0000	0.3261
	C525	CNA525C	0.2283	0.0000	0.2283	0.0000	0.4565	0.0000	0.0000	0.0000	0.4565
	C550	CNA55B	0.0885	0.0000	0.0885	0.0000	0.1770	0.0000	0.0000	0.0000	0.1770
	C560	CNA560U	0.0745	0.0000	0.0745	0.0000	0.1491	0.0000	0.0000	0.0000	0.1491
	C56X	CNA560XL	0.0466	0.0000	0.0466	0.0000	0.0932	0.0000	0.0000	0.0000	0.0932
	COL3	GASEPv	0.2748	0.0000	0.2748	0.0000	0.5497	0.0000	0.0000	0.0000	0.5497
	E50P	CNA510	0.0559	0.0000	0.0559	0.0000	0.1118	0.0000	0.0000	0.0000	0.1118
	F2TH	CNA750	0.0885	0.0000	0.0885	0.0000	0.1770	0.0000	0.0000	0.0000	0.1770
	FA50	FAL900EX	0.0606	0.0000	0.0606	0.0000	0.1211	0.0000	0.0000	0.0000	0.1211
	H25B	LEAR35	0.0699	0.0000	0.0699	0.0000	0.1397	0.0000	0.0000	0.0000	0.1397
	JS31	DHC6	0.6708	0.0000	0.6708	0.0000	1.3416	0.0000	0.0000	0.0000	1.3416
	LJ45	LEAR35	0.0606	0.0000	0.0606	0.0000	0.1211	0.0000	0.0000	0.0000	0.1211
	M20P	GASEPv	0.1863	0.0000	0.1863	0.0000	0.3727	0.3656	0.0000	0.3656	0.7383
	P28A	PA28	0.2469	0.0000	0.2469	0.0000	0.4938	0.5207	0.0000	0.5207	1.0145
	P32R	GASEPv	0.1444	0.0000	0.1444	0.0000	0.2888	0.0000	0.0000	0.0000	0.2888
	P46T	GASEPf	0.1165	0.0000	0.1165	0.0000	0.2329	0.0000	0.0000	0.0000	0.2329
	PA27	BEC58P	0.0000	0.0000	0.0000	0.0000	0.0000	0.1551	0.0000	0.1551	0.1551
	PA32	GASEPv	0.1770	0.0000	0.1770	0.0000	0.3540	0.2437	0.0000	0.2437	0.5978
	PA46	PA31	0.1491	0.0000	0.1491	0.0000	0.2981	0.0000	0.0000	0.0000	0.2981
	PC12	CNA208	2.1241	0.3214	1.9611	0.4844	4.8911	0.6647	0.0000	0.6647	5.5558
	R44	R44	0.0466	0.0000	0.0466	0.0000	0.0932	0.0000	0.0000	0.0000	0.0932
	SR22	COMSEP	0.1910	0.0000	0.1910	0.0000	0.3820	0.0000	0.0000	0.0000	0.3820
	T38	T-38A	0.2376	0.0000	0.2376	0.0000	0.4751	0.0000	0.0000	0.0000	0.4751
	TB21	GASEPv	0.0512	0.0000	0.0512	0.0000	0.1025	0.0000	0.0000	0.0000	0.1025
	TBM7	CNA208	0.1817	0.0000	0.1817	0.0000	0.3633	0.0000	0.0000	0.0000	0.3633
MIL	BE9L	BE9L	2.5517	0.1942	2.5240	0.2219	5.4917	20.2986	0.0000	20.2986	25.7903
	T1A	BE40	0.3606	0.0208	0.3467	0.0347	0.7627	3.1205	0.0000	3.1205	3.8833
	T38	T38	0.1872	0.0139	0.1872	0.0139	0.4022	1.6932	0.0000	1.6932	2.0953
	TEX2	CNA208	0.9846	0.0624	0.9569	0.0901	2.0941	8.2822	0.0000	8.2822	10.3763
Total			27.4617	3.2178	26.5211	4.1583	61.3589	50.1123	0.0000	50.1123	111.4712

