

APPENDIX E:
NOISE TECHNICAL REPORT

Noise Technical Report

Supplemental Environmental Assessment

Central Terminal Area Expansion Project

September 2026

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Table of Contents

1.	Background.....	1-1
1.1	Introduction to Noise Terminology	1-1
1.2	Regulatory Setting.....	1-2
1.3	Noise Compatible Land Use	1-7
1.3.1	Land Use Compatibility Guidelines.....	1-7
1.3.2	Study Area and Existing Land Use	1-9
2.	Noise Modeling Methodology.....	2-1
2.1	Aviation Environmental Design Tool (AEDT)	2-1
2.2	Noise Exposure Contours.....	2-3
2.3	Grid Point Noise Calculations.....	2-3
3.	Existing Conditions	3-1
3.1	Aircraft Activity Levels and Fleet Mix.....	3-1
3.2	Aircraft Stage Length and Operational Profiles.....	3-3
3.3	Runway Definition.....	3-5
3.4	Runway End Utilization	3-9
3.5	Flight Tracks	3-10
3.6	Existing Noise Exposure Contours.....	3-15
3.7	Existing Conditions Noise Compatible Land Use.....	3-17
4.	Future Alternatives.....	4-1
4.1	Forecast Aircraft Operations	4-1
4.2	Future (2031) No Action Alternative.....	4-2
4.2.1	Aircraft Activity Levels and Fleet Mix	4-2
4.2.2	Aircraft Stage Length and Operational Profiles	4-4
4.2.3	Runway Utilization for No Action Alternative.....	4-5
4.2.4	Flight Tracks for No Action Alternative.....	4-6
4.2.5	Noise Exposure Contours - No Action Alternative.....	4-6
4.2.6	Noise/Land Use Compatibility - No Action Alternative	4-6
4.3	Future (2031) Proposed Action Alternative	4-9
4.3.1	Aircraft Activity Levels and Fleet Mix	4-9
4.3.2	Aircraft Stage Length and Operational Profiles	4-10

4.3.3	Runway Utilization for Proposed Action Alternative	4-11
4.3.4	Flight Tracks for Proposed Action Alternative	4-11
4.3.5	Noise Exposure Contours - Proposed Action Alternative	4-11
4.3.6	Noise/Land Use Compatibility - Proposed Action Alternative	4-14
4.4	Comparison of the 2031 No Action and Proposed Action Alternatives.....	4-14
4.4.1	Future (2031) Proposed Action Alternative Grid Point Evaluation.....	4-17
4.5	Future (2036) No Action Alternative.....	4-20
4.5.1	Aircraft Activity Levels and Fleet Mix	4-20
4.5.2	Aircraft Stage Length and Operational Profiles	4-21
4.5.3	Runway Utilization for No Action Alternative.....	4-22
4.5.4	Flight Tracks for No Action Alternative.....	4-22
4.5.5	Noise Exposure Contours - No Action Alternative.....	4-22
4.5.6	Noise/Land Use Compatibility - No Action Alternative	4-23
4.6	Future (2036) Proposed Action Alternative	4-25
4.6.1	Aircraft Activity Levels and Fleet Mix	4-25
4.6.2	Aircraft Stage Length and Operational Profiles	4-26
4.6.3	Runway Utilization for Proposed Action Alternative	4-27
4.6.4	Flight Tracks for Proposed Action Alternative	4-27
4.6.5	Noise Exposure Contours - Proposed Action Alternative	4-27
4.6.6	Noise/Land Use Compatibility - Proposed Action Alternative	4-30
4.7	Comparison of the 2036 No Action and Proposed Action Alternatives.....	4-30
4.8	Future Alternative Noise/Land Use Compatibility Evaluation	4-31
4.8.1	Future (2036) Proposed Action Alternative Grid Point Evaluation.....	4-33
5.	Mitigation	5-1

Figures

Figure 1-1. Example of a Day-Night Average Sound Level Calculation	1-2
Figure 1-2. Land Use and Noise Study Area	1-10
Figure 3-1. DFW Runway Layout	3-6
Figure 3-2. DFW Runway Operating Configurations.....	3-8
Figure 3-3. Modeled Arrival Flight Tracks.....	3-13
Figure 3-4. Modeled Departure Flight Tracks.....	3-14
Figure 3-5. Existing Conditions Noise Exposure Contours with Land Use	3-16
Figure 4-1. No Action Alternative (2031) Noise Exposure Contour with Land Use.....	4-8

Figure 4-2. Proposed Action Alternative (2031) Noise Exposure Contours with Land Use.....	4-13
Figure 4-3. No Action Alternative and Proposed Action Alternative (2031) Noise Exposure Contours.....	4-16
Figure 4-4. 2031 Proposed Action DNL Change Over Residential Areas – South of Runway 35R.....	4-19
Figure 4-5. No Action Alternative (2036) Noise Exposure Contour with Land Use.....	4-24
Figure 4-6. Proposed Action Alternative (2036) Noise Exposure Contours with Land Use.....	4-29
Figure 4-7. No Action Alternative and Proposed Action Alternative (2036) Noise Exposure Contours.....	4-32
Figure 5-1. Prior EA Sound Mitigation Area and Proposed Action DNL 65 dB Noise Exposure Contours.....	5-2

Tables

Table 1-1. Aircraft DNL Thresholds and Impact Categories.....	1-7
Table 1-2. Part 150 Land Use Compatibility with Yearly Day-Night Average Sound Levels (in decibels).....	1-8
Table 3-1. Existing Conditions (2024) Operations	3-1
Table 3-2. DFW Modeled Average Daily Aircraft Operations for Existing Conditions (2024)	3-1
Table 3-3. AEDT Stage Length Categories.....	3-3
Table 3-4. Existing Conditions - Modeled Departure Stage Length Distribution by Aircraft Type.....	3-3
Table 3-5. DFW Runways - Existing Conditions.....	3-5
Table 3-6. DFW Runways – Typical Runway Use.....	3-7
Table 3-7. Runway Use Percentages, Existing Conditions	3-9
Table 3-8. Estimated Land Area within Existing Conditions DNL 65 dB Contour.....	3-15
Table 3-9. Estimated Land Area within Existing Conditions Noise Exposure Contour	3-17
Table 4-1. Fiscal Year to Calendar Year Adjustment	4-1
Table 4-2. Annual and AAD Forecast Operations for Noise Model Input.....	4-2
Table 4-3. DFW Modeled Average Daily Aircraft Operations for Future (2031) No Action Alternative	4-3
Table 4-4. Modeled Departure Stage Length Distribution by Aircraft Type for Future (2031) No Action Alternative.....	4-4
Table 4-5. Runway Use Percentages, Future 2031 and 2036 Conditions.....	4-5
Table 4-6. Estimated Land Area within No Action Alternative (2031) Noise Exposure Contour.....	4-6
Table 4-7. Noncompatible Land Use Housing and Population – Future No Action Alternative (2031).....	4-7
Table 4-8. DFW Modeled Average Daily Aircraft Operations for Future (2031) Proposed Action Alternative.....	4-9
Table 4-9. Modeled Departure Stage Length Distribution by Aircraft Type for Future (2031) Proposed Action Alternative.....	4-10
Table 4-10. Estimated Land Area within the Proposed Action Alternative Noise Exposure Contours.....	4-12
Table 4-11. Noncompatible Land Use Housing and Population under Proposed Action Alternative	4-14
Table 4-12. Estimated Land Area within Future (2031) Noise Exposure Contour Alternatives.....	4-14
Table 4-13. Noncompatible Land Use, Housing Units – Comparison of Future Year (2031) Alternatives.....	4-17
Table 4-14. Noncompatible Land Use, Residential Population – Comparison of Future Year (2031) Alternatives	4-17
Table 4-15. DFW Modeled Average Daily Aircraft Operations for Future (2036) No Action Alternative	4-20
Table 4-16. Modeled Departure Stage Length Distribution by Aircraft Type for Future (2036) No Action Alternative.....	4-21
Table 4-17. Estimated Land Area within No Action Alternative (2036) Noise Exposure Contour.....	4-22
Table 4-18. Noncompatible Land Use Housing and Population – Future No Action Alternative (2036).....	4-23

Table 4-19. DFW Modeled Average Daily Aircraft Operations for Future (2036) Proposed Action Alternative.	4-25
Table 4-20. Modeled Departure Stage Length Distribution by Aircraft Type for Future (2036) Proposed Action Alternative	4-26
Table 4-21. Estimated Land Area within the Proposed Action Alternative Noise Exposure Contours.....	4-28
Table 4-22. Noncompatible Land Use Housing and Population under Proposed Action Alternative	4-30
Table 4-23. Estimated Land Area within Future (2036) Noise Exposure Contour Alternatives.....	4-30
Table 4-24. Noncompatible Land Use, Housing Units – Comparison of Future Year (2036) Alternatives.....	4-33
Table 4-25. Noncompatible Land Use, Residential Population – Comparison of Future Year (2036) Alternatives ..	4-33

Appendices

Appendix A	Fundamentals of Characterizing Sound, Noise Effects, and Metrics.....	A-1
Appendix B	AEDT Flight Track Utilization.....	B-1
Appendix C	2026 DFW Operations Memo and FAA Approval	C-1
Appendix D	Comparison Between the Supplemental CTA EA and CTA EA Results.....	D-1

1. Background

The Dallas Fort Worth International Airport (DFW or Airport) is proposing modifications to the Terminal F design and implementation schedule since the Federal Aviation Administration (FAA) issued a Finding of No Significant Impact and Record of Decision (FONSI/ROD) for the Central Terminal Area (CTA) Expansion Project in April 2024. DFW is proposing to enlarge the Terminal F structure to change total passenger contact gates at this terminal to 31, from the original 22 contact gates along with the use of 10 hardstands and construct a Terminal F Garage and Ticketing Facility (referred to as the Proposed Action); see **Appendix C: 2026 DFW Operations Memo and FAA Approval**. A primary concern related to the Proposed Action is the potential changes to aircraft noise impacts over noise-sensitive land uses. Because the Proposed Action represents a substantial change to the previously evaluated project and involves new circumstances that are relevant to environmental concerns or impacts, an updated aircraft noise analysis is required in accordance with FAA Orders 5050.4B and 1050.1G. The orders establish the procedures for evaluating aircraft noise impacts associated with airport development projects.

The purpose of this Noise Technical Report is to provide analyses and documentation to support the DFW Environmental Affairs Department's (EAD) development of a Supplemental Environmental Assessment (EA) for the CTA Expansion project. This report presents the findings of the Existing Conditions and evaluates potential future aircraft noise impacts associated with the implementation of the Proposed Action.

1.1 Introduction to Noise Terminology

Information presented in this document relies upon a reader's understanding of the characteristics of noise (unwanted sound), the effects noise has on people and communities, and the metrics or descriptors commonly used to quantify noise. The properties, measurement, and presentation of noise involve specialized terminology that can be difficult to understand. This section presents an overview, and **Appendix A** contains more information on noise metrics.

Sound is a physical phenomenon consisting of very small vibrations (waveforms) that travel through a medium such as air or water. **Noise** is sound that is unwelcome because of its undesirable effects on people (e.g., speech interference, sleep disturbance) or on entire communities (annoyance).

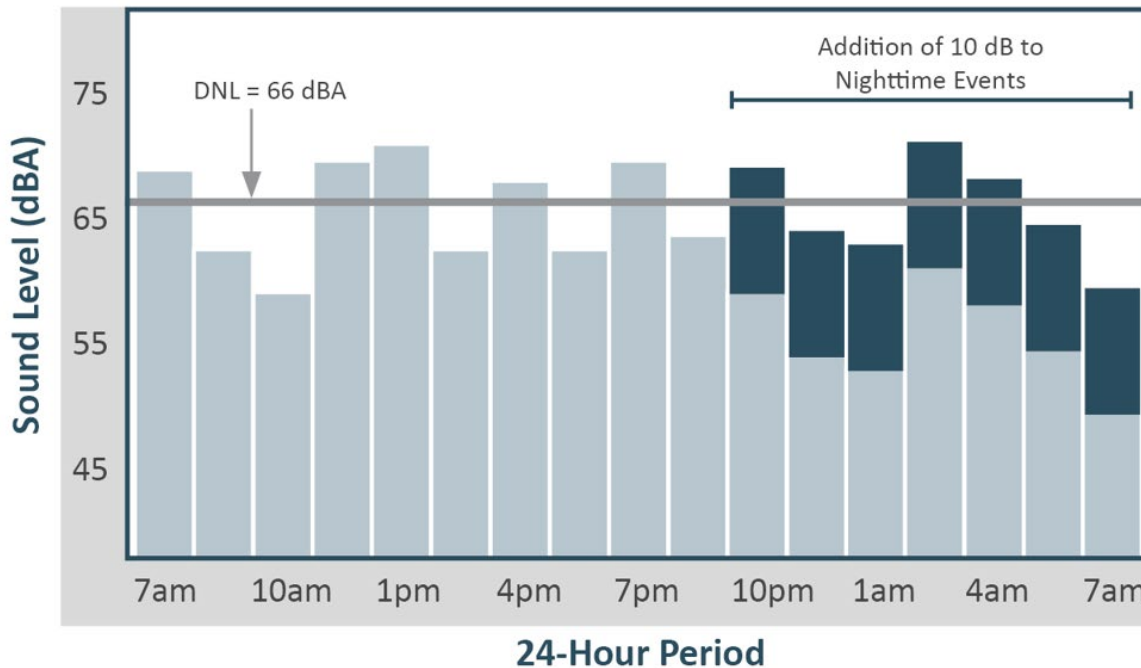
Noise metrics may be thought of as measures of noise 'dose.' There are two main types of noise metrics, which describe (1) single noise events (single-event noise metrics) and (2) total noise experienced over longer time periods (cumulative noise metrics). Single-event metrics indicate the intrusiveness, loudness, or noisiness of individual aircraft noises. Cumulative metrics, used to measure long-term noise, indicate community annoyance. Unless otherwise noted, all noise metrics presented in the Supplemental EA documentation are reported in terms of the A-weighted decibel (dBA or dB).

Annoyance is greater when an intrusive sound occurs at night. As is implied in its name, the Day-Night Average Sound Level (DNL) represents the noise energy present during a 24-hour period. However, for purposes of the

National Environmental Policy Act (NEPA), it is calculated using aircraft operations data averaged over the course of a year. The DNL reported in NEPA documentation is often referred to as the average-annual DNL.

DNL represents noise as it occurs over a 24-hour period, treating noise events occurring at night (10 p.m. to 6:59 a.m.) with a 10 dB weighting.¹ This weighting is applied to account for greater sensitivity to nighttime noise and the fact that events at night are often perceived to be more intrusive than daytime. **Figure 1-1** illustrates the application of the weighting. An alternative way of describing this adjustment is that each event occurring during the nighttime period is calculated as if it were equivalent to 10 daytime events.

Figure 1-1. Example of a Day-Night Average Sound Level Calculation



Source: HMMH

1.2 Regulatory Setting

The analysis of aviation noise impacts from federal actions is the FAA's responsibility. Federal statutes, FAA regulations, and FAA guidance related to the consideration of noise impacts include the following.

14 CFR Part 36 Noise Standards: Aircraft Type and Airworthiness Certification²

FAA's Federal Acquisition Regulation (FAR) Part 36 sets noise limits for aircraft certification and the procedures by which aircraft noise emission levels must be measured to determine compliance. The regulation defines noise emission limits for turbojets, turboprops, and helicopters, classifying turbojets into categories referred to

¹ For the regulatory definition of DNL, see 14CFR Part 150 §150.7 Definitions [eCFR :: 14 CFR Part 150 -- Airport Noise Compatibility Planning \(FAR Part 150\)](#)

² Code of Federal Regulations, 14 CFR Part 36, Noise Standards: Aircraft Type and Airworthiness Certification (Washington, DC: U.S. Government Publishing Office).

as stages based on noise levels at each of three locations: takeoff, landing, and to the side of the runway during takeoff (sideline). The categories include the following:

- **Stage 1 aircraft** are the oldest and usually have the loudest operations, having preceded the existence of any noise emission regulation. Rare examples include old, restored civil or military aircraft. There are no Stage 1 aircraft operating at DFW.
- **Stage 2 aircraft** are less old and less noisy than Stage 1; they were the first aircraft types required to meet a noise limit. Subsequent regulation prohibits the operation of a Stage 2 aircraft in the continental U.S. There are no Stage 2 aircraft operating at DFW.
- **Stage 3 aircraft** were certified for service before 2006 and have relatively quiet jets, although some are Stage 2 aircraft that have been re-engined, or have been fitted with hushkits, enabling them to meet Stage 3 noise limits. Most of these, typically Boeing 727, 737-200, and McDonald Douglas DC9s, no longer operate in the U.S.
- **Stage 4 aircraft** are required to operate with a cumulative noise level at least 10 dB quieter than Stage 3 aircraft at the three prescribed measurement points. Jet aircraft certificated between January 1, 2006, and December 31, 2017, must meet the Stage 4 limits.
- **Stage 5 aircraft** are the newest and quietest aircraft. All aircraft certificated after January 1, 2018, must meet Stage 5 limits, which are a cumulative 7 dB below Stage 4 and 17 dB below Stage 3 aircraft limits. The Boeing 737MAX, 787, 747-8, and Airbus A220, A320 NEO, A350, and A380 are examples of aircraft that meet Stage 5 limits.

49 U.S.C. 44715, The Control and Abatement of Aircraft Noise and Sonic Boom Act of 1968, as amended³

The Control and Abatement of Aircraft Noise and Sonic Boom Act authorize the FAA to prescribe standards for the measurement of aircraft noise and establish regulations to abate noise.

49 U.S.C. 4901-4918, The Noise Control Act of 1972⁴

The Noise Control Act amends The Control and Abatement of Aircraft Noise Sonic Boom Act of 1968 to add consideration of the protection of public health and welfare and to add the EPA to the rulemaking process for aircraft noise and sonic boom standards.

Federal Aviation Noise Abatement Policy⁵

In 1976, the Secretary of Transportation and the Administrator of the FAA issued the Aviation Noise Abatement Policy (ANAP), the first comprehensive aviation noise abatement policy in the U.S. In defining the "aircraft noise problem," this policy characterized aircraft noise exposure of DNL 65 to 75 dB in residential areas as "significant" and DNL 75 dB or more as "severe," and related these noise exposure levels to previously used interpretations of expected community actions based on case studies. The ANAP also identified DNL 65 dB as

³ United States Congress, *Aircraft Noise and Sonic Boom Act of 1968*, Pub. L. No. 90-411, codified as amended at 49 U.S.C. § 44715.

⁴ United States Congress, *Noise Control Act of 1972*, Pub. L. No. 92-574, codified as amended at 49 U.S.C. §§ 4901–4918.

⁵ U.S. Department of Transportation and Federal Aviation Administration, *Aviation Noise Abatement Policy* (Washington, DC: U.S. Department of Transportation and Federal Aviation Administration, 1976).

the noise exposure level above which aircraft noise "create[s] a significant annoyance for most residents," but it did not provide any additional information supporting this characterization.

49 U.S.C. 47501 et seq., The Aviation Safety and Noise Abatement Act of 1979, as amended⁶

The Aviation Safety and Noise Abatement Act of 1979 (ASNA) was enacted in February 1980 to provide assistance to encourage airport operators to prepare and carry out noise compatibility programs, among other purposes. ASNA required the FAA to promulgate regulations to meet three key requirements:

- Establish a single, uniform, repeatable system for considering aviation noise around airport communities.
- Establish a single system for determining noise exposure from aircraft, which takes into account noise intensity, duration of exposure, frequency of operations, and time of occurrence.
- Identify land uses which are normally compatible with various exposures of individuals to noise.

To implement the requirements established under ASNA, the FAA then published 14 Code of Federal Regulations (CFR) Part 150, more commonly known as "Part 150."

49 U.S.C. 47101 et seq., The Airport and Airway Improvement Act of 1982, as amended⁷

The Airport and Airway Improvement Act authorizes funding for noise mitigation and noise compatibility planning and projects, and establishes certain requirements related to noise-compatible land use for federally funded airport development projects.

49 U.S.C. 47521-47534, The Airport Noise and Capacity Act of 1990⁸

The Airport Noise and Capacity Act of 1990 (ANCA) directed the U.S. Secretary of Transportation to undertake three key noise-related actions:

- Establish a schedule for a phase out of Part 36 Stage 2 aircraft by the year 2000.
- Establish a program for FAA review of all new airport noise and access restrictions limiting operations of Stage 2 aircraft.
- Establish a program for FAA review and approval of any restriction that limits operations of Stage 3 aircraft, including public notice requirements.

FAA addressed these requirements through amendment of existing federal regulation and establishment of a new regulation, "Part 161."

⁶ United States Congress, *Aviation Safety and Noise Abatement Act of 1979*, Pub. L. No. 96-193, codified as amended at 49 U.S.C. §§ 47501 et seq.

⁷ United States Congress, *Airport and Airway Improvement Act of 1982*, Pub. L. No. 97-248, codified as amended at 49 U.S.C. §§ 47101 et seq.

