I Noise Technical Report

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1 Introduction

This technical report describes the noise modeling conducted for San Antonio Airspace Modernization Project Environmental Assessment (Draft EA). This report contains:

- Objectives in modeling noise analysis for the Draft EA (**Section 2**)
- Noise modeling background and inputs (**Section 3**)
- Noise modeling procedures (**Section 4**)
- Noise analysis (**Section 5**)
- Supplements (**Section 6**)

The following describes the criteria used to identify potential noise impacts. Further information on the fundamentals of noise is provided in the EA (see Appendix F, *Basics of Noise*).

1.1 Noise Impact Criteria

The Federal Aviation Administration (FAA) has considered and identified threshold levels above which aircraft noise causes an adverse impact to people. The agency has determined that a significant impact occurs if a proposed action would result in an increase of Day-Night Average Sound Level[1] (DNL) 1.5 decibels (dB) or higher on noise-sensitive areas exposed to DNL 65 dB or higher levels.

In 1992, the Federal Interagency Committee on Noise (FICON) recommended that noise increases of DNL 3 dB or higher in areas with exposure levels between DNL 60 and 65 dB be evaluated in environmental studies when increases of DNL 1.5 dB or higher occur at noise-sensitive locations with exposure levels at or above DNL 65 dB. Increases of this magnitude in areas with noise exposure levels below DNL 65 dB are not to be considered as "significant impacts," but are reportable changes and receive further consideration. FICON's recommendation has been adopted by the FAA into FAA Order 1050.1F, *Environmental Impacts: Policies and Procedures*.

In 1990, the FAA issued a noise screening procedure for determining whether certain airspace actions at or above 3,000 feet (ft) above ground level (AGL) might result in increases to DNL levels of 5 dB or higher. The noise screening procedure was issued in response to FAA experience that increases in noise of DNL 5 dB or higher at cumulative levels well below DNL 65 dB could be disturbing to people and become a source of public concern. In the Environmental Impact Statement (EIS) for the Expanded East Coast Plan (EECP), the FAA evaluated noise levels down to the DNL 45 dB level for potential increases in DNL noise exposure of 5 dB or higher. In the EECP study, the FAA determined that the DNL 45 dB level is the minimum level at which noise needed to be considered because "even distant ambient noise sources and natural sounds such as wind in trees can easily exceed this (DNL 45 dB) value."[2] This threshold of change was subsequently used in the Chicago Terminal Airspace

1 The DNL metric represents noise as it occurs over a 24-hour period, with one important exception: DNL treats noise occurring at night differently from daytime noise. In determining DNL, the metric assumes that the A-weighted levels occurring at night (defined as 10 p.m. to 7 a.m.) are 10 dB louder than they actually are. This 10-dB increase is applied to account for the fact that there is a greater sensitivity to nighttime noise, and the fact that events at night are often perceived to be more intrusive because nighttime ambient noise is less than daytime ambient noise.

2 U.S. Department of Transportation, Federal Aviation Administration, Expanded East Coast Plan – *Changes in Aircraft Flight Patterns Over the State of New Jersey*, pp. 5-9. 1995.

Project (CTAP) EIS and the Potomac Consolidated TRACON Airspace Redesign EIS. FAA Order 1050.1F memorialized the formal guidelines for evaluating noise impacts.

Increases of DNL 3 dB between DNL 60 and 65 dB and of DNL 5 dB between DNL 45 and 60 are considered reportable changes when evaluating air traffic actions such as the Proposed Action. The increase in noise at these levels may be enough to be noticeable and potentially disturbing to some people, but the cumulative noise level is not high enough to constitute a "significant impact." **Table 1** summarizes the criteria utilized to assess the level of change in noise exposure attributable to the alternative scenarios discussed in the Draft EA.

Table 1 Criteria for Determining Impact of Increases in Aircraft Noise

DNL Noise Exposure Level	Increase in DNL with Proposed Action	Aircraft Noise Exposure Change Consideration
DNL 65 and higher	DNL 1.5 dB or higher [1]	Exceeds Threshold of Significance
DNL 60 to 65	DNL 3.0 dB or higher [2]	Information Disclosed When Evaluating Air Traffic Actions
DNL 45 to 60	DNL 5.0 dB or greater [3]	Information Disclosed When Evaluating Air Traffic Actions

1 FAA Order 1050.1F; Title 14 C.F.R. Part 150.21 (2)(d); and Federal Interagency Committee on Noise, Federal Agency Review of Selected Airport Noise Issues, August 1992.

2 FAA Order 1050.1F; and Federal Interagency Committee on Noise, Federal Agency Review of Selected Airport Noise Issues, August 1992.

3 FAA Order 1050.1F.

Source: FAA Order 1050.1F. June 16, 2015.
Prepared By: ATAC Corporation, August 2022.

2 Noise Analysis Objectives

The San Antonio Airspace Modernization Project presents a detailed exercise in noise modeling for the following airports:

- San Antonio International Airport (SAT)
- New Braunfels National Airport (BAZ)
- Randolph Air Force Base Airfield (RND)
- Kelly Field (SKF)

The following sections describe the objectives identified to determine that the noise analysis provided a detailed and accurate assessment of noise exposure throughout the General Study Area, and other supplemental areas as defined and identified.

2.1 Evaluate Changes in Noise Levels

The FAA has developed specific guidance and requirements for the assessment of aircraft noise to comply with National Environmental Policy Act (NEPA) requirements. This guidance, specified in FAA Order 1050.1F, requires that aircraft noise be analyzed in terms of the annual DNL metric. In practice, this requirement means that DNL levels are computed for the Average Annual Day (AAD) of operations for the year of interest. An AAD represents all the aircraft operations for each day in a study year divided by 365, the number of days in a year. The AAD does not reflect a particular day, but is meant to represent a typical day over a period of a year.

Beyond requiring the use of the DNL metric, the FAA endorses the use of supplemental noise metrics on a case-by-case basis to describe aircraft noise impacts for specific noise sensitive locations. No supplemental noise metrics were determined to be necessary for the Draft EA.

Typical noise studies use noise exposure contours (typically color-coded lines on a base map delineating DNL 5dB increments) to describe noise impacts only in the immediate vicinity of airports (three to five miles). Wide area air traffic noise models use georeferenced receptors, which can provide more detailed results to evaluate the effects of high-altitude airspace changes from the ground level up to 18,000 ft AGL on noise-sensitive areas and to determine if more detailed NEPA analysis may be required. For this Draft EA, a detailed set of receptors was used to analyze current and future noise in the General Study Area (details regarding the creation of the General Study Area are discussed in the Draft EA Section 1.2 *General Study Area*). An additional supplemental boundary area (18,000 Foot Supplemental Study Area) including aircraft traveling up to 18,000 feet AGL was analyzed for assessing potential impacts to Section 4(f), Historic and Cultural Resources, and Wildlife only. An additional screening area (SNIDR Supplemental Study Area) was added in order to perform a noise screening for associated dependent utility procedure elements for the proposed SNIDR Standard Instrument Departure (SID) discussed in the Draft EA Chapter 3. This SNIDR Supplemental Study Area is defined as a polygon with vertices at the SMAKR, WEMAR, GMANN, and BELLR waypoints. This area overlaps and extends out of the General Study Area as well as the 18K Supplemental Area. Additional Section 4(f) resources and historic and cultural resources (see **Section 2.3.2**) and 0.5 nautical mile (NM) evenly spaced grid points (See **Section 2.3.3**) were added to cover this screening area.

Details regarding the receptors, and groups of receptors called receptor sets, used for the Draft EA are discussed in **Sections 3.1.13** and **3.2.11**.

The following scenarios were evaluated:

1. 2021/2022 Existing Conditions – routes as flown in the time period spanning 03/01/2021 through 02/28/2022
2. 2023 Future No Action – routes as forecasted to be flown in the year 2023 if no Proposed Action airspace changes were implemented
3. 2023 Future Proposed Action – routes as forecasted to be flown in the year 2023 if the Proposed Action changes are implemented
4. 2028 Future No Action – routes as forecasted to be flown in the year 2028 if no Proposed Action airspace changes were implemented
5. 2028 Future Proposed Action – routes as forecasted to be flown in the year 2028 if the Proposed Action changes are implemented

The information disclosed in this study includes the maximum potential number of people exposed to DNL changes that meet or exceed the thresholds stated in **Table 1** for the scenarios previously listed.

2.2 Model All Traffic Routes

2.2.1 General Study Area

For this effort, radar data from both the FAA Performance Data Analysis and Reporting System (PDARS) and the FAA System Wide Information Management (SWIM) for March 1, 2021 through February 28, 2021 was obtained and processed. Overall, 180,460 radar flight tracks were used to evaluate and model typical flight routes and flows throughout the General Study Area. The set of radar flight tracks included all military and civilian Instrument Flight Rules (IFR)[3] flights that operated at or below 10,000 feet AGL in the General Study Area and at or below 18,000 feet AGL within the 18,000 Foot Supplemental Study Area.

2.2.2 Between General Study Area Boundary and 18,000 Foot Supplemental Study Area

Radar flight tracks were used to evaluate and model flight routes in areas beyond the General Study Area boundary up to where IFR aircraft operate at or below 18,000 feet AGL (18,000 Foot Supplemental Study Area). FAA Order 1050.1F, *Environmental Impacts: Policies and Procedures, Appendix B, Section B-1.3*, provides that the study area for the noise analysis of a proposed change in air traffic procedures may extend up to 18,000 feet AGL if the proposed action is over a national park or wildlife refuge where other noise is very low, and a quiet setting is a generally recognized attribute.

3 Aircraft operate under two distinct categories of flight rules: Visual Flight Rules (VFR) and Instrument Flight Rules (IFR). These flight rules generally correspond with two categories of weather conditions: Visual Meteorological Conditions (VMC) and Instrument Meteorological Conditions (IMC). VMC generally exist during fair to good weather with good visibility. IMC occur during periods when visibility falls to less than three statute miles or the ceiling (the distance from the ground to the bottom layer of clouds when the clouds cover more than 50 percent of the sky) drops to lower than 1,000 feet. Under VFR, pilots are able to fly whatever route they choose and are responsible to "see and avoid" other aircraft and obstacles such as terrain to maintain safe separation. Under IFR, ATC is responsible for providing separation from other aircraft and terrain, and pilots use cockpit instruments and radar to fly routes specified by ATC and to comply with ATC instructions. Pilots must follow IFR during IMC; however, due to various factors such as the general requirement for aircraft to operate under IFR in Class A airspace [i.e., en route airspace between 18,000 and 60,000 feet above Mean Sea Level (MSL)], the majority of commercial air traffic operates under IFR regardless of weather conditions.

2.3 Model Day & Night Noise Levels

2.3.1 Population Centroids

Within the General Study Area, a total of 46,954 individual population points were evaluated, representing a total population of 3,574,471 people. These points, each of which represents a specific number of people, are referred to as population centroids. Each centroid represents a census block, the smallest geographical unit for which the U.S. Census maintains population data. The smallest centroid has a population of one, and the largest centroid has a population of 5,052. Centroid locations and population counts were drawn by the U.S. Census Bureau based on 2020 U.S. Census data. For each of the five modeling scenarios (see **Section 2.1**), AAD DNL values were calculated at all population centroids within the General Study Area. **Exhibit 1** depicts the census block centroid points modeled within the General Study Area.

2.3.2 Section 4(f) Resources and Historic and Cultural Resources

A grid point analysis was also performed to evaluate noise levels at sites or lands potentially protected under Section 4(f) of the Department of Transportation Act of 1966 (49 U.S.C. § 300 *et seq*.) (herein referred to as Section 4(f) properties or resources). For the purposes of this analysis, Section 4(f) resources include Section 106 historic resources listed or eligible for listing on the National Register of Historic Places under the National Historic Preservation Act (NHPA) of 1966 (16 U.S.C. § 470 et seq., as amended). The Section 4(f) sites were initially identified as single point locations within the 18,000 Foot Supplemental Study Area and SNIDR Supplemental Study Area. In some cases, the Section 4(f) properties covered a large area (usually large parks or wilderness areas) that were not well represented by a single analysis point. In these cases, a uniformly spaced grid of points was defined over each area to provide adequate coverage. **Exhibit 2** depicts the grid points modeled for Section 4(f) resources in the 18,000 Foot Supplemental Study Area.

A grid point analysis was also performed to evaluate noise levels as applicable at national parks, national wildlife refuges, and national wilderness areas that are outside of the General Study Area, but within the 18,000 Foot Supplemental Study Area. These points are included in **Exhibit 2.**

2.3.3 0.5 NM Evenly Spaced Grid Points

Another grid point analysis was performed to encompass the 18,000 Foot Supplemental Study Area and SNIDR Supplemental Study Area. This analysis was done to capture the noise level changes in areas not covered by other grids. Grid points used for this analysis were evenly spaced in one-half NM intervals. **Exhibit 3** depicts the 0.5 NM Evenly Spaced Grid Points.

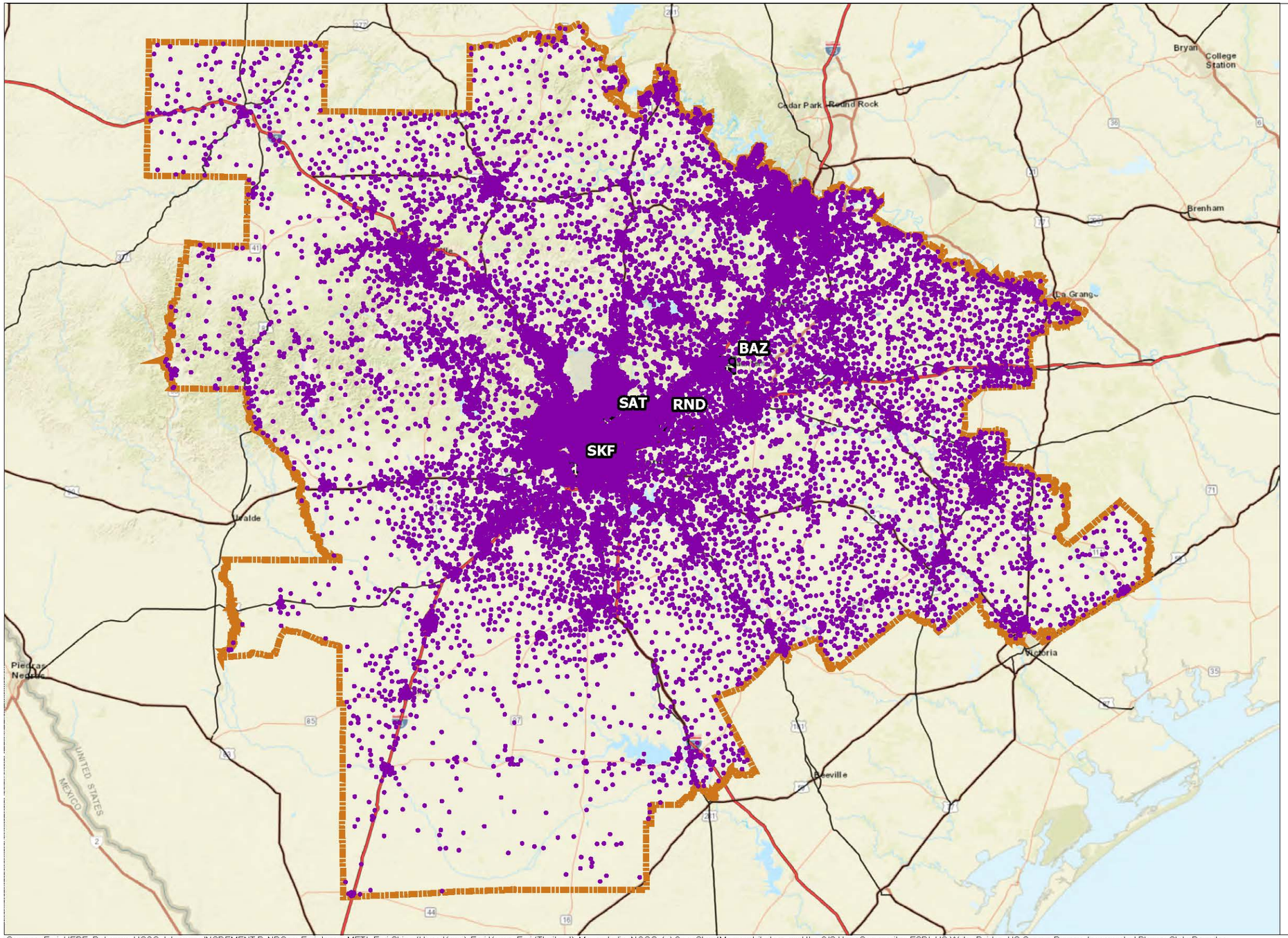
2.3.4 Noise Sensitive Land Use Areas

Order 1050.1F Appendix B requires the FAA to identify the location and number of noise sensitive uses in addition to residences that could be significantly impacted by noise. As defined in Paragraph 11-5b(10) of Order 1050.1F, a noise sensitive area is:

> "an area where noise interferes with normal activities associated with its use. Normally, noise sensitive areas include residential, educational, health, and religious structures and sites, parks, recreational areas, areas with wilderness characteristics, wildlife refuges, and cultural and historical sites."

The compatibility of noise sensitive uses is evaluated through comparison with the compatibility guidelines provided in 14 CFR Part 150, Appendix A, Table 1. The guidelines focus on areas exposed to noise levels of DNL 65 dB and greater.

The locations of these noise sensitive land use areas were identified and discussed in more detail in the Draft EA Chapter 4, Section 4.2.1.3 *Noise Sensitive Areas and Uses*. **Exhibit 4** depicts the grid points identified to represent the noise sensitive land use areas.



LEGEND

- Census Block Centroids
- Study Airport
- General Study Area (GSA)

Water Bodies

- Inundation Area
- Lake/Pond
- Playa
- Reservoir
- Stream/River
- Swamp/Marsh
- US States

Notes:

Major Study Airports
San Antonio International Airport **SAT**

Satellite Study Airports
Kelly Field **SKF**
New Braunfels National Airport **BAZ**
Randolph Air Force Base Airfield **RND**

Projection :GCS North American 1983
Scale: 1:2,631,162

0 5 10 20 Miles

N

Sources: Esri, HERE, DeLorme, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), MaymyIndia, NGCC, (c) OpenStreetMap contributors, and the GIS User Community. ESRI, US Water Boides. US Census Bureau, Incorporated Places, State Boundary, Census Block Centroid Points. Federal Aviation Administration, Code of Instrument Flight Procedures, Study Airports. ATAC, Study Area Boundaries.
Prepared by: ATAC Corporation, September 2022.

Exhibit 1

Census Block Centroid Points in the General Study Area

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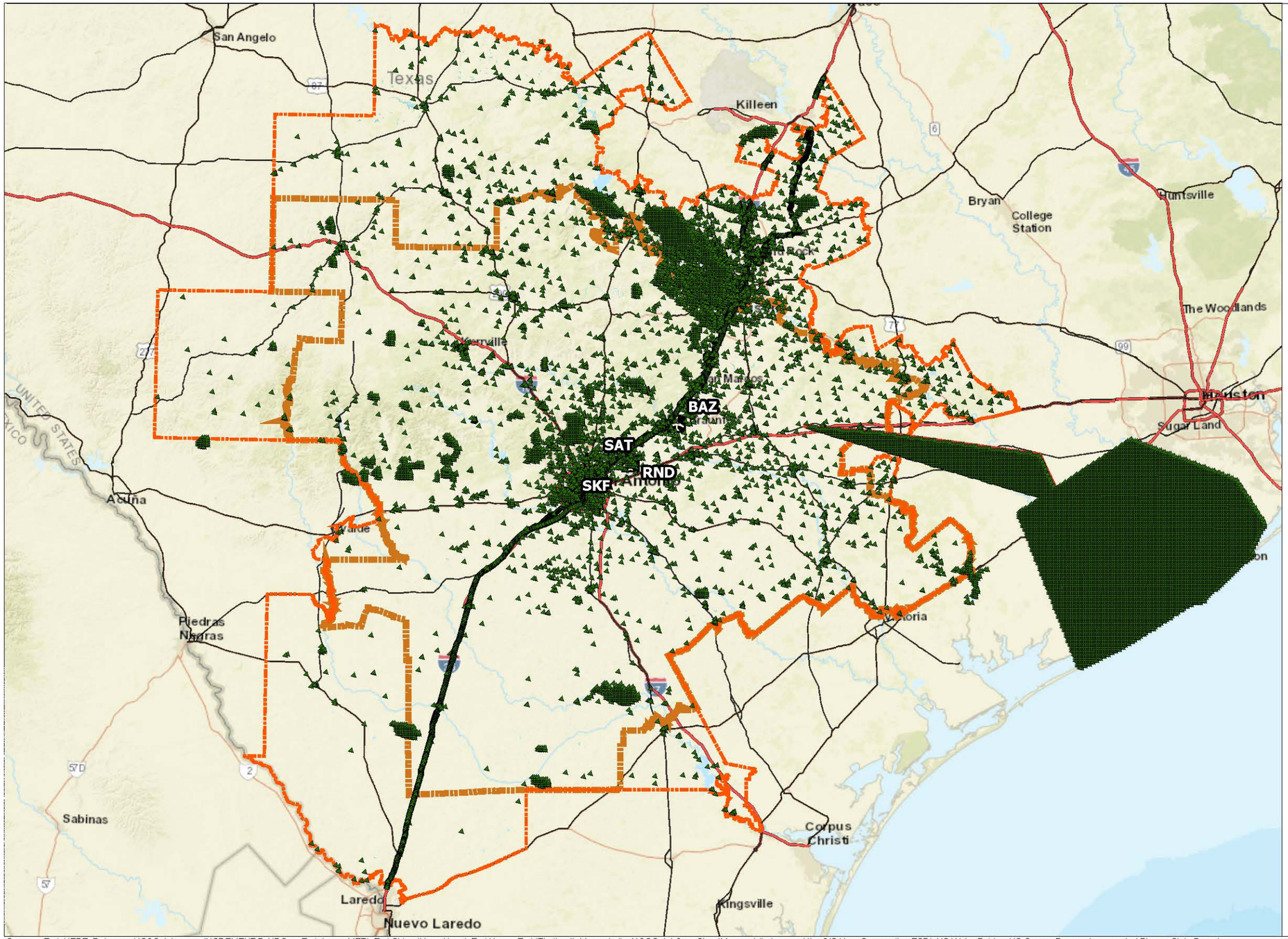

LEGEND

- Section 4(f), Cultural and Historic Point
- Study Airport
- Additional Section 4(f), Historic, and Cultural Resources Screening Area
- 18K Supplemental Boundary
- General Study Area (GSA)

Water Bodies

- Inundation
- Lake/Pond
- Playa
- Reservoir
- Stream/River
- Swamp/Marsh
- US States

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Prepared by: ATAC Corporation, September 2022.

Exhibit 2

Section 4(f), Cultural and Historic Points in the General Study Area

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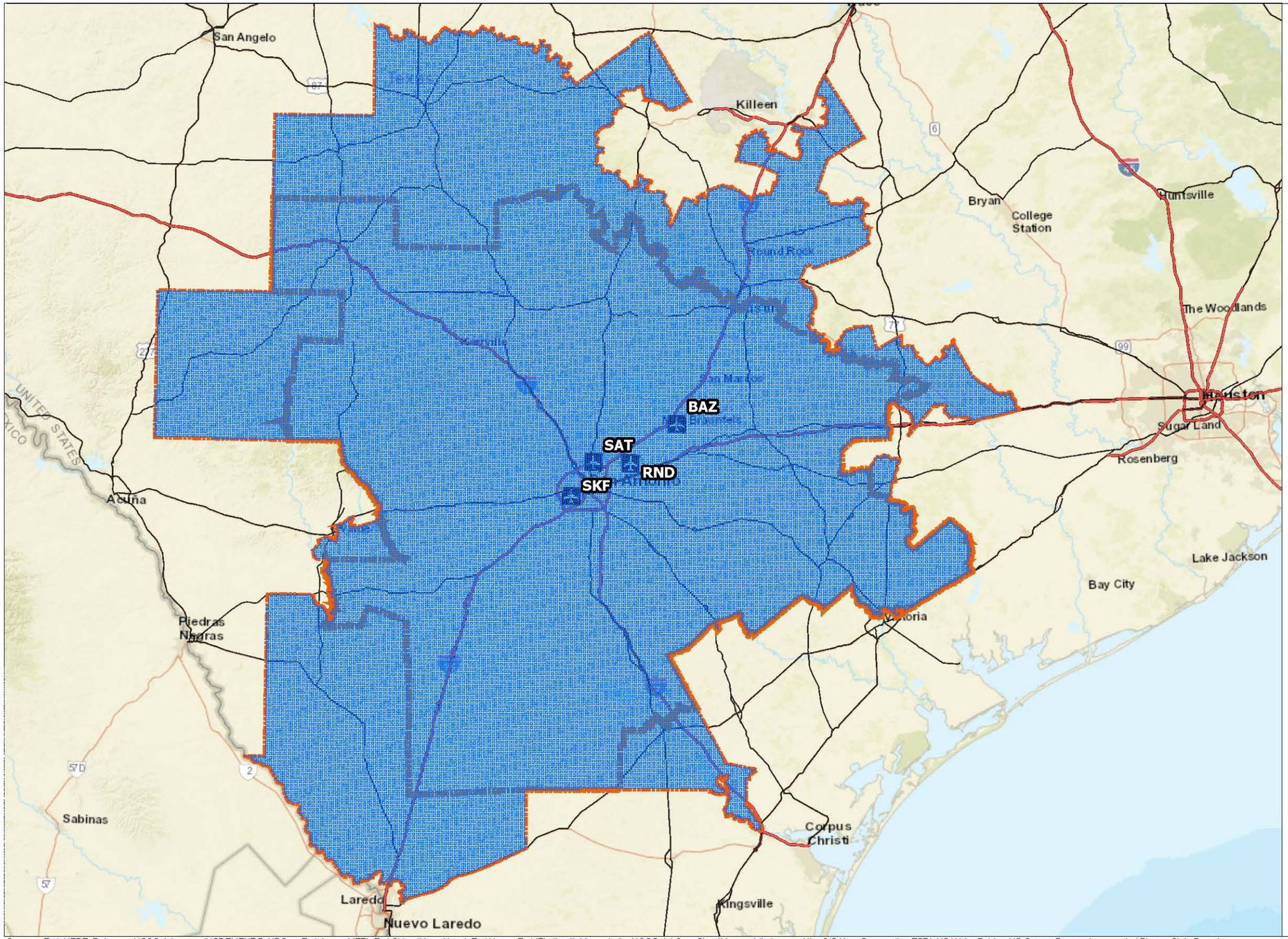

LEGEND

- 0.5 NM Evenly Spaced Grid
- Study Airport
- 18K Supplemental Boundary
- General Study Area (GSA)

Water Bodies

- Inundation
- Lake/Pond
- Playa
- Reservoir
- Stream/River
- Swamp/Marsh
- US States

Notes:

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New Braunfels National Airport **BAZ**
Randolph Air Force Base Airfield **RND**

Projection :GCS North American 1983
Scale: 1:2,631,162

0 5 10 20 Miles

N

Sources: Esri, HERE, DeLorme, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), MaymyIndia, NGCC, (c) OpenStreetMap contributors, and the GIS User Community. ESRI, US Water Boides. US Census Bureau, Incorporated Places, State Boundary, Census Block Centroid Points. Federal Aviation Administration, Code of Instrument Flight Procedures, Study Airports. ATAC, Study Area Boundaries.
Prepared by: ATAC Corporation, September 2022.

Exhibit 3

0.5 NM Evenly Spaced Grid Points

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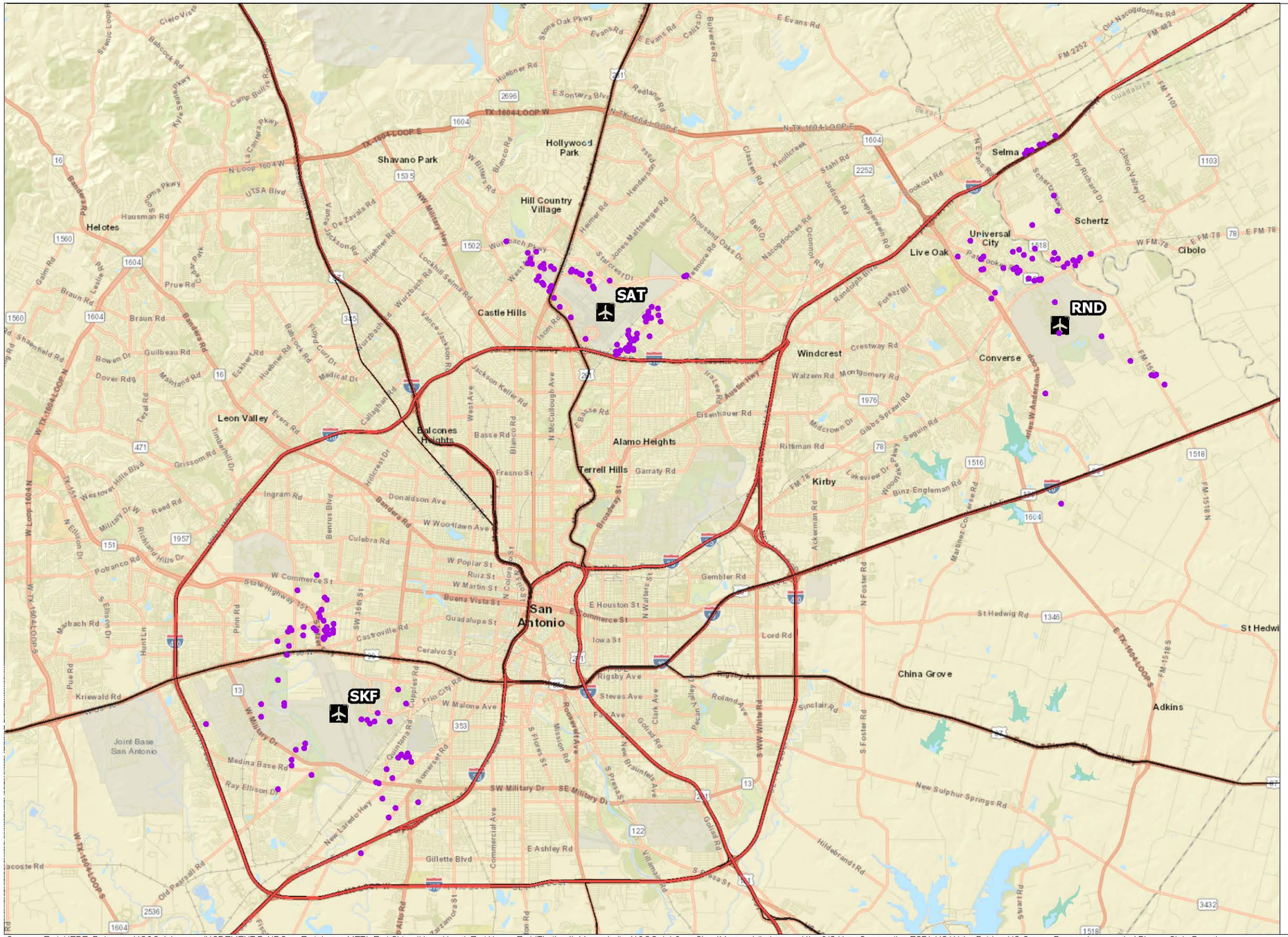

LEGEND

- Noise Sensitive Land Use Point
- Study Airport
- 18K Supplemental Boundary
- General Study Area (GSA)

Water Bodies

- Inundation Area
- Lake/Pond
- Playa
- Reservoir
- Stream/River
- Swamp/Marsh
- US States

Notes:

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Projection :GCS North American 1983
Scale: 1:2,631,162

0 0.5 1 2 Miles

N

Sources: Esri, HERE, DeLorme, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), MaymyIndia, NGCC, (c) OpenStreetMap contributors, and the GIS User Community. ESRI, US Water Boides. US Census Bureau, Incorporated Places, State Boundary, Census Block Centroid Points. Federal Aviation Administration, Code of Instrument Flight Procedures, Study Airports. ATAC, Study Area Boundaries.
Prepared by: ATAC Corporation, September 2022.

Exhibit 4

Noise Sensitive Land Use Grid Points

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2.4 Use Standard Profiles with Targeted Altitudes

Aircraft within the General Study Area operate in accordance with standardized air traffic control procedures. To model existing and proposed procedures, aircraft profiles were designed to meet target altitudes along the trajectory. These targeted altitudes were set by either air traffic control, airspace procedure restrictions, or recommended and approved by subject matter experts. See **Sections 3.1.8** and **3.2.8** for details.

2.5 Identify and Quantify Noise Changes and Causes Thereof

DNL noise levels were calculated for each centroid and grid point, and differences in noise exposure between the Proposed Action and the No Action for each of the future analysis years were quantified. Any significant or reportable noise changes would be explained in **Section 5**. The criteria set to meet this objective are described in **Section 1.1**, *Noise Impact Criteria*.

2.6 Produce Easily Interpreted and Informative Tables and Graphics of Results

The complexity (number of flight routes, airports, operations, etc.) of the study created challenges in reporting noise modeling results in a useful format for analysis. Tables and graphics were designed to provide data that would be understandable to the general public.

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3 Noise Modeling Background & Inputs

The FAA requires that aircraft noise be evaluated using authorized computer noise models. This project includes two civilian airports (SAT and BAZ), one military airfield (RND), and one joint-use military/civilian airfield that hosts primarily military aircraft. For this reason, two separate noise modeling tools were used. For SAT and BAZ, the Aviation Environmental Design Tool (AEDT) version 3d model was used. RND is located on a United States Air Force Base (Randolph Air Force Base, a subunit of Joint Base San Antonio [JBSA]) and SKF has a small civilian and primarily military presence, thus their flight schedules, types of operations, and aircraft are primarily military. From consultations with the FAA Office of Environment and Energy, it was decided that modeling of RND and SKF be performed using NOISEMAP. As a result, this section segregates noise modeling inputs by the respective civilian (AEDT) and military (NOISEMAP) authorized noise models.

Using two noise modeling tools for a single effort requires modeling inputs to vary. Effort was made to keep inputs and assumptions between the models as consistent as possible. Outputs were normalized using FAA-approved tools and methods to aggregate results to AAD DNL values.

3.1 AEDT

Noise modeling in AEDT requires several types of input data including airport/runway locations, local environmental variables, operational levels, day/night distributions, runway usage, fleet mix, noise-power-distance relationships, climb/descent profiles, aircraft stage lengths, flight track definition and assignment, user-defined profiles, and receptor sets. Details of the AEDT input data for the Draft EA are discussed below.

3.1.1 Model Background

AEDT is the FAA's regulatory noise modeling tool for air traffic actions such as those proposed for the San Antonio Airspace Modernization Project. AEDT is a software tool suite that models airspace traffic and its environmental effects for a range of scenarios from a single local flight to numerous global flights. By modeling aircraft performance in space and time, AEDT generates results for fuel consumption, emissions, noise, and air quality for the purposes of evaluating environmental impacts. AEDT leverages the use of geographic information system (GIS) and relational database technology to provide the necessary scalability and flexibility to accommodate the size and detail of regional airspace studies.

AEDT provides a powerful computational environment and graphical user interface, and provides the following major capabilities:

- Provides automated quantitative comparison of noise impacts across alternative airspace designs
- Imports and displays track and operation data from airspace models, and population and community data from other sources
- Enables users to specify air traffic control altitudes and automatically calculates required aircraft thrusts and speeds necessary for noise calculations
- Calculates predicted noise impacts at all population centroids (or other specially defined points) in large study areas
- Provides automated means of annualizing noise impact based on different operational configurations and/or runway usage statistics

- Identifies and maps all areas of change in noise impact
- Assembles tables and figures for noise-impact data analysis and report generation
- Applies multiple layers of data checking and quality control

AEDT has been identified as the officially-endorsed FAA tool for environmental modeling and analysis metrics (noise, fuel burn, and emissions) for regional airspace redesign/analysis projects. The official release of the initial AEDT 2a was on March, 21, 2012. Since then, subsequent versions of AEDT have been released. The San Antonio Airspace Modernization Project noise modeling was started in March 2022. FAA guidelines require that all FAA actions requiring noise, fuel burn, or emissions modeling and for which the environmental analysis process began on or after March 29, 2021 are required to use AEDT 3d.[4] To conform with these guidelines, the noise modeling for the San Antonio Airspace Modernization Project uses AEDT 3d.

3.1.2 Airport and Runway Data

Table 2 identifies the airports and runway end names modeled. In total, two airports within the General Study Area were evaluated. All runways at these airports were assumed to be available for traffic assignments in AEDT.

Table 2 Study Airport Details - AEDT

Airport Name	Code	Location	Runway End Names[1]
San Antonio International Airport	SAT	San Antonio, Texas	31L, 31R, 13L, 13R, 22,4
New Braunfels National Airport	BAZ	New Braunfels, Texas	17, 35, 13, 31

1 A runway can be used in both directions but is named in each direction separately. Runway number is based on the magnetic direction of the runway (e.g., Runway 09 points to the east direction). The two numbers on either side always differ by 180 degrees. If there is more than one runway pointing in the same direction, each runway number includes an L, C, or R at the end. This is based on a runway's position relative to others in the same direction – left, center, or right.

Source: Department of Transportation, Federal Aviation Administration. digital-Airport/Facility Directory. February 24, 2022 (http://www.faa.gov/air_traffic/flight_info/aeronav/digital_products/dafd/search/; accessed March 2022).
Prepared by: ATAC Corporation, August 2022.

3.1.3 Local Environmental Variables

To calculate noise levels specific to the conditions in the General Study Area, 18,000 Foot Supplemental Study Area, and SNIDR Supplemental Study Area, the AEDT model uses various local environmental variables such as temperature, pressure, dew point, humidity, and wind speed. This meteorological data is available for many weather stations in AEDT's airport database.

Detailed terrain data for the General Study Area, 18,000 Foot Supplemental Study Area, and SNIDR Supplemental Study Area were incorporated from the United States Geological Study (USGS) 1-degree National Elevation Dataset (NED).[5] NED is a digital elevation model with consistent grid-spacing of 1-arc-second (~30 meters) for 1-by-1-degree tiles covering the United States.[6]

4 Per the FAA AEE memo dated September 27, 2017, "Guidance on determining which version of the Aviation Environmental Design Tool (AEDT) to use for FAA actions and studies," the latest version of AEDT becomes the approved model upon its release.
5 U.S. Department of the Interior, U.S. Geological Survey, National Elevation Dataset, (http://ned.usgs.gov/).
6 U.S. Department of the Interior, U.S. Geological Survey, (https://nationalmap.gov/PERS_Jan2002_NED_highlight_article.pdf)

3.1.4 Operation Levels and Day/Night Distribution

IFR operation levels (number of takeoffs and landings) for each Study Airport were based on radar data, historical airport counts from FAA sources including the Operations Network (OPSNET),[7] Traffic Flow Management System Counts (TFMSC),[8] and Terminal Activity Forecasts (TAF)[9] developed for this analysis. Investigating radar data showed IFR helicopter traffic rarely, if ever, flew traffic patterns, airspace procedures, or exceeded 10,000 ft MSL. As a result, helicopter operations and trajectories were excluded from the project.

Forecasts are presented in Appendix H: the *Flight Schedules Tech Report* technical report. The information contained in these forecasts and used for noise modeling includes the type of aircraft, origin and destination airports, daytime or nighttime operation time, and the average number of daily operations. The detailed operation tables which comprise the forecast were developed for the forecast years 2023 and 2028. For this analysis, each forecast represents the average day (annual/365) of traffic for the year of interest. **Table 3** presents the IFR operation totals modeled for the Draft EA.

Table 3 Modeled Average Annual Day IFR Operation Totals

Airport	Existing Conditions (03/2021 – 02/2022)		2023		2028	
	Day	Night	Day	Night	Day	Night
BAZ	22.2	0.8	22.6	0.8	22.9	0.8
SAT	306.5	51.3	380.3	68.3	419.6	77.4

Source: PDARS Data (03/01/2021-02/28/2022), SWIM Data (03/01/2021-02/28/2022), OPSNET (accessed March 2022), ATAC Corporation, March 2022.
Prepared by: ATAC Corporation, August 2022.

3.1.5 Runway Use

Generally, the primary factors determining runway use at an airport are weather and prevailing wind conditions at the time of a flight. Additionally, several secondary factors influence runway selection. These factors include runway safety issues (e.g., taxiing aircraft crossing active runways or Land and Hold Short (LAHSO)[10] rules), the current composition of the traffic (many arrivals or many departures), and even the flight origin or destination. This latter factor is also based on safety in that traffic is easier to sort on the ground (taxi for direction) than it is in the air.

Typically, arriving and departing aircraft are assigned to a specific fix. These fixes, in turn, may have a preferred arrival or departure runway assignment and a secondary arrival or departure runway assignment. As controllers balance delay and runway utilization by time of delay based on demand, there are times when arriving and departing aircraft are diverted to a secondary runway. This is especially true when an airport has multiple parallel runways. This allows the airfield to operate in the safest and most efficient manner.

It is important to note that within the context of all of these factors, future runway use at an airport is, at best, an estimate. Simple changes over time, such as airlines changing the markets (destinations) that they serve, can have a notable effect on actual runway use in the future.

7 FAA OPSNET, (https://aspm.faa.gov/opsnet/sys/Airport.asp)
8 FAA TFMSC, (https://aspm.faa.gov/tfms/sys/main.asp)
9 FAA TAF, (https://taf.faa.gov/)
10 FAA JO 7110.118B, "Land and Hold Short Operations (LAHSO)," November 9, 2015

Table 4 presents airport runway operating configuration usage for SAT based on analysis of 2021/2022 historical data (graphically, see Draft EA Exhibit 1.3). The runway operating configuration refers to the direction a runway is used for arrivals and departures, which can vary based on the direction of prevailing winds.

Table 4 SAT Runway Operating Configuration

Operating Configuration	Main Arrival Runways	Main Departure Runways	Percentage
Southeast	13R	13R	41.9%
Mixed	13R	13R, 04	27.1%
Northeast	04	04	13.0%
Northwest	31L	31L	14.2%
Southwest	22	22	3.8%

Source: PDARS Data (03/01/2021-02/28/2022), SWIM Data (03/01/2021-02/28/2022)
Prepared by: ATAC Corporation, August 2022

Tables 5 and **6** present summaries of the modeled airport runway use percentages for BAZ and SAT arrivals and departures respectively, by daytime and nighttime, for the No Action and Proposed Action. The proposed air traffic procedures do not change runway use; therefore, the distribution of operations was held constant between No Action and Proposed Action.

The average annual runway use under 2021/2022, 2023, and 2028 conditions reflects average runway usage as sampled over 364 days from 03/01/2021-02/28/2022, providing a representative statistical sampling of existing conditions runway usage.[11] Data from 2/3/2022 was excluded from the analysis due to anomalous operations counts as a result of a significant cold weather event impacting regularly scheduled operations in the San Antonio area. One day of data was removed from the analysis due to anomalous operations counts. The average annual runway use for the Study Airports as presented in **Table 5** and **Table 6** for 2023 and 2028 No Action is based on historical runway use over a period from March 1, 2021 through February 28, 2021. The average annual runway use for 2023 and 2028 Proposed Action is based on estimates provided by air traffic controllers associated with anticipated changes in airport runway operating configuration use with the new procedures in place. As depicted in the tables, runway use is not notably different between No Action and Proposed Action. Note that differences in configuration use between those used in this study and other studies may result, given the use of different time periods to derive the No Action configuration use and, as a result, assumptions about future configuration use.

11 See Draft EA Chapter 4, Section 4.2.1.1 Noise Modeling Methodology.

Table 5 BAZ Runway Use Percentages – Proposed Action and No Action

Table 5	RWY	Heavy Jets		Jets		Small Jets		High Performance Turbo-Props		Turbo-Props		Props	
		Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night
BAZ		**2023**											
No Action Arrivals	**13**	0.00%	0.00%	60.14%	49.90%	44.59%	83.33%	53.09%	85.00%	37.28%	75.98%	24.18%	45.06%
	17	0.00%	0.00%	19.33%	22.24%	32.19%	6.83%	22.68%	0.00%	38.03%	19.93%	47.27%	28.27%
	31	0.00%	0.00%	8.50%	22.31%	9.29%	7.48%	9.93%	15.00%	4.31%	4.09%	8.12%	9.55%
	35	0.00%	0.00%	12.03%	5.54%	13.93%	2.36%	14.30%	0.00%	20.37%	0.00%	20.43%	17.12%
	Total	**0.00%**	**0.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**
No Action Departures	**13**	0.00%	0.00%	37.46%	16.83%	27.81%	36.15%	58.95%	0.00%	22.43%	15.82%	19.18%	19.99%
	17	0.00%	0.00%	30.92%	0.00%	27.71%	8.06%	5.47%	55.32%	33.29%	16.10%	49.67%	17.84%
	31	0.00%	0.00%	23.03%	83.17%	28.84%	42.05%	21.30%	44.68%	17.61%	33.91%	8.76%	48.58%
	35	0.00%	0.00%	8.59%	0.00%	15.64%	13.74%	14.28%	0.00%	26.67%	34.17%	22.39%	13.58%
	Total	**0.00%**	**0.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**
Proposed Action Arrivals	**13**	0.00%	0.00%	60.14%	49.90%	44.59%	83.33%	53.09%	85.00%	37.28%	75.98%	24.18%	45.06%
	17	0.00%	0.00%	19.33%	22.24%	32.19%	6.83%	22.68%	0.00%	38.03%	19.93%	47.27%	28.27%
	31	0.00%	0.00%	8.50%	22.31%	9.29%	7.48%	9.93%	15.00%	4.31%	4.09%	8.12%	9.55%
	35	0.00%	0.00%	12.03%	5.54%	13.93%	2.36%	14.30%	0.00%	20.37%	0.00%	20.43%	17.12%
	Total	**0.00%**	**0.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**
Proposed Action Departures	**13**	0.00%	0.00%	37.46%	16.83%	27.81%	36.15%	58.95%	0.00%	22.43%	15.82%	19.18%	19.99%
	17	0.00%	0.00%	30.92%	0.00%	27.71%	8.06%	5.47%	55.32%	33.29%	16.10%	49.67%	17.84%
	31	0.00%	0.00%	23.03%	83.17%	28.84%	42.05%	21.30%	44.68%	17.61%	33.91%	8.76%	48.58%
	35	0.00%	0.00%	8.59%	0.00%	15.64%	13.74%	14.28%	0.00%	26.67%	34.17%	22.39%	13.58%
	Total	**0.00%**	**0.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**
		2028											
No Action Arrivals	**13**	0.00%	0.00%	60.25%	49.87%	44.82%	83.28%	53.05%	85.70%	37.23%	75.84%	24.19%	45.06%
	17	0.00%	0.00%	19.23%	22.25%	31.97%	6.76%	22.75%	0.00%	38.04%	20.09%	47.26%	28.27%
	31	0.00%	0.00%	8.44%	22.34%	9.25%	7.51%	9.91%	14.30%	4.33%	4.07%	8.10%	9.55%
	35	0.00%	0.00%	12.08%	5.54%	13.97%	2.45%	14.28%	0.00%	20.39%	0.00%	20.44%	17.12%

Table 5	RWY	Heavy Jets		Jets		Small Jets		High Performance Turbo-Props		Turbo-Props		Props	
		Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night
	Total	**0.00%**	**0.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**
No Action Departures	**13**	0.00%	0.00%	37.57%	16.83%	27.96%	36.47%	58.80%	0.00%	22.37%	15.76%	19.19%	19.99%
	17	0.00%	0.00%	30.74%	0.00%	27.54%	7.95%	5.62%	55.32%	33.36%	16.03%	49.65%	17.84%
	31	0.00%	0.00%	23.03%	83.17%	28.84%	42.01%	21.31%	44.68%	17.65%	33.77%	8.76%	48.58%
	35	0.00%	0.00%	8.66%	0.00%	15.66%	13.57%	14.27%	0.00%	26.63%	34.44%	22.40%	13.58%
	Total	**0.00%**	**0.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**
Proposed Action Arrivals	**13**	0.00%	0.00%	60.25%	49.87%	44.82%	83.28%	53.05%	85.70%	37.23%	75.84%	24.19%	45.06%
	17	0.00%	0.00%	19.23%	22.25%	31.97%	6.76%	22.75%	0.00%	38.04%	20.09%	47.26%	28.27%
	31	0.00%	0.00%	8.44%	22.34%	9.25%	7.51%	9.91%	14.30%	4.33%	4.07%	8.10%	9.55%
	35	0.00%	0.00%	12.08%	5.54%	13.97%	2.45%	14.28%	0.00%	20.39%	0.00%	20.44%	17.12%
	Total	**0.00%**	**0.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**
Proposed Action Departures	**13**	0.00%	0.00%	37.57%	16.83%	27.96%	36.47%	58.80%	0.00%	22.37%	15.76%	19.19%	19.99%
	17	0.00%	0.00%	30.74%	0.00%	27.54%	7.95%	5.62%	55.32%	33.36%	16.03%	49.65%	17.84%
	31	0.00%	0.00%	23.03%	83.17%	28.84%	42.01%	21.31%	44.68%	17.65%	33.77%	8.76%	48.58%
	35	0.00%	0.00%	8.66%	0.00%	15.66%	13.57%	14.27%	0.00%	26.63%	34.44%	22.40%	13.58%
	Total	**0.00%**	**0.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**

Daytime operations arrive or depart between 7:00 a.m. and 9:59 p.m.; nighttime operations arrive or depart between 10:00 p.m. and 6:59 a.m.
Totals may not add up to 100% due to rounding.

Source: PDARS Data (03/01/2021 – 02/28/2022), SWIM Data (03/01/2021-02/28/2022), ATAC Corporation, March 2022.
Prepared by: ATAC Corporation, August 2022.

Table 6 SAT Runway Use Percentages – Proposed Action and No Action

Table 6		Heavy Jets		Jets		Small Jets		High Performance Turbo-Props		Turbo-Props		Props	
	RWY	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night
SAT		2023											
No Action Arrivals	4	22.09%	11.55%	16.81%	11.62%	17.08%	11.17%	27.57%	14.19%	20.96%	27.01%	16.51%	14.88%
	22	1.12%	0.86%	2.37%	1.12%	2.49%	2.58%	1.06%	4.46%	1.93%	1.76%	3.01%	0.73%
	13L	0.05%	0.00%	0.02%	0.01%	0.42%	0.13%	3.73%	0.00%	3.21%	0.23%	4.27%	1.87%
	13R	68.33%	77.34%	71.06%	79.36%	69.35%	73.10%	59.48%	69.44%	64.40%	62.72%	66.11%	79.60%
	31L	8.41%	10.24%	9.72%	7.89%	10.53%	13.02%	7.32%	11.91%	8.73%	8.07%	9.25%	2.92%
	31R	0.00%	0.00%	0.00%	0.00%	0.12%	0.00%	0.83%	0.00%	0.77%	0.20%	0.85%	0.00%
	Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
No Action Departures	4	45.02%	53.02%	47.26%	52.33%	37.53%	33.44%	32.19%	23.03%	32.86%	65.07%	31.16%	46.80%
	22	25.52%	25.99%	2.46%	1.70%	2.33%	0.31%	33.52%	53.06%	14.44%	3.77%	3.79%	2.90%
	13L	0.00%	0.11%	0.04%	0.04%	0.91%	0.23%	1.10%	1.20%	1.74%	0.24%	3.81%	0.53%
	13R	19.10%	13.22%	39.87%	35.81%	48.22%	54.13%	19.76%	14.09%	39.60%	25.21%	49.52%	40.20%
	31L	10.36%	7.55%	10.36%	10.07%	10.71%	11.76%	11.56%	6.82%	9.95%	5.20%	9.83%	7.51%
	31R	0.00%	0.11%	0.01%	0.05%	0.30%	0.13%	1.87%	1.81%	1.41%	0.51%	1.89%	2.07%
	Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Proposed Action Arrivals	4	22.09%	11.55%	16.81%	11.62%	17.08%	11.17%	27.57%	14.19%	20.96%	27.01%	16.51%	14.88%
	22	1.12%	0.86%	2.37%	1.12%	2.49%	2.58%	1.06%	4.46%	1.93%	1.76%	3.01%	0.73%
	13L	0.05%	0.00%	0.02%	0.01%	0.42%	0.13%	3.73%	0.00%	3.21%	0.23%	4.27%	1.87%
	13R	68.33%	77.34%	71.06%	79.36%	69.35%	73.10%	59.48%	69.44%	64.40%	62.72%	66.11%	79.60%
	31L	8.41%	10.24%	9.72%	7.89%	10.53%	13.02%	7.32%	11.91%	8.73%	8.07%	9.25%	2.92%
	31R	0.00%	0.00%	0.00%	0.00%	0.12%	0.00%	0.83%	0.00%	0.77%	0.20%	0.85%	0.00%
	Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Proposed Action Departures	4	45.02%	53.02%	47.26%	52.33%	37.53%	33.44%	32.19%	23.03%	32.86%	65.07%	31.16%	46.80%
	22	25.52%	25.99%	2.46%	1.70%	2.33%	0.31%	33.52%	53.06%	14.44%	3.77%	3.79%	2.90%
	13L	0.00%	0.11%	0.04%	0.04%	0.91%	0.23%	1.10%	1.20%	1.74%	0.24%	3.81%	0.53%
	13R	19.10%	13.22%	39.87%	35.81%	48.22%	54.13%	19.76%	14.09%	39.60%	25.21%	49.52%	40.20%

Table 6	RWY	Heavy Jets		Jets		Small Jets		High Performance Turbo-Props		Turbo-Props		Props	
		Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night
	31L	10.36%	7.55%	10.36%	10.07%	10.71%	11.76%	11.56%	6.82%	9.95%	5.20%	9.83%	7.51%
	31R	0.00%	0.11%	0.01%	0.05%	0.30%	0.13%	1.87%	1.81%	1.41%	0.51%	1.89%	2.07%
	Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
		2028											
No Action Arrivals	4	22.07%	11.54%	16.81%	11.62%	17.09%	11.14%	27.70%	14.27%	21.10%	27.29%	16.51%	14.95%
	22	1.12%	0.86%	2.37%	1.12%	2.48%	2.57%	1.05%	4.37%	1.92%	1.78%	3.01%	0.73%
	13L	0.05%	0.00%	0.02%	0.01%	0.42%	0.13%	3.77%	0.00%	3.24%	0.23%	4.27%	1.87%
	13R	68.36%	77.35%	71.08%	79.37%	69.35%	73.08%	59.35%	69.30%	64.26%	62.46%	66.11%	79.53%
	31L	8.41%	10.24%	9.72%	7.88%	10.53%	13.08%	7.30%	12.07%	8.71%	8.04%	9.25%	2.92%
	31R	0.00%	0.00%	0.00%	0.00%	0.12%	0.00%	0.84%	0.00%	0.77%	0.20%	0.85%	0.00%
	Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
No Action Departures	4	45.01%	53.01%	47.34%	52.45%	37.47%	33.44%	31.87%	22.86%	32.80%	65.47%	31.16%	46.79%
	22	25.53%	26.00%	2.46%	1.70%	2.32%	0.30%	33.90%	53.14%	14.75%	3.82%	3.79%	2.89%
	13L	0.00%	0.11%	0.04%	0.04%	0.90%	0.24%	1.10%	1.20%	1.74%	0.24%	3.81%	0.53%
	13R	19.09%	13.23%	39.80%	35.68%	48.30%	54.12%	19.64%	14.07%	39.32%	24.78%	49.52%	40.21%
	31L	10.36%	7.54%	10.36%	10.08%	10.71%	11.75%	11.59%	6.92%	9.97%	5.17%	9.83%	7.51%
	31R	0.00%	0.11%	0.01%	0.05%	0.30%	0.14%	1.89%	1.81%	1.42%	0.51%	1.89%	2.07%
	Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Proposed Action Arrivals	4	22.07%	11.54%	16.81%	11.62%	17.09%	11.14%	27.70%	14.27%	21.10%	27.29%	16.51%	14.95%
	22	1.12%	0.86%	2.37%	1.12%	2.48%	2.57%	1.05%	4.37%	1.92%	1.78%	3.01%	0.73%
	13L	0.05%	0.00%	0.02%	0.01%	0.42%	0.13%	3.77%	0.00%	3.24%	0.23%	4.27%	1.87%
	13R	68.36%	77.35%	71.08%	79.37%	69.35%	73.08%	59.35%	69.30%	64.26%	62.46%	66.11%	79.53%
	31L	8.41%	10.24%	9.72%	7.88%	10.53%	13.08%	7.30%	12.07%	8.71%	8.04%	9.25%	2.92%
	31R	0.00%	0.00%	0.00%	0.00%	0.12%	0.00%	0.84%	0.00%	0.77%	0.20%	0.85%	0.00%
	Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Proposed Action	4	45.01%	53.01%	47.34%	52.45%	37.47%	33.44%	31.87%	22.86%	32.80%	65.47%	31.16%	46.79%
	22	25.53%	26.00%	2.46%	1.70%	2.32%	0.30%	33.90%	53.14%	14.75%	3.82%	3.79%	2.89%

Table 6		Heavy Jets		Jets		Small Jets		High Performance Turbo-Props		Turbo-Props		Props	
	RWY	**Day**	**Night**	**Day**	**Night**	**Day**	**Night**	**Day**	**Night**	**Day**	**Night**	**Day**	**Night**
	13L	0.00%	0.11%	0.04%	0.04%	0.90%	0.24%	1.10%	1.20%	1.74%	0.24%	3.81%	0.53%
	13R	19.09%	13.23%	39.80%	35.68%	48.30%	54.12%	19.64%	14.07%	39.32%	24.78%	49.52%	40.21%
	31L	10.36%	7.54%	10.36%	10.08%	10.71%	11.75%	11.59%	6.92%	9.97%	5.17%	9.83%	7.51%
	31R	0.00%	0.11%	0.01%	0.05%	0.30%	0.14%	1.89%	1.81%	1.42%	0.51%	1.89%	2.07%
	Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Daytime operations arrive or depart between 7:00 a.m. and 9:59 p.m.; nighttime operations arrive or depart between 10:00 p.m. and 6:59 a.m.
Totals may not add up to 100% due to rounding.

Source: PDARS Data (03/01/2021 – 02/28/2022), SWIM Data (03/01/2021-02/28/2022), ATAC Corporation, March 2022.
Prepared by: ATAC Corporation, August 2022.

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3.1.6 Aircraft Fleet Mix

Fleet mix assumptions were developed for the Draft EA as part of the forecasting effort. **Tables 7** and **8** present the forecasted fleet mixes for 2023 and 2028 for operations at BAZ and SAT for both the No Action and Proposed Action. This table presents the aircraft types as used in the AEDT model. Not all specific aircraft types that were present in the forecast are available aircraft types in the AEDT model. For those cases, FAA-approved substitutions provided in AEDT were chosen. For aircraft not listed in AEDT as approved substitutions, a proposed AEDT aircraft type based on similar operating and noise characteristics was chosen and approved by the FAA. The letter to the FAA requesting approval of these substitutions and the response from the FAA are included with this technical report as **Supplement 1**.

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Table 7 Forecast Fleet Mix for Noise Modeling – 2023

Aircraft		SAT		BAZ	
Category	**AEDT Type**	**A**	**D**	**A**	**D**
Heavy Jets	747400	0.01%	0.01%	0.00%	0.00%
	767300	0.70%	0.70%	0.00%	0.00%
	777200	0.00%	0.04%	0.00%	0.00%
	777300	0.00%	0.10%	0.00%	0.00%
	767CF6	0.00%	0.00%	0.00%	0.00%
	7773ER	0.15%	0.01%	0.00%	0.00%
	7878R	0.11%	0.11%	0.00%	0.00%
	A300-622R	1.32%	1.32%	0.00%	0.00%
	DC1010	0.02%	0.02%	0.00%	0.00%
	MD11GE	1.35%	1.35%	0.00%	0.00%
Large Jets	717200	0.00%	0.00%	0.00%	0.00%
	737300	0.59%	0.59%	0.00%	0.00%
	737400	0.33%	0.33%	0.00%	0.00%
	737500	0.01%	0.01%	0.00%	0.00%
	737700	13.70%	13.70%	0.00%	0.00%
	737800	16.73%	16.74%	0.00%	0.00%
	727EM2	0.04%	0.04%	0.00%	0.00%
	7378MAX	2.63%	2.63%	0.00%	0.00%
	737D17	0.00%	0.00%	0.00%	0.00%
	757RR	1.40%	1.40%	0.00%	0.00%
	A319-131	5.55%	5.55%	0.00%	0.00%
	A320-232	5.40%	5.41%	0.00%	0.00%
	A320-271N	2.58%	2.58%	0.00%	0.00%
	A321-232	7.84%	7.84%	0.00%	0.00%
	CRJ9-ER	0.85%	0.85%	0.00%	0.00%
	DC910	0.02%	0.02%	0.00%	0.00%
	DC930	0.02%	0.02%	0.00%	0.00%

Aircraft		SAT		BAZ	
Category	**AEDT Type**	**A**	**D**	**A**	**D**
	EMB145	0.19%	0.19%	0.11%	0.11%
	EMB14L	0.01%	0.01%	0.00%	0.00%
	EMB170	4.33%	4.33%	0.00%	0.00%
	EMB175	0.05%	0.05%	0.00%	0.00%
	EMB190	1.44%	1.44%	0.00%	0.00%
	GIV	0.58%	0.58%	0.32%	0.32%
	GV	0.52%	0.52%	0.18%	0.18%
	MD82	0.00%	0.00%	0.00%	0.00%
	MD83	0.00%	0.01%	0.00%	0.00%
	MD9025	0.02%	0.00%	0.00%	0.00%
Small Jets	CIT3	0.78%	0.78%	0.22%	0.22%
	CL600	1.76%	1.76%	2.95%	2.95%
	CNA500	0.56%	0.56%	0.42%	0.41%
	CNA510	0.72%	0.72%	1.74%	1.81%
	CNA525C	2.13%	2.13%	2.50%	2.50%
	CNA55B	1.69%	1.69%	5.14%	5.14%
	CNA560U	0.72%	0.72%	2.52%	2.52%
	CNA560XL	1.13%	1.13%	0.99%	0.99%
	CNA680	1.26%	1.26%	0.71%	0.71%
	CNA750	1.34%	1.33%	1.14%	1.15%
	ECLIPSE500	0.20%	0.20%	0.32%	0.32%
	FAL20	0.09%	0.09%	0.07%	0.07%
	GII	0.00%	0.00%	0.00%	0.00%
	IA1125	0.10%	0.10%	0.32%	0.32%
	LEAR25	0.00%	0.00%	0.00%	0.00%
	LEAR35	3.00%	2.99%	5.27%	5.27%
	MU3001	1.37%	1.36%	2.11%	1.62%
High Performa	1900D	1.05%	1.05%	0.00%	0.00%
	DHC830	0.00%	0.00%	0.00%	0.00%

Aircraft		SAT		BAZ	
Category	**AEDT Type**	**A**	**D**	**A**	**D**
	EMB120	0.04%	0.04%	0.03%	0.03%
	HS748A	0.00%	0.00%	0.00%	0.00%
	DO328	0.01%	0.01%	0.08%	0.08%
Turboprops	SF340	0.02%	0.02%	0.09%	0.09%
	C130	0.08%	0.08%	0.00%	0.00%
	CNA208	4.07%	4.07%	6.36%	6.57%
	CNA441	0.66%	0.66%	4.93%	4.92%
	DHC6	4.18%	4.18%	15.81%	16.05%
	DHC6QP	0.00%	0.00%	0.02%	0.02%
	DO328	0.01%	0.01%	0.00%	0.00%
Props	PA42	0.04%	0.04%	0.06%	0.06%
	BEC58P	0.89%	0.89%	2.52%	2.46%
	CNA172	0.40%	0.40%	13.21%	13.19%
	CNA182	0.35%	0.35%	2.58%	2.57%
	COMSEP	0.81%	0.80%	5.27%	5.26%
	GASEPF	0.56%	0.56%	7.84%	7.90%
	GASEPV	1.45%	1.47%	13.58%	13.62%
	PA30	0.06%	0.06%	0.59%	0.56%

Totals may not add up to 100% due to rounding.
Heavy Jets = Aircraft capable of takeoff weights of 300,000 pounds or more whether or not they are operating at this weight during a particular phase of flight. (FAA Order JO71110.65U, Air Traffic Control, Appendix A.)
Jets = Aircraft of more than 41,000 pounds, maximum certificated takeoff weight, up to but not including 300,000 pounds. (FAA Order JO71110.65U, Air Traffic Control, Appendix A.)
Small Jets = Aircraft of 41,000 pounds or less maximum certificated takeoff weight. (FAA Order JO71110.65U, Air Traffic Control, Appendix A.)
Turbo-Props / High Performance Turbo-Props = Aircraft powered by turboprop engines.
Props = Propeller driven aircraft

Source: Aircraft Data, AEDT; Forecasted fleet mix ATAC Corporation, March 2022.
Prepared by: ATAC Corporation, August 2022.