Table 4. Modeled Average Daily Aircraft Operations for 2024

Category	Aircraft Type	ANP_Type	Arrivals		Departures		Total	Local		Total
			Day	Night	Day	Night		Day	Night	
AC	A20N	A320-271N	0.3471	0.0000	0.3471	0.0000	0.6942	0.0000	0.0000	0.0000
	A306	A300-622R	0.1099	0.0000	0.1099	0.0000	0.2198	0.0000	0.0000	0.0000
	A320	A320-211	0.1448	0.0000	0.1448	0.0000	0.2897	0.0000	0.0000	0.0000
	B734	737400	0.0300	0.0000	0.0300	0.0000	0.0599	0.0000	0.0000	0.0000
	B737	737700	4.2952	0.2098	3.6509	0.8540	9.0099	0.0000	0.0000	0.0000
	B738	737800	0.4270	0.0000	0.4270	0.0000	0.8540	0.0000	0.0000	0.0000
	B752	757PW	0.0000	0.1498	0.1224	0.0275	0.2997	0.0000	0.0000	0.0000
	B752	757RR	0.0250	0.0924	0.0874	0.0300	0.2347	0.0000	0.0000	0.0000
	B762	767CF6	0.6717	0.0649	0.3846	0.3521	1.4733	0.0000	0.0000	0.0000
	B763	767300	0.5744	0.1149	0.3221	0.3671	1.3785	0.0000	0.0000	0.0000
	CRJ9	CRJ9-ER	0.2347	0.0000	0.2347	0.0000	0.4695	0.0000	0.0000	0.0000
	DC10	DC1010	0.3796	0.5094	0.8490	0.0400	1.7780	0.0000	0.0000	0.0000
	DC10	DC1030	0.1024	0.0499	0.1523	0.0000	0.3047	0.0000	0.0000	0.0000
	E170	EMB170	0.0549	0.0325	0.0474	0.0400	0.1748	0.0000	0.0000	0.0000
	E75L	EMB175	1.1038	0.6992	1.0538	0.7492	3.6059	0.0000	0.0000	0.0000
AT	C172	CNA172	0.0045	0.0000	0.0045	0.0000	0.0090	0.9724	0.0000	0.9724
	C182	CNA182	0.0036	0.0000	0.0036	0.0000	0.0072	0.8670	0.0000	0.8670
	CL35	CL600	0.0015	0.0000	0.0015	0.0000	0.0029	0.0000	0.0000	0.0000
	E135	EMB14L	0.0827	0.0237	0.0758	0.0306	0.2127	0.0000	0.0000	0.0000
	E145	EMB14L	0.0644	0.0062	0.0625	0.0081	0.1412	0.0000	0.0000	0.0000
	E45X	EMB145	0.0236	0.0000	0.0236	0.0000	0.0472	0.0000	0.0000	0.0000
	E55P	CNA55B	0.0023	0.0000	0.0023	0.0000	0.0045	0.0000	0.0000	0.0000
GA	AEST	BEC58P	0.0000	0.0000	0.0000	0.0000	0.0000	0.4569	0.0000	0.4569
	AT5T	GA5EPV	0.1114	0.0000	0.1114	0.0000	0.2228	0.0000	0.0000	0.0000
	AT6T	GA5EPV	0.0533	0.0000	0.0533	0.0000	0.1066	0.0000	0.0000	0.0000
	B350	DHC6	0.1066	0.0000	0.1066	0.0000	0.2131	0.0000	0.0000	0.0000
	B407	B407	0.1792	0.0000	0.1792	0.0000	0.3584	0.0000	0.0000	0.0000
	BE20	DHC6	0.6684	0.0000	0.6684	0.0000	1.3369	0.0000	0.0000	0.0000
	BE35	GA5EPV	0.1356	0.0000	0.1356	0.0000	0.2712	0.2695	0.0000	0.2695
	BE36	GA5EPV	0.7169	0.0000	0.6539	0.0630	1.4337	0.1523	0.0000	0.1523
	BE40	MU3001	0.0969	0.0000	0.0969	0.0000	0.1937	0.0000	0.0000	0.0000
	BE58	BEC58P	0.1259	0.0000	0.1259	0.0000	0.2519	0.0000	0.0000	0.0000
	BE9L	DHC6	1.1673	0.0775	1.1673	0.0775	2.4897	0.1757	0.0000	0.1757
	C150	GA5EPF	0.3391	0.0000	0.3391	0.0000	0.6781	2.4252	0.0000	2.4252
	C172	CNA172	0.9736	0.0000	0.9736	0.0000	1.9472	8.5995	0.0000	8.5995
	C177	CNA172	0.0484	0.0000	0.0484	0.0000	0.0969	0.0000	0.0000	0.0000
	C182	CNA182	0.3875	0.0000	0.3875	0.0000	0.7750	1.0310	0.0000	1.0310
	C206	CNA206	0.3100	0.0533	0.3633	0.0000	0.7266	0.4452	0.0000	0.4452
	C210	GA5EPV	0.1356	0.0000	0.1356	0.0000	0.2712	0.2226	0.0000	0.2226
	C340	BEC58P	0.1017	0.0000	0.1017	0.0000	0.2034	0.0000	0.0000	0.0000
	C414	BEC58P	0.3972	0.0000	0.3972	0.0000	0.7944	0.0000	0.0000	0.0000
	C421	BEC58P	0.1695	0.0000	0.1695	0.0000	0.3391	0.0000	0.0000	0.0000
	C525	CNA525C	0.2373	0.0000	0.2373	0.0000	0.4747	0.0000	0.0000	0.0000
	C550	CNA55B	0.0920	0.0000	0.0920	0.0000	0.1841	0.0000	0.0000	0.0000
	C560	CNA560U	0.0775	0.0000	0.0775	0.0000	0.1550	0.0000	0.0000	0.0000
	C56X	CNA560XL	0.0484	0.0000	0.0484	0.0000	0.0969	0.0000	0.0000	0.0000
	COL3	GA5EPV	0.2858	0.0000	0.2858	0.0000	0.5716	0.0000	0.0000	0.0000
	E50P	CNA510	0.0581	0.0000	0.0581	0.0000	0.1162	0.0000	0.0000	0.0000
	F2TH	CNA750	0.0920	0.0000	0.0920	0.0000	0.1841	0.0000	0.0000	0.0000
	FA50	FAL900EX	0.0630	0.0000	0.0630	0.0000	0.1259	0.0000	0.0000	0.0000
	H25B	LEAR35	0.0727	0.0000	0.0727	0.0000	0.1453	0.0000	0.0000	0.0000
	JS31	DHC6	0.6975	0.0000	0.6975	0.0000	1.3950	0.0000	0.0000	0.0000
	LJ45	LEAR35	0.0630	0.0000	0.0630	0.0000	0.1259	0.0000	0.0000	0.0000
	M20P	GA5EPV	0.1937	0.0000	0.1937	0.0000	0.3875	0.3866	0.0000	0.3866
	P28A	PA28	0.2567	0.0000	0.2567	0.0000	0.5134	0.5507	0.0000	0.5507
	P32R	GA5EPV	0.1502	0.0000	0.1502	0.0000	0.3003	0.0000	0.0000	0.0000
	P46T	GA5EPF	0.1211	0.0000	0.1211	0.0000	0.2422	0.0000	0.0000	0.0000
	PA27	BEC58P	0.0000	0.0000	0.0000	0.0000	0.0000	0.1640	0.0000	0.1640
	PA32	GA5EPV	0.1841	0.0000	0.1841	0.0000	0.3681	0.2578	0.0000	0.2578
	PA46	PA31	0.1550	0.0000	0.1550	0.0000	0.3100	0.0000	0.0000	0.0000
	PC12	CNA208	2.2087	0.3342	2.0392	0.5037	5.0859	0.7030	0.0000	0.7030
	R44	R44	0.0484	0.0000	0.0484	0.0000	0.0969	0.0000	0.0000	0.0000
	SR22	COMSEP	0.1986	0.0000	0.1986	0.0000	0.3972	0.0000	0.0000	0.0000
	T38	T-38A	0.2470	0.0000	0.2470	0.0000	0.4941	0.0000	0.0000	0.0000
	TB21	GA5EPV	0.0533	0.0000	0.0533	0.0000	0.1066	0.0000	0.0000	0.0000
	TBM7	CNA208	0.1889	0.0000	0.1889	0.0000	0.3778	0.0000	0.0000	0.0000
MIL	BE9L	BE9L	2.5517	0.1942	2.5240	0.2219	5.4917	20.2986	0.0000	20.2986
	T1A	BE40	0.3606	0.0208	0.3467	0.0347	0.7627	3.1205	0.0000	3.1205
	T38	T38	0.1872	0.0139	0.1872	0.0139	0.4022	1.6932	0.0000	1.6932
	TEX2	CNA208	0.9846	0.0624	0.9569	0.0901	2.0941	8.2822	0.0000	8.2822
Total			24.7842	2.7090	23.9900	3.5032	54.9863	51.0740	0.0000	51.0740