⁸ United States Congress, *Airport Noise and Capacity Act of 1990*, Pub. L. No. 101-508, codified at 49 U.S.C. §§ 47521–47534.

14 CFR Part 150, Airport Noise Compatibility Planning⁹

First implemented in February 1981, FAR Part 150 defines procedures that an airport operator must follow if it chooses to conduct and implement an airport noise and land use compatibility plan. Part 150 Noise Compatibility studies require the use of DNL to evaluate the airport noise environment. FAR Part 150 identifies noise compatibility guidelines for different land uses depending on their sensitivity. Key values include a DNL of 75 dB, above which no residences, schools, hospitals, or churches are considered compatible, and a DNL of 65 dB, above which those land uses are considered compatible only if they are sound insulated.

14 CFR Part 161, Notice and Approval of Airport Noise and Access Restrictions¹⁰

FAA implemented the ANCA requirements related to notice, analysis, and approval of use restrictions affecting Stage 2 and Stage 3 aircraft through the establishment of a new regulation, 14 CFR Part 161. In simple terms, Part 161 requires an airport operator that proposes to implement a restriction on Stage 2 or Stage 3 aircraft operations to undertake, document, and publicize certain benefit-cost analyses, comparing the noise benefits of the restriction to its economic costs. Operators must obtain specific FAA approvals of the analysis, documentation, and notice processes, and – for Stage 3 restrictions – approval of the restriction itself.

Part 161 and ANCA define more demanding requirements and explicit guidance for Stage 3 restrictions. To implement a Stage 3 restriction, formal FAA approval is required. FAA's role for Stage 2 restrictions is limited to commenting on compliance with Part 161 notice and analysis procedural requirements. ANCA and Part 161 specifically exempt Stage 3 use restrictions that were effective on or before October 1, 1990, and Stage 2 restrictions that were proposed before that date.

49 U.S.C. 47534, Prohibition on Operating Certain Aircraft Weighing 75,000 Pounds or Less Not Complying with Stage 3 Noise Levels [section 506 of the FAA Modernization and Reform Act of 2012]¹¹

After December 31, 2015, a person may not operate a civil subsonic jet airplane with a maximum weight of 75,000 pounds or less unless the Secretary of Transportation finds that the aircraft complies with Stage 3 noise levels.

FAA Order 1050.1G, Environmental Impacts: Policies and Procedures¹²

This Order serves as the FAA policy and procedures for compliance with NEPA. The provisions of this Order apply to actions directly undertaken by the FAA and to actions undertaken by a non-Federal entity where the FAA has authority to condition a permit, license, or other approval. The requirements in this Order apply to, but are not limited to, the following actions: grants, loans, contracts, leases, construction and installation actions, procedural actions, research activities, rulemaking and regulatory actions, certifications, licensing, permits,

⁹ Code of Federal Regulations, *14 CFR Part 150, Airport Noise Compatibility Planning* (Washington, DC: U.S. Government Publishing Office).

¹⁰ Code of Federal Regulations, *14 CFR Part 161, Notice and Approval of Airport Noise and Access Restrictions* (Washington, DC: U.S. Government Publishing Office).

¹¹ United States Congress, *FAA Modernization and Reform Act of 2012*, Pub. L. No. 112-95, sec. 506, codified at 49 U.S.C. § 47534.

¹² Federal Aviation Administration, *FAA Order 1050.1G, Environmental Impacts: Policies and Procedures* (Washington, DC: Federal Aviation Administration, 2024).

plans submitted to the FAA by state and local agencies for approval, and legislation proposed by the FAA. Order 1050.1G provides the specific requirements for this Supplemental EA.

FAA Order 5050.4B, National Environmental Policy Act (NEPA) Implementing Instructions for Airport Actions¹³

The FAA's Office of Airports (ARP) is responsible for identifying major federal actions involving the nation's public-use airports. After determining that an airport sponsor is proposing a major federal action, ARP is responsible for analyzing the environmental effects of that action and its alternatives. Order 5050.4B provides instruction on evaluating those environmental effects. Order 5050.4B supplements FAA Order 1050.1G, "Environmental Impacts: Policies and Procedures."

These laws and guidance documents specify the use of DNL as the noise metric used in all FAA aviation noise studies in airport communities. DNL, a cumulative sound level, provides a measure of total sound energy. DNL is a logarithmic average of the sound levels of multiple events at one location over a 24-hour period. A 10 dB weighting is added to all sounds occurring during nighttime hours (between 10:00 p.m. and 6:59 a.m.). The weighting for nighttime noise events is intended to account for the added intrusiveness of noise during typical sleeping hours, as ambient sound levels during nighttime hours are typically about 10 dB lower than during daytime hours.

For a NEPA noise analysis, the FAA requires that the 24-hour analysis period represent the average annual day (AAD). The AAD reflects the daily aircraft operations averaged over a 365-day period. Further details on noise metrics, including DNL, can be found in **Appendix A**.

Estimates of noise effects resulting from aircraft operations can be interpreted in terms of the probable effects on human activities that typically occur within specific land uses. The FAA has adopted guidelines for evaluating land-use compatibility with noise exposure. In general, most land uses are considered compatible with DNL less than 65 dB, but only certain uses are compatible with DNL greater than or equal to 65 dB. **Section 1.3** contains further details on land use compatibility.

The noise analysis compares the No Action and Proposed Action Alternative for the forecast conditions using the FAA's thresholds of significance. **Table 1-1** defines the significance threshold for changes in noise in accordance with FAA Order 1050.1G. When an action (compared to the No Action Alternative for the same timeframe) would cause noise-sensitive areas to have a DNL greater than or equal to 65 dB and experience a change in noise of at least 1.5 dB, the impact is considered significant. For example, an increase from No Action DNL 65.5 dB to Proposed Action DNL 67 dB is considered a significant impact, as is an increase from No Action DNL 63.5 dB to Proposed Action DNL 65 dB. **Table 1-1** also lists FAA-defined reportable changes in noise levels.

¹³ Federal Aviation Administration, *FAA Order 5050.4B, National Environmental Policy Act (NEPA) Implementing Instructions for Airport Actions* (Washington, DC: Federal Aviation Administration, 2025).

Table 1-1. Aircraft DNL Thresholds and Impact Categories

Impact Category	DNL 65 dB or Greater	Greater than or equal to DNL 60 dB but less than DNL 65 dB	Greater than or equal to DNL 45 dB but less than DNL 60 dB
Minimum Change in DNL when compared to the higher of the Proposed Action or No Action Alternative DNL	1.5 dB	3.0 dB	5.0 dB
Level of Change	Significant	Reportable	Reportable

Source: FAA Order 1050.1G and the 1050.1 Desk Reference¹⁴

1.3 Noise Compatible Land Use

NEPA requires the review of land uses located in the airport environs to understand the relationship between those land uses and the noise exposure associated with arriving and departing aircraft. This includes delineation of land uses within the DNL 65 dB and higher aircraft noise exposure contours on the noise contour exhibits and identification of noise-sensitive uses that may be noncompatible with that level of noise exposure. Identification of a noise-sensitive use within the DNL 65 dB contour does not necessarily mean that the use is either considered noncompatible or that it is eligible for mitigation. Rather, identification merely indicates that the use is generally considered noncompatible but requires further investigation. Factors that influence compatibility and/or eligibility may include but are not limited to previous sound reduction treatments, current interior noise levels, structure condition, ambient and self-generated noise levels, whether a given use is considered temporary or permanent, and the timeframe within which a given structure was constructed.

This chapter provides a description of recommended land uses that are deemed generally compatible under Appendix A of Part 150.

1.3.1 Land Use Compatibility Guidelines

The objective of airport noise compatibility planning is to promote compatible land use in communities surrounding airports. The FAA has published land use compatibility designations, as set forth in Part 150, Appendix A, Table 1 (reproduced here as **Table 1-2**).¹⁵ As the table indicates, the FAA generally considers all land uses to be compatible with aircraft-related DNL below 65 dB, including residential, hotels, retirement homes, intermediate care facilities, hospitals, nursing homes, schools, preschools, and libraries. These categories are referenced throughout the Supplemental EA. Institutional or public land use consists of schools, hospitals, nursing homes, churches, auditoriums, concert halls, governmental services, transportation, and parking. While all these uses are compatible with aircraft-related DNL below 65 dB, schools without noise mitigation are not compatible in areas exposed to DNL 65 and above; therefore, schools are listed separately in the Supplemental EA.

¹⁴ Federal Aviation Administration, *Environmental Desk Reference for Airport Actions* (Washington, DC: Federal Aviation Administration, Office of Airports, Office of Airport Planning and Programming, Airports Planning and Environmental Division, October 2007)

¹⁵ Appendix A, Part 150 Table 1 can be found in 14 CFR Part 150, Airport Noise Compatibility Planning <https://www.ecfr.gov/current/title-14/chapter-I/subchapter-I/part-150>

Table 1-2. Part 150 Land Use Compatibility with Yearly Day-Night Average Sound Levels (in decibels)

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

Table Source: FAA Part 150, Appendix A, Table 1, 2007

SLUCM: Standard Land Use Coding Manual

Y(Yes): Land use and related structures compatible without restrictions.

N(No): Land use and related structures are not compatible and should be prohibited.

NLR: Noise Level Reduction (outdoor to indoor) to be achieved through incorporation of noise attenuation into the design and construction of the structure.

25, 30, or 35: Land use and related structures generally compatible; measures to achieve NLR of 25 dBA, 30 dBA, or 35 dBA must be incorporated into design and construction of structure.

Table Notes:

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

(1) Where the community determines that residential or school uses must be allowed, measures to achieve outdoor to indoor Noise Level Reduction (NLR) of at least 25 dBA and 30 dBA should be incorporated into building codes and be considered in individual approvals. Normal residential construction can be expected to provide a NLR of 20 dBA, thus, the reduction requirements are often stated as 5 dBA, 10 dBA, or 15 dBA over standard construction and normally assume mechanical ventilation and closed windows year-round. However, the use of NLR criteria will not eliminate outdoor noise problems.

- (2) Measures to achieve NLR of 25 dBA must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas, or where the normal noise level is low.
- (3) Measures to achieve NLR of 30 dBA must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas or where the normal noise level is low.
- (4) Measures to achieve NLR of 35 dBA must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas, or where the normal noise level is low.
- (5) Land use compatible provided special sound reinforcement systems are installed.
- (6) Residential buildings require an NLR of 25 dBA.
- (7) Residential buildings require an NLR of 30 dBA.
- (8) Residential buildings not permitted.

1.3.2 Study Area and Existing Land Use

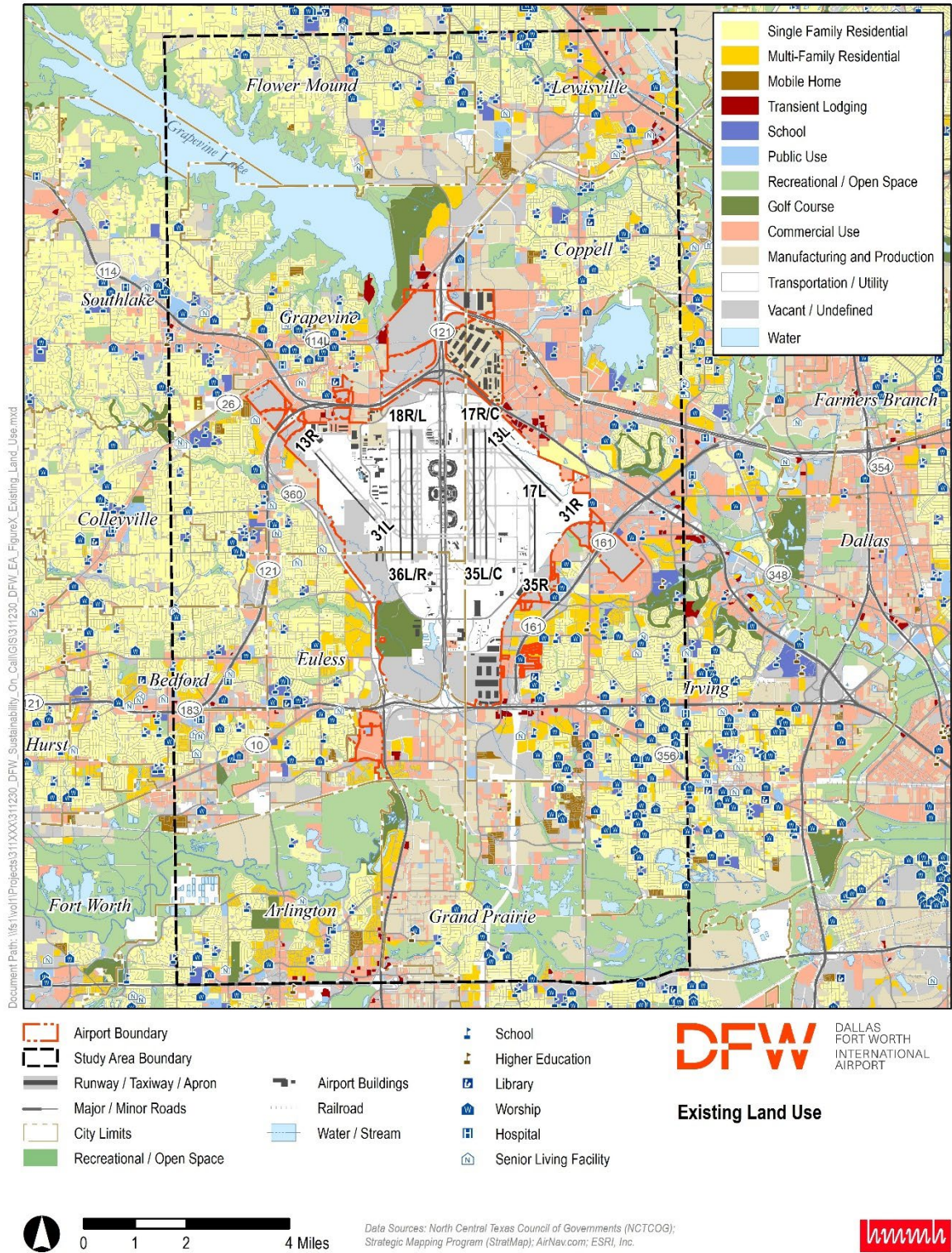
To adequately capture the effects of aircraft noise, the noise study area (NSA) must include not only the immediate airport environs, where aircraft flight paths are aligned with the runways, but also other potentially affected areas over which aircraft would fly as they follow any modified flight corridors that join the surrounding airspace. The NSA was developed to encompass an area that would contain at least the lateral extent of the estimated DNL 60 dB contour resulting from aircraft flight and ground operations contemplated under the Proposed Action, with an adequate buffer to accommodate potential changes in the contour between the No Action and the Proposed Action Alternatives. **Figure 1-2** displays the NSA on the land use map. The NSA is approximately 4 nautical miles (nmi) to the east and west and 8 nmi to the north and south.

DFW is located on over 17,200 acres between the two Texas cities it is named for, approximately 12 miles northwest of downtown Dallas, in Dallas County, and 12 miles northeast of downtown Fort Worth, in Tarrant County. The Airport is located north of Texas State Highway (SH) 183 and south of SH 114.

Existing land use in the study area consists of the DFW property, residential uses, commercial, and industrial land uses, as shown on **Figure 1-2**. DFW is surrounded to the west and southeast by residential areas consisting of single-family and multi-family residences. The area to the north is primarily industrial and commercial facilities with areas of residential land use located in Coppell to the northeast. The area directly south is commercial and industrial with residential areas located farther south in Grand Prairie.

All non-residential noise-sensitive sites in the NSA (such as schools, nursing homes, hospitals and places of worship) have been identified and are shown on **Figure 1-2**. Any potential noncompatible land use and the noise-sensitive sites within the study area are evaluated in the Supplemental EA.

Figure 1-2. Land Use and Noise Study Area



2. Noise Modeling Methodology

The following sections describe the modeling methodology for the noise analysis of the Existing Conditions, future No Action, and future Proposed Action Alternatives.

2.1 Aviation Environmental Design Tool (AEDT)

For an action occurring on or in the vicinity of a single airport or as part of an air traffic action, the FAA requires the use of the latest version of the Aviation Environmental Design Tool (AEDT) for detailed noise modeling or another model, as approved by the FAA. The model must be used to produce DNL 65, 70, and 75 dB contours and other noise calculations as needed.

The aircraft noise analysis for this Supplemental EA uses AEDT Version 4a (released January 28, 2026). All AEDT modeling conducted for this study adheres to *Guidance on Using the AEDT to Conduct Environmental modeling for FAA Actions Subject to NEPA*.¹⁶ AEDT is a combined noise and emission model that uses a database of aircraft noise and performance characteristics. The AEDT predicts ground-based DNL values from user input for aircraft types, AAD aircraft operations, airport operating conditions, aircraft performance, and flight patterns. AEDT also calculates air pollutant emissions from aircraft engines for air quality analyses, enables noise and air quality calculations on a regional basis (as opposed to in the immediate airport environment only), and includes updated databases for newer aircraft models.

The noise pattern calculated by the AEDT for an airport is a function of several factors, including the number of aircraft operations during the period evaluated, the types of aircraft flown, the time of day when they are flown, the way they are flown, how frequently each runway is used for landing and takeoff, and the routes of flight used to and from the runways. Substantial variations in any one of these factors may, when extended over a long period of time, cause marked changes to the noise pattern.

The primary data input categories for the AEDT are:

- **Airfield layout**, which includes the coordinates of each runway centerline endpoint, runway widths, approach threshold crossing heights, and runway end elevations.
- **Meteorological data**, which refers to weather conditions affecting sound propagation and aircraft performance. AEDT's database of airports was accessed to obtain annual average daily DFW weather conditions. AEDT's airport database contains 10-year average meteorological data (from 2015 through 2024), which AEDT uses to adjust aircraft performance and sound propagation parameters from standard day conditions.
 - Temperature: 67.3° F

¹⁶ FAA, 2017, *Guidance on Using the Aviation Environmental Design Tool (AEDT) to Conduct Environmental Modeling for FAA Actions Subject to NEPA*, https://aedt.faa.gov/Documents/guidance_aedt_nepa.pdf

- Station Pressure: 994.44 mbar
 - Sea Level Pressure: 1015.52 mbar
 - Dew point: 53.4° F
 - Relative humidity: 61.14%
 - Wind Speed: 9.22 knots
- **Terrain data**, which refers to ground elevations. AEDT uses terrain data to adjust the aircraft-to-ground path length, which is the distance between the modeled location on the ground and the aircraft in flight, making the ground closer to or farther from the aircraft relative to flat-earth conditions. AEDT does not use terrain data to account for shielding or reflective effects of terrain.
 - Specific aircraft types in DFW's **fleet mix, defined by airframe and engine type combinations**. All aircraft types evaluated for the DFW modeling are either in the AEDT database or have approved substitutions within the model.
 - **Aircraft flight operations**, which are numbers of AAD aircraft operations by DNL time periods and by aircraft type. Daytime is defined as 7:00 a.m. to 9:59 p.m. and nighttime is defined as 10:00 p.m. to 6:59 a.m. Departures and arrivals were the two types of flight operations modeled for the Supplemental EA. Touch-and-go or circuit operations are not conducted at DFW.
 - **Aircraft noise and performance characteristics**. The AEDT database contains noise and performance data for more than 300 different fixed-wing aircraft types. AEDT accesses the noise and performance data for takeoff, landing, and pattern operations by those aircraft. The database provides single-event noise levels for slant distances from 200 feet to 25,000 feet for several thrust or power settings for each aircraft type. Performance data includes thrust, speed, and altitude profiles for takeoffs and landings. For those aircraft types operating at DFW that are not directly represented in the AEDT database, the AEDT contains FAA-approved substitutions for noise modeling.
 - **Stage length**, which is a surrogate for an aircraft's weight that varies according to its fuel load. Stage length is assigned according to each departure's trip distance to its destination, using city-pair information from the Noise and Operations Monitoring System (NOMS) data and calculating the great-circle distance from DFW to the indicated destination airport. The assigned stage length then determines the appropriate flight performance profile from the AEDT database.
 - **Flight profiles**, which are based on standard flight procedures for each aircraft type contained in the AEDT database. Information in the flight profiles describes the sequence of altitudes, thrust/power settings, and airspeeds for departure and arrival operations.
 - **Runway use**, which is the allocation of flight operations to each runway, on an AAD basis, by DNL time periods, operation type, and aircraft type.
 - **Flight tracks and their usage**. A flight track is the two-dimensional projection of the aircraft's three-dimensional flight path onto the ground. A modeled flight track represents one or more actual flight tracks. Modeled flight tracks for a given flight corridor typically consist of a backbone track and sub-tracks, which represent the average location and dispersion of the actual flights in the corridor. Each backbone flight track typically represents a general heading for departures or originating point for arrivals. As each runway usually has multiple headings and originating points, the distribution of

operations, or track use, on an AAD basis, must be specified. Operations are farther spread across backbone tracks and sub-tracks via statistical distribution percentages.