Table 8 Forecast Fleet Mix for Noise Modeling – 2028

Aircraft		SAT		BAZ	
Category	**AEDT Type**	**A**	**D**	**A**	**D**
Heavy Jets	747400	0.01%	0.01%	0.00%	0.00%
	767300	0.89%	0.89%	0.00%	0.00%
	777200	0.00%	0.03%	0.00%	0.00%
	777300	0.00%	0.16%	0.00%	0.00%
	767CF6	0.00%	0.00%	0.00%	0.00%
	7773ER	0.21%	0.01%	0.00%	0.00%
	7878R	0.13%	0.13%	0.00%	0.00%
	A300-622R	1.22%	1.22%	0.00%	0.00%
	DC1010	0.02%	0.02%	0.00%	0.00%
	MD11GE	1.35%	1.35%	0.00%	0.00%
Large Jets	717200	0.00%	0.00%	0.00%	0.00%
	737300	0.56%	0.55%	0.00%	0.00%
	737400	0.32%	0.31%	0.00%	0.00%
	737500	0.01%	0.01%	0.00%	0.00%
	737700	13.51%	13.51%	0.00%	0.00%
	737800	17.41%	17.42%	0.00%	0.00%
	727EM2	0.04%	0.04%	0.00%	0.00%
	7378MAX	3.57%	3.57%	0.00%	0.00%
	737D17	0.00%	0.00%	0.00%	0.00%
	757RR	1.46%	1.46%	0.00%	0.00%
	A319-131	5.77%	5.77%	0.00%	0.00%
	A320-232	5.56%	5.57%	0.00%	0.00%
	A320-271N	2.69%	2.69%	0.00%	0.00%
	A321-232	8.26%	8.26%	0.00%	0.00%
	CRJ9-ER	0.28%	0.28%	0.32%	0.32%
	DC910	0.89%	0.89%	0.00%	0.00%
	DC930	0.02%	0.02%	0.00%	0.00%
	EMB145	0.02%	0.02%	0.00%	0.00%
	EMB14L	0.18%	0.18%	0.12%	0.12%

Aircraft		SAT		BAZ	
Category	**AEDT Type**	**A**	**D**	**A**	**D**
	EMB170	0.01%	0.01%	0.00%	0.00%
	EMB175	4.51%	4.51%	0.00%	0.00%
	EMB190	0.06%	0.06%	0.00%	0.00%
	GIV	1.38%	1.38%	0.00%	0.00%
	GV	0.55%	0.55%	0.35%	0.35%
	MD82	0.45%	0.45%	0.16%	0.16%
	MD83	0.00%	0.00%	0.00%	0.00%
	MD9025	0.00%	0.01%	0.00%	0.00%
Small Jets	CIT3	0.71%	0.71%	0.22%	0.22%
	CL600	1.10%	1.10%	0.82%	0.83%
	CNA500	0.79%	0.79%	2.41%	2.40%
	CNA510	0.66%	0.66%	1.74%	1.82%
	CNA525C	1.94%	1.93%	2.51%	2.51%
	CNA55B	1.56%	1.56%	5.18%	5.17%
	CNA560U	0.66%	0.65%	2.53%	2.53%
	CNA560XL	1.05%	1.05%	1.02%	1.01%
	CNA680	1.17%	1.17%	0.73%	0.73%
	CNA750	1.21%	1.21%	1.01%	1.01%
	DO328	0.01%	0.01%	0.08%	0.08%
	ECLIPSE500	0.18%	0.18%	0.32%	0.32%
	FAL20	0.09%	0.09%	0.08%	0.08%
	GII	0.00%	0.00%	0.00%	0.00%
	IA1125	0.09%	0.09%	0.32%	0.32%
	LEAR25	0.00%	0.00%	0.00%	0.00%
	LEAR35	2.75%	2.75%	5.32%	5.32%
	MU3001	1.25%	1.24%	2.10%	1.62%
High Performance Turbos	1900D	1.00%	1.00%	0.00%	0.00%
	DHC830	0.00%	0.00%	0.00%	0.00%
	EMB120	0.04%	0.04%	0.03%	0.03%
	HS748A	0.00%	0.00%	0.00%	0.00%

Aircraft		SAT		BAZ	
Category	**AEDT Type**	**A**	**D**	**A**	**D**
	SF340	0.02%	0.02%	0.08%	0.08%
Turboprops	C130	0.07%	0.07%	0.00%	0.00%
	CNA208	3.75%	3.75%	6.31%	6.52%
	CNA441	0.60%	0.60%	4.93%	4.92%
	DHC6	3.83%	3.83%	15.68%	15.90%
	DHC6QP	0.00%	0.00%	0.02%	0.02%
	PA42	0.03%	0.03%	0.06%	0.06%
Props	BEC58P	0.81%	0.80%	2.52%	2.46%
	CNA172	0.36%	0.36%	13.21%	13.19%
	CNA182	0.31%	0.32%	2.58%	2.57%
	COMSEP	0.73%	0.73%	5.27%	5.26%
	GASEPF	0.51%	0.51%	7.83%	7.90%
	GASEPV	1.32%	1.33%	13.56%	13.60%
	PA30	0.05%	0.05%	0.59%	0.56%

Totals may not add up to 100% due to rounding.
Heavy Jets = Aircraft capable of takeoff weights of 300,000 pounds or more whether or not they are operating at this weight during a particular phase of flight. (FAA Order JO71110.65Z, Air Traffic Control, Appendix A.)
Jets = Aircraft of more than 41,000 pounds, maximum certificated takeoff weight, up to but not including 300,000 pounds. (FAA Order JO71110.65Z, Air Traffic Control, Appendix A.)
Small Jets = Aircraft of 41,000 pounds or less maximum certificated takeoff weight. (FAA Order JO71110.65Z, Air Traffic Control, Appendix A.)
Turbo-Props / High Performance Turbo-Props = Aircraft powered by turboprop engines.
Props = Propeller driven aircraft

Source: Aircraft Data, AEDT; Forecasted fleet mix ATAC Corporation, March 2022.
Prepared by: ATAC Corporation, August 2022.

3.1.7 Aircraft Noise-Power-Distance (NPD) Curves

AEDT uses tables of noise vs. power vs. distance data to represent noise levels for a given power setting (or thrust setting) at a range of distances from the aircraft to a receptor. The data consists of a set of sound exposure levels in decibels for various combinations of aircraft, engine power settings, and distances from the aircraft to a receptor. This NPD data is available for many aircraft and is stored in AEDT's fleet database.

The NPD data is accessed during AEDT noise calculations to determine the noise levels for the appropriate metric at each receptor. The contribution of each modeled operation to each receptor is calculated, then aggregated across all operations to measure the noise exposure of a given set of operations.[12]

3.1.8 Aircraft Climb/Descent Profiles

To accurately model noise exposure, AEDT has the capability to include specified altitude control codes on flight trajectories, allowing users to constrain modeled trajectories as necessary. These altitude controls reflect altitude information provided by air traffic procedure design. AEDT generates climb/descent profiles for each operation that are consistent with specified altitude control codes within the constraints of the allowable aircraft performance determined by AEDT.

Altitude control codes are only applied above altitudes of 3,000 feet above field elevation (AFE).[13] This means that AEDT will use default profile data 3,000 feet AFE and below. Above 3,000 feet AFE, the profile will follow the altitudes prescribed by the input trajectory in such a manner that the specified altitude control codes are adhered to. For flight tracks that do not reach 3,000 feet AFE, an altitude control code is applied to its highest altitude. The four enumerations of altitude control codes are as follows: no altitude control, model to a specified altitude or higher, model exactly to a specified altitude, and model to a specified altitude or lower. If an operation cannot achieve a specified altitude control code, it will not be modeled. In this case, the user may relax the constraining altitude control code(s) and attempt to model the operation again. This process can be repeated until all operations are successfully modeled by AEDT. Once modeled, the operation's performance includes parameters such as four-dimensional position, speed, and thrust.

3.1.9 Aircraft Stage Length

Stage length is the term used in AEDT to refer to the length of the trip planned for each departure operation from origin to destination. The trip length is needed in noise calculations because it influences the take-off weight of the aircraft, which is higher for longer trips, and lower for shorter trips. The great-circle distance and the maximum stage length for a given aircraft is used to determine a stage length for each aircraft operation.

3.1.10 Flight Track Definitions

Flight tracks are input into AEDT and developed from a sample of detailed radar data. A radar sample of 365 days between March 1, 2021 and February 28, 2022 was acquired and analyzed. One day of data was removed from the analysis due anomalous operations counts.

12 U.S. Department of Transportation, Federal Aviation Administration, *Aviation Environmental Design Tool (AEDT) Technical Manual, Version 3d*, March 2021.
13 U.S. Department of Transportation, Federal Aviation Administration, FAA Notice 7210.360, *Noise Screening Procedures for Certain Air Traffic Actions Above 3,000 Feet AGL*, September 14, 1990

Proprietary software was utilized for the detailed analysis of radar data for BAZ and SAT. The data was separated first by airport and operation type (i.e., arrival, departure). Spatial analysis was conducted to develop bundles (a grouping of tracks representing a traffic flow) of radar tracks based on runway, aircraft category (e.g., jet, prop), and route similarity. The radar track bundling process included a review of the 3-dimensional aspect of each group of radar tracks. Bundles were split as necessary to isolate groups of tracks with restricted climb or descent profiles. Such groups generally represent flights operating along specific ATC climb or descent procedures or via ATC instructions.

Automated spatial analysis calculations were applied to the bundles to calculate primary, or backbone, flight tracks for each radar track bundle. The proprietary software allows for the simultaneous computation of sub-tracks located adjacent to the backbone track. Sub-tracks account for the dispersion of actual flights around the primary flight corridor, based on the distribution of radar tracks within each bundle. The spatial analysis process computes the appropriate number of sub-tracks and distributional factors in combination with the statistical lateral distribution of the radar tracks at many locations along the flight corridor to determine the appropriate spacing between the sub-tracks at each location. The number of sub-tracks and the distributional factor associated with each model track are chosen based on the number of radar tracks in the bundle and their general spread throughout the traffic flow.

FAA Order JO 7400.2N, Procedures for Handling Airspace Matters, Environmental Processing; Chapter 32, Section 2 (7400.2N 32-2-1e.2.(b)) recommends the analysis of project-related noise impacts in areas where IFR aircraft operate between 10,000 feet AGL and 18,000 feet AGL (above ground level) when a national park or wildlife refuge is present. To comply with this recommendation, all flight tracks are intended to be modeled to 18,000 feet AGL. If a radar track does not reach 18,000 feet AGL in altitude, then the radar track endpoint was determined at its' intersection with the 18,000 Foot Supplemental Study Area (described subsequently). If a radar track does not reach 18,000 feet AGL or intersect the 18,000 Foot Supplemental Study Area, then the radar track's endpoint was determined such that the cruise portion of the flight is modeled as much as possible. The location of each radar track's endpoint was calculated and recorded.

The 18,000 Foot Supplemental Study Area is constructed by determining the spatial location of where departing and arriving radar tracks cross 18,000 feet altitude AGL. Anomalous and/or irregular radar tracks are discarded from the construction of this boundary so that potential distortion of the lateral boundary can be avoided, and the boundary is kept to a reasonable size.

A backbone's endpoint location (and that of all associated sub-tracks) is determined to be the endpoint of the radar track that is furthest from the airport of the radar tracks composing that bundle. For flight tracks that reach 18,000 feet AGL, calculating the location of a backbone's endpoint in this manner ensures the backbone endpoint's altitude reaches at least 18,000 feet AGL. Due to variety in endpoint location of the radar tracks that compose a bundle, the backbone endpoint's altitude is often determined to be higher than 18,000 feet AGL. For a small number of cases, due to complex track geometry, a backbone's endpoint can exist outside the 18,000 Foot Supplemental Study Area. Also note that this methodology can also result in flight tracks being modeled beyond the Air Defense Identification Zone (ADIZ)[14]. Note, however, that the lengths of the backbone tracks are preserved (either by preserving its total distance for departures, or relative straight-line distance from the airport for arrivals) in the modeling of Proposed Action tracks to ensure equity in track length when comparisons

14 FAA. https://www.faa.gov/air_traffic/publications/us_restrictions/airspace/#adiz, Accessed September 2022.

are made across scenarios. The backbones (and all associated sub-tracks) serve as inputs into AEDT, which then calculates noise and emissions based on entire input tracks as described above.

Radar data analysis resulted in the development of 4,127 unique AEDT and NOISEMAP departure tracks for AEDT model input (backbones and sub-tracks). **Exhibit 5** presents the Draft EA AEDT and NOISEMAP departure tracks used in the modeling of 2021/2022 Existing Conditions scenario. The analysis also resulted in the development of 5,663 AEDT and NOISEMAP unique arrival tracks (backbones and sub-tracks). **Exhibit 6** presents the Draft EA AEDT and NOISEMAP arrival tracks used in the modeling of 2021/2022 Existing Conditions scenario.

A majority of the routing for No Action airspace procedures in 2023 and 2028 is anticipated to be identical to the routing in the 2021/2022 Existing Conditions scenario. This assumption excludes the addition of previously developed procedures identified as having independent utility and separately analyzed for environmental effects (Cumulative Impacts in Section 5.10 of the EA). As a result, the model tracks created from 2021/2022 Existing Conditions scenario, including these procedures, were used directly in the modeling of No Action.

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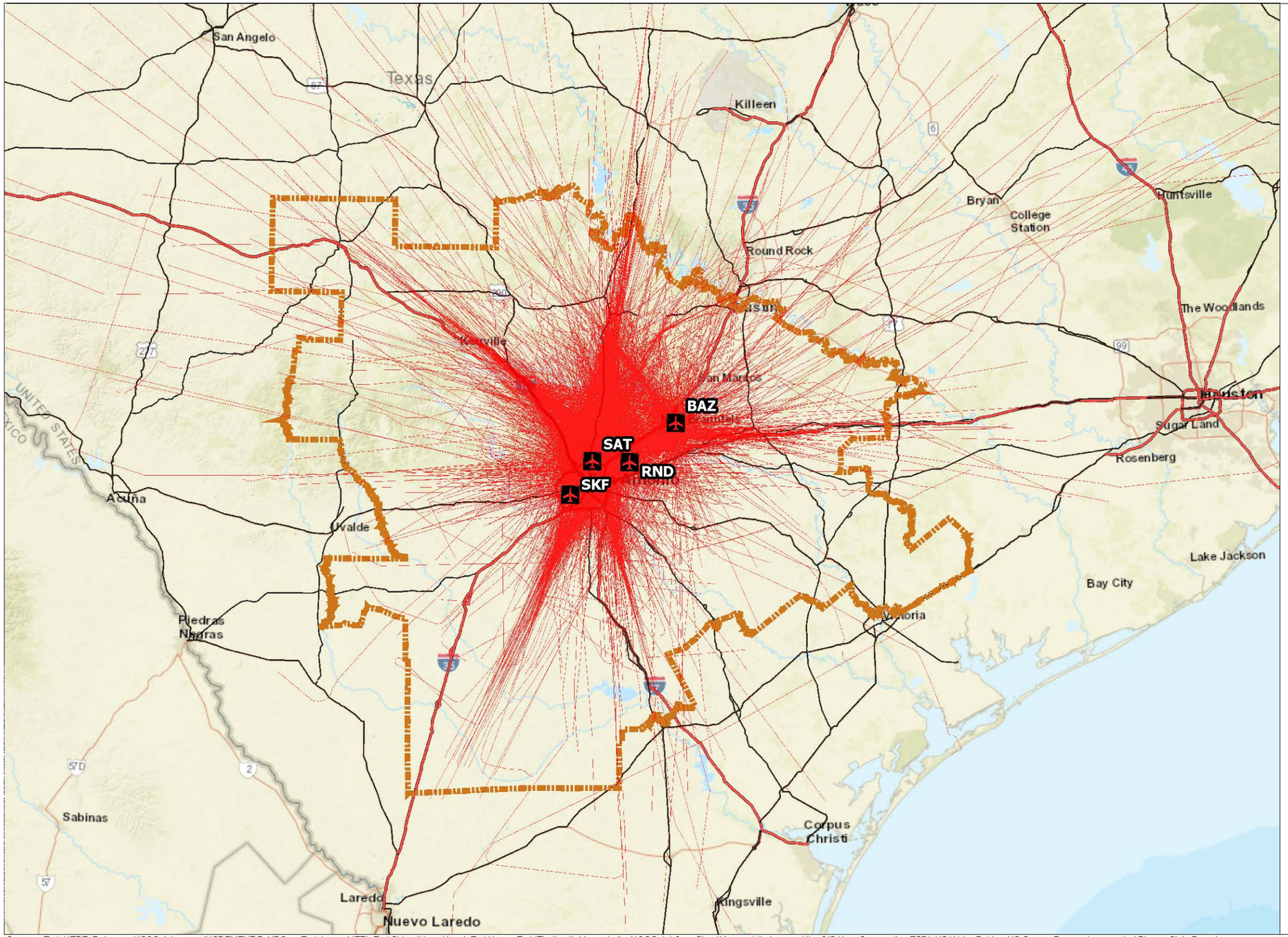

LEGEND

- Study Airport
- Existing Conditions AEDT Flight
- General Study Area (GSA)

Water Bodies

- Inundation
- Lake/Pond
- Playa
- Reservoir
- Stream/River
- Swamp/Marsh
- US States

Notes:

Major Study Airports
San Antonio International Airport **SAT**

Satellite Study Airports
Kelly Field **SKF**
New Braunfels National Airport **BAZ**
Randolph Air Force Base Airfield **RND**

Projection :GCS North American 1983
Scale: 1:2,631,162

0 5 10 20 Miles

N

Sources: Esri, HERE, DeLorme, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), MaymyIndia, NGCC, (c) OpenStreetMap contributors, and the GIS User Community. ESRI, US Water Boides. US Census Bureau, Incorporated Places, State Boundary, Census Block Centroid Points. Federal Aviation Administration, Code of Instrument Flight Procedures, Study Airports. ATAC, Study Area Boundaries.
Prepared by: ATAC Corporation, September 2022.

Exhibit 5

SAT Airspace Modernization EA AEDT Departure Tracks - Existing Conditions

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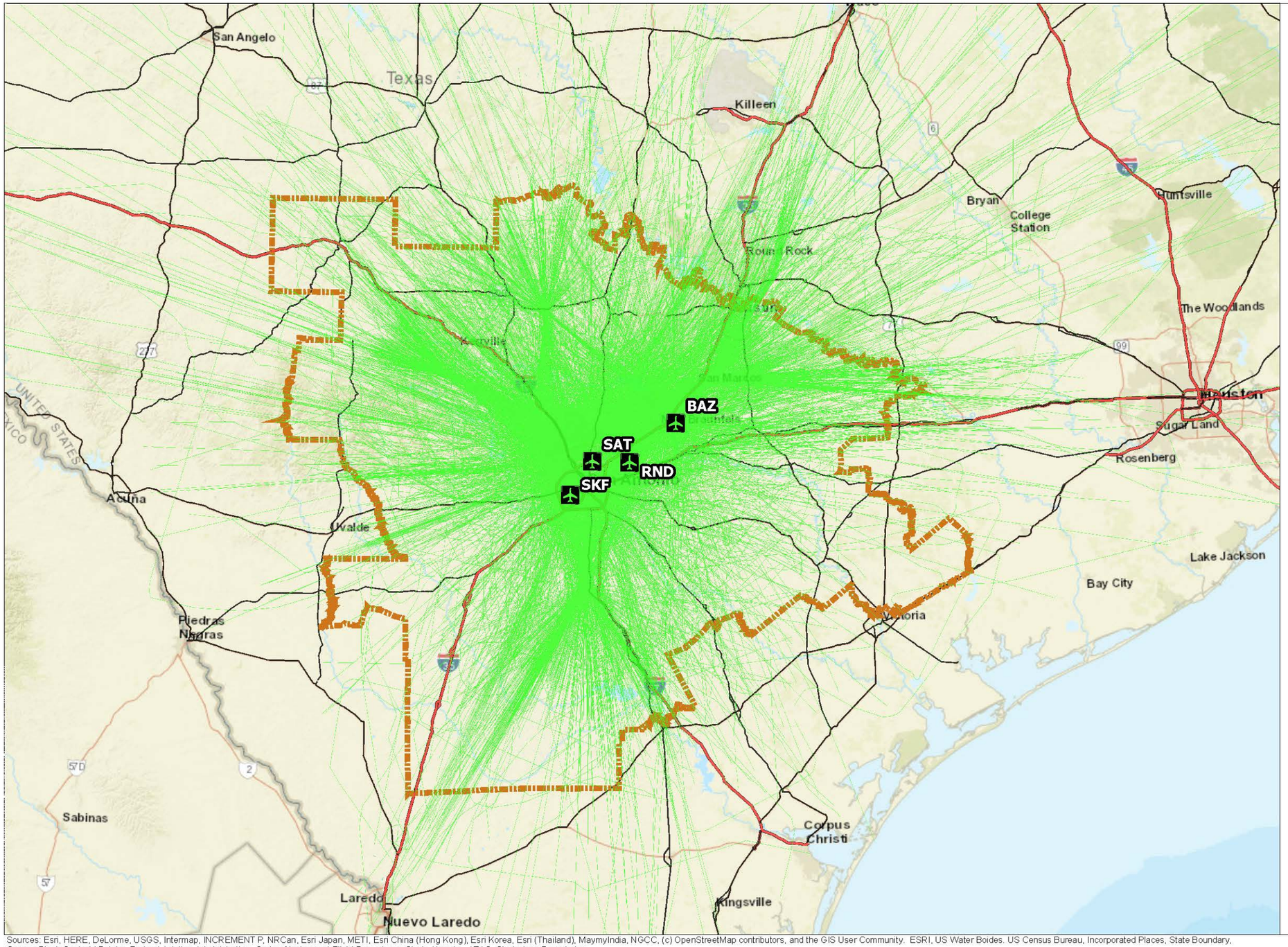

LEGEND

- Study Airport
- Existing Conditions AEDT Flight
- General Study Area (GSA)

Water Bodies

- Inundation Area
- Lake/Pond
- Playa
- Reservoir
- Stream/River
- Swamp/Marsh
- US States

Notes:

Major Study Airports
San Antonio International Airport **SAT**

Satellite Study Airports
Kelly Field **SKF**
New Braunfels National Airport **BAZ**
Randolph Air Force Base Airfield **RND**

Projection :GCS North American 1983
Scale: 1:2,631,162

0 5 10 20 Miles

N

Sources: Esri, HERE, DeLorme, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), MaymyIndia, NGCC, (c) OpenStreetMap contributors, and the GIS User Community. ESRI, US Water Boides. US Census Bureau, Incorporated Places, State Boundary, Census Block Centroid Points. Federal Aviation Administration, Code of Instrument Flight Procedures, Study Airports. ATAC, Study Area Boundaries.
Prepared by: ATAC Corporation, September 2022.

Exhibit 6

SAT Airspace Modernization EA AEDT Arrival Tracks - Existing Conditions

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3.1.11 Flight Track Assignments

The final step in developing the flight track input data for the AEDT model is the assignment of aircraft to specific flight tracks. The flight data associated with each radar data bundle was retained as an attribute of each AEDT backbone and sub-track. This data included aircraft type, time of day (day or night), and flight origin or destination. The resulting backbones and sub-tracks are used as the AEDT model input tracks. As a result, each AEDT model input track does not necessarily represent one flight operation; it could represent many operations or a small fraction of an operation.

3.1.12 User-Defined Profiles

A user-defined profile was required to model arrivals for the MD11GE aircraft type. AEDT 3d does not have procedure step profiles for arrivals for this aircraft type. Thus, a user-defined profile was created based on the approach procedure steps from a DC1030 aircraft in the model. Details regarding the creation of these user-defined profiles can also be found in **Supplement 2**.

3.1.13 Receptor Sets

Receptors are locations in AEDT where noise is calculated. Receptors can be grouped together into receptor sets. The first receptor set contains 46,954 receptors based on population data to represent 3,574,741 people (see **Section 2.3.1** for details). The second receptor set contains 46,453 receptors[15] representing Section 4(f), historic, cultural, and Department of Interior locations deemed noise sensitive (see **Section 2.3.2** for details). The third receptor set contains 118,489 receptors that have been regularly spaced at 0.5 NM apart to capture the noise level changes in any areas that were not covered by the population centroid and Section 4(f) properties and resources grids (see **Section 2.3.3** for details). The fourth receptor set contains 198 receptors to represent noise sensitive land use area in regions of high noise levels about the Study Airports (see **Section 2.3.4** for details).

Noise values for Existing Conditions, No Action, and Proposed Action scenarios for all of the aforementioned receptor sets can be found in Supplements 3 to 6 of this report. In addition, the receptor points that intersect the SNIDR Supplemental Study Area (see **Section 2.2.3**) are presented in Supplement 7 in **Table S7.1**. Note that all noise values presented are calculated by combining noise results from AEDT and NOISEMAP (see **Section 4.3** for details).

3.2 NOISEMAP

Noise modeling in NOISEMAP requires several types of input data including airport/runway locations, local environmental variables, operational levels, day/night distributions, runway usage, fleet mix, climb/descent profiles, flight track definitions and assignment, and receptor sets. Details of the NOISEMAP input data for the Draft EA are discussed below.

3.2.1 Model Background

NOISEMAP is a suite of aircraft noise models developed by the US Air Force, which serves as the lead Department of Defense (DoD) agency for aircraft noise modeling of air bases. NOISEMAP contains computational modules that accept data and estimate noise levels caused by aircraft events at many points on the ground in the airbase vicinity. Unlike AEDT, NOISEMAP does not provide fuel burn results, thus does not contribute to air quality results. Moreover, the primary output of NOISEMAP are noise contours near an airfield, and not

15 This count includes receptors with identical georeferences because a point can represent the same property from multiple sources.

necessarily noise values at particular census points. **Section 4.3** discusses how the noise results from the NOISEMAP models were combined with the AEDT results.

3.2.2 Leveraging Existing Reports & Models

Based on consultations with the FAA, it was decided that the noise modeling of RND and SKF for the Draft EA should leverage existing NOISEMAP models. These models were developed from recent Air Installations Compatible Use Zones (AICUZ) studies performed by the U.S. Air Force Civil Engineer Center. The FAA provided two studies, with a NOISEMAP model and report for each study. The first study was focused on RND with an accompanying report titled "Final Joint Base San Antonio-Lackland, Texas Air Installations Compatible Use Zones (AICUZ) Study."[16] The second study focused on SKF with an accompanying report titled "Joint Base San Antonio-Randolph and Seguin Auxiliary Airfield, Texas: Air Installations Compatible Use Zones (AICUZ) Study Final."[17] Information and data within these reports supported assumptions and decisions made during the modeling process. In addition, the *Final Environmental Impact Statement: T-7A Recapitalization at Joint Base San Antonio, Texas* (henceforth referred to T-7A Recapitalization EIS),[18] served as a resource for T-38C and T-7A operation levels for the modeled scenarios (see **Section 2.1**).

NOISEMAP models were acquired and used as a starting point to model airspace operations and noise at RND and SKF. Much of the input data and information present in the models remained unchanged during the modeling process (e.g., runway and weather data). It was assumed that the data within the models was correct and accurate. Adjustments were made to the existing models to accurately represent the San Antonio Airspace Modernization Project (e.g., flight tracks, flight profiles, fleet mix). Additionally, adjustments were made to the NOISEMAP models to more closely align with AEDT modeling.

3.2.3 Airport and Runway Data

Table 9 identifies the airports and runway end names modeled. In total, two airports within the General Study Area were evaluated. All runways at these airports were assumed to be available for traffic assignments in NOISEMAP.

16 Department of the Air Force. *Final Joint Base San Antonio-Lackland, Texas Air Installations Compatible Use Zones (AICUZ) Study*, October 2019.
17 Department of the Air Force. *Joint Base San Antonio-Randolph and Seguin Auxiliary Airfield, Texas: Air Installations Compatible Use Zones (AICUZ) Study Final*, 2017.
18 Department of the Air Force, *Final Environmental Impact Statement for T-7A Recapitalization at Joint Base San Antonio, Texas*, February 2022

Table 9 Study Airport Details - NOISEMAP

Airport Name	Code	Location	Runway End Names[1]
Randolph Air Force Base Airfield	RND	Universal City, Texas	15L, 15R, 33R, 33L
Kelly Field	SKF	San Antonio, Texas	16,34

1 A runway can be used in both directions but is named in each direction separately. Runway number is based on the magnetic direction of the runway (e.g., Runway 09 points to the east direction). The two numbers on either side always differ by 180 degrees. If there is more than one runway pointing in the same direction, each runway number includes an L, C, or R at the end. This is based on a runway's position relative to others in the same direction – left, center, or right.

Source: Department of the Air Force. *Joint Base San Antonio-Randolph and Seguin Auxiliary Airfield, Texas: Air Installations Compatible Use Zones (AICUZ) Study Final, 2017*. Department of the Air Force. *Final Joint Base San Antonio-Lackland, Texas Air Installations Compatible Use Zones (AICUZ) Study*, October 2019.

Prepared by: ATAC Corporation, August 2022.

3.2.4 Local Environmental Variables

The NOISEMAP models utilized the same terrain data used in AEDT modeling (see **Section 3.1.3**), incorporated from the USGS 1-degree NED.[19] As a result, input terrain data is consistent between the NOISEMAP and AEDT models.

Both of the NOISEMAP models retained weather settings that were used for the AICUZ studies, which were typical local April conditions. For RND, the modeled temperature was 69°F, the humidity was 66.5% and pressure was 29.92 in Hg. SKF was modeled with a temperature of 71°F, a humidity of 67.5%, and a pressure of 29.21 in Hg.

3.2.5 Operation Levels and Day/Night Distribution

The 2021/2022 aircraft operations were developed from information contained in the NOISEMAP AICUZ models in combination with projected future basing for T-38C and T-7A aircraft taken from the T-7A Recapitalization EIS.

EAs that primarily focus on airspace changes to Standard Instrument Departures (SIDs), Standard Terminal Arrivals (STARs), and Standard Instrument Approach Procedures (SIAPs), such as this Draft EA, only model Instrument Flight Rules (IFR) itinerant flights. In contrast, AICUZ studies focus on compatible land use near the airport, within a 65 dB noise contour. To match the AEDT inputs and be consistent with the airspace-focused modeling, the following steps were taken to determine 2021/2022 AAD flight operations:

1. 2021/2022 T-38C and T-7A operations were calculated by interpolating between the 2017 and 2023 years listed in the EIS (refer to Appendix H: *Flight Schedules Tech Report*)
2. The 2021/2022 calculation was used to scale T-38C and T-7A operations in the RND and SKF AICUZ models
3. Closed patterns were removed from the models, to match the AEDT inputs and be consistent with the airspace-focused modeling
4. Auxiliary field (Seguin Airfield) and static run-up operations were excluded to match the AEDT methodology
5. Helicopter operations were reviewed, determined to have insignificantly low counts and unlikely to utilize current or future SIDs/STARs/SIAPs, and excluded

Note that all other aircraft operations remained unchanged.

19 U.S. Department of the Interior, U.S. Geological Survey, National Elevation Dataset, (http://ned.usgs.gov/).

As a result of the Department of the Air Force (DAF) recapitalization of T-7A aircraft, it was necessary to model different levels of T-38C and T-7A aircraft for the three years when noise was modeled (2021/2022 Existing Conditions, 2023 No Action and Proposed Action, and 2028 No Action and Proposed Action). Operations for T-38C and T-7A aircraft at RND and SKF were based on the T-7A Recapitalization EIS. Flight operations for all other aircraft types in the AICUZ NOISEMAP models of RND and SKF were kept the same for all scenarios modeled for this EA.

Table 10 presents the aircraft operation totals modeled for the Draft EA.

Table 10 Modeled Average Annual Day Aircraft Operation Totals

Airport	Existing Conditions (03/2021 – 02/2022)		2023		2028	
	Day	Night	Day	Night	Day	Night
RND	251.4	0.2	259.4	0.3	255.5	4.8
SKF	44.7	2.3	44.7	2.4	46.3	3.0

Source: Department of the Air Force. *Joint Base San Antonio-Randolph and Seguin Auxiliary Airfield, Texas: Air Installations Compatible Use Zones (AICUZ) Study Final, 2017*. Department of the Air Force. *Final Joint Base San Antonio-Lackland, Texas Air Installations Compatible Use Zones (AICUZ) Study*, October 2019.

Prepared by: ATAC Corporation, August 2022.

3.2.6 Runway Use

The frequency with which aircraft utilize a runway involves a variety of factors including, but not limited to:

- Airfield environment (layout, lights, runway length)
- Direction of prevailing winds
- Location of natural terrain features (rivers, lakes, mountains, and other features);
- Wildlife activity
- Number of aircraft in the pattern and/or preference of a runway for the purpose of safety and noise abatement

Installation operations, control tower personnel, and the Supervisor of Flying establish the runway in use. Aviation planners adjust the pattern procedures accordingly to maximize air traffic flow efficiency.

Per the *Final Joint Base San Antonio-Lackland, Texas Air Installations Compatible Use Zones (AICUZ) Study* from October 2019, Kelly Field utilizes Runway 16 (arriving from the north and/or departing to the south) 80% of the time, and Runway 34 (arriving from the south and/or departing to the north) the remaining 20%.

The *Joint Base San Antonio-Randolph and Seguin Auxiliary Airfield, Texas: Air Installations Compatible Use Zones (AICUZ) Study Final*, from 2017 defined the following runway usage by aircraft types:

- Predominant runway usage at Randolph Air Force Base Airfield occurs on Runway 15L for T-1 and T-38 training (80 to 85 percent), with the exception of T-38 Depot training departures, which occur on Runway 15R (83 percent)
- The predominant runway used for T-6 is Runway 15R (80 percent)

- The remaining runway use is divided between Runway 33R (14 to 20 percent for T-1 and T-38) and Runway 33L (20 percent for T-6 and 14 percent for T-38 Depot departure)
- Transient flight runway usages are split between Runway 15L (85 percent) and Runway 33R (15 percent)

Tables 11 and **12** present the runway utilization percentages for RND and SKF. Operations were not moved between runways between No Action and Proposed Action; therefore each 2023 and 2028 are each only presented once.

Table 11 RND Runway Use Percentages – Proposed Action and No Action

Year	Runway	Annual Day Operations	Annual Night Operations
2023	15L	58%	83%
	15R	25%	1%
	33L	6%	0%
	33R	11%	16%
Total		**100%**	**100%**
2028	15L	57%	83%
	15R	25%	1%
	33L	6%	0%
	33R	11%	16%
Total		**100%**	**100%**

Source: Department of the Air Force. *Joint Base San Antonio-Randolph and Seguin Auxiliary Airfield, Texas: Air Installations Compatible Use Zones (AICUZ) Study Final, 2017*. Department of the Air Force. *Final Joint Base San Antonio-Lackland, Texas Air Installations Compatible Use Zones (AICUZ) Study*, October 2019.
Prepared by: ATAC Corporation, August 2022.

Table 12 SKF Runway Use Percentages – Proposed Action and No Action

Year	Runway	Annual Day Operations	Annual Night Operations
2023	16	80%	79%
	34	20%	21%
Total		**100%**	**100%**
2028	16	78%	73%
	34	22%	27%
Total		**100%**	**100%**

Source: Department of the Air Force. *Joint Base San Antonio-Randolph and Seguin Auxiliary Airfield, Texas: Air Installations Compatible Use Zones (AICUZ) Study Final, 2017*. Department of the Air Force. *Final Joint Base San Antonio-Lackland, Texas Air Installations Compatible Use Zones (AICUZ) Study*, October 2019.
Prepared by: ATAC Corporation, August 2022.

3.2.7 Aircraft Fleet Mix

Fleet mix and operation counts for the RND and SKF NOISEMAP models were taken directly from the original AICUZ studies with the exception of the T-38, T-7A, and helicopters which were removed. Additional details for RND and SKF fleet mix and operation counts are discussed in Appendix H: *Flight Schedules Technical Report*.

3.2.8 Aircraft Climb/Descent Profiles

Flight profiles within the NOISEMAP models were used as-is, as much as possible, beginning from the two AICUZ models. In order to reflect airspace changes due to the proposed STARs/SIDs, as well as be more consistent with the AEDT modeling for the other study airports, flight profiles were adjusted from the initial set. Flight profiles were adjusted by lengthening flight tracks to either reach the General Study Area Boundary or 18,000 ft AGL (see **Section 3.2.9**). Departure flight profiles were adjusted to continue existing climb segments up to 18,000 ft AGL, or a cruise segment to the study boundary. Similarly, arrival profiles were adjusted to maintain existing descent rates from 18,000 ft AGL, or a lower cruise segment to the study boundary.

Flight profiles were adjusted so that climb angles, power settings, and speeds were consistent with values in the original NOISEMAP models. For Proposed Action, flight profiles were adjusted to follow altitude restrictions defined for each SID/STAR. In the cases where this process introduced unrealistic trajectories, the profiles were adjusted as needed.

T-7A profiles were added to the SKF model, as they did not exist in the AICUZ model as it was received. The new profiles were based on existing T-38 profiles, and their operations were scaled to match the planned total aircraft operations in the T-7A Recapitalization EIS.

3.2.9 Flight Track Definitions

The AICUZ NOISEMAP model flight tracks were used as starting point and modified as needed. To remain consistent with AEDT inputs and cover the required 4(f) criteria, flight tracks from the original model were extended to reach 18,000 feet AGL or to the General Study Area Boundary, as appropriate. The maximum altitude for each modeled track was determined by measuring the average maximum altitude within each flow of the radar data.

Additionally, tracks were modified laterally as needed to capture existing traffic flows in the historical radar data. In some cases, additional tracks were defined to represent traffic flows found in the radar data which were not in the AICUZ models.

For Proposed Action, tracks were created and/or moved to represent the proposed SIDs and STARs.

Table 13 presents the number of tracks with operations in each of the NOISEMAP models. Note that Existing Conditions and No Action had the same tracks and profiles, and the only change was number of operations.

Table 13 NOISEMAP Flight Track Counts

Airport Code	Original AICUZ Models		Existing Conditions/ No Action		Proposed Action	
Airport	**Arrivals**	**Departures**	**Arrivals**	**Departures**	**Arrivals**	**Departures**
RND	62	28	135	46	143	46
SKF	47	13	64	19	82	24

Source: Department of the Air Force. *Joint Base San Antonio-Randolph and Seguin Auxiliary Airfield, Texas: Air Installations Compatible Use Zones (AICUZ) Study Final, 2017*. Department of the Air Force. *Final Joint Base San Antonio-Lackland, Texas Air Installations Compatible Use Zones (AICUZ) Study*, October 2019.
Prepared by: ATAC Corporation, August 2022.

3.2.10 Flight Track Assignments

The flight operations assigned to the modeled tracks were taken directly from the existing AICUZ NOISEMAP models. In some cases, it was necessary to create additional flight tracks to represent observed traffic flows in existing radar data that were not represented in the existing AICUZ NOISEMAP models (for Existing Conditions and No Action). For these cases, operations from existing nearby tracks were transferred among the new tracks to match the proportion of the observed traffic in each area.

3.2.11 Receptor Sets

The referenced AICUZ NOISEMAP models included receptor sets that were sufficient to capture noise contours near the airport. To provide noise measurements that capture airspace changes, an additional receptor set covering the General Study Area Boundary and 18,000 Foot Supplemental Study Area were created. This receptor set was created as an equally spaced cartesian grid of 2,500 points with a 0.1 NM resolution.

Additionally, in order to capture the noise impacts of RND operations on SKF and noise impacts of SKF operations on RND, the receptor sets from each model were input into the other.

The existing NOISEMAP grid pattern and density from the respective SKF and RND studies were used to capture areas nearest each airfield. For RND, the cartesian grid was input with 300 by 300 points spaced 750 feet apart from each other. For SKF, the cartesian grid was input with 101 points in an East-West direction and 151 in a North-South direction, with these points spaced 1,000 feet apart.

As defined above, the “Large” cartesian grid was input with 2,500 by 2,500 points spaced 607 feet (0.1NM) apart.

NOISEMAP uses the Noise Model Grid Format (NMGF) standard format for grid files. This allows for post-processing of multiple noise model results at the same location and for the combining model outputs to produce an overall grid of noise results.

NMPlot is part of the BaseOps toolset and can combine grid files with different grid spacing and spatial coverage. NMPlot was used to merge NOISEMAP grids and then combine them with AEDT grids.

First, the NOISEMAP grids were merged into a single grid using NMPlot. This combined NOISEMAP grid was then combined with the AEDT grid, again using NMPlot. Further information on how the output of the NOISEMAP receptor set was combined with output of the AEDT receptor set can be found in **Section 4.3.1**.

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4 Noise Modeling Procedures

4.1 AEDT

AEDT processes flight track and operation data following several major steps: data integration and quality control, calculation of flight dynamics (i.e., thrust and speed), noise exposure computation, annualization of noise exposures, change of exposure analysis, and report generation. Key aspects of this process are discussed below.

4.1.1 Model Input

The input for the AEDT modeling effort was developed in accordance with the data, sources, and methodologies presented in the previous sections. The input files for the Proposed Action and No Action vary due to the differences in procedures under each alternative.

4.1.2 Data Integrity Checks

Before any AEDT modeling is executed, data integrity checks are performed to ensure the model does not reject the inputs being provided. The following checks were made in the Draft EA noise analysis:

- Flight trajectories (flight tracks) were adjusted so that no arrival trajectories contained any ascending segments and no departure trajectories contained any descending segments.
- Flight trajectories were adjusted so that unrealistic turn angles were not present in the input trajectory.
- Runway end coordinates for flight trajectories were verified to be accurate and corrected if necessary.
- Input profiles were checked against those available in AEDT system databases to ensure that all profiles were available to be modeled.
- If necessary, aircraft profile data was adjusted to ensure compliance with aircraft profile approvals by the FAA.
- Operations counts were cross-referenced before and after input into the model to ensure that all operations were successfully imported into the model.

After AEDT modeling was completed, other data integrity checks were performed to verify that all operations that were intended to be modeled were successfully modeled. The following checks were made:

- Each operation was verified to have its performance calculations successfully modeled.
- All intended noise exposure and emissions calculations were successfully performed.

4.1.3 Extract Results

After all noise calculations were complete, AEDT noise data was recorded for all scenarios at each receptor location. These results were extracted, formatted, and prepared to be combined with NOISEMAP output data for impact analysis (see **Section 4.3**).

4.2 NOISEMAP

NOISEMAP is a suite of noise models for generating noise exposure contours in various metrics around US military bases. Noise and performance data files for military and civilian

aircraft are included in the program. BASEOPS is a Windows graphical user interface that guides the user through creation of a noise case. NMPLOT is the analysis tool which allows the user to view and modify output from a NOISEMAP model.

For the Draft EA, NMAP, the US Department of Defense's model of aircraft flight and run-up noise near air bases was the noise model used to generate noise data.

4.2.1 Model Input

The input for the NOISEMAP modeling effort was developed in accordance with the data, sources, and methodologies presented in the previous sections. The input files for the Proposed Action and No Action vary due to the differences in procedures under each alternative.

4.2.2 Data Integrity Checks

NOISEMAP has multiple built-in data integrity checks, which are automatically assessed any time a case is attempted to be run. These include but are not limited to: checking that every profile is assigned to a flight track, ensuring that every profile length is no longer than its assigned track, and ensuring that each track is assigned to a runway.

Additionally, the following checks were made in the Draft EA noise analysis:

- Flight trajectories were adjusted so that unrealistic climb and descent angles were not present in the input trajectory
- Operations counts were cross-referenced before and after input into the model to ensure that all operations were successfully imported into the model

4.2.3 Extract Results

After all noise calculations were complete, NOISEMAP noise data was recorded for all scenarios at each receptor location. These results were extracted, formatted, and prepared to be combined with AEDT output data for impact analysis (see **Section 4.3**).

4.3 Integrate Output Data for Impact Analysis

Noise output data from each model was integrated to produce a final grid of noise values for each scenario. Each scenario's noise values were compared using the impact criteria presented in **Section 1.1**.

4.3.1 Merging & Combining

Merging refers to creating a grid with noise values containing all data points from two or more existing grids. The resulting merged grid is equal to the union of the original grids. This process can be performed as the noise values represent the same noise metric (DNL) and are calculated as a result of the same set of flight tracks and operations.

Combining refers to the creation of a new grid by performing a mathematical operation on the data points in two existing grids. The mathematical operation is an addition of noise decibels, specifically DNL values for this effort.

The following steps were taken to merge and combine noise results for each of the five scenarios (see **Section 2.1**):

1. Merge noise results from all receptor sets from RND NOISEMAP model
2. Merge noise results from all receptor sets from SKF NOISEMAP model
3. Combine merged noise results from RND and SKF NOISEMAP models

4. Merge noise results from all receptor sets from AEDT model
5. Combine the combined noise results from NOISEMAP models (Step 3) with merged noise results from AEDT model (Step 4)

The final result is a grid of noise values that reflects noise from all receptor sets and runs from both AEDT and NOISEMAP models for all four study airports for each scenario.

4.3.2 Determine Noise Impacts

After all noise calculations were complete, noise impacts were determined by locating and categorizing changes in noise values between scenarios. Using FAA threshold criteria (significant impact and reportable noise change thresholds described in **Section 1.1**, *Noise Impact Criteria*), maps depicting zones of various types of change in annualized DNL noise exposure between scenarios were produced for the entire General Study Area.

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5 Analysis

The results from the five scenarios outlined in **Section 2.1** were analyzed. Noise impact results were tabulated based on the potential implementation of the Proposed Action compared to the No Action at the previously described grid points.

The following sections present both a summary of the noise model input modifications made to model the Proposed Action and the results of the noise analysis for each scenario.

5.1 Existing Conditions

The 2021/2022 Existing Conditions Scenario modeled in AEDT and NOISEMAP represent flight operations at the study airports from March 1, 2021 to February 28, 2022. During this time period, a total of 14 procedures were found across all study airports. The 14 procedures include eight Standard Terminal Arrival (STAR) procedures (BELLR, BRAUN, CENTERPOINT, HTOWN, LEMIG, MARCS, STONEWALL, TEJAS) and six Standard Instrument Departures (SIDs) (ALAMO, ALISS, BOWIE, LEJON, MILET, THREE RIVERS). Versions of these airspace procedures were previously evaluated through separate environmental analysis documentation.

5.2 No Action

For No Action conditions, no independent utilities were identified. Therefore, the only changes to the Existing Conditions scenarios to represent the No Action scenarios was to apply fleet mix and forecast adjustments. These adjustments are discussed in detail in Appendix H: *Flight Schedules Technical Report*.

Aside from the adjustments stated above, the 2023 and 2028 No Action scenarios model inputs were the same as the 2021/2022 Existing Conditions scenario.

5.3 Proposed Action

The Proposed Action consists of several air traffic procedure modifications as discussed in the EA, Chapter 3, *Alternatives*. Those modifications were implemented in the noise modeling through adjustments to the flight track routing at the Study Airports, or developed as new tracks. Consultations with subject matter experts confirmed assumptions that were made with regards to the track adjustments. Utilization percentages of new Standard Instrument Arrival Procedures (SIAPs) at SAT were determined based on observations of operations in the flight data acquired to model the Existing Conditions Scenario. The flight track adjustments are further discussed in the following sections.

Since the Proposed Action does not involve changes that are considered capacity enhancements or any actions that would induce growth in operations, operation levels, fleet mix, and day/night distribution, inputs were the same as for No Action for both 2023 and 2028. Environmental variables (i.e., temperature, humidity, barometric pressure, and headwind) were the same among Existing Conditions, No Action, and Proposed Action. The following sections describe changes related to tracks developed for the Proposed Action.

Proposed Action changes are aimed to improve airspace safety and efficiency. Proposed changes to existing procedures mitigate possible route conflicts and reduce the number and length of level-offs that aircraft are instructed fly. Moreover, new procedures will enhance pilot-air traffic control communications by formalizing routes that are frequently used. These new routes are largely Area Navigation (RNAV) (GPS-based) or Required Navigational Performance (RNP) procedures that allow for greater control of aircraft in the airspace. This

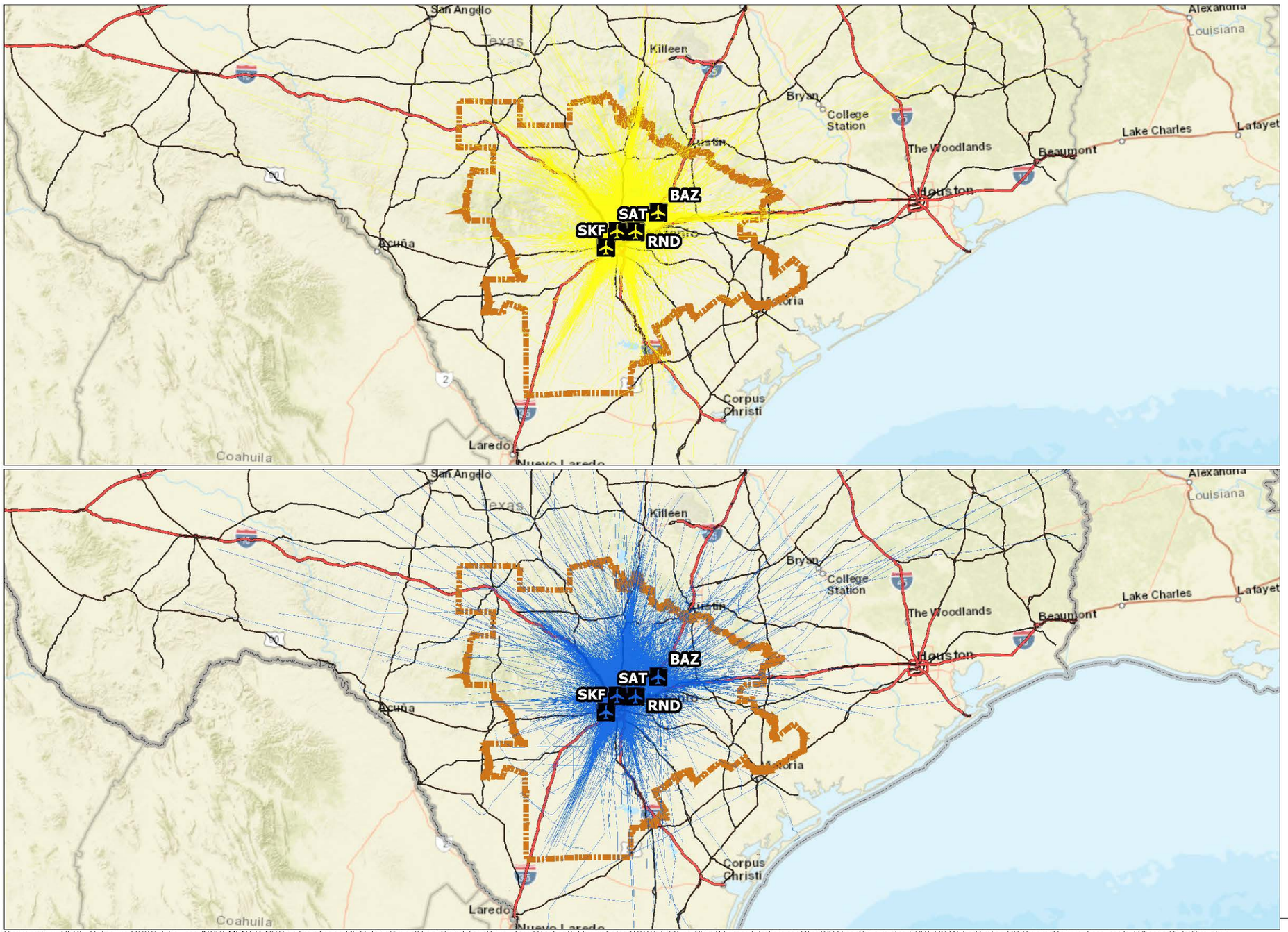
represents a greater use of standardized procedures that increase routing predictability, flexibility, and traffic segregation.

5.3.1 Departures

The Proposed Action changes constitute a general trend away from radar vector operational ATC procedures for portions of the departure trajectory and toward increased use of Area Navigation (RNAV) Standard Instrument Departure (SID) procedures. The changes between Proposed Action and No Action routing for AEDT and NOISEMAP departure tracks from the Study Airports are shown in **Exhibit 7**. Proposed Action routes are depicted in yellow, and No Action routes are depicted in blue.

5.3.2 Arrivals

The Proposed Action changes constitute a general trend away from radar vector operational ATC procedures for portions of the arrival trajectory and toward increased use of Area Navigation (RNAV) Standard Terminal Arrival (STAR) procedures. Furthermore, there is a general trend to update and implement new RNP and GPS-based SIAPs. The changes between Proposed Action and No Action routing for AEDT and NOISEMAP arrival tracks to the Study Airports are shown in **Exhibit 8**. Proposed Action routes are depicted in orange, and No Action routes are depicted in purple.



LEGEND

- Study Airport
- Proposed Action AEDT Flight Track
- No Action AEDT Flight Track
- General Study Area (GSA)

Water Bodies

- Inundation Area
- Lake/Pond
- Playa
- Reservoir
- Stream/River
- Swamp/Marsh
- US States

Notes:

Major Study Airports
San Antonio International Airport **SAT**

Satellite Study Airports
Kelly Field **SKF**
New Braunfels National Airport **BAZ**
Randolph Air Force Base Airfield **RND**

Projection :GCS North American 1983
Scale: 1:2,631,162

0 15 30 60 Miles

N

Exhibit 7

Sources: Esri, HERE, DeLorme, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), MaymyIndia, NGCC, (c) OpenStreetMap contributors, and the GIS User Community. ESRI, US Water Boides. US Census Bureau, Incorporated Places, State Boundary, Census Block Centroid Points. Federal Aviation Administration, Code of Instrument Flight Procedures, Study Airports. ATAC, Study Area Boundaries and AEDT Flight Tracks.
Prepared by: ATAC Corporation, September 2022.

SAT Airspace Modernization EA Proposed Action Departures vs. No Action Departures AEDT Tracks

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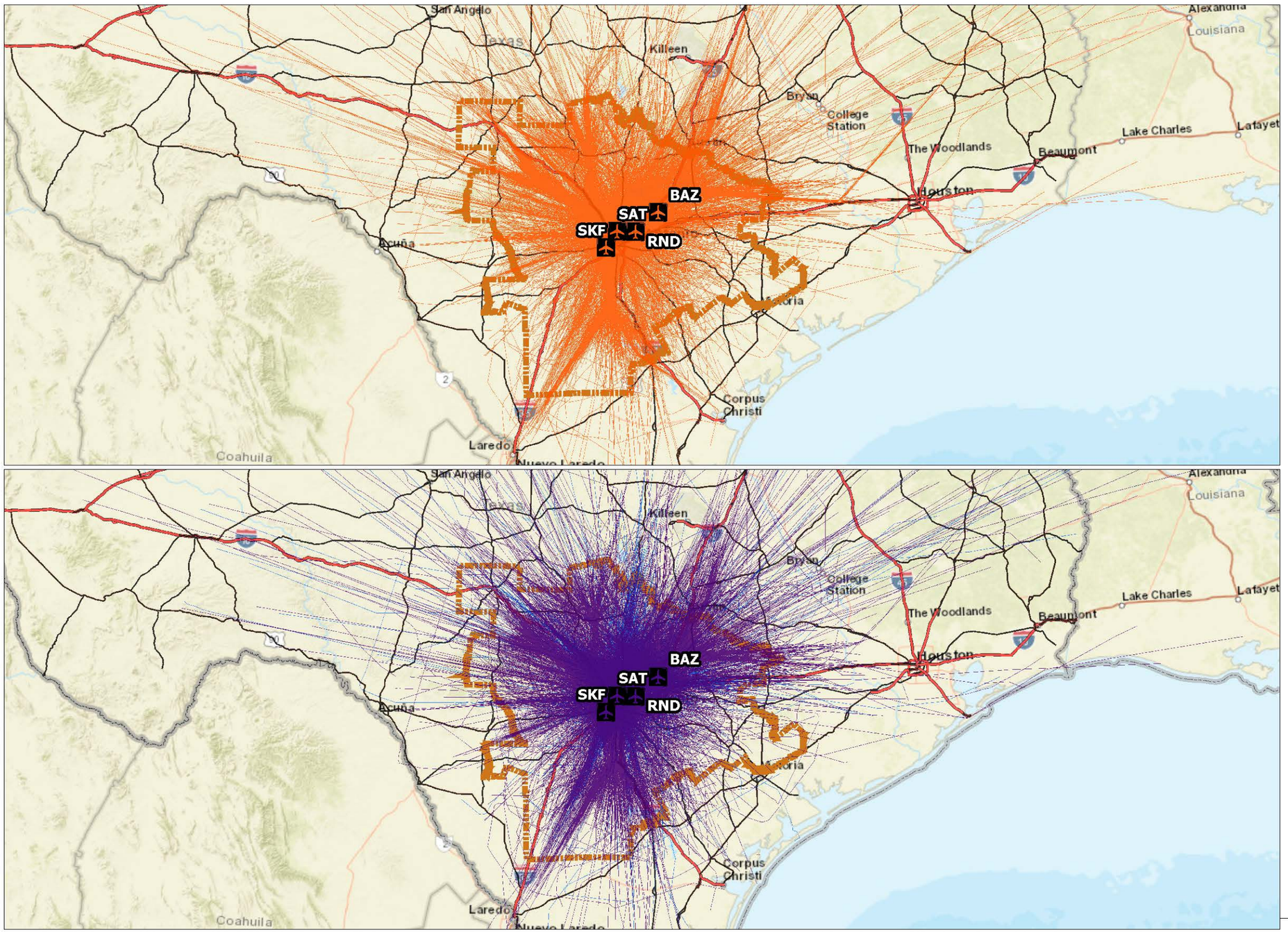

LEGEND

- Study Airport
- Proposed Action AEDT Flight Track
- No Action AEDT Flight Track
- General Study Area (GSA)

Water Bodies

- Inundation Area
- Lake/Pond
- Playa
- Reservoir
- Stream/River
- Swamp/Marsh
- US States

Notes:

Major Study Airports
San Antonio International Airport **SAT**

Satellite Study Airports
Kelly Field **SKF**
New Braunfels National Airport **BAZ**
Randolph Air Force Base Airfield **RND**

Projection :GCS North American 1983
Scale: 1:2,631,162

0 15 30 60 Miles

N

Sources: Esri, HERE, DeLorme, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), MapmyIndia, NGCC, (c) OpenStreetMap contributors, and the GIS User Community. ESRI, US Water Boides. US Census Bureau, Incorporated Places, State Boundary, Census Block Centroid Points. Federal Aviation Administration, Code of Instrument Flight Procedures, Study Airports. ATAC, Study Area Boundaries AEDT Flight Tracks.
Prepared by: ATAC Corporation, September 2022.

Exhibit 8

SAT Airspace Modernization EA Proposed Action Arrivals vs. No Action Arrivals AEDT Tracks

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5.4 Impact Analysis Results

This section presents the results of the impact analysis between the Proposed Action and No Action scenarios. The summary of results includes results from the 2023 and 2028 scenarios across 2020 US Census Population Centroids, 0.5 NM Evenly Spaced Grid Points, and 4(f) resource unique points.

For 2023, no significant noise (+1.5 DNL dB resulting in 65 DNL dB or higher) was identified. 11 Census Centroid receptor points representing 573 persons were identified in the +5.0 dB resulting in a value of 45-60 DNL dB. Six 0.5 NM evenly spaced grid receptor points were identified in the +5.0 dB resulting in a value of 45-60 DNL dB. Finally, six 4(f) receptor points representing 11 named resources were identified in the +5.0 dB resulting in a value of 45-60 DNL dB.

For 2028, no significant noise (+1.5 DNL dB resulting in 65 DNL dB or higher) was identified. Three Census Centroid receptor points representing 100 persons were identified in the +3.0 dB resulting in a value of 60-65 DNL dB. Two 0.5 NM evenly spaced grid receptor points were identified in the +3.0 dB resulting in a value of 60-65 DNL dB. 108 Census Centroid receptor points representing 8,068 persons were identified in the +5.0 dB resulting in a value of 45-60 DNL dB. 130 0.5 NM evenly spaced grid receptor points were identified in the +5.0 dB resulting in a value of 45-60 DNL dB. Finally, 19 4(f) receptor points representing 24 named resources were identified in the +5.0 dB resulting in a value of 45-60 DNL dB.

5.4.1 Population Data

Table 14 presents the change in potential population exposed to increased aircraft noise under the Proposed Action for 2023 conditions. The analysis indicates that the Proposed Action would not result in a DNL 1.5 dB increase in areas exposed to DNL of 65 dB and higher, nor would it result in a reportable noise increase of DNL 3.0 dB in areas exposed to DNL 60 dB to 65 dB.

However, the 2023 Proposed Action did result in a reportable noise increase of DNL 5.0 dB in areas exposed to DNL 45 dB to 60 dB. According to census data, a total of 573 people, associated with 11 population centroids, would be impacted by this increase. The population centroids are located in two general areas. The first area is located approximately 12.5 NM east of SAT near the border of Guadalupe and Bexar Counties. The second area is located approximately 10 NM northeast of SAT in Comal County. Details for these population centroids are presented in **Supplement 3** and shown in **Exhibit 9**.

The reportable noise increase is attributable to aircraft departing RND heading north in the 2023 No Action scenario shifting to utilize the YODUH SID in the 2023 Proposed Action scenario.

Table 14 Change in Potential Population Exposed to Increased Aircraft Noise - 2023

DNL Noise Exposure Level Under the Proposed Action	Increase in DNL with the Proposed Action	Population Exposed to Noise that Exceeds the Threshold
DNL 65 dB and higher	DNL 1.5 dB or greater	0
DNL 60 dB to 65 dB	DNL 3.0 dB or greater	0
DNL 45 dB to 60 dB	DNL 5.0 dB or greater	573

Source: 2020 U.S. Census (population centroid data), April 2022; ATAC Corporation, AEDT modeling results, August 2022
Prepared By: ATAC Corporation, August 2022.

Table 15 presents the change in potential population exposed to increased aircraft noise under the Proposed Action for 2028 conditions. The analysis indicates that the Proposed Action would not result in a DNL 1.5 dB increase in areas exposed to DNL of 65 dB and higher.

However, the 2028 Proposed Action did result in reportable noise increases of DNL 3.0 dB in areas exposed to DNL 60 dB to 65 dB. According to census data, a total of 100 people, associated with three population centroids, would be impacted by this increase. The population centroids are located approximately 12.5 NM east of SAT near the border of Guadalupe and Bexar Counties. Details for these population centroids are presented in **Supplement 3** and shown in **Exhibit 10**. These centroids align with modeled departure tracks for flights departing RND using the proposed YODUH SID.