Table 5. Modeled Average Daily Aircraft Operations for 2029

Category	Aircraft Type	ANP_Type	Arrivals		Departures		Total	Local		Total
			Day	Night	Day	Night		Day	Night	
AC	A20N	A320-271N	0.3728	0.0000	0.3728	0.0000	0.7457	0.0000	0.0000	0.0000
	A306	A300-622R	0.1180	0.0000	0.1180	0.0000	0.2360	0.0000	0.0000	0.0000
	A320	A320-211	0.1556	0.0000	0.1556	0.0000	0.3111	0.0000	0.0000	0.0000
	B734	737400	0.0322	0.0000	0.0322	0.0000	0.0644	0.0000	0.0000	0.0000
	B737	737700	4.6135	0.2253	3.9215	0.9173	9.6777	0.0000	0.0000	0.0000
	B738	737800	0.4587	0.0000	0.4587	0.0000	0.9173	0.0000	0.0000	0.0000
	B752	757PW	0.0000	0.1609	0.1314	0.0295	0.3219	0.0000	0.0000	0.0000
	B752	757RR	0.0268	0.0992	0.0939	0.0322	0.2521	0.0000	0.0000	0.0000
	B762	767CF6	0.7215	0.0697	0.4131	0.3782	1.5826	0.0000	0.0000	0.0000
	B763	767300	0.6169	0.1234	0.3460	0.3943	1.4806	0.0000	0.0000	0.0000
	CRJ9	CRJ9-ER	0.2521	0.0000	0.2521	0.0000	0.5043	0.0000	0.0000	0.0000
	DC10	DC1010	0.4077	0.5472	0.9120	0.0429	1.9098	0.0000	0.0000	0.0000
	DC10	DC1030	0.1100	0.0536	0.1636	0.0000	0.3272	0.0000	0.0000	0.0000
	E170	EMB170	0.0590	0.0349	0.0510	0.0429	0.1878	0.0000	0.0000	0.0000
	E75L	EMB175	1.1856	0.7510	1.1319	0.8047	3.8732	0.0000	0.0000	0.0000
AT	C172	CNA172	0.0048	0.0000	0.0048	0.0000	0.0096	0.9875	0.0000	0.9875
	C182	CNA182	0.0038	0.0000	0.0038	0.0000	0.0076	0.8804	0.0000	0.8804
	CL35	CL600	0.0016	0.0000	0.0016	0.0000	0.0031	0.0000	0.0000	0.0000
	E135	EMB14L	0.0880	0.0252	0.0807	0.0326	0.2265	0.0000	0.0000	0.0000
	E145	EMB14L	0.0685	0.0066	0.0666	0.0086	0.1503	0.0000	0.0000	0.0000
	E45X	EMB145	0.0251	0.0000	0.0251	0.0000	0.0502	0.0000	0.0000	0.0000
	E55P	CNA55B	0.0024	0.0000	0.0024	0.0000	0.0048	0.0000	0.0000	0.0000
	AEST	BEC58P	0.0000	0.0000	0.0000	0.0000	0.0000	0.4640	0.0000	0.4640
	AT5T	GA5EPV	0.1159	0.0000	0.1159	0.0000	0.2317	0.0000	0.0000	0.0000
	AT6T	GA5EPV	0.0554	0.0000	0.0554	0.0000	0.1108	0.0000	0.0000	0.0000
GA	B350	DHC6	0.1108	0.0000	0.1108	0.0000	0.2216	0.0000	0.0000	0.0000
	B407	B407	0.1864	0.0000	0.1864	0.0000	0.3728	0.0000	0.0000	0.0000
	BE20	DHC6	0.6951	0.0000	0.6951	0.0000	1.3903	0.0000	0.0000	0.0000
	BE35	GA5EPV	0.1410	0.0000	0.1410	0.0000	0.2821	0.2736	0.0000	0.2736
	BE36	GA5EPV	0.7455	0.0000	0.6800	0.0655	1.4910	0.1547	0.0000	0.1547
	BE40	MU3001	0.1007	0.0000	0.1007	0.0000	0.2015	0.0000	0.0000	0.0000
	BE58	BEC58P	0.1310	0.0000	0.1310	0.0000	0.2619	0.0000	0.0000	0.0000
	BE9L	DHC6	1.2140	0.0806	1.2140	0.0806	2.5891	0.1785	0.0000	0.1785
	C150	GA5EPF	0.3526	0.0000	0.3526	0.0000	0.7052	2.4628	0.0000	2.4628
	C172	CNA172	1.0125	0.0000	1.0125	0.0000	2.0249	8.7328	0.0000	8.7328
	C177	CNA172	0.0504	0.0000	0.0504	0.0000	0.1007	0.0000	0.0000	0.0000
	C182	CNA182	0.4030	0.0000	0.4030	0.0000	0.8059	1.0470	0.0000	1.0470
	C206	CNA206	0.3224	0.0554	0.3778	0.0000	0.7556	0.4521	0.0000	0.4521
	C210	GA5EPV	0.1410	0.0000	0.1410	0.0000	0.2821	0.2261	0.0000	0.2261
	C340	BEC58P	0.1058	0.0000	0.1058	0.0000	0.2116	0.0000	0.0000	0.0000
	C414	BEC58P	0.4130	0.0000	0.4130	0.0000	0.8261	0.0000	0.0000	0.0000
	C421	BEC58P	0.1763	0.0000	0.1763	0.0000	0.3526	0.0000	0.0000	0.0000
	C525	CNA525C	0.2468	0.0000	0.2468	0.0000	0.4936	0.0000	0.0000	0.0000
	C550	CNA55B	0.0957	0.0000	0.0957	0.0000	0.1914	0.0000	0.0000	0.0000
	C560	CNA560U	0.0806	0.0000	0.0806	0.0000	0.1612	0.0000	0.0000	0.0000
	C56X	CNA560XL	0.0504	0.0000	0.0504	0.0000	0.1007	0.0000	0.0000	0.0000
	COL3	GA5EPV	0.2972	0.0000	0.2972	0.0000	0.5944	0.0000	0.0000	0.0000
	E50P	CNA510	0.0604	0.0000	0.0604	0.0000	0.1209	0.0000	0.0000	0.0000
	F2TH	CNA750	0.0957	0.0000	0.0957	0.0000	0.1914	0.0000	0.0000	0.0000
	FA50	FAL900EX	0.0655	0.0000	0.0655	0.0000	0.1310	0.0000	0.0000	0.0000
	H25B	LEAR35	0.0756	0.0000	0.0756	0.0000	0.1511	0.0000	0.0000	0.0000
	JS31	DHC6	0.7254	0.0000	0.7254	0.0000	1.4507	0.0000	0.0000	0.0000
	LJ45	LEAR35	0.0655	0.0000	0.0655	0.0000	0.1310	0.0000	0.0000	0.0000
	M20P	GA5EPV	0.2015	0.0000	0.2015	0.0000	0.4030	0.3926	0.0000	0.3926
	P28A	PA28	0.2670	0.0000	0.2670	0.0000	0.5339	0.5592	0.0000	0.5592
	P32R	GA5EPV	0.1562	0.0000	0.1562	0.0000	0.3123	0.0000	0.0000	0.0000
	P46T	GA5EPF	0.1259	0.0000	0.1259	0.0000	0.2519	0.0000	0.0000	0.0000
	PA27	BEC58P	0.0000	0.0000	0.0000	0.0000	0.0000	0.1666	0.0000	0.1666
	PA32	GA5EPV	0.1914	0.0000	0.1914	0.0000	0.3828	0.2617	0.0000	0.2617
	PA46	PA31	0.1612	0.0000	0.1612	0.0000	0.3224	0.0000	0.0000	0.0000
	PC12	CNA208	2.2970	0.3476	2.1207	0.5239	5.2890	0.7139	0.0000	0.7139
	R44	R44	0.0504	0.0000	0.0504	0.0000	0.1007	0.0000	0.0000	0.0000
	SR22	COMSEP	0.2065	0.0000	0.2065	0.0000	0.4130	0.0000	0.0000	0.0000
	T38	T-38A	0.2569	0.0000	0.2569	0.0000	0.5138	0.0000	0.0000	0.0000
	TB21	GA5EPV	0.0554	0.0000	0.0554	0.0000	0.1108	0.0000	0.0000	0.0000
	TBM7	CNA208	0.1965	0.0000	0.1965	0.0000	0.3929	0.0000	0.0000	0.0000
MIL	BE9L	BE9L	2.5517	0.1942	2.5240	0.2219	5.4917	20.2986	0.0000	20.2986
	T1A	BE40	0.3606	0.0208	0.3467	0.0347	0.7627	3.1205	0.0000	3.1205
	T38	T38	0.1872	0.0139	0.1872	0.0139	0.4022	1.6932	0.0000	1.6932
	TEX2	CNA208	0.9846	0.0624	0.9569	0.0901	2.0941	8.2822	0.0000	8.2822
Total			25.9061	2.8720	25.0643	3.7137	57.5562	51.3479	0.0000	51.3479



4. AIRCRAFT NOISE AND PERFORMANCE CHARACTERISTICS

Specific noise and performance data must be entered into AEDT for each aircraft type operating at the Airport. Noise data include Sound Exposure Level (SEL) at a range of distances (from 200 feet to 25,000 feet) from a particular aircraft with engines at a specific thrust level. Performance data include thrust, speed, and altitude profiles for takeoff and landing operations. The AEDT database contains standard noise and performance data for over 300 different fixed-wing aircraft types, most of which are civilian aircraft. AEDT automatically accesses the noise and performance data for takeoff and landing operations by those aircraft.