2.2 Noise Exposure Contours

Noise contours (i.e., lines of equal noise exposure, usually expressed in terms of DNL) are typically used to illustrate average daily noise exposure around an airport. Noise contours are conceptually similar to topographic contour maps. A set of concentric contours, representing successively lower DNL, usually extends away from the airport's runways. DNL contours are typically presented in 5 dB increments on a base map, with each successive contour representing a 5 dB decrease in noise exposure on an AAD basis. Contours developed for the Supplemental EA represent DNL 60 dB, 65 dB, 70 dB, and 75 dB. The DNL 60 dB contour is provided for informational purposes; FAA guidelines for noise compatibility begin at the DNL 65 dB contour.

For purposes of the Supplemental EA, the noise contours show areas exposed to each DNL level. **Section 3.6** presents the Existing Conditions contours; **Sections 4.2.5** and **4.3.5** present the noise contours for the future year 2031 alternatives, and **Sections 4.5.5** and **4.6.5** present the noise contours for the future year 2036 alternatives. It is important to recognize that a line drawn on a map does not imply that a particular noise condition exists on one side of the line and not the other.

Appendix A contains further information on noise and its effects on people.

2.3 Grid Point Noise Calculations

Besides noise contours, the AEDT provides another way to show noise levels in the airport environs. DNL (or other metrics supported by the AEDT) can be calculated for specific locations, defined as grid points, and can be presented in a number of formats. Grid point analyses can show the change in noise levels over specific locations and are helpful in determining where significant or reportable noise changes may occur.

For the Supplemental EA, noise levels are developed for two area-wide grid sets. The NSA grid points are defined to cover the complete NSA area, and an outer set of points (the Secondary Study Grid) is defined to generally capture areas that would be exposed to levels in the range of DNL 45 dB to 60 dB for one or more of the analyzed alternatives. The NSA grid consists of a rectangle with points spaced 0.05 nmi (303 feet) apart, extending approximately 5 nmi to the east and west and 9 nmi to the north and south from the Airport Reference Point (which is near the geographic center of DFW's runways). The Secondary Study Grid consists of a rectangle with points spaced 0.1 nmi (608 feet) apart, extending approximately 10 nmi to the east and west and 20 nmi to the north and south from the Airport Reference Point (which is near the geographic center of DFW's runways).

3. Existing Conditions

This section provides a description of current aircraft noise conditions within the study area. The Existing Conditions for this Supplemental EA represent aircraft operations for calendar year 2024.

3.1 Aircraft Activity Levels and Fleet Mix

Data from DFW's NOMS and from the FAA's Operations Network (OPSNET) form the basis of the Existing Conditions noise model inputs. The NOMS data provided the aircraft fleet mix and runway use. The operations were grouped into FAA operational categories (Air Carrier, Air Taxi, General Aviation, and Military), and the totals were scaled to match the annual OPSNET counts. The commercial categories (air carrier and air taxi) were separated to display both passenger and cargo operations as shown in **Table 3-1**.

The total operations count for 2024 was 743,203. **Table 3-1** presents the annual operations modeled for the Existing Conditions.

Table 3-1. Existing Conditions (2024) Operations

Time frame	Air Carrier Passenger	Air Carrier Cargo	Air Taxi Passenger	Air Taxi Cargo	General Aviation	Military	Total
Full Year	705,825	16,573	10,580	4,290	5,724	211	743,203
Average Annual Day	1,928.5	45.3	28.9	11.7	15.6	0.6	2,030.6

Note: Because 2024 was a leap year, the AAD was determined by dividing by 366 days.

Sources: DFW NOMS, FAA OPSNET, FAA Terminal Area Forecast (TAF), HMMH analysis

Table 3-2 provides the average annual daily operations, by aircraft type, that were used in AEDT to model the Existing Conditions. The average daily number of aircraft arrivals and departures for 2024 are calculated by dividing the total annual operations by 366 (days in the year). The Existing Conditions average annual day includes 2,030.6 total operations, 11.8 percent of which occurred during the DNL nighttime hours of 10:00 p.m. to 6:59 a.m.

Table 3-2. DFW Modeled Average Daily Aircraft Operations for Existing Conditions (2024)

Tower Category	Propulsion	Aircraft Type	Arrivals Day	Arrivals Night	Departures Day	Departures Night	Total
Air Carrier Cargo	Jet	A306	2.5	0.2	2.3	0.4	5.4
Air Carrier Cargo	Jet	B744	0.8	0.4	0.8	0.4	2.5
Air Carrier Cargo	Jet	B748	0.9	0.7	1.0	0.6	3.2
Air Carrier Cargo	Jet	B752	2.0	0.2	1.9	0.3	4.4
Air Carrier Cargo	Jet	B763	5.5	2.5	4.3	3.8	16.1
Air Carrier Cargo	Jet	B77L	1.8	1.1	1.1	1.8	5.7
Air Carrier Cargo	Jet	MD11	2.1	1.9	2.5	1.5	8.0
Air Carrier Passenger	Jet	A20N	22.0	8.3	22.2	8.1	60.6
Air Carrier Passenger	Jet	A21N	20.3	4.8	21.8	3.3	50.1
Air Carrier Passenger	Jet	A319	65.5	6.6	65.5	6.5	144.1
Air Carrier Passenger	Jet	A320	48.5	7.5	49.9	6.1	112.0

Tower Category	Propulsion	Aircraft Type	Arrivals Day	Arrivals Night	Departures Day	Departures Night	Total
Air Carrier Passenger	Jet	A321	155.2	24.1	159.1	20.3	358.7
Air Carrier Passenger	Jet	A333	1.2	0.0	0.5	0.8	2.5
Air Carrier Passenger	Jet	A343	0.5	0.0	0.5	0.0	1.0
Air Carrier Passenger	Jet	A359	0.8	0.0	0.8	0.0	1.6
Air Carrier Passenger	Jet	A35K	2.3	0.0	1.7	0.6	4.6
Air Carrier Passenger	Jet	A388	0.9	0.0	0.8	0.0	1.8
Air Carrier Passenger	Jet	B38M	5.9	1.8	6.9	0.7	15.3
Air Carrier Passenger	Jet	B39M	1.9	0.9	2.4	0.3	5.5
Air Carrier Passenger	Jet	B737	1.7	0.5	2.2	0.0	4.4
Air Carrier Passenger	Jet	B738	200.7	26.1	206.4	20.3	453.6
Air Carrier Passenger	Jet	B739	3.2	1.9	4.4	0.7	10.3
Air Carrier Passenger	Jet	B744	0.9	0.4	0.9	0.4	2.5
Air Carrier Passenger	Jet	B748	0.1	0.3	0.2	0.1	0.6
Air Carrier Passenger	Jet	B772	5.8	0.7	6.2	0.3	13.0
Air Carrier Passenger	Jet	B77W	5.3	0.0	4.6	0.7	10.7
Air Carrier Passenger	Jet	B788	5.8	2.5	8.2	0.1	16.5
Air Carrier Passenger	Jet	B789	9.2	1.5	9.2	1.5	21.4
Air Carrier Passenger	Jet	BCS1	9.8	1.0	9.6	1.2	21.6
Air Carrier Passenger	Jet	BCS3	6.0	1.1	6.6	0.5	14.2
Air Carrier Passenger	Jet	E190	1.0	0.0	1.0	0.0	2.0
Air Carrier Passenger	Regional Jet	CRJ7	59.2	9.1	62.8	5.5	136.6
Air Carrier Passenger	Regional Jet	CRJ9	23.1	3.5	24.0	2.6	53.2
Air Carrier Passenger	Regional Jet	E170	33.3	4.5	34.4	3.5	75.8
Air Carrier Passenger	Regional Jet	E75L	152.1	15.2	153.6	13.7	334.6
Air Carrier Total	-	-	857.5	129.4	880.3	106.6	1,973.8
Air Taxi Cargo	Non-Jet	B190	1.0	0.0	0.7	0.3	2.1
Air Taxi Cargo	Non-Jet	BE99	0.7	0.0	0.6	0.1	1.5
Air Taxi Cargo	Non-Jet	C208	2.8	0.7	3.0	0.4	6.9
Air Taxi Cargo	Non-Jet	SF34	0.4	0.2	0.6	0.1	1.3
Air Taxi Passenger	Jet	C56X	0.8	0.0	0.9	0.0	1.8
Air Taxi Passenger	Jet	C68A	1.7	0.1	1.7	0.1	3.5
Air Taxi Passenger	Jet	C700	0.6	0.0	0.6	0.0	1.3
Air Taxi Passenger	Jet	CL35	0.8	0.1	0.8	0.1	1.7
Air Taxi Passenger	Jet	CRJ2	1.0	0.0	1.0	0.0	2.0
Air Taxi Passenger	Jet	E55P	1.5	0.1	1.5	0.1	3.2
Air Taxi Passenger	Regional Jet	E135	1.6	0.0	1.6	0.0	3.1
Air Taxi Passenger	Regional Jet	E145	0.9	0.0	0.9	0.0	1.9
Air Taxi Passenger	Non-Jet	C208	5.1	0.1	5.0	0.1	10.4
Air Taxi Total	-	-	19.0	1.4	19.0	1.4	40.6
General Aviation	Jet	C56X	1.6	0.1	1.6	0.1	3.4
General Aviation	Jet	CL35	0.9	0.1	0.9	0.0	1.8
General Aviation	Jet	E55P	1.0	0.0	0.9	0.1	2.0
General Aviation	Jet	G280	2.0	0.1	2.1	0.1	4.3
General Aviation	Non-Jet	BE20	0.6	0.0	0.5	0.0	1.1
General Aviation	Non-Jet	C172	0.6	0.2	0.5	0.3	1.5
General Aviation	Non-Jet	PC12	0.7	0.0	0.7	0.1	1.5
General Aviation Total	-	-	7.3	0.5	7.1	0.7	15.6
Military	Jet	C17	0.1	0.0	0.1	0.0	0.3
Military	Jet	LJ35	0.1	<0.1	0.1	0.0	0.2
Military	Non-Jet	C30J	<0.1	0.0	<0.1	0.0	0.1

Tower Category	Propulsion	Aircraft Type	Arrivals Day	Arrivals Night	Departures Day	Departures Night	Total
Military Total	-	-	0.3	<0.1	0.3	<0.1	0.6
Grand Total	-	-	884.0	131.3	906.6	108.7	2,030.6

Note: Totals may not match exactly due to rounding.

Sources: DFW NOMS, FAA OPSNET, FAA TAF, HMMH analysis

3.2 Aircraft Stage Length and Operational Profiles

Within the AEDT database, aircraft departure profiles are defined by a range of trip distances identified as “stage lengths.” Higher stage lengths (longer trip distances) are associated with heavier aircraft due to the increase in fuel requirements for the flight. For example, a departure aircraft with a trip distance less than 500 nmi would be assigned a stage length value of one, where a departure aircraft with a trip distance of 3,000 nmi would be assigned a stage length value of five. **Table 3-3** provides the stage length classifications by their associated trip distances, and **Table 3-4** presents the modeled stage length distribution by AEDT aircraft type, developed from the NOMS data. Typically, widebody aircraft that operate on long haul routes have the highest stage lengths. Many smaller aircraft have only a “stage length 1” profile defined in the AEDT database. For some aircraft types, AEDT uses an “M” stage length designation to indicate the maximum weight departure profile defined for that aircraft.

Table 3-3. AEDT Stage Length Categories

Category	Stage Length (nmi)
1	0-500
2	500-1000
3	1000-1500
4	1500-2500
5	2500-3500
6	3500-4500
7	4500-5500
8	5500-6500
9	6500+

Source: FAA’s [AEDT 4a User Manual](#)

AEDT includes standard flight procedure data for each aircraft that represents each phase of flight to or from the airport. Information related to aircraft speed, altitude, thrust settings, flap settings, and distance is available and used by AEDT to calculate noise levels on the ground. Standard aircraft departure profiles are supplied from the runway (field elevation) up to 10,000 feet above ground level (AGL). Aircraft arrival profiles are supplied from 6,000 feet AGL down to the runway including the application of reverse thrust and rollout. The FAA requires that these standard arrival and departure profiles be used unless there is evidence that they are not applicable. The noise calculations presented in this document used the standard AEDT departure and arrival profiles.

Table 3-4. Existing Conditions - Modeled Departure Stage Length Distribution by Aircraft Type

Propulsion	Aircraft Type	SL1	SL2	SL3	SL4	SL5	SL6	SL7	SL8	SL9
Jet	A20N	7%	65%	25%	4%	-	-	-	-	-
Jet	A21N	5%	53%	39%	1%	2%	-	-	-	-

Propulsion	Aircraft Type	SL1	SL2	SL3	SL4	SL5	SL6	SL7	SL8	SL9
Jet	A306	20%	56%	24%	-	-	-	-	-	-
Jet	A319	28%	49%	22%	1%	-	-	-	-	-
Jet	A320	19%	53%	28%	-	-	-	-	-	-
Jet	A321	6%	60%	33%	1%	-	-	-	-	-
Jet	A333	-	-	-	-	-	100%	-	-	-
Jet	A343	-	-	-	-	-	100%	-	-	-
Jet	A359	-	-	-	-	-	-	100%	-	-
Jet	A35K	-	-	-	-	-	-	-	100%	-
Jet	A388	-	-	-	-	-	100%	-	-	-
Jet	B38M	15%	31%	46%	8%	-	-	-	-	-
Jet	B39M	4%	4%	93%	-	-	-	-	-	-
Jet	B737	28%	29%	43%	-	-	-	-	-	-
Jet	B738	21%	46%	31%	2%	-	-	-	-	-
Jet	B739	7%	4%	89%	-	-	-	-	-	-
Jet	B744	2%	5%	33%	-	33%	14%	-	13%	-
Jet	B748	-	69%	3%	-	28%	-	-	-	-
Jet	B752	44%	35%	21%	-	-	-	-	-	-
Jet	B763	22%	57%	21%	-	-	-	-	-	-
Jet	B772	1%	13%	10%	2%	8%	46%	13%	8%	-
Jet	B77L	1%	21%	0%	-	19%	30%	29%	-	-
Jet	B77W	1%	4%	2%	-	-	58%	-	14%	21%
Jet	B788	1%	10%	10%	-	24%	19%	5%	31%	-
Jet	B789	-	11%	4%	-	3%	27%	9%	45%	-
Jet	BCS1	-	18%	82%	-	-	-	-	-	-
Jet	BCS3	-	36%	64%	-	-	-	-	-	-
Jet	C17	100%	-	-	-	-	-	-	-	-
Jet	C56X	100%	-	-	-	-	-	-	-	-
Jet	C68A	100%	-	-	-	-	-	-	-	-
Jet	C700	100%	-	-	-	-	-	-	-	-
Jet	CL35	100%	-	-	-	-	-	-	-	-
Jet	CRJ2	100%	-	-	-	-	-	-	-	-
Jet	CRJ7	70%	30%	-	-	-	-	-	-	-
Jet	CRJ9	54%	46%	-	-	-	-	-	-	-
Jet	E135	100%	-	-	-	-	-	-	-	-
Jet	E145	100%	-	-	-	-	-	-	-	-
Jet	E170	77%	23%	-	-	-	-	-	-	-
Jet	E190	-	94%	6%	-	-	-	-	-	-
Jet	E55P	100%	-	-	-	-	-	-	-	-
Jet	E75L	63%	36%	1%	-	-	-	-	-	-
Jet	G280	100%	-	-	-	-	-	-	-	-
Jet	LJ35	100%	-	-	-	-	-	-	-	-
Jet	MD11	16%	71%	13%	-	-	-	-	-	-
Non-Jet	C172	100%	-	-	-	-	-	-	-	-
Non-Jet	B190	100%	-	-	-	-	-	-	-	-
Non-Jet	BE20	100%	-	-	-	-	-	-	-	-
Non-Jet	BE99	100%	-	-	-	-	-	-	-	-
Non-Jet	C208	100%	-	-	-	-	-	-	-	-
Non-Jet	C30J	100%	-	-	-	-	-	-	-	-
Non-Jet	PC12	100%	-	-	-	-	-	-	-	-
Non-Jet	SF34	88%	12%	-	-	-	-	-	-	-

Note: SL = Stage Length
Source: DFW NOMS, HMMH analysis

3.3 Runway Definition

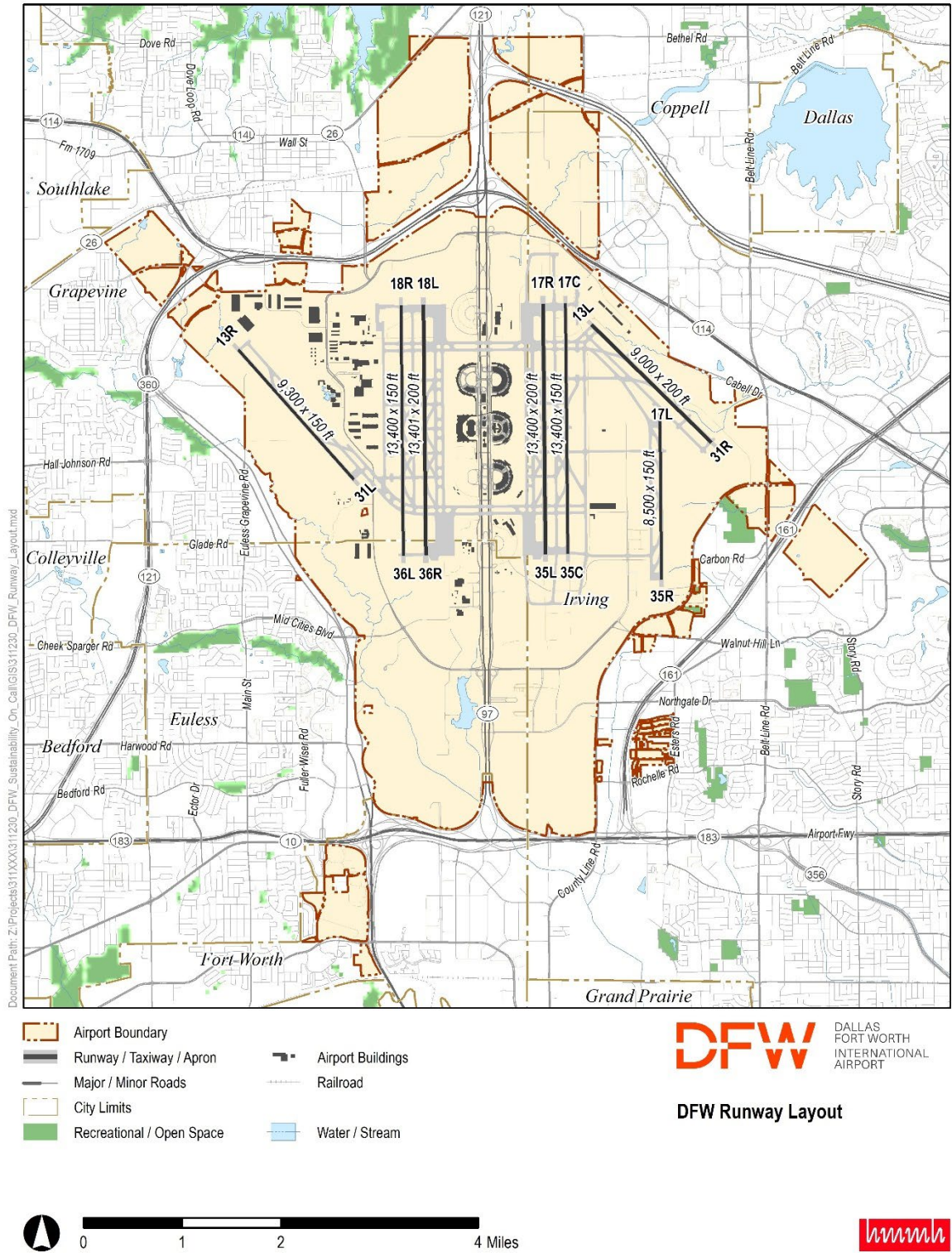
DFW has two main runway complexes, which include the east side and west side, that are comprised of seven runways oriented primarily in a north-south direction: four on the east side (13L/31R, 17C/35C, 17L/35R, 17R/35L) and three on the west side (13R/31L, 18L/36R, and 18R/36L). **Table 3-5** provides the length and width of the current runways at DFW. The current runway layout is provided in **Figure 3-1**.