Additionally, the Proposed Action resulted in a reportable noise increase of DNL 5.0 dB in areas exposed to DNL 45 dB to 60 dB. According to census data, a total of 8,068 people, associated with 108 population centroids, would be impacted by this increase. The population centroids are located in five general areas. The first area is located approximately 10 NM northeast of SAT near the border of Bexar and Comal Counties. The second area is located approximately 20 NM north of SAT in Comal and Blanco Counties. The impact points at these first two locations align with modeled departure tracks for flights departing RND using the proposed YODUH SID. The third and fourth areas are located approximately 12 NM north and 17 NM northwest of SAT, respectively. These areas are near the borders of Comal, Bexar, and Kendall counties. These areas align with modeled departure tracks for flights departing RND using the proposed ALISS SID. The fifth area is about 17 NM northwest of SAT in Bexar County and aligns with modeled tracks for flights arriving to SKF using the proposed POPPO STAR.

The reportable noise increase at the aforementioned locations is attributable to aircraft operations utilizing three Proposed Action procedures. The first set of operations that are the likely cause of these noise impacts are aircraft departing RND heading north in the 2028 No Action scenario shifting to utilize the YODUH SID in the 2028 Proposed Action scenario. These operations impact locations to the north and east of SAT. The second set of operations that are a likely cause of noise impacts are aircraft departing RND heading northwest in the 2028 No Action scenario shifting to utilize the ALISS SID in the 2028 Proposed Action scenario. These operations impact locations to the north and northwest of SAT. Finally, arrivals to SKF utilizing the STV arrival procedure in the No Action 2028 Scenario shifting to utilize the POPPO STAR in the Proposed Action 2028 Scenario are the likely cause of the noise impacted locations northwest of SAT.

Table 15 Change in Potential Population Exposed to Increased Aircraft Noise - 2028

DNL Noise Exposure Level Under the Proposed Action	Increase in DNL with the Proposed Action	Population Exposed to Noise that Exceeds the Threshold
DNL 65 and higher	DNL 1.5 dB or greater	0
DNL 60 to 65	DNL 3.0 dB or greater	100
DNL 45 to 60	DNL 5.0 dB or greater	8,068

Source: 2020 U.S. Census (population centroid data), April 2022; ATAC Corporation, AEDT modeling results, August 2022.
Prepared By: ATAC Corporation, August 2022.

5.4.2 4(f), Historic, and Cultural Resources

For the 4(f), Historic, and Cultural Resources areas in the 2023 scenarios, the analysis indicates that the Proposed Action would not result in a DNL 1.5 dB increase in areas exposed to DNL of 65 dB and higher, nor would it result in a reportable noise increase of DNL 3.0 dB in areas exposed to DNL 60 dB to 65 dB compared with the 2023 No Action scenario. However, the 2023 Proposed Action did result in a reportable noise increase of DNL 5.0 dB in areas exposed to DNL 45 dB to 60 dB. The locations of these 4(f), Historic, and Cultural Resources reportable noise points are in the same two general areas as the noise impacted population centroids found in the 2023 scenarios: one area is approximately 12.5 NM east of SAT near the border of Guadalupe and Bexar Counties; and another approximately 10 NM northeast of SAT in Comal County. These 4(f), Historic, and Cultural Resources areas with reportable noise impacts are shown in **Exhibit 9**. Detailed information for all 4(f), Historic, and Cultural Resources areas is provided in **Supplement 4**.

Similarly, for the 4(f), Historic, and Cultural Resources areas in the 2028 scenarios, the analysis indicates that the Proposed Action would not result in a DNL 1.5 dB increase in areas exposed to DNL of 65 dB and higher, nor would it result in a reportable noise increase DNL 3.0 dB in areas exposed to DNL 60 dB to 65 dB compared with the 2028 No Action scenario. However, the 2028 Proposed Action did result in a reportable noise increase of DNL 5.0 dB in areas exposed to DNL 45 dB to 60 dB. The locations of these 4(f), Historic, and Cultural Resources reportable noise points are in similar areas as the noise impacted population centroids found in the 2028 scenarios. The points are all about 10 to 20 NM north and east of SAT. These 4(f), Historic, and Cultural Resources areas with reportable noise impacts are shown in **Exhibit 10**. Detailed information for all 4(f), Historic, and Cultural Resources areas is provided in **Supplement 4**.

The reportable noise increase in the 2023 Proposed Action scenario is attributable to the use of the YODUH SID from RND departures. For the reportable noise increase in the 2028 Proposed Action scenario, the likely causes are the use of YODUH and ALISS SIDs from RND departures.

5.4.3 One-Half Nautical Mile Grid

For the 0.5 NM Grid Point data in both the 2023 and 2028 scenarios, the analysis indicates the Proposed Action would not result in a DNL 1.5 dB increase in areas exposed to DNL of 65 dB and higher. Moreover, the 2023 Proposed Action scenario also did not result in a DNL 3.0 dB increase in areas exposed to DNL 60 dB to 65 dB compared to the 2023 No Action scenario.

However, the 2028 Proposed Action scenario did result in a reportable noise increase of DNL 3.0 dB in areas exposed to DNL 60 dB to 65 dB compared with the 2028 No Action scenario at two grid points. The locations of these grid points are in similar areas as the noise impacted population centroids found in the 2028 scenarios.

In addition, for the 2023 scenarios, six grid points would experience a greater than DNL 5 dB increase in areas exposed to DNL between 45 dB and 60 dB in the Proposed Action scenario. The locations of these grid points are in similar areas as the noise impacted population centroids found in the 2023 scenarios. For the 2028 scenarios, 130 grid points would experience a greater than DNL 5 dB increase in areas exposed to DNL between 45 dB and 60 dB in the Proposed Action scenario. The locations of these grid points are in similar areas as the noise impacted population centroids found in the 2028 scenarios. The 0.5 NM reportable noise impact points for the 2023 and 2028 scenarios are shown in **Exhibits 9** and **10**, respectively. Detailed information for all 0.5 NM Grid points is provided in **Supplement 5.**

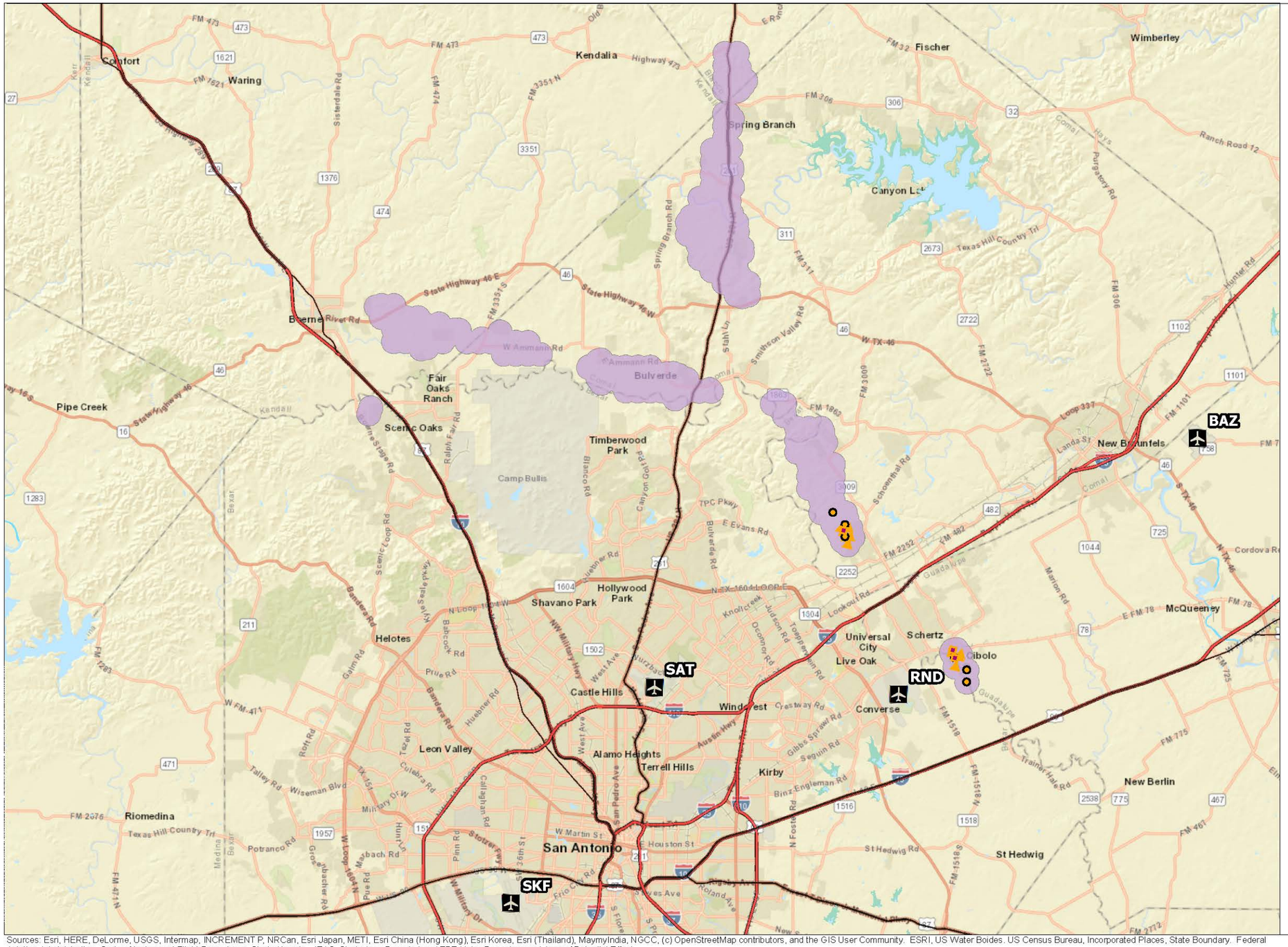
Similar to the population centroid results, the likely cause of the reportable noise increase in the 2023 Proposed Action scenario is attributable to the use of the YODUH SID from RND departures. For the reportable noise increase in the 2028 Proposed Action scenario, the likely causes are the YODUH and ALISS SIDs from departures from RND and the POPPO STAR from SKF arrivals.

5.4.4 Noise Sensitive Land Use Areas

For all 2023 and 2028 scenarios, the analysis indicates that the Proposed Action would not result in any significant increase in noise in any of the identified Noise Sensitive Land Use Areas. Noise results for these points are provided in **Supplement 6**.

5.4.5 SNIDR Supplemental Study Area

For all 2023 and 2028 scenarios, the analysis indicates that the Proposed Action would not result in any significant increase in noise in any of the points that intersect the SNIDR Supplemental Study Area. Noise results for these points are provided in **Supplement 7**.



LEGEND

- Section 4(f), Section 106 Historic and Cultural Resource Centroid Exposed to a DNL 45 to 60 dB with a DNL 5 dB Increase
- Evenly-Spaced Grid Centroid Exposed to a DNL 45 to 60 dB with a DNL 5 dB Increase
- Census Grid Centroid Exposed to a DNL 45 to 60 dB with a DNL 5 dB Increase
- Study Airport
- Area of Potential Effect
- General Study Area (GSA)

Water Bodies

- Inundation Area
- Lake/Pond
- Playa
- Reservoir
- Stream/River
- Swamp/Marsh
- US States

Notes:

Major Study Airports
San Antonio International Airport **SAT**

Satellite Study Airports
Kelly Field **SKF**
New Braunfels National Airport **BAZ**
Randolph Air Force Base Airfield **RND**

Projection :GCS North American 1983
Scale: 1:2,631,162

0 1 2 4 Miles

N

Sources: Esri, HERE, DeLorme, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), MaymyIndia, NGCC, (c) OpenStreetMap contributors, and the GIS User Community. ESRI, US Water Boides. US Census Bureau, Incorporated Places, State Boundary. Federal Aviation Administration, Code of Instrument Flight Procedures, Study Airports. ATAC, Study Area Boundaries, AEDT Noise Receptors and Area of Potential Effect.
Prepared by: ATAC Corporation, September 2022.

Exhibit 9

Change in Aircraft Noise – Reportable Noise Increase 2023

SAN ANTONIO AIRSPACE MODERNIZATION PROJECT

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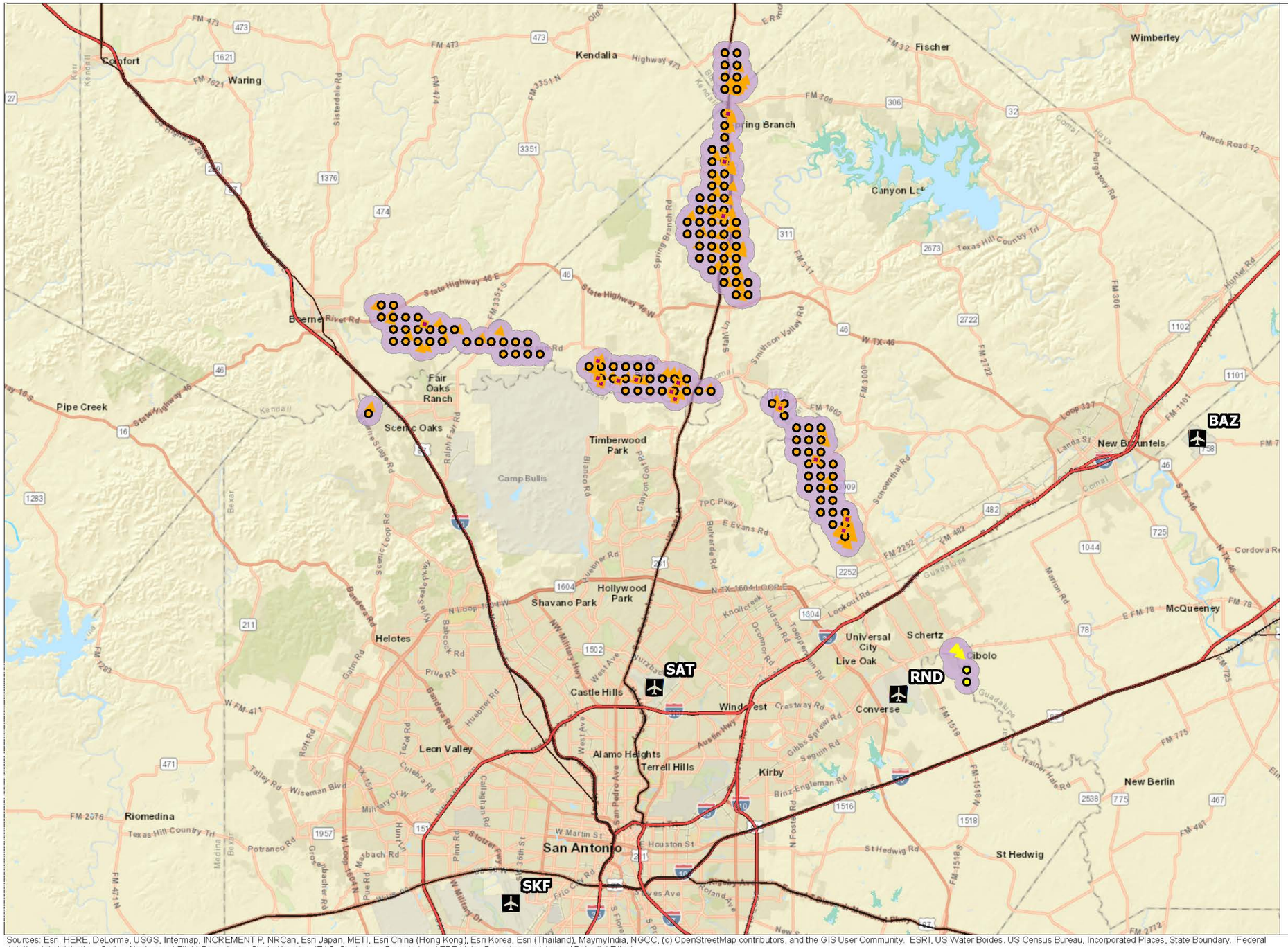

LEGEND

- Section 4(f), Section 106 Historic and Cultural Resource Centroid Exposed to a DNL 45 to 60 dB with a DNL 5 dB Increase
- Evenly-Spaced Grid Centroid Exposed to a DNL 60 to 65 dB with a DNL 3 dB Increase
- Evenly-Spaced Grid Centroid Exposed to a DNL 45 to 60 dB with a DNL 5 dB Increase
- Census Grid Centroid Exposed to a DNL 60 to 65 dB with a DNL 3 dB Increase
- Census Grid Centroid Exposed to a DNL 45 to 60 dB with a DNL 5 dB Increase
- Study Airport
- Area of Potential Effect
- General Study Area (GSA)

Water Bodies

- Inundation Area
- Lake/Pond
- Playa
- Reservoir
- Stream/River
- Swamp/Marsh
- US States

Notes:

Major Study Airports
San Antonio International Airport **SAT**

Satellite Study Airports
Kelly Field **SKF**
New Braunfels National Airport **BAZ**
Randolph Air Force Base Airfield **RND**

Projection :GCS North American 1983
Scale: 1:2,631,162

0 1 2 4 Miles

N

Sources: Esri, HERE, DeLorme, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), MaymyIndia, NGCC, (c) OpenStreetMap contributors, and the GIS User Community. ESRI, US Water Boides. US Census Bureau, Incorporated Places, State Boundary. Federal Aviation Administration, Code of Instrument Flight Procedures, Study Airports. ATAC, Study Area Boundaries, AEDT Noise Receptors and Area of Potential Effect.
Prepared by: ATAC Corporation, September 2022.

Exhibit 10

Change in Aircraft Noise – Reportable Noise Increase 2028

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6 Supplements

Supplement 1 – AEDT Aircraft Substitution Requests and Approvals

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July 18, 2022

Kristi Regotti
Environmental Specialist, Environmental
Federal Aviation Administration
Central Service Center
10101 Hillwood Pkwy
Fort Worth, TX 76177
Kristi.Regotti@faa.gov

Subject: AEDT Aircraft Substitution Request, Rev. C
Reference: San Antonio Airspace Modernization Project
Contract No.: 693KA9-21-D-00007
Delivery Order: 693KA9-21-F-00005 (DO5)

Dear Kristi:

As part of the San Antonio Airspace Modernization Draft Environmental Assessment (Draft EA), ATAC is developing the inputs for the Aviation Environmental Design Tool (AEDT). AEDT will be used to model the noise effects resulting from proposed changes to the airspace. Consistent with Federal Aviation Administration (FAA) policies and procedures, we submit this request for approval of the San Antonio Airspace Modernization Draft EA identified aircraft types of interest (Attachment A).

While AEDT 3d includes supporting noise data from the legacy environmental tools such as the Integrated Noise Model (INM) version 7.0b and the Noise Integrated Routing System (NIRS) version 7.0b3, as well as its own improvements and additions, certain aircraft types that occur in the regional airspace existing and forecast fleets are not included in the AEDT database. Since this is an airspace study, procedure step profiles for both arrivals and departures are required in order to use altitude controls in AEDT. These altitude controls are important to adequately model the noise impact of different altitude profiles such as existing step-down procedures in comparison to proposed new OPDs. We have attempted to identify surrogate departure and/or arrival aircraft types that would be compatible with AEDT. We request that the FAA review and approve these AEDT 3d substitutes for each of these aircraft types or provide a suitable substitution.

In accordance with FAA policy, we expect that this request will be reviewed by the FAA's Office of Environment and Energy Noise Division (AEE-100). We will be happy to respond to questions regarding this request from yourself or those offices.

Thank you for your assistance on this matter.

Sincerely,

Bill Keller
ATAC Corporation

Attachments:
Attachment A: AEDT Aircraft Substitution Requests and Suggestions

Attachment A: AEDT Aircraft Substitution Requests and Suggestions

The following aircraft types included in the San Antonio Airspace Modernization require an FAA-approved substitution. In each case, a recommended substitute with a similar aircraft type from the existing AEDT 3d database is presented.

FAA AEE provided a SQL query to run against the AEDT databases, which resulted in a table containing AEDT-recommended substitutions. FAA AEE also indicated that if a substitution was covered by the AEDT-recommended substitutions table, a request and subsequent approval is not required.

The methodology used to evaluate aircraft substitutions consisted of first developing a list of aircraft types that require substitutions. The resulting list was cross-referenced against AEDT-recommended substitutions, and if available, the AEDT recommendation would be used. Next, for the aircraft types that were left without an AEDT recommendation, an analysis to determine the best AEDT aircraft substitution was conducted.

Table 1 presents the San Antonio Airspace Modernization aircraft substitution requests previously submitted by ATAC that have historically been FAA AEE approved. The approvals used for this aircraft substitution request include the Denver Metroplex aircraft substitution approval dated December 3, 2018. The copies of previous aircraft substitution requests and approvals are available upon request. For each row in **Table 1**, the aircraft substitution choices are discussed in subsections following **Table 1**.

Table 1: Previously Approved Metroplex EA Aircraft Substitutions for San Antonio Airspace Modernization

Aircraft Code	Represented Aircraft	Operation Type	AEDT EQUIP_ID	AEDT ANP_ID	AEDT Airframe	AEDT ENGINE	AEDT BADA	Source
B753	Boeing 757-300	Arrivals Only	392	757RR	Boeing 757-200 Series	1430	B752	DEN Metroplex
B772	Boeing 777-200	Arrivals Only	665	7773ER	Boeing 777-300 ER	2153	B77W	DEN Metroplex
B77L	B777-200LR	Arrivals Only	665	7773ER	Boeing 777-300 ER	2153	B77W	DEN Metroplex
EXP	Any experimental (piston homebuilt)	Arrivals and Departures	1904	GASEPV	EADS Socata TB-10 Tobago	1567	TB21	DEN Metroplex
EXPR	Express 2000	Arrivals and Departures	6331	GASEPV	Vans RV8 (FAS)	1567	TB21	DEN Metroplex
GL5T	Bombardier Global Express	Arrivals and Departures	2432	GV	Gulfstream V-SP	1377	GLF5	DEN Metroplex
GLEX	Bombardier Global 6000	Arrivals and Departures	2432	GV	Gulfstream V-SP	1377	GLF5	DEN Metroplex
LNC4	Columbia Aircraft Lancair (All Types)	Arrivals and Departures	6283	GASEPV	Columbia Aircraft Lancair (COL3/4 All Types) (FAS)	1715	P28A	DEN Metroplex
MD82	MD-82	Arrivals Only	2091	MD9025	Boeing MD-90	1437	MD83	DEN Metroplex
MD83	MD-83	Arrivals and Departures	2091	MD9025	Boeing MD-90	1437	MD83	DEN Metroplex
P51	P-51 Mustang	Arrivals and Departures	1271	GASEPV	Piper PA-32 Cherokee Six	1715	P28A	DEN Metroplex

Aircraft Code	Represented Aircraft	Operation Type	AEDT EQUIP_ID	AEDT ANP_ID	AEDT Airframe	AEDT ENGINE	AEDT BADA	Source
PA20	Piper Pacer	Arrivals and Departures	6313	CNA172	Piper PA-22-150 (FAS)	1594	C172	DEN Metroplex
PA44	Piper Seminole	Arrivals and Departures	2104	PA30	Piper PA-30 Twin Comanche	1566	BE58	DEN Metroplex

B753

The 757300 (a direct match) was used for the AEDT departure model substitution for the B753. Because there is no arrival procedure step in AEDT for the B753, the substitution 757RR was used for arrivals. This aircraft is a variant of the Boeing 757, and is similar in size, configuration, and engine type.

B772

The AEDT type 777200 was recommended by the AEDT model substitution database and was used as a departure substitution aircraft for the B772, but the 777200 does not have arrival procedure step profiles available. Thus, for arrivals the AEDT type 7773ER was used. Both of these aircraft are variants of the B772 and are similar aircraft in size, configuration, and engine type.

B77L

The AEDT type 777300 was recommended by the AEDT model substitution database and was used as a departure substitution aircraft for the B77L, but the 777300 does not have arrival procedure step profiles available. Thus, for arrivals the AEDT type 7773ER was used. Both of these aircraft are variants of the B77L and are similar aircraft in size, configuration, and engine type.

EXP

The AEDT type GASEPV (General Aviation Single Engine Prop Variable) was used as a substitution aircraft for departures and arrivals for the EXP. The EXP can represent any experimental (piston homebuilt) aircraft. These aircraft can be a general aviation variable pitch propeller aircraft, and therefore GASEPV is a good substitution.

EXPR

The AEDT type GASEPV (General Aviation Single Engine Prop Variable) was used as a substitution aircraft for departures and arrivals for the Express 2000, EXPR. The EXPR aircraft is a general aviation constant speed propeller aircraft, and therefore GASEPV is a good substitution.

GL5T

The Bombardier Global Express, with a maximum takeoff weight (MTOW) of 92,500 lb, having 2 x BR710A2-20 engines, each generating 14,750 lb (65.6kN) thrust was mapped to the Gulfstream V (GV), with a MTOW of 90,500 lb (41,050 kg), having 2 × Rolls-Royce BR710A1-10 turbofan engines, each generating 14,750 lb (65.6 kN) thrust each engine. The GL5T aircraft is a variant of the GV and is similar aircraft in size, configuration, and engine type.

GLEX

The Bombardier Global 6000, with a MTOW of 99,500 lb, having 2 x BR10A2-20 engines, each generating 14,750 lb (65.6 kN) of thrust was mapped to the Gulfstream V (GV), with a MTOW of 90,500 lb (41,050 kg), having 2 × Rolls-Royce BR710A1-10 turbofan engines, each generating 14,750 lb (65.6 kN) thrust each engine. The GLEX aircraft is a variant of the GV and is similar aircraft in size, configuration, and engine type.

LNC4

The AEDT type GASEPV was used as a substitution aircraft for departures and arrivals for the Columbia Lancair LNC4. The LNC4 aircraft is a general aviation variable pitch propeller aircraft, and therefore GASEPV is a good substitution.

MD82

The AEDT type MD82 (a direct match) was recommended by the AEDT model substitution database and was used as a departure substitution aircraft for the MD82; however, the MD82 does not have arrival procedure step profiles available within AEDT. Thus, for arrivals the AEDT type MD9025 was used. The MD9025 substitution is the closest available match within AEDT to the MD82 in terms of aircraft size, configuration, and engine type.

MD83

The AEDT type MD83 (a direct match) was recommended by the AEDT model substitution database and was used as a departure substitution aircraft for the MD83, but the MD83 does not have arrival procedure step profiles available. Thus, for arrivals the AEDT type MD9025 was used. The MD9025 substitution is the closest match within AEDT to the MD83 in terms of aircraft size, configuration, and engine type.

P51

The AEDT type GASEPV was used as a substitution aircraft for departures and arrivals for the P-54 Mustang. The P51 aircraft is a general aviation variable pitch propeller aircraft, and therefore GASEPV is a good substitution.

PA20

The PA20 Piper Pacer is a high wing aircraft with O-320 engine. ATAC requests mapping this aircraft to the Cessna 172 Skyhawk airframe, CNA172 ANP_ID, C172 BADA, and O-320 engine.

PA44

The AEDT type PA30 was used as a substitution aircraft for the PA44 for both arrivals and departures. Both aircraft are light twin aircraft, and are similar in size and configuration.

Table 2 presents substitutions for aircraft types that have no historical Metroplex EA precedence. For each row, the aircraft substitution choices are discussed in following subsections.

Table 2: Aircraft Substitutions for San Antonio Airspace Modernization

Aircraft Code	Represented Aircraft	Operation Type	AEDT EQUIP_ID	AEDT ANP_ID	AEDT Airframe	AEDT ENGINE	AEDT BADA
AC95	690/695 Jetprop Commander	Arrivals and Departures	1541	DHC6	Rockwell Twin Commander 690	1726	PAY3
B3XM	Boeing 737 MAX 10	Arrivals and Departures	6383	7378MAX	Boeing 737-9	2175	B39M
FA50	Dassault Falcon 50	Arrivals and Departures	1172	LEAR35	Lockheed L-1329 Jetstar II	1205	FA50

AC95

AC95 is the aircraft designator for a 690/695 Jetprop Commander aircraft, which is a twin-engine light business aircraft. ATAC requests that this be mapped to the Rockwell Twin Commander 690 airframe, DHC6 ANP_ID, PAY3 BADA, and TPE331-10 engines.

B3XM

B3XM is the aircraft designator for a Boeing 737 MAX 10 aircraft, which is a twin-engine narrow-body airliner. ATAC requests that this be mapped to the Boeing 737-9 airframe, 7378MAX ANP_ID, B39M BADA, and CFM LEAP-1B27 engines.

FA50

FA50 is the aircraft designator for the Dassault Falcon 50. The Falcon 50 is a French super-midsize, long-range business jet. ATAC requests this aircraft be mapped to the Lockheed L-1329 Jetstar II airframe, LEAR35 ANP_ID, FA50 BADA, and Allied Signal TFE731-3 engine.

U.S. Department
of Transportation
**Federal Aviation
Administration**

Office of Environment and Energy

800 Independence Ave., S.W.
Washington, D.C. 20591

7/25/2022

Kristi Regotti
Environmental Protection Specialist
Mission Support Services
Central Service Center
Federal Aviation Administration
10101 Hillwood Pkwy
Fort Worth, TX 76177

Dear Kristi,

The Office of Environment and Energy (AEE) has received the memo from ATAC dated July 18th, 2022, referencing the San Antonio Airspace Modernization Draft Environmental Assessment (EA). The memo requests approval for non-standard AEDT 3d aircraft substitutions for aircraft types not present in the AEDT database. Additionally, the memo requests approval for non-standard AEDT 3d aircraft substitutions for aircraft that lack procedural step profiles in the AEDT database which are needed to utilize altitude control codes to model altitude profiles for arrivals and departures including existing step-down and proposed new Optimized Profile Descent (OPD) procedures.

AEE has reviewed the proposed substitutions and is providing a list of approvals or required updates in the tables below.

Table 1: Aircraft not present in the AEDT 3d Database

- AEE does not approve the proposed substitutions for the Experimental (EXP), Express 2000, Piper PA20, and Piper PA44 aircraft types. Alternative substitutions are provided.
- AEE approves the proposed substitutions for the Lancair LNC4, North American P51, Rockwell 690/695, and Boeing B3XM aircraft types.

Table 2: Aircraft lacking procedural profiles in the AEDT 3d database

- AEE does not approve the proposed departure and arrival substitution for the Dassault FA50 aircraft type. An alternative substitution is provided.
- AEE approves the proposed arrival only substitutions for the Boeing B753, Boeing B772, Boeing 77L, McDonnell Douglas MD82, and McDonnell Douglas MD83 aircraft types.
- AEE approves the proposed departure and arrival substitutions for the Bombardier GLEX and GL5T aircraft types.

Table 1: Aircraft Not Present in the AEDT 3d Database

ATAC Proposed Substitution						FAA AEE Approved Substitution				
Aircraft Code	**Aircraft Description**	**AEDT Model / Substitution Model**	**AEDT EQUIP_ID**	**AEDT ANP_ID**	**AEDT BADA_ID**	**AEDT EQUIP_ID**	**AEDT Airframe**	**AEDT Engine**	**AEDT ANP_ID**	**AEDT BADA_ID**
EXP	Variety of "homebuilt" Experimental	EADS Socata TB- 10 Tobago	1904	GASEPV	TB21	6329	Vans RV6 (FAS)	IO-360-B	GASEPV	TB21
EXPR	Express 2000	Vans RV8 (FAS)	6331	GASEPV	TB21	1271	Piper PA-32 Cherokee Six	TIO540	GASEPV	P28A
PA20	Piper Pacer	Piper PA- 22-150 (FAS)	6313	CNA172	C172	6318	Piper Pacer (FAS)	O-320	CNA172	C172
PA44	Piper Seminole	Piper PA-30 Twin Comanche	2104	PA30	BE58	6316	Piper PA44 (FAS)	IO-320-D1AD	PA30	BE58
AC95	690/695 Jetprop Commander	Rockwell Twin Commander 690	1541	DHC6	PAY3	Proposed Approved				
LNC4	Lancair 4	Columbia Aircraft Lancair (COL3/4 All Types) (FAS)	6283	GASEPV	P28A					
P51	P-51 Mustang	Piper PA-32 Cherokee Six	1271	GASEPV	P28A					
B3XM	Boeing 737 MAX10	Boeing 737-9	6383	7378MAX	B39M					

Table 2: Aircraft Lacking Procedural Profiles in the AEDT 3d database

ATAC Proposed Substitution			FAA AEE Approved Substitution					
Aircraft Code	**Represented Aircraft**	**AEDT ANP_ID**	**AEDT EQUIP_ID**	**AEDT Airframe**	**AEDT Engine**	**AEDT ANP_ID**	**AEDT BADA_ID**	**Notes**
FA50	Dassault Falcon 50	LEAR35	3818	1985 BUSINESS JET	TFE731-3	COMJET	F900	**AEE Approved Non-Standard Arrival and Departure***
B753	Boeing 757-300	757300	378	Boeing 757-300 Series	RB211-535E4B	757300	B753	Standard Departure
		757RR	392	Boeing 757-200 Series	RB211-535E4B	757RR	B752	**Proposed Approved Non-Standard Arrival**
B772	Boeing 777-200	777200	647	Boeing 777-200 Series	GE90-115B	777200	B772	Standard Departure
		7773ER	665	Boeing 777-300 ER	GE90-115B	7773ER	B77W	**Proposed Approved Non-Standard Arrival**
B77L	Boeing 777-200LR	777300	2570	Boeing 777-200-LR	GE90-115B	777300	B77L	Standard Departure
		7773ER	665	Boeing 777-300 ER	GE90-115B	7773ER	B77W	**Proposed Approved Non-Standard Arrival**
MD82	MD-82	MD82	2064	Boeing MD-82	JT8D-219	MD82	MD82	Standard Departure
		MD9025	2091	Boeing MD-90	BR700-715C1-30	MD9025	MD83	**Proposed Approved Non-Standard Arrival**
MD83	MD-83	MD83	2083	Boeing MD-83	JT8D-219	MD83	MD83	Standard Departure
		MD9025	2091	Boeing MD-90	BR700-715C1-30	MD9025	MD83	**Proposed Approved Non-Standard Arrival**
GL5T	Bombardier Global Express	GV	2432	Gulfstream V-SP	BR700-710A1-10	GV	GLF5	**Proposed Approved Non-Standard Arrival and Departure**
GLEX	Bombardier Global 6000	GV	2432	Gulfstream V-SP	BR700-710A1-10	GV	GLF5	**Proposed Approved Non-Standard Arrival and Departure**

*Approval of an alternative Dassault Falcon 50 aircraft substitution (AEDT EQUIP_ID 1318) for arrival operations is provided due to errors in the standard FAL900EX ANP arrival procedural profile when modeled in conjunction with altitude control codes.

Please understand that this approval is limited to this particular Environmental Assessment for the San Antonio Airspace Modernization project and for use with AEDT 3d only. Further non-standard AEDT inputs for additional projects at this or any other site will require separate approval.

Sincerely,

Donald Scata
Manager
AEE-100/Noise Division

cc: ATO Contacts (Vonnie Giles, AJV-C23)

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Supplement 2 – AEDT User-Defined Profile Requests and Approvals

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San Antonio Airspace Modernization Project
AEDT User-defined Profile Submission – MD11GE

July 18, 2022

Prepared for:

Prepared by:

ATAC Corporation

Aviation Analysis Experts

2770 De La Cruz Boulevard

Santa Clara, CA 94050

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1 Introduction

1.1 Background

This submittal contains data and information describing the use and implementation of user-defined procedure profiles in the Federal Aviation Administration's (FAA's) Aviation Environmental Design Tool (AEDT). AEDT is a comprehensive software tool that provides aircraft noise, fuel burn, and emissions information to FAA and its stakeholders. AEDT facilitates environmental review activities required under the National Environmental Policy Act (NEPA) by consolidating the modeling of these environmental impacts in a single tool.

1.2 Purpose

Use of non-default methods or data for environmental analysis of FAA actions generally requires written approval from the FAA's Office of Environment and Energy (AEE). AEDT provides pre-packaged default profiles that are appropriate for most studies. In certain situations, user-defined profiles are created. The purpose of this submittal is to obtain permission from AEE to use a user-defined approach profile for the MD11GE arrivals in the San Antonio Airspace Modernization Project.

This submittal follows the guidance put forth in the FAA document titled, "Guidance on Using the Aviation Environmental Design Tool (AEDT) to Conduct Environmental Modeling for FAA Actions Subject to NEPA"[1]. Section 5.3.2, "User-defined Profiles", from the FAA document outlines additional information to include in the submittal package when requesting the use of user-defined profiles. The reason for this request is to acquire permission to utilize user-defined approach procedure steps rather than the default profile points for MD11GE arrivals that is currently implemented in AEDT 3d. Procedure steps instruct how to flight profiles are modeled within AEDT. Because procedure steps are a set of instructions, the modeled flight profile can vary depending on a given trajectory. In contrast, profile points are a set of pre-determined, static points that make up a flight profile. For airspace noise analyses, procedure step profiles are preferred due to their dynamic nature and utilization of altitude control code functionality – modeling aircraft trajectory and performance to a higher fidelity compared to profile point profiles. It is proposed that using user-defined procedure steps is preferable over the use of an aircraft substitution for the MD11GE. This submittal does not include information for the following items that are found in Section 5.3.2 because they are not applicable under the conditions of this request:

- #1 Analysis Demonstrating Change: While the noise receptors spaced at 0.5 nautical miles under the flight path are evaluated, the receptors for Noise Sensitive Areas are not. The Day/Night Noise Level (DNL) exposure levels where the requested profile segment will most likely be applied are primarily levels below DNL 65.
- #2 Concurrence of Aircraft Performance: The request is not related to developing a custom performance climb or descent profile for specific aircraft types.
- #3 Performance Characteristics: The request is not related to developing a custom performance climb or descent profile for specific aircraft types.

[1] Federal Aviation Administration. *Guidance on Using the Aviation Environmental Design Tool (AEDT) to Conduct Environmental Modeling for FAA Actions Subject to NEPA*, Retrieved from https://aedt.faa.gov/2d_information.aspx on May 30, 2018.

1.3 Problem Statement

In AEDT 3d, the MD11GE only has profile points available for approaches. Due to the high amount of varying flight trajectories in airspace noise studies, it is not desirable to represent all MD11GE arrival flight trajectories using a single, static fixed-point profile.

Although the DC1030 presents a viable substitution, its noise levels at altitude appear to be less than the MD11GE.

1.4 Proposed Solution

The proposed solution is to copy the approach procedure steps from a DC1030 and apply it for the MD11GE approach profile, thus creating a non-standard aircraft model. The non-standard aircraft model would use the approach procedure steps of the DC1030, while maintaining the use of the Noise-Power-Distance (NPD) curve and other attributes (equipment, engine type, etc.) of the MD11GE. NPD data in AEDT is a set of noise levels expressed as a function of engine power (usually the corrected net thrust per engine), and distance.

1.5 Statement of Benefit

Implementing the proposed solution in Section **1.4** allows for the retention of the MD11GE noise characteristics while leveraging the similar DC1030 approach profile, which also allows the ability to vary altitude trajectories within the San Antonio Airspace Modernization Project.

2 Methodology

This section presents the methodology used to compare the default MD11GE profile points against the MD11GE user-defined procedure step profile. Section **2.1** presents the AEDT modeling methodology, and Section **2.2** presents how performance results were compared.

2.1 Modeling Methodology

The resulting altitude, speed, and thrust profiles were compared for a sample MD11GE arrival flight using profile points (default) and user-defined procedure steps described in Section **1.4**. Sound Exposure Level (SEL) noise values every half nautical mile along the flight trajectory were also compared between the two versions of the MD11GE.

A straight vector track trajectory landing at San Antonio International Airport (SAT) on Runway 31L was used for the comparison. The operation count was set to ‘1’ for both flights. All annualization factors were set to a value of ‘1’.

AEDT’s option to utilize terrain data when calculating noise values was enabled using data from the United States Geological Survey (USGS). Data from the USGS’s digital elevation model in 1 arc second resolution was downloaded, input, and used during runtime affecting the noise values for both the user-defined and default profiles.

The same weather settings in AEDT 3d was used for both flights. The flights were modeled with relevant weather data for the San Antonio Airspace Modernization Project (see Section **3**).

2.2 Methodology for Analysis of Aircraft Performance Comparison

The objective of this analysis is to demonstrate the magnitude of differences between default and user-defined profiles with respect to aircraft performance. A commonly used measure of the differences between values is the root-mean-square error (RMSE). RMSE is computed by calculating the square root of the average of squared errors. In this application, the error is the

difference between the default value and the user-defined value for each of the three aircraft performance parameters (altitude, speed, and thrust). These differences were calculated every 1 Nautical Mile (NM). along the track until the end of the shorter track is reached, which is approximately 20 NM (see Section **5**). RMSE is defined by the following formula where $\hat{y}$ is equal to user-defined value and y is the default value.

$$RMSE = \sqrt{\frac{\sum(\hat{y} - y)^2}{n}}$$

A RMSE value of 0 indicates that the default and user-defined values are identical. In general, lower RMSE values indicate the default and user-defined values are similar and higher RMSE values indicate less similarity. It should be noted that comparisons across data types are invalid because RMSE is dependent on the scale of numbers used. In other words, the RMSE for altitude cannot be compared to the RMSE for speed.

3 San Antonio Airspace Modernization Project

Table 3-1 summarizes the amount of MD11GE arrival operations in the San Antonio Airspace Modernization Project for all five scenarios.

Table 3-1 MD11GE Scaled Arrival Operations per Scenario

Scenario	Year	MD11GE Arrivals Operation Count	MD11GE Arrivals AAD Operation Count	Scenario Operation Count	MD11GE Arrivals Operation %
Existing Conditions	2021-2022	858.6	2.352	138,995.0	0.62%
No Action	2023	1,102.0	3.019	172,290.6	0.64%
	2028	1,220.3	3.343	190,075.5	0.64%
Proposed Action	2023	1,102.0	3.019	172,290.6	0.64%
	2028	1,220.3	3.343	190,075.5	0.64%

Source: ATAC, July 2022
Prepared by: ATAC, July 2022

Table 3-2 summarizes the amount of MD11GE arrival tracks in the San Antonio Airspace Modernization Project for all five scenarios. Note that the Proposed Action Scenario tracks are still in development at the time of this request.

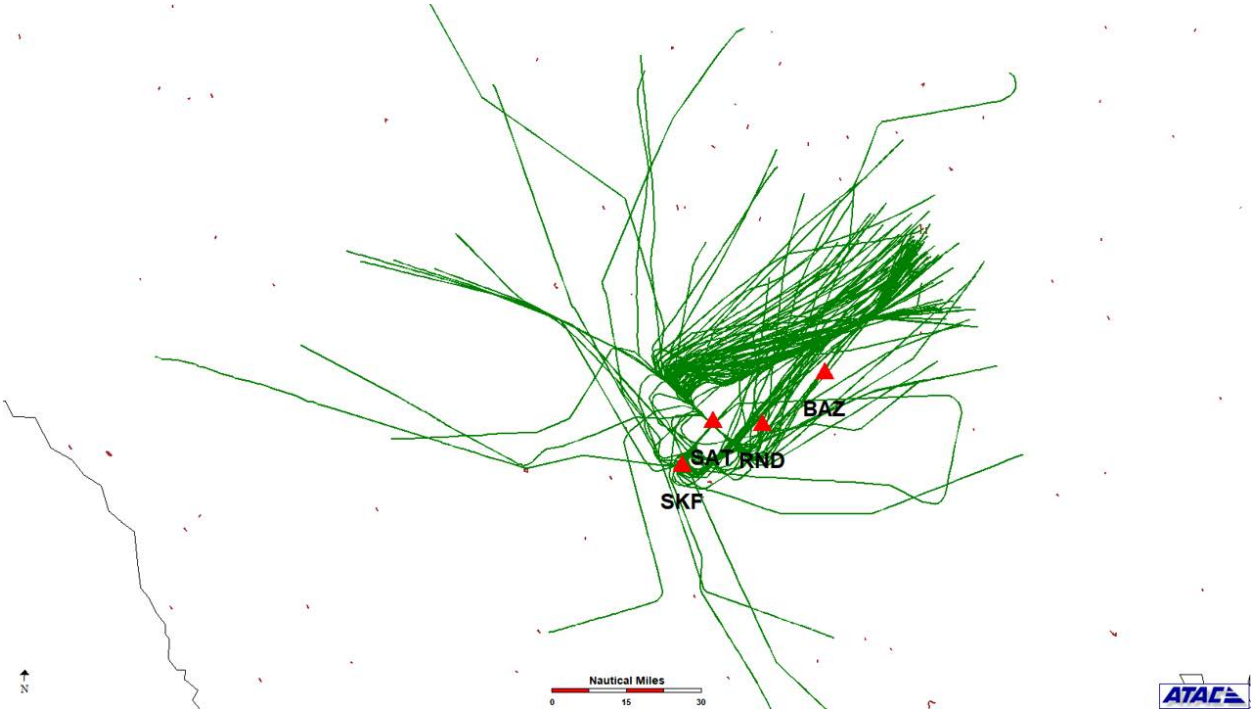
Table 3-2 MD11GE Arrival Tracks per Scenario

Scenario	Year	MD11GE Arrivals Track Count	Scenario Track Count	MD11GE Arrivals Track %
Existing Conditions	2021-2022	130	73,865	0.18%
No Action	2023	123	75,032	0.16%
	2028	126	75,937	0.17%
Proposed Action	2023	TBD	TBD	TBD
	2028	TBD	TBD	TBD

Source: ATAC, July 2022
Prepared by: ATAC, July 2022

Exhibit 1 displays the MD11GE arrival tracks in the Existing Conditions scenario (green).

Exhibit 1 MD11GE Arrival AEDT Flight Tracks Using User-Defined Profile



Source: ATAC, July 2022
Prepared by: ATAC, July 2022

3.1 Implementation of Proposed Solution

A new user-defined approach profile for the MD11GE ACFT_ID named 'STD_DC10' was created using the same values as the MD11GE STANDARD approach profile found within the FLT_ANP_AIRPLANE_PROFILES table. Thus, retaining the aircraft weight of the MD11GE. The next step was to copy the necessary FLAP_IDs of the DC1030 from the FLT_ANP_AIRPLANE_FLAPS table and associate them with the MD11GE.

Table 3-3 presents the default set of flaps available for the DC1030. **Table 3-4** presents the default set of flaps available for the MD11GE as well as the additional flap records that were copied from the DC1030 (shaded in grey for clarity).

Table 3-3 AEDT Default Flaps for DC1030

ACFT_ID	FLAP_ID	OP_TYPE	COEFF_R	COEFF_C_D	COEFF_B
DC1030	U-20	A	0.104	0	0
DC1030	D-35	A	0.13	0.2534	0
DC1030	20	D	0.104	0.2434	0.003091
DC1030	ZERO	D	0.06519	0	0
DC1030	INT1	D	0.09454	0	0
DC1030	INT2	D	0.07307	0	0

Source: AEDT Version 3d, FLEET Database Version 3.40.6, FLT_ANP_AIRPLANE_FLAPS table
Prepared by: ATAC, July 2022

Table 3-4 AEDT User-Defined Flaps for User-Defined MD11GE

ACFT_ID	FLAP_ID	OP_TYPE	COEFF_R	COEFF_C_D	COEFF_B
MD11GE	D-35	A	0.13	0.2534	0
MD11GE	U-20	A	0.104	0	0
MD11GE	INT2	D	0.07307	0	0
MD11GE	ZERO	D	0.0551	0	0
MD11GE	10	D	0.0843	0.2648	0.003812
MD11GE	15	D	0.0891	0.2578	0.003625
MD11GE	20	D	0.0947	0.2524	0.003509
MD11GE	0/EXT	D	0.0692	0	0
MD11GE	25	D	0.1016	0.2481	0.003443
MD11GE	0/RET	D	0.0551	0	0

Source: AEDT Version 3d, FLEET Database Version 3.40.6, FLT_ANP_AIRPLANE_FLAPS table
Prepared by: ATAC, July 2022

Next, the procedure profile was defined by copying the values of the DC1030 approach profile from the FLT_ANP_AIRPLANE_PROCEDURES table.

Table 3-5 and **Table 3-6** below present the default AEDT approach procedural profile for the DC1030 (for comparative purposes) and the user-defined procedural profile created for the MD11GE (the differences between the tables have their cells shaded grey), respectively.

Table 3-5 AEDT Default Approach Procedure Profile for DC1030

ACFT_ID	OP_TYPE	PROF_ID1	PROF_ID2	STEP_NUM	FLAP_ID	STEP_TYPE	THR_TYPE	PARAM1	PARAM2	PARAM3
DC1030	A	STANDARD	1	1	ZERO	D		6000	250	3
DC1030	A	STANDARD	1	2	INT2	D		3000	172.6	3
DC1030	A	STANDARD	1	3	U-20	D		1500	162.6	3
DC1030	A	STANDARD	1	4	D-35	D		1000	152.6	3
DC1030	A	STANDARD	1	5	D-35	L		392.2	152.6	0
DC1030	A	STANDARD	1	6	NULL	B	V	3529.8	144.8	10
DC1030	A	STANDARD	1	7	NULL	B	L	0	30	10

Source: AEDT Version 3d, FLEET Database Version 3.40.6, FLT_ANP_AIRPLANE_PROCEDURES table
Prepared by: ATAC, July 2022

Table 3-6 AEDT User-Defined Approach Procedure Profile for User-Defined MD11GE

ACFT_ID	OP_TYPE	PROF_ID1	PROF_ID2	STEP_NUM	FLAP_ID	STEP_TYPE	THR_TYPE	PARAM1	PARAM2	PARAM3
MD11GE	A	STD_DC10	1	1	ZERO	D		6000	250	3
MD11GE	A	STD_DC10	1	2	INT2	D		3000	172.6	3
MD11GE	A	STD_DC10	1	3	U-20	D		1500	162.6	3
MD11GE	A	STD_DC10	1	4	D-35	D		1000	152.6	3
MD11GE	A	STD_DC10	1	5	D-35	L		392.2	152.6	0
MD11GE	A	STD_DC10	1	6	NULL	B	V	3529.8	144.8	10
MD11GE	A	STD_DC10	1	7	NULL	B	L	0	30	10

Source: AEDT Version 3d, FLEET Database Version 3.40.6, FLT_ANP_AIRPLANE_PROCEDURES table
Prepared by: ATAC, July 2022

After all profile inputs for the user-defined aircraft has been added to the AEDT study, all arrival MD11GE AIR_OPERATIONS were assigned to use the user-defined profile.

4 Analysis Demonstrating Change

As outlined in Section 5.3.2 of the "Guidance on Using the Aviation Environmental Design Tool (AEDT) to Conduct Environmental Modeling for FAA Actions Subject to NEPA" document, noise results for arrival tracks should be reported by placing noise receptors 0.5 NM apart underneath the flight path. This analysis and all remaining analysis sections was performed on a straight vector track arriving to SAT on runway 31L.

Table 4-1 compares the noise output of the modeled track using the MD11GE profile points (default) against the procedure steps user-defined profile. The AEDT aircraft model (also known as "ANP_ACFT_ID") is presented along with the profile weight which describes the starting weight of the aircraft in pounds (lbs). The first column presents the distance from the arriving runway end to the particular noise receptor placed underneath the given track in nautical miles. The second column is the noise value generated from the default profile at each receptor in SEL in decibels (dB). The third column is the noise value generated from the user-defined profile at each receptor in SEL dB. The fourth column is a difference between the third and fourth columns presented in dB. (Due to rounding, this column may contain values that are not accurately represented by the hundredth decimal place.) To capture the noise impacts of the entire approach procedure profile, noise receptors were placed underneath the track until 20 NM of cumulative distance was reached, which is approximately the length of both profiles.

Table 4-1 Comparative Noise Analysis

AEDT Aircraft Model: MD11GE		**Profile Weight: 390,000 lbs**	
Receptors	AEDT Default Profile	User-Defined Profile	Diff
(NM)	(SEL dB)	(SEL dB)	(dB)
0.5	96.07	98.41	2.34
1.0	93.84	95.67	1.83
1.5	91.39	92.77	1.38
2.0	90.33	91.19	0.86
2.5	89.52	89.87	0.35
3.0	88.46	88.59	0.13
3.5	86.88	86.78	-0.10
4.0	85.77	85.43	-0.34
4.5	84.82	84.18	-0.64
5.0	83.80	83.04	-0.76
5.5	82.98	82.16	-0.82
6.0	82.17	81.29	-0.88
6.5	81.42	80.47	-0.95
7.0	80.67	79.67	-1.00
7.5	80.07	79.00	-1.07
8.0	79.50	78.37	-1.13
8.5	78.81	77.62	-1.19
9.0	78.20	76.92	-1.28
9.5	77.77	76.37	-1.40
10.0	76.97	75.53	-1.44
10.5	76.32	74.90	-1.42
11.0	75.71	74.35	-1.36
11.5	75.20	73.71	-1.49
12.0	74.77	73.21	-1.56
12.5	74.28	72.79	-1.49
13.0	73.63	72.19	-1.44

AEDT Aircraft Model: MD11GE		Profile Weight: 390,000 lbs	
Receptors	AEDT Default Profile	User-Defined Profile	Diff
(NM)	(SEL dB)	(SEL dB)	(dB)
13.5	73.18	71.78	-1.40
14.0	72.76	71.34	-1.42
14.5	72.37	70.97	-1.40
15.0	72.00	70.52	-1.48
15.5	71.61	70.17	-1.44
16.0	71.18	69.78	-1.40
16.5	70.76	69.40	-1.36
17.0	70.37	69.00	-1.37
17.5	69.91	68.53	-1.38
18.0	69.29	67.93	-1.36
18.5	67.48	66.15	-1.33
19.0	62.25	60.93	-1.32
19.5	56.12	54.78	-1.34
20.0	50.73	49.37	-1.36

Source: ATAC, July 2022
Prepared by: ATAC, July 2022

Table 4-1 shows that noise values generated from the user-defined procedure profile are slightly different from the noise values generated from the default procedure profile, which is the expected result due to the different profiles.

5 Graphical and Tabular Comparison

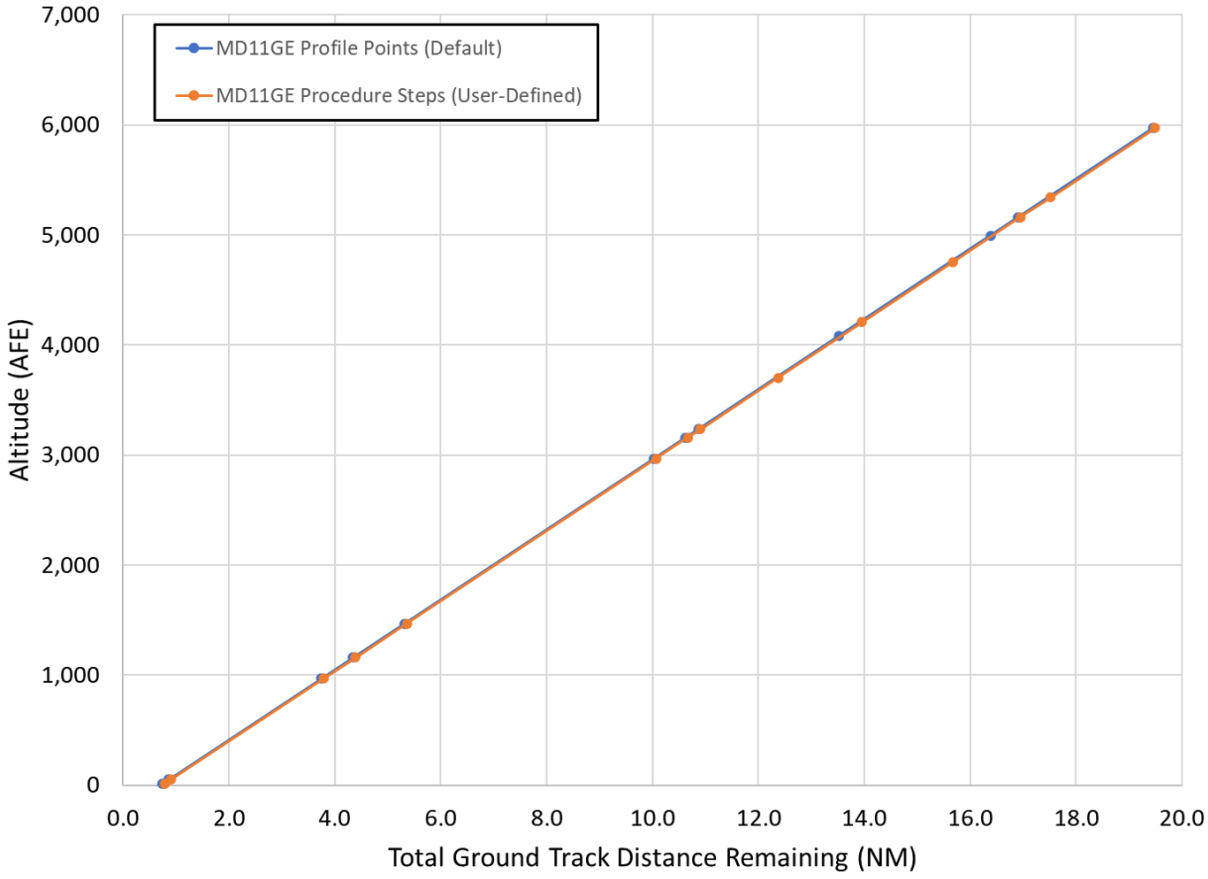
Section 5.3.2 of the "Guidance on Using the Aviation Environmental Design Tool (AEDT) to Conduct Environmental Modeling for FAA Actions Subject to NEPA" document also describes that graphics depicting each proposed change in profile be provided to display the effect on aircraft performance in the three following ways:

- Altitude vs. Total Ground Track Distance Remaining
- Speed vs. Total Ground Track Distance Remaining
- Thrust vs. Total Ground Track Distance Remaining

This section provides charts for the modeled track plotting total ground track distance remaining until the end of roll in nautical miles along the x-axis versus altitude in feet referenced using Above Airfield Elevation (AFE), speed measured as ground speed in knots, and thrust measured as net corrected thrust in pounds, respectively.

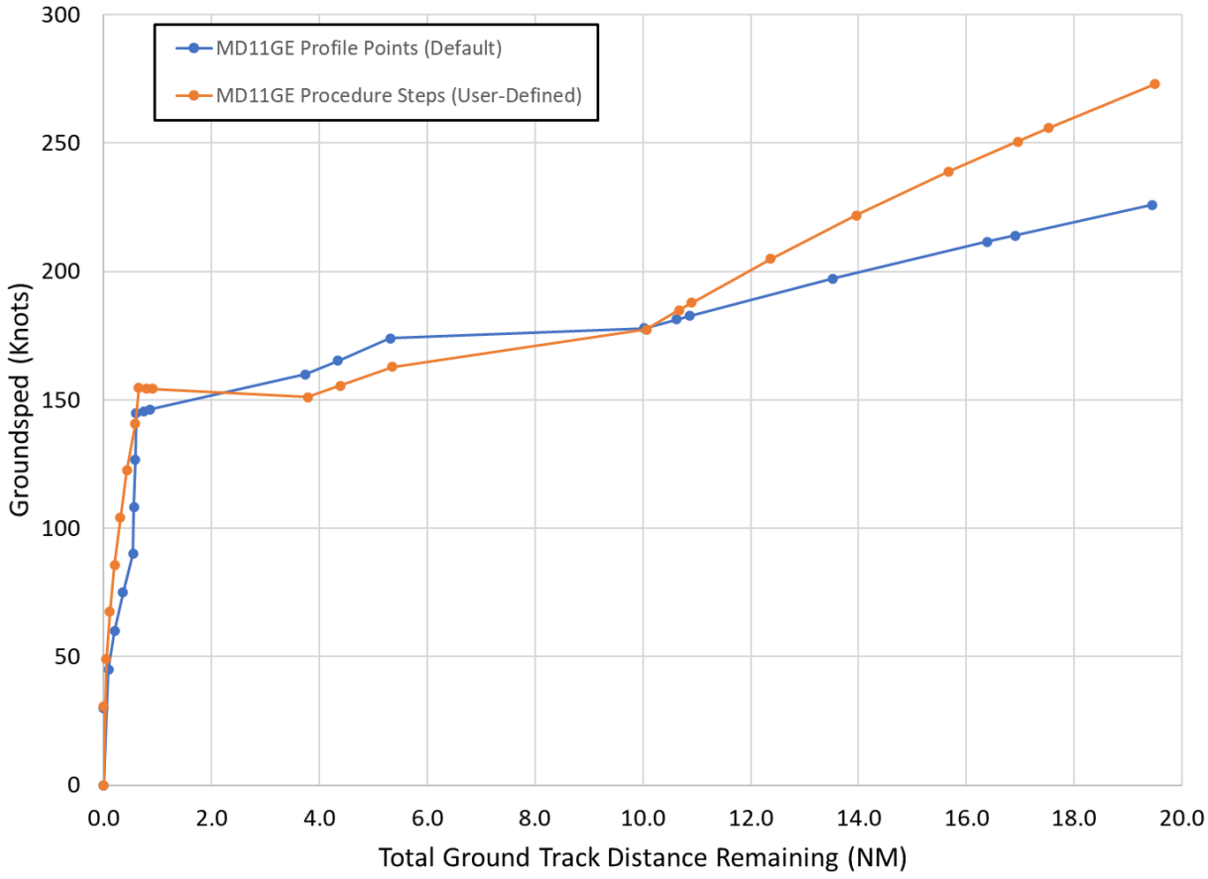
For all charts, the default approach procedure profile will be presented as a blue line and the user-defined approach procedure profile will be presented as a solid orange line. Similar to the comparative noise analysis presented in Section **4**, all of the charts presented will be truncated at approximately 20 NM in order to depict the complete approach procedure profile.

Exhibit 2 Altitude vs. Total Ground Track Distance Remaining



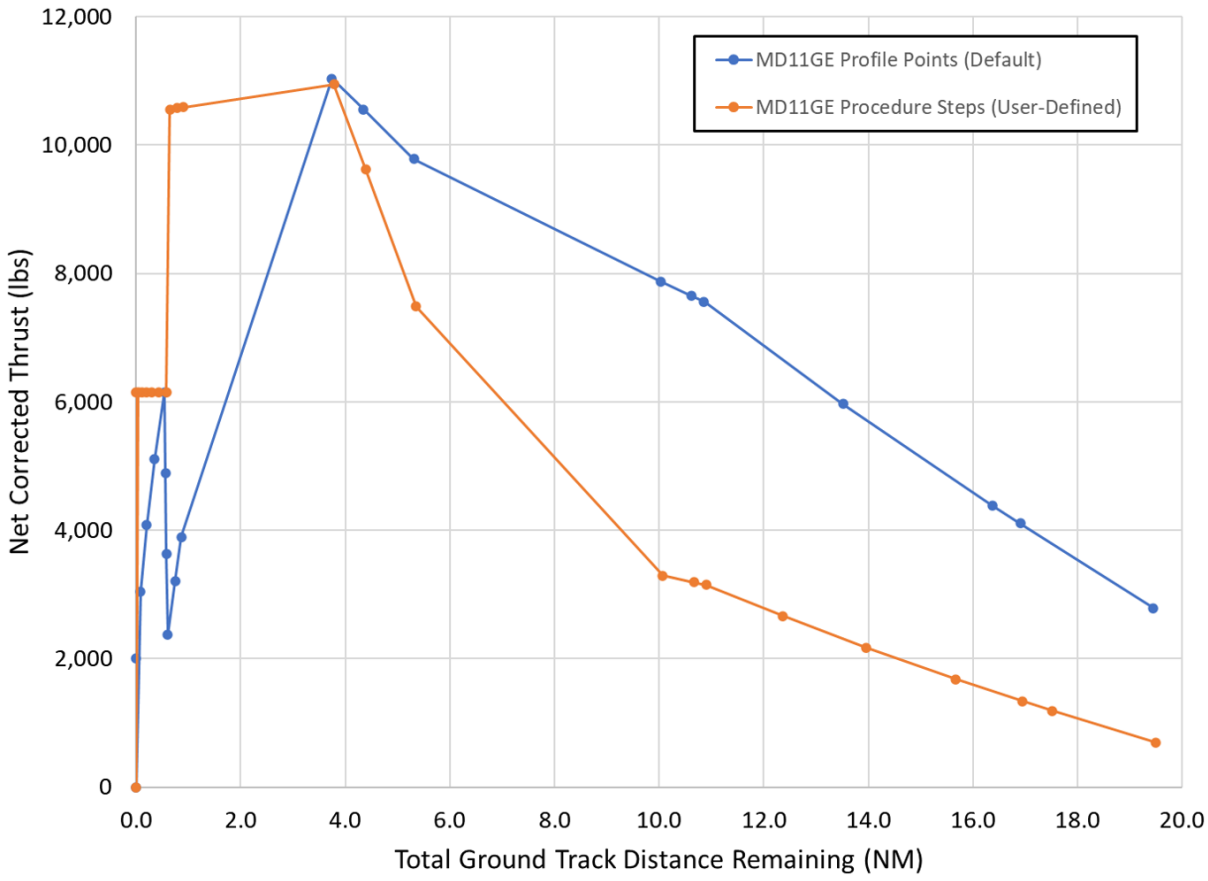
Source: ATAC, July 2022
Prepared by: ATAC, July 2022

Exhibit 3 Speed vs. Total Ground Track Distance Remaining



Source: ATAC, July 2022
Prepared by: ATAC, July 2022

Exhibit 4 Thrust vs. Total Ground Track Distance Remaining



Source: ATAC, July 2022
Prepared by: ATAC, July 2022

It can be observed from **Exhibit 2** and **Exhibit 3** that altitude and speed values for the default and user-defined procedure profiles are very similar. **Exhibit 4** shows that net corrected thrust between profiles is different due to the difference in profiles used.