Within the AEDT database, aircraft takeoff or departure profiles are usually defined by a range of trip distances identified as “stage lengths.” A longer trip distance or higher stage length is associated with a heavier aircraft due to the increase in fuel requirements for the flight. Stage length determinations were obtained from flight radar data. Table 7 through Table 9 give the stage length use percentages for both takeoffs and landings by aircraft for each forecast year.

Besides identifying the aircraft type in the database, AEDT has STANDARD and ICAO aircraft flight profiles for takeoffs, landings, and flight patterns or touch-and-go operations. HMMH recommends using these standard profiles for all aircraft types whenever possible. However, in processing the flight data, we identified three aircraft types that do not appear in AEDT’s FLEET database. Table 6 lists these types and our requested substitutions. Since these aircraft are not in the default database, we have requested approval from the FAA to perform a nonstandard aircraft noise and performance data substitution.²

Table 6: Summary of Requested Non-Standard AEDT Aircraft Substitutions

Aircraft Designator	Aircraft Description	Engine Type	Proposed AEDT 3c Data				
			AEDT Equipment ID	AEDT Airframe	AEDT Engine	ANP Type	AEDT BADA_ID
B763(ICA0)	Boeing 767-300ER	Jet, 2 engines	TBD on study import	U_Boeing 767-300ERF	CF6-80C2B6F	U_7673ER	B763
B763(ICA0)	Boeing 767-300F	Jet, 2 engines	TBD on study import	U_Boeing 767-300ERF	CF6-80C2B6F	U_7673ER	B763
TB21 (ICA0)	Socata TB-21 Trinidad TC	Piston, 1 engine	1906	EADS Socata TB-20 Trinidad	TIO-540-J2B2	GASEPV	TB21

² Valley International Airport (HRL) Runway 35L Extension Environmental Assessment (EA) Non-Standard Aviation Environmental Design Tool (AEDT) Modeling Request, October 21, 2020

Table 7. Stage Length Usage by Aircraft Type for 2019

Category	Aircraft Type	ANP_Type	Day			Night			Total
			1	2	3	1	2	3	
AC	A20N	A320-271N	0%	58%	42%	0%	0%	0%	100%
	A306	A300-622R	0%	100%	0%	0%	0%	0%	100%
	A320	A320-211	0%	57%	43%	0%	0%	0%	100%
	B734	737400	50%	0%	50%	0%	0%	0%	100%
	B737	737700	81%	0%	0%	19%	0%	0%	100%
	B738	737800	33%	0%	67%	0%	0%	0%	100%
	B752	757PW	82%	0%	0%	18%	0%	0%	100%
	B752	757RR	74%	0%	0%	26%	0%	0%	100%
	B762	767CF6	44%	0%	8%	3%	0%	44%	100%
	B763	767300	30%	0%	17%	13%	0%	40%	100%
	CRJ9	CRJ9-ER	0%	0%	100%	0%	0%	0%	100%
	DC10	DC1010	0%	96%	0%	0%	4%	0%	100%
	DC10	DC1030	0%	100%	0%	0%	0%	0%	100%
	E170	EMB170	54%	0%	0%	46%	0%	0%	100%
	E75L	EMB175	58%	0%	0%	42%	0%	0%	100%
AT	C172	CNA172	100%	0%	0%	0%	0%	0%	100%
	C182	CNA182	100%	0%	0%	0%	0%	0%	100%
	CL35	CL600	100%	0%	0%	0%	0%	0%	100%
	E135	EMB14L	71%	0%	0%	29%	0%	0%	100%
	E145	EMB14L	89%	0%	0%	11%	0%	0%	100%
	E45X	EMB145	100%	0%	0%	0%	0%	0%	100%
	E55P	CNA55B	100%	0%	0%	0%	0%	0%	100%
GA	AEST	BEC58P	-	-	-	-	-	-	-
	AT5T	GASEPV	100%	0%	0%	0%	0%	0%	100%
	AT6T	GASEPV	100%	0%	0%	0%	0%	0%	100%
	B350	DHC6	100%	0%	0%	0%	0%	0%	100%
	B407	B407	100%	0%	0%	0%	0%	0%	100%
	BE20	DHC6	100%	0%	0%	0%	0%	0%	100%
	BE35	GASEPV	100%	0%	0%	0%	0%	0%	100%
	BE36	GASEPV	91%	0%	0%	9%	0%	0%	100%
	BE40	MU3001	100%	0%	0%	0%	0%	0%	100%
	BE58	BEC58P	100%	0%	0%	0%	0%	0%	100%
	BE9L	DHC6	94%	0%	0%	6%	0%	0%	100%
	C150	GASEPF	100%	0%	0%	0%	0%	0%	100%
	C172	CNA172	100%	0%	0%	0%	0%	0%	100%
	C177	CNA172	100%	0%	0%	0%	0%	0%	100%
	C182	CNA182	100%	0%	0%	0%	0%	0%	100%
	C206	CNA206	100%	0%	0%	0%	0%	0%	100%
	C210	GASEPV	100%	0%	0%	0%	0%	0%	100%
	C340	BEC58P	100%	0%	0%	0%	0%	0%	100%
	C414	BEC58P	100%	0%	0%	0%	0%	0%	100%
	C421	BEC58P	100%	0%	0%	0%	0%	0%	100%
	C525	CNA525C	100%	0%	0%	0%	0%	0%	100%
	C550	CNA55B	100%	0%	0%	0%	0%	0%	100%
	C560	CNA560U	100%	0%	0%	0%	0%	0%	100%
	C56X	CNA560XL	100%	0%	0%	0%	0%	0%	100%
	COL3	GASEPV	100%	0%	0%	0%	0%	0%	100%
	E50P	CNA510	100%	0%	0%	0%	0%	0%	100%
	F2TH	CNA750	100%	0%	0%	0%	0%	0%	100%
	FA50	FAL900EX	100%	0%	0%	0%	0%	0%	100%
	H25B	LEAR35	100%	0%	0%	0%	0%	0%	100%
	JS31	DHC6	100%	0%	0%	0%	0%	0%	100%
	LJ45	LEAR35	100%	0%	0%	0%	0%	0%	100%
	M20P	GASEPV	100%	0%	0%	0%	0%	0%	100%
	P28A	PA28	100%	0%	0%	0%	0%	0%	100%
	P32R	GASEPV	100%	0%	0%	0%	0%	0%	100%
	P46T	GASEPF	100%	0%	0%	0%	0%	0%	100%
	PA27	BEC58P	-	-	-	-	-	-	-
	PA32	GASEPV	100%	0%	0%	0%	0%	0%	100%
	PA46	PA31	100%	0%	0%	0%	0%	0%	100%
	PC12	CNA208	80%	0%	0%	20%	0%	0%	100%
	R44	R44	100%	0%	0%	0%	0%	0%	100%
	SR22	COMSEP	100%	0%	0%	0%	0%	0%	100%
	T38	T-38A	100%	0%	0%	0%	0%	0%	100%
	TB21	GASEPV	100%	0%	0%	0%	0%	0%	100%
	TBM7	CNA208	100%	0%	0%	0%	0%	0%	100%
MIL	BE9L	BE9L	92%	0%	0%	8%	0%	0%	100%
	T1A	BE40	91%	0%	0%	9%	0%	0%	100%
	T38	T38	93%	0%	0%	7%	0%	0%	100%
	TEX2	CNA208	91%	0%	0%	9%	0%	0%	100%