Table 3-5. DFW Runways - Existing Conditions

Runway	Length (feet)	Width (feet)
13L/31R	9,000	200
13R/31L	9,300	150
17C/35C	13,400	150
17L/35R	8,500	150
17R/35L	13,400	200
18L/36R	13,401	200
18R/36L	13,400	150

Source: FAA Airport Data and Information Portal (ADIP), accessed June 8, 2026

Figure 3-1. DFW Runway Layout



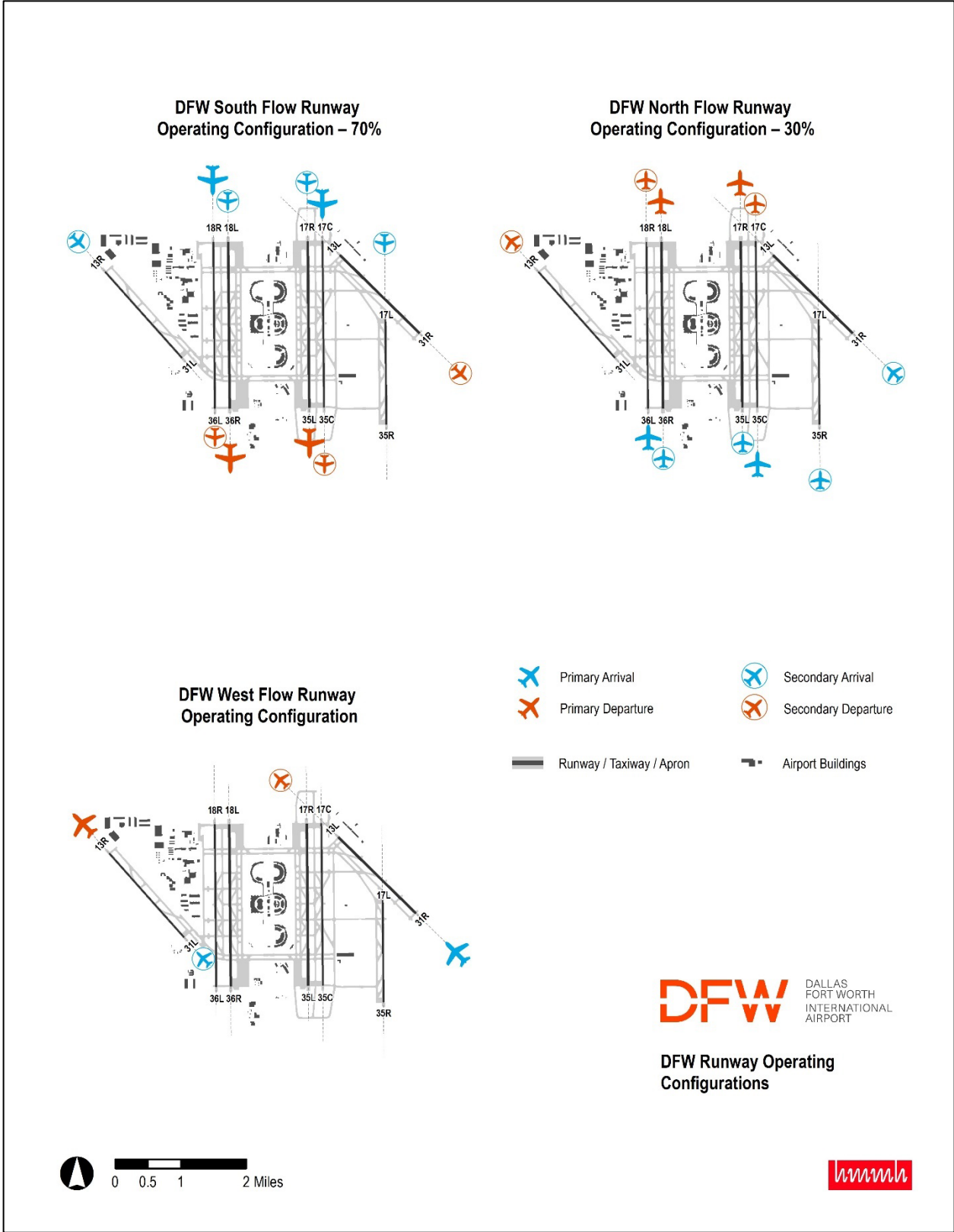
DFW typically uses its north/south parallel runways for most arrivals and departures. Aircraft typically arrive on the outermost main north/south runways, as well as some of the outboards, and depart on the innermost main north/south runways (inboards). Based on historical conditions, the Airport is operated in one of two main operating configurations: south flow (approximately 70 percent of the time) or north flow (approximately 30 percent of the time), as shown in **Figure 3-2**. Aircraft normally take off and land into the wind. However, runway end utilization can also be affected by type of aircraft, type of activity, and, if applicable, any airport runway use plans. **Table 3-6** provides a brief description of how each runway shown in **Figure 3-1** and **Figure 3-2** is typically used at DFW.

Table 3-6. DFW Runways – Typical Runway Use

Runway	South Flow	North Flow
Runway 13R	Diagonal runway in the west airfield used as a secondary arrival runway. Typically, no departures.	
Runway 18R	Primary arrival runway in the west airfield. It is also used as a secondary departure runway.	
Runway 18L	Primary departure runway in the west airfield. It is also used as a secondary arrival runway.	
Runway 17R	Primary departure runway in the east airfield. It is also used as a secondary arrival runway.	
Runway 17C	Primary arrival runway in the east airfield. It is also used as a secondary departure runway.	
Runway 17L	Used as a secondary arrival runway in the east airfield. Typically, no departures.	
Runway 13L	Diagonal runway in the east airfield used as a secondary departure runway. Typically, no arrivals.	
Runway 31L		Diagonal runway in the west airfield not typically used unless needed due to runway closures, strong W/NW wind conditions (West Flow) or other factors. Typically, no arrivals unless needed during West Flow.
Runway 36L		Primary arrival runway in the west airfield. It is also used as a secondary departure runway.
Runway 36R		Primary departure runway in the west airfield. It is also used as a secondary arrival runway.
Runway 35L		Primary departure runway in the east airfield. It is also used as a secondary arrival runway.
Runway 35C		Primary arrival runway in the east airfield. It is also used as a secondary departure runway.
Runway 35R		Used as a secondary arrival runway in the east airfield. Typically, no departures.
Runway 31R		Diagonal runway in the east airfield used as a secondary arrival runway. Typically, no departures.

Source: DFW Runway Use Plan, 1996

Figure 3-2. DFW Runway Operating Configurations



3.4 Runway End Utilization

Runway end utilization refers to the percent of time that a particular runway end is used for departures or arrivals. It is a principal element in the definition of the noise exposure pattern. Proportional use of a runway is based largely on conditions of wind direction and velocity and the length of the runway.

HMMH calculated runway usage rates using operations data from the DFW NOMS for a recent 12-month period without any extended runway closures. DFW has had several runway reconstruction projects in the past two years, with the latest completed in October 2024. Because the Supplemental EA noise analysis should reflect typical annual runway use, the modeling incorporated runway usage rates from October 2021 through September 2022, which is fiscal year [FY] 2022.¹⁷

The outboard runways (Runways 17L/35R, 13R/31L and 13L/31R) are open daily until 11.00 p.m. The development of runway usage noise model inputs for day and night includes the assumption that the outboard runways (Runways 17L/35R, 13L/31R and 13R/31L) are not typically used after 10 p.m. or before 6 a.m. Nighttime runway utilization reflects the predominant use of the main parallel runways for arrivals and departures.¹⁸

The year's aircraft operations in the NOMS data were separated into jets and non-jets, then percentages calculated for departures and arrivals for the day and nighttime periods used in the calculation of DNL. The FY 2022 usage was normalized to the historical north flow (30 percent), south flow (70 percent) split. **Table 3-7** summarizes the modeled Existing Conditions runway use.

Long haul departure flights (greater than Stage Length 5) for widebody aircraft types (747 types, 777 types, 787 types, A380 and A350) were limited to the four long parallels for departures to provide sufficient runway length.

Table 3-7. Runway Use Percentages, Existing Conditions

Propulsion	Runway	Day Arrivals	Night Arrivals	Day Departures	Night Departures
Jet	13L	--	--	<1%	--
Jet	13R	3%	<1%	<1%	--
Jet	17C	27%	32%	<1%	1%
Jet	17L	11%	1%	<1%	--
Jet	17R	<1%	7%	39%	33%
Jet	18L	<1%	4%	31%	31%
Jet	18R	28%	24%	<1%	6%
Jet	31L	<1%	0%	<1%	--
Jet	31R	<1%	<1%	<1%	--
Jet	35C	11%	14%	<1%	<1%
Jet	35L	<1%	3%	16%	15%
Jet	35R	5%	<1%	<1%	--
Jet	36L	12%	10%	<1%	2%
Jet	36R	<1%	1%	14%	13%

¹⁷ HMMH compared FY 2022 runway use data to the runway usage for calendar year 2025; the values are within two percent or less.

¹⁸ Per FAA, nighttime operations are defined as 10:00 p.m. to 6:59 a.m. in the calculation of DNL.

Propulsion	Runway	Day Arrivals	Night Arrivals	Day Departures	Night Departures
Jet Subtotal	-	100%	100%	100%	100%
Non-Jet	13L	<1%	--	<1%	<1%
Non-Jet	13R	28%	<1%	<1%	0%
Non-Jet	17C	9%	16%	3%	2%
Non-Jet	17L	23%	<1%	<1%	--
Non-Jet	17R	<1%	4%	38%	15%
Non-Jet	18L	<1%	5%	24%	18%
Non-Jet	18R	9%	44%	5%	34%
Non-Jet	31L	<1%	--	9%	2%
Non-Jet	31R	13%	--	<1%	--
Non-Jet	35C	2%	8%	2%	<1%
Non-Jet	35L	<1%	1%	15%	7%
Non-Jet	35R	3%	<1%	--	--
Non-Jet	36L	12%	18%	<1%	15%
Non-Jet	36R	<1%	1%	3%	5%
Non-Jet Subtotal	-	100%	100%	100%	100%
Overall	13L	<1%	--	<1%	<1%
Overall	13R	4%	<1%	<1%	--
Overall	17C	27%	32%	<1%	1%
Overall	17L	11%	1%	<1%	--
Overall	17R	<1%	7%	39%	32%
Overall	18L	<1%	4%	31%	30%
Overall	18R	28%	25%	<1%	7%
Overall	31L	<1%	--	<1%	<1%
Overall	31R	1%	<1%	<1%	--
Overall	35C	11%	14%	<1%	<1%
Overall	35L	<1%	3%	16%	14%
Overall	35R	5%	<1%	<1%	--
Overall	36L	12%	11%	<1%	3%
Overall	36R	<1%	1%	14%	12%
Overall Subtotal	-	100%	100%	100%	100%

Sources: DFW NOMS FY2022, HMMH analysis

3.5 Flight Tracks

The flight tracks used in the modeling were originally developed from DFW NOMS data (under previous DFW noise analysis projects¹⁹), verified and revised where necessary based on the calendar year 2024 flight track data for the recently completed Runway 18L/36R Rehabilitation Environmental Assessment. HMMH used an industry-standard method to review the model tracks, analyzing a full year of DFW's current NOMS data, first separating the flight tracks into manageable groups by operation type (i.e., arrival, departure), runway end, aircraft type (i.e., jet, non-jet), and destination/direction. For this Supplemental EA, HMMH used a total of 760 model tracks from the prior AEDT study, consisting of 354 arrival tracks and 406 departure tracks. The FAA's established routes for aircraft arriving and departing from DFW are readily apparent in the analysis process.

¹⁹ DFW Runway 17R/35L Rehabilitation EA (2022) and revised as part of the 2024 Central Terminal Area Expansion Project.

The track data analysis verified the location, density, and width of existing flight corridors. Departure corridors are defined by a series of individual flight tracks located across the width of the corridor. Generally, aircraft on approach to a given runway end follow a narrower corridor due to the use of navigational instruments. To represent DFW flight corridors in AEDT, consolidated flight tracks were originally developed from the radar data and assigned a track ID. The resulting adjusted model flight tracks are shown in **Figure 3-3** (Arrival Tracks) and **Figure 3-4** (Departure Tracks). Geometrically similar groups with wide dispersion are represented as a track “bundle” with a ‘backbone’ track and one to four ‘dispersion’ sub tracks on either side of the backbone, resulting in three, five, seven, or nine total model tracks representing the corridor. All model tracks for jet and non-jet aircraft are presented in **Figure 3-3** and **Figure 3-4**.

Appendix B provides tables of the modeled flight track percentages by runway end and operation.

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DALLAS
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All Arrival Model Tracks

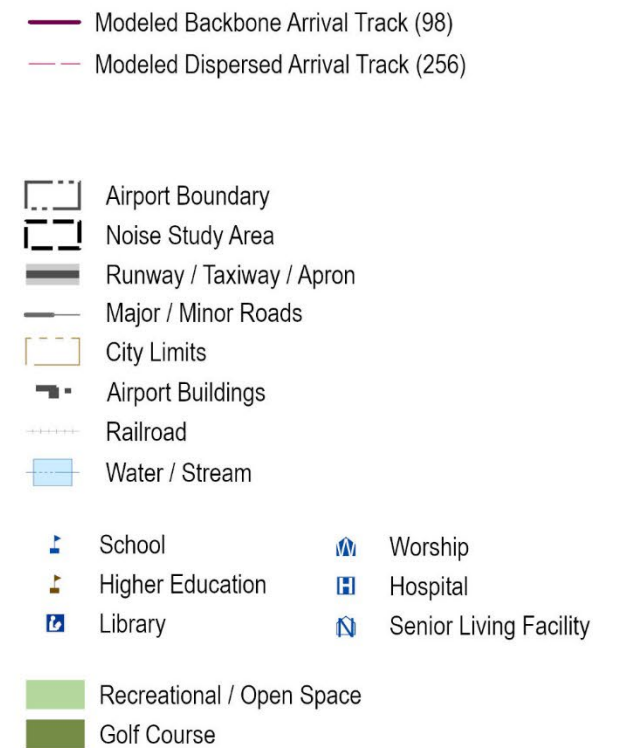
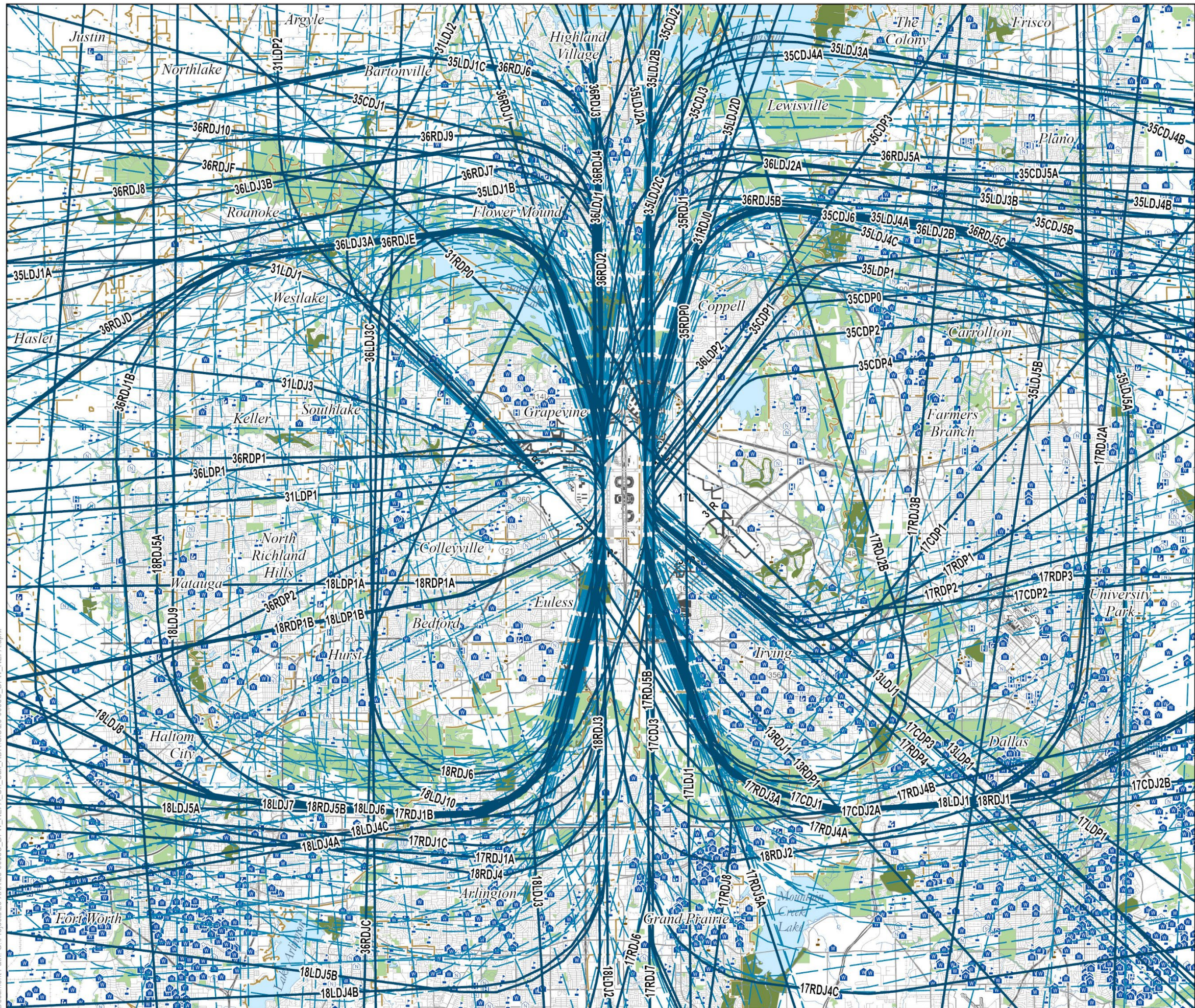


Figure 3-3. Modeled Arrival Flight Tracks

Data Sources: North Central Texas Council of Governments (NCTCOG); Strategic Mapping Program (StratMap); AirNav.com; ESRI, Inc.



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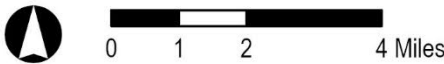


All Departure Model Tracks

- Modeled Backbone Departure Track (120)
- Modeled Dispersed Departure Track (286)
- Airport Boundary
- Noise Study Area
- Runway / Taxiway / Apron
- Major / Minor Roads
- City Limits
- Airport Buildings
- Railroad
- Water / Stream
- School
- Higher Education
- Library
- Worship
- Hospital
- Senior Living Facility
- Recreational / Open Space
- Golf Course

Figure 3-4. Modeled Departure Flight Tracks

Data Sources: North Central Texas Council of Governments (NCTCOG); Strategic Mapping Program (StratMap); AirNav.com; ESRI, Inc.



3.6 Existing Noise Exposure Contours

DNL contours are a graphic representation of how the noise from DFW's annual average daily aircraft operations is distributed over the surrounding area. The size and shape of the noise exposure contours are reflective of the south and north flow at DFW. Noise contour patterns extend from DFW along each extended runway centerline, reflective of the flight tracks used by all aircraft. The relative distance of a contour from DFW along each route is a function of the frequency of use of each runway end for total aircraft arrivals and departures, and the type of aircraft assigned to the respective runways.

Figure 3-5 shows the annual noise exposure pattern at DFW for the Existing Conditions. Noise contours are presented for DNL 65 dB, 70 dB, and 75 dB. For the Existing Conditions, the DNL contours extend away from DFW to both the north and south sides of the airport in two main lobes along the extended centerlines of the outboard main parallel runways. On the north side, the contours extend off DFW property over noise-compatible land use. On the south side, the contour lobes remain on airport property. A separate area of the DNL 65 dB contour extends slightly off airport property over noise-compatible land use north and south of Runway 17L/35R. The DNL 70 dB contour for the Existing Conditions does not extend off DFW property.

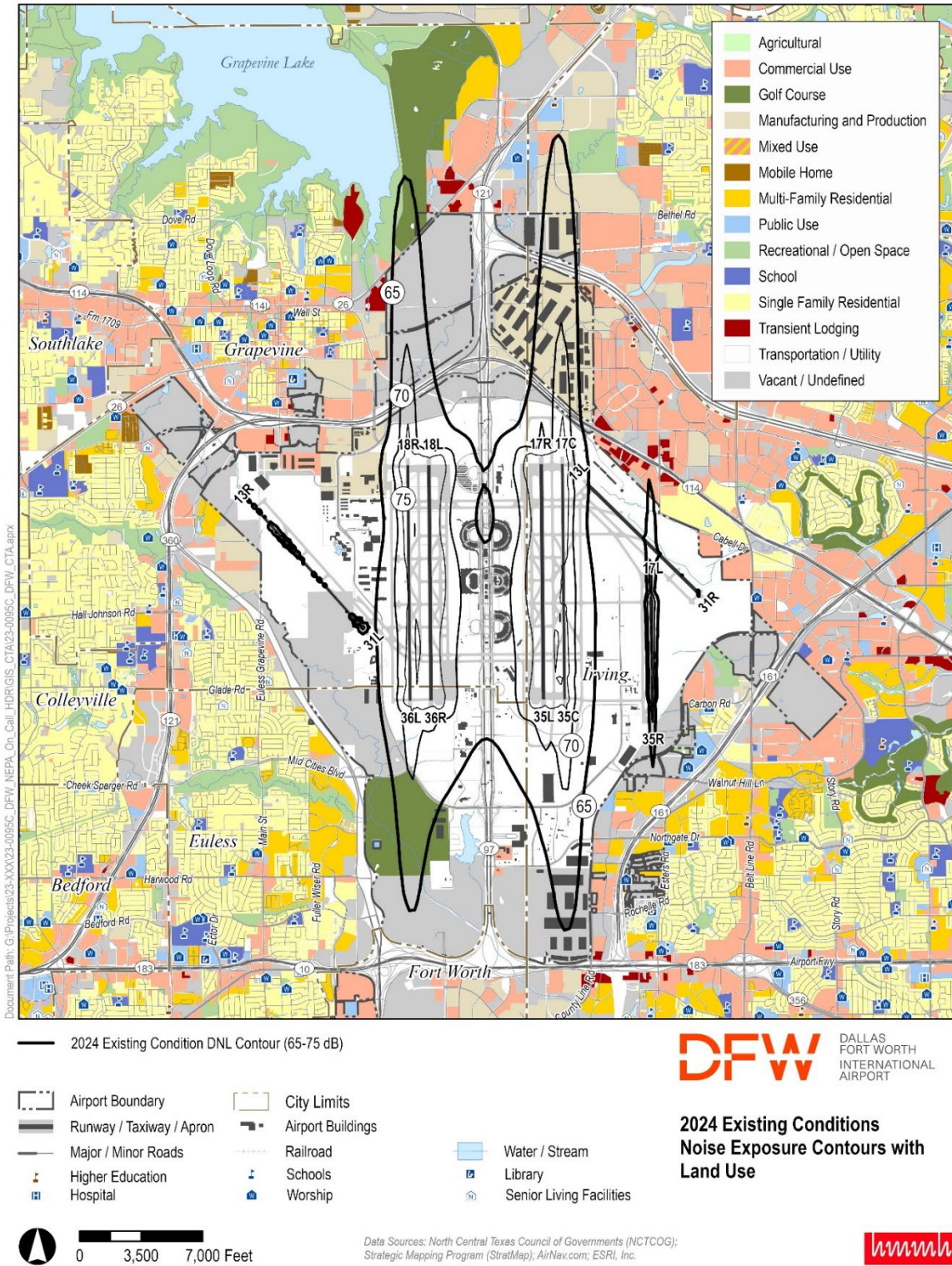
Table 3-8 provides estimates of the total area, on-airport area, and off-airport area exposed to aircraft noise of at least DNL 65 dB for the Existing Conditions. Approximately 11.88 square miles of land fall within the Existing Conditions DNL 65 dB or higher noise exposure area. Of the total land area, approximately 0.58 square miles exposed to DNL 65 dB or higher is located off-Airport (the remaining 11.30 square miles are located on DFW property).