Table 5-1 contains the data used to plot the graphs found in **Exhibit 2**, **Exhibit 3**, and **Exhibit 4**.

Table 5-1 Comparative Aircraft Performance

MD11GE Profile Points (Default)				MD11GE Procedure Steps (User-Defined)			
Cumulative Distance (NM)	Altitude (ft. AFE)	Speed (knots)	Net Corrected Thrust (lbs.)	Cumulative Distance (NM)	Altitude (ft. AFE)	Speed (knots)	Net Corrected Thrust (lbs.)
0.0	-31.0	30.0	2,011.0	0.0	-31.0	30.7	6,150.0
0.0	-31.0	0.0	0.0	0.0	-31.0	0.0	0.0
0.1	-31.0	45.0	3,045.8	0.0	-31.0	49.1	6,150.0
0.2	-31.0	60.0	4,080.5	0.1	-31.0	67.4	6,150.0
0.4	-31.0	75.0	5,115.3	0.2	-31.0	85.8	6,150.0
0.5	-31.0	90.0	6,150.0	0.3	-31.0	104.1	6,150.0
0.6	-31.0	108.3	4,894.0	0.4	-31.0	122.5	6,150.0
0.6	-31.0	126.7	3,638.0	0.6	-31.0	140.8	6,150.0
0.6	-31.0	145.0	2,382.0	0.6	-31.0	154.6	10,558.6
0.7	13.6	145.7	3,208.8	0.8	13.6	154.5	10,576.4
0.9	51.0	146.3	3,898.4	0.9	51.0	154.3	10,591.3
3.7	969.0	160.0	11,037.0	3.8	969.0	151.2	10,949.9
4.3	1,160.0	165.3	10,559.1	4.4	1,160.0	155.6	9,626.1
5.3	1,469.0	174.0	9,786.0	5.4	1,469.0	162.8	7,484.4
10.0	2,969.0	178.0	7,874.0	10.1	2,969.0	177.4	3,298.0
10.6	3,160.0	181.4	7,650.4	10.7	3,160.0	184.9	3,195.5
10.9	3,235.3	182.8	7,562.2	10.9	3,235.3	187.9	3,155.1
13.5	4,082.3	197.2	5,971.8	12.4	3,701.3	204.9	2,663.8
16.4	4,993.5	211.6	4,381.4	14.0	4,207.7	221.9	2,172.5
16.9	5,160.0	214.0	4,110.0	15.7	4,754.4	238.9	1,681.2
19.4	5,969.0	226.0	2,791.0	16.9	5,160.0	250.7	1,341.8
0.0	-31.0	30.0	2,011.0	17.5	5,341.5	255.9	1,189.9
				19.5	5,969.0	272.9	698.6

Source: ATAC, July 2022
Prepared by: ATAC, July 2022

6 Quantitative Comparison of Results

This section quantitatively compares the results of the default and user-defined profiles for altitude, speed, and net corrected thrust using the methodology presented in Section **2.2**. **Table 6-1** presents the RMSE values calculated for each aircraft performance parameter.

Table 6-1 RMSE Summary Table

Parameter	RMSE
Altitude	0.009
Speed	20.896
Thrust	3,390.7

Source: ATAC, July 2022
Prepared by: ATAC, July 2022

The RMSE values in **Table 6-1** indicate that the aircraft performance of the default and user-defined profiles are similar.

7 Conclusion

ATAC is seeking approval for the use of the user-defined approach profile described in Section **1.4** in order to more accurately model MD11GE arrivals. MD11GE arrivals constitutes about 0.6% of the total operations in the San Antonio Airspace Modernization Project. Comparisons show slight differences in altitude vs. distance and slightly larger differences in speed vs. distance between the default and proposed user-defined profile. These factors help explain differences in net corrected thrust, but the noise results do not significantly differ with a maximum difference of 2.34 dB. Small noise differences between the default and proposed user-defined profiles exist; however, the benefit to the model of allowing for dynamic approach profiles using procedure step profiles and altitude control codes exceeds this cost.

U.S. Department
of Transportation
**Federal Aviation
Administration**

Office of Environment and Energy

800 Independence Ave., S.W.
Washington, D.C. 20591

8/2/2022

Kristi Regotti
Environmental Protection Specialist
Mission Support Services
Central Service Center
Federal Aviation Administration
10101 Hillwood Pkwy
Fort Worth, TX 76177

Dear Kristi,

The Office of Environment and Energy (AEE) has received the memo from ATAC dated July 18th, 2022, referencing the San Antonio Airspace Modernization Draft Environmental Assessment (EA). The memo requests approval for the use of the DC1030 ANP type arrival procedure profile for use with the MD11GE ANP type, in lieu of its standard fixed point profile data in AEDT 3d. This request was made so that altitude control code functionality not available for aircraft with fixed point profiles, may be used during the modeling process for the MD11GE.

AEE approves the use of an MD11GE non-standard arrival profile based on the DC1030 arrival profile for this purpose.

Please understand that this approval is limited to this particular Environmental Assessment for the San Antonio Airspace Modernization project and for use with AEDT 3d only. Further non-standard AEDT inputs for additional projects at this or any other site will require separate approval.

Sincerely,

Donald Scata
Manager
AEE-100/Noise Division

cc: ATO Contacts (Vonnie Giles, AJV-C23)

Supplement 3 – Census Block Noise Results

S3.1 Reportable Noise Increases 2023

Table S3.1 identifies the U.S. Census blocks that would experience a DNL 5 dB or greater increase in areas exposed to DNL between 45 dB and 60 dB under the 2023 Proposed Action scenario when compared to the 2023 No Action scenario. **Exhibit 9** in the Noise Technical Report identifies the location of the population centroids for the census block. For the affected centroids, **Table S3.1** provides the U.S. Census block identification number, geographical coordinates (latitude and longitude), population count, the calculated DNL under No Action and Proposed Action conditions for 2023, and the change in DNL. As shown in the table, a total of 573 people, associated with 11 population centroids, would be affected. The population centroids are located in two general areas. The first area is located approximately 12.5 NM east of SAT near the border of Guadalupe and Bexar Counties. The second area is located approximately 10 NM northeast of SAT in Comal County.

Table S3.1 Reportable Noise Increases in the DNL 45 dB to 60 dB Range 2023

Census Block ID	Latitude	Longitude	Population	No Action DNL	Proposed Action DNL	Change
481872107172025	29.5563	-98.22948	35	44.62	50.10	5.48
481872107172028	29.5545	-98.23018	44	43.90	50.04	6.14
480291316011069	29.5476	-98.23364	7	43.23	48.42	5.19
481872107172027	29.5551	-98.23074	16	44.03	50.10	6.06
481872107172023	29.5565	-98.23547	83	43.82	49.57	5.74
480913108011019	29.6404	-98.32052	55	41.94	48.24	6.30
480913108012003	29.6381	-98.31569	75	42.34	48.10	5.76
480913108011024	29.6325	-98.3176	40	43.75	49.05	5.30
480913108011020	29.6369	-98.31871	71	42.56	48.58	6.03
480913108011016	29.6437	-98.32279	74	41.55	47.81	6.26
480913108014010	29.6439	-98.31684	73	41.54	46.58	5.03

Source: AEDT modeling results, August 2022
Prepared By: ATAC Corporation, August 2022.

S3.2 Reportable Noise Increases 2028

Table S3.2 identifies the U.S. Census blocks that would experience a DNL 3 dB or greater increase in areas exposed to DNL between 60 dB and 65 dB under the 2028 Proposed Action scenario when compared to the 2028 No Action scenario. **Exhibit 10** in the Noise Technical Report identifies the location of the population centroids for the census block. For the affected centroids, **Table S3.2** provides the U.S. Census block identification number, geographical coordinates (latitude and longitude), population count, the calculated DNL under No Action and Proposed Action conditions for 2028, and the change in DNL. As shown in the table, a total of 100 people, associated with three population centroids, would be affected. The population centroids are located approximately 12.5 NM east of SAT near the border of Guadalupe and Bexar Counties.

Table S3.2 Reportable Noise Increases in the DNL 60 dB to 65 dB Range 2028

Census Block ID	Latitude	Longitude	Population	No Action DNL	Proposed Action DNL	Change
481872107172025	29.556265	-98.229484	35	57.0129	60.04	3.02
481872107172033	29.559744	-98.233769	50	56.6777	60.09	3.41

Census Block ID	Latitude	Longitude	Population	No Action DNL	Proposed Action DNL	Change
481872107172014	29.559877	-98.232592	15	57.0486	60.20	3.15

Source: AEDT modeling results, August 2022
Prepared By: ATAC Corporation, August 2022.

Table S3.3 identifies the U.S. Census blocks that would experience a DNL 5 dB or greater increase in areas exposed to DNL between 45 dB and 60 dB under the 2028 Proposed Action scenario when compared to the 2028 No Action scenario. **Exhibit 10** in the Noise Technical Report identifies the location of the population centroids for the census block. For the affected centroids, **Table S3.3** provides the U.S. Census block identification number, geographical coordinates (latitude and longitude), population count, the calculated DNL under No Action and Proposed Action conditions for 2028, and the change in DNL. As shown in the table, a total of 8,068 people, associated with 108 population centroids, would be affected. The population centroids are located in 5 general areas. The first area is located approximately 10 NM northeast of SAT near the border of Bexar and Comal Counties. The second area is located approximately 20 NM north of SAT in Comal and Blanco Counties. The third and fourth areas are located approximately 12 NM north and 17 NM northwest of SAT, respectively. Finally, the fifth area is about 17 NM northwest of SAT in Bexar County.

Table S3.3 Reportable Noise Increases in the DNL 45 dB to 60 dB Range 2028

Census Block ID	Latitude	Longitude	Population	No Action DNL	Proposed Action DNL	Change
482599704062000	29.775748	-98.633465	617	41.3633	46.90	5.54
482599704062011	29.768577	-98.652093	73	40.7307	45.88	5.15
482599704062013	29.777043	-98.661693	448	40.2144	46.32	6.11
482599704061009	29.785937	-98.638079	12	41.0233	46.41	5.39
482599704061014	29.788213	-98.67588	63	39.8714	45.44	5.57
482599704042017	29.797719	-98.687356	473	39.8859	45.07	5.18
480291821022007	29.727736	-98.691494	63	39.4188	45.10	5.68
480913107061031	29.755763	-98.520617	88	43.6197	49.27	5.65
480913107062021	29.74908	-98.50212	137	42.882	49.34	6.46
480913107062019	29.748719	-98.490244	69	43.169	49.71	6.54
480913107062020	29.746349	-98.477758	174	43.6405	49.98	6.34
480913107062017	29.751582	-98.45938	13	45.8567	51.35	5.49
482599704061013	29.791735	-98.675436	27	39.9854	45.46	5.48
482599704062009	29.769397	-98.647358	47	40.9315	46.24	5.31
482599704061015	29.781622	-98.622264	19	41.4027	46.83	5.43
480913107052027	29.736392	-98.448649	15	44.0454	49.39	5.34
480913108011001	29.703554	-98.334828	372	46.6943	52.15	5.46
480913107033015	29.804772	-98.400143	118	44.7467	49.76	5.01
480913108011005	29.710875	-98.337059	22	47.6319	52.83	5.20
480913107031062	29.740545	-98.42568	248	46.8142	52.10	5.28
480913107082026	29.732568	-98.373684	177	50.1066	55.19	5.08
480913108011018	29.635251	-98.321661	56	48.517	55.55	7.03
480913108011019	29.640375	-98.32052	55	47.5701	56.47	8.90
480913108012003	29.638067	-98.315693	75	49.1345	56.42	7.29
480913108012004	29.637797	-98.313614	67	49.8213	55.69	5.87

Census Block ID	Latitude	Longitude	Population	No Action DNL	Proposed Action DNL	Change
480913107022005	29.839147	-98.412013	4	41.5436	48.55	7.01
480913107021015	29.88752	-98.42088	8	39.7863	46.64	6.86
480913107033016	29.819442	-98.402257	150	43.7561	49.10	5.35
480913106102041	29.907818	-98.40892	16	40.3529	46.00	5.65
480913107033018	29.814358	-98.411512	268	43.636	48.97	5.34
480913107021006	29.899782	-98.412211	8	40.2233	46.21	5.99
480913107021055	29.858701	-98.423291	52	40.1165	48.11	7.99
480913107021056	29.85648	-98.414853	55	40.975	48.24	7.27
480913107022000	29.847008	-98.417146	95	40.9035	48.65	7.75
480913107033011	29.835287	-98.400035	360	42.5886	48.00	5.41
480913107022001	29.837672	-98.420642	81	41.0935	48.49	7.40
480913107022004	29.825547	-98.419133	23	42.2719	48.23	5.96
480913107021051	29.865416	-98.428994	68	39.5272	46.96	7.43
480913108011024	29.632514	-98.317598	40	50.3342	57.05	6.71
480913108011017	29.640215	-98.324165	165	46.8433	55.01	8.16
480913108011020	29.636864	-98.318711	71	48.678	56.76	8.08
480913108011016	29.643679	-98.322793	74	46.6389	56.00	9.36
480913108014010	29.64394	-98.316835	73	48.0689	55.25	7.18
480913108014011	29.644584	-98.315364	56	48.594	54.54	5.94
480913106101039	29.921947	-98.409241	2	40.0811	45.78	5.70
480319502011083	29.951849	-98.404569	33	39.8109	45.89	6.08
480319502011080	29.951463	-98.399453	5	40.1008	45.24	5.13
480319502011086	29.951703	-98.406089	6	39.7309	45.93	6.20
480319502011078	29.952625	-98.407058	11	39.6509	45.99	6.34
480319502011087	29.951217	-98.407715	10	39.6409	45.96	6.32
480319502011095	29.948301	-98.402359	1	40.0109	45.82	5.81
480319502011072	29.952744	-98.407955	10	39.601	46.04	6.43
480913107052028	29.736548	-98.453913	6	43.5461	49.18	5.63
480913107052025	29.746123	-98.44777	70	45.6473	51.33	5.68
480913107052031	29.740147	-98.443395	4	44.8936	50.52	5.63
480913107052029	29.74149	-98.452944	11	44.331	50.32	5.99
480913107052014	29.750472	-98.450014	28	46.4214	51.45	5.03
480913107033020	29.823939	-98.413762	12	42.7039	48.97	6.26
480913107033008	29.834492	-98.411018	53	42.0325	48.75	6.72
480913107023003	29.84017	-98.434365	63	39.9299	46.51	6.58
480913107023016	29.849439	-98.431351	156	39.4855	47.38	7.90
480913107021054	29.861914	-98.418446	34	40.5057	48.15	7.64
480913107021052	29.865251	-98.42277	49	40.0765	48.01	7.93
480913107021016	29.884651	-98.418977	14	39.9855	46.84	6.86
480913107052024	29.751769	-98.454401	21	46.3397	51.43	5.09
480913107021004	29.901833	-98.420423	296	39.5743	45.93	6.36
480913107023005	29.860499	-98.439876	72	38.697	45.05	6.35

Census Block ID	Latitude	Longitude	Population	No Action DNL	Proposed Action DNL	Change
480913107033013	29.811191	-98.401192	456	44.2912	49.73	5.44
480913107033017	29.826466	-98.405108	307	43.1277	48.96	5.83
480913107033009	29.837669	-98.407483	204	42.0045	48.46	6.46
480913107033025	29.826376	-98.412152	17	42.5758	48.99	6.42
480913107033012	29.838885	-98.400167	51	42.5614	47.80	5.24
480913107021076	29.852089	-98.408694	1	41.6025	47.85	6.24
480913107021075	29.857335	-98.407942	3	41.5827	47.30	5.71
480913107021036	29.862454	-98.408498	4	41.4228	47.17	5.75
480913107021027	29.871176	-98.410339	4	41.0237	47.07	6.04
480913106102043	29.892301	-98.408273	1	40.6632	46.16	5.50
480913107021014	29.893083	-98.409588	51	40.5333	46.23	5.69
480913106102042	29.894664	-98.408251	8	40.613	46.17	5.56
480913106101038	29.92456	-98.410088	8	39.9609	45.73	5.77
480913106101024	29.928225	-98.407774	47	40.0509	45.09	5.04
480319502021087	29.957418	-98.413451	4	39.1511	45.90	6.75
480319502011088	29.948018	-98.409268	21	39.581	46.05	6.47
480319502011091	29.947013	-98.406711	13	39.7509	46.04	6.29
480319502011092	29.947258	-98.40459	6	39.8909	45.97	6.08
480319502011081	29.950117	-98.401648	19	39.9909	45.75	5.76
480319502011084	29.950588	-98.405586	11	39.7909	45.94	6.15
480319502011082	29.950147	-98.4025	4	39.9609	45.80	5.84
480319502011073	29.954631	-98.39724	5	40.2008	45.20	5.00
480319502011074	29.952485	-98.399985	4	40.0609	45.41	5.35
480319502011070	29.954673	-98.405839	12	39.6809	46.06	6.38
480319502011071	29.952604	-98.40939	3	39.511	46.00	6.49
480319502011068	29.963243	-98.402136	34	39.7909	45.51	5.72
480913107021037	29.876607	-98.420201	16	40.0666	47.47	7.40
480913106102026	29.880864	-98.40773	2	40.973	46.41	5.43
480913107021003	29.921096	-98.412309	8	39.8609	45.78	5.92
480913107033002	29.851638	-98.407355	15	41.7524	47.78	6.02
480913107033001	29.849932	-98.403922	76	42.0626	47.37	5.31
480913108011011	29.641366	-98.324899	28	46.4438	54.80	8.36
480913108011008	29.677427	-98.332438	50	44.1673	53.09	8.92
480913108011009	29.67275	-98.331195	113	44.1624	53.54	9.38
480913107061011	29.775604	-98.604448	3	41.7801	47.42	5.64
480913107061036	29.780471	-98.590185	70	41.5842	47.05	5.47
480913107061032	29.754278	-98.516559	48	43.5428	48.77	5.23
480913107061034	29.753375	-98.514023	32	43.4066	49.16	5.75
480913107062023	29.75101	-98.512077	23	42.7575	49.13	6.38
480913107062024	29.761052	-98.510995	63	44.4752	49.78	5.30
480913107062022	29.752895	-98.51026	61	42.8636	49.47	6.61

Source: AEDT modeling results, August 2022
Prepared By: ATAC Corporation, August 2022.

Table S3.4 presents the U.S. Census block identification number, geographical coordinates (latitude and longitude), population count, the calculated DNL under No Action and Proposed Action conditions, as well as the change in DNL for both 2023 and 2028 scenarios, for all population centroids evaluated in this San Antonio Airspace Modernization Project.

Table S3.4 Census Block Noise Exposure Results

For Table S3.4, please see Addendum 1.

Supplement 4 – Section 4(f), Historic, and Cultural Resources Noise Results

S4.1 Inventory

This supplement provides an inventory of Department of Transportation Act (DOT Act), Section 4(f) (49 U.S.C. § 303; 23 U.S.C. § 138) resources, including historical/cultural properties also covered under Section 106 of the National Historic Preservation Act (NHPA) (16 U.S.C. § 470), that were identified and evaluated as part of the Draft EA.

The inventory of Section 4(f) resources and historical/cultural properties is intended to include all public parks, recreation areas, wildlife and waterfowl refuges, and historic sites, including properties listed on the National Register of Historic Places (National Register) located within the 18,000 Foot Supplemental Study Area and the SNIDR Screening Area. Properties listed on the National Register and considered under both Section 4(f) and Section 106 of the NHPA are included in this supplement. Spatial data for the National Register properties was downloaded from the National Park Service Integrated Resource Management Applications Portal. Spatial data for cultural and park properties was downloaded from readily available federal, state, and local sources. Source information is identified in **Table S4.1**.

Table S4.1 Types of Section 4(f) Resources Considered

Source	Spatial Data	URL Download or Data Files Received
National Park Service Integrated Resource Management Data Store	File geodatabase of unrestricted National Register of Historic Places properties	https://irma.nps.gov/DataStore/Reference/Profile/2210280 Accessed 03/01/2022
US Geological Survey ScienceBase Catalog	Protected Areas Database of the United States (PAD-US) 2.1, DOI Region 6 Shapefile	https://www.sciencebase.gov/catalog/item/602597cad34eb12031138e12 Accessed 04/15/2022
ESRI	USA_Parks	https://www.arcgis.com/home/item.html?id=578968f975774d3fab79fe56c8c90941 Accessed 03/03/2022
ESRI	USA Federal Lands	https://www.arcgis.com/home/item.html?id=26c2a38f94c54ad880ff877f884ff931 Accessed 03/05/2022
US Census Bureau	American Indian/Alaska Native Areas/Hawaiian Home Lands	https://www.census.gov/geographies/mapping-files/time-series/geo/carto-boundary-file.html Accessed 03/01/2022
Texas Parks and Wildlife	State Park Boundaries	https://tpwd.texas.gov/gis/ Accessed 04/07/2022

Source	Spatial Data	URL Download or Data Files Received
Texas Parks and Wildlife	Wildlife Management Areas	https://tpwd.texas.gov/gis/ Accessed 04/07/2022
Texas Parks and Wildlife	Boat Ramps	https://tpwd.texas.gov/gis/ Accessed 04/11/2022
Travis County TNR	Golden-cheeked Warbler Habitat	https://tnr-traviscountytx.opendata.arcgis.com/datasets/golden-cheeked-warbler-habitat/explore?location=30.371050%2C-97.937150%2C11.05 Accessed 04/15/2022
Texas General Land Office	Priority Protection Habitat Areas	https://www.glo.texas.gov/land/land-management/gis/ Accessed 04/07/2022
Texas General Land Office	Beach Access Points	https://www.glo.texas.gov/land/land-management/gis/ Accessed 04/07/2022
Texas Historic Commission	State Cemeteries, County Courthouses, Historic Highways, Historic Sites, Historic Markers, Museums, National Register of Historic Places (Districts) (Properties), State Historic Sites	https://atlas.thc.state.tx.us/Data/GISData Accessed 06/13/2022
City of San Antonio	Historic Landmark Sites	https://www.sanantonio.gov/GIS/GISData Accessed 04/11/2022
City of San Antonio	Park Boundaries	https://www.sanantonio.gov/GIS/GISData Accessed 04/11/2022

Source: ATAC Corporation, August 2022.
Prepared By: ATAC Corporation, August 2022.

S4.2 Section 4(f), Historic, and Cultural Resources Noise Increases 2023

Table S4.2 identifies the Section 4(f) resources and historical/cultural properties identified within the General Study Area that would experience a DNL 5 dB or greater increase in areas exposed to DNL between 45 dB and 60 dB under the 2023 Proposed Action scenario when compared to the 2023 No Action scenario. **Exhibit 9** in the Noise Technical Report identifies the location of the points. **Table S4.2** provides a Location Identifier, geographical coordinates (latitude and longitude), place name/description, the calculated DNL under No Action and Proposed Action conditions for 2023, and the change in DNL. Note that some places are in identical geographic coordinates either due to their proximity to each other or having originated from different data resources (see **Table S4.1**), however all named places with unique resource numbering are listed in this table for completeness.

Table S4.2 Section 4(f), Historic, and Cultural Resources Noise Increases in the DNL 45 dB to 60 dB Range 2023

Location ID	Latitude	Longitude	Name	No Action DNL	Proposed Action DNL	Change
SECTION4F12754845	29.5580673	-98.23638084	Niemietz Park	44.17	49.38	5.22
SECTION4F12755768	29.64259532	-98.32059523	Park Lane Park	41.62	48.12	6.50
SECTION4F12756796	29.5580673	-98.23638084	Niemietz Park	44.17	49.38	5.22
SECTION4F12757719	29.64259532	-98.32059523	Park Lane Park	41.62	48.12	6.50
SECTION4F12759227	29.55806731	-98.23638084	Park, Cibolo, City of	44.17	49.38	5.22
SECTION4F12763339	29.55934409	-98.23543707	Cibolo	44.72	49.86	5.13
SECTION4F12779759	29.55934915	-98.23544479	Cibolo	44.72	49.86	5.13
GRID000007226281	29.55397453	-98.23400488	Park, Bexar, County of	43.40	49.29	5.89
GRID000007226281	29.55397453	-98.23400488	Lakewood Acres Park	43.40	49.29	5.89
GRID000007226281	29.55397453	-98.23400488	Crescent Bend Nature Park	43.40	49.29	5.89
GRID000007226281	29.55397453	-98.23400488	Crescent Bend Nature Park	43.40	49.29	5.89

Source: AEDT modeling results, August 2022.
Prepared By: ATAC Corporation, September 2022.

S4.2 Section 4(f), Historic, and Cultural Resources Noise Increases 2028

Table S4.3 identifies the Section 4(f) resources and historical/cultural properties identified within the General Study Area that would experience a DNL 5 dB or greater increase in areas exposed to DNL between 45 dB and 60 dB under the 2028 Proposed Action scenario when compared to the 2028 No Action scenario. **Exhibit 10** in the Noise Technical Report identifies the location of the points. **Table S4.3** provides a Location Identifier, geographical coordinates (latitude and longitude), place name/description, the calculated DNL under No Action and Proposed Action conditions for 2028, and the change in DNL. Note that some of the places are in identical geographic coordinates either due to their proximity to each other or having different labels from different data resources (see **Table S4.1**). All places are listed in this table for completeness.

Table S4.3 Section 4(f), Historic, and Cultural Resources Noise Increases in the DNL 45 dB to 60 dB Range 2028

Location ID	Latitude	Longitude	Name	No Action DNL	Proposed Action DNL	Change
SECTION4F12755639	29.73878244	-98.45571305	Bulverde Community Park	43.79	49.42	5.62
SECTION4F12755768	29.64259532	-98.32059523	Park Lane Park	47.22	56.39	9.18
SECTION4F12757590	29.73878244	-98.45571305	Bulverde Community Park	43.79	49.42	5.62
SECTION4F12757719	29.64259532	-98.32059523	Park Lane Park	47.22	56.39	9.18

Location ID	Latitude	Longitude	Name	No Action DNL	Proposed Action DNL	Change
SECTION4F12763604	29.69197909	-98.3425163	Natural Bridge Caverns	44.65	53.03	8.37
SECTION4F12763604	29.69197909	-98.3425163	Natural Bridge Caverns Sinkhole	44.65	53.03	8.37
SECTION4F12764215	29.78574866	-98.64948373	Pinta Trail in Kendall County	40.63	46.52	5.88
SECTION4F12765754	29.9317447	-98.41091443	Spring Branch	39.78	45.52	5.74
SECTION4F12765779	29.7292944	-98.3709115	Romple #1	49.57	54.83	5.25
SECTION4F12765780	29.72736932	-98.37029143	Romple #2	49.03	54.21	5.18
SECTION4F12766915	29.86081113	-98.41475834	Kuebel	40.88	48.16	7.28
SECTION4F12766935	29.74737508	-98.48308085	Traughott #2	43.39	49.95	6.55
SECTION4F12766936	29.73389826	-98.45284006	Scharmann	43.19	48.33	5.14
SECTION4F12766986	29.76043414	-98.51325044	Tristan Grave	44.31	49.70	5.39
SECTION4F12767276	29.74661549	-98.49728961	Prasch	42.85	49.10	6.25
SECTION4F12767300	29.74478497	-98.51065653	Poss	42.64	48.11	5.48
SECTION4F12767312	29.74830184	-98.51321661	Kupferschmidt	42.74	48.54	5.80
SECTION4F12767323	29.74487605	-98.4501331	Stahl	45.22	51.26	6.04
SECTION4F12767505	29.65010499	-98.31810117	Boehm	47.37	54.09	6.72
SECTION4F12780020	29.69198417	-98.34252404	Natural Bridge Caverns	44.65	53.03	8.38
SECTION4F12780624	29.78575375	-98.64949155	Pinta Trail in Kendall County	40.63	46.52	5.88
GRID000007212623	29.89818536	-98.4138547	Jumbo Evans Sports Park	40.11	46.39	6.27
GRID000007212623	29.89818536	-98.4138547	Jumbo Evans Sports Park	40.11	46.39	6.27
GRID000007212623	29.89818536	-98.4138547	County Park, Comal, County of	40.11	46.39	6.27

Source: AEDT modeling results, August 2022.
Prepared By: ATAC Corporation, August 2022.

S4.3 Section 4(f), Historic, and Cultural Resources Noise Exposure

Table S4.4 identifies noise values modeled at all of the Section 4(f) resources and historical/cultural properties identified within the 18K Supplemental Study Boundary Area and SNIDR Supplemental Study Area. The inventory includes the Location Identifier, geographical coordinates (latitude and longitude), type, agency, source identifier, name, source, state, and the calculated noise exposure values under 2021/2022 Existing Conditions (EC) and Proposed Action (PA) and No Action (NA) Conditions for 2023 and 2028.

Table S4.4 Department of Transportation Act, Section 4(f) Properties and Historic and Cultural Resources Inventory and Noise Exposure Results

For Table S4.4, please see Addendum 2.

Supplement 5 – One-Half Nautical Mile Grid Noise Results

Table S5.1 identifies the 0.5 NM Grid points that would experience a DNL 5 dB or greater increase in areas exposed to DNL between 45 dB and 60 dB under the 2023 Proposed Action scenario when compared to the 2023 No Action scenario. **Exhibit 9** in the Noise Technical Report identifies the location of these points. For the affected points, **Table S5.1** provides the location identifier, geographical coordinates (latitude and longitude), the calculated DNL under No Action and Proposed Action conditions for 2023, and the change in DNL.

Table S5.1 One-Half Nautical Mile Grid Noise Increases in the DNL 45 dB to 60 dB Range 2023

Location ID	Latitude	Longitude	No Action DNL	Proposed Action DNL	Change
GRID000007219083	29.654974	-98.329058	41.62	46.97	5.35
GRID000007219802	29.63818	-98.319591	42.25	48.36	6.10
GRID000007219803	29.646551	-98.319532	41.34	46.95	5.61
GRID000007226281	29.553975	-98.234005	43.40	49.29	5.89
GRID000007227000	29.537174	-98.224564	42.83	50.02	7.19
GRID000007227001	29.545545	-98.224497	43.18	50.64	7.46

Source: AEDT modeling results, August 2022.
Prepared By: ATAC Corporation, August 2022.

Table S5.2 identifies the 0.5 NM Grid points that would experience a DNL 3 dB or greater increase in areas exposed to DNL between 60 dB and 65 dB under the 2028 Proposed Action scenario when compared to the 2028 No Action scenario. **Exhibit 10** in the Noise Technical Report identifies the location of these points. For the affected points, **Table S5.2** provides the location identifier, geographical coordinates (latitude and longitude), the calculated DNL under No Action and Proposed Action conditions for 2028, and the change in DNL.

Table S5.2 One-Half Nautical Mile Grid Noise Increases in the DNL 60 dB to 65 dB Range 2028

Location ID	Latitude	Longitude	No Action DNL	Proposed Action DNL	Change
GRID000007227000	29.537174	-98.224564	56.82	60.01	3.19
GRID000007227001	29.545545	-98.224497	57.01	60.34	3.33

Source: AEDT modeling results, August 2022.
Prepared By: ATAC Corporation, August 2022.

Table S5.3 identifies the 0.5 NM Grid points that would experience a DNL 5 dB or greater increase in areas exposed to DNL between 45 dB and 60 dB under the 2028 Proposed Action scenario when compared to the 2028 No Action scenario. **Exhibit 10** in the Noise Technical Report identifies the location of these points. For the affected points, **Table S5.3** provides the location identifier, geographical coordinates (latitude and longitude), the calculated DNL under No Action and Proposed Action conditions for 2028, and the change in DNL.

Table S5.3 One-Half Nautical Mile Grid Noise Increases in the DNL 45 dB to 60 dB Range 2028

Location ID	Latitude	Longitude	No Action DNL	Proposed Action DNL	Change
GRID000007191693	29.723348	-98.693069	38.97	45.53	6.56
GRID000007192422	29.7903	-98.683259	39.75	45.06	5.30
GRID000007192423	29.798672	-98.683232	40.04	45.25	5.21
GRID000007193141	29.773532	-98.673717	39.48	45.12	5.64
GRID000007193142	29.781904	-98.673689	39.75	45.78	6.03
GRID000007193143	29.790276	-98.673661	40.00	45.82	5.82
GRID000007193144	29.798648	-98.673633	40.39	45.66	5.27

Location ID	Latitude	Longitude	No Action DNL	Proposed Action DNL	Change
GRID000007193862	29.773507	-98.664121	40.00	45.85	5.85
GRID000007193863	29.781879	-98.664092	40.31	46.41	6.11
GRID000007193864	29.790251	-98.664063	40.36	46.22	5.86
GRID000007194583	29.773481	-98.654524	40.58	46.37	5.79
GRID000007194584	29.781853	-98.654494	40.64	46.66	6.02
GRID000007194585	29.790225	-98.654464	40.58	46.24	5.66
GRID000007195304	29.773455	-98.644928	41.32	46.49	5.17
GRID000007195305	29.781827	-98.644897	40.90	46.45	5.56
GRID000007196025	29.773428	-98.635331	41.55	46.70	5.15
GRID000007196026	29.7818	-98.6353	41.14	46.49	5.36
GRID000007196747	29.781772	-98.625702	41.20	46.25	5.04
GRID000007197467	29.773371	-98.616138	41.78	46.83	5.06
GRID000007198188	29.773342	-98.606542	41.85	47.03	5.18
GRID000007198909	29.773312	-98.596945	41.65	47.23	5.59
GRID000007199629	29.764909	-98.587384	42.16	47.19	5.03
GRID000007199630	29.773281	-98.587349	41.64	47.48	5.85
GRID000007200350	29.764878	-98.577789	42.24	47.60	5.36
GRID000007200351	29.77325	-98.577752	41.87	47.76	5.89
GRID000007201071	29.764846	-98.568193	42.68	47.96	5.28
GRID000007201072	29.773218	-98.568156	42.64	47.92	5.28
GRID000007201792	29.764813	-98.558598	43.19	48.27	5.08
GRID000007204675	29.756302	-98.520257	43.64	49.31	5.67
GRID000007205395	29.747894	-98.510704	42.73	48.75	6.01
GRID000007205396	29.756266	-98.510662	43.61	49.76	6.15
GRID000007206116	29.747856	-98.50111	42.86	49.28	6.41
GRID000007206117	29.756228	-98.501067	43.91	50.32	6.40
GRID000007206836	29.739447	-98.49156	42.79	47.80	5.01
GRID000007206837	29.747819	-98.491516	43.08	49.70	6.62
GRID000007206838	29.75619	-98.491472	44.51	50.76	6.25
GRID000007207557	29.739408	-98.481967	42.61	48.09	5.48
GRID000007207558	29.74778	-98.481922	43.61	49.99	6.38
GRID000007207559	29.756152	-98.481878	45.09	51.04	5.95
GRID000007208278	29.739369	-98.472374	42.74	48.58	5.84
GRID000007208279	29.747741	-98.472329	44.12	50.48	6.36
GRID000007208280	29.756112	-98.472283	45.88	50.97	5.08
GRID000007208999	29.739329	-98.462781	43.13	49.15	6.01
GRID000007209000	29.7477	-98.462735	44.65	50.99	6.33
GRID000007209720	29.739288	-98.453188	44.04	49.73	5.69
GRID000007209721	29.74766	-98.453141	45.55	51.47	5.92
GRID000007210441	29.739246	-98.443595	44.77	50.48	5.71
GRID000007210442	29.747618	-98.443547	46.54	51.90	5.36
GRID000007210454	29.848082	-98.44297	38.57	45.26	6.69

Location ID	Latitude	Longitude	No Action DNL	Proposed Action DNL	Change
GRID000007210455	29.856454	-98.442922	38.51	45.09	6.58
GRID000007211162	29.739204	-98.434002	45.56	51.26	5.69
GRID000007211173	29.831295	-98.433464	40.47	45.86	5.39
GRID000007211174	29.839667	-98.433415	39.98	46.93	6.95
GRID000007211175	29.84804	-98.433366	39.32	47.05	7.73
GRID000007211176	29.856412	-98.433317	39.23	46.94	7.71
GRID000007211177	29.864784	-98.433268	39.18	46.47	7.30
GRID000007211178	29.873156	-98.433219	39.03	45.59	6.56
GRID000007211883	29.739161	-98.424409	46.65	51.93	5.29
GRID000007211893	29.82288	-98.423912	41.96	47.55	5.59
GRID000007211894	29.831252	-98.423862	41.13	47.89	6.76
GRID000007211895	29.839624	-98.423812	40.56	48.25	7.68
GRID000007211896	29.847996	-98.423762	40.22	48.23	8.01
GRID000007211897	29.856369	-98.423713	40.12	48.14	8.02
GRID000007211898	29.864741	-98.423663	40.01	47.98	7.97
GRID000007211899	29.873113	-98.423613	39.85	47.60	7.75
GRID000007211900	29.881485	-98.423563	39.69	46.64	6.95
GRID000007211901	29.889857	-98.423513	39.54	46.17	6.63
GRID000007211902	29.898229	-98.423463	39.39	45.79	6.40
GRID000007211903	29.906601	-98.423414	39.28	45.55	6.26
GRID000007212613	29.814465	-98.414361	43.43	48.78	5.36
GRID000007212614	29.822837	-98.41431	42.81	48.87	6.05
GRID000007212615	29.831209	-98.41426	41.90	48.71	6.82
GRID000007212616	29.839581	-98.414209	41.33	48.83	7.50
GRID000007212617	29.847953	-98.414159	41.18	48.59	7.40
GRID000007212618	29.856325	-98.414108	41.04	48.21	7.17
GRID000007212619	29.864697	-98.414057	40.86	48.02	7.16
GRID000007212620	29.873069	-98.414007	40.67	47.63	6.95
GRID000007212621	29.881441	-98.413956	40.43	46.92	6.49
GRID000007212622	29.889813	-98.413905	40.26	46.73	6.46
GRID000007212623	29.898185	-98.413855	40.11	46.39	6.27
GRID000007212624	29.906558	-98.413804	39.99	46.07	6.07
GRID000007212625	29.91493	-98.413753	39.85	45.88	6.03
GRID000007212626	29.923302	-98.413703	39.71	45.71	6.00
GRID000007212627	29.931674	-98.413652	39.58	45.52	5.94
GRID000007212629	29.948418	-98.413551	39.28	45.91	6.63
GRID000007212630	29.956791	-98.4135	39.16	45.92	6.76
GRID000007212631	29.965163	-98.413449	39.00	45.38	6.38
GRID000007212632	29.973535	-98.413398	38.70	45.08	6.38
GRID000007213333	29.806048	-98.404812	44.55	49.61	5.06
GRID000007213334	29.81442	-98.404761	43.90	49.65	5.74
GRID000007213335	29.822792	-98.404709	43.48	49.30	5.82

Location ID	Latitude	Longitude	No Action DNL	Proposed Action DNL	Change
GRID000007213336	29.831164	-98.404658	42.68	48.77	6.09
GRID000007213337	29.839536	-98.404606	42.20	48.18	5.98
GRID000007213338	29.847908	-98.404555	42.04	47.68	5.64
GRID000007213339	29.85628	-98.404503	41.89	47.01	5.12
GRID000007213350	29.948374	-98.403937	39.93	45.91	5.98
GRID000007213351	29.956746	-98.403885	39.77	45.97	6.20
GRID000007213352	29.965118	-98.403834	39.63	45.61	5.98
GRID000007213353	29.973491	-98.403782	39.32	45.30	5.98
GRID000007214054	29.806003	-98.395212	44.70	49.74	5.04
GRID000007214055	29.814375	-98.39516	44.26	49.28	5.02
GRID000007215487	29.730563	-98.376498	49.30	54.35	5.05
GRID000007216207	29.722144	-98.36696	48.60	53.86	5.25
GRID000007216208	29.730516	-98.366906	50.28	55.58	5.30
GRID000007216925	29.696981	-98.357535	45.65	51.11	5.47
GRID000007216926	29.705352	-98.35748	46.20	52.24	6.04
GRID000007216927	29.713724	-98.357424	47.94	53.51	5.58
GRID000007217643	29.671817	-98.348115	45.32	50.34	5.02
GRID000007217644	29.680189	-98.348059	44.45	51.47	7.01
GRID000007217645	29.68856	-98.348003	44.64	52.61	7.97
GRID000007217646	29.696932	-98.347946	45.19	53.01	7.82
GRID000007217647	29.705304	-98.34789	46.08	52.86	6.78
GRID000007217648	29.713676	-98.347834	47.82	53.29	5.47
GRID000007218362	29.655024	-98.338643	45.77	51.13	5.37
GRID000007218363	29.663396	-98.338586	44.47	52.39	7.92
GRID000007218364	29.671767	-98.338529	43.92	53.66	9.74
GRID000007218365	29.680139	-98.338472	43.64	53.59	9.95
GRID000007218366	29.688511	-98.338415	44.24	52.76	8.53
GRID000007218367	29.696882	-98.338358	45.23	52.13	6.90
GRID000007218368	29.705254	-98.338301	46.40	52.39	5.99
GRID000007218369	29.713626	-98.338243	48.09	53.27	5.18
GRID000007219082	29.646602	-98.329116	44.96	53.70	8.74
GRID000007219083	29.654974	-98.329058	44.41	55.01	10.60
GRID000007219084	29.663345	-98.329	44.83	54.54	9.71
GRID000007219085	29.671717	-98.328943	44.79	53.19	8.40
GRID000007219086	29.680089	-98.328885	44.85	51.96	7.10
GRID000007219087	29.688461	-98.328827	45.75	51.75	6.00
GRID000007219802	29.63818	-98.319591	48.19	56.61	8.42
GRID000007219803	29.646551	-98.319532	47.12	55.50	8.38
GRID000007219804	29.654923	-98.319474	46.99	53.51	6.51

Source: AEDT modeling results, August 2022.
Prepared By: ATAC Corporation, August 2022.

Table S5.4 presents the 0.5 NM Grid location identifier, geographical coordinates (latitude and longitude), the calculated DNL under No Action and Proposed Action conditions, as well as the change in DNL for both 2023 and 2028 scenarios, for all 0.5 NM Grid points evaluated in this San Antonio Airspace Modernization Project.

Table S5.4 0.5 NM Grid Noise Exposure Results

For Table S5.4, please see Addendum 3

Supplement 6 – Noise Sensitive Land Use Areas Noise Results

Table S6.1 identifies noise values modeled at 198 individual grid points representing Noise Sensitive Land Use Areas. The table includes the name, address, type of place, geographical coordinates (latitude and longitude) of the Noise Sensitive Land Use Area and presents the calculated noise exposure values under 2021/2022 Existing Conditions (EC) and Proposed Action (PA) and No Action (NA) Conditions for 2023 and 2028.

Table S6.1 Noise Sensitive Land Use Area Location and Noise Exposure Results

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Place Name	Type of Place	Location	Latitude	Longitude	dB DNL - 2021/2022	dB DNL - 2023			dB DNL - 2028		
					EC	NA	PA	Change	NA	PA	Change
Almouie Pediatrics	medical	1227 Enrique M. Barrera Pkwy, San Antonio, TX 78237	29.420312	-98.589028	56.35	56.48	56.48	0.00	61.10	61.10	0.00
Athens Elementary School	school	2707 W Gerald Ave, San Antonio, TX 78211	29.366207	-98.550744	51.68	51.75	51.70	-0.06	53.27	53.19	-0.08
Beauty Secrets Salon & Spa	health/spa	368 Valley Hi Dr, San Antonio, TX 78227	29.380274	-98.636788	43.03	43.12	43.45	0.33	45.41	45.56	0.15
Bethany Missionary Baptist Church	worship	153 Lawton St, San Antonio, TX 78237	29.413697	-98.585186	59.58	59.64	59.65	0.00	62.72	62.72	0.00
Bethel Casa de Misericordia Iglesia de Dios 7o Día	worship	118 Muskogee St, San Antonio, TX 78237	29.415552	-98.583577	57.23	57.32	57.32	0.01	60.62	60.63	0.00
Bonita Inn	hotel	5535 W Old US Hwy 90 E, San Antonio, TX 78227	29.415294	-98.600919	62.50	62.57	62.57	0.00	66.20	66.20	0.00
C&M Motel	hotel	3824 SW Military Dr, San Antonio, TX 78211	29.358279	-98.564309	60.31	60.32	60.33	0.01	61.34	61.34	0.00
Camargo Park	parks/rec	5738 Castroville Rd, San Antonio, TX 78227	29.406161	-98.602778	59.96	60.03	60.01	-0.02	63.18	63.17	-0.01
Centro Fitness	health/spa	5427 Ray Ellison Blvd, San Antonio, TX 78242	29.355920	-98.606456	49.01	49.07	48.58	-0.49	51.19	50.89	-0.30
Church of the Living God Temple	worship	435 SW 42nd St, San Antonio, TX 78237	29.426624	-98.586183	51.64	51.80	51.80	0.01	56.58	56.58	0.00
Compass Rose Ingenuity	school	522 Billy Mitchell Blvd, San Antonio, TX 78226	29.384467	-98.564610	59.49	59.52	59.54	0.02	60.77	60.79	0.01
Deity's Palace	health/spa	2606 W Southcross Blvd #101, San Antonio, TX 78211	29.368679	-98.554915	53.87	53.92	53.94	0.02	55.34	55.35	0.01
Dwight Middle School	school	2454 W Southcross Blvd, San Antonio, TX 78211	29.368189	-98.551462	51.67	51.74	51.75	0.01	53.27	53.28	0.01
E T Wrenn Middle School	school	627 S Acme Rd, San Antonio, TX 78237	29.423043	-98.588325	53.94	54.07	54.08	0.01	58.70	58.71	0.00
Fire Training Academy	school	300 S Callaghan Rd, San Antonio, TX 78237	29.430208	-98.598429	59.72	59.78	59.77	-0.01	62.57	62.56	-0.01
Freedom Church of San Antonio	worship	123 Pierian Ave. San Antonio, TX 78211	29.367967	-98.553058	53.14	53.20	53.20	0.00	54.66	54.66	0.00
Gateway Hills Golf Course	parks/rec	1800 Dimsted Pl, Lackland AFB, TX 78236	29.396739	-98.606539	57.05	57.09	56.99	-0.10	59.14	59.08	-0.06
Gillum Fitness Center	health/spa	301 Kirknewton St Bldg 2086, Lackland AFB, TX 78243	29.371366	-98.595445	61.20	61.22	61.22	0.00	62.58	62.58	0.00
Greater Bethany Temple Christ	worship	252 Oklahoma St, San Antonio, TX 78237	29.412581	-98.587543	61.29	61.37	61.37	0.00	65.16	65.17	0.00
Greater Joy Temple Church of God In Christ	worship	407 Laverne Ave, San Antonio, TX 78237	29.426603	-98.586175	51.61	51.76	51.77	0.01	56.54	56.54	0.00
Harvey E. Najim Children's Pavilion	parks/rec	5200 Enrique M. Barrera Pkwy, San Antonio, TX 78227	29.416077	-98.591684	62.14	62.22	62.22	0.00	65.88	65.88	0.00
Iglesia Bautista Monte de Las Olivas	worship	3402 La Violeta St, San Antonio, TX 78211	29.352512	-98.562676	59.77	59.79	59.79	0.00	60.50	60.50	0.01
Iglesia Cristiana Cinco Palms	worship	808 S Acme Rd, San Antonio, TX 78237	29.418950	-98.587413	55.77	55.91	55.91	0.00	60.87	60.87	0.00

Place Name	Type of Place	Location	Latitude	Longitude	dB DNL - 2021/2022	dB DNL - 2023			dB DNL - 2028		
					EC	NA	PA	Change	NA	PA	Change
Judah Academy of the Worship Arts	school	1042 S Acme Rd, San Antonio, TX 78237	29.412068	-98.587515	62.27	62.34	62.34	0.00	65.52	65.53	0.00
Kelly Inn	hotel	250 Donald Goodrich, San Antonio, TX 78226	29.381969	-98.571506	65.32	65.34	65.35	0.01	66.48	66.49	0.01
Kennedy Park	parks/rec	3299 SW 28th St, San Antonio, TX 78226	29.393155	-98.556229	52.31	52.39	52.33	-0.06	54.32	54.29	-0.03
Kids Are Angels	school	342 Whitewood St, San Antonio, TX 78242	29.364766	-98.600815	54.15	54.19	54.14	-0.04	55.62	55.60	-0.02
Kingdom Hall of Jehovah's Witnesses	worship	216 Hobart St, San Antonio, TX 78237	29.414041	-98.585903	59.87	59.94	59.94	0.00	62.90	62.90	0.00
Kingdom Hall of Jehovah's Witnesses	worship	9265 Somerset Rd, San Antonio, TX 78211	29.332163	-98.571720	58.40	58.42	58.43	0.02	58.98	58.99	0.01
La Siesta Motel	hotel	5410 Enrique M. Barrera Pkwy, San Antonio, TX 78227	29.416515	-98.595887	62.81	62.89	62.89	0.00	66.42	66.42	0.00
Lackland AFB Saddle Club	animals/wildlife	Joint Base San Antonio-Lackland, 1701 Kenly Ave, San Antonio, TX 78236	29.388151	-98.603925	61.50	61.52	61.53	0.01	62.68	62.68	0.01
Lackland Motel	hotel	201 Whitewood St, San Antonio, TX 78242	29.367090	-98.600914	54.95	54.98	54.94	-0.04	56.34	56.32	-0.02
Levi Strauss Park	parks/rec	6100 Old Hwy 90 W, San Antonio, TX 78227	29.411208	-98.606812	57.59	57.69	57.67	-0.02	61.81	61.81	-0.01
Life Center SA	worship	224 Hobart St, San Antonio, TX 78237	29.414116	-98.586058	59.99	60.05	60.05	0.00	62.93	62.93	0.00
Life Church of San Antonio	worship	2483 W Southcross Blvd, San Antonio, TX 78211	29.369405	-98.552111	51.84	51.90	51.91	0.01	53.44	53.45	0.01
Life Synagogue	worship	222 Ardmore St, San Antonio, TX 78237	29.416481	-98.586161	57.39	57.50	57.52	0.02	61.65	61.66	0.01
Lindbergh Park	parks/rec	145 Schuster Cove, San Antonio, TX 78226	29.381357	-98.559694	56.41	56.44	56.45	0.01	57.75	57.75	0.01
Living Days Adult Day Care Center	senior care	2603 W Southcross Blvd, San Antonio, TX 78211	29.369079	-98.554817	53.47	53.52	53.54	0.02	54.96	54.97	0.01
Lyndon B. Johnson Elementary School	school	6515 W Commerce St, San Antonio, TX 78227	29.435889	-98.590360	49.30	49.49	49.41	-0.08	54.58	54.55	-0.03
Macedonia Baptist Church	worship	963 SW 40th St, San Antonio, TX 78237	29.414379	-98.583395	57.78	57.87	57.87	0.01	61.16	61.17	0.00
Messengers of God Church	worship	1752 W Mayfield Blvd, San Antonio, TX 78211	29.363587	-98.561064	56.40	56.43	56.44	0.00	57.72	57.72	0.00
MID Town Inn Motel	hotel	3838 SW Military Dr, San Antonio, TX 78211	29.358569	-98.565356	62.29	62.30	62.31	0.00	63.29	63.29	0.00
Miguel Carrillo Jr Elementary School	school	500 Price Ave, San Antonio, TX 78211	29.360156	-98.558607	55.27	55.31	55.28	-0.03	56.56	56.54	-0.03
Nelson W. Wolff Municipal Stadium	parks/rec	5757 US-90 W, San Antonio, TX 78227	29.409526	-98.601930	61.22	61.30	61.29	0.00	64.96	64.96	0.00
Pearsall Park	parks/rec	4838 Old Pearsall Rd, San Antonio, TX 78242	29.361302	-98.592395	57.55	57.59	57.61	0.02	59.40	59.41	0.01

Place Name	Type of Place	Location	Latitude	Longitude	dB DNL - 2021/2022	dB DNL - 2023			dB DNL - 2028		
					EC	NA	PA	Change	NA	PA	Change
Peoples Missionary Baptist Church	worship	216 Muskogee St, San Antonio, TX 78237	29.415744	-98.585939	58.61	58.68	58.68	0.00	61.80	61.81	0.00
Pre-K 4 SA - West Education Center	school	1235 Enrique M. Barrera Pkwy, San Antonio, TX 78237	29.421616	-98.589481	56.24	56.36	56.36	0.00	60.88	60.88	0.00
Regal Nails, Salon & Spa	health/spa	2180 Reese Bldg 1385, Lackland AFB, TX 78236	29.383035	-98.613613	51.85	51.89	51.89	0.01	53.68	53.67	-0.01
Saint Mark Independent Methodist Church	worship	238 Oklahoma St, San Antonio, TX 78237	29.412501	-98.587022	61.51	61.58	61.58	0.00	64.83	64.83	0.00
SAMSAT Education Center	museum/camp/learning center	5035 SW 36th St, San Antonio, TX 78226	29.380553	-98.567911	63.32	63.34	63.34	0.00	64.49	64.49	0.00
San Antonio Animal Care Svcs.	animals/wildlife	4710 TX-151, San Antonio, TX 78227	29.415112	-98.590628	62.02	62.10	62.10	0.00	65.61	65.61	0.00
San Antonio Museum of Science and Technology	museum	102 Mabry Dr, San Antonio, TX 78226	29.381853	-98.569231	63.45	63.47	63.48	0.00	64.62	64.63	0.00
San Fernando Cemetery	cemetery	1735 Cupples Rd, San Antonio, TX 78226	29.387967	-98.552763	52.11	52.19	52.17	-0.02	54.06	54.05	-0.01
Selina Inn	hotel	5639 Enrique M. Barrera Pkwy, San Antonio, TX 78227	29.414817	-98.602400	62.15	62.24	62.24	0.00	66.27	66.27	0.00
Sherman A.M.E. Church	worship	603 Erline Ave, San Antonio, TX 78237	29.427467	-98.586966	51.83	51.99	51.97	-0.01	56.75	56.74	0.00
South San Antonio High School	school	7535 Barlite Blvd, San Antonio, TX 78224	29.351210	-98.547722	48.03	48.14	48.16	0.03	49.43	49.39	-0.04
St. Clare Church	worship	7701 Somerset Rd, San Antonio, TX 78211	29.348958	-98.557150	53.76	53.79	53.77	-0.02	54.62	54.60	-0.02
St. Gabriel Chapel	worship	5643 McDavitt Rd, San Antonio, TX 78227	29.416097	-98.601538	63.20	63.28	63.28	0.00	67.13	67.13	0.00
Stapleton Park	parks/rec	Gaffney St., San Antonio, TX 78236	29.373100	-98.595194	61.49	61.51	61.49	-0.02	62.77	62.75	-0.01
Stillman Park	parks/rec	Kelly Dr., Lackland AFB, TX 78236	29.387068	-98.604033	59.73	59.75	59.75	0.00	61.03	61.03	0.00
Tech Port Center	event venue/theater	3331 General Hudnell Dr., San Antonio, TX 78226	29.381329	-98.566083	61.41	61.43	61.44	0.01	62.60	62.61	0.01
Templo Amor Y Gracia	worship	332 Wilcox Ave, San Antonio, TX 78211	29.367834	-98.556139	53.09	53.15	53.12	-0.03	54.55	54.53	-0.02
Templo Magdiel	worship	8023 Somerset Rd, San Antonio, TX 78211	29.345504	-98.560031	56.44	56.46	56.46	0.00	57.01	57.01	0.00
Templo Victorioso Emmanuel	worship	241 Coopwood Ave, San Antonio, TX 78237	29.415318	-98.587068	59.14	59.22	59.23	0.01	62.78	62.78	0.00
Van de Walle Park	parks/rec	Dabney, Herbert, and Joslyn Lanes, San Antonio, TX 78227	29.413467	-98.595995	66.12	66.19	66.19	0.00	69.42	69.42	0.00
Vigilance Memorial Park	war memorial	Hall Blvd., San Antonio, TX 78243	29.370784	-98.599203	57.93	57.95	57.97	0.02	59.22	59.24	0.01
Warhawk Fitness Center	health/spa	1951 Biggs Ave Bldg 2418, Lackland AFB, TX 78236	29.387787	-98.613623	53.63	53.65	53.45	-0.21	55.26	55.13	-0.13

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West Laurel Heights First Missionary Baptist Church	worship	115 Guthrie St, San Antonio, TX 78237	29.417568	-98.583206	55.58	55.68	55.69	0.01	59.33	59.33	0.00
Baptist Neighborhood Hospital	medical	16977 I-35, Schertz, TX 78154	29.594276	-98.289773	61.03	61.41	60.04	-1.38	69.34	68.22	-1.12
Best Western Plus Atrium Inn	hotel	17401 I-35 N, Schertz, TX 78154	29.599503	-98.279786	61.37	61.78	61.18	-0.60	69.99	69.48	-0.51
Candlewood Suites	hotel	17145 N Interstate 35 Frontage Rd, Schertz, TX 78154	29.596630	-98.284636	63.02	63.39	62.43	-0.96	70.98	70.15	-0.83
Caring Daughters Military Cemetery	funeral	411 Exchange Ave # 2, Schertz, TX 78154	29.553114	-98.272360	62.89	63.25	62.67	-0.58	70.86	70.54	-0.32
Christ the King Lutheran Church	worship	1129 Pat Booker Rd, Universal City, TX 78148	29.549832	-98.297623	52.15	52.49	52.46	-0.03	59.87	59.79	-0.08
Church of Jesus Christ of Latter-Day Saints	worship	13201 Forum Rd, Universal City, TX 78148	29.560422	-98.315556	46.11	46.61	46.72	0.11	52.36	52.40	0.04
Cibolo Creek Mountain Bike Trails	parks/rec	Universal City, TX 78148	29.557524	-98.288398	62.17	62.54	62.45	-0.09	70.38	70.28	-0.10
Cibolo Creek Primitive Trail	parks/rec	909 FM1518, Schertz, TX 78154	29.553306	-98.280931	73.09	73.39	73.31	-0.08	79.34	79.27	-0.08
City on a Hill Church	worship	513 Main St, Schertz, TX 78154	29.552912	-98.270494	61.55	61.91	60.56	-1.35	69.64	68.75	-0.89
Colonial Funeral Home	funeral	625 Kitty Hawk Rd, Universal City, TX 78148	29.549880	-98.310106	51.14	51.29	51.25	-0.04	54.61	54.55	-0.06
Cut Off Park	parks/rec	909N FM1518, Schertz, TX 78154	29.551859	-98.274826	67.07	67.40	67.50	0.09	74.44	74.53	0.09
Designer Glitz & Glamour Spa	health/spa	222 E Aviation Blvd, Universal City, TX 78148	29.545737	-98.286255	61.21	61.54	61.37	-0.17	68.82	68.70	-0.12
Eberle Park	parks/rec	E. Perimeter Rd., Schertz, TX 78154	29.524757	-98.260410	78.41	78.75	78.75	0.01	85.84	85.85	0.01
Emmanuel Baptist Church	worship	234 E Aviation Blvd, Universal City, TX 78148	29.546145	-98.285848	61.77	62.10	61.93	-0.17	69.30	69.19	-0.11
First Baptist Church and Academy	worship	1401 Pat Booker Rd, Universal City, TX 78148	29.550312	-98.301721	52.98	53.20	53.19	-0.02	58.59	58.54	-0.05
Flawless Spa Retreat of Distinction	health/spa	816 Main St #A1, Schertz, TX 78154	29.555386	-98.264902	55.60	56.02	56.13	0.11	64.68	64.81	0.14
Founders Classical Academy of Schertz	school	8453 E FM 1518 North, Schertz, TX 78154	29.510111	-98.239538	59.07	59.54	59.55	0.01	69.38	69.39	0.01
Fountain Of Praise Church of God in Christ	worship	213 E Aviation Blvd, Universal City, TX 78148	29.545936	-98.286967	60.19	60.53	60.39	-0.14	67.97	67.87	-0.11
Grace Community Church	worship	701 Kitty Hawk Rd, Universal City, TX 78148	29.549729	-98.310926	51.16	51.29	51.26	-0.03	54.31	54.32	0.01
Hands N Harmony	health/spa	1001 Pat Booker Rd. #107, Universal City, TX 78148	29.549155	-98.294881	53.02	53.41	53.37	-0.04	61.46	61.38	-0.08
Heritage Academy Charter School	school	12470 Woman Hollering Rd, Schertz, TX 78154	29.510424	-98.237703	57.50	57.99	58.01	0.02	67.99	68.01	0.02
Heritage Oaks Park	parks/rec	11700 Long Leaf Pkwy, Schertz, TX 78154	29.515583	-98.248370	64.80	65.21	65.21	0.00	74.05	74.05	0.00