Table 8. Stage Length Usage by Aircraft Type for 2024

Category	Aircraft Type	ANP_Type	Day			Night			Total
			1	2	3	1	2	3	
AC	A20N	A320-271N	0%	58%	42%	0%	0%	0%	100%
	A306	A300-622R	0%	100%	0%	0%	0%	0%	100%
	A320	A320-211	0%	57%	43%	0%	0%	0%	100%
	B734	737400	50%	0%	50%	0%	0%	0%	100%
	B737	737700	81%	0%	0%	19%	0%	0%	100%
	B738	737800	33%	0%	67%	0%	0%	0%	100%
	B752	757PW	82%	0%	0%	18%	0%	0%	100%
	B752	757RR	74%	0%	0%	26%	0%	0%	100%
	B762	767CF6	44%	0%	8%	3%	0%	44%	100%
	B763	767300	30%	0%	17%	13%	0%	40%	100%
	CRJ9	CRJ9-ER	0%	0%	100%	0%	0%	0%	100%
	DC10	DC1010	0%	96%	0%	0%	4%	0%	100%
	DC10	DC1030	0%	100%	0%	0%	0%	0%	100%
	E170	EMB170	54%	0%	0%	46%	0%	0%	100%
	E75L	EMB175	58%	0%	0%	42%	0%	0%	100%
AT	C172	CNA172	100%	0%	0%	0%	0%	0%	100%
	C182	CNA182	100%	0%	0%	0%	0%	0%	100%
	CL35	CL600	100%	0%	0%	0%	0%	0%	100%
	E135	EMB14L	71%	0%	0%	29%	0%	0%	100%
	E145	EMB14L	89%	0%	0%	11%	0%	0%	100%
	E45X	EMB145	100%	0%	0%	0%	0%	0%	100%
	E55P	CNA55B	100%	0%	0%	0%	0%	0%	100%
GA	AEST	BEC58P	-	-	-	-	-	-	-
	AT5T	GASEPV	100%	0%	0%	0%	0%	0%	100%
	AT6T	GASEPV	100%	0%	0%	0%	0%	0%	100%
	B350	DHC6	100%	0%	0%	0%	0%	0%	100%
	B407	B407	100%	0%	0%	0%	0%	0%	100%
	BE20	DHC6	100%	0%	0%	0%	0%	0%	100%
	BE35	GASEPV	100%	0%	0%	0%	0%	0%	100%
	BE36	GASEPV	91%	0%	0%	9%	0%	0%	100%
	BE40	MU3001	100%	0%	0%	0%	0%	0%	100%
	BE58	BEC58P	100%	0%	0%	0%	0%	0%	100%
	BE9L	DHC6	94%	0%	0%	6%	0%	0%	100%
	C150	GASEPF	100%	0%	0%	0%	0%	0%	100%
	C172	CNA172	100%	0%	0%	0%	0%	0%	100%
	C177	CNA172	100%	0%	0%	0%	0%	0%	100%
	C182	CNA182	100%	0%	0%	0%	0%	0%	100%
	C206	CNA206	100%	0%	0%	0%	0%	0%	100%
	C210	GASEPV	100%	0%	0%	0%	0%	0%	100%
	C340	BEC58P	100%	0%	0%	0%	0%	0%	100%
	C414	BEC58P	100%	0%	0%	0%	0%	0%	100%
	C421	BEC58P	100%	0%	0%	0%	0%	0%	100%
	C525	CNA525C	100%	0%	0%	0%	0%	0%	100%
	C550	CNA55B	100%	0%	0%	0%	0%	0%	100%
	C560	CNA560U	100%	0%	0%	0%	0%	0%	100%
	C56X	CNA560XL	100%	0%	0%	0%	0%	0%	100%
	COL3	GASEPV	100%	0%	0%	0%	0%	0%	100%
	E50P	CNA510	100%	0%	0%	0%	0%	0%	100%
	F2TH	CNA750	100%	0%	0%	0%	0%	0%	100%
	FA50	FAL900EX	100%	0%	0%	0%	0%	0%	100%
	H25B	LEAR35	100%	0%	0%	0%	0%	0%	100%
	JS31	DHC6	100%	0%	0%	0%	0%	0%	100%
	LJ45	LEAR35	100%	0%	0%	0%	0%	0%	100%
	M20P	GASEPV	100%	0%	0%	0%	0%	0%	100%
	P28A	PA28	100%	0%	0%	0%	0%	0%	100%
	P32R	GASEPV	100%	0%	0%	0%	0%	0%	100%
	P46T	GASEPF	100%	0%	0%	0%	0%	0%	100%
	PA27	BEC58P	-	-	-	-	-	-	-
	PA32	GASEPV	100%	0%	0%	0%	0%	0%	100%
	PA46	PA31	100%	0%	0%	0%	0%	0%	100%
	PC12	CNA208	80%	0%	0%	20%	0%	0%	100%
	R44	R44	100%	0%	0%	0%	0%	0%	100%
	SR22	COMSEP	100%	0%	0%	0%	0%	0%	100%
	T38	T-38A	100%	0%	0%	0%	0%	0%	100%
	TB21	GASEPV	100%	0%	0%	0%	0%	0%	100%
	TBM7	CNA208	100%	0%	0%	0%	0%	0%	100%
MIL	BE9L	BE9L	92%	0%	0%	8%	0%	0%	100%
	T1A	BE40	91%	0%	0%	9%	0%	0%	100%
	T38	T38	93%	0%	0%	7%	0%	0%	100%
	TEX2	CNA208	91%	0%	0%	9%	0%	0%	100%