Table 3-8. Estimated Land Area within Existing Conditions DNL 65 dB Contour

Contour Range	Airport Property Estimated Land Area (sq mi)	Non-Airport Property Estimated Land Area (sq mi)	Total Estimated Land Area (sq mi)
DNL 65-70 dB	6.86	0.53	7.39
DNL 70-75 dB	2.20	0.05	2.25
DNL 75+ dB	2.24	0.00	2.24
Total	11.30	0.58	11.88

Source: HMMH analysis, 2026

Figure 3-5. Existing Conditions Noise Exposure Contours with Land Use



3.7 Existing Conditions Noise Compatible Land Use

There are no schools, churches, nursing homes, hospitals, historical properties or libraries within the Existing Conditions DNL 65 dB or greater contours. Furthermore, there are no single-family, multifamily, or manufactured housing within the Existing Conditions DNL 65 dB contours (see **Figure 3-5**). The DNL 65 dB contour extending north from Runway 18R/36L extends off airport property over the western edge of Mariner Point Park and a portion of the Cowboys Golf Club course and to the south, the DNL 65 dB contour extends over the Bear Creek Golf Course which is on airport property. The park and golf courses are active recreation areas and are compatible land uses within the DNL 65 dB contours. **Table 3-9** summarizes the residential population and housing units exposed to noise levels exceeding DNL 65 dB for the Existing Conditions.

Table 3-9. Estimated Land Area within Existing Conditions Noise Exposure Contour

Analysis Category	Housing Type	DNL 65-70 dB	DNL 70-75 dB	DNL 75+ dB	Total (DNL 65 dB or greater)
Housing Units	Single-Family Residential	0	0	0	0
Housing Units	Multi-Family Residential	0	0	0	0
Housing Units	Manufactured Housing	0	0	0	0
Total Units	-	0	0	0	0
Population	Single-Family Residential	0	0	0	0
Population	Multi-Family Residential	0	0	0	0
Population	Manufactured Housing	0	0	0	0
Total Units	-	0	0	0	0

Source: 2020 US Census Block Data, HMMH analysis, 2026

4. Future Alternatives

The following sections discuss the development of the aircraft operational forecast, runway use, flight tracks and flight track usage for the future No Action and Proposed Action Alternatives. The following conditions have been evaluated in the Supplemental EA with 2031 being the year of implementation and 2036 being implementation year plus five:

- 2031 No Action
- 2031 Proposed Action
- 2036 No Action
- 2036 Proposed Action

Sections 4.4 and 4.7 provide the comparison between the resulting noise calculations for the two alternatives for each future year.

4.1 Forecast Aircraft Operations

Construction of Terminal F and related facilities is expected to occur between 2026 and 2031. DFW submitted forecast fiscal year operations developed from the FAA 2024 Terminal Area Forecast (TAF) for 2031 and 2036 to the FAA for approval in a memorandum dated April 1, 2026. The FAA approved forecast operations and enplanements²⁰ for the Supplemental EA (see **Appendix C** for details). Since the TAF forecast numbers represent the fiscal year, an adjustment to the operational data was made to develop the forecast numbers for the calendar year. The future forecast Calendar Year (CY) operations were derived by multiplying the fiscal year (FY) total by 75 percent (which represents 9 months: January–September) and adding it to the remaining 25 percent (representing 3 months: October–December) of the following FY, multiplied by the 2024 TAF growth rate between the two fiscal years for each OPSNET category. This was done as follows for each year:

- $CY\ 2031\ operations = 75\ percent\ of\ operations + (25\ percent\ of\ Operations * TAF\ growth\ rate\ between\ 2031\ and\ 2032)$
- $CY\ 2036\ operations = 75\ percent\ of\ operations + (25\ percent\ of\ Operations * TAF\ growth\ rate\ between\ 2036\ and\ 2037)$

Table 4-1 presents the fiscal year totals as reported in Appendix D in the approved DFW Operations Memo, the overall FY-to-CY adjustment factor from the 2024 FAA TAF, and the calendar year operations to be modeled for 2031 and 2036.

Table 4-1. Fiscal Year to Calendar Year Adjustment

Alternative	FY	CY	Adjustment
No Action 2031	820,046	823,078	1.003697
Proposed Action 2031	890,491	893,512	1.003700
No Action 2036	830,339	833,463	1.003748
Proposed Action 2036	961,983	956,603	1.003763

Sources: FAA TAF, DFW Ops Memo; Appendix D, HMMH analysis, 2026

²⁰ Approved by FAA on April 3, 2026

Table 4-2 lists the annual operations by operational category and the same data, divided by the number of days in the year to obtain the AAD operations for each alternative for 2031 and 2036. Further details on the forecast development and the full breakdown of CY data can be found in **Appendix C**.

The fleet mix for each forecast and alternative year (2031, 2036) was based on the table provided in Appendix D of the DFW Operations Memo (reproduced in **Appendix C**). The split between day and night operations from the 2024 data was applied to the future year data sets, and the cargo operations were separated from passenger operations to reflect the constrained level of cargo operations reflected in the original CTA EA.

Table 4-2. Annual and AAD Forecast Operations for Noise Model Input

Alternative	Operations Format	Air Carrier	Air Carrier Cargo	Air Taxi	Air Taxi Cargo	General Aviation/Military	Total
No Action 2031	Annual	762,402	29,770	22,684	1,492	6,729	823,078
Proposed Action 2031	Annual	830,785	29,799	24,869	1,465	6,593	893,512
Difference		68,383	29	2,185	(27)	(136)	70,434
No Action 2036	Annual	794,371	29,780	1,178	1,486	6,648	833,463
Proposed Action 2036	Annual	925,031	29,783	1,601	1,486	7,702	965,603
Difference		130,660	3	423	(0)	1,054	132,140
No Action 2031	AAD	2,088.8	81.6	62.1	4.1	18.4	2,255.0
Proposed Action 2031	AAD	2,276.1	81.6	68.1	4.0	18.1	2,448.0
Difference		187.4	0.1	6.0	(0.1)	(0.4)	193.0
No Action 2036	AAD	2,170.4	81.4	3.2	4.1	18.2	2,277.2
Proposed Action 2036	AAD	2,527.4	81.4	4.4	4.1	21.0	2,638.3
Difference		357.0	0.0	1.2	0.0	2.9	361.0

Sources: FAA OPSNET, FAA TAF, DFW Ops Memo, HMMH analysis, 2026

4.2 Future (2031) No Action Alternative

Under the (2031) No Action Alternative, the CTA would not be developed. There would be no changes to the use of existing 180 gates (170 contact gates and 10 ground-loaded gates) at DFW. Passenger operations would be constrained due to lack of sufficient facilities, and overall operational levels would grow at a minimal growth rate to over 823,000 operations. The Future (2031) No Action Alternative would include the additional cargo operations disclosed in the 19th Street Cargo EA Proposed Action.

4.2.1 Aircraft Activity Levels and Fleet Mix

The 823,078 annual operations forecasted for year 2031 translate to 2,255 AAD operations to be modeled for the Future (2031) No Action Alternative noise analysis. **Table 4-3** provides representative aircraft types and the number of average daily operations that were modeled in AEDT for the Future (2031) No Action Alternative. The Future (2031) No Action Alternative fleet mix would include changes in the Air Carrier fleet mix (the retirement of the older A333, A343 and MD11 aircraft) and a reduction in Air Taxi fleet operations (reduction in 50 seat and smaller regional jets such as the CRJ2 and E135) compared to the existing conditions. The Future (2031) No Action Alternative includes 2,255 total daily operations, 11.8 percent of which occurred during the DNL nighttime hours of 10:00 p.m. to 6:59 a.m.

Table 4-3. DFW Modeled Average Daily Aircraft Operations for Future (2031) No Action Alternative

Tower Category	Propulsion	Aircraft Type	Arrivals Day	Arrivals Night	Departures Day	Departures Night	Total
Air Carrier Cargo	Jet	A306	3.4	0.2	3.1	0.5	7.2
Air Carrier Cargo	Jet	B738	8.5	0.9	8.3	1.1	18.8
Air Carrier Cargo	Jet	B744	2.2	1.0	2.1	1.1	6.4
Air Carrier Cargo	Jet	B748	1.1	0.8	1.2	0.7	3.7
Air Carrier Cargo	Jet	B752	4.8	0.4	4.6	0.7	10.6
Air Carrier Cargo	Jet	B763	7.7	3.4	5.9	5.2	22.2
Air Carrier Cargo	Jet	B77L	3.9	2.4	2.4	3.9	12.6
Air Carrier Passenger	Jet	A20N	33.5	12.2	33.6	12.1	91.3
Air Carrier Passenger	Jet	A21N	24.7	5.4	26.4	3.8	60.3
Air Carrier Passenger	Jet	A319	92.3	8.3	91.7	8.9	201.2
Air Carrier Passenger	Jet	A320	52.8	7.4	54.0	6.2	120.4
Air Carrier Passenger	Jet	A321	189.1	27.4	192.4	23.9	432.7
Air Carrier Passenger	Jet	A359	0.3	0.0	0.3	0.0	0.6
Air Carrier Passenger	Jet	A35K	0.9	0.0	0.7	0.2	1.8
Air Carrier Passenger	Jet	A388	1.2	0.0	1.2	0.1	2.5
Air Carrier Passenger	Jet	B38M	30.0	8.7	35.2	3.5	77.3
Air Carrier Passenger	Jet	B39M	9.6	4.3	12.3	1.6	27.8
Air Carrier Passenger	Jet	B737	6.4	1.9	8.3	0.1	16.7
Air Carrier Passenger	Jet	B738	203.6	24.3	208.0	19.8	455.8
Air Carrier Passenger	Jet	B739	3.2	1.8	4.4	0.7	10.2
Air Carrier Passenger	Jet	B744	0.8	0.3	0.8	0.3	2.1
Air Carrier Passenger	Jet	B748	0.1	0.3	0.2	0.1	0.7
Air Carrier Passenger	Jet	B772	9.1	1.1	9.7	0.4	20.3
Air Carrier Passenger	Jet	B77W	6.0	0.0	5.2	0.8	12.0
Air Carrier Passenger	Jet	B788	3.3	1.4	4.7	0.0	9.5
Air Carrier Passenger	Jet	B789	15.3	2.3	15.2	2.4	35.2
Air Carrier Passenger	Jet	BCS1	37.6	3.4	36.4	4.4	81.8
Air Carrier Passenger	Jet	BCS3	22.9	3.9	25.1	1.8	53.8
Air Carrier Passenger	Jet	E190	1.9	0.0	1.9	0.0	3.8
Air Carrier Passenger	Regional Jet	CRJ7	58.1	8.3	61.2	5.2	132.8
Air Carrier Passenger	Regional Jet	CRJ9	22.7	3.1	23.4	2.4	51.7
Air Carrier Passenger	Regional Jet	E170	74.7	9.3	76.5	7.5	168.0
Air Carrier Passenger	Regional Jet	E75L	8.4	0.7	8.4	0.7	18.3
Air Carrier Total	-	-	940.0	145.1	964.9	120.2	2,170.3
Air Taxi Cargo	Non-Jet	B190	0.5	0.0	0.4	0.2	1.1
Air Taxi Cargo	Non-Jet	BE99	0.7	0.0	0.6	0.1	1.3
Air Taxi Cargo	Non-Jet	C208	0.7	0.1	0.7	0.1	1.6
Air Taxi Passenger	Jet	C68A	0.3	0.0	0.3	0.0	0.7
Air Taxi Passenger	Jet	C700	0.1	0.0	0.1	0.0	0.2
Air Taxi Passenger	Jet	E135	14.9	0.0	14.8	0.0	29.7
Air Taxi Passenger	Jet	E145	15.2	0.0	15.2	0.0	30.5
Air Taxi Passenger	Non-Jet	C208	0.5	0.0	0.5	0.0	1.1
Air Taxi Total	-	-	32.9	0.2	32.7	0.5	66.2
General Aviation	Jet	C25M	0.4	0.0	0.4	0.0	0.9
General Aviation	Jet	C56X	0.4	0.0	0.4	0.0	0.9
General Aviation	Jet	CL35	0.2	0.0	0.2	0.0	0.4
General Aviation	Jet	E55P	0.2	0.0	0.2	0.0	0.4
General Aviation	Jet	GLF4	0.3	0.0	0.3	0.0	0.7
General Aviation	Jet	GLF5	0.2	0.0	0.2	0.0	0.4
General Aviation	Jet	LJ35	0.4	0.0	0.4	0.0	0.9
General Aviation	Non-Jet	PC12	6.6	0.3	6.3	0.5	13.7
General Aviation Total	-	-	8.9	0.3	8.6	0.6	18.4
Grand Total	-	-	981.9	145.6	1,006.2	121.3	2,255.0

Note: Totals may not match exactly due to rounding.

Sources: FAA OPSNET, FAA TAF, DFW Ops Memo, HMMH analysis, 2026

4.2.2 Aircraft Stage Length and Operational Profiles

Table 4-4 provides the modeled stage length distribution based on associated trip distances by aircraft type. The trip lengths flown from DFW for the Future (2031) No Action Alternative are similar to Existing Conditions except for the retirement of the A333, A343, and MD11 aircraft.

Table 4-4. Modeled Departure Stage Length Distribution by Aircraft Type for Future (2031) No Action Alternative

Propulsion	Aircraft Type	SL1	SL2	SL3	SL4	SL5	SL6	SL7	SL8	SL9	SLM
Jet	A20N	6.6%	65.1%	24.6%	3.7%	-	-	-	-	-	-
Jet	A21N	4.6%	53.3%	39.1%	0.8%	2.2%	-	-	-	-	-
Jet	A306	20.0%	55.9%	24.1%	-	-	-	-	-	-	-
Jet	A319	27.9%	49.5%	21.9%	0.8%	-	-	-	-	-	-
Jet	A320	19.7%	52.0%	28.3%	0.1%	-	-	-	-	-	-
Jet	A321	6.2%	59.9%	32.5%	1.1%	0.2%	-	-	-	-	-
Jet	A359	-	-	-	-	-	-	99.7%	0.3%	-	-
Jet	A35K	-	-	-	-	-	-	-	23.0%	77.0%	-
Jet	A388	-	-	-	-	-	100.0%	-	-	-	-
Jet	B38M	15.0%	30.7%	46.1%	8.3%	-	-	-	-	-	-
Jet	B39M	3.8%	3.6%	92.6%	-	-	-	-	-	-	-
Jet	B737	28.2%	29.2%	42.6%	-	-	-	-	-	-	-
Jet	B738	21.8%	46.0%	30.4%	1.7%	-	-	-	-	-	-
Jet	B739	7.2%	3.6%	89.3%	-	-	-	-	-	-	-
Jet	B744	3.0%	8.2%	22.1%	-	25.7%	21.0%	-	20.1%	-	-
Jet	B748	-	68.9%	2.7%	-	28.4%	-	-	-	-	-
Jet	B752	43.9%	34.5%	21.5%	-	-	-	-	-	-	-
Jet	B763	22.5%	56.9%	20.6%	-	-	-	-	-	-	-
Jet	B772	0.6%	12.8%	9.5%	2.5%	7.9%	46.1%	12.5%	8.2%	-	-
Jet	B77L	0.8%	20.7%	-	-	18.8%	30.4%	-	<0.1%	29.3%	-
Jet	B77W	0.6%	3.5%	2.4%	-	-	57.7%	-	14.5%	-	-
Jet	B788	0.8%	10.2%	10.2%	-	23.9%	18.9%	5.1%	30.7%	-	-
Jet	B789	0.4%	11.0%	4.1%	-	2.9%	27.5%	9.2%	20.0%	20.3%	4.6%
Jet	BCS1	0.3%	18.0%	81.7%	-	-	-	-	-	-	-
Jet	BCS3	-	35.8%	64.2%	-	-	-	-	-	-	-
Jet	C25M	100.0%	-	-	-	-	-	-	-	-	-
Jet	C56X	100.0%	-	-	-	-	-	-	-	-	-
Jet	C68A	100.0%	-	-	-	-	-	-	-	-	-
Jet	C700	100.0%	-	-	-	-	-	-	-	-	-
Jet	CL35	100.0%	-	-	-	-	-	-	-	-	-
Jet	CRJ7	69.8%	30.1%	0.1%	-	-	-	-	-	-	-
Jet	CRJ9	53.5%	46.4%	0.2%	-	-	-	-	-	-	-
Jet	E135	100%	-	-	-	-	-	-	-	-	-
Jet	E145	100%	-	-	-	-	-	-	-	-	-
Jet	E170	77.3%	22.6%	0.1%	-	-	-	-	-	-	-
Jet	E190	-	93.9%	6.1%	-	-	-	-	-	-	-
Jet	E55P	100%	-	-	-	-	-	-	-	-	-
Jet	E75L	62.6%	36.0%	1.4%	-	-	-	-	-	-	-
Jet	GLF4	100%	-	-	-	-	-	-	-	-	-
Jet	GLF5	100%	-	-	-	-	-	-	-	-	-
Jet	LJ35	100%	-	-	-	-	-	-	-	-	-
Non-Jet	B190	100%	-	-	-	-	-	-	-	-	-
Non-Jet	BE99	100%	-	-	-	-	-	-	-	-	-
Non-Jet	C208	100%	-	-	-	-	-	-	-	-	-
Non-Jet	PC12	100%	-	-	-	-	-	-	-	-	-

Note: SL = Stage Length

Source: FAA OPSNET, FAA TAF, DFW Ops Memo, HMMH analysis, 2026

4.2.3 Runway Utilization for No Action Alternative

Runway end utilization for all of the future alternatives is similar to Existing Conditions (see **Table 3-7**). Runway use data from the FAA System Wide Information Management (SWIM) system data was used to develop the future runway use percentages. The runway use percentage for day and night includes the assumption that the outboard runways (Runways 17L/35R, 13L/31R and 13R/31L) are not typically used after 10 p.m. or before 6 a.m.

Relative to Existing Conditions, the No Action Alternative results in only minor changes to runway utilization patterns. These changes are summarized below:

- Daytime south flow – There are slightly less arrivals (1 percent to 3 percent) to Runway 13R and 17C and slightly more arrivals (1 percent to 2 percent) on Runway 17L and 18R.
- Nighttime south flow – There are less arrivals (7 percent) to Runway 17C and more arrivals (3 percent to 5 percent) on Runway 17R and 18L.
- Daytime north flow – There are slightly less arrivals (3 percent) to Runway 35C and slightly more arrivals (1 percent to 3 percent) on Runway 35R and 36L.
- Nighttime north flow – There are slightly less arrivals (3 percent) to Runway 35C and slightly more arrivals (1 percent to 2 percent) on Runway 35L and 36R.
- South flow departures show very little difference (within 1 percent) during the day and a small reduction (2 percent) on Runway 17R and a small increase (2 percent) on Runway 17C at night.
- North flow departures show very little difference (within 1 percent) during the day and a small reduction (1 percent) on Runway 35L and Runway 36L and a small increase (2 percent) on Runway 35C and 36R at night.

Table 4-5 provides the breakdown by time of day for future arrivals and departures.