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Impact Church	worship	8453 E FM 1518 North, Schertz, TX 78154	29.510069	-98.238419	58.26	58.74	58.76	0.02	68.66	68.68	0.01
Journey Fellowship	worship	16847 I-35, Selma, TX 78154	29.592879	-98.292549	58.34	58.75	58.15	-0.60	67.22	66.68	-0.54
Mary Whitfield Burks Park	parks/rec	3175 Schertz Pkwy, Schertz, TX 78154	29.577223	-98.280430	60.51	60.91	60.81	-0.11	69.35	69.25	-0.09
A New Covenant Family Church	worship	814c Main St, Schertz, TX 78154	29.555377	-98.264988	55.68	56.10	56.23	0.13	64.76	64.91	0.15
New Moon Spa Studio	health/spa	524 Exchange Ave suite b, Schertz, TX 78154	29.554006	-98.269529	63.38	63.73	59.11	-4.62	71.15	67.52	-3.64
Northview Splashpad	parks/rec	100 Randolph Plaza Dr, Universal City, TX 78148	29.548518	-98.295792	52.75	53.12	53.11	-0.01	60.86	60.80	-0.06
Paloma Park	parks/rec	10643 Francisco Way, Converse, TX 78109	29.462345	-98.277594	45.84	46.11	49.08	2.98	53.35	54.11	0.76
Pentecostal Life Church	worship	102 Farm-To-Market Rd 78, Schertz, TX 78154	29.551242	-98.271599	62.38	62.74	62.79	0.05	70.55	70.61	0.06
Pickrell Park	parks/rec	703 Oak St, Schertz, TX 78154	29.553703	-98.278807	73.55	73.86	74.09	0.24	79.76	79.95	0.19
Randolph AFB Mental Health Clinic	medical	315 J St W, Universal City, TX 78150	29.525857	-98.278366	64.01	64.33	64.34	0.01	71.43	71.43	0.00
Randolph Church of Christ	worship	1032 Pat Booker Rd, Universal City, TX 78148	29.550466	-98.296298	52.58	52.95	52.83	-0.12	60.74	60.65	-0.09
Randolph Inn	hotel	415 B St E, Randolph AFB, TX 78150	29.537462	-98.280022	68.10	68.44	68.39	-0.05	75.60	75.55	-0.05
Red Horse Park	parks/rec	1100 North Blvd, Universal City, TX 78148	29.556223	-98.297617	51.33	51.80	51.69	-0.10	60.71	60.60	-0.11
Schertz Medical Home	medical	17115 Schertz Pkwy, Schertz, TX 78154	29.596074	-98.286450	62.76	63.13	61.99	-1.13	70.73	69.77	-0.97
Schertz Soccer Complex	parks/rec	75 Maske Rd, Schertz, TX 78154	29.566187	-98.289554	63.28	63.65	63.30	-0.34	71.35	71.04	-0.31
Staybridge Suites	hotel	5601 Schertz Pkwy, Schertz, TX 78154	29.593999	-98.291631	58.89	59.30	58.20	-1.10	67.65	66.78	-0.87
Super 8 Wyndham	hotel	200 Palisades Dr, Universal City, TX 78148	29.554524	-98.320995	44.41	45.01	45.07	0.06	49.06	49.00	-0.06
The Natural Way	health/spa	218 Pat Booker Rd, Universal City, TX 78148	29.545564	-98.288648	58.28	58.62	58.50	-0.13	66.21	66.11	-0.10
The Potter's House	worship	2025 Universal City Blvd, Universal City, TX 78148	29.554583	-98.310067	49.65	49.85	49.83	-0.02	54.76	54.71	-0.05
Thulemeyer Park	parks/rec	901 Oak St, Schertz, TX 78154	29.555812	-98.280352	72.82	73.13	72.98	-0.15	79.10	78.97	-0.13
Tower of Deliverance Fellowship	worship	11503 TX-1604 Loop, Universal City, TX 78148	29.538879	-98.306855	48.85	49.15	50.92	1.77	54.02	55.48	1.46
True Life Church	worship	202 W Byrd Blvd, Universal City, TX 78148	29.546332	-98.291041	55.82	56.17	56.09	-0.08	64.00	63.93	-0.08
Turtle Park	parks/rec	Thoreau Trail, Schertz, TX 78154	29.571512	-98.278933	64.02	64.38	64.32	-0.06	71.90	71.86	-0.05
United Fellowship Church	worship	7722 Citadel Peak, Converse, TX 78109	29.503557	-98.284133	53.09	53.39	53.34	-0.05	61.21	61.19	-0.01
Universal City Disc Golf Course	parks/rec	1200 Cibolo Trail, Universal City, TX 78148	29.557081	-98.295160	53.04	53.54	53.48	-0.06	62.76	62.67	-0.10
Universal City Family Practice Center	medical	2009 Pat Booker Rd, Universal City, TX 78148	29.553563	-98.311178	48.59	48.82	48.78	-0.03	53.76	53.70	-0.06
Universal City Park	parks/rec	305 North Blvd, Universal City, TX 78148	29.555020	-98.293087	54.52	54.98	55.06	0.08	63.95	63.89	-0.05

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Universal City United Methodist Church	worship	90 Winn Ave, Universal City, TX 78148	29.553724	-98.289624	57.77	58.18	58.09	-0.09	66.84	66.74	-0.09
Veterans Park	parks/rec	737 E Aviation Blvd, Universal City, TX 78148	29.550534	-98.276446	72.47	72.78	72.97	0.19	78.85	79.01	0.17
Victory Assembly of God	worship	1017 W Byrd Blvd, Universal City, TX 78148	29.541119	-98.305245	51.13	51.33	51.80	0.47	55.79	55.96	0.17
Wat Saddhadhamma	worship	8000 FM1518, Schertz, TX 78154	29.506558	-98.234165	56.77	57.25	57.28	0.02	67.29	67.31	0.02
AGC	school	10806 Gulfdale St, San Antonio, TX 78216	29.539200	-98.490620	59.64	61.02	61.04	0.02	61.69	61.89	0.20
Alamo Fencing Academy	school	106 W Rhapsody Dr, San Antonio, TX 78216	29.544098	-98.495195	58.09	59.40	59.43	0.03	60.09	60.37	0.28
Alamo Training	school	318 E Nakoma Dr, San Antonio, TX 78216	29.549900	-98.490727	62.49	63.79	63.87	0.08	64.37	64.53	0.15
All Sports Fitness	gym/health	1228 Safari, San Antonio, TX 78216	29.543604	-98.474327	55.76	57.16	57.18	0.02	57.84	58.12	0.28
American Surgery Center of South Texas	medical	12838 Vista Del Norte, San Antonio, TX 78216	29.560374	-98.510813	63.64	64.98	64.82	-0.16	65.57	65.47	-0.10
Anthem Studios	school	12002 Warfield St, San Antonio, TX 78216	29.550969	-98.492113	62.48	63.78	63.87	0.09	64.36	64.53	0.16
Ariel Ministries	worship	11926 Radium St, San Antonio, TX 78216	29.550742	-98.496315	69.84	71.16	71.04	-0.12	71.70	71.61	-0.09
Armando Montelongo Real Estate School	school	11503 Jones Maltsberger Rd #1125, San Antonio, TX 78216	29.545511	-98.475923	55.57	56.97	57.00	0.03	57.65	57.95	0.30
Artiquity	school	11905 Warfield St, San Antonio, TX 78216	29.550213	-98.494790	70.82	72.13	72.07	-0.06	72.68	72.62	-0.06
Ashcraft's Martial Arts Center	school	12116 Radium St, San Antonio, TX 78216	29.552005	-98.495085	65.50	66.83	66.98	0.15	67.40	67.59	0.19
Best Brows Microblading	beauty clinic	2105 Mannix Dr, San Antonio, TX 78217	29.525505	-98.459491	65.52	66.83	66.84	0.01	67.42	67.45	0.03
Black Label Dominion	school	2422 Freedom Dr, San Antonio, TX 78217	29.532157	-98.452555	61.46	62.98	62.98	0.00	63.62	63.65	0.04
Broadway Oilfield Training	school	9200 Broadway #114, San Antonio, TX 78217	29.523467	-98.457147	64.40	65.69	65.69	0.00	66.25	66.30	0.05
Center of Advanced Wellness	medical	8723 Botts Ln, San Antonio, TX 78217	29.519958	-98.459167	64.37	65.66	65.65	-0.01	66.23	66.26	0.03
Chinese School - San Antonio	school	154 Rhapsody Dr, San Antonio, TX 78216	29.545894	-98.497970	57.03	58.33	58.39	0.06	59.07	59.44	0.36
City of Refuge Christian Fellowship	worship	8800 Broadway #225, San Antonio, TX 78217	29.520325	-98.460623	64.29	65.59	65.58	-0.01	66.17	66.20	0.04
Classics Elite Soccer Academy	parks/rec	1600 E Bitters Rd, San Antonio, TX 78216	29.545791	-98.467373	53.72	55.20	55.20	0.00	55.91	56.19	0.27
Claudia's Little Corner Spa	spa/health	127 Middlebury Dr, San Antonio, TX 78217	29.524924	-98.450480	58.28	59.62	59.62	0.00	60.22	60.31	0.09
Complete Care Medical Associates (CCMA)	medical	12446 West Ave, San Antonio, TX 78216	29.553910	-98.500618	67.72	69.04	68.91	-0.13	69.59	69.49	-0.10
Concentra Hospital	medical	10100 Reunion Pl, San Antonio, TX 78216	29.532099	-98.483730	55.54	56.95	57.00	0.05	57.80	58.25	0.46
Courtyard by Marriott	hotel	8615 Broadway, San Antonio, TX 78217	29.519726	-98.462930	63.15	64.51	64.52	0.00	65.13	65.19	0.06
Cressie Animal Refuge and Enrichment (CARE)	animals/wildlife	1614 Doe Park, San Antonio, TX 78248	29.520185	-98.457426	65.36	66.63	66.57	-0.06	67.18	67.17	-0.02
CrossFit Lethal	gym/health	119 W Rhapsody Dr, San Antonio, TX 78216	29.544776	-98.495516	58.28	59.59	59.63	0.04	60.28	60.54	0.26

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Davies Boxing and Fitness	gym/health	9503 Middlex Dr, San Antonio, TX 78217	29.527227	-98.459333	64.98	66.36	66.36	0.00	66.98	67.01	0.03
De Irlanda	event venue	9200 Broadway, San Antonio, TX 78217	29.524293	-98.456080	63.11	64.41	64.41	0.00	64.99	65.03	0.04
Defy Cellulite Endermologie Center	medical	11103 San Pedro Ave #215, San Antonio, TX 78216	29.541730	-98.492694	59.47	60.83	60.85	0.02	61.50	61.70	0.20
DeVry University	school	814 Arion Pkwy Suite 120, San Antonio, TX 78216	29.549883	-98.483297	57.12	58.48	58.50	0.02	59.14	59.37	0.23
Divine Khepera Yoga	gym/health	12656 West Ave Bldg 3, San Antonio, TX 78216	29.556484	-98.498220	60.66	61.98	62.14	0.16	62.59	62.87	0.28
Dream Fire Glass	museum	11916 Persuasion Dr, San Antonio, TX 78216	29.552138	-98.501790	62.21	63.53	63.55	0.02	64.13	64.24	0.11
Drumming with Mike Baez	school	11210 Disco, San Antonio, TX 78216	29.542841	-98.473966	56.08	57.48	57.50	0.02	58.16	58.41	0.25
Emergency Pet Clinic	animals/wildlife	8503 Broadway #105, San Antonio, TX 78217	29.518178	-98.464558	61.35	62.76	62.77	0.01	63.41	63.50	0.10
English Language School USA	school	8705 Botts Ln, San Antonio, TX 78217	29.519440	-98.459585	63.76	65.05	65.05	0.00	65.63	65.67	0.04
Flight Deck SA Fit Body Boot Camp	gym/health	11503 Jones Maltsberger Rd #1160, San Antonio, TX 78216	29.545634	-98.476113	55.62	57.03	57.05	0.02	57.71	58.00	0.29
Flight Safety International	school	9027 Airport Blvd, San Antonio, TX 78216	29.523882	-98.477435	60.06	61.55	61.57	0.02	62.26	62.44	0.17
Free Born Church	worship	8934 Broadway, San Antonio, TX 78217	29.521968	-98.459003	66.57	67.83	67.80	-0.03	68.39	68.37	-0.01
Grace Guides	gym/health	9003 Aero St, San Antonio, TX 78217	29.521900	-98.464209	66.01	67.41	67.41	0.00	68.02	68.06	0.03
Hilton Garden Inn	hotel	8505 Broadway, San Antonio, TX 78217	29.519318	-98.464663	62.80	64.21	64.22	0.01	64.85	64.92	0.07
Homewood Suites	hotel	8531 Broadway, San Antonio, TX 78217	29.518730	-98.463858	61.95	63.34	63.35	0.01	63.98	64.06	0.08
Hot Mix Yoga	gym/health	11331 E Coker Loop, San Antonio, TX 78216	29.549032	-98.481424	56.88	58.26	58.28	0.02	58.92	59.16	0.24
Ignite Community Solutions	community center	11503 Jones Maltsberger Rd, San Antonio, TX 78216	29.545637	-98.476101	55.62	57.02	57.04	0.02	57.70	57.99	0.29
Kalalaya Indian Performing Arts	school	12012 Radium St, San Antonio, TX 78216	29.551218	-98.495892	69.54	70.86	70.81	-0.05	71.41	71.38	-0.03
Launch Revival	worship	9200 Broadway Suite 131, San Antonio, TX 78217	29.523989	-98.456707	63.80	65.09	65.10	0.01	65.66	65.70	0.04
LCC Campus Broadway	worship	8800 Broadway, San Antonio, TX 78217	29.519686	-98.460006	63.86	65.15	65.15	0.00	65.73	65.78	0.05
Lids Christian Center	worship	8800 Broadway #245, San Antonio, TX 78217	29.520549	-98.460366	64.57	65.87	65.86	-0.01	66.44	66.48	0.04
Lighthouse Baptist Church	worship	10400 Broadway, San Antonio, TX 78217	29.535270	-98.447134	59.98	61.50	61.50	0.00	62.13	62.16	0.04
Loop 410 Veterinary Hospital	animals/wildlife	9901 Broadway #108, San Antonio, TX 78217	29.530472	-98.452051	59.32	60.80	60.80	0.00	61.44	61.50	0.06
Lou's Spa	spa/health	9200 Broadway, San Antonio, TX 78217	29.523883	-98.456639	63.80	65.09	65.10	0.01	65.66	65.70	0.04
McAllister Park	parks/rec	13102 Jones Maltsberger Rd, San Antonio, TX 78247	29.547270	-98.435893	58.46	59.85	59.85	0.00	60.43	60.45	0.02
Mission CrossFit	gym/health	8842 Broadway, San Antonio, TX 78217	29.520458	-98.459870	64.63	65.92	65.91	-0.01	66.50	66.53	0.03

Place Name	Type of Place	Location	Latitude	Longitude	dB DNL - 2021/2022	dB DNL - 2023			dB DNL - 2028		
					EC	NA	PA	Change	NA	PA	Change
NEISD Fitness Center	gym/health	10333 Broadway, San Antonio, TX 78217	29.535873	-98.449589	63.09	64.61	64.61	0.00	65.24	65.26	0.02
Nicole, Inc. Chapel	worship	903 Clydeville Rd, San Antonio, TX 78216	29.547870	-98.479085	56.20	57.59	57.60	0.01	58.26	58.52	0.27
Nourish Healing Collective	medical	221 W Rhapsody Dr #101, San Antonio, TX 78216	29.547226	-98.497197	59.81	61.11	61.20	0.09	61.76	62.00	0.24
Ortho-Tex Surgical Center	medical	1211 Arion Pkwy #100, San Antonio, TX 78216	29.548243	-98.475434	53.40	54.81	54.84	0.03	55.54	55.96	0.42
Parkour Ninjas	gym/health	2506 Freedom Dr, San Antonio, TX 78217	29.531418	-98.451705	59.87	61.38	61.38	0.00	62.01	62.07	0.05
Pawderosa Ranch	animals/wildlife	923 Clydeville Rd, San Antonio, TX 78216	29.548226	-98.479939	56.61	58.00	58.01	0.01	58.66	58.91	0.25
Penny Paws	animals/wildlife	10330 Kotzebue St, San Antonio, TX 78217	29.534206	-98.451042	62.59	64.12	64.12	0.00	64.75	64.76	0.01
Prime Performance Training	gym/health	8812 Tradeway St, San Antonio, TX 78217	29.519917	-98.457488	65.07	66.34	66.30	-0.04	66.90	66.89	-0.01
RCCG Restoration Chapel	worship	2122 Mannix Dr, San Antonio, TX 78217	29.524270	-98.458778	65.33	66.62	66.63	0.01	67.19	67.23	0.04
Regency Place Elementary School	school	10222 Broadway, San Antonio, TX 78217	29.532695	-98.446842	57.56	59.06	59.06	0.00	59.69	59.76	0.07
Revive Ministries	worship	8934 Broadway, San Antonio, TX 78217	29.521936	-98.458959	66.54	67.80	67.77	-0.03	68.36	68.35	0.00
Sit Means Sit Dog Training	animals/wildlife	10025 Broadway, San Antonio, TX 78217	29.531886	-98.449842	58.89	60.40	60.40	0.00	61.04	61.10	0.06
St Ephraim Orthodox Church	worship	8800 Broadway Suite 245, San Antonio, TX 78217	29.520460	-98.459958	64.61	65.90	65.89	-0.01	66.47	66.51	0.04
St. Matthew's UMC Church and Day School	worship/school	2738 MacArthur View, San Antonio, TX 78217	29.530341	-98.445883	55.66	57.12	57.12	0.00	57.76	57.86	0.11
Stars Vipers	gym/health	406 Breesport St, San Antonio, TX 78216	29.551991	-98.499910	65.33	66.66	66.59	-0.07	67.23	67.21	-0.02
Studio 6	hotel	11221 San Pedro Ave, San Antonio, TX 78216	29.543230	-98.492168	61.17	62.50	62.51	0.01	63.12	63.27	0.14
SureStay Plus	hotel	11355 San Pedro Ave, San Antonio, TX 78216	29.543771	-98.491867	61.88	63.20	63.22	0.02	63.81	63.92	0.11
Texas Strength Systems	gym/health	2418 Boardwalk St, San Antonio, TX 78217	29.533131	-98.451281	61.44	62.96	62.96	0.00	63.59	63.63	0.03
Texas Transportation Museum	museum	11731 Wetmore Rd, San Antonio, TX 78247	29.547601	-98.435004	57.95	59.34	59.34	0.00	59.92	59.94	0.02
The Pets Inn	animals/wildlife	123 W Rhapsody Dr, San Antonio, TX 78216	29.544887	-98.495748	58.15	59.46	59.49	0.03	60.14	60.42	0.28
The Protocol School of Texas	school	2438 Freedom Dr, San Antonio, TX 78217	29.531677	-98.451976	60.36	61.87	61.87	0.00	62.51	62.56	0.05
Throwin' Gold Ceramics	school	10506 Gulfdale St Ste 200, San Antonio, TX 78216	29.536023	-98.488222	57.32	58.73	58.77	0.04	59.48	59.80	0.33
Total Body Training	gym/health	9200 Broadway #130, San Antonio, TX 78217	29.523915	-98.456632	63.78	65.07	65.08	0.01	65.64	65.68	0.04

Place Name	Type of Place	Location	Latitude	Longitude	dB DNL - 2021/2022	dB DNL - 2023			dB DNL - 2028		
					EC	NA	PA	Change	NA	PA	Change
Total Body Training	gym/health	9200 Broadway #130, San Antonio, TX 78217	29.523922	-98.456661	63.79	65.09	65.09	0.00	65.66	65.70	0.04
Verse by Verse Fellowship	worship	551 E Nakoma Dr, San Antonio, TX 78216	29.549062	-98.483688	58.65	60.01	60.02	0.01	60.65	60.82	0.17
Walker Ranch Park	parks/rec	12603 West Ave, San Antonio, TX 78216	29.556083	-98.501702	66.78	68.10	68.06	-0.04	68.67	68.66	0.00
Watershed Church	worship	9315 Broadway, San Antonio, TX 78217	29.525982	-98.455911	61.96	63.29	63.30	0.01	63.89	63.94	0.05
Wonder Chamber	entertainment venue	8800 Broadway # 116, San Antonio, TX 78217	29.520374	-98.460508	64.36	65.66	65.66	0.00	66.24	66.28	0.04

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Supplement 7 – SNIDR Supplemental Study Area Noise Results

Table S7.1 identifies noise values modeled at 2007 individual points that intersect the SNIDR Supplemental Study Area (see **Section 2.2.3**). The table includes the Location ID, geographical coordinates (latitude and longitude), and presents the calculated noise exposure values under 2021/2022 Existing Conditions (EC) and Proposed Action (PA) and No Action (NA) Conditions for 2023 and 2028.

Table S7.1 SNIDR Supplemental Study Area and Noise Exposure Results

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LocationID	Latitude	Longitude	dB DNL - 2021/2022	dB DNL - 2023			dB DNL - 2028		
			EC	NA	PA	Change	NA	PA	Change
481770001002128	29.660754	-97.268786	16.24	16.77	17.73	0.97	38.24	38.59	0.35
481770001002163	29.675442	-97.291774	19.41	20.00	18.33	-1.67	36.89	37.37	0.48
481770001002127	29.662855	-97.223563	15.13	15.61	16.36	0.75	37.32	37.71	0.40
481770001002132	29.647394	-97.169924	14.65	15.08	15.51	0.43	36.88	36.43	-0.45
481770001002136	29.635286	-97.179938	14.44	14.94	15.30	0.37	35.62	35.03	-0.59
481770001002130	29.666667	-97.180658	14.66	15.07	15.48	0.41	36.15	36.83	0.69
481770001002135	29.633708	-97.156195	14.18	14.64	15.02	0.38	35.29	34.61	-0.68
481770001002131	29.657795	-97.160867	14.97	15.39	15.39	0.00	36.84	36.94	0.11
481499705001120	29.673215	-97.162556	14.86	15.26	15.25	-0.01	35.21	35.71	0.50
482850003001033	29.622839	-97.12817	13.17	13.68	14.01	0.33	33.26	31.93	-1.33
482850003001032	29.61605	-97.113714	12.54	13.09	13.38	0.29	14.40	13.61	-0.79
482850003001031	29.616843	-97.100912	12.46	12.99	13.30	0.31	13.49	13.52	0.02
482850003001029	29.62704	-97.083249	13.01	13.45	13.84	0.39	33.49	28.40	-5.09
482850003001028	29.621449	-97.068566	12.50	12.96	13.32	0.35	13.33	13.50	0.17
482850003001053	29.62642	-97.052577	12.72	13.15	13.54	0.39	13.32	13.71	0.39
482850003001052	29.622471	-97.044181	12.39	12.83	13.21	0.38	13.01	13.37	0.36
482850003001008	29.623928	-97.030513	12.39	12.81	13.20	0.39	12.98	13.36	0.38
482850003001007	29.622827	-97.007945	12.14	12.55	12.90	0.35	12.71	13.05	0.34
482850003001006	29.614073	-96.984713	11.28	11.73	12.05	0.32	11.92	12.22	0.31
482850003001004	29.614493	-96.96382	11.06	11.49	11.83	0.34	11.67	12.01	0.33
481499705001085	29.647465	-96.971321	12.26	12.60	13.36	0.76	12.73	15.82	3.09
481499705001090	29.630318	-97.039831	12.87	13.27	13.70	0.43	13.99	13.84	-0.15
481499705001080	29.641434	-96.998287	12.88	13.22	13.89	0.67	13.35	16.35	3.00
481499705001084	29.635281	-96.989512	12.62	12.98	13.39	0.41	13.12	13.52	0.40
481499705001091	29.633071	-97.053172	13.14	13.53	13.97	0.44	34.02	14.27	-19.75
481499705001064	29.641181	-97.054542	13.37	13.73	14.22	0.49	34.80	34.30	-0.50
481499705001062	29.651305	-97.048628	13.24	13.60	14.13	0.53	35.06	34.93	-0.13
481499706021073	29.641516	-96.955702	12.04	12.38	12.86	0.47	12.52	12.98	0.46
481770001002022	29.682506	-97.309774	16.80	17.21	17.65	0.44	35.24	35.92	0.68
481770001002017	29.688457	-97.341992	17.40	17.87	18.25	0.38	34.37	35.20	0.83
481770001002100	29.683528	-97.28299	17.11	17.63	17.99	0.35	34.79	35.55	0.76
481770001002101	29.681402	-97.300176	16.64	17.04	17.46	0.42	35.35	36.01	0.66
481499705001117	29.631311	-97.134263	13.80	14.25	14.64	0.39	34.77	33.94	-0.82
481499705001110	29.633018	-97.114703	13.64	14.08	14.50	0.42	34.79	34.02	-0.78
481499705001114	29.645019	-97.130894	14.47	14.90	15.32	0.43	36.23	35.66	-0.57
481499705001109	29.633366	-97.097695	13.49	13.91	14.35	0.44	34.60	33.82	-0.78
481499705001108	29.634208	-97.084991	13.44	13.84	14.29	0.44	34.54	33.76	-0.78
481499705001092	29.63293	-97.069133	13.24	13.64	14.08	0.44	34.19	33.33	-0.86
481499705001093	29.643138	-97.070265	13.52	13.90	14.40	0.50	35.14	34.72	-0.42
481499705001112	29.6423	-97.124233	14.34	14.76	15.19	0.43	35.88	35.38	-0.51
481499705001111	29.639565	-97.11897	13.91	14.32	14.85	0.52	35.49	34.99	-0.50
481499705001106	29.646981	-97.105581	13.79	14.18	14.70	0.52	35.88	35.46	-0.41
481499705001107	29.648682	-97.089629	13.66	14.04	14.56	0.53	35.69	35.39	-0.29
481499705001113	29.652278	-97.118896	13.88	14.27	15.16	0.89	36.37	36.24	-0.13
481499705001094	29.657389	-97.085227	13.41	13.77	14.75	0.98	35.50	35.66	0.16
481499705001087	29.658409	-97.074524	13.31	13.66	14.40	0.73	35.31	35.43	0.13
481499705001101	29.671391	-97.138804	14.31	14.70	15.14	0.44	35.17	35.69	0.52
481499705001099	29.666797	-97.12168	13.81	14.18	14.93	0.74	35.47	36.06	0.60
481499705001097	29.663331	-97.106267	13.49	13.85	14.85	1.00	35.52	36.02	0.50
481499705001096	29.664671	-97.09784	13.40	13.75	14.77	1.01	35.28	35.67	0.39
481499705001098	29.664863	-97.11376	13.58	13.95	15.29	1.34	35.53	36.14	0.61
481499705001078	29.648254	-97.029242	13.13	13.48	14.31	0.83	34.71	34.51	-0.20

481499705001079	29.642813	-97.011668	13.01	13.36	14.07	0.71	13.49	16.66	3.17
481499705001081	29.647764	-96.986394	12.71	13.04	13.78	0.73	13.16	16.37	3.21
481499705001119	29.636457	-96.974542	12.39	12.74	13.17	0.43	12.87	13.30	0.42
GRID000007291188	29.688166	-97.369964	18.06	18.60	18.90	0.30	34.69	35.45	0.76
GRID000007291909	29.688043	-97.360377	17.81	18.33	18.66	0.33	34.64	35.42	0.78
GRID000007292630	29.687919	-97.35079	17.54	18.04	18.41	0.37	34.57	35.36	0.80
GRID000007293350	29.679424	-97.341346	17.24	17.72	18.15	0.43	36.03	36.96	0.94
GRID000007293351	29.687794	-97.341203	17.39	17.86	18.25	0.39	34.51	35.32	0.81
GRID000007294071	29.679298	-97.33176	17.08	17.54	17.96	0.43	35.97	36.89	0.92
GRID000007294072	29.687669	-97.331616	17.25	17.69	18.10	0.41	34.42	35.25	0.82
GRID000007294792	29.679172	-97.322174	16.90	17.34	17.77	0.43	35.89	36.79	0.90
GRID000007295512	29.670675	-97.312733	20.34	20.90	18.27	-2.63	38.36	38.42	0.05
GRID000007295513	29.679046	-97.312588	16.83	17.25	18.12	0.87	35.96	36.87	0.91
GRID000007296233	29.670547	-97.303148	19.84	20.39	17.99	-2.39	38.14	38.28	0.14
GRID000007296234	29.678918	-97.303002	16.71	17.12	17.90	0.78	35.90	36.73	0.83
GRID000007296954	29.670419	-97.293563	19.62	20.21	18.30	-1.91	37.96	38.19	0.23
GRID000007296955	29.67879	-97.293416	17.17	17.71	18.32	0.60	35.85	36.65	0.80
GRID000007297674	29.661919	-97.284126	19.18	19.77	18.01	-1.76	38.79	38.77	-0.02
GRID000007297675	29.67029	-97.283978	19.08	19.66	18.06	-1.61	37.73	38.05	0.33
GRID000007297676	29.678661	-97.28383	17.06	17.59	18.12	0.54	35.76	36.49	0.74
GRID000007298395	29.66179	-97.274541	16.77	17.28	17.82	0.54	38.40	38.63	0.23
GRID000007298396	29.670161	-97.274392	16.74	17.26	17.83	0.57	37.27	37.91	0.64
GRID000007298397	29.678531	-97.274244	16.71	17.24	17.90	0.66	35.58	36.37	0.78
GRID000007299116	29.661659	-97.264957	16.17	16.69	17.63	0.94	38.09	38.48	0.39
GRID000007299117	29.67003	-97.264807	16.19	16.71	17.62	0.91	36.94	37.77	0.82
GRID000007299118	29.678401	-97.264658	16.45	16.96	17.66	0.70	35.46	36.23	0.77
GRID000007299837	29.661528	-97.255373	15.98	16.48	17.61	1.13	37.94	38.31	0.37
GRID000007299838	29.669899	-97.255222	15.98	16.49	17.60	1.12	36.84	37.65	0.82
GRID000007299839	29.67827	-97.255072	16.22	16.70	17.62	0.92	35.40	36.17	0.76
GRID000007300557	29.653026	-97.24594	15.78	16.28	17.34	1.06	38.17	38.14	-0.02
GRID000007300558	29.661397	-97.245788	15.77	16.25	17.38	1.13	37.84	38.20	0.36
GRID000007300559	29.669767	-97.245637	15.75	16.23	17.34	1.11	36.72	37.55	0.82
GRID000007300560	29.678138	-97.245486	15.94	16.40	17.33	0.93	35.32	36.08	0.75
GRID000007301278	29.652893	-97.236356	15.52	16.02	16.93	0.91	38.04	37.99	-0.05
GRID000007301279	29.661264	-97.236204	15.48	15.98	16.94	0.97	37.69	38.04	0.34
GRID000007301280	29.669635	-97.236052	15.45	15.92	16.88	0.96	36.54	37.36	0.82
GRID000007301281	29.678006	-97.2359	15.62	16.09	16.92	0.83	35.22	35.92	0.70
GRID000007301999	29.65276	-97.226773	15.26	15.76	16.44	0.69	37.87	37.77	-0.10
GRID000007302000	29.661131	-97.22662	15.21	15.69	16.43	0.74	37.53	37.84	0.30
GRID000007302001	29.669502	-97.226467	15.16	15.63	16.39	0.75	36.38	37.16	0.79
GRID000007302002	29.677872	-97.226314	15.35	15.80	16.49	0.69	35.13	35.79	0.65
GRID000007302719	29.644256	-97.217343	15.06	15.57	15.98	0.41	37.34	36.77	-0.56
GRID000007302720	29.652626	-97.217189	15.10	15.59	16.28	0.70	37.73	37.62	-0.11
GRID000007302721	29.660997	-97.217036	15.05	15.52	16.27	0.74	37.39	37.69	0.30
GRID000007302722	29.669368	-97.216882	14.99	15.45	16.21	0.77	36.25	37.04	0.79
GRID000007302723	29.677739	-97.216728	15.16	15.60	16.30	0.70	35.07	35.73	0.66
GRID000007303440	29.644121	-97.207761	14.97	15.46	15.87	0.41	37.18	36.59	-0.59
GRID000007303441	29.652492	-97.207606	15.01	15.48	16.18	0.70	37.60	37.48	-0.12
GRID000007303442	29.660862	-97.207451	14.95	15.41	16.16	0.75	37.26	37.56	0.31
GRID000007303443	29.669233	-97.207297	14.87	15.31	16.09	0.78	36.09	36.90	0.81
GRID000007304161	29.643986	-97.198178	14.87	15.35	15.77	0.42	37.04	36.41	-0.62
GRID000007304162	29.652356	-97.198023	14.93	15.39	16.09	0.70	37.49	37.35	-0.14
GRID000007304163	29.660727	-97.197867	14.86	15.30	16.06	0.76	37.12	37.43	0.31
GRID000007304164	29.669098	-97.197712	14.79	15.22	15.99	0.77	36.00	36.80	0.80
GRID000007304881	29.635479	-97.188752	14.54	15.05	15.42	0.37	35.73	35.15	-0.58

GRID000007304882	29.64385	-97.188596	14.78	15.26	15.66	0.41	36.88	36.23	-0.65
GRID000007304883	29.65222	-97.188439	14.84	15.29	15.72	0.42	37.34	37.19	-0.15
GRID000007304884	29.660591	-97.188283	14.79	15.22	15.64	0.42	37.01	37.30	0.30
GRID000007304885	29.668962	-97.188127	14.71	15.13	15.54	0.41	35.91	36.70	0.78
GRID000007305602	29.635342	-97.17917	14.43	14.93	15.29	0.37	35.61	35.03	-0.59
GRID000007305603	29.643713	-97.179013	14.69	15.14	15.55	0.40	36.71	36.03	-0.68
GRID000007305604	29.652083	-97.178856	14.75	15.18	15.62	0.44	37.19	37.02	-0.16
GRID000007305605	29.660454	-97.178699	14.70	15.13	15.56	0.43	36.88	37.18	0.30
GRID000007305606	29.668825	-97.178542	14.62	15.02	15.45	0.42	35.80	36.57	0.77
GRID000007306323	29.635205	-97.169589	14.35	14.83	15.20	0.37	35.53	34.92	-0.61
GRID000007306324	29.643575	-97.169431	14.60	15.05	15.46	0.41	36.56	35.87	-0.68
GRID000007306325	29.651946	-97.169273	14.66	15.08	15.53	0.45	37.03	36.85	-0.18
GRID000007306326	29.660317	-97.169115	14.60	15.01	15.47	0.46	36.73	37.04	0.30
GRID000007306327	29.668687	-97.168957	14.51	14.91	15.35	0.44	35.70	36.44	0.75
GRID000007307044	29.635066	-97.160007	14.27	14.73	15.12	0.38	35.45	34.82	-0.63
GRID000007307045	29.643437	-97.159848	14.90	15.36	15.37	0.01	36.48	35.76	-0.72
GRID000007307046	29.651808	-97.15969	14.98	15.41	15.43	0.01	36.94	36.71	-0.23
GRID000007307047	29.660178	-97.159531	14.94	15.35	15.37	0.01	36.64	36.89	0.25
GRID000007307048	29.668549	-97.159372	14.84	15.24	15.24	0.00	35.67	36.30	0.63
GRID000007307764	29.626557	-97.150585	13.71	14.21	14.54	0.32	34.23	33.21	-1.03
GRID000007307765	29.634927	-97.150425	14.17	14.62	15.01	0.39	35.37	34.73	-0.64
GRID000007307766	29.643298	-97.150266	14.79	15.22	15.57	0.34	36.34	35.69	-0.65
GRID000007307767	29.651669	-97.150107	14.84	15.26	15.67	0.41	36.80	36.61	-0.20
GRID000007307768	29.660039	-97.149947	14.79	15.20	15.63	0.43	36.51	36.81	0.30
GRID000007307769	29.66841	-97.149787	14.66	15.06	15.46	0.40	35.58	36.22	0.64
GRID000007308486	29.634788	-97.140844	14.04	14.49	14.89	0.40	35.24	34.58	-0.66
GRID000007308487	29.643158	-97.140684	14.63	15.06	15.44	0.37	36.20	35.60	-0.60
GRID000007308488	29.651529	-97.140523	14.68	15.09	15.54	0.44	36.69	36.47	-0.22
GRID000007308489	29.6599	-97.140363	14.59	14.99	15.46	0.46	36.40	36.69	0.29
GRID000007308490	29.66827	-97.140203	14.42	14.81	15.25	0.44	35.50	36.08	0.58
GRID000007309207	29.634647	-97.131262	13.91	14.35	14.76	0.41	35.15	34.47	-0.68
GRID000007309208	29.643018	-97.131101	14.45	14.88	15.30	0.42	36.04	35.50	-0.54
GRID000007309209	29.651389	-97.13094	14.46	14.87	15.35	0.49	36.56	36.32	-0.24
GRID000007309210	29.659759	-97.130779	14.34	14.74	15.25	0.52	36.28	36.58	0.30
GRID000007309211	29.66813	-97.130618	14.17	14.57	15.05	0.48	35.43	35.98	0.55
GRID000007309928	29.634506	-97.121681	13.77	14.21	14.63	0.42	35.03	34.34	-0.70
GRID000007309929	29.642877	-97.121519	14.05	14.46	15.17	0.71	35.88	35.40	-0.48
GRID000007309930	29.651247	-97.121357	13.99	14.38	15.20	0.83	36.44	36.23	-0.20
GRID000007309931	29.659618	-97.121195	13.84	14.21	15.08	0.87	36.16	36.48	0.32
GRID000007309932	29.667989	-97.121033	13.68	14.05	14.89	0.84	35.34	35.91	0.58
GRID000007310649	29.634365	-97.1121	13.68	14.10	14.54	0.44	34.92	34.20	-0.72
GRID000007310650	29.642735	-97.111937	13.85	14.26	15.03	0.78	35.64	35.27	-0.38
GRID000007310651	29.651106	-97.111774	13.80	14.18	15.07	0.90	36.19	35.96	-0.23
GRID000007310652	29.659476	-97.111611	13.62	13.99	15.31	1.32	35.98	36.31	0.33
GRID000007310653	29.667847	-97.111448	13.52	13.88	15.22	1.34	35.25	35.80	0.55
GRID000007311370	29.634222	-97.102518	13.56	13.98	14.43	0.44	34.78	34.05	-0.74
GRID000007311371	29.642593	-97.102355	13.76	14.16	14.66	0.50	35.47	35.06	-0.41
GRID000007311372	29.650963	-97.102191	13.70	14.08	14.62	0.54	35.98	35.70	-0.28
GRID000007311373	29.659334	-97.102027	13.51	13.88	14.85	0.97	35.76	36.05	0.29
GRID000007311374	29.667704	-97.101864	13.41	13.77	14.78	1.01	35.10	35.54	0.44
GRID000007312091	29.634079	-97.092937	13.48	13.90	14.34	0.44	34.62	33.86	-0.76
GRID000007312092	29.642449	-97.092772	13.70	14.08	14.58	0.50	35.36	34.93	-0.43
GRID000007312093	29.65082	-97.092608	13.63	14.01	14.56	0.55	35.82	35.55	-0.28
GRID000007312094	29.65919	-97.092444	13.44	13.81	14.79	0.98	35.55	35.84	0.29
GRID000007312812	29.633935	-97.083356	13.41	13.82	14.26	0.44	34.49	33.69	-0.79

GRID000007312813	29.642305	-97.08319	13.62	14.00	14.50	0.50	35.26	34.82	-0.44
GRID000007312814	29.650676	-97.083025	13.55	13.92	14.46	0.55	35.59	35.42	-0.18
GRID000007312815	29.659046	-97.08286	13.36	13.72	14.71	0.99	35.41	35.59	0.18
GRID000007313533	29.63379	-97.073774	13.32	13.73	14.17	0.43	34.37	33.55	-0.82
GRID000007313534	29.642161	-97.073608	13.54	13.92	14.42	0.50	35.13	34.67	-0.46
GRID000007313535	29.650531	-97.073442	13.48	13.84	14.38	0.53	35.42	35.28	-0.14
GRID000007313536	29.658902	-97.073276	13.29	13.64	14.20	0.56	35.27	35.41	0.14
GRID000007314254	29.633645	-97.064193	13.25	13.65	14.09	0.44	34.23	33.38	-0.85
GRID000007314255	29.642015	-97.064026	13.47	13.84	14.33	0.49	34.99	34.52	-0.47
GRID000007314256	29.650386	-97.063859	13.40	13.75	14.29	0.53	35.29	35.13	-0.16
GRID000007314257	29.658756	-97.063692	13.19	13.54	14.09	0.55	35.14	35.28	0.14
GRID000007314975	29.633498	-97.054612	13.17	13.56	14.00	0.44	34.09	15.86	-18.23
GRID000007314976	29.641869	-97.054444	13.37	13.73	14.23	0.50	34.84	34.37	-0.47
GRID000007314977	29.650239	-97.054276	13.31	13.66	14.19	0.53	35.13	34.97	-0.17
GRID000007314978	29.65861	-97.054108	13.09	13.44	14.00	0.56	35.01	35.15	0.14
GRID000007315696	29.633352	-97.04503	13.08	13.46	13.91	0.45	33.93	14.05	-19.88
GRID000007315697	29.641722	-97.044862	13.30	13.66	14.15	0.49	34.69	34.20	-0.49
GRID000007315698	29.650092	-97.044693	13.24	13.59	14.13	0.54	35.01	34.83	-0.17
GRID000007315699	29.658463	-97.044525	13.02	13.36	13.92	0.56	34.86	34.99	0.13
GRID000007316417	29.633204	-97.035449	12.99	13.37	13.82	0.45	33.73	13.95	-19.78
GRID000007316418	29.641574	-97.03528	13.22	13.57	14.06	0.50	34.53	34.01	-0.52
GRID000007316419	29.649945	-97.03511	13.15	13.50	14.04	0.54	34.83	34.64	-0.18
GRID000007316420	29.658315	-97.034941	12.95	13.30	13.86	0.57	34.72	34.85	0.13
GRID000007317138	29.633056	-97.025868	12.90	13.28	13.72	0.44	33.55	13.85	-19.70
GRID000007317139	29.641426	-97.025698	13.13	13.49	14.23	0.74	34.35	18.06	-16.29
GRID000007317140	29.649797	-97.025528	13.09	13.43	14.26	0.83	34.66	18.07	-16.59
GRID000007317141	29.658167	-97.025357	12.91	13.24	14.15	0.90	34.58	17.82	-16.76
GRID000007317859	29.632907	-97.016287	12.81	13.19	13.60	0.41	13.33	13.73	0.40
GRID000007317860	29.641277	-97.016116	13.03	13.39	14.10	0.71	13.52	16.65	3.13
GRID000007317861	29.649647	-97.015945	13.02	13.36	14.15	0.79	13.49	17.01	3.53
GRID000007317862	29.658018	-97.015774	12.86	13.20	14.07	0.87	13.32	17.20	3.88
GRID000007318580	29.632757	-97.006706	12.71	13.08	13.47	0.39	13.22	13.61	0.38
GRID000007318581	29.641127	-97.006534	12.95	13.31	13.98	0.67	13.43	16.48	3.05
GRID000007318582	29.649498	-97.006362	12.96	13.30	14.06	0.77	13.42	16.87	3.45
GRID000007318583	29.657868	-97.00619	12.80	13.13	13.96	0.83	13.25	17.04	3.78
GRID000007319301	29.632606	-96.997125	12.61	12.96	13.36	0.40	13.11	13.49	0.38
GRID000007319302	29.640977	-96.996952	12.86	13.21	13.87	0.66	13.33	16.30	2.96
GRID000007319303	29.649347	-96.996779	12.87	13.21	13.96	0.75	13.33	16.69	3.35
GRID000007319304	29.657718	-96.996607	12.73	13.05	14.28	1.22	13.17	17.05	3.88
GRID000007320022	29.632455	-96.987544	12.47	12.84	13.23	0.40	12.98	13.37	0.39
GRID000007320023	29.640826	-96.98737	12.73	13.07	13.73	0.66	13.20	16.07	2.88
GRID000007320024	29.649196	-96.987197	12.72	13.04	13.79	0.75	13.17	16.44	3.27
GRID000007320743	29.632303	-96.977963	12.30	12.67	13.07	0.40	12.80	13.20	0.40
GRID000007320744	29.640674	-96.977788	12.53	12.86	13.53	0.67	13.00	15.80	2.80
GRID000007320745	29.649044	-96.977614	12.42	12.76	13.52	0.76	12.88	16.09	3.20
GRID000007321464	29.632151	-96.968382	12.12	12.48	12.89	0.41	12.62	13.03	0.40
GRID000007321465	29.640521	-96.968207	12.30	12.64	13.11	0.47	12.77	13.23	0.46
GRID000007321466	29.648891	-96.968031	12.16	12.50	13.03	0.53	12.62	13.14	0.52
SECTION4F12762770	29.40299708	-96.2335788	7.33	7.46	7.53	0.06	7.51	7.57	0.06
SECTION4F12762773	29.40376028	-96.23349994	7.35	7.47	7.53	0.06	7.51	7.58	0.06
SECTION4F12762781	29.35711966	-96.17495056	5.03	5.15	5.27	0.12	5.19	5.31	0.12
SECTION4F12762809	29.40376028	-96.23349994	7.35	7.47	7.53	0.06	7.51	7.58	0.06
SECTION4F12762814	29.64171317	-97.12820197	14.40	14.82	15.23	0.41	35.85	35.35	-0.50
SECTION4F12763150	29.58793429	-96.89000056	8.96	9.47	9.75	0.27	9.71	9.97	0.26
SECTION4F12763164	29.58181286	-96.91736532	9.43	9.95	10.14	0.18	10.19	10.36	0.17

SECTION4F12763187	29.58554029	-96.98502756	10.18	10.74	10.88	0.14	10.99	11.14	0.14
SECTION4F12763190	29.43551456	-96.3971963	7.20	7.35	7.42	0.07	7.41	7.47	0.06
SECTION4F12763194	29.44876161	-96.39547831	6.99	7.15	7.19	0.04	7.21	7.26	0.05
SECTION4F12763534	29.50465503	-96.33336694	6.66	6.89	7.12	0.23	6.99	7.23	0.23
SECTION4F12763536	29.60136199	-96.83079263	8.85	9.28	9.64	0.36	9.48	9.82	0.34
SECTION4F12763537	29.60133719	-96.83079263	8.85	9.28	9.64	0.36	9.48	9.82	0.34
SECTION4F12763546	29.60058993	-96.82978106	8.83	9.26	9.61	0.36	9.46	9.80	0.34
SECTION4F12763889	29.43761917	-96.27009311	7.01	7.15	7.17	0.02	7.21	7.23	0.02
SECTION4F12763959	29.40356819	-96.23612437	7.33	7.46	7.53	0.06	7.51	7.57	0.06
SECTION4F12763967	29.5877505	-96.88996402	8.96	9.47	9.75	0.27	9.71	9.97	0.26
SECTION4F12764004	29.62996825	-97.00403699	12.54	12.92	13.31	0.39	13.07	13.44	0.37
SECTION4F12764012	29.64118718	-96.8871807	11.00	11.33	11.88	0.55	11.46	12.00	0.54
SECTION4F12764093	29.61331514	-97.06896868	11.99	12.51	12.79	0.29	12.73	13.00	0.27
SECTION4F12764193	29.57952298	-96.87924969	8.88	9.39	9.60	0.21	9.62	9.82	0.20
SECTION4F12764890	29.58973218	-96.98497037	10.27	10.81	10.98	0.18	11.06	11.22	0.16
SECTION4F12764897	29.58309769	-96.98541263	10.15	10.72	10.84	0.13	10.97	11.09	0.13
SECTION4F12764905	29.49041609	-96.30873693	6.69	6.90	7.14	0.24	6.99	7.23	0.24
SECTION4F12765162	29.63115197	-96.99325438	12.48	12.86	13.24	0.39	13.00	13.38	0.38
SECTION4F12765457	29.64171553	-97.12820799	14.40	14.82	15.23	0.41	35.85	35.35	-0.50
SECTION4F12765458	29.67433439	-97.24911495	15.92	16.40	17.47	1.07	35.89	36.90	1.01
SECTION4F12765461	29.64078612	-97.0020995	12.91	13.25	13.93	0.68	13.39	16.38	3.00
SECTION4F12765466	29.65562389	-97.09027374	13.50	13.86	14.81	0.95	35.73	35.78	0.05
SECTION4F12767548	29.53182904	-96.79698408	8.14	8.54	8.54	0.00	8.74	8.74	0.00
SECTION4F12767549	29.53809298	-96.80046482	8.15	8.57	8.57	0.00	8.77	8.78	0.01
SECTION4F12767550	29.54351792	-96.81075545	8.20	8.64	8.65	0.01	8.85	8.87	0.01
SECTION4F12767551	29.55272161	-96.80945559	8.20	8.65	8.74	0.09	8.87	8.95	0.08
SECTION4F12767552	29.5602536	-96.80435604	8.24	8.70	8.84	0.15	8.91	9.06	0.15
SECTION4F12767553	29.55762743	-96.82021001	8.30	8.76	8.87	0.11	8.98	9.09	0.11
SECTION4F12767554	29.56356166	-96.78373076	8.19	8.63	8.83	0.20	8.84	9.04	0.20
SECTION4F12767555	29.5717537	-96.79579978	8.40	8.84	9.09	0.25	9.04	9.29	0.24
SECTION4F12767556	29.54064038	-96.77825763	8.03	8.45	8.47	0.02	8.65	8.67	0.02
SECTION4F12767557	29.54556018	-96.86565736	8.51	8.99	8.99	0.00	9.22	9.23	0.01
SECTION4F12767558	29.58391736	-96.84942102	8.73	9.21	9.49	0.28	9.43	9.71	0.27
SECTION4F12767559	29.40789502	-96.37922995	6.89	7.01	7.10	0.09	7.06	7.14	0.09
SECTION4F12767560	29.44042907	-96.43655306	7.25	7.40	7.47	0.07	7.46	7.53	0.07
SECTION4F12767561	29.48752068	-96.41592505	7.33	7.54	7.53	-0.01	7.63	7.63	0.00
SECTION4F12767562	29.48439831	-96.39159537	7.33	7.54	7.54	0.01	7.62	7.64	0.01
SECTION4F12767563	29.45764444	-96.31018649	7.06	7.23	7.19	-0.04	7.31	7.26	-0.04
SECTION4F12767564	29.48865972	-96.30598328	6.70	6.91	7.13	0.23	7.00	7.23	0.23
SECTION4F12767565	29.49662511	-96.32597975	6.70	6.92	7.17	0.25	7.03	7.27	0.25
SECTION4F12767566	29.38151598	-96.16833743	6.18	6.32	6.41	0.08	6.37	6.45	0.08
SECTION4F12767567	29.38802095	-96.19088103	6.27	6.42	6.50	0.09	6.46	6.55	0.09
SECTION4F12767568	29.49825884	-96.65904891	7.62	7.89	7.89	0.00	8.02	8.02	0.00
SECTION4F12767569	29.59645484	-96.87402022	8.90	9.38	9.75	0.37	9.60	9.95	0.35
SECTION4F12767570	29.61116723	-96.84073486	9.29	9.69	10.06	0.37	9.87	10.23	0.36
SECTION4F12767571	29.61680892	-96.8050617	9.57	9.92	10.28	0.36	10.07	10.43	0.36
SECTION4F12767572	29.57231945	-96.77379897	8.32	8.75	9.02	0.27	8.95	9.21	0.26
SECTION4F12767573	29.60015576	-96.77907248	8.70	9.09	9.39	0.30	9.26	9.57	0.30
SECTION4F12767574	29.56691917	-96.89112976	8.82	9.35	9.46	0.11	9.60	9.70	0.10
SECTION4F12767575	29.58788531	-96.89009978	8.96	9.47	9.75	0.27	9.71	9.98	0.27
SECTION4F12767576	29.58981964	-96.90534129	9.24	9.75	10.02	0.26	9.99	10.24	0.25
SECTION4F12767577	29.58294665	-96.98565668	10.15	10.72	10.85	0.13	10.98	11.09	0.12
SECTION4F12767578	29.63115197	-96.99325438	12.48	12.86	13.24	0.39	13.00	13.38	0.38
SECTION4F12767579	29.63951506	-96.88593195	10.95	11.28	11.82	0.54	11.42	11.94	0.53
SECTION4F12767580	29.64107423	-96.88754042	11.00	11.33	11.88	0.55	11.46	12.00	0.54

SECTION4F12767581	29.52649953	-96.32526236	6.55	6.79	6.94	0.15	6.91	7.06	0.15
SECTION4F12767582	29.51022603	-96.41793607	7.15	7.40	7.64	0.24	7.51	7.75	0.24
SECTION4F12767583	29.64171553	-97.12820799	14.40	14.82	15.23	0.41	35.85	35.35	-0.50
SECTION4F12767584	29.67433439	-97.24911495	15.92	16.40	17.47	1.07	35.89	36.90	1.01
SECTION4F12767585	29.64078612	-97.0020995	12.91	13.25	13.93	0.68	13.39	16.38	3.00
SECTION4F12767586	29.65562389	-97.09027374	13.50	13.86	14.81	0.95	35.73	35.78	0.05
SECTION4F12767587	29.59182919	-96.88970969	8.97	9.47	9.78	0.31	9.71	10.01	0.30
SECTION4F12767588	29.61909151	-96.79492592	9.70	10.04	10.40	0.36	10.18	10.54	0.35
SECTION4F12767589	29.62961046	-97.00395482	12.53	12.90	13.28	0.38	13.05	13.42	0.37
SECTION4F12767590	29.59415128	-96.99935162	10.68	11.21	11.39	0.18	11.45	11.62	0.17
SECTION4F12767591	29.40484365	-96.24120204	7.33	7.45	7.52	0.06	7.50	7.56	0.06
SECTION4F12767592	29.55628469	-96.45813699	7.06	7.33	7.51	0.17	7.47	7.64	0.17
SECTION4F12767593	29.55352584	-96.84390389	8.40	8.88	8.93	0.05	9.10	9.17	0.06
SECTION4F12767594	29.51051218	-96.56978803	7.36	7.63	7.62	-0.01	7.76	7.75	-0.01
SECTION4F12767595	29.58349907	-96.98579461	10.16	10.73	10.86	0.13	10.98	11.11	0.13
SECTION4F12767596	29.63428208	-96.95495033	11.95	12.30	12.73	0.43	12.45	12.86	0.42
SECTION4F12767597	29.50447183	-96.33340551	6.66	6.89	7.12	0.23	6.99	7.23	0.23
SECTION4F12767598	29.394214	-96.16714977	6.44	6.59	6.66	0.08	6.63	6.71	0.08
SECTION4F12767599	29.57769005	-96.91765226	9.36	9.89	10.05	0.16	10.13	10.28	0.15
SECTION4F12767600	29.39233754	-96.16460498	6.44	6.59	6.66	0.07	6.63	6.71	0.08
SECTION4F12767601	29.40343701	-96.23617526	7.33	7.46	7.52	0.06	7.50	7.56	0.06
SECTION4F12767602	29.41819282	-96.25101953	7.24	7.38	7.43	0.05	7.42	7.48	0.06
SECTION4F12767603	29.45660119	-96.3286196	7.10	7.27	7.23	-0.04	7.34	7.31	-0.03
SECTION4F12767604	29.37575999	-96.21549028	6.52	6.62	6.71	0.09	6.66	6.75	0.09
SECTION4F12779239	29.64171828	-97.12820942	14.40	14.82	15.23	0.41	35.85	35.35	-0.50
SECTION4F12781499	29.40300218	-96.23358601	7.33	7.46	7.53	0.06	7.51	7.57	0.06
SECTION4F12781500	29.40376538	-96.23350715	7.35	7.47	7.53	0.06	7.51	7.58	0.06
SECTION4F12781501	29.35712474	-96.17495775	5.03	5.15	5.27	0.12	5.19	5.31	0.12
SECTION4F12781502	29.40376538	-96.23350715	7.35	7.47	7.53	0.06	7.51	7.58	0.06
SECTION4F12781503	29.64171828	-97.12820942	14.40	14.82	15.23	0.41	35.85	35.35	-0.50
SECTION4F12781504	29.5879394	-96.89000795	8.96	9.47	9.75	0.27	9.71	9.97	0.26
SECTION4F12781505	29.58181797	-96.91737271	9.43	9.95	10.14	0.18	10.19	10.36	0.17
SECTION4F12781506	29.5855454	-96.98503497	10.18	10.74	10.88	0.14	10.99	11.14	0.14
SECTION4F12781507	29.43551966	-96.39720355	7.20	7.35	7.42	0.07	7.41	7.47	0.06
SECTION4F12781508	29.44876671	-96.39548556	6.99	7.15	7.19	0.04	7.21	7.26	0.05
SECTION4F12781509	29.50466015	-96.33337417	6.66	6.89	7.12	0.23	6.99	7.23	0.23
SECTION4F12781510	29.6013671	-96.8308	8.85	9.28	9.64	0.36	9.48	9.82	0.34
SECTION4F12781511	29.6013423	-96.8308	8.85	9.28	9.64	0.36	9.48	9.82	0.34
SECTION4F12781512	29.60059505	-96.82978843	8.83	9.26	9.61	0.36	9.46	9.80	0.34
SECTION4F12781513	29.43762427	-96.27010033	7.01	7.15	7.17	0.02	7.21	7.23	0.02
SECTION4F12781514	29.40357329	-96.23613158	7.33	7.46	7.53	0.06	7.51	7.57	0.06
SECTION4F12781515	29.58775561	-96.88997141	8.96	9.47	9.75	0.27	9.71	9.97	0.26
SECTION4F12781516	29.62997336	-97.0040444	12.54	12.92	13.31	0.39	13.07	13.44	0.37
SECTION4F12781517	29.6411923	-96.88718809	11.00	11.33	11.88	0.55	11.46	12.00	0.54
SECTION4F12781518	29.61332025	-97.06897611	11.99	12.51	12.79	0.29	12.73	13.00	0.27
SECTION4F12781519	29.57952809	-96.87925707	8.88	9.39	9.60	0.21	9.62	9.82	0.20
SECTION4F12781520	29.58973729	-96.98497778	10.27	10.81	10.98	0.18	11.06	11.22	0.16
SECTION4F12781521	29.5831028	-96.98542004	10.15	10.72	10.84	0.13	10.98	11.09	0.12
SECTION4F12781522	29.4904212	-96.30874416	6.69	6.90	7.14	0.24	6.99	7.23	0.24
GRID000007291188	29.688166	-97.36996421	18.06	18.60	18.90	0.30	34.69	35.45	0.76
GRID000007291909	29.68804288	-97.36037715	17.81	18.33	18.66	0.33	34.64	35.42	0.78
GRID000007292630	29.68791903	-97.35079012	17.54	18.04	18.41	0.37	34.57	35.36	0.80
GRID000007293350	29.67942352	-97.34134617	17.24	17.72	18.15	0.43	36.03	36.96	0.94
GRID000007293351	29.68779445	-97.3412031	17.39	17.86	18.25	0.39	34.51	35.32	0.81
GRID000007294071	29.67929824	-97.33176002	17.08	17.54	17.96	0.43	35.97	36.89	0.92

GRID000007294072	29.68766916	-97.33161612	17.25	17.69	18.10	0.41	34.42	35.25	0.82
GRID000007294792	29.67917223	-97.32217388	16.90	17.34	17.77	0.43	35.89	36.79	0.90
GRID000007295512	29.67067463	-97.3127333	20.34	20.90	18.27	-2.63	38.36	38.42	0.05
GRID000007295513	29.67904551	-97.31258777	16.83	17.25	18.12	0.87	35.96	36.87	0.91
GRID000007296233	29.67054719	-97.30314804	19.84	20.39	17.99	-2.39	38.14	38.28	0.14
GRID000007296234	29.67891806	-97.30300169	16.71	17.12	17.90	0.78	35.90	36.73	0.83
GRID000007296954	29.67041903	-97.29356281	19.62	20.21	18.30	-1.91	37.96	38.19	0.23
GRID000007296955	29.67878989	-97.29341563	17.17	17.71	18.32	0.60	35.85	36.65	0.80
GRID000007297675	29.67029015	-97.2839776	19.08	19.66	18.06	-1.61	37.73	38.05	0.33
GRID000007297676	29.678661	-97.2838296	17.06	17.59	18.12	0.54	35.76	36.49	0.74
GRID000007298395	29.66178973	-97.27454122	16.77	17.28	17.82	0.54	38.40	38.63	0.23
GRID000007298396	29.67016054	-97.27439242	16.74	17.26	17.83	0.57	37.27	37.91	0.64
GRID000007298397	29.67853138	-97.27424359	16.71	17.24	17.90	0.66	35.58	36.37	0.78
GRID000007299116	29.66165941	-97.26495689	16.17	16.69	17.63	0.94	38.09	38.48	0.39
GRID000007299117	29.67003022	-97.26480726	16.19	16.71	17.62	0.91	36.94	37.77	0.82
GRID000007299118	29.67840105	-97.26465761	16.45	16.96	17.66	0.70	35.46	36.23	0.77
GRID000007299837	29.66152838	-97.25537259	15.98	16.48	17.61	1.13	37.94	38.31	0.37
GRID000007299838	29.66989917	-97.25522213	15.98	16.49	17.60	1.12	36.84	37.65	0.82
GRID000007299839	29.67826999	-97.25507165	16.22	16.70	17.62	0.92	35.40	36.17	0.76
GRID000007300557	29.65302586	-97.24593957	15.78	16.28	17.34	1.06	38.17	38.14	-0.02
GRID000007300558	29.66139662	-97.24578831	15.77	16.25	17.38	1.13	37.84	38.20	0.36
GRID000007300559	29.66976741	-97.24563703	15.75	16.23	17.34	1.11	36.72	37.55	0.82
GRID000007300560	29.67813821	-97.24548572	15.94	16.40	17.33	0.93	35.32	36.08	0.75
GRID000007301278	29.65289339	-97.23635615	15.52	16.02	16.93	0.91	38.04	37.99	-0.05
GRID000007301279	29.66126414	-97.23620406	15.48	15.98	16.94	0.97	37.69	38.04	0.34
GRID000007301280	29.66963491	-97.23605195	15.45	15.92	16.88	0.96	36.54	37.36	0.82
GRID000007301281	29.67800571	-97.23589982	15.62	16.09	16.92	0.83	35.22	35.92	0.70
GRID000007301999	29.6527602	-97.22677275	15.26	15.76	16.44	0.69	37.87	37.77	-0.10
GRID000007302000	29.66113094	-97.22661984	15.21	15.69	16.43	0.74	37.53	37.84	0.30
GRID000007302001	29.6695017	-97.2264669	15.16	15.63	16.39	0.75	36.38	37.16	0.79
GRID000007302002	29.67787248	-97.22631394	15.35	15.80	16.49	0.69	35.13	35.79	0.65
GRID000007302719	29.64425558	-97.21734308	15.06	15.57	15.98	0.41	37.34	36.77	-0.56
GRID000007302720	29.65262629	-97.21718937	15.10	15.59	16.28	0.70	37.73	37.62	-0.11
GRID000007302721	29.66099702	-97.21703564	15.05	15.52	16.27	0.74	37.39	37.69	0.30
GRID000007302722	29.66936777	-97.21688188	14.99	15.45	16.21	0.77	36.25	37.04	0.79
GRID000007302723	29.67773854	-97.21672809	15.16	15.60	16.30	0.70	35.07	35.73	0.66
GRID000007303440	29.64412096	-97.20776056	14.97	15.46	15.87	0.41	37.18	36.59	-0.59
GRID000007303441	29.65249166	-97.20760603	15.01	15.48	16.18	0.70	37.60	37.48	-0.12
GRID000007303442	29.66086238	-97.20745147	14.95	15.41	16.16	0.75	37.26	37.56	0.31
GRID000007303443	29.66923311	-97.20729688	14.87	15.31	16.09	0.78	36.09	36.90	0.81
GRID000007304161	29.64398562	-97.19817807	14.87	15.35	15.77	0.42	37.04	36.41	-0.62
GRID000007304162	29.6523563	-97.19802271	14.93	15.39	16.09	0.70	37.49	37.35	-0.14
GRID000007304163	29.66072701	-97.19786732	14.86	15.30	16.06	0.76	37.12	37.43	0.31
GRID000007304164	29.66909774	-97.1977119	14.79	15.22	15.99	0.77	36.00	36.80	0.80
GRID000007304882	29.64384955	-97.1885956	14.78	15.26	15.66	0.41	36.88	36.23	-0.65
GRID000007304883	29.65222023	-97.18843941	14.84	15.29	15.72	0.42	37.34	37.19	-0.15
GRID000007304884	29.66059092	-97.1882832	14.79	15.22	15.64	0.42	37.01	37.30	0.30
GRID000007304885	29.66896164	-97.18812696	14.71	15.13	15.54	0.41	35.91	36.70	0.78
GRID000007305602	29.63534212	-97.17917015	14.43	14.93	15.29	0.37	35.61	35.03	-0.59
GRID000007305603	29.64371277	-97.17901316	14.69	15.14	15.55	0.40	36.71	36.03	-0.68
GRID000007305604	29.65208343	-97.17885615	14.75	15.18	15.62	0.44	37.19	37.02	-0.16
GRID000007305605	29.66045411	-97.17869911	14.70	15.13	15.56	0.43	36.88	37.18	0.30
GRID000007305606	29.66882482	-97.17854204	14.62	15.02	15.45	0.42	35.80	36.57	0.77
GRID000007306323	29.63520463	-97.16958856	14.35	14.83	15.20	0.37	35.53	34.92	-0.61
GRID000007306324	29.64357526	-97.16943075	14.60	15.05	15.46	0.41	36.56	35.87	-0.68