Table 9. Stage Length Usage by Aircraft Type for 2029

Category	Aircraft Type	ANP_Type	Day			Night			Total
			1	2	3	1	2	3	
AC	A20N	A320-271N	0%	58%	42%	0%	0%	0%	100%
	A306	A300-622R	0%	100%	0%	0%	0%	0%	100%
	A320	A320-211	0%	57%	43%	0%	0%	0%	100%
	B734	737400	50%	0%	50%	0%	0%	0%	100%
	B737	737700	81%	0%	0%	19%	0%	0%	100%
	B738	737800	33%	0%	67%	0%	0%	0%	100%
	B752	757PW	82%	0%	0%	18%	0%	0%	100%
	B752	757RR	74%	0%	0%	26%	0%	0%	100%
	B762	767CF6	44%	0%	8%	3%	0%	44%	100%
	B763	767300	30%	0%	17%	13%	0%	40%	100%
	CRJ9	CRJ9-ER	0%	0%	100%	0%	0%	0%	100%
	DC10	DC1010	0%	96%	0%	0%	4%	0%	100%
	DC10	DC1030	0%	100%	0%	0%	0%	0%	100%
	E170	EMB170	54%	0%	0%	46%	0%	0%	100%
	E75L	EMB175	58%	0%	0%	42%	0%	0%	100%
AT	C172	CNA172	100%	0%	0%	0%	0%	0%	100%
	C182	CNA182	100%	0%	0%	0%	0%	0%	100%
	CL35	CL600	100%	0%	0%	0%	0%	0%	100%
	E135	EMB14L	71%	0%	0%	29%	0%	0%	100%
	E145	EMB14L	89%	0%	0%	11%	0%	0%	100%
	E45X	EMB145	100%	0%	0%	0%	0%	0%	100%
	E55P	CNA55B	100%	0%	0%	0%	0%	0%	100%
GA	AEST	BEC58P	-	-	-	-	-	-	-
	AT5T	GASEPV	100%	0%	0%	0%	0%	0%	100%
	AT6T	GASEPV	100%	0%	0%	0%	0%	0%	100%
	B350	DHC6	100%	0%	0%	0%	0%	0%	100%
	B407	B407	100%	0%	0%	0%	0%	0%	100%
	BE20	DHC6	100%	0%	0%	0%	0%	0%	100%
	BE35	GASEPV	100%	0%	0%	0%	0%	0%	100%
	BE36	GASEPV	91%	0%	0%	9%	0%	0%	100%
	BE40	MU3001	100%	0%	0%	0%	0%	0%	100%
	BE58	BEC58P	100%	0%	0%	0%	0%	0%	100%
	BE9L	DHC6	94%	0%	0%	6%	0%	0%	100%
	C150	GASEPF	100%	0%	0%	0%	0%	0%	100%
	C172	CNA172	100%	0%	0%	0%	0%	0%	100%
	C177	CNA172	100%	0%	0%	0%	0%	0%	100%
	C182	CNA182	100%	0%	0%	0%	0%	0%	100%
	C206	CNA206	100%	0%	0%	0%	0%	0%	100%
	C210	GASEPV	100%	0%	0%	0%	0%	0%	100%
	C340	BEC58P	100%	0%	0%	0%	0%	0%	100%
	C414	BEC58P	100%	0%	0%	0%	0%	0%	100%
	C421	BEC58P	100%	0%	0%	0%	0%	0%	100%
	C525	CNA525C	100%	0%	0%	0%	0%	0%	100%
	C550	CNA55B	100%	0%	0%	0%	0%	0%	100%
	C560	CNA560U	100%	0%	0%	0%	0%	0%	100%
	C56X	CNA560XL	100%	0%	0%	0%	0%	0%	100%
	COL3	GASEPV	100%	0%	0%	0%	0%	0%	100%
	E50P	CNA510	100%	0%	0%	0%	0%	0%	100%
	F2TH	CNA750	100%	0%	0%	0%	0%	0%	100%
	FA50	FAL900EX	100%	0%	0%	0%	0%	0%	100%
	H25B	LEAR35	100%	0%	0%	0%	0%	0%	100%
	JS31	DHC6	100%	0%	0%	0%	0%	0%	100%
	LJ45	LEAR35	100%	0%	0%	0%	0%	0%	100%
	M20P	GASEPV	100%	0%	0%	0%	0%	0%	100%
	P28A	PA28	100%	0%	0%	0%	0%	0%	100%
	P32R	GASEPV	100%	0%	0%	0%	0%	0%	100%
	P46T	GASEPF	100%	0%	0%	0%	0%	0%	100%
	PA27	BEC58P	-	-	-	-	-	-	-
	PA32	GASEPV	100%	0%	0%	0%	0%	0%	100%
	PA46	PA31	100%	0%	0%	0%	0%	0%	100%
	PC12	CNA208	80%	0%	0%	20%	0%	0%	100%
	R44	R44	100%	0%	0%	0%	0%	0%	100%
	SR22	COMSEP	100%	0%	0%	0%	0%	0%	100%
	T38	T-38A	100%	0%	0%	0%	0%	0%	100%
	TB21	GASEPV	100%	0%	0%	0%	0%	0%	100%
	TBM7	CNA208	100%	0%	0%	0%	0%	0%	100%
MIL	BE9L	BE9L	92%	0%	0%	8%	0%	0%	100%
	T1A	BE40	91%	0%	0%	9%	0%	0%	100%
	T38	T38	93%	0%	0%	7%	0%	0%	100%
	TEX2	CNA208	91%	0%	0%	9%	0%	0%	100%



5. RUNWAY UTILIZATION

The primary factor affecting runway use at airports is weather, specifically wind direction and wind speed. Additional factors that may affect runway use include the position of the facility or ramp relative to the runways or operational proficiency training for military units. For the HRL Runway 35L Extension, there are no anticipated changes to the runway utilization expected between scenarios. Table 10 gives the runway utilization percentages between the different runways at HRL as represented in the 2019 flight data.

Table 10. Runway Utilization
Source: 2019 HRL FlightAware data

Runway	Arrivals	Departures
13	2.52%	3.71%
17R	54.51%	43.08%
17L	20.47%	15.63%
31	0.19%	0.12%
35R	6.47%	9.26%
35L	15.85%	28.20%

6. FLIGHT TRACK GEOMETRY AND USE

Model tracks were developed using a standard method, which entailed analyzing radar data obtained from FlightAware for operations at HRL and splitting the flight tracks into similar and manageable groups. This was first done by separating tracks by phase of flight (e.g., arrival or departure) and then by runway. Following this, the flights were separated by destination direction, e.g., north, south, or west. Finally, at this point, radar flight tracks were analyzed and split into groups according to their degree of similar geometry.

Model tracks were developed for each geometrically similar group. For example, Runway 35L departures with a northerly destination were split into a geometrically similar group, and a 'backbone' track was developed. Each of these backbone tracks were then assigned one or two 'dispersion' subtracks on either side of the backbone, for a total of three or five tracks (one backbone and two or four dispersion) for each geometrically similar group. Figure 2 shows an example of one backbone track in the center and two subtracks, one on each side of the backbone track.

Figure 2. Example Model Track



Table 11 presents the utilization rates for each group of the developed model jet tracks; Table 12 presents the same information for the modeled non-jet tracks. The relative ratio of flight track usage was preserved according to those ratios in the FlightAware dataset. Dispersion percentages³ were used to assign utilization of the backbone and subtracks within a given track group. As an example, track groups with one backbone and one subtrack pair, 68.26% of operations associated with the track group are assigned to the backbone, while each subtrack receives 15.87% of the operations.

³ Dispersion percentages are based on the default percentages in FAA's Integrated Noise Model (INM), which was a predecessor to AEDT.

Table 11. Jet Flight Track Utilization Table

Jets						
Runway	Arrivals			Departures		
	Track ID	Percent Use		Track ID	Percent Use	
		Day	Night		Day	Night
13	A13JN01	20.18%	16.67%	D13JN01	4.55%	5.88%
	A13JN02	30.70%	83.33%	D13JN02	4.55%	11.76%
	A13JN03	18.42%	0.00%	D13JN03	86.93%	76.47%
	A13JN04	30.70%	0.00%	D13JN04	3.98%	5.88%
	Total	100.00%	100.00%	Total	100.00%	100.00%
17L	A17LJN01	100.00%	100.00%	D17LJN01	8.44%	8.33%
				D17LJN02	58.23%	58.33%
				D17LJN03	16.03%	8.33%
				D17LJW01	17.30%	25.00%
	Total	100.00%	100.00%	Total	100.00%	100.00%
17R	A17RJN01	16.24%	14.42%	D17RJE01	0.92%	0.85%
	A17RJN02	5.16%	2.09%	D17RJN01	13.74%	7.30%
	A17RJN03	1.82%	2.09%	D17RJN02	0.56%	0.51%
	A17RJN04	3.37%	2.21%	D17RJN03	1.60%	1.19%
	A17RJN05	29.19%	26.16%	D17RJN04	2.36%	1.36%
	A17RJN06	0.92%	7.33%	D17RJN05	44.45%	59.08%
	A17RJN07	37.47%	43.72%	D17RJN06	30.63%	24.79%
	A17RJW01	0.26%	0.23%	D17RJW01	4.03%	3.57%
	A17RJW02	1.93%	0.35%	D17RJW02	1.72%	1.36%
	A17RJW03	3.63%	1.40%			
	Total	100.00%	100.00%	Total	100.00%	100.00%
31	A31JN01	100.00%	100.00%	D31JN01	100.00%	100.00%
	Total	100.00%	100.00%	Total	100.00%	100.00%
35L	A35LJE01	4.21%	12.21%	D35LJN01	5.18%	5.05%
	A35LJN01	7.80%	7.63%	D35LJN02	81.53%	82.42%
	A35LJN02	13.35%	10.69%	D35LJN03	7.78%	8.72%
	A35LJN03	19.35%	29.77%	D35LJW01	0.58%	0.46%
	A35LJN04	21.06%	10.69%	D35LJW02	4.93%	3.36%
	A35LJN05	9.68%	5.34%			
	A35LJN06	12.63%	8.40%			
	A35LJN07	7.08%	12.21%			
	A35LJW02	4.84%	3.05%			
	Total	100.00%	100.00%	Total	100.00%	100.00%
35R	A35RJN01	34.55%	50.00%	D35RJN02	92.47%	92.86%
	A35RJN05	49.09%	0.00%	D35RJN03	7.53%	7.14%
	A35RJW01	16.36%	50.00%			
	Total	100.00%	100.00%	Total	100.00%	100.00%