Table 4-5. Runway Use Percentages, Future 2031 and 2036 Conditions

Runway	Day Arrivals	Night Arrivals	Total	Day Departures	Night Departures	Total
13L	0%	0%	0%	0%	0%	0%
13R	3%	<1%	3%	0%	0%	0%
17C	24%	25%	24%	<1%	2%	<1%
17L	13%	<1%	12%	0%	0%	0%
17R	<1%	12%	1%	39%	30%	38%
18L	<1%	7%	<1%	31%	31%	31%
18R	29%	25%	29%	<1%	6%	<1%
31L	0%	0%	0%	<1%	<1%	<1%
31R	1%	<1%	1%	0%	0%	0%
35C	8%	11%	8%	<1%	2%	<1%
35L	<1%	4%	<1%	15%	13%	15%
35R	8%	<1%	7%	0%	0%	0%
36L	13%	11%	13%	<1%	2%	<1%
36R	<1%	3%	<1%	14%	14%	14%
-	100%	100%	100%	100%	100%	100%

Sources: FAA SWIM, Centurion Planning and Design, 2023

4.2.4 Flight Tracks for No Action Alternative

Flight track locations and percent utilization for the Future (2031) No Action Alternative would be expected to be the same as the Existing Condition (see **Section 3.5**).

4.2.5 Noise Exposure Contours - No Action Alternative

Figure 4-1 shows the 12-month noise exposure at DFW for the No Action Alternative. Noise contours are presented for DNL 65 dB, 70 dB, and 75 dB levels. Under the (2031) No Action Alternative, the DNL contours are similar to Existing Conditions; the size and shape of the noise exposure contours are reflective of the south and north flow at DFW. Noise contour patterns extend from DFW along each extended runway centerline, reflective of the flight tracks used by all aircraft. The relative distance of a contour from DFW along each route is a function of the frequency of use of each runway end for total aircraft arrivals and departures, and the type of aircraft assigned to the respective runways.

In the Future (2031) No Action Alternative, the DNL contours would extend away from DFW on the north side in two main lobes along the extended centerline of the outboard parallel runway extending off DFW property to north of Bethel Road, and on the south side in two main lobes along the extended centerline of the outboard parallel runway but would remain on DFW property. The DNL 65 dB would also extend off airport property north of Runway 17L and south of Runway 35R over compatible land use. The DNL 70 dB contour would barely extend off DFW property north of Runways 18R and 17C to across SH 114. There would be no noise-sensitive land use within the Future (2031) No Action Alternative DNL 65 dB or greater contours.

Table 4-6 provides estimates of the total area, on-airport area, and off-airport area exposed to aircraft noise of at least DNL 65 dB for the No Action Alternative. Approximately 12.91 square miles of land fall within the 65 DNL or higher noise exposure area. Of the total land area, approximately 0.70 square miles is located off Airport property, with the remaining 12.20 square miles located on DFW property.

Table 4-6. Estimated Land Area within No Action Alternative (2031) Noise Exposure Contour

Contour Range	Airport Property Estimated Land Area (sq mi)	Non-Airport Property Estimated Land Area (sq mi)	Total Estimated Land Area (sq mi)
DNL 65-70 dB	7.37	0.65	8.02
DNL 70-75 dB	2.41	0.05	2.47
DNL 75+ dB	2.42	0.00	2.42
Total	12.20	0.70	12.91

Source: HMMH analysis, 2026

4.2.6 Noise/Land Use Compatibility - No Action Alternative

Under the (2031) No Action Alternative, no schools, churches, nursing homes, hospitals, historical properties, or libraries would be located within any of the DNL 65 dB or greater noise contours. In addition, no single-family, multifamily, or manufactured housing would be within the No Action Alternative DNL 65 dB contours (see **Figure 4-1**). The DNL 65 dB contour extending north from Runway 18R/36L extends off airport property

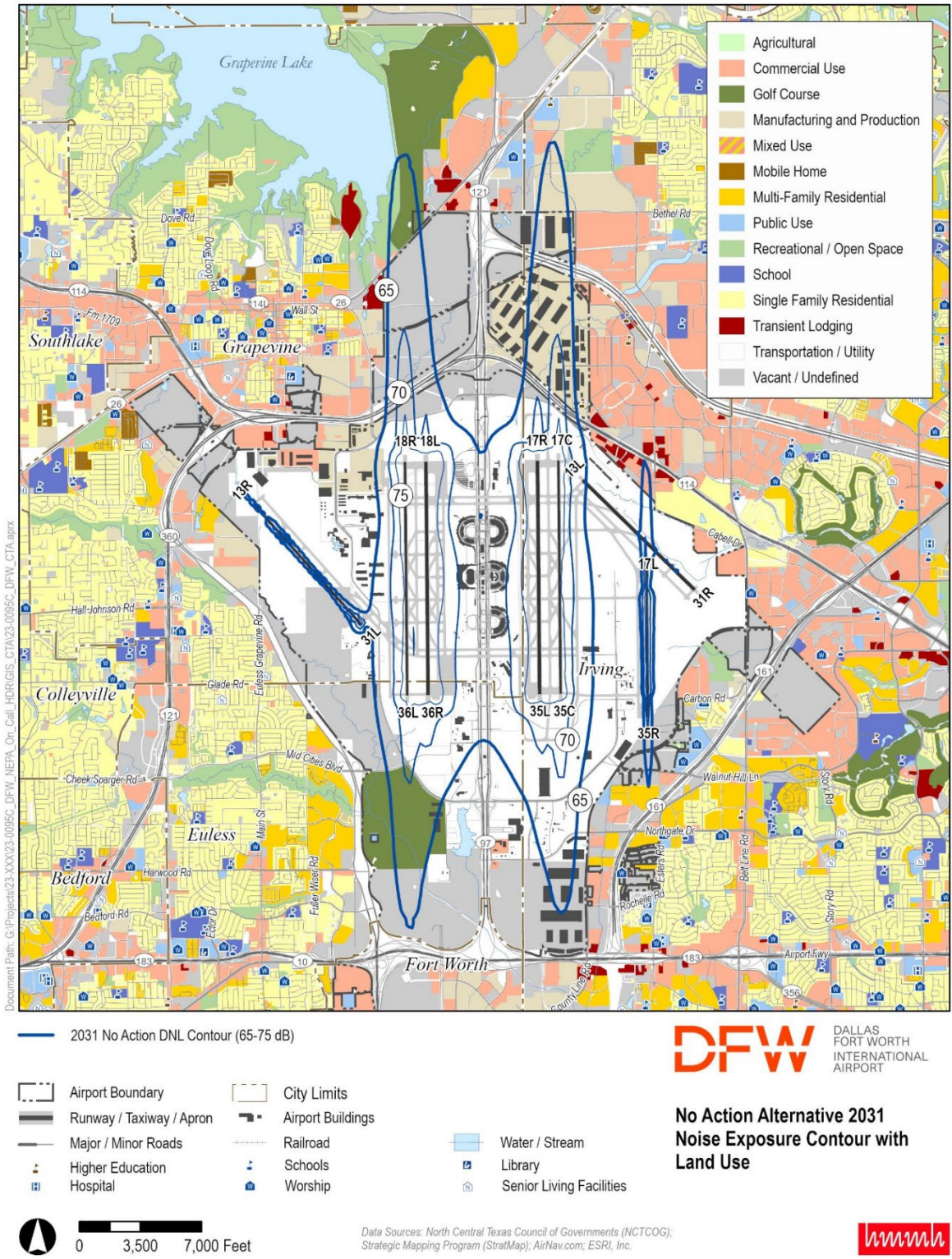
over the western edge of Mariner Point Park and a portion of the Cowboys Golf Club course and to the south, the DNL 65 dB contour extends over the Bear Creek Golf Course which is on airport property. The park and golf courses are active recreation areas and are compatible land uses within the DNL 65 dB contours. **Table 4-7** summarizes the residential population and housing units exposed to noise levels exceeding DNL 65 dB for the No Action Alternative.

Table 4-7. Noncompatible Land Use Housing and Population – Future No Action Alternative (2031)

Analysis Category	Housing Type	DNL 65-70 dB	DNL 70-75 dB	DNL 75+ dB	Total (DNL 65 dB or greater)
Housing Units	Single-Family Residential	0	0	0	0
Housing Units	Multi-Family Residential	0	0	0	0
Housing Units	Manufactured Housing	0	0	0	0
Total Units	-	0	0	0	0
Population	Single-Family Residential	0	0	0	0
Population	Multi-Family Residential	0	0	0	0
Population	Manufactured Housing	0	0	0	0
Total Units	-	0	0	0	0

Source: 2020 US Census Block Data, HMMH analysis, 2026

Figure 4-1. No Action Alternative (2031) Noise Exposure Contour with Land Use



4.3 Future (2031) Proposed Action Alternative

The proposed project would be completed and operational in 2031, and the Proposed Action Alternative represents the year of implementation for the Supplemental EA projects. The Future (2031) Proposed Action Alternative would include the additional cargo operations disclosed in the 19th Street Cargo EA Proposed Action. All forecasted operational demand would be accommodated with the 31 additional gates and 9 additional gates (converted from Hardstands) in the Proposed Action Alternative. Therefore, the forecast annual operations for Future (2031) Proposed Action Alternative would grow to over 890,000 annual operations.

4.3.1 Aircraft Activity Levels and Fleet Mix

The 893,512 annual operations predicted for year 2031 translate to 2,448 AAD operations to be modeled for the Future (2031) Proposed Action Alternative noise analysis. **Table 4-8** provides representative aircraft and the number of average daily operations that were modeled in AEDT for the Future (2031) Proposed Action Alternative. The Future (2031) Proposed Action fleet mix would include the additional operations in the Air Carrier and Air Taxi categories (an additional 187 operations in Air Carrier and 6 operations in Air Taxi) compared to the Future (2031) No Action Alternative. The Future (2031) Proposed Action Alternative fleet mix includes the same retirement of older aircraft types with increases in B738, A321, E170 and CRJ9 operations compared to the No Action. The Future (2031) Proposed Action Alternative AAD would include 2,448 total operations, 11.8 percent of which occurred during the DNL nighttime hours of 10:00 p.m. to 6:59 a.m.

Table 4-8. DFW Modeled Average Daily Aircraft Operations for Future (2031) Proposed Action Alternative

Tower Category	Propulsion	Aircraft Type	Arrivals Day	Arrivals Night	Departures Day	Departures Night	Total
Air Carrier Cargo	Jet	A306	4.6	0.3	4.2	0.7	9.8
Air Carrier Cargo	Jet	B738	7.0	0.8	6.8	0.9	15.5
Air Carrier Cargo	Jet	B744	2.2	1.0	2.1	1.1	6.4
Air Carrier Cargo	Jet	B748	1.1	0.8	1.2	0.7	3.7
Air Carrier Cargo	Jet	B752	4.9	0.4	4.7	0.7	10.7
Air Carrier Cargo	Jet	B763	8.0	3.6	6.2	5.4	23.2
Air Carrier Cargo	Jet	B77L	3.8	2.3	2.4	3.8	12.4
Air Carrier Passenger	Jet	A20N	32.8	12.0	32.9	11.9	89.6
Air Carrier Passenger	Jet	A21N	26.9	5.9	28.8	4.2	65.8
Air Carrier Passenger	Jet	A319	96.1	8.6	95.4	9.2	209.3
Air Carrier Passenger	Jet	A320	59.1	8.4	60.4	7.0	134.9
Air Carrier Passenger	Jet	A321	206.3	29.8	209.9	26.1	472.1
Air Carrier Passenger	Jet	A359	0.4	0.0	0.3	0.0	0.7
Air Carrier Passenger	Jet	A35K	1.0	0.0	0.7	0.3	2.0
Air Carrier Passenger	Jet	A388	1.1	0.0	1.1	0.0	2.2
Air Carrier Passenger	Jet	B38M	32.2	9.4	37.8	3.7	83.0
Air Carrier Passenger	Jet	B39M	10.3	4.6	13.2	1.7	29.8
Air Carrier Passenger	Jet	B737	6.6	2.0	8.6	0.1	17.3
Air Carrier Passenger	Jet	B738	212.8	25.4	217.4	20.7	476.4
Air Carrier Passenger	Jet	B739	3.4	1.9	4.6	0.8	10.6
Air Carrier Passenger	Jet	B744	3.0	1.2	3.0	1.3	8.5
Air Carrier Passenger	Jet	B748	0.1	0.5	0.4	0.2	1.2
Air Carrier Passenger	Jet	B772	13.2	1.5	14.1	0.6	29.4
Air Carrier Passenger	Jet	B773	4.6	0.0	4.0	0.7	9.4
Air Carrier Passenger	Jet	B77W	6.0	0.0	5.2	0.8	12.0
Air Carrier Passenger	Jet	B788	1.1	1.1	1.1	1.1	4.4

Tower Category	Propulsion	Aircraft Type	Arrivals Day	Arrivals Night	Departures Day	Departures Night	Total
Air Carrier Passenger	Jet	B789	17.3	2.6	17.2	2.7	39.7
Air Carrier Passenger	Jet	BCS1	38.9	3.5	37.7	4.5	84.7
Air Carrier Passenger	Jet	BCS3	23.8	4.1	26.0	1.9	55.7
Air Carrier Passenger	Jet	E190	2.3	0.0	2.3	0.0	4.7
Air Carrier Passenger	Regional Jet	CRJ7	68.9	9.8	72.6	6.1	157.4
Air Carrier Passenger	Regional Jet	CRJ9	26.9	3.7	27.7	2.9	61.3
Air Carrier Passenger	Regional Jet	E170	83.5	10.4	85.5	8.4	187.8
Air Carrier Passenger	Regional Jet	E75L	9.3	0.8	9.4	0.8	20.3
Air Carrier Total	-	-	1,021.9	157.0	1049.0	129.9	2,357.8
Air Taxi Cargo	Non-Jet	B190	0.9	0.0	0.7	0.3	2.0
Air Taxi Cargo	Non-Jet	BE99	0.5	0.0	0.5	0.1	1.1
Air Taxi Cargo	Non-Jet	C208	0.4	0.1	0.4	0.1	1.0
Air Taxi Passenger	Jet	C68A	0.6	0.0	0.6	0.0	1.2
Air Taxi Passenger	Jet	C700	0.2	0.0	0.2	0.0	0.5
Air Taxi Passenger	Jet	E135	15.3	0.0	15.2	0.0	30.6
Air Taxi Passenger	Jet	E145	15.7	0.0	15.7	0.0	31.3
Air Taxi Passenger	Non-Jet	BE20	0.0	0.6	0.0	0.6	1.1
Air Taxi Passenger	Non-Jet	C208	1.7	0.0	1.7	0.0	3.4
Air Taxi Total	-	-	35.4	0.7	34.9	1.1	72.1
General Aviation	Jet	C25M	0.6	0.0	0.6	0.0	1.2
General Aviation	Jet	C56X	0.5	0.0	0.5	0.0	1.0
General Aviation	Jet	CL35	0.2	0.0	0.2	0.0	0.5
General Aviation	Jet	E55P	0.4	0.0	0.3	0.0	0.7
General Aviation	Jet	GLF4	0.4	0.0	0.4	0.0	0.7
General Aviation	Jet	GLF5	0.2	0.0	0.2	0.0	0.5
General Aviation	Jet	LJ35	0.1	0.0	0.1	0.0	0.2
General Aviation	Non-Jet	PC12	6.3	0.3	6.1	0.5	13.2
General Aviation Total	-	-	8.7	0.3	8.5	0.6	18.1
Grand Total	-	-	1,066.0	158.0	1,092.4	131.6	2,448.0

Note: Totals may not match exactly due to rounding.

Sources: FAA OPSNET, FAA TAF, DFW Ops Memo, HMMH analysis, 2026

4.3.2 Aircraft Stage Length and Operational Profiles

Table 4-9 provides the modeled stage length distribution based on associated trip distances by aircraft type. The trip lengths flown from DFW for the Future (2031) Proposed Action Alternative is similar to the No Action.

Table 4-9. Modeled Departure Stage Length Distribution by Aircraft Type for Future (2031) Proposed Action Alternative

Propulsion	Aircraft Type	SL1	SL2	SL3	SL4	SL5	SL6	SL7	SL8	SL9	SLM
Jet	A20N	6.6%	65.1%	24.6%	3.7%	-	-	-	-	-	-
Jet	A21N	4.6%	53.3%	39.1%	0.8%	2.2%	-	-	-	-	-
Jet	A306	20.0%	55.9%	24.1%	-	-	-	-	-	-	-
Jet	A319	27.9%	49.5%	21.9%	0.8%	-	-	-	-	-	-
Jet	A320	19.6%	52.3%	28.0%	0.1%	-	-	-	-	-	-
Jet	A321	6.2%	59.9%	32.5%	1.1%	0.2%	-	-	-	-	-
Jet	A359	-	-	-	-	-	-	99.7%	0.3%	-	-
Jet	A35K	-	-	-	-	-	-	-	23.0%	77.0%	-
Jet	A388	-	-	-	-	-	100.0%	-	-	-	-
Jet	B38M	15.0%	30.7%	46.1%	8.3%	-	-	-	-	-	-
Jet	B39M	3.8%	3.6%	92.6%	-	-	-	-	-	-	-
Jet	B737	28.2%	29.2%	42.6%	-	-	-	-	-	-	-
Jet	B738	21.7%	46.1%	30.5%	1.7%	-	-	-	-	-	-
Jet	B739	7.2%	3.6%	89.3%	-	-	-	-	-	-	-

Propulsion	Aircraft Type	SL1	SL2	SL3	SL4	SL5	SL6	SL7	SL8	SL9	SLM
Jet	B744	1.7%	4.7%	35.4%	-	34.7%	12.0%	-	11.5%	-	-
Jet	B748	-	64.0%	2.5%	-	33.5%	-	-	-	-	-
Jet	B752	43.9%	34.5%	21.5%	-	-	-	-	-	-	-
Jet	B763	22.5%	56.9%	20.6%	-	-	-	-	-	-	-
Jet	B772	0.6%	12.8%	9.5%	2.5%	7.9%	46.1%	12.5%	8.2%	-	-
Jet	B773	0.6%	3.5%	2.4%	-	-	58.0%	-	14.4%	21.1%	-
Jet	B77L	0.8%	20.7%	-	-	18.8%	30.4%	-	<0.1%	29.3%	-
Jet	B77W	0.6%	3.5%	2.4%	-	-	57.7%	-	14.5%	-	-
Jet	B788	0.8%	10.2%	10.2%	-	23.9%	18.9%	5.1%	30.7%	-	-
Jet	B789	0.4%	11.0%	4.1%	-	2.9%	27.5%	9.2%	20.0%	20.3%	4.6%
Jet	BCS1	0.3%	18.0%	81.7%	-	-	-	-	-	-	-
Jet	BCS3	-	35.8%	64.2%	-	-	-	-	-	-	-
Jet	C25M	100.0%	-	-	-	-	-	-	-	-	-
Jet	C56X	100.0%	-	-	-	-	-	-	-	-	-
Jet	C68A	100.0%	-	-	-	-	-	-	-	-	-
Jet	C700	100.0%	-	-	-	-	-	-	-	-	-
Jet	CL35	100.0%	-	-	-	-	-	-	-	-	-
Jet	CRJ7	69.8%	30.1%	0.1%	-	-	-	-	-	-	-
Jet	CRJ9	53.5%	46.4%	0.2%	-	-	-	-	-	-	-
Jet	E135	100%	-	-	-	-	-	-	-	-	-
Jet	E145	100%	-	-	-	-	-	-	-	-	-
Jet	E170	77.3%	22.6%	0.1%	-	-	-	-	-	-	-
Jet	E190	-	93.9%	6.1%	-	-	-	-	-	-	-
Jet	E55P	100%	-	-	-	-	-	-	-	-	-
Jet	E75L	62.6%	36.0%	1.4%	-	-	-	-	-	-	-
Jet	GLF4	100%	-	-	-	-	-	-	-	-	-
Jet	GLF5	100%	-	-	-	-	-	-	-	-	-
Jet	LJ35	100%	-	-	-	-	-	-	-	-	-
Non-Jet	B190	100%	-	-	-	-	-	-	-	-	-
Non-Jet	BE20	100%	-	-	-	-	-	-	-	-	-
Non-Jet	BE99	100%	-	-	-	-	-	-	-	-	-
Non-Jet	C208	100%	-	-	-	-	-	-	-	-	-
Non-Jet	PC12	100%	-	-	-	-	-	-	-	-	-

Note: SL = Stage Length

Source: FAA OPSNET, FAA TAF, DFW Ops Memo, HMMH analysis, 2026

4.3.3 Runway Utilization for Proposed Action Alternative

The Proposed Action would not alter the location or length of the runways, nor would it alter future runway use. Runway end utilization for the Future (2031) Proposed Action Alternative is the same as the Future (2026) No Action Alternative (see **Table 4-5**).

4.3.4 Flight Tracks for Proposed Action Alternative

The Proposed Action would not alter future track and track use. Flight track locations and percent utilization for the Future (2031) Proposed Action Alternative are expected to be the same as the Existing Conditions (see **Section 3.5**).