GRID000007306325	29.65194591	-97.16927291	14.66	15.08	15.53	0.45	37.03	36.85	-0.18
GRID000007306326	29.66031658	-97.16911504	14.60	15.01	15.47	0.46	36.73	37.04	0.30
GRID000007306327	29.66868727	-97.16895715	14.51	14.91	15.35	0.44	35.70	36.44	0.75
GRID000007307044	29.63506641	-97.160007	14.27	14.73	15.12	0.38	35.45	34.82	-0.63
GRID000007307045	29.64343703	-97.15984836	14.90	15.36	15.37	0.01	36.48	35.76	-0.72
GRID000007307046	29.65180767	-97.1596897	14.98	15.41	15.43	0.01	36.94	36.71	-0.23
GRID000007307047	29.66017833	-97.15953101	14.94	15.35	15.37	0.01	36.64	36.89	0.25
GRID000007307048	29.66854901	-97.15937229	14.84	15.24	15.24	0.00	35.67	36.30	0.63
GRID000007307764	29.62655688	-97.1505849	13.71	14.21	14.54	0.32	34.23	33.21	-1.03
GRID000007307765	29.63492747	-97.15042547	14.17	14.62	15.01	0.39	35.37	34.73	-0.64
GRID000007307766	29.64329808	-97.150266	14.79	15.22	15.57	0.34	36.34	35.69	-0.65
GRID000007307767	29.65166871	-97.15010651	14.84	15.26	15.67	0.41	36.80	36.61	-0.20
GRID000007307768	29.66003936	-97.149947	14.79	15.20	15.63	0.43	36.51	36.81	0.30
GRID000007307769	29.66841002	-97.14978745	14.66	15.06	15.46	0.40	35.58	36.22	0.64
GRID000007308485	29.62641724	-97.14100422	13.58	14.07	14.42	0.34	34.07	33.00	-1.06
GRID000007308486	29.63478782	-97.14084396	14.04	14.49	14.89	0.40	35.24	34.58	-0.66
GRID000007308487	29.64315841	-97.14068367	14.63	15.06	15.44	0.37	36.20	35.60	-0.60
GRID000007308488	29.65152903	-97.14052336	14.68	15.09	15.54	0.44	36.69	36.47	-0.22
GRID000007308489	29.65989966	-97.14036301	14.59	14.99	15.46	0.46	36.40	36.69	0.29
GRID000007308490	29.66827031	-97.14020264	14.42	14.81	15.25	0.44	35.50	36.08	0.58
GRID000007309206	29.62627687	-97.13142357	13.45	13.95	14.30	0.35	33.97	32.86	-1.11
GRID000007309207	29.63464743	-97.13126249	13.91	14.35	14.76	0.41	35.15	34.47	-0.68
GRID000007309208	29.64301802	-97.13110137	14.45	14.88	15.30	0.42	36.04	35.50	-0.54
GRID000007309209	29.65138862	-97.13094023	14.46	14.87	15.35	0.48	36.56	36.32	-0.24
GRID000007309210	29.65975924	-97.13077906	14.34	14.74	15.25	0.52	36.28	36.58	0.30
GRID000007309211	29.66812988	-97.13061786	14.17	14.57	15.05	0.48	35.43	35.98	0.55
GRID000007309926	29.61776524	-97.12200483	12.74	13.29	13.58	0.29	31.90	13.81	-18.10
GRID000007309927	29.62613578	-97.12184295	13.32	13.80	14.16	0.36	33.81	32.67	-1.14
GRID000007309928	29.63450633	-97.12168104	13.77	14.21	14.63	0.42	35.03	34.34	-0.70
GRID000007309929	29.6428769	-97.1215191	14.05	14.46	15.17	0.71	35.88	35.40	-0.48
GRID000007309930	29.65124749	-97.12135713	13.99	14.38	15.20	0.83	36.44	36.23	-0.20
GRID000007309931	29.6596181	-97.12119513	13.84	14.21	15.08	0.87	36.16	36.48	0.32
GRID000007309932	29.66798873	-97.12103311	13.68	14.05	14.89	0.84	35.34	35.91	0.58
GRID000007310647	29.61762345	-97.11242506	12.62	13.16	13.46	0.30	31.02	13.68	-17.34
GRID000007310648	29.62599397	-97.11226235	13.21	13.69	14.06	0.37	33.70	32.51	-1.19
GRID000007310649	29.63436451	-97.11209961	13.68	14.10	14.54	0.44	34.92	34.20	-0.72
GRID000007310650	29.64273507	-97.11193685	13.85	14.26	15.03	0.78	35.64	35.27	-0.38
GRID000007310651	29.65110565	-97.11177405	13.80	14.18	15.07	0.90	36.19	35.96	-0.23
GRID000007310652	29.65947624	-97.11161123	13.62	13.99	15.31	1.32	35.98	36.31	0.33
GRID000007310653	29.66784686	-97.11144838	13.52	13.88	15.22	1.34	35.25	35.80	0.55
GRID000007311368	29.61748093	-97.10284532	12.52	13.04	13.35	0.31	13.87	13.57	-0.30
GRID000007311369	29.62585144	-97.10268178	13.10	13.57	13.95	0.38	33.54	31.23	-2.31
GRID000007311370	29.63422196	-97.10251822	13.56	13.98	14.43	0.44	34.78	34.05	-0.74
GRID000007311371	29.64259251	-97.10235463	13.76	14.16	14.66	0.50	35.47	35.06	-0.41
GRID000007311372	29.65096308	-97.10219101	13.70	14.08	14.62	0.54	35.98	35.70	-0.28
GRID000007311373	29.65933366	-97.10202736	13.51	13.88	14.85	0.97	35.76	36.05	0.29
GRID000007311374	29.66770426	-97.10186368	13.41	13.77	14.78	1.01	35.10	35.54	0.44
GRID000007312089	29.61733768	-97.09326561	12.42	12.94	13.25	0.31	13.16	13.46	0.30
GRID000007312090	29.62570818	-97.09310124	13.02	13.47	13.85	0.38	33.39	29.64	-3.75
GRID000007312091	29.6340787	-97.09293685	13.48	13.90	14.34	0.44	34.62	33.86	-0.76
GRID000007312092	29.64244923	-97.09277244	13.70	14.08	14.58	0.50	35.36	34.93	-0.43
GRID000007312093	29.65081978	-97.09260799	13.63	14.01	14.56	0.55	35.82	35.55	-0.28
GRID000007312094	29.65919035	-97.09244352	13.44	13.81	14.79	0.98	35.55	35.84	0.29
GRID000007312809	29.60882326	-97.08385108	11.89	12.45	12.70	0.25	12.70	12.94	0.23
GRID000007312810	29.61719372	-97.08368592	12.33	12.84	13.15	0.31	13.05	13.36	0.31

GRID000007312811	29.62556421	-97.08352073	12.91	13.36	13.74	0.38	33.23	14.46	-18.77
GRID000007312812	29.63393471	-97.08335552	13.41	13.82	14.26	0.44	34.49	33.69	-0.79
GRID000007312813	29.64230523	-97.08319027	13.62	14.00	14.50	0.50	35.26	34.82	-0.44
GRID000007312814	29.65067577	-97.083025	13.55	13.92	14.46	0.55	35.59	35.42	-0.18
GRID000007312815	29.65904633	-97.0828597	13.36	13.72	14.71	0.99	35.41	35.59	0.18
GRID000007313530	29.60867859	-97.07427225	11.80	12.36	12.61	0.25	12.60	12.84	0.24
GRID000007313531	29.61704904	-97.07410626	12.24	12.74	13.06	0.32	12.95	13.26	0.31
GRID000007313532	29.62541951	-97.07394025	12.82	13.27	13.65	0.38	33.03	13.82	-19.22
GRID000007313533	29.63379	-97.07377421	13.32	13.73	14.17	0.43	34.37	33.55	-0.82
GRID000007313534	29.64216051	-97.07360814	13.54	13.92	14.42	0.50	35.13	34.67	-0.46
GRID000007313535	29.65053103	-97.07344204	13.48	13.84	14.38	0.53	35.42	35.28	-0.14
GRID000007313536	29.65890158	-97.07327592	13.29	13.64	14.20	0.56	35.27	35.41	0.14
GRID000007314251	29.60853319	-97.06469344	11.73	12.27	12.52	0.25	12.50	12.74	0.24
GRID000007314252	29.61690363	-97.06452663	12.15	12.65	12.96	0.31	12.86	13.16	0.31
GRID000007314253	29.62527409	-97.0643598	12.75	13.18	13.56	0.38	27.77	13.73	-14.03
GRID000007314254	29.63364457	-97.06419293	13.25	13.65	14.09	0.44	34.23	33.38	-0.85
GRID000007314255	29.64201506	-97.06402603	13.47	13.84	14.33	0.49	34.99	34.52	-0.47
GRID000007314256	29.65038558	-97.06385911	13.40	13.75	14.29	0.53	35.29	35.13	-0.16
GRID000007314257	29.65875611	-97.06369216	13.19	13.54	14.09	0.55	35.14	35.28	0.14
GRID000007314971	29.60001667	-97.05528227	11.36	11.93	12.12	0.19	12.18	12.36	0.18
GRID000007314972	29.60838708	-97.05511467	11.65	12.18	12.43	0.25	12.41	12.65	0.24
GRID000007314973	29.61675751	-97.05494703	12.08	12.56	12.88	0.32	12.77	13.07	0.31
GRID000007314974	29.62512795	-97.05477937	12.66	13.09	13.47	0.38	13.75	13.64	-0.11
GRID000007314975	29.63349841	-97.05461168	13.17	13.56	14.00	0.44	34.09	15.86	-18.23
GRID000007314976	29.6418689	-97.05444396	13.37	13.73	14.23	0.50	34.84	34.37	-0.47
GRID000007314977	29.6502394	-97.05427621	13.31	13.66	14.19	0.53	35.13	34.97	-0.17
GRID000007314978	29.65860992	-97.05410843	13.09	13.44	14.00	0.56	35.01	35.15	0.14
GRID000007315692	29.59986985	-97.04570435	11.28	11.84	12.03	0.19	12.08	12.27	0.18
GRID000007315693	29.60824024	-97.04553592	11.57	12.09	12.35	0.26	12.32	12.57	0.25
GRID000007315694	29.61661066	-97.04536746	12.00	12.47	12.80	0.33	12.68	12.99	0.31
GRID000007315695	29.62498109	-97.04519897	12.57	13.00	13.39	0.39	13.17	13.55	0.38
GRID000007315696	29.63335154	-97.04503046	13.08	13.46	13.91	0.45	33.93	14.05	-19.88
GRID000007315697	29.64172201	-97.04486191	13.30	13.66	14.15	0.49	34.69	34.20	-0.49
GRID000007315698	29.6500925	-97.04469333	13.24	13.59	14.13	0.54	35.01	34.83	-0.17
GRID000007315699	29.65846301	-97.04452473	13.02	13.36	13.92	0.56	34.86	34.99	0.13
GRID000007316413	29.59972231	-97.03612646	11.20	11.75	11.94	0.19	12.00	12.18	0.18
GRID000007316414	29.60809269	-97.0359572	11.49	12.01	12.27	0.25	12.23	12.48	0.25
GRID000007316415	29.61646309	-97.03578792	11.92	12.39	12.72	0.33	12.59	12.91	0.32
GRID000007316416	29.62483351	-97.0356186	12.49	12.91	13.31	0.40	13.08	13.46	0.38
GRID000007316417	29.63320394	-97.03544926	12.99	13.37	13.82	0.45	33.73	13.95	-19.78
GRID000007316418	29.6415744	-97.03527989	13.22	13.57	14.06	0.50	34.53	34.01	-0.52
GRID000007316419	29.64994488	-97.03511049	13.15	13.50	14.04	0.54	34.83	34.64	-0.18
GRID000007316420	29.65831537	-97.03494106	12.95	13.30	13.86	0.57	34.72	34.85	0.13
GRID000007317133	29.59120369	-97.02671865	10.92	11.49	11.63	0.15	11.74	11.87	0.14
GRID000007317134	29.59957404	-97.0265486	11.13	11.67	11.87	0.20	11.91	12.09	0.18
GRID000007317135	29.60794441	-97.02637852	11.43	11.93	12.19	0.26	12.15	12.39	0.25
GRID000007317136	29.6163148	-97.02620841	11.85	12.30	12.64	0.34	12.50	12.82	0.32
GRID000007317137	29.6246852	-97.02603827	12.40	12.82	13.21	0.39	12.98	13.36	0.38
GRID000007317138	29.63305563	-97.0258681	12.90	13.28	13.72	0.44	33.55	13.85	-19.70
GRID000007317139	29.64142607	-97.0256979	13.13	13.49	14.23	0.74	34.35	18.06	-16.29
GRID000007317140	29.64979653	-97.02552767	13.09	13.43	14.26	0.83	34.66	18.07	-16.59
GRID000007317141	29.65816701	-97.02535742	12.91	13.24	14.15	0.90	34.58	17.82	-16.76
GRID000007317854	29.59105472	-97.01714164	10.83	11.39	11.54	0.15	11.64	11.78	0.14
GRID000007317855	29.59942505	-97.01697076	11.04	11.58	11.77	0.19	11.81	12.00	0.18
GRID000007317856	29.60779541	-97.01679986	11.35	11.84	12.10	0.26	12.06	12.30	0.25

GRID000007317857	29.61616578	-97.01662892	11.77	12.22	12.54	0.32	12.41	12.72	0.31
GRID000007317858	29.62453618	-97.01645796	12.32	12.73	13.10	0.37	12.89	13.25	0.36
GRID000007317859	29.63290659	-97.01628696	12.81	13.19	13.60	0.41	13.33	13.73	0.40
GRID000007317860	29.64127702	-97.01611594	13.03	13.39	14.10	0.71	13.52	16.65	3.13
GRID000007317861	29.64964747	-97.01594489	13.02	13.36	14.15	0.79	13.49	17.01	3.53
GRID000007317862	29.65801794	-97.0157738	12.86	13.20	14.07	0.87	13.32	17.20	3.88
GRID000007318575	29.59090503	-97.00756466	10.73	11.28	11.43	0.15	11.52	11.67	0.15
GRID000007318576	29.59927535	-97.00739296	10.95	11.47	11.67	0.20	11.70	11.89	0.19
GRID000007318577	29.60764569	-97.00722123	11.25	11.74	12.00	0.25	11.95	12.20	0.25
GRID000007318578	29.61601605	-97.00704947	11.68	12.13	12.45	0.32	12.31	12.62	0.31
GRID000007318579	29.62438643	-97.00687768	12.22	12.63	12.99	0.36	12.79	13.14	0.35
GRID000007318580	29.63275683	-97.00670586	12.71	13.08	13.47	0.39	13.22	13.61	0.38
GRID000007318581	29.64112725	-97.00653401	12.95	13.31	13.98	0.67	13.43	16.48	3.05
GRID000007318582	29.64949768	-97.00636213	12.96	13.30	14.06	0.77	13.42	16.87	3.45
GRID000007318583	29.65786814	-97.00619022	12.80	13.13	13.96	0.83	13.25	17.04	3.78
GRID000007319296	29.59075461	-96.99798771	10.56	11.10	11.26	0.16	11.35	11.50	0.15
GRID000007319297	29.59912492	-96.99781518	10.78	11.31	11.51	0.21	11.54	11.74	0.20
GRID000007319298	29.60749525	-96.99764263	11.11	11.60	11.87	0.27	11.80	12.06	0.25
GRID000007319299	29.61586559	-96.99747004	11.56	12.01	12.33	0.33	12.20	12.50	0.30
GRID000007319300	29.62423596	-96.99729743	12.12	12.52	12.87	0.36	12.68	13.03	0.35
GRID000007319301	29.63260635	-96.99712478	12.61	12.96	13.36	0.40	13.11	13.49	0.38
GRID000007319302	29.64097675	-96.99695211	12.86	13.21	13.87	0.66	13.33	16.30	2.96
GRID000007319303	29.64934717	-96.9967794	12.87	13.21	13.96	0.75	13.33	16.69	3.35
GRID000007319304	29.65771761	-96.99660667	12.73	13.05	14.28	1.22	13.17	17.05	3.88
GRID000007320016	29.5822332	-96.98858411	10.19	10.76	10.88	0.12	11.01	11.13	0.12
GRID000007320017	29.59060347	-96.98841079	10.34	10.89	11.06	0.17	11.14	11.30	0.16
GRID000007320018	29.59897377	-96.98823744	10.58	11.10	11.32	0.22	11.33	11.55	0.21
GRID000007320019	29.60734408	-96.98806406	10.94	11.43	11.70	0.28	11.63	11.90	0.27
GRID000007320020	29.61571442	-96.98789065	11.43	11.87	12.20	0.33	12.05	12.37	0.32
GRID000007320021	29.62408477	-96.98771721	11.99	12.38	12.75	0.36	12.54	12.90	0.36
GRID000007320022	29.63245514	-96.98754374	12.47	12.84	13.23	0.40	12.98	13.37	0.39
GRID000007320023	29.64082553	-96.98737024	12.73	13.07	13.73	0.66	13.20	16.07	2.88
GRID000007320024	29.64919594	-96.98719671	12.72	13.04	13.79	0.75	13.17	16.44	3.27
GRID000007320737	29.58208135	-96.97900805	10.04	10.60	10.73	0.13	10.86	10.98	0.13
GRID000007320738	29.59045162	-96.9788339	10.20	10.74	10.92	0.18	10.98	11.16	0.18
GRID000007320739	29.5988219	-96.97865972	10.44	10.95	11.18	0.23	11.18	11.40	0.22
GRID000007320740	29.6071922	-96.97848552	10.80	11.28	11.57	0.29	11.49	11.77	0.28
GRID000007320741	29.61556252	-96.97831128	11.30	11.74	12.07	0.33	11.92	12.24	0.32
GRID000007320742	29.62393286	-96.97813702	11.84	12.23	12.61	0.37	12.39	12.76	0.36
GRID000007320743	29.63230322	-96.97796272	12.30	12.67	13.07	0.40	12.80	13.20	0.40
GRID000007320744	29.6406736	-96.97778839	12.53	12.86	13.53	0.67	13.00	15.80	2.80
GRID000007320745	29.64904399	-96.97761404	12.42	12.76	13.52	0.76	12.88	16.09	3.20
GRID000007321458	29.58192879	-96.96943201	9.93	10.49	10.62	0.13	10.74	10.87	0.13
GRID000007321459	29.59029904	-96.96925704	10.08	10.62	10.81	0.19	10.87	11.04	0.18
GRID000007321460	29.59866931	-96.96908204	10.31	10.83	11.07	0.23	11.06	11.29	0.23
GRID000007321461	29.60703959	-96.96890701	10.68	11.16	11.45	0.29	11.37	11.65	0.28
GRID000007321462	29.6154099	-96.96873195	11.17	11.60	11.94	0.35	11.78	12.11	0.33
GRID000007321463	29.62378023	-96.96855686	11.68	12.08	12.45	0.37	12.24	12.61	0.36
GRID000007321464	29.63215057	-96.96838173	12.12	12.48	12.89	0.41	12.62	13.03	0.40
GRID000007321465	29.64052094	-96.96820658	12.30	12.64	13.11	0.47	12.77	13.23	0.46
GRID000007321466	29.64889132	-96.9680314	12.16	12.50	13.03	0.53	12.62	13.14	0.52
GRID000007322178	29.57340529	-96.96003177	9.67	10.24	10.33	0.09	10.50	10.59	0.09
GRID000007322179	29.5817755	-96.95985601	9.83	10.38	10.53	0.15	10.63	10.77	0.13
GRID000007322180	29.59014574	-96.95968021	9.98	10.52	10.71	0.19	10.76	10.94	0.18
GRID000007322181	29.59851599	-96.95950438	10.22	10.73	10.98	0.25	10.95	11.19	0.24

GRID000007322182	29.60688627	-96.95932853	10.57	11.03	11.35	0.31	11.25	11.54	0.29
GRID000007322183	29.61525656	-96.95915264	11.05	11.48	11.82	0.35	11.66	12.00	0.34
GRID000007322184	29.62362687	-96.95897673	11.55	11.94	12.30	0.37	12.09	12.45	0.36
GRID000007322185	29.6319972	-96.95880078	11.95	12.31	12.72	0.41	12.45	12.86	0.40
GRID000007322186	29.64036755	-96.9586248	12.12	12.46	12.93	0.46	12.59	13.04	0.46
GRID000007322187	29.64873792	-96.95844879	11.98	12.31	12.86	0.54	12.44	12.97	0.54
GRID000007322899	29.57325129	-96.95045662	9.58	10.14	10.24	0.11	10.40	10.49	0.10
GRID000007322900	29.58162149	-96.95028003	9.75	10.28	10.44	0.16	10.54	10.68	0.14
GRID000007322901	29.58999172	-96.95010341	9.90	10.42	10.63	0.21	10.66	10.85	0.19
GRID000007322902	29.59836196	-96.94992676	10.10	10.61	10.87	0.26	10.83	11.09	0.25
GRID000007322903	29.60673222	-96.94975008	10.44	10.90	11.22	0.32	11.11	11.42	0.31
GRID000007322904	29.6151025	-96.94957337	10.89	11.31	11.67	0.36	11.49	11.85	0.35
GRID000007322905	29.6234728	-96.94939663	11.34	11.74	12.12	0.38	11.89	12.27	0.38
GRID000007322906	29.63184312	-96.94921985	11.71	12.08	12.50	0.42	12.22	12.63	0.42
GRID000007322907	29.64021345	-96.94904305	11.87	12.21	12.69	0.49	12.34	12.82	0.48
GRID000007322908	29.64858381	-96.94886622	11.74	12.08	12.64	0.57	12.21	12.76	0.55
GRID000007323620	29.57309658	-96.9408815	9.50	10.04	10.15	0.11	10.29	10.40	0.11
GRID000007323621	29.58146677	-96.94070409	9.66	10.19	10.35	0.16	10.44	10.59	0.16
GRID000007323622	29.58983697	-96.94052664	9.79	10.31	10.53	0.21	10.54	10.76	0.22
GRID000007323623	29.5982072	-96.94034917	9.99	10.49	10.76	0.27	10.71	10.98	0.27
GRID000007323624	29.60657745	-96.94017166	10.29	10.76	11.09	0.34	10.96	11.28	0.32
GRID000007323625	29.61494771	-96.93999412	10.72	11.14	11.51	0.38	11.32	11.68	0.36
GRID000007323626	29.623318	-96.93981656	11.13	11.52	11.92	0.40	11.68	12.07	0.38
GRID000007323627	29.6316883	-96.93963896	11.47	11.83	12.27	0.44	11.98	12.41	0.43
GRID000007323628	29.64005863	-96.93946133	11.61	11.96	12.46	0.50	12.10	12.60	0.49
GRID000007323629	29.64842897	-96.93928367	11.53	11.87	12.45	0.59	12.01	12.58	0.57
GRID000007324340	29.56457099	-96.93148462	9.23	9.78	9.84	0.06	10.03	10.10	0.06
GRID000007324341	29.57294114	-96.93130641	9.41	9.95	10.06	0.11	10.20	10.31	0.11
GRID000007324342	29.58131132	-96.93112817	9.57	10.10	10.27	0.17	10.34	10.50	0.16
GRID000007324343	29.58968151	-96.9309499	9.71	10.22	10.44	0.23	10.45	10.67	0.21
GRID000007324344	29.59805172	-96.9307716	9.89	10.38	10.67	0.29	10.60	10.88	0.27
GRID000007324345	29.60642196	-96.93059327	10.18	10.64	10.98	0.34	10.85	11.18	0.33
GRID000007324346	29.61479221	-96.93041491	10.60	11.03	11.39	0.36	11.20	11.56	0.36
GRID000007324347	29.62316248	-96.93023652	11.00	11.39	11.79	0.40	11.55	11.94	0.38
GRID000007324348	29.63153277	-96.93005809	11.34	11.70	12.15	0.44	11.85	12.28	0.43
GRID000007324349	29.63990308	-96.92987964	11.49	11.84	12.35	0.51	11.98	12.47	0.49
GRID000007324350	29.64827341	-96.92970115	11.43	11.77	12.36	0.59	11.90	12.48	0.58
GRID000007325061	29.56441484	-96.92191039	9.14	9.67	9.75	0.07	9.93	10.00	0.07
GRID000007325062	29.57278498	-96.92173135	9.32	9.85	9.97	0.12	10.10	10.22	0.12
GRID000007325063	29.58115515	-96.92155229	9.48	10.00	10.18	0.18	10.24	10.41	0.17
GRID000007325064	29.58952533	-96.9213732	9.60	10.11	10.34	0.23	10.34	10.57	0.23
GRID000007325065	29.59789553	-96.92119407	9.78	10.27	10.56	0.29	10.48	10.77	0.29
GRID000007325066	29.60626575	-96.92101491	10.08	10.54	10.88	0.35	10.73	11.07	0.33
GRID000007325067	29.61463598	-96.92083573	10.49	10.92	11.28	0.36	11.09	11.45	0.36
GRID000007325068	29.62300624	-96.92065651	10.88	11.27	11.67	0.39	11.43	11.82	0.39
GRID000007325069	29.63137652	-96.92047726	11.21	11.58	12.01	0.43	11.73	12.15	0.43
GRID000007325070	29.63974681	-96.92029798	11.39	11.74	12.24	0.51	11.87	12.37	0.50
GRID000007325782	29.56425798	-96.91233618	9.02	9.56	9.64	0.08	9.81	9.88	0.07
GRID000007325783	29.57262811	-96.91215633	9.19	9.71	9.85	0.13	9.96	10.09	0.13
GRID000007325784	29.58099825	-96.91197644	9.33	9.85	10.03	0.18	10.09	10.27	0.18
GRID000007325785	29.58936842	-96.91179652	9.42	9.93	10.18	0.25	10.16	10.40	0.24
GRID000007325786	29.59773861	-96.91161657	9.57	10.05	10.36	0.32	10.27	10.57	0.29
GRID000007325787	29.60610881	-96.91143659	9.85	10.31	10.66	0.35	10.50	10.85	0.35
GRID000007325788	29.61447904	-96.91125658	10.26	10.68	11.05	0.38	10.86	11.23	0.37
GRID000007325789	29.62284928	-96.91107653	10.68	11.07	11.47	0.40	11.23	11.61	0.39

GRID000007325790	29.63121954	-96.91089646	11.05	11.41	11.86	0.45	11.55	11.99	0.43
GRID000007325791	29.63958982	-96.91071635	11.27	11.61	12.13	0.52	11.74	12.25	0.51
GRID000007326503	29.56410039	-96.90276201	8.90	9.43	9.52	0.09	9.68	9.76	0.08
GRID000007326504	29.57247051	-96.90258133	9.03	9.56	9.70	0.14	9.80	9.94	0.13
GRID000007326505	29.58084064	-96.90240062	9.12	9.64	9.84	0.20	9.89	10.07	0.18
GRID000007326506	29.58921079	-96.90221987	9.15	9.67	9.93	0.26	9.90	10.15	0.26
GRID000007326507	29.59758097	-96.9020391	9.24	9.74	10.07	0.33	9.96	10.29	0.33
GRID000007326508	29.60595116	-96.90185829	9.46	9.94	10.31	0.38	10.14	10.51	0.37
GRID000007326509	29.61432137	-96.90167745	9.86	10.29	10.68	0.39	10.48	10.87	0.39
GRID000007326510	29.6226916	-96.90149659	10.34	10.73	11.15	0.42	10.90	11.31	0.41
GRID000007326511	29.63106185	-96.90131569	10.83	11.19	11.65	0.46	11.34	11.79	0.45
GRID000007326512	29.63943211	-96.90113475	11.13	11.46	11.99	0.53	11.60	12.11	0.51
GRID000007327223	29.55557201	-96.89336935	8.73	9.25	9.29	0.04	9.50	9.53	0.04
GRID000007327224	29.56394209	-96.89318787	8.81	9.33	9.42	0.09	9.57	9.66	0.09
GRID000007327225	29.57231219	-96.89300636	8.92	9.44	9.59	0.15	9.68	9.82	0.14
GRID000007327226	29.58068231	-96.89282483	8.98	9.50	9.71	0.21	9.75	9.94	0.20
GRID000007327227	29.58905245	-96.89264326	8.99	9.50	9.78	0.28	9.74	10.01	0.27
GRID000007327228	29.5974226	-96.89246166	9.05	9.55	9.90	0.35	9.78	10.11	0.33
GRID000007327229	29.60579278	-96.89228003	9.26	9.72	10.12	0.40	9.94	10.32	0.39
GRID000007327230	29.61416298	-96.89209836	9.64	10.08	10.49	0.41	10.27	10.67	0.39
GRID000007327231	29.62253319	-96.89191667	10.15	10.55	10.98	0.42	10.72	11.14	0.42
GRID000007327232	29.63090343	-96.89173495	10.67	11.03	11.49	0.47	11.18	11.63	0.45
GRID000007327233	29.63927368	-96.89155319	11.00	11.33	11.87	0.53	11.47	11.99	0.52
GRID000007327944	29.555413	-96.88379606	8.66	9.17	9.21	0.04	9.42	9.46	0.04
GRID000007327945	29.56378306	-96.88361376	8.73	9.25	9.34	0.09	9.50	9.59	0.09
GRID000007327946	29.57215315	-96.88343143	8.84	9.36	9.51	0.15	9.60	9.75	0.15
GRID000007327947	29.58052325	-96.88324907	8.91	9.42	9.64	0.22	9.66	9.86	0.21
GRID000007327948	29.58889338	-96.88306668	8.90	9.41	9.70	0.29	9.64	9.93	0.28
GRID000007327949	29.59726352	-96.88288425	8.96	9.45	9.81	0.36	9.67	10.02	0.35
GRID000007327950	29.60563368	-96.88270179	9.17	9.64	10.02	0.39	9.84	10.22	0.38
GRID000007327951	29.61400387	-96.88251931	9.57	9.99	10.40	0.40	10.18	10.58	0.39
GRID000007327952	29.62237407	-96.88233679	10.07	10.46	10.88	0.42	10.63	11.04	0.41
GRID000007327953	29.63074429	-96.88215424	10.59	10.94	11.41	0.47	11.09	11.55	0.45
GRID000007327954	29.63911453	-96.88197165	10.90	11.23	11.77	0.54	11.37	11.89	0.53
GRID000007328665	29.55525326	-96.87422281	8.59	9.10	9.14	0.05	9.34	9.38	0.04
GRID000007328666	29.56362331	-96.87403968	8.67	9.18	9.28	0.10	9.43	9.52	0.09
GRID000007328667	29.57199338	-96.87385653	8.77	9.28	9.44	0.16	9.52	9.67	0.16
GRID000007328668	29.58036348	-96.87367334	8.84	9.35	9.57	0.22	9.58	9.80	0.22
GRID000007328669	29.58873359	-96.87349012	8.84	9.34	9.64	0.30	9.57	9.86	0.29
GRID000007328670	29.59710372	-96.87330687	8.90	9.39	9.75	0.37	9.61	9.96	0.35
GRID000007328671	29.60547387	-96.87312359	9.12	9.57	9.96	0.39	9.78	10.16	0.38
GRID000007328672	29.61384403	-96.87294028	9.52	9.94	10.34	0.40	10.13	10.51	0.38
GRID000007328673	29.62221422	-96.87275693	10.02	10.40	10.83	0.42	10.58	10.98	0.41
GRID000007328674	29.63058443	-96.87257356	10.52	10.88	11.34	0.46	11.02	11.47	0.45
GRID000007328675	29.63895465	-96.87239015	10.83	11.15	11.68	0.53	11.28	11.80	0.52
GRID000007329385	29.54672279	-96.8648335	8.51	8.99	9.00	0.01	9.23	9.23	0.01
GRID000007329386	29.55509281	-96.86464958	8.54	9.03	9.08	0.05	9.27	9.32	0.05
GRID000007329387	29.56346284	-96.86446564	8.61	9.11	9.22	0.11	9.35	9.46	0.11
GRID000007329388	29.5718329	-96.86428166	8.71	9.21	9.38	0.17	9.45	9.61	0.16
GRID000007329389	29.58020298	-96.86409765	8.79	9.29	9.52	0.23	9.51	9.75	0.23
GRID000007329390	29.58857307	-96.8639136	8.81	9.29	9.60	0.31	9.52	9.81	0.29
GRID000007329391	29.59694319	-96.86372953	8.87	9.34	9.70	0.36	9.56	9.91	0.35
GRID000007329392	29.60531333	-96.86354542	9.08	9.53	9.90	0.38	9.73	10.10	0.37
GRID000007329393	29.61368348	-96.86336128	9.48	9.90	10.28	0.39	10.08	10.45	0.37
GRID000007329394	29.62205365	-96.86317711	9.98	10.36	10.78	0.41	10.53	10.93	0.40

GRID000007329395	29.63042385	-96.86299291	10.46	10.81	11.27	0.46	10.95	11.40	0.45
GRID000007329396	29.63879406	-96.86280868	10.76	11.09	11.62	0.54	11.22	11.74	0.51
GRID000007330106	29.54656163	-96.85526113	8.44	8.93	8.93	0.01	9.15	9.16	0.01
GRID000007330107	29.55493163	-96.85507639	8.48	8.97	9.02	0.05	9.20	9.26	0.05
GRID000007330108	29.56330166	-96.85489162	8.54	9.04	9.15	0.11	9.27	9.38	0.11
GRID000007330109	29.5716717	-96.85470682	8.66	9.15	9.33	0.18	9.38	9.55	0.17
GRID000007330110	29.58004176	-96.85452198	8.75	9.23	9.47	0.25	9.46	9.69	0.23
GRID000007330111	29.58841184	-96.85433711	8.76	9.23	9.55	0.32	9.46	9.76	0.30
GRID000007330112	29.59678194	-96.85415221	8.83	9.29	9.65	0.36	9.51	9.86	0.35
GRID000007330113	29.60515206	-96.85396728	9.04	9.49	9.86	0.37	9.69	10.05	0.36
GRID000007330114	29.6135222	-96.85378232	9.45	9.86	10.23	0.38	10.03	10.40	0.37
GRID000007330115	29.62189236	-96.85359733	9.95	10.32	10.73	0.40	10.48	10.88	0.40
GRID000007330116	29.63026254	-96.8534123	10.42	10.76	11.22	0.46	10.90	11.35	0.45
GRID000007330827	29.54639975	-96.8456888	8.39	8.87	8.87	0.01	9.09	9.10	0.02
GRID000007330828	29.55476974	-96.84550323	8.42	8.90	8.96	0.06	9.13	9.19	0.06
GRID000007330829	29.56313974	-96.84531764	8.49	8.98	9.10	0.12	9.20	9.33	0.12
GRID000007330830	29.57150977	-96.84513201	8.61	9.10	9.28	0.18	9.32	9.50	0.19
GRID000007330831	29.57987982	-96.84494635	8.70	9.18	9.43	0.25	9.40	9.64	0.24
GRID000007330832	29.58824989	-96.84476066	8.73	9.20	9.52	0.31	9.42	9.72	0.30
GRID000007330833	29.59661998	-96.84457493	8.80	9.26	9.60	0.35	9.46	9.81	0.34
GRID000007330834	29.60499008	-96.84438918	9.01	9.45	9.81	0.36	9.64	10.00	0.36
GRID000007330835	29.61336021	-96.84420339	9.42	9.82	10.19	0.38	10.00	10.35	0.36
GRID000007330836	29.62173035	-96.84401757	9.92	10.28	10.68	0.40	10.44	10.83	0.39
GRID000007330837	29.63010052	-96.84383172	10.37	10.71	11.16	0.45	10.84	11.29	0.45
GRID000007331547	29.53786719	-96.83630285	8.34	8.78	8.79	0.01	9.00	9.01	0.01
GRID000007331548	29.54623715	-96.8361165	8.34	8.81	8.82	0.01	9.03	9.04	0.02
GRID000007331549	29.55460712	-96.83593011	8.37	8.84	8.91	0.07	9.07	9.14	0.07
GRID000007331550	29.56297711	-96.83574369	8.44	8.92	9.04	0.13	9.14	9.27	0.13
GRID000007331551	29.57134713	-96.83555723	8.57	9.04	9.24	0.20	9.26	9.46	0.19
GRID000007331552	29.57971716	-96.83537075	8.67	9.14	9.39	0.26	9.36	9.60	0.25
GRID000007331553	29.58808721	-96.83518423	8.69	9.15	9.47	0.32	9.36	9.67	0.31
GRID000007331554	29.59645729	-96.83499768	8.76	9.21	9.57	0.35	9.42	9.76	0.34
GRID000007331555	29.60482738	-96.8348111	8.98	9.41	9.77	0.36	9.60	9.95	0.35
GRID000007331556	29.61319749	-96.83462449	9.39	9.78	10.15	0.37	9.96	10.31	0.35
GRID000007331557	29.62156762	-96.83443784	9.90	10.26	10.65	0.39	10.41	10.80	0.39
GRID000007331558	29.62993777	-96.83425117	10.34	10.68	11.13	0.45	10.81	11.25	0.45
GRID000007332268	29.53770388	-96.82673141	8.30	8.73	8.73	0.00	8.94	8.95	0.01
GRID000007332269	29.54607382	-96.82654423	8.29	8.75	8.77	0.02	8.96	8.98	0.02
GRID000007332270	29.55444378	-96.82635701	8.32	8.78	8.86	0.07	9.01	9.08	0.08
GRID000007332271	29.56281376	-96.82616977	8.39	8.86	9.01	0.15	9.08	9.23	0.14
GRID000007332272	29.57118376	-96.82598249	8.52	8.98	9.20	0.21	9.20	9.40	0.20
GRID000007332273	29.57955378	-96.82579518	8.62	9.09	9.36	0.27	9.30	9.57	0.26
GRID000007332274	29.58792382	-96.82560784	8.66	9.11	9.44	0.33	9.32	9.64	0.32
GRID000007332275	29.59629388	-96.82542047	8.73	9.17	9.52	0.35	9.37	9.71	0.34
GRID000007332276	29.60466395	-96.82523306	8.95	9.36	9.72	0.36	9.56	9.90	0.35
GRID000007332277	29.61303405	-96.82504562	9.36	9.75	10.12	0.37	9.92	10.28	0.36
GRID000007332278	29.62140417	-96.82485815	9.87	10.22	10.63	0.41	10.37	10.77	0.40
GRID000007332279	29.6297743	-96.82467065	10.30	10.63	11.09	0.47	10.76	11.22	0.46
GRID000007332989	29.53753985	-96.81715999	8.24	8.67	8.67	-0.01	8.88	8.88	0.00
GRID000007332990	29.54590978	-96.81697199	8.23	8.68	8.70	0.02	8.90	8.92	0.02
GRID000007332991	29.55427972	-96.81678395	8.25	8.71	8.80	0.09	8.93	9.01	0.08
GRID000007332992	29.56264969	-96.81659588	8.33	8.79	8.95	0.16	9.01	9.17	0.15
GRID000007332993	29.57101967	-96.81640778	8.47	8.93	9.15	0.22	9.15	9.36	0.21
GRID000007332994	29.57938968	-96.81621965	8.59	9.04	9.33	0.29	9.25	9.53	0.28
GRID000007332995	29.5877597	-96.81603148	8.62	9.06	9.39	0.33	9.26	9.59	0.32

GRID000007332996	29.59612974	-96.81584328	8.69	9.12	9.47	0.35	9.32	9.66	0.34
GRID000007332997	29.60449981	-96.81565505	8.93	9.33	9.69	0.36	9.52	9.86	0.35
GRID000007332998	29.61286989	-96.81546679	9.34	9.72	10.09	0.37	9.89	10.25	0.36
GRID000007332999	29.62123999	-96.81527849	9.84	10.19	10.59	0.40	10.34	10.73	0.39
GRID000007333000	29.62961011	-96.81509016	10.27	10.58	11.04	0.46	10.72	11.17	0.45
GRID000007333710	29.5373751	-96.80758861	8.19	8.62	8.61	-0.01	8.82	8.81	-0.01
GRID000007333711	29.54574501	-96.80739978	8.18	8.62	8.66	0.04	8.84	8.87	0.03
GRID000007333712	29.55411494	-96.80721092	8.20	8.65	8.74	0.09	8.87	8.95	0.09
GRID000007333713	29.56248489	-96.80702203	8.28	8.74	8.90	0.16	8.95	9.12	0.17
GRID000007333714	29.57085486	-96.8068331	8.42	8.88	9.11	0.23	9.09	9.32	0.23
GRID000007333715	29.57922485	-96.80664414	8.54	8.99	9.29	0.29	9.20	9.48	0.28
GRID000007333716	29.58759486	-96.80645515	8.59	9.02	9.36	0.33	9.22	9.55	0.33
GRID000007333717	29.59596489	-96.80626613	8.67	9.09	9.43	0.34	9.28	9.62	0.34
GRID000007333718	29.60433494	-96.80607707	8.90	9.29	9.64	0.35	9.48	9.82	0.34
GRID000007333719	29.61270501	-96.80588798	9.32	9.69	10.05	0.36	9.86	10.20	0.34
GRID000007333720	29.6210751	-96.80569886	9.82	10.17	10.55	0.38	10.31	10.68	0.38
GRID000007333721	29.6294452	-96.80550971	10.22	10.54	10.99	0.45	10.68	11.11	0.44
GRID000007334430	29.52883976	-96.79820688	8.16	8.55	8.57	0.01	8.74	8.76	0.01
GRID000007334431	29.53720963	-96.79801726	8.14	8.56	8.55	-0.01	8.76	8.76	0.00
GRID000007334432	29.54557953	-96.79782761	8.13	8.57	8.60	0.04	8.77	8.81	0.04
GRID000007334433	29.55394944	-96.79763792	8.14	8.59	8.70	0.10	8.81	8.91	0.10
GRID000007334434	29.56231938	-96.7974482	8.23	8.68	8.86	0.18	8.90	9.07	0.17
GRID000007334435	29.57068933	-96.79725845	8.39	8.84	9.07	0.24	9.04	9.27	0.23
GRID000007334436	29.57905931	-96.79706867	8.51	8.95	9.24	0.29	9.15	9.44	0.29
GRID000007334437	29.5874293	-96.79687886	8.55	8.98	9.31	0.33	9.18	9.50	0.31
GRID000007334438	29.59579932	-96.79668901	8.63	9.05	9.38	0.33	9.24	9.57	0.32
GRID000007334439	29.60416935	-96.79649913	8.87	9.26	9.59	0.32	9.44	9.76	0.32
GRID000007334440	29.61253941	-96.79630921	9.30	9.67	10.01	0.34	9.82	10.16	0.34
GRID000007334441	29.62090948	-96.79611927	9.80	10.14	10.51	0.37	10.28	10.64	0.36
GRID000007334442	29.62927957	-96.79592929	10.19	10.50	10.93	0.43	10.63	11.05	0.42
GRID000007335151	29.52867358	-96.78863639	8.11	8.50	8.51	0.01	8.69	8.70	0.01
GRID000007335152	29.53704344	-96.78844594	8.10	8.52	8.52	0.00	8.71	8.71	0.00
GRID000007335153	29.54541332	-96.78825547	8.09	8.52	8.57	0.05	8.73	8.77	0.04
GRID000007335154	29.55378322	-96.78806496	8.11	8.54	8.66	0.12	8.76	8.87	0.11
GRID000007335155	29.56215314	-96.78787442	8.18	8.62	8.81	0.19	8.84	9.01	0.18
GRID000007335156	29.57052308	-96.78768384	8.34	8.78	9.03	0.25	8.98	9.23	0.24
GRID000007335157	29.57889304	-96.78749323	8.47	8.90	9.20	0.30	9.10	9.39	0.30
GRID000007335158	29.58726302	-96.78730259	8.52	8.94	9.26	0.32	9.14	9.45	0.31
GRID000007335159	29.59563302	-96.78711192	8.60	9.01	9.33	0.32	9.20	9.50	0.31
GRID000007335160	29.60400304	-96.78692121	8.85	9.24	9.55	0.31	9.41	9.72	0.31
GRID000007335161	29.61237308	-96.78673048	9.29	9.64	9.97	0.32	9.80	10.12	0.32
GRID000007335162	29.62074314	-96.7865397	9.78	10.11	10.48	0.37	10.25	10.61	0.36
GRID000007335872	29.52850668	-96.77906592	8.07	8.46	8.46	0.00	8.64	8.64	0.00
GRID000007335873	29.53687653	-96.77887466	8.05	8.46	8.46	0.00	8.65	8.65	0.00
GRID000007335874	29.54524639	-96.77868336	8.04	8.46	8.52	0.06	8.66	8.72	0.06
GRID000007335875	29.55361628	-96.77849202	8.06	8.49	8.62	0.13	8.70	8.82	0.12
GRID000007335876	29.56198618	-96.77830066	8.14	8.58	8.78	0.20	8.78	8.98	0.19
GRID000007335877	29.57035611	-96.77810926	8.30	8.73	8.99	0.26	8.93	9.19	0.26
GRID000007335878	29.57872606	-96.77791783	8.44	8.86	9.16	0.30	9.05	9.35	0.30
GRID000007335879	29.58709602	-96.77772636	8.49	8.90	9.21	0.31	9.09	9.39	0.30
GRID000007335880	29.59546601	-96.77753487	8.57	8.97	9.28	0.31	9.16	9.46	0.30
GRID000007335881	29.60383601	-96.77734334	8.83	9.20	9.51	0.31	9.38	9.67	0.30
GRID000007335882	29.61220604	-96.77715177	9.26	9.62	9.94	0.32	9.78	10.09	0.31
GRID000007335883	29.62057608	-96.77696017	9.77	10.10	10.44	0.35	10.23	10.58	0.34
GRID000007336592	29.51996926	-96.76968755	8.05	8.41	8.45	0.04	8.58	8.62	0.04

GRID000007336593	29.52833906	-96.7694955	8.02	8.40	8.39	-0.01	8.58	8.58	0.00
GRID000007336594	29.53670889	-96.76930341	8.00	8.41	8.42	0.01	8.60	8.61	0.01
GRID000007336595	29.54507874	-96.76911128	7.98	8.40	8.47	0.06	8.60	8.67	0.07
GRID000007336596	29.55344862	-96.76891913	8.00	8.43	8.57	0.14	8.63	8.77	0.14
GRID000007336597	29.56181851	-96.76872694	8.10	8.53	8.73	0.20	8.73	8.93	0.20
GRID000007336598	29.57018842	-96.76853471	8.26	8.68	8.95	0.27	8.88	9.14	0.26
GRID000007336599	29.57855835	-96.76834246	8.40	8.81	9.12	0.31	9.01	9.30	0.30
GRID000007336600	29.5869283	-96.76815017	8.46	8.87	9.17	0.30	9.05	9.35	0.30
GRID000007336601	29.59529827	-96.76795784	8.55	8.94	9.24	0.30	9.12	9.41	0.29
GRID000007336602	29.60366826	-96.76776549	8.81	9.18	9.47	0.29	9.35	9.64	0.29
GRID000007336603	29.61203827	-96.7675731	9.26	9.60	9.91	0.32	9.75	10.06	0.30
GRID000007336604	29.6204083	-96.76738068	9.75	10.08	10.42	0.34	10.21	10.54	0.33
GRID000007337313	29.51980093	-96.76011798	8.00	8.36	8.39	0.04	8.53	8.56	0.03
GRID000007337314	29.52817073	-96.7599251	7.98	8.35	8.34	-0.01	8.53	8.52	-0.01
GRID000007337315	29.53654054	-96.75973219	7.96	8.35	8.36	0.01	8.54	8.55	0.01
GRID000007337316	29.54491038	-96.75953924	7.94	8.35	8.43	0.08	8.55	8.62	0.07
GRID000007337317	29.55328023	-96.75934626	7.96	8.38	8.53	0.15	8.58	8.73	0.15
GRID000007337318	29.56165011	-96.75915325	8.06	8.49	8.70	0.22	8.68	8.90	0.21
GRID000007337319	29.57002	-96.7589602	8.22	8.64	8.91	0.27	8.83	9.10	0.27
GRID000007337320	29.57838992	-96.75876712	8.37	8.78	9.07	0.30	8.96	9.26	0.29
GRID000007337321	29.58675986	-96.758574	8.42	8.82	9.12	0.30	9.01	9.29	0.29
GRID000007337322	29.59512981	-96.75838086	8.53	8.92	9.20	0.29	9.09	9.37	0.28
GRID000007337323	29.60349979	-96.75818768	8.79	9.16	9.44	0.28	9.32	9.60	0.29
GRID000007337324	29.61186978	-96.75799446	9.24	9.59	9.89	0.30	9.73	10.02	0.29
GRID000007337325	29.62023979	-96.75780121	9.75	10.06	10.40	0.33	10.19	10.53	0.33
GRID000007338034	29.51963189	-96.75054845	7.97	8.32	8.35	0.04	8.49	8.52	0.03
GRID000007338035	29.52800167	-96.75035474	7.94	8.31	8.30	-0.01	8.49	8.48	-0.01
GRID000007338036	29.53637147	-96.750161	7.91	8.30	8.32	0.01	8.49	8.51	0.02
GRID000007338037	29.54474129	-96.74996723	7.90	8.30	8.38	0.08	8.49	8.57	0.08
GRID000007338038	29.55311113	-96.74977343	7.93	8.34	8.50	0.16	8.54	8.70	0.16
GRID000007338039	29.56148099	-96.74957959	8.02	8.44	8.66	0.22	8.63	8.85	0.22
GRID000007338040	29.56985087	-96.74938572	8.18	8.59	8.87	0.28	8.78	9.06	0.28
GRID000007338041	29.57822077	-96.74919181	8.34	8.73	9.04	0.30	8.92	9.21	0.29
GRID000007338042	29.58659069	-96.74899787	8.40	8.79	9.08	0.29	8.98	9.26	0.28
GRID000007338043	29.59496063	-96.7488039	8.51	8.89	9.17	0.28	9.06	9.33	0.27
GRID000007338044	29.60333059	-96.7486099	8.78	9.14	9.42	0.28	9.30	9.57	0.27
GRID000007338045	29.61170057	-96.74841586	9.23	9.57	9.86	0.29	9.71	10.01	0.29
GRID000007338046	29.62007057	-96.74822178	9.74	10.05	10.39	0.34	10.18	10.51	0.33
GRID000007338754	29.51109238	-96.74117344	8.00	8.32	8.42	0.09	8.47	8.57	0.09
GRID000007338755	29.51946212	-96.74097894	7.93	8.28	8.30	0.01	8.44	8.47	0.02
GRID000007338756	29.52783188	-96.74078441	7.90	8.27	8.25	-0.01	8.44	8.43	-0.01
GRID000007338757	29.53620167	-96.74058985	7.86	8.25	8.27	0.03	8.43	8.46	0.03
GRID000007338758	29.54457148	-96.74039526	7.85	8.25	8.34	0.09	8.44	8.54	0.09
GRID000007338759	29.5529413	-96.74020063	7.88	8.30	8.46	0.16	8.49	8.65	0.17
GRID000007338760	29.56131115	-96.74000596	7.98	8.39	8.63	0.24	8.59	8.82	0.23
GRID000007338761	29.56968101	-96.73981127	8.15	8.55	8.84	0.28	8.74	9.02	0.28
GRID000007338762	29.5780509	-96.73961654	8.31	8.70	8.99	0.29	8.88	9.17	0.28
GRID000007338763	29.58642081	-96.73942178	8.38	8.76	9.04	0.28	8.94	9.21	0.27
GRID000007338764	29.59479073	-96.73922698	8.49	8.87	9.13	0.26	9.03	9.29	0.27
GRID000007338765	29.60316068	-96.73903215	8.77	9.13	9.39	0.27	9.28	9.55	0.27
GRID000007338766	29.61153064	-96.73883728	9.23	9.57	9.86	0.29	9.71	9.99	0.29
GRID000007338767	29.61990062	-96.73864239	9.74	10.05	10.37	0.32	10.17	10.49	0.33
GRID000007339475	29.51092191	-96.73160479	7.96	8.28	8.36	0.08	8.43	8.51	0.08
GRID000007339476	29.51929163	-96.73140947	7.90	8.24	8.25	0.01	8.40	8.41	0.01
GRID000007339477	29.52766138	-96.73121412	7.86	8.23	8.21	-0.01	8.40	8.39	-0.01

GRID000007339478	29.53603115	-96.73101873	7.83	8.20	8.24	0.03	8.39	8.42	0.04
GRID000007339479	29.54440094	-96.73082331	7.81	8.21	8.31	0.10	8.39	8.49	0.10
GRID000007339480	29.55277075	-96.73062786	7.85	8.25	8.43	0.18	8.44	8.62	0.17
GRID000007339481	29.56114059	-96.73043237	7.94	8.35	8.59	0.24	8.54	8.78	0.25
GRID000007339482	29.56951044	-96.73023685	8.11	8.51	8.80	0.29	8.70	8.98	0.28
GRID000007339483	29.57788031	-96.7300413	8.28	8.67	8.95	0.28	8.84	9.12	0.28
GRID000007339484	29.5862502	-96.72984571	8.36	8.74	9.00	0.26	8.91	9.17	0.26
GRID000007339485	29.59462011	-96.72965009	8.48	8.84	9.10	0.25	9.01	9.26	0.26
GRID000007339486	29.60299004	-96.72945444	8.76	9.11	9.37	0.26	9.26	9.53	0.26
GRID000007339487	29.61135999	-96.72925875	9.23	9.57	9.84	0.28	9.70	9.98	0.28
GRID000007339488	29.61972996	-96.72906302	9.75	10.05	10.36	0.32	10.17	10.49	0.32
GRID000007340196	29.51075072	-96.72203618	7.93	8.24	8.31	0.07	8.39	8.46	0.07
GRID000007340197	29.51912043	-96.72184003	7.85	8.19	8.19	0.00	8.35	8.35	0.00
GRID000007340198	29.52749016	-96.72164386	7.82	8.18	8.16	-0.01	8.34	8.33	-0.01
GRID000007340199	29.53585992	-96.72144765	7.79	8.16	8.20	0.03	8.34	8.37	0.04
GRID000007340200	29.54422969	-96.72125141	7.77	8.16	8.27	0.11	8.35	8.46	0.11
GRID000007340201	29.55259949	-96.72105513	7.81	8.21	8.39	0.18	8.39	8.58	0.19
GRID000007340202	29.5609693	-96.72085882	7.91	8.31	8.57	0.26	8.49	8.75	0.25
GRID000007340203	29.56933914	-96.72066247	8.09	8.48	8.76	0.28	8.66	8.94	0.28
GRID000007340204	29.577709	-96.72046609	8.25	8.63	8.90	0.27	8.81	9.07	0.27
GRID000007340205	29.58607887	-96.72026968	8.34	8.71	8.96	0.25	8.88	9.13	0.25
GRID000007340206	29.59444877	-96.72007324	8.47	8.83	9.07	0.24	8.99	9.23	0.23
GRID000007340207	29.60281868	-96.71987676	8.76	9.10	9.36	0.25	9.26	9.50	0.25
GRID000007340208	29.61118861	-96.71968024	9.25	9.57	9.83	0.27	9.70	9.96	0.26
GRID000007340917	29.5105788	-96.7124676	7.87	8.18	8.23	0.05	8.33	8.38	0.05
GRID000007340918	29.5189485	-96.71227063	7.81	8.14	8.13	-0.01	8.30	8.29	-0.01
GRID000007340919	29.52731822	-96.71207363	7.78	8.13	8.11	-0.02	8.30	8.29	-0.01
GRID000007340920	29.53568796	-96.7118766	7.75	8.11	8.16	0.04	8.30	8.34	0.04
GRID000007340921	29.54405772	-96.71167953	7.73	8.12	8.24	0.12	8.30	8.42	0.12
GRID000007340922	29.5524275	-96.71148243	7.77	8.17	8.37	0.20	8.36	8.55	0.19
GRID000007340923	29.5607973	-96.7112853	7.89	8.28	8.54	0.26	8.47	8.72	0.25
GRID000007340924	29.56916712	-96.71108813	8.05	8.44	8.73	0.29	8.62	8.90	0.28
GRID000007340925	29.57753696	-96.71089092	8.23	8.60	8.87	0.26	8.77	9.03	0.26
GRID000007340926	29.58590682	-96.71069369	8.32	8.69	8.93	0.24	8.85	9.09	0.24
GRID000007340927	29.5942767	-96.71049642	8.45	8.81	9.04	0.23	8.96	9.20	0.23
GRID000007340928	29.6026466	-96.71029911	8.76	9.10	9.34	0.24	9.25	9.49	0.24
GRID000007340929	29.61101652	-96.71010177	9.26	9.57	9.83	0.26	9.71	9.96	0.25
GRID000007341637	29.50203651	-96.7030968	7.91	8.20	8.27	0.07	8.33	8.39	0.06
GRID000007341638	29.51040617	-96.70289905	7.81	8.12	8.12	0.00	8.27	8.27	0.01
GRID000007341639	29.51877585	-96.70270126	7.76	8.09	8.05	-0.04	8.25	8.22	-0.03
GRID000007341640	29.52714556	-96.70250344	7.73	8.08	8.06	-0.02	8.25	8.23	-0.02
GRID000007341641	29.53551528	-96.70230558	7.70	8.07	8.11	0.05	8.24	8.29	0.05
GRID000007341642	29.54388503	-96.70210769	7.69	8.07	8.20	0.13	8.25	8.38	0.13
GRID000007341643	29.55225479	-96.70190977	7.74	8.13	8.34	0.21	8.31	8.52	0.21
GRID000007341644	29.56062458	-96.70171181	7.85	8.24	8.51	0.27	8.42	8.68	0.27
GRID000007341645	29.56899438	-96.70151381	8.03	8.41	8.69	0.28	8.58	8.86	0.28
GRID000007341646	29.57736421	-96.70131579	8.20	8.57	8.83	0.26	8.75	9.00	0.25
GRID000007341647	29.58573405	-96.70111772	8.31	8.67	8.90	0.24	8.83	9.06	0.23
GRID000007341648	29.59410392	-96.70091963	8.45	8.80	9.03	0.23	8.95	9.18	0.23
GRID000007341649	29.6024738	-96.7007215	8.78	9.10	9.34	0.24	9.25	9.48	0.23
GRID000007341650	29.6108437	-96.70052334	9.27	9.58	9.84	0.26	9.71	9.96	0.25
GRID000007342358	29.50186317	-96.69352912	7.79	8.08	8.11	0.03	8.21	8.24	0.03
GRID000007342359	29.51023282	-96.69333054	7.73	8.04	8.01	-0.03	8.18	8.16	-0.02
GRID000007342360	29.51860249	-96.69313193	7.70	8.03	7.98	-0.05	8.19	8.14	-0.05
GRID000007342361	29.52697217	-96.69293328	7.68	8.02	8.00	-0.02	8.19	8.17	-0.02

GRID000007342362	29.53534188	-96.6927346	7.65	8.01	8.06	0.05	8.18	8.24	0.06
GRID000007342363	29.54371161	-96.69253588	7.65	8.02	8.16	0.14	8.20	8.34	0.14
GRID000007342364	29.55208136	-96.69233714	7.70	8.08	8.30	0.22	8.26	8.48	0.22
GRID000007342365	29.56045113	-96.69213835	7.82	8.20	8.48	0.28	8.38	8.65	0.27
GRID000007342366	29.56882092	-96.69193953	8.00	8.37	8.65	0.28	8.54	8.82	0.28
GRID000007342367	29.57719073	-96.69174068	8.19	8.55	8.81	0.26	8.72	8.96	0.24
GRID000007342368	29.58556056	-96.6915418	8.30	8.65	8.89	0.24	8.81	9.04	0.23
GRID000007342369	29.59393041	-96.69134288	8.46	8.80	9.03	0.23	8.95	9.18	0.23
GRID000007342370	29.60230028	-96.69114392	8.79	9.11	9.36	0.24	9.26	9.49	0.23
GRID000007342371	29.61067017	-96.69094493	9.28	9.58	9.84	0.26	9.71	9.96	0.25
GRID000007343079	29.50168911	-96.68396146	7.71	8.00	8.00	0.01	8.13	8.13	0.01
GRID000007343080	29.51005875	-96.68376206	7.66	7.97	7.93	-0.04	8.11	8.08	-0.03
GRID000007343081	29.5184284	-96.68356262	7.65	7.98	7.92	-0.06	8.13	8.07	-0.06
GRID000007343082	29.52679807	-96.68336315	7.63	7.97	7.96	-0.01	8.13	8.12	-0.01
GRID000007343083	29.53516776	-96.68316365	7.60	7.96	8.02	0.06	8.13	8.20	0.06
GRID000007343084	29.54353748	-96.68296411	7.61	7.98	8.13	0.15	8.16	8.32	0.16
GRID000007343085	29.55190721	-96.68276454	7.67	8.04	8.28	0.24	8.22	8.45	0.23
GRID000007343086	29.56027697	-96.68256493	7.79	8.17	8.45	0.28	8.34	8.62	0.28
GRID000007343087	29.56864674	-96.68236529	7.98	8.35	8.63	0.28	8.52	8.79	0.27
GRID000007343088	29.57701653	-96.68216561	8.18	8.54	8.78	0.24	8.70	8.94	0.24
GRID000007343089	29.58538635	-96.6819659	8.30	8.65	8.87	0.23	8.81	9.03	0.22
GRID000007343090	29.59375618	-96.68176616	8.47	8.81	9.04	0.23	8.95	9.18	0.23
GRID000007343091	29.60212604	-96.68156638	8.81	9.13	9.36	0.24	9.26	9.50	0.23
GRID000007343092	29.61049591	-96.68136657	9.27	9.57	9.83	0.26	9.69	9.95	0.26
GRID000007343799	29.49314474	-96.67459403	7.71	7.98	8.00	0.03	8.09	8.13	0.03
GRID000007343800	29.50151434	-96.67439384	7.66	7.94	7.94	-0.01	8.07	8.07	-0.01
GRID000007343801	29.50988395	-96.67419362	7.62	7.92	7.87	-0.05	8.07	8.02	-0.04
GRID000007343802	29.51825359	-96.67399336	7.62	7.94	7.87	-0.06	8.09	8.03	-0.05
GRID000007343803	29.52662324	-96.67379306	7.59	7.93	7.92	-0.01	8.09	8.09	-0.01
GRID000007343804	29.53499292	-96.67359274	7.57	7.93	8.00	0.07	8.09	8.18	0.08
GRID000007343805	29.54336262	-96.67339237	7.58	7.95	8.12	0.17	8.12	8.30	0.17
GRID000007343806	29.55173234	-96.67319198	7.65	8.02	8.27	0.25	8.20	8.44	0.24
GRID000007343807	29.56010208	-96.67299155	7.77	8.14	8.43	0.29	8.32	8.60	0.29
GRID000007343808	29.56847184	-96.67279108	7.97	8.33	8.60	0.27	8.49	8.76	0.27
GRID000007343809	29.57684162	-96.67259058	8.18	8.52	8.76	0.24	8.68	8.92	0.24
GRID000007343810	29.58521142	-96.67239004	8.30	8.65	8.87	0.22	8.80	9.01	0.22
GRID000007343811	29.59358123	-96.67218947	8.49	8.81	9.04	0.22	8.96	9.18	0.22
GRID000007343812	29.60195107	-96.67198887	8.81	9.13	9.36	0.24	9.26	9.50	0.23
GRID000007343813	29.61032093	-96.67178823	9.25	9.54	9.80	0.26	9.67	9.92	0.25
GRID000007344520	29.49296926	-96.66502727	7.67	7.93	7.96	0.03	8.05	8.08	0.03
GRID000007344521	29.50133884	-96.66482626	7.62	7.90	7.89	-0.01	8.03	8.02	-0.01
GRID000007344522	29.50970844	-96.66462521	7.59	7.89	7.83	-0.05	8.03	7.98	-0.05
GRID000007344523	29.51807806	-96.66442413	7.58	7.90	7.85	-0.05	8.05	8.00	-0.05
GRID000007344524	29.5264477	-96.66422301	7.56	7.90	7.90	0.01	8.05	8.07	0.01
GRID000007344525	29.53481736	-96.66402186	7.54	7.89	7.98	0.09	8.06	8.15	0.09
GRID000007344526	29.54318704	-96.66382067	7.55	7.92	8.10	0.18	8.09	8.27	0.19
GRID000007344527	29.55155675	-96.66361945	7.63	7.99	8.25	0.26	8.16	8.42	0.26
GRID000007344528	29.55992647	-96.66341819	7.76	8.12	8.41	0.29	8.29	8.57	0.29
GRID000007344529	29.56829621	-96.6632169	7.96	8.31	8.57	0.26	8.47	8.73	0.26
GRID000007344530	29.57666598	-96.66301558	8.17	8.52	8.75	0.23	8.67	8.90	0.23
GRID000007344531	29.58503576	-96.66281422	8.32	8.65	8.87	0.21	8.80	9.01	0.22
GRID000007344532	29.59340556	-96.66261283	8.49	8.82	9.04	0.22	8.96	9.18	0.22
GRID000007344533	29.60177539	-96.6624114	8.81	9.11	9.35	0.24	9.25	9.48	0.23
GRID000007344534	29.61014523	-96.66220993	9.20	9.49	9.75	0.26	9.60	9.86	0.26
GRID000007345241	29.49279306	-96.65546054	7.64	7.90	7.92	0.02	8.01	8.04	0.03