Table 12. Non-Jet Flight Track Utilization Table

Non-Jets						
Runway	Arrivals			Departures		
	Track ID	Percent Use		Track ID	Percent Use	
		Day	Night		Day	Night
13	A13PN02	23.26%	-	D13PN03	59.65%	50.00%
	A13PN03	20.93%	-	D13PN04	40.35%	50.00%
	A13PN04	23.26%	-			
	A13PN05	32.56%	-			
	Total	100.00%	-	Total	100.00%	100.00%
17L	A17LPE03	6.76%	16.67%	D17LPE01	3.12%	0.00%
	A17LPS02	5.41%	66.67%	D17LPN01	8.78%	2.86%
	A17LPS03	7.43%	0.00%	D17LPN02	41.11%	61.43%
	A17LPW01	42.57%	0.00%	D17LPN03	7.85%	18.57%
	A17LPW02	8.11%	16.67%	D17LPS01	5.77%	2.86%
	A17LPW03	11.49%	0.00%	D17LPS02	4.04%	2.86%
	A17LPW04	18.24%	0.00%	D17LPW01	29.33%	11.43%
	Total	100.00%	100.00%	Total	100.00%	100.00%
17R	A17RPE02	16.49%	0.00%	D17RPE01	13.08%	0.00%
	A17RPN01	13.40%	0.00%	D17RPN01	6.54%	0.00%
	A17RPN05	53.61%	100.00%	D17RPN05	34.62%	38.46%
	A17RPW03	16.49%	0.00%	D17RPN06	15.38%	50.00%
				D17RPS01	4.23%	0.00%
				D17RPW01	5.77%	3.85%
				D17RPW02	20.38%	7.69%
	Total	100.00%	100.00%	Total	100.00%	100.00%
31	A31JN01	100.00%	100.00%	D31JN01	100.00%	100.00%
	Total	100.00%	100.00%	Total	100.00%	100.00%
35L	A35LPS01	100.00%	-	D35LPN01	100.00%	100.00%
	Total	100.00%	-	Total	100.00%	100.00%
35R	A35RPN01	21.37%	57.14%	D35RPN01	9.36%	5.00%
	A35RPN02	7.41%	0.00%	D35RPN02	68.72%	85.00%
	A35RPN03	4.84%	14.29%	D35RPN03	6.40%	10.00%
	A35RPN04	4.27%	0.00%	D35RPW01	10.84%	0.00%
	A35RPN05	12.82%	0.00%	D35RPW02	4.68%	0.00%
	A35RPN06	23.08%	14.29%			
	A35RPS01	4.27%	0.00%			
	A35RPW01	9.12%	14.29%			
	A35RPW02	12.82%	0.00%			
	Total	100.00%	100.00%	Total	100.00%	100.00%
H1	AH1HN01	59.26%	50.00%	DH1HN01	100.00%	100.00%
	AH1HN02	40.74%	50.00%			
	Total	100.00%	100.00%	Total	100.00%	100.00%



7. METEOROLOGICAL CONDITIONS

AEDT has several settings that affect aircraft performance profiles and sound propagation based on meteorological data. Meteorological settings include average annual temperature, barometric pressure, and relative humidity at the airport. AEDT holds the following values for annual average weather conditions at HRL:

- Temperature: 73° F
- Pressure: 1015.090027 millibars
- Sea-level Pressure: 1015.09 millibars
- Relative Humidity 73.37%
- Dew Point: 64.589996° F
- Wind Speed: 10.34 Knots

8. TERRAIN DATA



Terrain data describes the elevation of the ground surrounding the airport and on airport property. If the AEDT user selects the use of terrain data, AEDT uses terrain data to adjust the ground level under the flight paths. The terrain data does not affect the aircraft's performance or noise levels but does affect the vertical distance between the aircraft and a "receiver" on the ground. This in turn affects noise propagation assumptions about how noise propagates over ground. The terrain data were obtained from the United States Geological Survey (USGS) National Map Viewer and will be used with the terrain feature of the AEDT in generating the noise contours for the HRL Runway 35L Extension EA.

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APPENDIX G
COMMENTS ON DRAFT EA AND
RESPONSES TO COMMENTS

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G.1 INTRODUCTION

This appendix contains a list of the three comment submissions received concerning the Draft Environmental Assessment (EA) during the 30-day comment period (April 26, 2021 through May 26, 2021) and the responses to those comments.

G.2 LIST OF COMMENTERS

Table G-1 below provides an indexed list of all commenters. Each commenter was assigned a commenter number. A code was used that consists of a letter and a number to identify each commenter to facilitate the cataloging of all comments that were received. The letter identifies the type of commenter as follows:

A = Agency (Federal, State, Regional, or Local)

The number that follows the letter identifies the specific commenter. For example, the code "A-1" describes the commenter as being the first member of an agency who provided comments.

No comments were received by organizations or members of the public.

TABLE G-1
LIST OF COMMENTERS

COMMENTS NUMBER	NAME	AFFILIATION	DATE	SUBMISSION TYPE
Agency				
A-1	Ryan Vise	Texas Council on Environmental Quality	May 24, 2021	Email
A-2	Charles Ardizzone	U.S. Fish and Wildlife Service	April 28, 2021	Email
A-3	Jonna Polk	U.S. Environmental Protection Agency	May 21, 2021	Email

Source: RS&H, 2021.

Commenter A-1

Jon Niermann, *Chairman*
 Emily Lindley, *Commissioner*
 Bobby Janecka, *Commissioner*
 Toby Baker, *Executive Director*



TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

May 24, 2021

William Davidson
 RS&H

Via: E-mail

Re: TCEQ NEPA Request #2021-068. Valley International Airport Runway Extension. Cameron County.

Dear Mr. Davidson,

The Texas Commission on Environmental Quality (TCEQ) has reviewed the above-referenced project and offers the following comments:

In accordance with the general conformity regulations in 40 CFR Part 93, this proposed action was reviewed for air quality impact. The proposed action is located in Cameron County, which is currently designated as attainment/unclassified for the National Ambient Air Quality Standards for all six criteria air pollutants. General conformity requirements do not apply.

We recommend the environmental assessment address actions that will be taken to prevent surface and groundwater contamination.

Any debris or waste disposal should be at an appropriately authorized disposal facility.