4.3.5 Noise Exposure Contours - Proposed Action Alternative

Figure 4-2 provides the resultant DNL contours for the Proposed Action Alternative. In the Future (2031) Proposed Action Alternative, the DNL contours would extend away from DFW on the north side in two main

lobes along the extended centerline of the outboard parallel runways, extending off airport property on the west side to Grapevine Lake and on the east side to north of Bethel Road. On the south side, the contour would extend in two main lobes along the extended centerline of the outboard parallel runways but would remain on airport property. The DNL 65 dB would also extend off airport property north of Runway 17L over compatible land use and south of Runway 35R over multi-family residential land use. The DNL 70 dB contour would barely extend off DFW property north of outboard parallel runways to across SH 114.

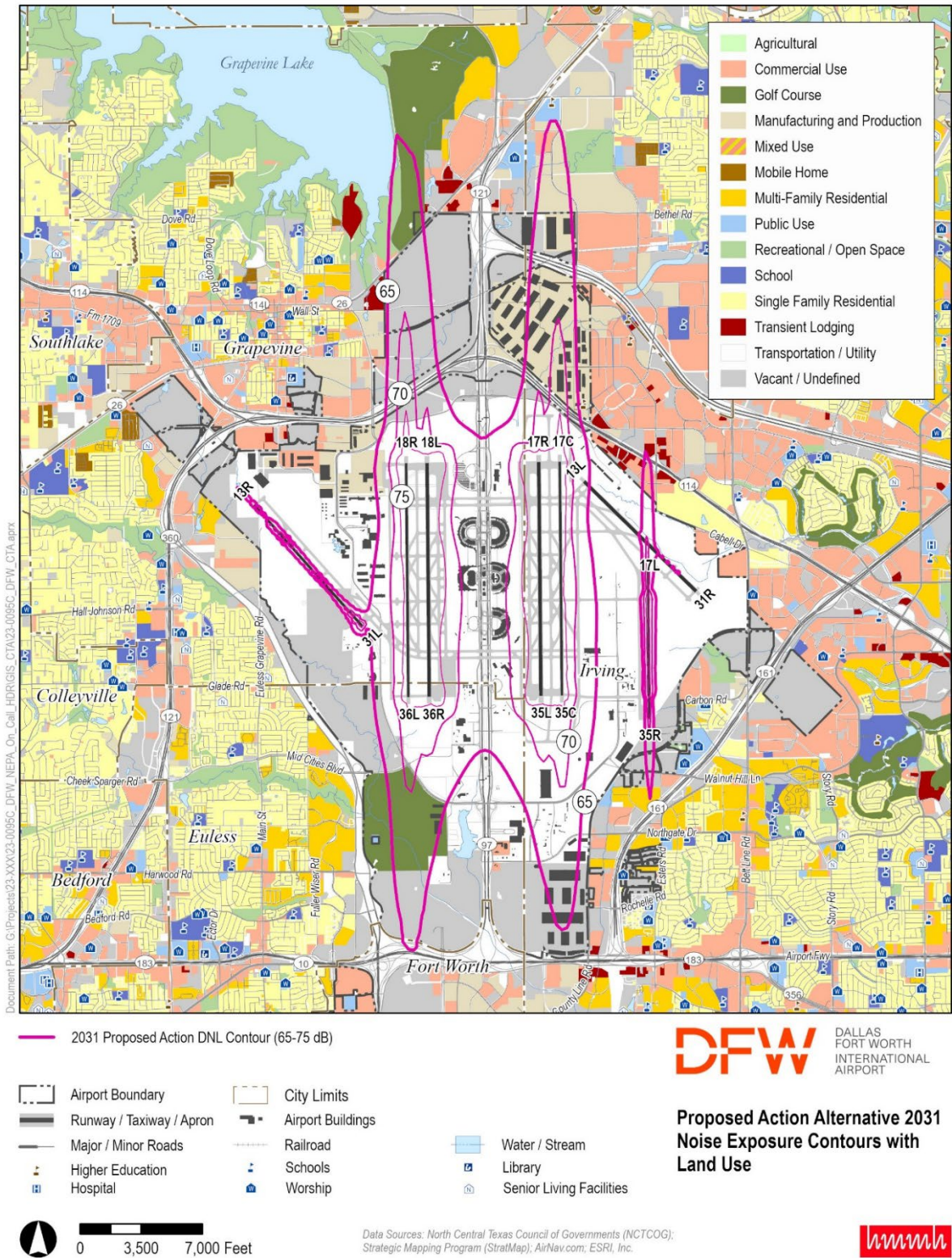
Table 4-10 provides estimates of the total area, on-airport area, and off-airport area exposed to aircraft noise of at least DNL 65 dB for the Proposed Action Alternative. Approximately 13.87 square miles of land fall within the DNL 65 dB or higher noise exposure area. Of the total land area, approximately 0.93 square miles exposed to DNL 65 dB or higher are located off Airport property, with the remaining 12.94 square miles located on DFW property.

Table 4-10. Estimated Land Area within the Proposed Action Alternative Noise Exposure Contours

Contour Range	Airport Property Estimated Land Area (sq mi)	Non-Airport Property Estimated Land Area (sq mi)	Total Estimated Land Area (sq mi)
DNL 65-70 dB	7.71	0.87	8.58
DNL 70-75 dB	2.69	0.06	2.75
DNL 75+ dB	2.54	0.00	2.54
Total	12.94	0.93	13.87

Source: HMMH analysis, 2026

Figure 4-2. Proposed Action Alternative (2031) Noise Exposure Contours with Land Use



4.3.6 Noise/Land Use Compatibility - Proposed Action Alternative

Under the (2031) Proposed Action Alternative, no schools, churches, nursing homes, hospitals, historical properties or libraries would be within any of the Proposed Action DNL contours. Furthermore, no single-family houses or manufactured housing would be within any of the Proposed Action Alternative (2031) noise contours. The DNL 65 dB contour extending north from Runway 18R/36L extends off airport property over the western edge of Mariner Point Park and a portion of the Cowboys Golf Club course and to the south, the DNL 65 dB contour extends over the Bear Creek Golf Course which is on airport property. The park and golf courses are active recreation areas and are compatible land uses within the DNL 65 dB contours. There would be one area south of Runway 17L/35R where the Proposed Action DNL 65 contour extends off airport property and over residential (multi-family) land use. This would result in the exposure of 28 housing units (52 people) to DNL 65 dB or higher under the Proposed Action Alternative. **Table 4-11** summarizes the residential population and housing units affected by noise levels exceeding DNL 65 dB for the Proposed Action Alternative (2031) noise exposure contours.

Table 4-11. Noncompatible Land Use Housing and Population under Proposed Action Alternative

Analysis Category	Housing Type	DNL 65-70 dB	DNL 70-75 dB	DNL 75+ dB	Total (DNL 65 dB or greater)
Housing Units	Single-Family Residential	0	0	0	0
Housing Units	Multi-Family Residential	28	0	0	28
Housing Units	Manufactured Housing	0	0	0	0
Total Units	-	28	0	0	28
Population	Single-Family Residential	0	0	0	0
Population	Multi-Family Residential	52	0	0	52
Population	Manufactured Housing	0	0	0	0
Total Units	-	52	0	0	52

Source: 2020 US Census Block Data, HMMH analysis, 2026

The US Census Block intersecting the 65 DNL contour has 1.81 people per unit

4.4 Comparison of the 2031 No Action and Proposed Action Alternatives

Table 4-12 provides estimates of the total area split between on- and off-airport areas that could be exposed to aircraft noise of at least DNL 65 dB for the 2031 No Action and Proposed Action Alternatives.

Table 4-12. Estimated Land Area within Future (2031) Noise Exposure Contour Alternatives

Alternative	Contour Range	Airport Property Estimated Land Area (sq mi)	Non-Airport Property Estimated Land Area (sq mi)	Total Estimated Land Area (sq mi)
No Action	DNL 65-70 dB	7.37	0.65	8.02
No Action	DNL 70-75 dB	2.41	0.05	2.47
No Action	DNL 75+ dB	2.42	0.00	2.42
No Action	Total	12.20	0.70	12.91
Proposed Action	DNL 65-70 dB	7.71	0.87	8.58
Proposed Action	DNL 70-75 dB	2.69	0.06	2.75
Proposed Action	DNL 75+ dB	2.54	0.00	2.54

Alternative	Contour Range	Airport Property Estimated Land Area (sq mi)	Non-Airport Property Estimated Land Area (sq mi)	Total Estimated Land Area (sq mi)
Proposed Action	Total	12.94	0.93	13.87
Difference*	DNL 65-70 dB	0.34	0.22	0.56
Difference	DNL 70-75 dB	0.28	0.01	0.28
Difference	DNL 75+ dB	0.12	0	0.12
Difference	Total	0.74	0.23	0.96

Source: HMMH analysis, 2026

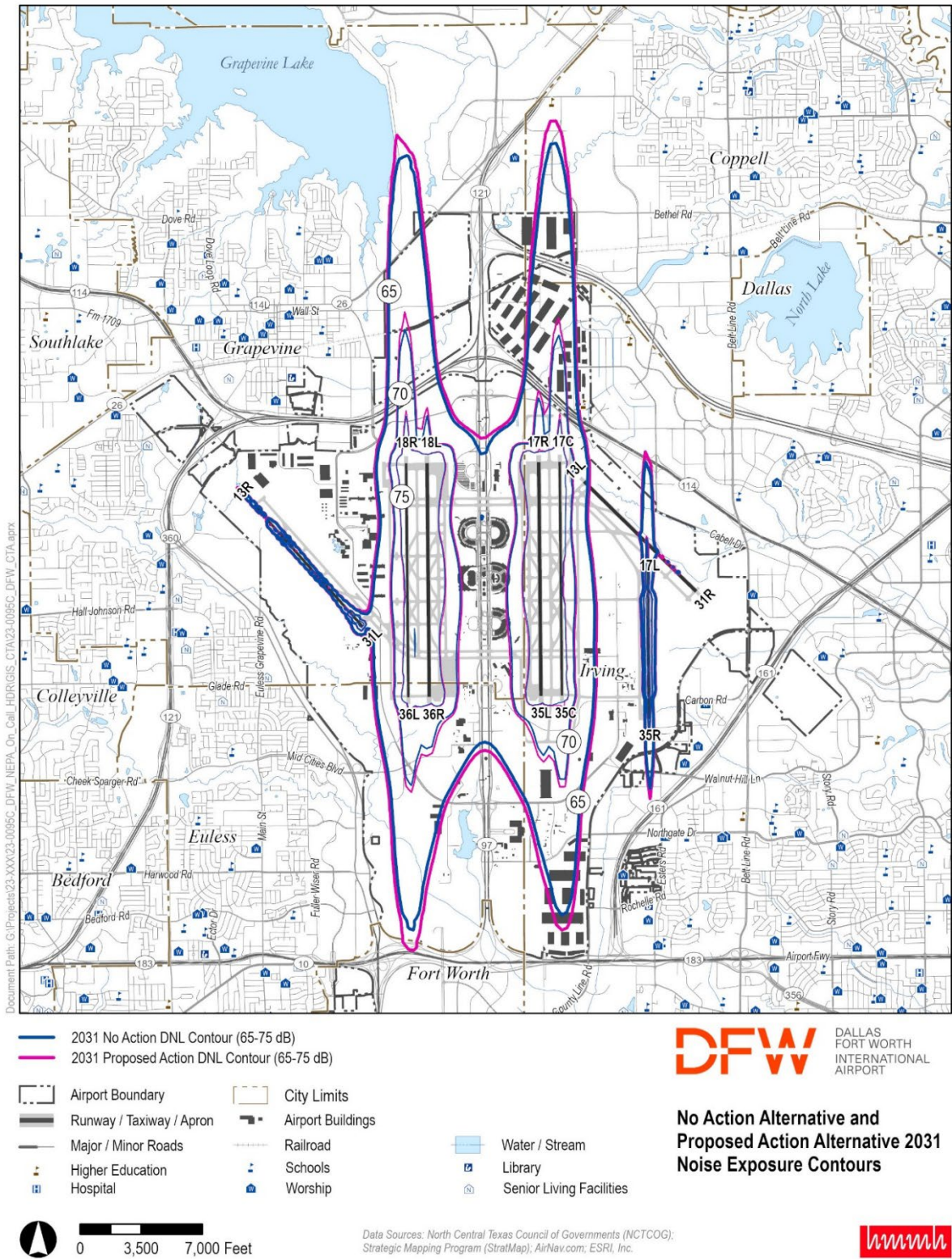
* Difference is the Proposed Action minus No Action Alternative.

The noise exposure analysis results showed a slight increase in the estimated on- and off-airport land area; this was due to the increased operations in the Proposed Action Alternative. The noise analysis results showed that the Future (2031) Proposed Action would increase the estimated land area within the DNL 65+ dB noise exposure contour as compared to the Future (2031) No Action Alternative.

Figure 4-3 shows the comparison between the Future (2031) No Action Alternative and Proposed Action Alternative. Noise contours are presented for the DNL 65 dB, 70 dB, and 75 dB. North of Runways 18R and 17C, the contour would extend farther to the north due to increased arrivals to Runways 18R and 17C. The contour north of Runway 17L would extend farther north than the Future (2031) No Action Alternative due to increased arrivals to Runway 17L. The area between Runways 18L and 17R would increase due to increased departures from Runways 36R and 35L.

To the south of the airport, the contour south of Runways 36L and 35C would extend farther to the south due to increased arrivals to Runways 36L and 35C. The area between Runways 36R and 35L would increase due to the increase in departures from Runways 18L and 17R. The contour south of 35R would extend farther to the south over the residential (multi-family) land use due to increased arrivals to Runway 35R in the Proposed Action. These buildings, located directly along the extended centerline of Runway 17L/35R, would be affected by increased aircraft operations on Runway 17L/35R. The analysis concluded that 28 multi-family residential units, with an estimated population of 52 people, would be exposed to higher noise levels within the DNL 65 dB to 70 dB contour, as residential uses are not a compatible use unless sound attenuated. While noise levels would be higher with the project (0.4 dB increase), the increase is well below the significance threshold (a 1.5 dB or greater change within the Proposed Action DNL 65 dB).

Figure 4-3. No Action Alternative and Proposed Action Alternative (2031) Noise Exposure Contours



Comparisons of the residential population and housing units exposed to noise levels at or exceeding DNL 65 dB for the future (2031) alternatives are provided in **Table 4-13** and **Table 4-14**. No schools, churches, nursing homes, hospitals, historical properties or libraries would be within the 65 DNL or greater contours.

Table 4-13. Noncompatible Land Use, Housing Units – Comparison of Future Year (2031) Alternatives

Alternative	Housing Type	DNL 65-70 dB	DNL 70-75 dB	DNL 75+ dB	Total (DNL 65 dB or greater)
No Action	Single-Family	0	0	0	0
No Action	Multi-Family	0	0	0	0
No Action	Manufactured	0	0	0	0
No Action	Total Units	0	0	0	0
Proposed Action	Single-Family	0	0	0	0
Proposed Action	Multi-Family	52	0	0	52
Proposed Action	Manufactured	0	0	0	0
Proposed Action	Total Units	52	0	0	52
Difference*	Single-Family	0	0	0	0
Difference	Multi-Family	52	0	0	52
Difference	Manufactured	0	0	0	0
Difference	Total Units	52	0	0	52

Notes: Housing units numbers are estimates based on the 2020 United States Census block data.

* Difference is the Proposed Action minus No Action Alternative.

Source: HMMH analysis, 2026

Table 4-14. Noncompatible Land Use, Residential Population – Comparison of Future Year (2031) Alternatives

Alternative	Contour Range	DNL 65-70 dB	DNL 70-75 dB	DNL 75+ dB	Total (DNL 65 dB or greater)
No Action	Single-Family	0	0	0	0
No Action	Multi-Family	0	0	0	0
No Action	Manufactured	0	0	0	0
No Action	Total Units	0	0	0	0
Proposed Action	Single-Family	0	0	0	0
Proposed Action	Multi-Family	28	0	0	28
Proposed Action	Manufactured	0	0	0	0
Proposed Action	Total Units	28	0	0	28
Difference	Single-Family	0	0	0	0
Difference	Multi-Family	28	0	0	28
Difference	Manufactured	0	0	0	0
Difference	Total Units	28	0	0	28

Notes:

Population numbers are estimates based on the 2020 United States Census block data.

The US Census Block intersecting the 65 DNL contour has 1.81 people per unit.

* Difference is the Proposed Action minus No Action Alternative.

Source: HMMH analysis, 2026

4.4.1 Future (2031) Proposed Action Alternative Grid Point Evaluation

HMMH evaluated the change in noise using two different grids as described in **Section 2.3**. The NSA grid was used to determine any significant changes within the DNL 65 dB contours or any reportable changes between DNL 60 dB and 65 dB. The Secondary Study Grid was used to determine any reportable changes within the DNL 45 dB to 60 dB contour. A significant change in noise, as defined by the FAA criteria discussed in **Section 1.2** and shown in **Table 1-1**, is a change of 1.5 dB or more in DNL in areas within the Proposed Action Alternative

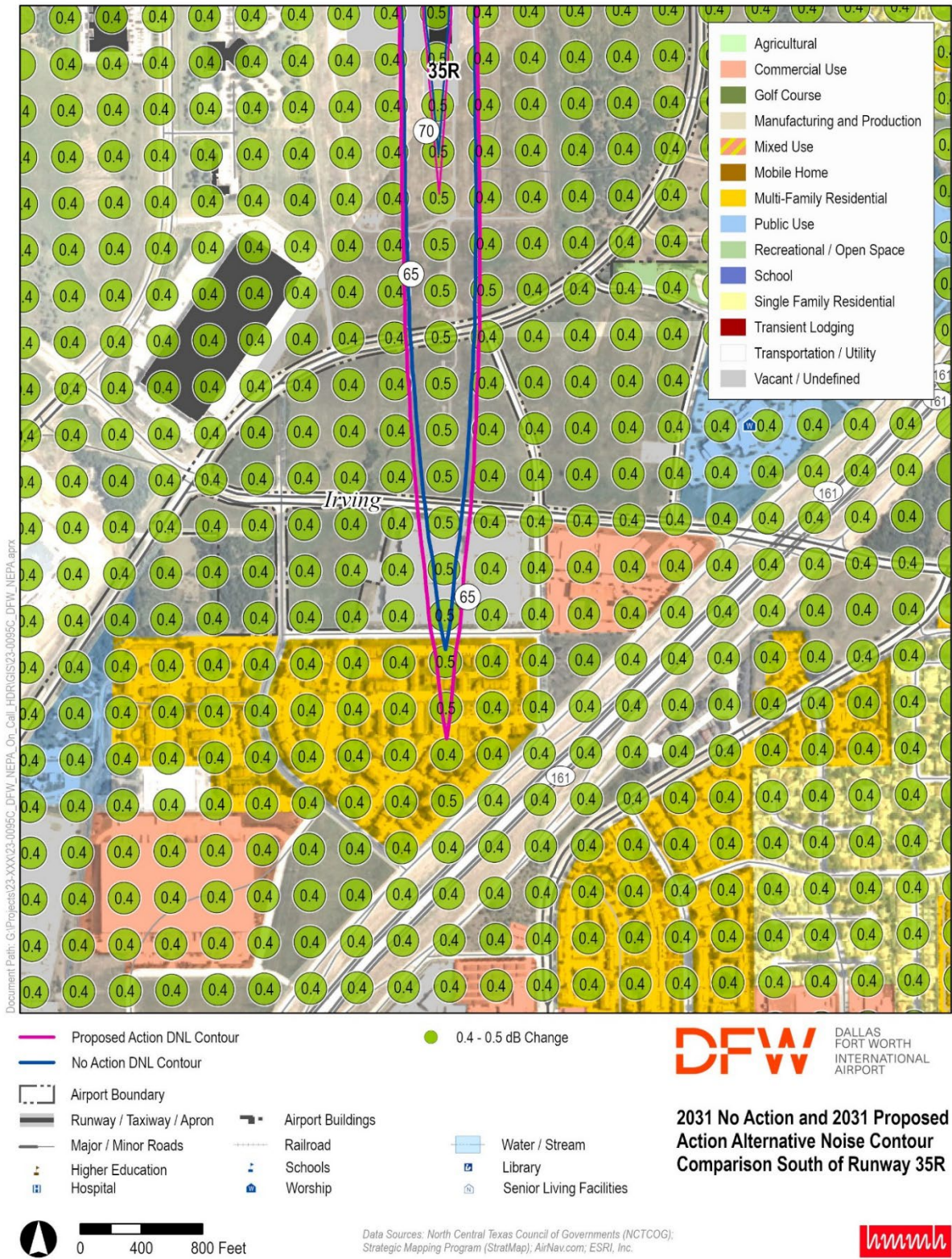
DNL 65 dB contours. Grid point analyses identify any reportable change in noise using a similar process to the identification of significant changes. Reportable changes are defined as:

- A change of 3 dB or more where DNL is between 60 and 65
- A change of 5 dB or more where DNL is between 45 and 60

For 2031, there are no areas of 1.5 dB increase within the Proposed Action Alternative DNL 65 dB contours; therefore, there is no significant noise impact due to the Proposed Action Alternative. There are also no 3 dB changes between the Proposed Action Alternative DNL 60 dB and 65 dB contours and no 5 dB changes between the Proposed Action Alternative DNL 45 dB and 60 dB grid points; therefore, there are no reportable changes due to the Proposed Action Alternative.