GRID000007345242	29.50116262	-96.6552587	7.59	7.87	7.85	-0.02	8.00	7.98	-0.01
GRID000007345243	29.5095322	-96.65505683	7.56	7.86	7.81	-0.05	8.00	7.95	-0.05
GRID000007345244	29.51790181	-96.65485493	7.56	7.87	7.82	-0.05	8.02	7.98	-0.05
GRID000007345245	29.52627143	-96.65465299	7.53	7.86	7.88	0.02	8.02	8.04	0.02
GRID000007345246	29.53464108	-96.65445101	7.51	7.85	7.96	0.11	8.02	8.13	0.11
GRID000007345247	29.54301075	-96.654249	7.53	7.89	8.09	0.20	8.06	8.26	0.20
GRID000007345248	29.55138043	-96.65404696	7.60	7.96	8.23	0.27	8.13	8.40	0.27
GRID000007345249	29.55975014	-96.65384488	7.74	8.10	8.39	0.29	8.27	8.55	0.28
GRID000007345250	29.56811987	-96.65364276	7.95	8.30	8.55	0.26	8.46	8.71	0.25
GRID000007345251	29.57648962	-96.65344061	8.17	8.51	8.73	0.22	8.66	8.88	0.22
GRID000007345252	29.58485939	-96.65323843	8.33	8.66	8.87	0.21	8.80	9.01	0.22
GRID000007345253	29.59322917	-96.65303621	8.50	8.82	9.04	0.22	8.95	9.17	0.22
GRID000007345254	29.60159898	-96.65283396	8.78	9.08	9.32	0.24	9.21	9.44	0.23
GRID000007345255	29.60996881	-96.65263167	9.13	9.42	9.67	0.26	9.53	9.79	0.26
GRID000007345961	29.48424661	-96.64609647	7.64	7.88	7.92	0.04	7.99	8.03	0.04
GRID000007345962	29.49261613	-96.64589385	7.60	7.86	7.87	0.01	7.98	8.00	0.01
GRID000007345963	29.50098568	-96.64569119	7.56	7.83	7.81	-0.03	7.96	7.94	-0.02
GRID000007345964	29.50935525	-96.64548849	7.54	7.84	7.78	-0.06	7.98	7.92	-0.06
GRID000007345965	29.51772484	-96.64528576	7.53	7.84	7.80	-0.04	7.99	7.96	-0.03
GRID000007345966	29.52609445	-96.645083	7.49	7.83	7.85	0.03	7.98	8.02	0.03
GRID000007345967	29.53446408	-96.6448802	7.48	7.82	7.95	0.13	7.98	8.11	0.13
GRID000007345968	29.54283373	-96.64467737	7.51	7.85	8.07	0.22	8.02	8.24	0.21
GRID000007345969	29.5512034	-96.6444745	7.58	7.94	8.22	0.28	8.11	8.38	0.27
GRID000007345970	29.55957309	-96.6442716	7.73	8.08	8.37	0.29	8.25	8.52	0.28
GRID000007345971	29.56794281	-96.64406866	7.94	8.29	8.54	0.25	8.44	8.69	0.25
GRID000007345972	29.57631254	-96.64386568	8.18	8.52	8.73	0.21	8.66	8.87	0.21
GRID000007345973	29.58468229	-96.64366267	8.34	8.66	8.87	0.21	8.81	9.01	0.20
GRID000007345974	29.59305206	-96.64345963	8.49	8.81	9.03	0.22	8.95	9.16	0.21
GRID000007345975	29.60142185	-96.64325655	8.73	9.03	9.26	0.23	9.16	9.39	0.23
GRID000007346682	29.48406898	-96.63653064	7.62	7.85	7.89	0.03	7.96	8.00	0.04
GRID000007346683	29.49243849	-96.63632719	7.58	7.83	7.84	0.01	7.95	7.96	0.01
GRID000007346684	29.50080802	-96.63612371	7.54	7.81	7.78	-0.03	7.94	7.91	-0.03
GRID000007346685	29.50917757	-96.63592019	7.53	7.81	7.75	-0.06	7.96	7.90	-0.05
GRID000007346686	29.51754715	-96.63571664	7.50	7.81	7.77	-0.03	7.96	7.93	-0.03
GRID000007346687	29.52591674	-96.63551305	7.47	7.79	7.84	0.05	7.95	8.00	0.05
GRID000007346688	29.53428635	-96.63530943	7.45	7.79	7.94	0.14	7.96	8.10	0.14
GRID000007346689	29.54265599	-96.63510577	7.49	7.83	8.07	0.23	8.00	8.23	0.23
GRID000007346690	29.55102565	-96.63490208	7.57	7.92	8.20	0.28	8.09	8.37	0.28
GRID000007346691	29.55939532	-96.63469835	7.71	8.07	8.34	0.27	8.23	8.50	0.28
GRID000007346692	29.56776502	-96.63449459	7.94	8.28	8.52	0.24	8.44	8.67	0.24
GRID000007346693	29.57613474	-96.63429079	8.19	8.52	8.73	0.20	8.67	8.87	0.21
GRID000007346694	29.58450447	-96.63408695	8.35	8.67	8.87	0.21	8.81	9.01	0.20
GRID000007346695	29.59287423	-96.63388309	8.48	8.78	9.00	0.22	8.92	9.14	0.22
GRID000007346696	29.601244	-96.63367918	8.67	8.97	9.20	0.23	9.10	9.33	0.24
GRID000007347403	29.48389063	-96.62696484	7.59	7.83	7.85	0.03	7.93	7.97	0.04
GRID000007347404	29.49226012	-96.62676057	7.54	7.80	7.80	0.00	7.92	7.92	0.01
GRID000007347405	29.50062964	-96.62655626	7.51	7.79	7.75	-0.04	7.92	7.87	-0.04
GRID000007347406	29.50899918	-96.62635192	7.51	7.79	7.73	-0.06	7.94	7.87	-0.06
GRID000007347407	29.51736873	-96.62614754	7.47	7.78	7.75	-0.03	7.93	7.91	-0.02
GRID000007347408	29.52573831	-96.62594313	7.44	7.77	7.82	0.05	7.92	7.98	0.06
GRID000007347409	29.53410791	-96.62573869	7.44	7.77	7.93	0.16	7.93	8.09	0.16
GRID000007347410	29.54247753	-96.62553421	7.47	7.81	8.05	0.24	7.98	8.21	0.23
GRID000007347411	29.55084717	-96.62532969	7.55	7.90	8.18	0.29	8.06	8.34	0.29
GRID000007347412	29.55921683	-96.62512514	7.70	8.04	8.32	0.27	8.20	8.47	0.26
GRID000007347413	29.56758651	-96.62492055	7.94	8.27	8.50	0.23	8.42	8.65	0.23

GRID000007347414	29.57595621	-96.62471593	8.19	8.51	8.71	0.20	8.65	8.85	0.20
GRID000007347415	29.58432593	-96.62451127	8.34	8.65	8.85	0.20	8.79	8.98	0.19
GRID000007347416	29.59269567	-96.62430658	8.42	8.73	8.94	0.21	8.87	9.07	0.21
GRID000007347417	29.60106543	-96.62410185	8.60	8.90	9.13	0.23	9.02	9.26	0.23
GRID000007348124	29.48371156	-96.61739907	7.56	7.79	7.82	0.03	7.90	7.93	0.03
GRID000007348125	29.49208104	-96.61719398	7.52	7.77	7.77	-0.01	7.89	7.89	0.00
GRID000007348126	29.50045054	-96.61698885	7.49	7.76	7.71	-0.05	7.89	7.85	-0.04
GRID000007348127	29.50882006	-96.61678369	7.48	7.77	7.71	-0.06	7.91	7.85	-0.06
GRID000007348128	29.5171896	-96.61657849	7.45	7.75	7.73	-0.01	7.90	7.88	-0.01
GRID000007348129	29.52555916	-96.61637325	7.41	7.73	7.80	0.07	7.88	7.96	0.07
GRID000007348130	29.53392875	-96.61616798	7.40	7.73	7.91	0.17	7.89	8.07	0.18
GRID000007348131	29.54229835	-96.61596268	7.44	7.77	8.03	0.26	7.94	8.18	0.25
GRID000007348132	29.55066798	-96.61575734	7.51	7.85	8.14	0.29	8.01	8.30	0.28
GRID000007348133	29.55903762	-96.61555196	7.65	7.98	8.25	0.27	8.14	8.40	0.26
GRID000007348134	29.56740729	-96.61534655	7.85	8.18	8.42	0.23	8.34	8.56	0.22
GRID000007348135	29.57577697	-96.6151411	8.08	8.40	8.60	0.20	8.54	8.74	0.20
GRID000007348136	29.58414667	-96.61493562	8.22	8.53	8.73	0.20	8.67	8.87	0.20
GRID000007348137	29.5925164	-96.6147301	8.31	8.62	8.83	0.21	8.75	8.95	0.21
GRID000007348138	29.60088614	-96.61452455	8.51	8.81	9.04	0.24	8.93	9.17	0.24
GRID000007348844	29.47516233	-96.60803922	7.56	7.78	7.82	0.04	7.87	7.92	0.04
GRID000007348845	29.48353177	-96.60783334	7.53	7.76	7.79	0.03	7.87	7.90	0.03
GRID000007348846	29.49190123	-96.60762742	7.49	7.75	7.73	-0.01	7.86	7.85	-0.01
GRID000007348847	29.50027072	-96.60742147	7.47	7.74	7.69	-0.05	7.87	7.82	-0.05
GRID000007348848	29.50864022	-96.60721549	7.46	7.75	7.68	-0.07	7.88	7.82	-0.06
GRID000007348849	29.51700975	-96.60700946	7.42	7.72	7.71	-0.01	7.86	7.86	0.00
GRID000007348850	29.52537929	-96.60680341	7.38	7.69	7.79	0.09	7.85	7.94	0.09
GRID000007348851	29.53374886	-96.60659731	7.37	7.70	7.89	0.19	7.85	8.04	0.19
GRID000007348852	29.54211845	-96.60639118	7.40	7.73	8.00	0.27	7.90	8.16	0.27
GRID000007348853	29.55048806	-96.60618502	7.47	7.81	8.10	0.29	7.97	8.25	0.28
GRID000007348854	29.55885769	-96.60597882	7.59	7.93	8.18	0.25	8.08	8.34	0.26
GRID000007348855	29.56722734	-96.60577258	7.75	8.08	8.30	0.22	8.23	8.45	0.22
GRID000007348856	29.57559701	-96.60556631	7.92	8.24	8.44	0.21	8.39	8.59	0.20
GRID000007348857	29.58396669	-96.60536001	8.04	8.36	8.56	0.20	8.50	8.70	0.20
GRID000007348858	29.5923364	-96.60515366	8.18	8.47	8.69	0.22	8.61	8.82	0.21
GRID000007348859	29.60070613	-96.60494729	8.42	8.71	8.95	0.24	8.84	9.07	0.24
GRID000007349565	29.47498184	-96.59847435	7.54	7.76	7.79	0.03	7.85	7.90	0.04
GRID000007349566	29.48335126	-96.59826765	7.51	7.73	7.75	0.02	7.84	7.86	0.02
GRID000007349567	29.49172071	-96.59806091	7.47	7.72	7.70	-0.02	7.83	7.81	-0.02
GRID000007349568	29.50009018	-96.59785413	7.45	7.72	7.66	-0.06	7.85	7.79	-0.06
GRID000007349569	29.50845966	-96.59764732	7.44	7.72	7.66	-0.06	7.85	7.80	-0.05
GRID000007349570	29.51682917	-96.59744048	7.39	7.69	7.69	0.01	7.83	7.84	0.01
GRID000007349571	29.52519871	-96.5972336	7.36	7.67	7.77	0.11	7.81	7.92	0.11
GRID000007349572	29.53356826	-96.59702668	7.35	7.68	7.88	0.21	7.83	8.03	0.20
GRID000007349573	29.54193783	-96.59681973	7.39	7.72	7.99	0.27	7.87	8.15	0.27
GRID000007349574	29.55030742	-96.59661274	7.47	7.80	8.08	0.28	7.96	8.23	0.28
GRID000007349575	29.55867703	-96.59640571	7.60	7.92	8.17	0.25	8.07	8.32	0.24
GRID000007349576	29.56704667	-96.59619865	7.74	8.07	8.27	0.21	8.21	8.42	0.21
GRID000007349577	29.57541632	-96.59599156	7.87	8.19	8.39	0.20	8.33	8.53	0.20
GRID000007349578	29.58378599	-96.59578443	7.96	8.27	8.47	0.20	8.41	8.61	0.20
GRID000007349579	29.59215568	-96.59557726	8.09	8.39	8.61	0.22	8.52	8.74	0.22
GRID000007349580	29.6005254	-96.59537006	8.36	8.65	8.89	0.24	8.77	9.01	0.24
GRID000007350286	29.47480063	-96.58890951	7.53	7.73	7.77	0.03	7.83	7.86	0.03
GRID000007350287	29.48317003	-96.58870199	7.48	7.71	7.71	0.01	7.81	7.82	0.01
GRID000007350288	29.49153946	-96.58849443	7.45	7.69	7.66	-0.03	7.81	7.78	-0.03
GRID000007350289	29.49990891	-96.58828683	7.44	7.70	7.64	-0.07	7.83	7.76	-0.07

GRID000007350290	29.50827839	-96.58807919	7.42	7.69	7.64	-0.05	7.83	7.78	-0.05
GRID000007350291	29.51664788	-96.58787153	7.37	7.66	7.68	0.02	7.80	7.82	0.02
GRID000007350292	29.52501739	-96.58766382	7.33	7.64	7.77	0.13	7.79	7.92	0.13
GRID000007350293	29.53338693	-96.58745608	7.34	7.66	7.87	0.22	7.81	8.02	0.22
GRID000007350294	29.54175649	-96.5872483	7.38	7.71	7.99	0.28	7.86	8.14	0.28
GRID000007350295	29.55012606	-96.58704049	7.48	7.80	8.08	0.28	7.96	8.23	0.27
GRID000007350296	29.55849566	-96.58683264	7.61	7.93	8.17	0.24	8.08	8.32	0.24
GRID000007350297	29.56686528	-96.58662476	7.75	8.07	8.27	0.21	8.21	8.42	0.20
GRID000007350298	29.57523491	-96.58641684	7.83	8.15	8.34	0.20	8.29	8.48	0.19
GRID000007350299	29.58360457	-96.58620888	7.90	8.20	8.40	0.20	8.34	8.54	0.20
GRID000007350300	29.59197425	-96.58600089	8.02	8.32	8.54	0.22	8.45	8.67	0.22
GRID000007350301	29.60034394	-96.58579287	8.32	8.60	8.84	0.24	8.73	8.96	0.24
GRID000007351006	29.46624932	-96.57955303	7.51	7.70	7.74	0.04	7.79	7.83	0.04
GRID000007351007	29.47461869	-96.57934471	7.49	7.70	7.73	0.03	7.79	7.82	0.03
GRID000007351008	29.48298808	-96.57913636	7.45	7.68	7.67	-0.01	7.77	7.78	0.01
GRID000007351009	29.4913575	-96.57892798	7.42	7.67	7.63	-0.04	7.78	7.75	-0.03
GRID000007351010	29.49972693	-96.57871956	7.42	7.68	7.61	-0.07	7.80	7.73	-0.07
GRID000007351011	29.50809639	-96.5785111	7.40	7.67	7.62	-0.05	7.80	7.75	-0.05
GRID000007351012	29.51646587	-96.57830261	7.35	7.64	7.67	0.03	7.77	7.81	0.03
GRID000007351013	29.52483536	-96.57809408	7.31	7.62	7.76	0.14	7.77	7.90	0.13
GRID000007351014	29.53320488	-96.57788552	7.33	7.64	7.87	0.23	7.79	8.02	0.23
GRID000007351015	29.54157442	-96.57767692	7.38	7.70	7.98	0.28	7.85	8.13	0.28
GRID000007351016	29.54994398	-96.57746828	7.50	7.81	8.08	0.26	7.96	8.23	0.26
GRID000007351017	29.55831356	-96.57725961	7.63	7.94	8.17	0.23	8.09	8.32	0.22
GRID000007351018	29.56668317	-96.5770509	7.74	8.05	8.25	0.20	8.20	8.39	0.20
GRID000007351019	29.57505279	-96.57684216	7.78	8.09	8.28	0.19	8.23	8.42	0.19
GRID000007351020	29.58342243	-96.57663338	7.83	8.13	8.33	0.20	8.27	8.47	0.20
GRID000007351021	29.59179209	-96.57642456	7.97	8.27	8.49	0.22	8.39	8.62	0.22
GRID000007351727	29.46606668	-96.56998908	7.49	7.68	7.71	0.04	7.76	7.80	0.04
GRID000007351728	29.47443604	-96.56977995	7.45	7.66	7.68	0.02	7.75	7.78	0.03
GRID000007351729	29.48280541	-96.56957078	7.42	7.64	7.63	-0.01	7.74	7.73	-0.01
GRID000007351730	29.49117481	-96.56936157	7.40	7.64	7.60	-0.05	7.75	7.71	-0.05
GRID000007351731	29.49954423	-96.56915233	7.40	7.66	7.58	-0.07	7.77	7.71	-0.07
GRID000007351732	29.50791367	-96.56894305	7.37	7.64	7.60	-0.04	7.77	7.73	-0.04
GRID000007351733	29.51628313	-96.56873373	7.32	7.61	7.66	0.05	7.75	7.79	0.05
GRID000007351734	29.52465261	-96.56852438	7.30	7.60	7.75	0.16	7.74	7.90	0.15
GRID000007351735	29.53302212	-96.56831499	7.32	7.63	7.87	0.25	7.77	8.02	0.24
GRID000007351736	29.54139164	-96.56810557	7.40	7.71	7.99	0.28	7.85	8.13	0.28
GRID000007351737	29.54976118	-96.56789611	7.51	7.83	8.09	0.26	7.98	8.23	0.25
GRID000007351738	29.55813075	-96.56768661	7.64	7.95	8.17	0.22	8.09	8.31	0.22
GRID000007351739	29.56650033	-96.56747708	7.71	8.02	8.21	0.19	8.16	8.35	0.20
GRID000007351740	29.57486994	-96.56726751	7.72	8.02	8.21	0.19	8.16	8.35	0.19
GRID000007351741	29.58323956	-96.56705791	7.77	8.07	8.27	0.20	8.20	8.40	0.20
GRID000007351742	29.59160921	-96.56684827	7.93	8.22	8.44	0.22	8.35	8.57	0.21
GRID000007352448	29.46588333	-96.56042518	7.46	7.65	7.69	0.04	7.73	7.77	0.04
GRID000007352449	29.47425266	-96.56021522	7.42	7.62	7.64	0.02	7.71	7.73	0.02
GRID000007352450	29.48262202	-96.56000522	7.38	7.60	7.59	-0.01	7.71	7.69	-0.01
GRID000007352451	29.4909914	-96.55979519	7.38	7.62	7.56	-0.05	7.73	7.68	-0.05
GRID000007352452	29.49936081	-96.55958513	7.38	7.64	7.56	-0.08	7.75	7.68	-0.07
GRID000007352453	29.50773023	-96.55937503	7.35	7.62	7.58	-0.03	7.74	7.71	-0.03
GRID000007352454	29.51609968	-96.55916489	7.30	7.58	7.65	0.07	7.71	7.79	0.07
GRID000007352455	29.52446914	-96.55895471	7.28	7.58	7.75	0.17	7.72	7.90	0.17
GRID000007352456	29.53283863	-96.5587445	7.32	7.62	7.88	0.26	7.77	8.02	0.26
GRID000007352457	29.54120814	-96.55853425	7.42	7.72	8.00	0.28	7.87	8.14	0.27
GRID000007352458	29.54957766	-96.55832397	7.54	7.85	8.09	0.25	7.99	8.23	0.24

GRID000007352459	29.55794721	-96.55811365	7.64	7.94	8.15	0.21	8.09	8.29	0.20
GRID000007352460	29.56631678	-96.55790329	7.66	7.96	8.16	0.19	8.10	8.29	0.19
GRID000007352461	29.57468637	-96.5576929	7.66	7.96	8.15	0.19	8.09	8.28	0.19
GRID000007352462	29.58305598	-96.55748247	7.71	8.01	8.21	0.20	8.14	8.34	0.20
GRID000007352463	29.5914256	-96.55727201	7.90	8.18	8.40	0.22	8.31	8.53	0.22
GRID000007353168	29.45732995	-96.55107205	7.40	7.58	7.64	0.06	7.66	7.71	0.06
GRID000007353169	29.46569925	-96.55086131	7.42	7.62	7.66	0.04	7.69	7.74	0.05
GRID000007353170	29.47406857	-96.55065053	7.37	7.58	7.60	0.02	7.67	7.69	0.02
GRID000007353171	29.48243791	-96.55043971	7.35	7.57	7.54	-0.03	7.67	7.65	-0.02
GRID000007353172	29.49080728	-96.55022886	7.35	7.59	7.53	-0.06	7.70	7.64	-0.06
GRID000007353173	29.49917666	-96.55001797	7.35	7.60	7.53	-0.07	7.72	7.66	-0.07
GRID000007353174	29.50754607	-96.54980704	7.32	7.58	7.57	-0.01	7.71	7.70	-0.01
GRID000007353175	29.5159155	-96.54959608	7.28	7.56	7.64	0.08	7.69	7.78	0.09
GRID000007353176	29.52428495	-96.54938508	7.28	7.57	7.76	0.19	7.71	7.90	0.19
GRID000007353177	29.53265442	-96.54917405	7.33	7.63	7.90	0.27	7.77	8.03	0.26
GRID000007353178	29.54102391	-96.54896297	7.44	7.74	8.01	0.27	7.88	8.15	0.27
GRID000007353179	29.54939342	-96.54875187	7.55	7.85	8.09	0.24	8.00	8.23	0.23
GRID000007353180	29.55776295	-96.54854072	7.61	7.92	8.11	0.20	8.05	8.25	0.20
GRID000007353181	29.56613251	-96.54832954	7.59	7.90	8.09	0.19	8.03	8.22	0.19
GRID000007353182	29.57450208	-96.54811833	7.59	7.89	8.08	0.19	8.02	8.21	0.19
GRID000007353183	29.58287167	-96.54790707	7.66	7.96	8.16	0.21	8.09	8.29	0.20
GRID000007353184	29.59124128	-96.54769578	7.87	8.15	8.37	0.22	8.27	8.49	0.21
GRID000007353889	29.45714517	-96.54150904	7.39	7.57	7.62	0.05	7.64	7.70	0.06
GRID000007353890	29.46551445	-96.54129747	7.38	7.57	7.62	0.05	7.66	7.70	0.05
GRID000007353891	29.47388375	-96.54108587	7.33	7.53	7.55	0.02	7.62	7.64	0.02
GRID000007353892	29.48225308	-96.54087423	7.30	7.53	7.51	-0.02	7.63	7.61	-0.02
GRID000007353893	29.49062243	-96.54066255	7.32	7.56	7.50	-0.06	7.66	7.61	-0.05
GRID000007353894	29.4989918	-96.54045084	7.33	7.58	7.51	-0.06	7.69	7.64	-0.06
GRID000007353895	29.50736119	-96.54023909	7.30	7.56	7.56	0.00	7.68	7.69	0.01
GRID000007353896	29.5157306	-96.54002731	7.26	7.54	7.64	0.10	7.68	7.77	0.10
GRID000007353897	29.52410004	-96.53981549	7.28	7.56	7.77	0.20	7.70	7.90	0.20
GRID000007353898	29.53246949	-96.53960363	7.35	7.65	7.91	0.26	7.78	8.04	0.26
GRID000007353899	29.54083897	-96.53939173	7.46	7.76	8.02	0.26	7.90	8.16	0.26
GRID000007353900	29.54920846	-96.5391798	7.55	7.85	8.08	0.22	7.99	8.21	0.22
GRID000007353901	29.55757798	-96.53896783	7.56	7.86	8.06	0.20	8.00	8.19	0.19
GRID000007353902	29.56594751	-96.53875583	7.53	7.83	8.01	0.18	7.96	8.15	0.19
GRID000007353903	29.57431707	-96.53854379	7.53	7.82	8.01	0.19	7.96	8.15	0.19
GRID000007353904	29.58268664	-96.53833171	7.62	7.92	8.11	0.20	8.04	8.25	0.20
GRID000007353905	29.59105624	-96.5381196	7.84	8.12	8.33	0.21	8.25	8.46	0.21
GRID000007354610	29.45695967	-96.53194607	7.38	7.55	7.61	0.06	7.62	7.69	0.07
GRID000007354611	29.46532893	-96.53173368	7.34	7.53	7.57	0.05	7.61	7.66	0.05
GRID000007354612	29.47369822	-96.53152125	7.28	7.48	7.50	0.02	7.57	7.60	0.03
GRID000007354613	29.48206753	-96.53130879	7.26	7.49	7.47	-0.02	7.58	7.57	-0.01
GRID000007354614	29.49043686	-96.53109629	7.30	7.53	7.47	-0.06	7.64	7.58	-0.06
GRID000007354615	29.49880622	-96.53088375	7.31	7.56	7.50	-0.06	7.67	7.62	-0.05
GRID000007354616	29.50717559	-96.53067118	7.28	7.54	7.55	0.01	7.66	7.68	0.02
GRID000007354617	29.51554499	-96.53045857	7.25	7.53	7.65	0.12	7.66	7.78	0.13
GRID000007354618	29.5239144	-96.53024593	7.28	7.57	7.79	0.22	7.70	7.92	0.22
GRID000007354619	29.53228384	-96.53003325	7.37	7.66	7.93	0.27	7.80	8.07	0.26
GRID000007354620	29.5406533	-96.52982053	7.47	7.77	8.02	0.25	7.91	8.16	0.25
GRID000007354621	29.54902278	-96.52960777	7.53	7.83	8.04	0.22	7.96	8.18	0.21
GRID000007354622	29.55739228	-96.52939498	7.50	7.79	7.98	0.19	7.93	8.12	0.19
GRID000007354623	29.5657618	-96.52918215	7.45	7.75	7.94	0.18	7.89	8.07	0.18
GRID000007354624	29.57413134	-96.52896929	7.47	7.77	7.95	0.18	7.90	8.09	0.18
GRID000007354625	29.58250089	-96.52875638	7.58	7.87	8.07	0.20	8.00	8.20	0.20

GRID000007354626	29.59087047	-96.52854345	7.81	8.09	8.30	0.21	8.21	8.42	0.21
GRID000007355331	29.45677344	-96.52238313	7.35	7.53	7.59	0.06	7.60	7.66	0.06
GRID000007355332	29.46514269	-96.52216992	7.30	7.48	7.53	0.05	7.56	7.62	0.05
GRID000007355333	29.47351197	-96.52195667	7.24	7.44	7.46	0.02	7.53	7.56	0.03
GRID000007355334	29.48188126	-96.52174338	7.24	7.46	7.44	-0.03	7.56	7.54	-0.02
GRID000007355335	29.49025057	-96.52153006	7.28	7.51	7.45	-0.06	7.62	7.56	-0.06
GRID000007355336	29.49861991	-96.5213167	7.30	7.54	7.49	-0.05	7.65	7.60	-0.05
GRID000007355337	29.50698927	-96.52110331	7.26	7.52	7.55	0.03	7.64	7.68	0.03
GRID000007355338	29.51535865	-96.52088987	7.25	7.53	7.66	0.14	7.65	7.79	0.14
GRID000007355339	29.52372805	-96.52067641	7.30	7.58	7.81	0.22	7.71	7.94	0.23
GRID000007355340	29.53209747	-96.5204629	7.40	7.68	7.94	0.26	7.81	8.08	0.26
GRID000007355341	29.54046691	-96.52024936	7.48	7.77	8.01	0.24	7.90	8.14	0.24
GRID000007355342	29.54883637	-96.52003578	7.48	7.77	7.98	0.21	7.91	8.11	0.21
GRID000007355343	29.55720586	-96.51982216	7.43	7.72	7.91	0.19	7.85	8.04	0.19
GRID000007355344	29.56557536	-96.51960851	7.39	7.68	7.86	0.18	7.82	8.00	0.18
GRID000007355345	29.57394488	-96.51939482	7.42	7.71	7.90	0.19	7.85	8.03	0.18
GRID000007355346	29.58231442	-96.51918109	7.55	7.83	8.02	0.19	7.96	8.16	0.19
GRID000007355347	29.59068399	-96.51896733	7.79	8.07	8.27	0.20	8.18	8.39	0.20
GRID000007356051	29.44821729	-96.51303422	7.31	7.47	7.54	0.08	7.54	7.61	0.07
GRID000007356052	29.4565865	-96.51282023	7.33	7.50	7.56	0.06	7.57	7.64	0.07
GRID000007356053	29.46495573	-96.51260619	7.25	7.44	7.49	0.04	7.53	7.57	0.05
GRID000007356054	29.47332499	-96.51239212	7.20	7.40	7.42	0.02	7.50	7.51	0.01
GRID000007356055	29.48169427	-96.51217801	7.22	7.44	7.41	-0.03	7.54	7.51	-0.03
GRID000007356056	29.49006357	-96.51196387	7.27	7.50	7.44	-0.06	7.60	7.54	-0.06
GRID000007356057	29.49843289	-96.51174969	7.28	7.52	7.48	-0.04	7.64	7.60	-0.04
GRID000007356058	29.50680223	-96.51153547	7.25	7.51	7.56	0.05	7.63	7.68	0.05
GRID000007356059	29.51517159	-96.51132121	7.26	7.53	7.68	0.16	7.65	7.81	0.16
GRID000007356060	29.52354097	-96.51110692	7.32	7.60	7.84	0.24	7.73	7.96	0.24
GRID000007356061	29.53191038	-96.51089259	7.42	7.69	7.96	0.26	7.83	8.09	0.26
GRID000007356062	29.5402798	-96.51067823	7.46	7.75	7.98	0.23	7.87	8.11	0.23
GRID000007356063	29.54864925	-96.51046382	7.42	7.71	7.91	0.20	7.84	8.04	0.20
GRID000007356064	29.55701872	-96.51024938	7.35	7.65	7.83	0.18	7.78	7.96	0.18
GRID000007356065	29.5653882	-96.51003491	7.33	7.63	7.81	0.18	7.76	7.94	0.17
GRID000007356066	29.57375771	-96.50982039	7.38	7.68	7.85	0.18	7.81	7.99	0.18
GRID000007356067	29.58212723	-96.50960584	7.53	7.81	8.00	0.19	7.93	8.12	0.19
GRID000007356772	29.44802965	-96.50347218	7.31	7.47	7.54	0.07	7.54	7.61	0.07
GRID000007356773	29.45639884	-96.50325736	7.30	7.47	7.53	0.06	7.54	7.61	0.07
GRID000007356774	29.46476806	-96.5030425	7.21	7.40	7.45	0.04	7.49	7.53	0.05
GRID000007356775	29.4731373	-96.50282761	7.18	7.38	7.38	0.01	7.47	7.48	0.01
GRID000007356776	29.48150656	-96.50261268	7.21	7.42	7.38	-0.04	7.52	7.49	-0.03
GRID000007356777	29.48987584	-96.50239771	7.26	7.49	7.42	-0.06	7.59	7.53	-0.06
GRID000007356778	29.49824514	-96.50218271	7.27	7.51	7.48	-0.03	7.62	7.59	-0.03
GRID000007356779	29.50661447	-96.50196767	7.25	7.51	7.57	0.06	7.62	7.69	0.07
GRID000007356780	29.51498381	-96.50175259	7.27	7.54	7.71	0.17	7.66	7.83	0.17
GRID000007356781	29.52335318	-96.50153747	7.35	7.62	7.86	0.25	7.74	7.99	0.25
GRID000007356782	29.53172257	-96.50132232	7.42	7.70	7.96	0.25	7.83	8.08	0.25
GRID000007356783	29.54009198	-96.50110713	7.42	7.70	7.92	0.22	7.83	8.05	0.22
GRID000007356784	29.54846141	-96.5008919	7.35	7.64	7.83	0.19	7.77	7.96	0.20
GRID000007356785	29.55683085	-96.50067664	7.29	7.58	7.76	0.18	7.71	7.90	0.18
GRID000007356786	29.56520032	-96.50046134	7.28	7.58	7.75	0.17	7.71	7.88	0.17
GRID000007356787	29.57356981	-96.500246	7.35	7.64	7.81	0.18	7.76	7.94	0.18
GRID000007356788	29.58193932	-96.50003063	7.49	7.77	7.96	0.18	7.90	8.09	0.19
GRID000007357493	29.44784128	-96.49391017	7.30	7.47	7.54	0.07	7.53	7.60	0.07
GRID000007357494	29.45621046	-96.49369453	7.26	7.44	7.49	0.06	7.51	7.57	0.06
GRID000007357495	29.46457966	-96.49347885	7.18	7.37	7.40	0.04	7.45	7.49	0.04

GRID000007357496	29.47294888	-96.49326314	7.15	7.35	7.35	0.00	7.44	7.44	0.01
GRID000007357497	29.48131812	-96.49304739	7.19	7.40	7.36	-0.04	7.50	7.46	-0.04
GRID000007357498	29.48968739	-96.49283159	7.25	7.47	7.42	-0.06	7.58	7.52	-0.06
GRID000007357499	29.49805668	-96.49261577	7.26	7.49	7.47	-0.02	7.61	7.59	-0.02
GRID000007357500	29.50642598	-96.4923999	7.25	7.50	7.58	0.08	7.62	7.70	0.08
GRID000007357501	29.51479531	-96.492184	7.29	7.55	7.73	0.18	7.67	7.85	0.19
GRID000007357502	29.52316466	-96.49196806	7.36	7.63	7.88	0.25	7.75	8.00	0.25
GRID000007357503	29.53153404	-96.49175209	7.40	7.68	7.93	0.25	7.80	8.05	0.25
GRID000007357504	29.53990343	-96.49153607	7.35	7.63	7.85	0.22	7.76	7.98	0.22
GRID000007357505	29.54827284	-96.49132002	7.28	7.56	7.75	0.19	7.69	7.89	0.19
GRID000007357506	29.55664227	-96.49110393	7.23	7.52	7.69	0.18	7.65	7.83	0.18
GRID000007357507	29.56501173	-96.49088781	7.24	7.53	7.70	0.18	7.66	7.83	0.17
GRID000007357508	29.5733812	-96.49067165	7.31	7.60	7.77	0.18	7.72	7.90	0.18
GRID000007357509	29.58175069	-96.49045545	7.47	7.74	7.93	0.19	7.87	8.05	0.18
GRID000007358213	29.43928306	-96.48456463	7.25	7.40	7.47	0.08	7.45	7.54	0.08
GRID000007358214	29.4476522	-96.48434821	7.30	7.45	7.53	0.07	7.53	7.59	0.06
GRID000007358215	29.45602136	-96.48413174	7.23	7.40	7.46	0.06	7.47	7.53	0.06
GRID000007358216	29.46439054	-96.48391524	7.15	7.33	7.37	0.04	7.41	7.45	0.04
GRID000007358217	29.47275974	-96.4836987	7.13	7.32	7.32	0.00	7.42	7.41	-0.01
GRID000007358218	29.48112897	-96.48348213	7.18	7.39	7.35	-0.04	7.49	7.44	-0.04
GRID000007358219	29.48949822	-96.48326551	7.25	7.47	7.41	-0.06	7.57	7.51	-0.06
GRID000007358220	29.49786749	-96.48304886	7.25	7.49	7.49	-0.01	7.60	7.60	-0.01
GRID000007358221	29.50623678	-96.48283218	7.26	7.51	7.61	0.10	7.63	7.73	0.10
GRID000007358222	29.51460609	-96.48261545	7.31	7.56	7.77	0.20	7.69	7.88	0.19
GRID000007358223	29.52297543	-96.48239869	7.37	7.64	7.89	0.25	7.75	8.01	0.26
GRID000007358224	29.53134478	-96.48218189	7.35	7.63	7.87	0.25	7.75	8.00	0.24
GRID000007358225	29.53971416	-96.48196505	7.28	7.56	7.77	0.21	7.68	7.90	0.21
GRID000007358226	29.54808355	-96.48174818	7.20	7.49	7.68	0.19	7.62	7.81	0.19
GRID000007358227	29.55645297	-96.48153127	7.17	7.45	7.63	0.17	7.59	7.76	0.17
GRID000007358228	29.56482241	-96.48131432	7.19	7.47	7.65	0.18	7.60	7.78	0.18
GRID000007358229	29.57319186	-96.48109733	7.28	7.55	7.73	0.18	7.68	7.86	0.18
GRID000007358230	29.58156134	-96.48088031	7.44	7.71	7.90	0.19	7.83	8.02	0.19
GRID000007358934	29.43909327	-96.47500352	7.26	7.41	7.49	0.08	7.47	7.54	0.08
GRID000007358935	29.44746239	-96.47478627	7.28	7.44	7.51	0.06	7.51	7.58	0.07
GRID000007358936	29.45583153	-96.47456899	7.20	7.37	7.42	0.06	7.44	7.50	0.06
GRID000007358937	29.4642007	-96.47435167	7.11	7.30	7.33	0.03	7.38	7.41	0.03
GRID000007358938	29.47256989	-96.4741343	7.11	7.30	7.30	-0.01	7.40	7.38	-0.01
GRID000007358939	29.4809391	-96.47391691	7.17	7.38	7.33	-0.05	7.48	7.43	-0.05
GRID000007358940	29.48930833	-96.47369947	7.24	7.46	7.40	-0.06	7.56	7.51	-0.05
GRID000007358941	29.49767758	-96.473482	7.26	7.49	7.51	0.01	7.60	7.62	0.01
GRID000007358942	29.50604686	-96.47326449	7.28	7.53	7.64	0.11	7.64	7.76	0.12
GRID000007358943	29.51441616	-96.47304694	7.33	7.58	7.79	0.21	7.70	7.91	0.21
GRID000007358944	29.52278547	-96.47282935	7.35	7.62	7.87	0.25	7.74	7.99	0.25
GRID000007358945	29.53115481	-96.47261173	7.29	7.56	7.80	0.24	7.69	7.93	0.24
GRID000007358946	29.53952417	-96.47239407	7.20	7.48	7.69	0.21	7.61	7.81	0.20
GRID000007358947	29.54789355	-96.47217637	7.13	7.42	7.60	0.19	7.55	7.73	0.18
GRID000007358948	29.55626295	-96.47195864	7.12	7.40	7.58	0.17	7.53	7.71	0.18
GRID000007358949	29.56463236	-96.47174086	7.15	7.44	7.61	0.17	7.56	7.73	0.17
GRID000007358950	29.5730018	-96.47152305	7.25	7.52	7.69	0.18	7.65	7.82	0.17
GRID000007358951	29.58137126	-96.4713052	7.42	7.68	7.87	0.19	7.80	7.98	0.18
GRID000007359655	29.43890276	-96.46544245	7.26	7.42	7.49	0.08	7.47	7.55	0.08
GRID000007359656	29.44727187	-96.46522438	7.26	7.42	7.49	0.07	7.49	7.55	0.06
GRID000007359657	29.45564099	-96.46500627	7.16	7.33	7.38	0.06	7.40	7.45	0.05
GRID000007359658	29.46401014	-96.46478813	7.08	7.26	7.29	0.03	7.35	7.38	0.03
GRID000007359659	29.47237931	-96.46456994	7.09	7.29	7.27	-0.02	7.38	7.37	-0.01

GRID000007359660	29.48074851	-96.46435172	7.17	7.38	7.32	-0.06	7.47	7.42	-0.05
GRID000007359661	29.48911772	-96.46413346	7.24	7.46	7.41	-0.05	7.56	7.51	-0.05
GRID000007359662	29.49748696	-96.46391517	7.26	7.50	7.53	0.03	7.61	7.64	0.03
GRID000007359663	29.50585622	-96.46369683	7.30	7.54	7.68	0.13	7.66	7.79	0.13
GRID000007359664	29.51422549	-96.46347846	7.33	7.59	7.81	0.22	7.71	7.93	0.22
GRID000007359665	29.52259479	-96.46326005	7.31	7.58	7.83	0.25	7.69	7.95	0.25
GRID000007359666	29.53096412	-96.46304161	7.21	7.49	7.72	0.23	7.62	7.85	0.23
GRID000007359667	29.53933346	-96.46282312	7.13	7.40	7.61	0.21	7.53	7.73	0.20
GRID000007359668	29.54770282	-96.4626046	7.07	7.36	7.54	0.18	7.49	7.67	0.18
GRID000007359669	29.5560722	-96.46238604	7.07	7.35	7.53	0.17	7.49	7.66	0.17
GRID000007359670	29.5644416	-96.46216744	7.12	7.39	7.56	0.17	7.52	7.69	0.18
GRID000007359671	29.57281103	-96.46194881	7.21	7.49	7.66	0.18	7.61	7.79	0.18
GRID000007359672	29.58118047	-96.46173014	7.38	7.65	7.83	0.19	7.77	7.95	0.18
GRID000007360375	29.43034247	-96.45610027	7.18	7.32	7.40	0.08	7.38	7.46	0.08
GRID000007360376	29.43871153	-96.45588142	7.27	7.42	7.49	0.07	7.48	7.56	0.08
GRID000007360377	29.44708062	-96.45566252	7.23	7.39	7.45	0.06	7.45	7.53	0.07
GRID000007360378	29.45544973	-96.45544359	7.12	7.30	7.34	0.04	7.37	7.42	0.05
GRID000007360379	29.46381886	-96.45522463	7.06	7.24	7.26	0.02	7.32	7.34	0.02
GRID000007360380	29.47218802	-96.45500562	7.08	7.28	7.25	-0.02	7.37	7.35	-0.02
GRID000007360381	29.48055719	-96.45478658	7.17	7.38	7.32	-0.06	7.47	7.42	-0.06
GRID000007360382	29.48892639	-96.45456749	7.25	7.47	7.42	-0.04	7.56	7.53	-0.04
GRID000007360383	29.49729561	-96.45434838	7.29	7.52	7.56	0.05	7.62	7.67	0.05
GRID000007360384	29.50566485	-96.45412922	7.32	7.56	7.71	0.14	7.68	7.82	0.15
GRID000007360385	29.51403411	-96.45391002	7.32	7.58	7.81	0.23	7.69	7.92	0.23
GRID000007360386	29.5224034	-96.45369079	7.25	7.51	7.77	0.26	7.63	7.88	0.25
GRID000007360387	29.5307727	-96.45347152	7.14	7.42	7.64	0.23	7.54	7.77	0.23
GRID000007360388	29.53914203	-96.45325221	7.06	7.34	7.54	0.20	7.47	7.66	0.19
GRID000007360389	29.54751137	-96.45303287	7.03	7.30	7.48	0.18	7.44	7.61	0.17
GRID000007360390	29.55588074	-96.45281349	7.03	7.31	7.48	0.17	7.44	7.61	0.17
GRID000007360391	29.56425012	-96.45259406	7.08	7.35	7.53	0.17	7.48	7.65	0.17
GRID000007360392	29.57261953	-96.45237461	7.18	7.45	7.63	0.17	7.58	7.75	0.17
GRID000007360393	29.58098895	-96.45215511	7.36	7.62	7.80	0.18	7.74	7.92	0.18
GRID000007361096	29.43015054	-96.4465401	7.20	7.34	7.42	0.08	7.40	7.47	0.08
GRID000007361097	29.43851959	-96.44632042	7.27	7.42	7.49	0.08	7.48	7.55	0.07
GRID000007361098	29.44688866	-96.44610071	7.20	7.36	7.42	0.06	7.43	7.49	0.06
GRID000007361099	29.45525775	-96.44588095	7.09	7.26	7.30	0.04	7.33	7.38	0.04
GRID000007361100	29.46362686	-96.44566116	7.03	7.21	7.23	0.01	7.30	7.31	0.02
GRID000007361101	29.471996	-96.44544133	7.07	7.27	7.24	-0.03	7.36	7.33	-0.03
GRID000007361102	29.48036516	-96.44522147	7.18	7.38	7.32	-0.06	7.48	7.42	-0.06
GRID000007361103	29.48873434	-96.44500156	7.26	7.48	7.45	-0.03	7.58	7.54	-0.03
GRID000007361104	29.49710354	-96.44478162	7.31	7.54	7.60	0.06	7.64	7.70	0.06
GRID000007361105	29.50547277	-96.44456164	7.33	7.57	7.73	0.16	7.68	7.84	0.17
GRID000007361106	29.51384201	-96.44434162	7.28	7.54	7.77	0.24	7.65	7.89	0.24
GRID000007361107	29.52221128	-96.44412157	7.18	7.44	7.69	0.25	7.56	7.81	0.25
GRID000007361108	29.53058057	-96.44390148	7.07	7.34	7.56	0.22	7.46	7.68	0.22
GRID000007361109	29.53894987	-96.44368134	7.01	7.28	7.47	0.19	7.40	7.60	0.19
GRID000007361110	29.5473192	-96.44346117	6.98	7.26	7.43	0.17	7.38	7.56	0.17
GRID000007361111	29.55568855	-96.44324097	6.99	7.27	7.44	0.17	7.40	7.56	0.17
GRID000007361112	29.56405792	-96.44302072	7.05	7.32	7.49	0.17	7.45	7.62	0.17
GRID000007361113	29.57242731	-96.44280044	7.15	7.42	7.60	0.17	7.54	7.72	0.18
GRID000007361817	29.42995789	-96.43697996	7.21	7.36	7.44	0.08	7.41	7.49	0.08
GRID000007361818	29.43832692	-96.43675946	7.26	7.41	7.48	0.07	7.47	7.54	0.07
GRID000007361819	29.44669597	-96.43653892	7.17	7.33	7.39	0.06	7.39	7.45	0.06
GRID000007361820	29.45506505	-96.43631835	7.06	7.23	7.27	0.04	7.30	7.35	0.04
GRID000007361821	29.46343415	-96.43609774	7.01	7.20	7.20	0.01	7.28	7.29	0.01

GRID000007361822	29.47180327	-96.43587709	7.07	7.26	7.23	-0.03	7.35	7.32	-0.03
GRID000007361823	29.48017241	-96.4356564	7.19	7.39	7.33	-0.06	7.49	7.43	-0.06
GRID000007361824	29.48854157	-96.43543567	7.28	7.50	7.48	-0.02	7.60	7.58	-0.02
GRID000007361825	29.49691076	-96.43521491	7.33	7.56	7.63	0.07	7.66	7.73	0.08
GRID000007361826	29.50527996	-96.4349941	7.32	7.56	7.73	0.18	7.67	7.85	0.18
GRID000007361827	29.51364919	-96.43477326	7.23	7.47	7.72	0.25	7.59	7.83	0.24
GRID000007361828	29.52201844	-96.43455238	7.10	7.37	7.61	0.24	7.49	7.73	0.24
GRID000007361829	29.53038771	-96.43433147	7.00	7.27	7.49	0.22	7.39	7.61	0.22
GRID000007361830	29.538757	-96.43411051	6.95	7.23	7.41	0.18	7.35	7.54	0.19
GRID000007361831	29.54712631	-96.43388952	6.94	7.21	7.38	0.17	7.34	7.51	0.17
GRID000007361832	29.55549564	-96.43366849	6.96	7.23	7.40	0.16	7.36	7.53	0.17
GRID000007361833	29.56386499	-96.43344742	7.02	7.29	7.45	0.16	7.41	7.58	0.17
GRID000007361834	29.57223436	-96.43322631	7.13	7.40	7.57	0.17	7.51	7.69	0.18
GRID000007362538	29.42976452	-96.42741986	7.23	7.37	7.45	0.08	7.42	7.50	0.08
GRID000007362539	29.43813353	-96.42719854	7.25	7.40	7.47	0.07	7.45	7.53	0.07
GRID000007362540	29.44650257	-96.42697718	7.13	7.30	7.35	0.06	7.36	7.42	0.06
GRID000007362541	29.45487163	-96.42675578	7.03	7.20	7.23	0.04	7.27	7.31	0.04
GRID000007362542	29.46324071	-96.42653435	7.00	7.18	7.18	0.00	7.26	7.27	0.01
GRID000007362543	29.47160981	-96.42631288	7.08	7.27	7.23	-0.04	7.36	7.32	-0.04
GRID000007362544	29.47997893	-96.42609136	7.21	7.41	7.35	-0.06	7.50	7.44	-0.06
GRID000007362545	29.48834808	-96.42586982	7.31	7.52	7.51	-0.01	7.62	7.61	-0.01
GRID000007362546	29.49671725	-96.42564823	7.34	7.56	7.66	0.09	7.67	7.76	0.09
GRID000007362547	29.50508644	-96.4254266	7.28	7.53	7.71	0.19	7.63	7.82	0.19
GRID000007362548	29.51345565	-96.42520494	7.15	7.40	7.66	0.25	7.52	7.77	0.25
GRID000007362549	29.52182488	-96.42498324	7.03	7.28	7.53	0.24	7.40	7.64	0.24
GRID000007362550	29.53019413	-96.4247615	6.95	7.21	7.42	0.21	7.33	7.54	0.21
GRID000007362551	29.53856341	-96.42453972	6.91	7.18	7.36	0.18	7.30	7.49	0.18
GRID000007362552	29.5469327	-96.4243179	6.91	7.18	7.34	0.16	7.30	7.47	0.17
GRID000007362553	29.55530202	-96.42409605	6.93	7.20	7.36	0.16	7.32	7.49	0.17
GRID000007362554	29.56367135	-96.42387415	6.99	7.26	7.42	0.16	7.38	7.54	0.17
GRID000007362555	29.5720407	-96.42365222	7.10	7.37	7.54	0.17	7.49	7.66	0.18
GRID000007363258	29.42120145	-96.41808191	7.12	7.25	7.33	0.08	7.30	7.38	0.08
GRID000007363259	29.42957043	-96.4178598	7.24	7.38	7.45	0.08	7.44	7.51	0.08
GRID000007363260	29.43793942	-96.41763766	7.23	7.38	7.44	0.06	7.44	7.51	0.07
GRID000007363261	29.44630844	-96.41741548	7.10	7.26	7.31	0.06	7.33	7.38	0.06
GRID000007363262	29.45467748	-96.41719326	7.00	7.17	7.20	0.04	7.24	7.28	0.04
GRID000007363263	29.46304655	-96.416971	6.99	7.18	7.17	-0.01	7.26	7.25	-0.01
GRID000007363264	29.47141563	-96.4167487	7.09	7.28	7.23	-0.05	7.37	7.32	-0.04
GRID000007363265	29.47978474	-96.41652637	7.23	7.44	7.38	-0.06	7.53	7.47	-0.05
GRID000007363266	29.48815387	-96.416304	7.33	7.54	7.54	0.00	7.64	7.64	0.01
GRID000007363267	29.49652302	-96.41608159	7.33	7.56	7.67	0.11	7.66	7.77	0.11
GRID000007363268	29.50489219	-96.41585914	7.23	7.46	7.68	0.21	7.57	7.78	0.21
GRID000007363269	29.51326139	-96.41563665	7.08	7.33	7.58	0.25	7.44	7.69	0.25
GRID000007363270	29.5216306	-96.41541413	6.95	7.21	7.45	0.23	7.33	7.56	0.23
GRID000007363271	29.52999984	-96.41519156	6.89	7.15	7.35	0.20	7.28	7.47	0.20
GRID000007363272	29.53836909	-96.41496896	6.86	7.13	7.31	0.17	7.26	7.43	0.17
GRID000007363273	29.54673837	-96.41474632	6.86	7.13	7.30	0.16	7.26	7.42	0.16
GRID000007363274	29.55510767	-96.41452364	6.90	7.17	7.33	0.16	7.29	7.45	0.16
GRID000007363275	29.56347698	-96.41430092	6.97	7.23	7.39	0.16	7.35	7.51	0.16
GRID000007363276	29.57184632	-96.41407817	7.08	7.34	7.51	0.17	7.46	7.63	0.17
GRID000007363979	29.42100666	-96.4085227	7.14	7.27	7.35	0.08	7.32	7.40	0.08
GRID000007363980	29.42937562	-96.40829978	7.25	7.39	7.46	0.07	7.44	7.52	0.08
GRID000007363981	29.4377446	-96.40807681	7.20	7.35	7.42	0.06	7.41	7.48	0.07
GRID000007363982	29.4461136	-96.40785381	7.07	7.23	7.28	0.05	7.29	7.35	0.06
GRID000007363983	29.45448262	-96.40763077	6.98	7.14	7.17	0.03	7.21	7.25	0.03

GRID000007363984	29.46285167	-96.40740769	6.99	7.17	7.16	-0.01	7.25	7.25	-0.01
GRID000007363985	29.47122074	-96.40718457	7.11	7.30	7.25	-0.05	7.38	7.33	-0.05
GRID000007363986	29.47958983	-96.40696141	7.26	7.46	7.41	-0.05	7.55	7.50	-0.05
GRID000007363987	29.48795894	-96.40673822	7.34	7.56	7.57	0.01	7.65	7.67	0.02
GRID000007363988	29.49632807	-96.40651499	7.30	7.53	7.65	0.12	7.62	7.75	0.13
GRID000007363989	29.50469723	-96.40629171	7.15	7.39	7.62	0.23	7.50	7.72	0.22
GRID000007363990	29.5130664	-96.4060684	7.01	7.25	7.51	0.25	7.37	7.62	0.25
GRID000007363991	29.5214356	-96.40584506	6.90	7.15	7.38	0.22	7.27	7.50	0.23
GRID000007363992	29.52980482	-96.40562167	6.85	7.11	7.30	0.19	7.23	7.42	0.20
GRID000007363993	29.53817406	-96.40539824	6.83	7.09	7.26	0.17	7.21	7.38	0.17
GRID000007363994	29.54654332	-96.40517478	6.84	7.10	7.26	0.15	7.23	7.38	0.16
GRID000007363995	29.5549126	-96.40495128	6.87	7.14	7.29	0.15	7.26	7.41	0.15
GRID000007363996	29.5632819	-96.40472773	6.94	7.20	7.35	0.15	7.32	7.47	0.15
GRID000007363997	29.57165122	-96.40450416	7.07	7.33	7.48	0.15	7.44	7.60	0.16
GRID000007364700	29.42081115	-96.39896354	7.17	7.30	7.37	0.08	7.35	7.43	0.08
GRID000007364701	29.42918009	-96.39873979	7.25	7.39	7.46	0.07	7.44	7.52	0.08
GRID000007364702	29.43754905	-96.39851601	7.18	7.32	7.38	0.06	7.38	7.45	0.06
GRID000007364703	29.44591803	-96.39829218	7.04	7.19	7.24	0.05	7.26	7.31	0.05
GRID000007364704	29.45428704	-96.39806832	6.95	7.12	7.15	0.02	7.20	7.22	0.02
GRID000007364705	29.46265607	-96.39784442	6.99	7.17	7.16	-0.01	7.25	7.24	-0.01
GRID000007364706	29.47102512	-96.39762048	7.13	7.32	7.27	-0.05	7.41	7.35	-0.06
GRID000007364707	29.47939419	-96.3973965	7.28	7.49	7.44	-0.05	7.57	7.53	-0.04
GRID000007364708	29.48776329	-96.39717248	7.34	7.55	7.58	0.03	7.64	7.68	0.04
GRID000007364709	29.49613241	-96.39694842	7.25	7.47	7.61	0.14	7.56	7.71	0.15
GRID000007364710	29.50450154	-96.39672433	7.08	7.31	7.55	0.24	7.42	7.66	0.23
GRID000007364711	29.5128707	-96.39650019	6.94	7.18	7.43	0.25	7.30	7.54	0.24
GRID000007364712	29.52123988	-96.39627602	6.85	7.10	7.32	0.22	7.21	7.44	0.22
GRID000007364713	29.52960908	-96.39605181	6.81	7.06	7.25	0.18	7.18	7.37	0.18
GRID000007364714	29.5379783	-96.39582756	6.79	7.06	7.22	0.16	7.18	7.34	0.16
GRID000007364715	29.54634755	-96.39560328	6.81	7.07	7.22	0.15	7.20	7.35	0.15
GRID000007364716	29.55471681	-96.39537895	6.85	7.12	7.26	0.14	7.23	7.38	0.14
GRID000007364717	29.56308609	-96.39515458	6.92	7.18	7.33	0.14	7.30	7.45	0.15
GRID000007364718	29.57145539	-96.39493018	7.05	7.30	7.45	0.15	7.42	7.57	0.15
GRID000007365420	29.41224602	-96.38962895	6.98	7.11	7.20	0.09	7.16	7.25	0.09
GRID000007365421	29.42061492	-96.38940442	7.18	7.31	7.40	0.08	7.37	7.45	0.08
GRID000007365422	29.42898384	-96.38917985	7.25	7.38	7.45	0.07	7.44	7.51	0.07
GRID000007365423	29.43735278	-96.38895524	7.15	7.29	7.35	0.06	7.35	7.42	0.06
GRID000007365424	29.44572175	-96.38873059	7.01	7.16	7.21	0.05	7.23	7.28	0.05
GRID000007365425	29.45409074	-96.38850591	6.95	7.11	7.13	0.02	7.18	7.21	0.02
GRID000007365426	29.46245975	-96.38828118	7.01	7.18	7.16	-0.02	7.26	7.24	-0.02
GRID000007365427	29.47082878	-96.38805642	7.16	7.35	7.29	-0.06	7.43	7.38	-0.05
GRID000007365428	29.47919784	-96.38783162	7.30	7.49	7.45	-0.04	7.58	7.54	-0.04
GRID000007365429	29.48756692	-96.38760678	7.30	7.51	7.56	0.05	7.60	7.66	0.06
GRID000007365430	29.49593602	-96.3873819	7.17	7.39	7.56	0.17	7.49	7.66	0.17
GRID000007365431	29.50430514	-96.38715698	7.00	7.23	7.47	0.24	7.34	7.58	0.24
GRID000007365432	29.51267428	-96.38693202	6.87	7.12	7.36	0.24	7.23	7.47	0.25
GRID000007365433	29.52104344	-96.38670703	6.80	7.05	7.26	0.22	7.17	7.38	0.21
GRID000007365434	29.52941262	-96.38648199	6.77	7.03	7.20	0.18	7.15	7.32	0.17
GRID000007365435	29.53778183	-96.38625692	6.77	7.03	7.18	0.15	7.14	7.30	0.16
GRID000007365436	29.54615105	-96.38603181	6.78	7.04	7.19	0.15	7.17	7.31	0.15
GRID000007365437	29.5545203	-96.38580666	6.82	7.09	7.23	0.14	7.20	7.35	0.14
GRID000007365438	29.56288956	-96.38558147	6.91	7.17	7.31	0.14	7.28	7.42	0.14
GRID000007365439	29.57125885	-96.38535624	7.04	7.29	7.44	0.15	7.40	7.55	0.15
GRID000007366141	29.41204908	-96.38007068	7.01	7.13	7.22	0.09	7.18	7.27	0.09
GRID000007366142	29.42041796	-96.37984533	7.20	7.33	7.41	0.08	7.38	7.46	0.08

GRID000007366143	29.42878687	-96.37961994	7.24	7.38	7.45	0.07	7.43	7.50	0.07
GRID000007366144	29.4371558	-96.37939451	7.12	7.26	7.32	0.06	7.32	7.38	0.06
GRID000007366145	29.44552474	-96.37916904	6.98	7.13	7.18	0.05	7.20	7.25	0.05
GRID000007366146	29.45389372	-96.37894353	6.94	7.11	7.12	0.01	7.18	7.20	0.01
GRID000007366147	29.46226271	-96.37871799	7.03	7.21	7.18	-0.03	7.28	7.26	-0.03
GRID000007366148	29.47063173	-96.3784924	7.18	7.38	7.31	-0.06	7.45	7.40	-0.05
GRID000007366149	29.47900077	-96.37826678	7.30	7.49	7.47	-0.03	7.58	7.56	-0.02
GRID000007366150	29.48736983	-96.37804111	7.24	7.45	7.53	0.07	7.54	7.62	0.08
GRID000007366151	29.49573891	-96.37781541	7.08	7.30	7.49	0.18	7.40	7.59	0.19
GRID000007366152	29.50410801	-96.37758967	6.92	7.15	7.40	0.25	7.26	7.51	0.25
GRID000007366153	29.51247713	-96.37736389	6.81	7.05	7.29	0.24	7.17	7.40	0.24
GRID000007366154	29.52084628	-96.37713807	6.75	7.00	7.20	0.20	7.12	7.32	0.20
GRID000007366155	29.52921545	-96.37691222	6.72	6.98	7.15	0.17	7.10	7.27	0.17
GRID000007366156	29.53758463	-96.37668632	6.72	6.98	7.14	0.16	7.10	7.26	0.15
GRID000007366157	29.54595384	-96.37646038	6.75	7.01	7.15	0.15	7.13	7.27	0.14
GRID000007366158	29.55432307	-96.37623441	6.80	7.06	7.20	0.14	7.18	7.31	0.14
GRID000007366159	29.56269231	-96.3760084	6.89	7.14	7.28	0.14	7.25	7.40	0.14
GRID000007366160	29.57106158	-96.37578235	7.03	7.27	7.42	0.15	7.38	7.53	0.15
GRID000007366862	29.41185143	-96.37051246	7.04	7.17	7.25	0.08	7.21	7.30	0.09
GRID000007366863	29.42022029	-96.37028628	7.22	7.35	7.43	0.08	7.40	7.48	0.08
GRID000007366864	29.42858918	-96.37006007	7.22	7.37	7.43	0.06	7.42	7.49	0.07
GRID000007366865	29.43695809	-96.36983382	7.09	7.23	7.29	0.06	7.29	7.35	0.06
GRID000007366866	29.44532702	-96.36960753	6.96	7.12	7.16	0.04	7.18	7.23	0.04
GRID000007366867	29.45369598	-96.3693812	6.95	7.12	7.12	0.01	7.19	7.20	0.01
GRID000007366868	29.46206495	-96.36915483	7.06	7.24	7.20	-0.04	7.31	7.28	-0.03
GRID000007366869	29.47043395	-96.36892842	7.21	7.40	7.35	-0.06	7.48	7.43	-0.05
GRID000007366870	29.47880297	-96.36870198	7.27	7.47	7.46	-0.01	7.56	7.54	-0.01
GRID000007366871	29.48717201	-96.36847549	7.17	7.38	7.47	0.09	7.47	7.57	0.10
GRID000007366872	29.49554108	-96.36824897	7.00	7.23	7.42	0.20	7.32	7.53	0.20
GRID000007366873	29.50391016	-96.3680224	6.85	7.09	7.33	0.25	7.19	7.44	0.25
GRID000007366874	29.51227927	-96.3677958	6.75	6.99	7.23	0.23	7.11	7.34	0.23
GRID000007366875	29.5206484	-96.36756916	6.70	6.95	7.15	0.19	7.07	7.26	0.20
GRID000007366876	29.52901755	-96.36734248	6.68	6.94	7.10	0.16	7.06	7.22	0.17
GRID000007366877	29.53738671	-96.36711576	6.69	6.95	7.09	0.14	7.06	7.21	0.15
GRID000007366878	29.5457559	-96.366889	6.71	6.97	7.12	0.15	7.09	7.23	0.14
GRID000007366879	29.55412511	-96.3666622	6.77	7.03	7.17	0.14	7.14	7.28	0.14
GRID000007366880	29.56249434	-96.36643536	6.86	7.11	7.25	0.14	7.22	7.37	0.14
GRID000007367582	29.40328423	-96.36118123	6.80	6.92	7.01	0.09	6.97	7.06	0.09
GRID000007367583	29.41165306	-96.36095427	7.07	7.20	7.27	0.07	7.24	7.32	0.08
GRID000007367584	29.4200219	-96.36072728	7.23	7.37	7.44	0.07	7.42	7.49	0.07
GRID000007367585	29.42839077	-96.36050024	7.20	7.35	7.41	0.06	7.40	7.47	0.07
GRID000007367586	29.43675966	-96.36027317	7.06	7.20	7.26	0.06	7.26	7.32	0.06
GRID000007367587	29.44512858	-96.36004606	6.95	7.10	7.14	0.04	7.17	7.21	0.04
GRID000007367588	29.45349751	-96.3598189	6.97	7.13	7.13	0.00	7.21	7.21	0.00
GRID000007367589	29.46186647	-96.35959171	7.09	7.27	7.23	-0.04	7.35	7.31	-0.04
GRID000007367590	29.47023545	-96.35936448	7.23	7.42	7.36	-0.06	7.49	7.44	-0.05
GRID000007367591	29.47860446	-96.35913721	7.23	7.42	7.43	0.01	7.51	7.51	0.00
GRID000007367592	29.48697348	-96.3589099	7.09	7.30	7.42	0.11	7.40	7.51	0.12
GRID000007367593	29.49534253	-96.35868256	6.92	7.15	7.36	0.21	7.25	7.46	0.21
GRID000007367594	29.5037116	-96.35845517	6.79	7.03	7.28	0.25	7.13	7.38	0.25
GRID000007367595	29.51208069	-96.35822774	6.71	6.95	7.17	0.22	7.06	7.28	0.22
GRID000007367596	29.52044979	-96.35800028	6.67	6.91	7.10	0.19	7.03	7.21	0.19
GRID000007367597	29.52881893	-96.35777278	6.65	6.90	7.06	0.16	7.02	7.18	0.16
GRID000007367598	29.53718808	-96.35754523	6.66	6.91	7.06	0.14	7.03	7.18	0.15
GRID000007367599	29.54555725	-96.35731765	6.68	6.94	7.08	0.14	7.06	7.20	0.15