Thank you for the opportunity to review this project. If you have any questions, please contact the agency NEPA coordinator at (512) 239-0010 or NEPA@tceq.texas.gov

Sincerely,

Ryan Vise,
 Division Director
 External Relations

P.O. Box 13087 • Austin, Texas 78711-3087 • 512-239-1000 • tceq.texas.gov

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Response to Commenter A-1

1. Comment noted.
2. Sections 4.13.2.6 and 4.13.3.6 of the EA outline the best management practices the Airport would implement and identifies the permits the Airport would comply with for surface waters and groundwater, respectively, to reduce impacts to those resources.
3. The Airport would dispose of construction debris and waste at the appropriate authorized facility. Text has been added to Section 4.7.5.2 of the EA to reflect this.

Commenter A-2



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Texas Coastal Ecological Services Field Office
3325 Green Jay Road
Alamo, Texas 78516
956/784-7560 (Fax) 956/787-8338



In Reply Refer To:
02ETTX00-2021-I-1662

April 28, 2021

Ms. Julie Barrow
RS&H
4582 South Ulster Street
Suite 1100
Denver, Colorado 80237

Dear Ms. Barrow:

We received your April 26, 2021, letter regarding effects of a proposed airport runway extension on federally listed species in Cameron County, Texas. Additionally, this action was evaluated for impacts to wetlands and other federal trust fish and wildlife resources.

Federal Aviation Administration (FAA) proposes construction and operation of the Runway 17R-35L extension at Valley International Airport, Harlingen, Texas to extend Runway 17R-35L and adjacent taxiways by 1,099 feet to the south (Proposed Action). Additionally, the Proposed Action would require the relocation of the existing perimeter road. Connected actions include relocation, replacement, and/or installation of Navigational aids (NAVAIDs). The Proposed Action would occur entirely on Airport property. The U.S. Fish and Wildlife Service (Service) has received a Draft Environmental Assessment for review.

The components of the Proposed Action are the following:

- Runway Extension: Runway 17R-35L would be extended by 1,099 feet to the south.
- Taxiway Extension: Taxiways A and M would be extended by 1,099 feet to the south.
- Perimeter Road Relocation: Perimeter Road would be rerouted around the proposed extensions to Runway 17R-35L and Taxiways A and M.
- Medium Intensity Approach Lighting System with Runway Alignment Indicator Lights (MALSR) Installation: a MALSR for the Runway 35L end would be installed.
- Precision Approach Path Indicators (PAPI) Relocation: the PAPI on the Runway 35L end would be relocated.

Ms. Julie Barrow

2

- Instrument Landing System (ILS): for Runway 35L end:
 - Localizer (LOC) Installation: a new LOC for the Runway 35L end would be installed.
 - Glideslope Installation: a new glideslope for Runway 35L end would be installed.
- Runway Visual Range (RVR) Installation: RVRs would be installed for both the Runway 17R end and the Runway 35L end, as well as a midpoint RVR.

To avoid impacts to migratory birds, the Service recommends migratory bird surveys be conducted prior to mechanical clearing of brush and trees between March 15 and September 15. Surveys should look for birds, nests and eggs. The Service recommends leaving a buffer of vegetation (≥ 100 feet) around songbird nests detected until young have fledged or the nest is abandoned. Other species such as water birds or raptors require larger buffer distances of 500 feet or more.

1

FAA has made a "no effect" determination for the ocelot (*Leopardus pardalis*), gulf coast jaguarundi (*Herpailurus yagouaroundi cacomitli*), interior least tern (*Sterna antillarum*), piping plover (*Charadrius melodus*), red knot (*Calidris canutus rufa*), Eastern black rail (*Laterallus jamaicensis ssp. Jamaicensis*), Northern aplomado falcon (*Falco femoralis septentrionalis*), green sea turtle (*Chelonia mydas*), hawksbill sea turtle (*Eretmochelys imbricata*), Kemp's ridley sea turtle (*Lepidochelys kempii*), leatherback sea turtle (*Dermochelys coriacea*), loggerhead sea turtle (*Caretta caretta*), South Texas ambrosia (*Ambrosia cheiranthifolia*), and Texas ayenia (*Ayenia limitaris*). The Service does not provide concurrence for "no effect" determinations, but by making such determination, we believe FAA has complied with Section 7(a)(2) of the Endangered Species Act of 1973, as amended. We appreciate the opportunity to provide pre-planning information. If we can be of further assistance, please contact Ernesto Reyes at (956) 784-7560.

2

Sincerely,



Charles Ardizzone
Field Supervisor

cc: Assistant Field Supervisor, U.S. Fish and Wildlife Service, Corpus Christi, TX

Response to Commenter A-2

1. Comment noted.
2. Comment noted.

Commenter A-3



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
1201 ELM STREET, SUITE 500
DALLAS, TEXAS 75270-2102

May 21, 2021

Ms. Julie Barrow
RS&H, Inc.
4582 South Ulster Street, Suite 1100
Denver, Colorado 80237

Dear Ms. Barrow:

The U.S. Environmental Protection Agency (EPA) has reviewed the Draft Environmental Assessment (EA) for the proposed Runway 17R-35L Extension, Valley International Airport at Harlingen, Texas, dated April 2021. Our review is provided pursuant to the National Environmental Policy Act (NEPA), the Council on Environmental Quality regulations (40 CFR Parts 1500 – 1508), and our NEPA review authority under Section 309 of the Clean Air Act.

The Valley International Airport is proposing to extend Runway 17R-35L approximately 1,100 feet to the south, including the relocation of an existing access road, and drainage ditch. The proposed action will enable the air carrier and cargo aircraft to operate at or close to full payload during periods of warmer temperatures in accordance with Federal Aviation Administration's guidance.

EPA is offering the following comments for your consideration:

Air Quality:

Section 4.4.6, Mitigation Measures (page 4-6 of the Draft EA), states: "*contractor would conduct construction activities in accordance with FAA Advisory Circular 150/5370-10G, Standards for Specifying Construction of Airports*". This document has been superseded by FAA Advisory Circular 150/5370-10H, Standard Specifications for Construction of Airports, dated December 21, 2018. EPA recommends updating reference to reflect currently applicable FAA Advisory Circular.

1

Further, the last sentence on Section 4.4.6 states: "*Additionally, the following best management practices (BMPs) could be implemented to help reduce emissions associated with construction vehicles and equipment during the construction periods*". This statement seems to suggest that best management practices to help reduce emissions associated with construction vehicles and equipment during the construction periods have been included/identified. EPA recommends revising language to identify BMPs in this section, or include a reference to them if they are identified elsewhere in the Draft EA.

2

We appreciate the opportunity to review this Draft EA. If you have any questions, please contact Eli Martinez, the project review lead, at (214) 665-2119 or martinez.eli@epa.gov.

Sincerely,

Polk, Jonna

Digitally signed by Polk, Jonna
DN: cn=Polk, Jonna,
email=Polk.Jonna@epa.gov
Date: 2021.05.24 10:28:37 -0500

Jonna Polk
Director
Office of Communities, Tribes and
Environmental Assessment

Response to Commenter A-3

1. The reference to the FAA Advisory Circular (AC) has been updated to FAA AC 150/5370-10H, *Standard Specifications for Construction of Airports* in Section 4.4.6 of the EA.
2. The EA has been updated to state that best management practices (BMPs) could be implemented to help reduce emissions associated with construction vehicles and equipment during the construction periods. If elected to do so by the Airport, any specific BMPs to reduce emissions would be drafted into the construction contract.

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