GRID000007367600	29.55392644	-96.35709003	6.74	6.99	7.13	0.14	7.11	7.25	0.14
GRID000007367601	29.56229565	-96.35686237	6.83	7.09	7.22	0.14	7.20	7.34	0.14
GRID000007368303	29.40308516	-96.3516239	6.83	6.95	7.04	0.09	6.99	7.08	0.09
GRID000007368304	29.41145396	-96.35139612	7.10	7.22	7.30	0.08	7.27	7.35	0.08
GRID000007368305	29.41982279	-96.35116831	7.24	7.37	7.45	0.08	7.42	7.50	0.08
GRID000007368306	29.42819164	-96.35094045	7.18	7.32	7.39	0.07	7.38	7.44	0.06
GRID000007368307	29.43656052	-96.35071256	7.04	7.18	7.23	0.05	7.24	7.30	0.06
GRID000007368308	29.44492941	-96.35048462	6.95	7.10	7.13	0.03	7.17	7.20	0.03
GRID000007368309	29.45329833	-96.35025665	6.99	7.17	7.16	-0.01	7.23	7.23	0.00
GRID000007368310	29.46166727	-96.35002863	7.12	7.30	7.25	-0.04	7.37	7.33	-0.04
GRID000007368311	29.47003624	-96.34980058	7.21	7.40	7.35	-0.05	7.48	7.44	-0.04
GRID000007368312	29.47840522	-96.34957249	7.16	7.36	7.38	0.02	7.44	7.47	0.03
GRID000007368313	29.48677423	-96.34934436	7.02	7.23	7.36	0.13	7.32	7.45	0.13
GRID000007368314	29.49514326	-96.34911619	6.86	7.08	7.31	0.23	7.18	7.40	0.23
GRID000007368315	29.50351231	-96.34888798	6.74	6.97	7.22	0.25	7.08	7.33	0.25
GRID000007368316	29.51188138	-96.34865973	6.67	6.91	7.12	0.22	7.02	7.23	0.21
GRID000007368317	29.52025047	-96.34843144	6.63	6.88	7.06	0.18	6.99	7.17	0.18
GRID000007368318	29.52861959	-96.34820311	6.62	6.87	7.03	0.15	6.98	7.14	0.16
GRID000007368319	29.53698872	-96.34797475	6.63	6.88	7.03	0.14	6.99	7.14	0.15
GRID000007368320	29.54535787	-96.34774634	6.66	6.91	7.05	0.14	7.03	7.17	0.13
GRID000007368321	29.55372705	-96.3475179	6.72	6.97	7.10	0.13	7.09	7.22	0.14
GRID000007368322	29.56209624	-96.34728941	6.82	7.06	7.20	0.14	7.17	7.31	0.14
GRID000007369024	29.40288536	-96.34206662	6.86	6.98	7.07	0.09	7.03	7.11	0.08
GRID000007369025	29.41125415	-96.34183802	7.12	7.25	7.33	0.08	7.30	7.38	0.08
GRID000007369026	29.41962296	-96.34160938	7.25	7.38	7.45	0.07	7.43	7.50	0.07
GRID000007369027	29.42799179	-96.3413807	7.17	7.30	7.37	0.06	7.36	7.42	0.06
GRID000007369028	29.43636065	-96.34115198	7.02	7.17	7.21	0.05	7.23	7.28	0.05
GRID000007369029	29.44472953	-96.34092323	6.95	7.11	7.14	0.03	7.18	7.21	0.03
GRID000007369030	29.45309843	-96.34069443	7.03	7.19	7.18	-0.01	7.26	7.25	-0.01
GRID000007369031	29.46146735	-96.34046559	7.14	7.31	7.27	-0.04	7.39	7.35	-0.04
GRID000007369032	29.4698363	-96.34023672	7.18	7.37	7.32	-0.04	7.45	7.40	-0.04
GRID000007369033	29.47820527	-96.34000781	7.09	7.28	7.32	0.04	7.37	7.41	0.04
GRID000007369034	29.48657426	-96.33977885	6.94	7.15	7.30	0.16	7.24	7.40	0.16
GRID000007369035	29.49494327	-96.33954986	6.80	7.02	7.25	0.23	7.12	7.35	0.24
GRID000007369036	29.5033123	-96.33932083	6.70	6.92	7.17	0.24	7.03	7.27	0.24
GRID000007369037	29.51168135	-96.33909175	6.63	6.86	7.07	0.21	6.98	7.18	0.21
GRID000007369038	29.52005043	-96.33886264	6.60	6.84	7.01	0.17	6.95	7.13	0.18
GRID000007369039	29.52841952	-96.33863349	6.59	6.83	6.98	0.15	6.95	7.10	0.16
GRID000007369040	29.53678864	-96.3384043	6.60	6.85	6.99	0.14	6.97	7.10	0.14
GRID000007369041	29.54515778	-96.33817507	6.63	6.88	7.02	0.14	7.00	7.13	0.13
GRID000007369042	29.55352693	-96.3379458	6.70	6.95	7.08	0.13	7.06	7.20	0.14
GRID000007369043	29.56189611	-96.33771649	6.80	7.04	7.18	0.13	7.15	7.29	0.14
GRID000007369745	29.40268485	-96.33250937	6.89	7.01	7.10	0.08	7.06	7.14	0.09
GRID000007369746	29.41105362	-96.33227995	7.15	7.28	7.36	0.08	7.33	7.40	0.08
GRID000007369747	29.41942241	-96.33205049	7.25	7.38	7.45	0.07	7.43	7.50	0.07
GRID000007369748	29.42779123	-96.33182099	7.14	7.28	7.34	0.06	7.33	7.40	0.06
GRID000007369749	29.43616006	-96.33159145	7.01	7.15	7.20	0.05	7.21	7.26	0.05
GRID000007369750	29.44452893	-96.33136187	6.98	7.13	7.15	0.02	7.20	7.22	0.02
GRID000007369751	29.45289781	-96.33113225	7.05	7.21	7.20	-0.01	7.29	7.27	-0.02
GRID000007369752	29.46126672	-96.33090259	7.13	7.31	7.26	-0.05	7.38	7.34	-0.04
GRID000007369753	29.46963564	-96.3306729	7.12	7.31	7.27	-0.04	7.38	7.35	-0.03
GRID000007369754	29.47800459	-96.33044316	7.01	7.21	7.26	0.06	7.30	7.35	0.06
GRID000007369755	29.48637357	-96.33021338	6.87	7.08	7.25	0.17	7.17	7.35	0.17
GRID000007369756	29.49474256	-96.32998357	6.75	6.97	7.21	0.24	7.06	7.31	0.25
GRID000007369757	29.50311157	-96.32975371	6.66	6.88	7.12	0.23	6.99	7.22	0.23

GRID000007369758	29.51148061	-96.32952382	6.59	6.83	7.03	0.20	6.94	7.14	0.21
GRID000007369759	29.51984967	-96.32929388	6.57	6.81	6.97	0.17	6.92	7.09	0.17
GRID000007369760	29.52821874	-96.32906391	6.56	6.81	6.95	0.15	6.92	7.07	0.15
GRID000007369761	29.53658784	-96.3288339	6.58	6.82	6.96	0.14	6.94	7.07	0.14
GRID000007369762	29.54495696	-96.32860384	6.61	6.86	6.99	0.14	6.97	7.11	0.14
GRID000007369763	29.5533261	-96.32837375	6.67	6.92	7.06	0.14	7.03	7.17	0.13
GRID000007369764	29.56169526	-96.32814362	6.78	7.02	7.16	0.14	7.13	7.26	0.14
GRID000007370465	29.39411488	-96.32318236	6.64	6.75	6.84	0.09	6.79	6.88	0.09
GRID000007370466	29.40248361	-96.32295216	6.93	7.05	7.13	0.08	7.09	7.17	0.08
GRID000007370467	29.41085236	-96.32272192	7.18	7.31	7.38	0.08	7.35	7.43	0.08
GRID000007370468	29.41922114	-96.32249164	7.24	7.38	7.44	0.06	7.42	7.49	0.07
GRID000007370469	29.42758994	-96.32226132	7.13	7.26	7.32	0.06	7.32	7.38	0.06
GRID000007370470	29.43595876	-96.32203095	7.01	7.15	7.20	0.04	7.21	7.26	0.04
GRID000007370471	29.4443276	-96.32180055	6.99	7.15	7.17	0.02	7.21	7.24	0.02
GRID000007370472	29.45269647	-96.32157011	7.07	7.23	7.21	-0.02	7.30	7.29	-0.01
GRID000007370473	29.46106536	-96.32133963	7.11	7.28	7.23	-0.05	7.36	7.31	-0.05
GRID000007370474	29.46943427	-96.32110911	7.05	7.24	7.21	-0.03	7.31	7.30	-0.02
GRID000007370475	29.4778032	-96.32087855	6.94	7.13	7.20	0.07	7.21	7.29	0.07
GRID000007370476	29.48617215	-96.32064796	6.81	7.02	7.21	0.19	7.11	7.30	0.19
GRID000007370477	29.49454113	-96.32041732	6.70	6.92	7.16	0.24	7.01	7.26	0.25
GRID000007370478	29.50291012	-96.32018664	6.62	6.84	7.07	0.23	6.95	7.18	0.23
GRID000007370479	29.51127914	-96.31995592	6.56	6.79	6.98	0.19	6.91	7.09	0.19
GRID000007370480	29.51964818	-96.31972516	6.54	6.78	6.94	0.16	6.89	7.05	0.16
GRID000007370481	29.52801724	-96.31949437	6.53	6.78	6.92	0.15	6.89	7.04	0.15
GRID000007370482	29.53638632	-96.31926353	6.55	6.79	6.94	0.14	6.91	7.05	0.14
GRID000007370483	29.54475542	-96.31903265	6.59	6.83	6.97	0.13	6.95	7.08	0.13
GRID000007370484	29.55312454	-96.31880174	6.66	6.90	7.03	0.13	7.01	7.14	0.13
GRID000007370485	29.56149368	-96.31857078	6.77	7.00	7.14	0.14	7.11	7.25	0.14
GRID000007371186	29.39391295	-96.31362602	6.67	6.78	6.87	0.09	6.82	6.91	0.09
GRID000007371187	29.40228166	-96.31339499	6.97	7.09	7.17	0.08	7.13	7.21	0.08
GRID000007371188	29.41065039	-96.31316393	7.21	7.33	7.40	0.07	7.38	7.45	0.08
GRID000007371189	29.41901915	-96.31293283	7.23	7.37	7.44	0.06	7.42	7.49	0.07
GRID000007371190	29.42738793	-96.31270168	7.12	7.25	7.31	0.06	7.31	7.37	0.06
GRID000007371191	29.43575673	-96.3124705	7.01	7.17	7.20	0.04	7.22	7.26	0.04
GRID000007371192	29.44412556	-96.31223928	7.02	7.18	7.19	0.01	7.24	7.26	0.02
GRID000007371193	29.45249441	-96.31200801	7.07	7.23	7.21	-0.02	7.30	7.28	-0.02
GRID000007371194	29.46086328	-96.31177671	7.06	7.23	7.18	-0.06	7.31	7.26	-0.05
GRID000007371195	29.46923217	-96.31154537	6.98	7.17	7.15	-0.01	7.25	7.23	-0.01
GRID000007371196	29.47760108	-96.31131399	6.86	7.06	7.15	0.10	7.15	7.25	0.10
GRID000007371197	29.48597002	-96.31108257	6.75	6.97	7.17	0.20	7.06	7.26	0.20
GRID000007371198	29.49433898	-96.31085111	6.66	6.87	7.12	0.25	6.97	7.21	0.24
GRID000007371199	29.50270796	-96.31061961	6.58	6.81	7.03	0.22	6.91	7.13	0.22
GRID000007371200	29.51107696	-96.31038806	6.53	6.77	6.95	0.18	6.87	7.06	0.19
GRID000007371201	29.51944598	-96.31015648	6.51	6.75	6.91	0.16	6.86	7.01	0.15
GRID000007371202	29.52781502	-96.30992486	6.51	6.75	6.89	0.15	6.86	7.01	0.14
GRID000007371203	29.53618408	-96.3096932	6.53	6.77	6.91	0.13	6.88	7.02	0.14
GRID000007371204	29.54455316	-96.3094615	6.57	6.81	6.94	0.13	6.92	7.06	0.13
GRID000007371205	29.55292227	-96.30922976	6.64	6.88	7.01	0.14	6.99	7.12	0.13
GRID000007371206	29.56129139	-96.30899798	6.75	6.99	7.12	0.13	7.09	7.23	0.14
GRID000007371907	29.39371029	-96.30406971	6.70	6.81	6.90	0.09	6.85	6.95	0.09
GRID000007371908	29.40207899	-96.30383786	7.00	7.12	7.20	0.08	7.17	7.25	0.08
GRID000007371909	29.4104477	-96.30360598	7.23	7.36	7.43	0.07	7.40	7.47	0.07
GRID000007371910	29.41881644	-96.30337405	7.23	7.37	7.42	0.06	7.41	7.48	0.07
GRID000007371911	29.4271852	-96.30314209	7.11	7.25	7.30	0.05	7.30	7.36	0.06
GRID000007371912	29.43555399	-96.30291008	7.03	7.17	7.21	0.04	7.23	7.27	0.04

GRID000007371913	29.4439228	-96.30267804	7.04	7.19	7.20	0.01	7.26	7.26	0.01
GRID000007371914	29.45229163	-96.30244596	7.04	7.21	7.18	-0.03	7.28	7.25	-0.02
GRID000007371915	29.46066048	-96.30221383	6.99	7.17	7.12	-0.05	7.24	7.20	-0.04
GRID000007371916	29.46902935	-96.30198167	6.91	7.09	7.09	0.01	7.17	7.17	0.00
GRID000007371917	29.47739825	-96.30174946	6.80	6.99	7.11	0.12	7.08	7.20	0.12
GRID000007371918	29.48576717	-96.30151722	6.71	6.91	7.13	0.22	7.01	7.22	0.21
GRID000007371919	29.49413611	-96.30128494	6.62	6.83	7.07	0.24	6.93	7.17	0.24
GRID000007371920	29.50250507	-96.30105261	6.55	6.77	6.98	0.21	6.88	7.09	0.22
GRID000007371921	29.51087405	-96.30082025	6.50	6.73	6.91	0.18	6.84	7.02	0.18
GRID000007371922	29.51924305	-96.30058784	6.48	6.72	6.87	0.15	6.83	6.98	0.15
GRID000007371923	29.52761207	-96.3003554	6.48	6.72	6.86	0.14	6.83	6.98	0.14
GRID000007371924	29.53598112	-96.30012292	6.50	6.75	6.88	0.13	6.86	6.99	0.13
GRID000007371925	29.54435018	-96.29989039	6.55	6.79	6.92	0.13	6.90	7.03	0.13
GRID000007371926	29.55271927	-96.29965783	6.62	6.86	6.99	0.13	6.97	7.10	0.13
GRID000007372627	29.38513827	-96.29474607	6.47	6.57	6.66	0.09	6.61	6.70	0.10
GRID000007372628	29.39350692	-96.29451344	6.74	6.85	6.94	0.08	6.89	6.98	0.09
GRID000007372629	29.40187559	-96.29428077	7.04	7.17	7.24	0.07	7.20	7.28	0.08
GRID000007372630	29.41024429	-96.29404807	7.25	7.38	7.44	0.06	7.42	7.49	0.07
GRID000007372631	29.41861301	-96.29381532	7.23	7.36	7.42	0.06	7.41	7.47	0.06
GRID000007372632	29.42698176	-96.29358254	7.12	7.26	7.31	0.05	7.31	7.37	0.05
GRID000007372633	29.43535052	-96.29334971	7.04	7.19	7.23	0.04	7.25	7.28	0.04
GRID000007372634	29.44371931	-96.29311684	7.04	7.19	7.20	0.01	7.25	7.26	0.01
GRID000007372635	29.45208812	-96.29288394	6.99	7.16	7.12	-0.04	7.23	7.20	-0.03
GRID000007372636	29.46045696	-96.29265099	6.93	7.10	7.06	-0.04	7.18	7.13	-0.04
GRID000007372637	29.46882582	-96.292418	6.83	7.02	7.04	0.02	7.10	7.12	0.02
GRID000007372638	29.47719469	-96.29218498	6.74	6.94	7.07	0.13	7.03	7.17	0.14
GRID000007372639	29.48556359	-96.29195191	6.66	6.86	7.09	0.23	6.96	7.19	0.23
GRID000007372640	29.49393251	-96.2917188	6.58	6.79	7.03	0.24	6.89	7.13	0.24
GRID000007372641	29.50230146	-96.29148566	6.52	6.74	6.95	0.21	6.84	7.05	0.21
GRID000007372642	29.51067042	-96.29125247	6.48	6.70	6.88	0.17	6.81	6.98	0.17
GRID000007372643	29.51903941	-96.29101924	6.46	6.69	6.84	0.15	6.80	6.95	0.15
GRID000007372644	29.52740841	-96.29078598	6.46	6.70	6.83	0.14	6.81	6.95	0.14
GRID000007372645	29.53577744	-96.29055267	6.48	6.72	6.85	0.13	6.83	6.97	0.13
GRID000007372646	29.54414648	-96.29031932	6.53	6.77	6.89	0.13	6.88	7.01	0.13
GRID000007372647	29.55251555	-96.29008593	6.61	6.84	6.97	0.13	6.95	7.08	0.13
GRID000007373348	29.38493419	-96.28519066	6.49	6.59	6.68	0.09	6.63	6.73	0.10
GRID000007373349	29.39330282	-96.28495721	6.78	6.89	6.97	0.08	6.93	7.01	0.08
GRID000007373350	29.40167148	-96.28472372	7.08	7.20	7.28	0.07	7.25	7.32	0.08
GRID000007373351	29.41004016	-96.2844902	7.26	7.39	7.46	0.07	7.44	7.51	0.07
GRID000007373352	29.41840886	-96.28425663	7.23	7.36	7.42	0.06	7.41	7.47	0.06
GRID000007373353	29.42677759	-96.28402302	7.12	7.26	7.31	0.05	7.31	7.37	0.06
GRID000007373354	29.43514634	-96.28378937	7.06	7.20	7.23	0.03	7.26	7.29	0.03
GRID000007373355	29.44351511	-96.28355569	7.01	7.17	7.17	0.00	7.23	7.23	0.00
GRID000007373356	29.4518839	-96.28332196	6.93	7.10	7.06	-0.04	7.17	7.13	-0.04
GRID000007373357	29.46025272	-96.28308819	6.86	7.03	6.99	-0.04	7.10	7.07	-0.04
GRID000007373358	29.46862156	-96.28285438	6.78	6.96	6.99	0.04	7.04	7.08	0.04
GRID000007373359	29.47699042	-96.28262053	6.70	6.89	7.04	0.16	6.98	7.13	0.16
GRID000007373360	29.4853593	-96.28238664	6.62	6.82	7.06	0.24	6.92	7.15	0.24
GRID000007373361	29.4937282	-96.28215271	6.55	6.77	6.99	0.23	6.86	7.09	0.23
GRID000007373362	29.50209713	-96.28191874	6.49	6.71	6.91	0.19	6.81	7.01	0.20
GRID000007373363	29.51046607	-96.28168473	6.45	6.68	6.84	0.16	6.78	6.95	0.16
GRID000007373364	29.51883504	-96.28145068	6.43	6.67	6.81	0.14	6.78	6.92	0.14
GRID000007373365	29.52720403	-96.28121659	6.44	6.67	6.81	0.13	6.78	6.92	0.13
GRID000007373366	29.53557304	-96.28098246	6.47	6.70	6.83	0.13	6.81	6.94	0.14
GRID000007373367	29.54394206	-96.28074829	6.51	6.75	6.88	0.13	6.85	6.98	0.13

GRID000007373368	29.55231111	-96.28051408	6.59	6.82	6.95	0.13	6.93	7.06	0.13
GRID000007374069	29.3847294	-96.27563529	6.52	6.62	6.71	0.09	6.66	6.76	0.10
GRID000007374070	29.39309801	-96.27540102	6.82	6.93	7.01	0.08	6.97	7.06	0.08
GRID000007374071	29.40146665	-96.27516672	7.12	7.25	7.31	0.07	7.29	7.36	0.07
GRID000007374072	29.40983531	-96.27493237	7.28	7.41	7.47	0.06	7.45	7.52	0.06
GRID000007374073	29.418204	-96.27469798	7.23	7.37	7.42	0.06	7.41	7.47	0.06
GRID000007374074	29.4265727	-96.27446355	7.13	7.27	7.31	0.04	7.32	7.37	0.05
GRID000007374075	29.43494143	-96.27422908	7.05	7.20	7.22	0.02	7.25	7.28	0.03
GRID000007374076	29.44331019	-96.27399457	6.96	7.12	7.11	-0.01	7.18	7.17	-0.01
GRID000007374077	29.45167896	-96.27376002	6.87	7.03	6.99	-0.04	7.10	7.06	-0.04
GRID000007374078	29.46004776	-96.27352543	6.79	6.97	6.93	-0.04	7.04	7.01	-0.03
GRID000007374079	29.46841658	-96.2732908	6.72	6.90	6.96	0.06	6.98	7.04	0.06
GRID000007374080	29.47678542	-96.27305613	6.65	6.84	7.02	0.18	6.93	7.10	0.17
GRID000007374081	29.48515429	-96.27282141	6.58	6.79	7.03	0.24	6.88	7.12	0.23
GRID000007374082	29.49352317	-96.27258666	6.52	6.73	6.95	0.22	6.83	7.05	0.22
GRID000007374083	29.50189208	-96.27235187	6.46	6.68	6.87	0.19	6.78	6.97	0.19
GRID000007374084	29.510261	-96.27211704	6.42	6.65	6.81	0.16	6.75	6.91	0.16
GRID000007374085	29.51862995	-96.27188216	6.41	6.64	6.78	0.14	6.75	6.89	0.14
GRID000007374086	29.52699892	-96.27164725	6.42	6.65	6.78	0.13	6.76	6.89	0.13
GRID000007374087	29.53536791	-96.2714123	6.44	6.68	6.81	0.13	6.78	6.92	0.13
GRID000007374088	29.54373692	-96.2711773	6.49	6.72	6.85	0.13	6.83	6.96	0.12
GRID000007374089	29.55210595	-96.27094227	6.58	6.81	6.94	0.12	6.91	7.04	0.13
GRID000007374789	29.37615531	-96.26631501	6.33	6.43	6.53	0.10	6.47	6.57	0.10
GRID000007374790	29.38452388	-96.26607997	6.55	6.66	6.75	0.09	6.70	6.79	0.09
GRID000007374791	29.39289248	-96.26584488	6.86	6.98	7.06	0.08	7.01	7.10	0.08
GRID000007374792	29.4012611	-96.26560975	7.16	7.28	7.35	0.07	7.33	7.40	0.07
GRID000007374793	29.40962974	-96.26537458	7.30	7.42	7.49	0.06	7.47	7.53	0.06
GRID000007374794	29.41799841	-96.26513937	7.23	7.37	7.43	0.06	7.42	7.48	0.06
GRID000007374795	29.4263671	-96.26490412	7.13	7.27	7.31	0.04	7.33	7.37	0.04
GRID000007374796	29.43473581	-96.26466883	7.02	7.17	7.19	0.02	7.22	7.25	0.03
GRID000007374797	29.44310454	-96.26443349	6.89	7.05	7.04	-0.01	7.12	7.10	-0.01
GRID000007374798	29.4514733	-96.26419812	6.80	6.97	6.92	-0.04	7.04	6.99	-0.04
GRID000007374799	29.45984208	-96.26396271	6.74	6.91	6.89	-0.02	6.98	6.97	-0.02
GRID000007374800	29.46821088	-96.26372726	6.67	6.85	6.93	0.08	6.94	7.01	0.08
GRID000007374801	29.47657971	-96.26349176	6.61	6.80	6.99	0.19	6.89	7.08	0.19
GRID000007374802	29.48494855	-96.26325623	6.55	6.75	6.99	0.24	6.84	7.08	0.24
GRID000007374803	29.49331742	-96.26302065	6.49	6.70	6.92	0.22	6.79	7.01	0.22
GRID000007374804	29.50168631	-96.26278504	6.43	6.66	6.83	0.18	6.75	6.94	0.18
GRID000007374805	29.51005522	-96.26254938	6.40	6.62	6.78	0.15	6.72	6.88	0.16
GRID000007374806	29.51842415	-96.26231368	6.39	6.62	6.75	0.14	6.72	6.86	0.14
GRID000007374807	29.5267931	-96.26207795	6.40	6.63	6.76	0.13	6.74	6.86	0.13
GRID000007374808	29.53516207	-96.26184217	6.42	6.66	6.78	0.13	6.77	6.89	0.12
GRID000007374809	29.54353106	-96.26160635	6.48	6.71	6.83	0.13	6.81	6.94	0.13
GRID000007374810	29.55190007	-96.26137049	6.57	6.79	6.92	0.12	6.89	7.03	0.13
GRID000007375510	29.37594909	-96.25676055	6.35	6.45	6.54	0.09	6.49	6.58	0.09
GRID000007375511	29.38431765	-96.25652468	6.59	6.70	6.79	0.09	6.74	6.83	0.09
GRID000007375512	29.39268623	-96.25628877	6.91	7.03	7.10	0.07	7.06	7.14	0.08
GRID000007375513	29.40105483	-96.25605282	7.20	7.33	7.39	0.06	7.37	7.44	0.07
GRID000007375514	29.40942345	-96.25581683	7.31	7.44	7.50	0.06	7.49	7.55	0.06
GRID000007375515	29.4177921	-96.2555808	7.25	7.38	7.44	0.06	7.43	7.49	0.06
GRID000007375516	29.42616077	-96.25534472	7.12	7.26	7.30	0.04	7.31	7.36	0.04
GRID000007375517	29.43452947	-96.25510861	6.97	7.11	7.13	0.02	7.17	7.19	0.02
GRID000007375518	29.44289818	-96.25487246	6.83	6.98	6.97	-0.02	7.04	7.03	-0.01
GRID000007375519	29.45126692	-96.25463626	6.74	6.90	6.86	-0.04	6.97	6.93	-0.04
GRID000007375520	29.45963568	-96.25440003	6.68	6.86	6.85	-0.01	6.94	6.93	-0.01

GRID000007375521	29.46800447	-96.25416375	6.62	6.81	6.91	0.10	6.89	6.99	0.10
GRID000007375522	29.47637327	-96.25392744	6.57	6.76	6.97	0.21	6.85	7.05	0.20
GRID000007375523	29.4847421	-96.25369108	6.52	6.72	6.95	0.23	6.81	7.04	0.23
GRID000007375524	29.49311095	-96.25345468	6.46	6.67	6.88	0.20	6.77	6.98	0.21
GRID000007375525	29.50147982	-96.25321824	6.41	6.63	6.80	0.17	6.73	6.90	0.17
GRID000007375526	29.50984871	-96.25298177	6.37	6.60	6.75	0.15	6.70	6.85	0.15
GRID000007375527	29.51821762	-96.25274525	6.37	6.59	6.73	0.14	6.70	6.83	0.14
GRID000007375528	29.52658655	-96.25250869	6.37	6.61	6.74	0.13	6.71	6.84	0.13
GRID000007375529	29.53495551	-96.25227208	6.41	6.63	6.76	0.13	6.74	6.87	0.13
GRID000007375530	29.54332448	-96.25203544	6.46	6.69	6.81	0.12	6.79	6.92	0.12
GRID000007375531	29.55169347	-96.25179876	6.55	6.78	6.91	0.13	6.88	7.01	0.13
GRID000007376231	29.37574216	-96.24720613	6.37	6.48	6.57	0.09	6.52	6.61	0.09
GRID000007376232	29.38411069	-96.24696943	6.63	6.74	6.83	0.09	6.78	6.87	0.09
GRID000007376233	29.39247925	-96.2467327	6.96	7.07	7.15	0.08	7.12	7.19	0.07
GRID000007376234	29.40084784	-96.24649593	7.25	7.37	7.44	0.07	7.41	7.48	0.07
GRID000007376235	29.40921644	-96.24625912	7.33	7.46	7.52	0.06	7.51	7.56	0.06
GRID000007376236	29.41758507	-96.24602227	7.25	7.38	7.44	0.05	7.43	7.49	0.06
GRID000007376237	29.42595373	-96.24578537	7.09	7.23	7.27	0.04	7.28	7.32	0.04
GRID000007376238	29.4343224	-96.24554844	6.89	7.04	7.06	0.02	7.10	7.12	0.02
GRID000007376239	29.4426911	-96.24531146	6.76	6.91	6.89	-0.02	6.98	6.96	-0.02
GRID000007376240	29.45105982	-96.24507445	6.69	6.85	6.81	-0.04	6.92	6.88	-0.04
GRID000007376241	29.45942856	-96.24483739	6.64	6.81	6.82	0.01	6.89	6.89	0.01
GRID000007376242	29.46779733	-96.24460029	6.58	6.76	6.88	0.12	6.84	6.97	0.12
GRID000007376243	29.47616612	-96.24436315	6.53	6.72	6.94	0.22	6.81	7.03	0.22
GRID000007376244	29.48453492	-96.24412597	6.49	6.68	6.92	0.23	6.78	7.01	0.23
GRID000007376245	29.49290375	-96.24388875	6.43	6.64	6.84	0.20	6.74	6.94	0.21
GRID000007376246	29.50127261	-96.24365149	6.38	6.61	6.77	0.16	6.70	6.86	0.16
GRID000007376247	29.50964148	-96.24341419	6.36	6.58	6.72	0.14	6.68	6.82	0.14
GRID000007376248	29.51801037	-96.24317685	6.35	6.57	6.70	0.13	6.67	6.81	0.13
GRID000007376249	29.52637929	-96.24293946	6.36	6.58	6.71	0.12	6.69	6.82	0.13
GRID000007376250	29.53474822	-96.24270204	6.38	6.62	6.74	0.12	6.72	6.85	0.13
GRID000007376251	29.54311718	-96.24246457	6.44	6.67	6.79	0.12	6.78	6.90	0.12
GRID000007376252	29.55148615	-96.24222707	6.54	6.77	6.89	0.12	6.86	6.99	0.12
GRID000007376952	29.3755345	-96.23765174	6.41	6.50	6.60	0.09	6.54	6.64	0.10
GRID000007376953	29.38390302	-96.23741423	6.68	6.79	6.87	0.08	6.83	6.91	0.08
GRID000007376954	29.39227156	-96.23717668	7.01	7.13	7.20	0.07	7.17	7.25	0.07
GRID000007376955	29.40064013	-96.23693909	7.28	7.41	7.47	0.06	7.45	7.52	0.07
GRID000007376956	29.40900872	-96.23670145	7.34	7.47	7.53	0.06	7.52	7.58	0.06
GRID000007376957	29.41737733	-96.23646378	7.23	7.37	7.42	0.05	7.42	7.47	0.05
GRID000007376958	29.42574596	-96.23622606	7.03	7.17	7.21	0.04	7.22	7.26	0.04
GRID000007376959	29.43411462	-96.23598831	6.82	6.97	6.98	0.01	7.03	7.04	0.02
GRID000007376960	29.4424833	-96.23575051	6.70	6.85	6.82	-0.02	6.91	6.89	-0.02
GRID000007376961	29.450852	-96.23551267	6.64	6.80	6.76	-0.04	6.87	6.83	-0.04
GRID000007376962	29.45922072	-96.23527479	6.60	6.77	6.79	0.02	6.85	6.87	0.02
GRID000007376963	29.46758947	-96.23503687	6.54	6.72	6.86	0.14	6.81	6.95	0.14
GRID000007376964	29.47595824	-96.23479891	6.49	6.68	6.91	0.22	6.77	6.99	0.22
GRID000007376965	29.48432703	-96.23456091	6.46	6.66	6.88	0.22	6.75	6.97	0.22
GRID000007376965	29.48432703	-96.23456091	6.46	6.66	6.88	0.22	6.75	6.97	0.22
GRID000007376965	29.48432703	-96.23456091	6.46	6.66	6.88	0.22	6.75	6.97	0.22
GRID000007376965	29.48432703	-96.23456091	6.46	6.66	6.88	0.22	6.75	6.97	0.22
GRID000007376965	29.48432703	-96.23456091	6.46	6.66	6.88	0.22	6.75	6.97	0.22
GRID000007376966	29.49269584	-96.23432286	6.41	6.62	6.81	0.19	6.71	6.90	0.19
GRID000007376967	29.50106467	-96.23408478	6.36	6.58	6.74	0.16	6.67	6.83	0.16
GRID000007376968	29.50943353	-96.23384666	6.33	6.55	6.69	0.14	6.65	6.79	0.14
GRID000007376969	29.5178024	-96.23360849	6.33	6.55	6.68	0.13	6.65	6.78	0.13

GRID000007376970	29.5261713	-96.23337028	6.34	6.56	6.68	0.12	6.66	6.79	0.13
GRID000007376971	29.53454022	-96.23313204	6.37	6.59	6.72	0.12	6.70	6.82	0.13
GRID000007376972	29.54290915	-96.23289375	6.43	6.65	6.78	0.13	6.75	6.88	0.12
GRID000007377672	29.36695765	-96.22833569	6.25	6.34	6.43	0.09	6.37	6.47	0.10
GRID000007377673	29.37532613	-96.2280974	6.44	6.54	6.63	0.09	6.58	6.67	0.10
GRID000007377674	29.38369463	-96.22785907	6.73	6.84	6.92	0.08	6.88	6.96	0.08
GRID000007377675	29.39206315	-96.22762069	7.07	7.19	7.26	0.07	7.23	7.30	0.07
GRID000007377676	29.4004317	-96.22738228	7.32	7.45	7.51	0.06	7.49	7.56	0.06
GRID000007377677	29.40880027	-96.22714382	7.35	7.48	7.54	0.06	7.53	7.59	0.06
GRID000007377678	29.41716886	-96.22690533	7.20	7.33	7.38	0.05	7.38	7.44	0.05
GRID000007377679	29.42553748	-96.22666679	6.95	7.10	7.13	0.03	7.15	7.19	0.04
GRID000007377680	29.43390611	-96.22642821	6.75	6.89	6.91	0.01	6.96	6.97	0.01
GRID000007377681	29.44227478	-96.22618959	6.64	6.79	6.77	-0.02	6.86	6.83	-0.03
GRID000007377682	29.45064346	-96.22595093	6.61	6.76	6.72	-0.03	6.83	6.80	-0.04
GRID000007377683	29.45901217	-96.22571223	6.56	6.72	6.77	0.04	6.81	6.85	0.04
GRID000007377684	29.46738089	-96.22547349	6.50	6.68	6.84	0.16	6.77	6.92	0.16
GRID000007377685	29.47574964	-96.22523471	6.46	6.65	6.88	0.23	6.74	6.97	0.23
GRID000007377686	29.48411842	-96.22499588	6.43	6.63	6.84	0.21	6.72	6.94	0.22
GRID000007377687	29.49248721	-96.22475702	6.38	6.59	6.77	0.18	6.68	6.86	0.18
GRID000007377688	29.50085602	-96.22451811	6.34	6.55	6.71	0.15	6.65	6.81	0.16
GRID000007377689	29.50922486	-96.22427916	6.31	6.53	6.67	0.14	6.63	6.77	0.14
GRID000007377690	29.51759372	-96.22404017	6.30	6.53	6.66	0.13	6.63	6.76	0.13
GRID000007377691	29.52596259	-96.22380114	6.31	6.54	6.66	0.12	6.64	6.77	0.13
GRID000007377692	29.53433149	-96.22356207	6.35	6.57	6.70	0.12	6.67	6.80	0.13
GRID000007377693	29.54270041	-96.22332296	6.41	6.63	6.75	0.12	6.74	6.86	0.12
GRID000007378393	29.36674858	-96.21878221	6.27	6.36	6.46	0.09	6.40	6.49	0.10
GRID000007378394	29.37511704	-96.2185431	6.48	6.58	6.67	0.09	6.62	6.71	0.09
GRID000007378395	29.38348552	-96.21830394	6.79	6.90	6.98	0.08	6.94	7.02	0.08
GRID000007378396	29.39185402	-96.21806475	7.13	7.25	7.32	0.07	7.29	7.37	0.08
GRID000007378397	29.40022255	-96.21782551	7.36	7.48	7.54	0.06	7.53	7.59	0.06
GRID000007378398	29.4085911	-96.21758624	7.35	7.48	7.53	0.05	7.52	7.58	0.06
GRID000007378399	29.41695967	-96.21734692	7.14	7.28	7.33	0.05	7.33	7.38	0.05
GRID000007378400	29.42532827	-96.21710756	6.88	7.01	7.05	0.04	7.07	7.10	0.04
GRID000007378401	29.43369689	-96.21686816	6.68	6.82	6.83	0.01	6.89	6.89	0.00
GRID000007378402	29.44206553	-96.21662872	6.59	6.75	6.71	-0.03	6.81	6.78	-0.03
GRID000007378403	29.4504342	-96.21638924	6.57	6.72	6.70	-0.03	6.79	6.77	-0.02
GRID000007378404	29.45880289	-96.21614972	6.52	6.69	6.75	0.06	6.77	6.83	0.06
GRID000007378405	29.4671716	-96.21591015	6.47	6.65	6.82	0.17	6.73	6.91	0.18
GRID000007378406	29.47554033	-96.21567055	6.43	6.62	6.85	0.22	6.71	6.94	0.23
GRID000007378407	29.48390908	-96.2154309	6.41	6.61	6.81	0.21	6.69	6.90	0.21
GRID000007378408	29.49227786	-96.21519121	6.36	6.57	6.74	0.18	6.66	6.83	0.17
GRID000007378409	29.50064665	-96.21495148	6.32	6.53	6.68	0.15	6.63	6.78	0.15
GRID000007378410	29.50901547	-96.21471171	6.29	6.50	6.64	0.13	6.61	6.74	0.14
GRID000007378411	29.51738431	-96.2144719	6.28	6.50	6.63	0.13	6.60	6.73	0.13
GRID000007378412	29.52575317	-96.21423205	6.29	6.52	6.64	0.12	6.62	6.74	0.13
GRID000007378413	29.53412205	-96.21399215	6.33	6.55	6.67	0.12	6.66	6.78	0.12
GRID000007378414	29.54249095	-96.21375222	6.40	6.62	6.74	0.12	6.72	6.84	0.12
GRID000007379114	29.36653879	-96.20922877	5.13	5.26	5.38	0.12	5.30	5.43	0.13
GRID000007379115	29.37490722	-96.20898884	5.44	5.57	5.68	0.11	5.61	5.73	0.12
GRID000007379116	29.38327569	-96.20874886	5.85	5.99	6.09	0.10	6.03	6.13	0.10
GRID000007379117	29.39164417	-96.20850885	6.28	6.42	6.51	0.09	6.47	6.55	0.09
GRID000007379118	29.40001268	-96.20826879	6.51	6.66	6.74	0.08	6.71	6.79	0.08
GRID000007379119	29.40838121	-96.20802869	6.43	6.59	6.66	0.07	6.64	6.71	0.07
GRID000007379120	29.41674977	-96.20778855	6.11	6.28	6.34	0.06	6.34	6.40	0.06
GRID000007379121	29.42511835	-96.20754837	5.77	5.95	5.99	0.04	6.02	6.06	0.05

GRID000007379122	29.43348695	-96.20730815	5.56	5.74	5.73	-0.01	5.81	5.81	0.00
GRID000007379123	29.44185557	-96.20706789	5.47	5.66	5.62	-0.04	5.75	5.71	-0.04
GRID000007379124	29.45022422	-96.20682759	5.44	5.64	5.62	-0.02	5.73	5.72	-0.01
GRID000007379125	29.45859289	-96.20658724	5.38	5.59	5.69	0.10	5.69	5.80	0.10
GRID000007379126	29.46696158	-96.20634685	5.31	5.54	5.78	0.24	5.65	5.89	0.24
GRID000007379127	29.47533029	-96.20610643	5.27	5.52	5.80	0.28	5.63	5.91	0.28
GRID000007379128	29.48369903	-96.20586596	5.24	5.50	5.75	0.25	5.61	5.86	0.25
GRID000007379129	29.49206778	-96.20562545	5.19	5.46	5.66	0.21	5.58	5.79	0.21
GRID000007379130	29.50043656	-96.20538489	5.14	5.41	5.59	0.18	5.53	5.72	0.19
GRID000007379131	29.50880536	-96.2051443	5.10	5.38	5.55	0.16	5.51	5.68	0.17
GRID000007379132	29.51717418	-96.20490367	5.10	5.38	5.54	0.16	5.51	5.67	0.17
GRID000007379133	29.52554302	-96.20466299	5.11	5.40	5.56	0.16	5.53	5.69	0.16
GRID000007379134	29.53391188	-96.20442227	5.16	5.45	5.60	0.15	5.57	5.73	0.16
GRID000007379135	29.54228076	-96.20418151	5.24	5.53	5.68	0.15	5.65	5.81	0.16
GRID000007379834	29.35795988	-96.19991608	4.95	5.07	5.19	0.12	5.11	5.24	0.13
GRID000007379835	29.36632827	-96.19967537	5.17	5.30	5.42	0.12	5.34	5.46	0.12
GRID000007379836	29.37469669	-96.19943462	5.51	5.64	5.75	0.11	5.68	5.79	0.11
GRID000007379837	29.38306514	-96.19919382	5.94	6.07	6.17	0.10	6.13	6.22	0.09
GRID000007379838	29.3914336	-96.19895299	6.35	6.49	6.58	0.09	6.54	6.63	0.09
GRID000007379839	29.39980209	-96.19871211	6.52	6.67	6.74	0.07	6.72	6.80	0.08
GRID000007379840	29.40817061	-96.19847119	6.36	6.52	6.59	0.07	6.58	6.65	0.07
GRID000007379841	29.41653914	-96.19823023	6.00	6.17	6.23	0.06	6.24	6.29	0.05
GRID000007379842	29.4249077	-96.19798923	5.68	5.85	5.89	0.04	5.92	5.96	0.04
GRID000007379843	29.43327629	-96.19774819	5.49	5.67	5.66	-0.01	5.75	5.75	0.00
GRID000007379844	29.44164489	-96.1975071	5.43	5.62	5.58	-0.04	5.70	5.66	-0.04
GRID000007379845	29.45001352	-96.19726597	5.40	5.60	5.60	0.00	5.69	5.69	0.00
GRID000007379846	29.45838217	-96.19702481	5.33	5.55	5.67	0.12	5.64	5.77	0.13
GRID000007379847	29.46675084	-96.1967836	5.27	5.50	5.75	0.25	5.61	5.86	0.25
GRID000007379848	29.47511954	-96.19654235	5.24	5.48	5.76	0.28	5.58	5.86	0.28
GRID000007379849	29.48348825	-96.19630106	5.21	5.46	5.71	0.25	5.58	5.82	0.24
GRID000007379850	29.49185699	-96.19605972	5.16	5.43	5.63	0.20	5.54	5.75	0.20
GRID000007379851	29.50022575	-96.19581835	5.10	5.38	5.56	0.18	5.51	5.68	0.17
GRID000007379852	29.50859453	-96.19557693	5.07	5.35	5.51	0.16	5.48	5.64	0.17
GRID000007379853	29.51696333	-96.19533547	5.06	5.35	5.51	0.16	5.48	5.64	0.16
GRID000007379854	29.52533215	-96.19509397	5.08	5.37	5.52	0.15	5.50	5.65	0.15
GRID000007379855	29.53370099	-96.19485243	5.14	5.42	5.58	0.16	5.55	5.70	0.15
GRID000007380555	29.35774866	-96.19036354	4.97	5.10	5.21	0.12	5.14	5.26	0.13
GRID000007380555	29.35774866	-96.19036354	4.97	5.10	5.21	0.12	5.14	5.26	0.13
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GRID000007380557	29.37448544	-96.18988044	5.58	5.71	5.81	0.10	5.76	5.86	0.10
GRID000007380558	29.38285387	-96.18963882	6.03	6.17	6.26	0.09	6.22	6.31	0.09
GRID000007380559	29.39122231	-96.18939717	6.40	6.55	6.63	0.08	6.60	6.68	0.08
GRID000007380560	29.39959079	-96.18915547	6.50	6.66	6.73	0.07	6.70	6.78	0.08
GRID000007380561	29.40795928	-96.18891373	6.28	6.43	6.50	0.07	6.49	6.55	0.06
GRID000007380562	29.4163278	-96.18867195	5.91	6.07	6.13	0.05	6.13	6.19	0.06
GRID000007380563	29.42469634	-96.18843012	5.59	5.77	5.80	0.03	5.83	5.87	0.04
GRID000007380564	29.4330649	-96.18818826	5.43	5.61	5.61	-0.01	5.69	5.69	-0.01
GRID000007380565	29.44143349	-96.18794635	5.39	5.58	5.54	-0.04	5.66	5.63	-0.04
GRID000007380566	29.4498021	-96.1877044	5.36	5.56	5.57	0.01	5.65	5.66	0.01
GRID000007380567	29.45817073	-96.18746242	5.29	5.51	5.66	0.15	5.60	5.75	0.15
GRID000007380568	29.46653938	-96.18722038	5.23	5.46	5.72	0.26	5.56	5.83	0.26
GRID000007380569	29.47490806	-96.18697831	5.20	5.44	5.72	0.27	5.55	5.83	0.28
GRID000007380570	29.48327676	-96.1867362	5.18	5.43	5.66	0.23	5.55	5.78	0.23
GRID000007380571	29.49164547	-96.18649404	5.13	5.39	5.59	0.20	5.51	5.71	0.20
GRID000007380572	29.50001421	-96.18625184	5.08	5.35	5.53	0.18	5.47	5.65	0.18

GRID000007380573	29.50838298	-96.1860096	5.04	5.32	5.48	0.16	5.45	5.61	0.16
GRID000007380574	29.51675176	-96.18576732	5.04	5.32	5.48	0.16	5.45	5.61	0.16
GRID000007381276	29.35753673	-96.18081105	5.01	5.13	5.25	0.12	5.17	5.30	0.13
GRID000007381276	29.35753673	-96.18081105	5.01	5.13	5.25	0.12	5.17	5.30	0.13
GRID000007381277	29.36590509	-96.18056869	5.28	5.41	5.52	0.11	5.46	5.57	0.12
GRID000007381278	29.37427347	-96.1803263	5.66	5.80	5.90	0.10	5.84	5.94	0.10
GRID000007381279	29.38264188	-96.18008386	6.12	6.26	6.35	0.08	6.31	6.40	0.09
GRID000007381280	29.39101031	-96.17984139	6.44	6.59	6.66	0.08	6.64	6.72	0.08
GRID000007381281	29.39937876	-96.17959887	6.45	6.60	6.67	0.07	6.66	6.73	0.07
GRID000007381282	29.40774723	-96.17935631	6.17	6.33	6.39	0.06	6.38	6.45	0.07
GRID000007381283	29.41611573	-96.1791137	5.80	5.97	6.02	0.05	6.03	6.09	0.06
GRID000007381284	29.42448426	-96.17887106	5.52	5.69	5.72	0.03	5.77	5.80	0.03
GRID000007381285	29.4328528	-96.17862837	5.38	5.57	5.55	-0.02	5.65	5.64	-0.01
GRID000007381286	29.44122137	-96.17838565	5.36	5.54	5.51	-0.03	5.63	5.60	-0.03
GRID000007381287	29.44958996	-96.17814288	5.32	5.52	5.56	0.04	5.61	5.65	0.04
GRID000007381288	29.45795857	-96.17790006	5.24	5.46	5.64	0.17	5.56	5.74	0.18
GRID000007381289	29.46632721	-96.17765721	5.19	5.42	5.69	0.27	5.52	5.79	0.27
GRID000007381290	29.47469586	-96.17741432	5.17	5.41	5.67	0.27	5.52	5.78	0.26
GRID000007381291	29.48306454	-96.17717138	5.15	5.40	5.62	0.22	5.51	5.74	0.23
GRID000007381292	29.49143324	-96.1769284	5.10	5.36	5.56	0.19	5.48	5.67	0.19
GRID000007381293	29.49980196	-96.17668538	5.06	5.32	5.49	0.17	5.44	5.61	0.17
GRID000007381996	29.34895576	-96.17150172	4.83	4.95	5.08	0.12	4.99	5.12	0.13
GRID000007381996	29.34895576	-96.17150172	4.83	4.95	5.08	0.12	4.99	5.12	0.13
GRID000007381997	29.35732408	-96.17125859	5.06	5.17	5.29	0.12	5.22	5.34	0.12
GRID000007381997	29.35732408	-96.17125859	5.06	5.17	5.29	0.12	5.22	5.34	0.12
GRID000007381998	29.36569242	-96.17101542	5.36	5.48	5.59	0.11	5.53	5.64	0.12
GRID000007381998	29.36569242	-96.17101542	5.36	5.48	5.59	0.11	5.53	5.64	0.12
GRID000007381999	29.37406078	-96.17077221	5.76	5.90	6.00	0.10	5.94	6.04	0.10
GRID000007382000	29.38242917	-96.17052895	6.20	6.35	6.43	0.08	6.39	6.48	0.09
GRID000007382001	29.39079758	-96.17028565	6.45	6.60	6.67	0.07	6.65	6.73	0.08
GRID000007382002	29.39916601	-96.17004231	6.37	6.52	6.59	0.07	6.57	6.65	0.08
GRID000007382003	29.40753447	-96.16979893	6.06	6.22	6.28	0.07	6.28	6.35	0.07
GRID000007382004	29.41590295	-96.1695555	5.70	5.87	5.92	0.05	5.94	5.99	0.05
GRID000007382005	29.42427145	-96.16931204	5.46	5.63	5.65	0.02	5.70	5.72	0.02
GRID000007382006	29.43263998	-96.16906853	5.34	5.53	5.51	-0.02	5.61	5.58	-0.02
GRID000007382007	29.44100853	-96.16882498	5.32	5.51	5.48	-0.03	5.60	5.57	-0.03
GRID000007382008	29.4493771	-96.16858139	5.28	5.48	5.53	0.06	5.57	5.63	0.06
GRID000007382009	29.45774569	-96.16833776	5.20	5.42	5.61	0.19	5.51	5.72	0.20
GRID000007382010	29.46611431	-96.16809408	5.15	5.38	5.65	0.27	5.48	5.75	0.27
GRID000007382011	29.47448295	-96.16785036	5.13	5.38	5.63	0.25	5.48	5.74	0.25
GRID000007382012	29.48285161	-96.1676066	5.12	5.37	5.58	0.22	5.48	5.69	0.21
GRID000007382717	29.34874241	-96.16195013	4.86	4.98	5.10	0.12	5.02	5.15	0.13
GRID000007382717	29.34874241	-96.16195013	4.86	4.98	5.10	0.12	5.02	5.15	0.13
GRID000007382718	29.35711071	-96.16170618	5.10	5.23	5.34	0.11	5.27	5.39	0.12
GRID000007382718	29.35711071	-96.16170618	5.10	5.23	5.34	0.11	5.27	5.39	0.12
GRID000007382719	29.36547903	-96.16146219	5.44	5.57	5.67	0.10	5.61	5.72	0.11
GRID000007382719	29.36547903	-96.16146219	5.44	5.57	5.67	0.10	5.61	5.72	0.11
GRID000007382720	29.37384737	-96.16121815	5.86	6.00	6.09	0.10	6.04	6.14	0.10
GRID000007382720	29.37384737	-96.16121815	5.86	6.00	6.09	0.10	6.04	6.14	0.10
GRID000007382721	29.38221574	-96.16097407	6.27	6.41	6.49	0.09	6.45	6.54	0.09
GRID000007382722	29.39058413	-96.16072996	6.42	6.57	6.65	0.08	6.62	6.70	0.08
GRID000007382723	29.39895255	-96.16048579	6.28	6.42	6.50	0.08	6.48	6.55	0.08
GRID000007382724	29.40732098	-96.16024159	5.95	6.11	6.18	0.07	6.17	6.24	0.07
GRID000007382725	29.41568945	-96.15999735	5.62	5.79	5.84	0.05	5.86	5.91	0.05
GRID000007382726	29.42405793	-96.15975306	5.40	5.57	5.59	0.02	5.64	5.66	0.02

GRID000007382727	29.43242644	-96.15950873	5.31	5.49	5.47	-0.02	5.57	5.55	-0.02
GRID000007382728	29.44079497	-96.15926436	5.29	5.48	5.46	-0.01	5.56	5.55	-0.01
GRID000007382729	29.44916352	-96.15901994	5.24	5.43	5.52	0.09	5.53	5.61	0.09
GRID000007382730	29.4575321	-96.15877549	5.16	5.38	5.59	0.22	5.47	5.69	0.22
GRID000007383438	29.34852834	-96.15239858	4.90	5.02	5.14	0.12	5.06	5.19	0.12
GRID000007383438	29.34852834	-96.15239858	4.90	5.02	5.14	0.12	5.06	5.19	0.12
GRID000007383439	29.35689662	-96.15215381	5.17	5.29	5.41	0.11	5.33	5.45	0.11
GRID000007383439	29.35689662	-96.15215381	5.17	5.29	5.41	0.11	5.33	5.45	0.11
GRID000007383440	29.36526492	-96.151909	5.53	5.66	5.77	0.10	5.71	5.81	0.10
GRID000007383440	29.36526492	-96.151909	5.53	5.66	5.77	0.10	5.71	5.81	0.10
GRID000007383441	29.37363324	-96.15166414	5.95	6.09	6.19	0.09	6.13	6.23	0.10
GRID000007383441	29.37363324	-96.15166414	5.95	6.09	6.19	0.09	6.13	6.23	0.10
GRID000007383442	29.38200159	-96.15141924	6.30	6.45	6.52	0.08	6.49	6.58	0.09
GRID000007383443	29.39036997	-96.1511743	6.35	6.51	6.58	0.07	6.55	6.63	0.08
GRID000007383444	29.39873836	-96.15092932	6.17	6.32	6.40	0.08	6.38	6.45	0.08
GRID000007383445	29.40710678	-96.1506843	5.85	6.01	6.07	0.06	6.06	6.13	0.07
GRID000007383446	29.41547522	-96.15043923	5.55	5.72	5.77	0.05	5.78	5.83	0.05
GRID000007383447	29.42384369	-96.15019412	5.36	5.53	5.53	0.01	5.60	5.61	0.01
GRID000007383448	29.43221218	-96.14994897	5.28	5.46	5.43	-0.02	5.53	5.52	-0.01
GRID000007383449	29.44058069	-96.14970378	5.26	5.45	5.44	-0.01	5.53	5.53	-0.01
GRID000007384159	29.34831355	-96.14284708	4.95	5.06	5.18	0.12	5.10	5.23	0.13
GRID000007384159	29.34831355	-96.14284708	4.95	5.06	5.18	0.12	5.10	5.23	0.13
GRID000007384160	29.35668181	-96.14260148	5.24	5.36	5.48	0.11	5.41	5.52	0.11
GRID000007384160	29.35668181	-96.14260148	5.24	5.36	5.48	0.11	5.41	5.52	0.11
GRID000007384161	29.36505009	-96.14235585	5.63	5.76	5.86	0.10	5.80	5.91	0.10
GRID000007384161	29.36505009	-96.14235585	5.63	5.76	5.86	0.10	5.80	5.91	0.10
GRID000007384162	29.3734184	-96.14211017	6.03	6.17	6.26	0.09	6.22	6.31	0.09
GRID000007384162	29.3734184	-96.14211017	6.03	6.17	6.26	0.09	6.22	6.31	0.09
GRID000007384163	29.38178673	-96.14186445	6.30	6.44	6.52	0.09	6.49	6.57	0.09
GRID000007384163	29.38178673	-96.14186445	6.30	6.44	6.52	0.09	6.49	6.57	0.09
GRID000007384164	29.39015508	-96.14161869	6.27	6.42	6.49	0.08	6.47	6.55	0.08
GRID000007384165	29.39852346	-96.14137289	6.07	6.22	6.29	0.07	6.28	6.35	0.08
GRID000007384166	29.40689186	-96.14112704	5.77	5.92	5.99	0.07	5.98	6.05	0.07
GRID000007384167	29.41526028	-96.14088115	5.49	5.66	5.70	0.04	5.72	5.77	0.04
GRID000007384168	29.42362873	-96.14063522	5.31	5.48	5.49	0.01	5.56	5.56	0.01
GRID000007384879	29.33972983	-96.13354198	4.76	4.87	5.00	0.13	4.92	5.04	0.12
GRID000007384879	29.33972983	-96.13354198	4.76	4.87	5.00	0.13	4.92	5.04	0.12
GRID000007384880	29.34809804	-96.13329561	5.00	5.12	5.24	0.12	5.16	5.28	0.12
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GRID000007384881	29.35646628	-96.1330492	5.33	5.46	5.56	0.11	5.50	5.61	0.11
GRID000007384881	29.35646628	-96.1330492	5.33	5.46	5.56	0.11	5.50	5.61	0.11
GRID000007384882	29.36483454	-96.13280274	5.72	5.86	5.95	0.10	5.90	6.00	0.10
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GRID000007384883	29.37320283	-96.13255624	6.09	6.23	6.32	0.08	6.27	6.36	0.09
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GRID000007384884	29.38157114	-96.13230971	6.25	6.40	6.48	0.08	6.45	6.53	0.09
GRID000007384884	29.38157114	-96.13230971	6.25	6.40	6.48	0.08	6.45	6.53	0.09
GRID000007384885	29.38993947	-96.13206312	6.18	6.32	6.40	0.08	6.38	6.45	0.08
GRID000007384885	29.38993947	-96.13206312	6.18	6.32	6.40	0.08	6.38	6.45	0.08
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GRID000007384887	29.40667621	-96.13156983	5.69	5.84	5.91	0.07	5.91	5.97	0.06
GRID000007385600	29.33951362	-96.12399138	4.80	4.91	5.03	0.12	4.95	5.08	0.13
GRID000007385600	29.33951362	-96.12399138	4.80	4.91	5.03	0.12	4.95	5.08	0.13
GRID000007385601	29.34788181	-96.12374419	5.06	5.19	5.30	0.11	5.23	5.35	0.12
GRID000007385601	29.34788181	-96.12374419	5.06	5.19	5.30	0.11	5.23	5.35	0.12

GRID000007385602	29.35625003	-96.12349695	5.42	5.55	5.66	0.11	5.59	5.70	0.11
GRID000007385602	29.35625003	-96.12349695	5.42	5.55	5.66	0.11	5.59	5.70	0.11
GRID000007385603	29.36461828	-96.12324968	5.80	5.94	6.03	0.10	5.98	6.08	0.10
GRID000007385603	29.36461828	-96.12324968	5.80	5.94	6.03	0.10	5.98	6.08	0.10
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GRID000007385604	29.37298654	-96.12300236	6.10	6.25	6.33	0.08	6.28	6.38	0.09
GRID000007385605	29.38135484	-96.122755	6.19	6.33	6.42	0.08	6.38	6.46	0.08
GRID000007385605	29.38135484	-96.122755	6.19	6.33	6.42	0.08	6.38	6.46	0.08
GRID000007385606	29.38972315	-96.1225076	6.08	6.22	6.30	0.08	6.28	6.35	0.08
GRID000007385606	29.38972315	-96.1225076	6.08	6.22	6.30	0.08	6.28	6.35	0.08
GRID000007386321	29.33929669	-96.11444082	4.84	4.95	5.08	0.12	4.99	5.12	0.13
GRID000007386321	29.33929669	-96.11444082	4.84	4.95	5.08	0.12	4.99	5.12	0.13
GRID000007386322	29.34766487	-96.11419281	5.14	5.26	5.38	0.11	5.31	5.42	0.11
GRID000007386322	29.34766487	-96.11419281	5.14	5.26	5.38	0.11	5.31	5.42	0.11
GRID000007386323	29.35603307	-96.11394475	5.51	5.64	5.75	0.10	5.68	5.79	0.11
GRID000007386323	29.35603307	-96.11394475	5.51	5.64	5.75	0.10	5.68	5.79	0.11
GRID000007386324	29.36440129	-96.11369666	5.86	6.00	6.09	0.10	6.04	6.14	0.10
GRID000007386324	29.36440129	-96.11369666	5.86	6.00	6.09	0.10	6.04	6.14	0.10
GRID000007386325	29.37276954	-96.11344852	6.08	6.22	6.31	0.08	6.26	6.35	0.09
GRID000007386325	29.37276954	-96.11344852	6.08	6.22	6.31	0.08	6.26	6.35	0.09
GRID000007387041	29.33071091	-96.10513909	4.65	4.76	4.89	0.13	4.80	4.93	0.13
GRID000007387041	29.33071091	-96.10513909	4.65	4.76	4.89	0.13	4.80	4.93	0.13
GRID000007387042	29.33907904	-96.1048903	4.89	5.01	5.12	0.12	5.05	5.17	0.12
GRID000007387042	29.33907904	-96.1048903	4.89	5.01	5.12	0.12	5.05	5.17	0.12
GRID000007387043	29.3474472	-96.10464147	5.21	5.34	5.45	0.11	5.38	5.50	0.11
GRID000007387043	29.3474472	-96.10464147	5.21	5.34	5.45	0.11	5.38	5.50	0.11
GRID000007387044	29.35581538	-96.10439259	5.58	5.72	5.81	0.10	5.75	5.86	0.10
GRID000007387044	29.35581538	-96.10439259	5.58	5.72	5.81	0.10	5.75	5.86	0.10
GRID000007387762	29.33049257	-96.09558943	4.66	4.77	4.90	0.13	4.81	4.94	0.13
GRID000007387762	29.33049257	-96.09558943	4.66	4.77	4.90	0.13	4.81	4.94	0.13