Figure 4-4 displays the area south of Runway 35R where the Future (2031) Proposed Action Alternatives DNL 65 dB contour extends over residential land use. This area would be exposed to levels greater than DNL 65 dB due to the proposed project but would not exceed the NEPA threshold for significant noise impact of 1.5 dB or greater (noise increase within the DNL 65 dB area is 0.5 dB).

Figure 4-4. 2031 Proposed Action DNL Change Over Residential Areas – South of Runway 35R



4.5 Future (2036) No Action Alternative

The Future (2036) No Action Alternative would include the additional cargo operations disclosed in the 19th Street Cargo EA Proposed Action. Under the Future (2036) No Action Alternative, there would be no changes to the use of existing 180 gates (170 contact gates and 10 ground-loaded gates) at DFW. Air Carrier operations would be constrained due to a lack of sufficient facilities, and overall operational levels would grow at a minimal growth rate to over 830,000 operations.

4.5.1 Aircraft Activity Levels and Fleet Mix

The 833,463 annual operations forecast for year 2036 without the Proposed Action translates to 2,277 AAD operations to be modeled for the Future (2036) No Action Alternative noise analysis. **Table 4-15** provides representative aircraft and engine combinations and the number of average daily operations that were modeled in AEDT for the Future (2036) No Action Alternative. The Future (2036) No Action Alternative fleet mix includes the same retirement of older aircraft types with increases in newer more efficient and quieter aircraft types B78M, A32N, B789, A359, and E170 operations compared to the Future (2031) No Action. The Future (2036) No Action Alternative AAD includes 2,277 total operations, 11.8 percent of which occurred during the DNL nighttime hours of 10:00 p.m. to 6:59 a.m.

Table 4-15. DFW Modeled Average Daily Aircraft Operations for Future (2036) No Action Alternative

Tower Category	Propulsion	Aircraft Type	Arrivals Day	Arrivals Night	Departures Day	Departures Night	Total
Air Carrier Cargo	Jet	A35K	4.2	2.6	3.4	3.4	13.6
Air Carrier Cargo	Jet	B738	5.8	0.6	5.8	0.6	12.9
Air Carrier Cargo	Jet	B748	1.1	0.8	1.2	0.7	3.9
Air Carrier Cargo	Jet	B763	15.7	7.0	12.1	10.6	45.4
Air Carrier Cargo	Jet	B77L	1.8	1.1	1.1	1.7	5.7
Air Carrier Passenger	Jet	A20N	342.8	55.8	362.7	35.9	797.2
Air Carrier Passenger	Jet	A21N	2.3	0.5	2.4	0.4	5.6
Air Carrier Passenger	Jet	A319	20.9	1.9	20.8	2.0	45.6
Air Carrier Passenger	Jet	A320	15.7	2.2	16.0	1.9	35.8
Air Carrier Passenger	Jet	A321	17.5	2.5	17.8	2.2	40.0
Air Carrier Passenger	Jet	A359	13.1	0.0	12.5	0.6	26.1
Air Carrier Passenger	Jet	A35K	37.0	0.0	27.2	9.9	74.1
Air Carrier Passenger	Jet	A388	1.3	0.0	1.2	0.1	2.5
Air Carrier Passenger	Jet	B38M	243.1	29.3	248.5	19.9	540.7
Air Carrier Passenger	Jet	B39M	77.6	14.5	86.8	9.3	188.1
Air Carrier Passenger	Jet	B738	44.1	5.3	45.1	4.3	98.8
Air Carrier Passenger	Jet	B739	0.7	0.4	1.0	0.2	2.2
Air Carrier Passenger	Jet	B748	0.1	0.3	0.2	0.1	0.7
Air Carrier Passenger	Jet	B77W	2.8	0.0	2.5	0.4	5.7
Air Carrier Passenger	Jet	B788	8.0	3.4	11.3	0.1	22.8
Air Carrier Passenger	Jet	B789	59.5	8.9	59.1	9.2	136.7
Air Carrier Passenger	Jet	E190	10.4	1.0	10.4	1.0	22.8
Air Carrier Passenger	Regional Jet	CRJ7	7.2	1.0	7.6	0.6	16.4
Air Carrier Passenger	Regional Jet	CRJ9	2.8	0.4	2.9	0.3	6.4
Air Carrier Passenger	Regional Jet	E170	40.5	5.0	41.5	4.1	91.1
Air Carrier Passenger	Regional Jet	E75L	5.2	0.5	5.2	0.4	11.4
Air Carrier Total	-	-	981.0	144.9	1,006.1	119.8	2,251.8
Air Taxi Cargo	Non-Jet	B190	0.7	0.0	0.5	0.2	1.4
Air Taxi Cargo	Non-Jet	BE99	0.8	0.0	0.7	0.1	1.6
Air Taxi Cargo	Non-Jet	C208	0.5	0.1	0.5	0.1	1.1

Tower Category	Propulsion	Aircraft Type	Arrivals Day	Arrivals Night	Departures Day	Departures Night	Total
Air Taxi Passenger	Jet	C68A	0.4	0.0	0.4	0.0	0.8
Air Taxi Passenger	Jet	C700	0.2	0.0	0.1	0.0	0.3
Air Taxi Passenger	Non-Jet	C208	1.0	0.0	1.0	0.0	2.1
Air Taxi Total	-	-	3.5	0.2	3.2	0.5	7.3
General Aviation	Jet	C25M	0.5	0.0	0.5	0.0	0.9
General Aviation	Jet	C56X	0.4	0.0	0.4	0.0	0.9
General Aviation	Jet	CL35	0.2	0.0	0.2	0.0	0.5
General Aviation	Jet	E55P	0.2	0.0	0.2	0.0	0.5
General Aviation	Jet	GLF4	0.3	0.0	0.3	0.0	0.7
General Aviation	Jet	GLF5	0.1	0.0	0.1	0.0	0.2
General Aviation	Jet	LJ35	0.5	0.0	0.5	0.0	0.9
General Aviation	Non-Jet	PC12	6.5	0.3	6.3	0.5	13.6
General Aviation Total	-	-	8.8	0.3	8.5	0.6	18.2
Grand Total	-	-	993.3	145.3	1,017.8	120.8	2,277.2

Note: Totals may not match exactly due to rounding.

Sources: FAA OPSNET, FAA TAF, DFW Ops Memo, HMMH analysis, 2026

4.5.2 Aircraft Stage Length and Operational Profiles

Table 4-16 provides the modeled stage length distribution based on associated trip distances by aircraft type. The trip lengths flown from DFW for the Future (2036) No Action Alternative is similar to the Future (2031) No Action.

Table 4-16. Modeled Departure Stage Length Distribution by Aircraft Type for Future (2036) No Action Alternative

Propulsion	Aircraft Type	SL1	SL2	SL3	SL4	SL5	SL6	SL7	SL8	SL9	SLM
Jet	A20N	6.1%	63.6%	27.1%	3.2%	-	-	-	-	-	-
Jet	A21N	4.6%	53.3%	39.1%	0.8%	2.2%	-	-	-	-	-
Jet	A319	27.9%	49.5%	21.9%	0.8%	-	-	-	-	-	-
Jet	A320	19.6%	52.2%	28.1%	0.1%	-	-	-	-	-	-
Jet	A321	6.2%	59.9%	32.5%	1.1%	0.2%	-	-	-	-	-
Jet	A359	-	-	-	-	-	-	99.7%	0.3%	-	-
Jet	A35K	0.5%	1.7%	1.6%	0.0%	3.1%	4.4%	0.0%	23.7%	65.1%	-
Jet	A388	-	-	-	-	-	100.0%	-	-	-	-
Jet	B38M	14.8%	30.2%	46.6%	8.4%	-	-	-	-	-	-
Jet	B39M	3.9%	3.6%	92.5%	0.0%	-	-	-	-	-	-
Jet	B738	23.5%	45.0%	29.8%	1.6%	-	-	-	-	-	-
Jet	B739	7.2%	3.6%	89.3%	-	-	-	-	-	-	-
Jet	B748	-	69.9%	2.8%	0.0%	27.3%	-	-	-	-	-
Jet	B763	22.5%	56.9%	20.6%	-	-	-	-	-	-	-
Jet	B77L	0.8%	20.7%	-	-	18.8%	30.4%	-	<0.1%	29.3%	-
Jet	B77W	0.6%	3.5%	2.4%	-	-	57.7%	-	14.5%	-	-
Jet	B788	0.8%	10.2%	10.2%	-	23.9%	18.9%	5.1%	30.7%	-	-
Jet	B789	0.4%	11.0%	4.1%	-	2.9%	27.5%	9.2%	20.0%	20.3%	4.6%
Jet	C25M	100.0%	-	-	-	-	-	-	-	-	-
Jet	C56X	100.0%	-	-	-	-	-	-	-	-	-
Jet	C68A	100.0%	-	-	-	-	-	-	-	-	-
Jet	C700	100.0%	-	-	-	-	-	-	-	-	-
Jet	CL35	100.0%	-	-	-	-	-	-	-	-	-
Jet	CRJ7	69.8%	30.1%	0.1%	-	-	-	-	-	-	-
Jet	CRJ9	53.5%	46.4%	0.2%	-	-	-	-	-	-	-
Jet	E170	77.3%	22.6%	0.1%	-	-	-	-	-	-	-

Propulsion	Aircraft Type	SL1	SL2	SL3	SL4	SL5	SL6	SL7	SL8	SL9	SLM
Jet	E190	-	93.9%	6.1%	-	-	-	-	-	-	-
Jet	E55P	100%	-	-	-	-	-	-	-	-	-
Jet	E75L	62.6%	36.0%	1.4%	-	-	-	-	-	-	-
Jet	GLF4	100%	-	-	-	-	-	-	-	-	-
Jet	GLF5	100%	-	-	-	-	-	-	-	-	-
Jet	LJ35	100%	-	-	-	-	-	-	-	-	-
Non-Jet	B190	100%	-	-	-	-	-	-	-	-	-
Non-Jet	BE99	100%	-	-	-	-	-	-	-	-	-
Non-Jet	C208	100%	-	-	-	-	-	-	-	-	-
Non-Jet	PC12	100%	-	-	-	-	-	-	-	-	-

Note: SL = Stage Length

Source: FAA OPSNET, FAA TAF, DFW Ops Memo, HMMH analysis, 2026

4.5.3 Runway Utilization for No Action Alternative

Runway end utilization for the future (2036) No Action Alternative is assumed to be the same as for the Future (2031) No Action Alternative (see [Section 4.2.3](#)).

4.5.4 Flight Tracks for No Action Alternative

Flight track locations and percent utilization for the Future (2036) No Action Alternative would be expected to be the same as the Existing Conditions (see [Section 3.5](#)).

4.5.5 Noise Exposure Contours - No Action Alternative

Figure 4-5 provides the resultant DNL contours for the Future (2036) No Action Alternative. Due to the increased use of quieter aircraft, the DNL contours have reduced in size and are slightly smaller than the 2031 No Action contour. In the Future (2036) No Action Alternative, the DNL contours would extend away from DFW on the north side in two main lobes along the extended centerline of the outboard parallel runway extending off DFW property to north of Bethel Road. On the south side, the contour would extend in two main lobes along the extended centerline of the outboard parallel runway but remaining on DFW property. There would be no noise-sensitive land use within the Future (2036) No Action Alternative DNL 65 dB or greater contours. The DNL 70 dB contour would barely extend off DFW property north of Runways 18R and 17C to across SH 114.

Table 4-17 provides estimates of the total area, on-airport area, and off-airport area exposed to aircraft noise of at least DNL 65 dB for the No Action Alternative. Approximately 9.72 square miles of land fall within the DNL 65 dB or higher noise exposure area. Of the total land area, approximately 0.44 square miles exposed to DNL 65 dB or higher is located off-Airport, with the remaining 9.29 square miles located on DFW property.

Table 4-17. Estimated Land Area within No Action Alternative (2036) Noise Exposure Contour

Contour Range	Airport Property Estimated Land Area (sq mi)	Non-Airport Property Estimated Land Area (sq mi)	Total Estimated Land Area (sq mi)
DNL 65-70 dB	5.65	0.40	6.04
DNL 70-75 dB	1.79	0.04	1.83
DNL 75+ dB	1.85	0.00	1.85
Total	9.29	0.44	9.72

Source: HMMH analysis, 2026

4.5.6 Noise/Land Use Compatibility - No Action Alternative

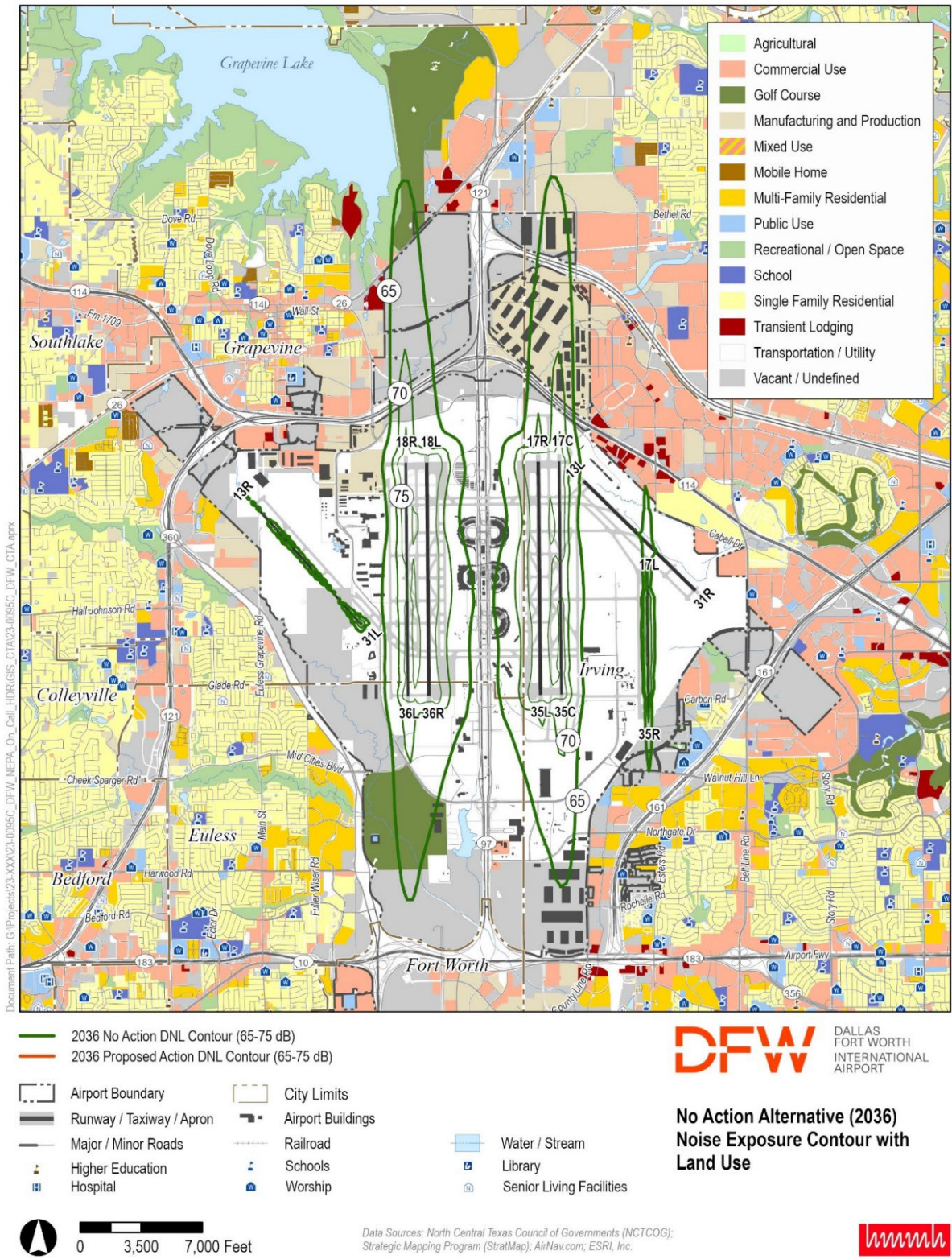
Under the (2036) No Action Alternative, no schools, churches, nursing homes, hospitals, historical properties or libraries would be within any of the DNL 65 dB or greater contours. Furthermore, no single-family, multifamily, or manufactured housing would be within the No Action Alternative DNL 65 dB contours (see **Figure 4-5**). The DNL 65 dB contour extending north from Runway 18R/36L extends off airport property over the western edge of Mariner Point Park and a portion of the Cowboys Golf Club course and to the south, the DNL 65 dB contour extends over the Bear Creek Golf Course, which is on airport property. The park and golf courses are active recreation areas and are compatible land uses within the DNL 65 dB contours. **Table 4-18** summarizes the residential population and housing units exposed to noise levels exceeding DNL 65 dB for the 2036 No Action Alternative.

Table 4-18. Noncompatible Land Use Housing and Population – Future No Action Alternative (2036)

Analysis Category	Housing Type	DNL 65-70 dB	DNL 70-75 dB	DNL 75+ dB	Total (DNL 65 dB or greater)
Housing Units	Single-Family Residential	0	0	0	0
Housing Units	Multi-Family Residential	0	0	0	0
Housing Units	Manufactured Housing	0	0	0	0
Total Units	-	0	0	0	0
Population	Single-Family Residential	0	0	0	0
Population	Multi-Family Residential	0	0	0	0
Population	Manufactured Housing	0	0	0	0
Total Units	-	0	0	0	0

Source: 2020 US Census Block Data, HMMH analysis, 2026

Figure 4-5. No Action Alternative (2036) Noise Exposure Contour with Land Use



4.6 Future (2036) Proposed Action Alternative

The proposed project would be completed in 2031. The Future (2036) Proposed Action Alternative reflects the year of implementation (2031) plus five years. The Future (2036) Proposed Action Alternative would include the additional cargo operations disclosed in the 19th Street Cargo EA Proposed Action. All forecasted demand would be accommodated with the additional gates in the Proposed Action Alternative. Therefore, the forecast annual operations for Future (2036) Proposed Action Alternative would be over 965,000 operations.

4.6.1 Aircraft Activity Levels and Fleet Mix

The 965,603 annual operations forecast to occur in 2036 with the Proposed Action translate to 2,638 AAD operations modeled for the Future (2036) Proposed Action Alternative noise analysis. **Table 4-19** provides representative aircraft and engine combinations and the number of average daily operations that were modeled in AEDT for the Future (2036) Proposed Action Alternative. The Future (2036) Proposed Action fleet mix would include the additional operations in the Air Carrier and Air Taxi categories (an additional 353 operations in Air Carrier and 11 operations in Air Taxi) compared to the Future (2036) No Action Alternative. The Future (2036) Proposed Action Alternative fleet mix includes the same retirement of older aircraft types with increases in newer more efficient and quieter aircraft types B78M, A32N, B789, A359, and E170 operations compared to the Future (2031) No Action. The Future (2036) Proposed Action AAD includes 2,638 total operations, 11.8 percent of which occurred during the DNL nighttime hours of 10:00 p.m. to 6:59 a.m.

Table 4-19. DFW Modeled Average Daily Aircraft Operations for Future (2036) Proposed Action Alternative

Tower Category	Propulsion	Aircraft Type	Arrivals Day	Arrivals Night	Departures Day	Departures Night	Total
Air Carrier Cargo	Jet	A35K	3.6	2.2	2.9	2.9	11.7
Air Carrier Cargo	Jet	B738	3.3	0.4	3.3	0.4	7.2
Air Carrier Cargo	Jet	B748	1.0	0.7	1.1	0.6	3.3
Air Carrier Cargo	Jet	B763	18.1	8.1	14.0	12.2	52.6
Air Carrier Cargo	Jet	B77L	2.0	1.2	1.3	2.0	6.6
Air Carrier Passenger	Jet	A20N	397.1	64.6	420.2	41.6	923.5
Air Carrier Passenger	Jet	A21N	2.6	0.6	2.8	0.4	6.5
Air Carrier Passenger	Jet	A319	24.2	2.2	24.1	2.3	52.8
Air Carrier Passenger	Jet	A320	18.2	2.6	18.6	2.2	41.4
Air Carrier Passenger	Jet	A321	20.2	2.9	20.6	2.6	46.3
Air Carrier Passenger	Jet	A359	15.7	0.0	14.9	0.7	31.3
Air Carrier Passenger	Jet	A35K	44.4	0.0	32.6	11.9	88.8
Air Carrier Passenger	Jet	A388	1.5	0.0	1.4	0.1	2.9
Air Carrier Passenger	Jet	B38M	281.6	33.9	287.9	23.1	626.4
Air Carrier Passenger	Jet	B39M	89.9	16.8	100.6	10.7	218.0
Air Carrier Passenger	Jet	B738	54.5	6.5	55.7	5.3	122.0
Air Carrier Passenger	Jet	B739	0.9	0.5	1.2	0.2	2.7
Air Carrier Passenger	Jet	B748	0.2	0.8	0.6	0.4	2.0
Air Carrier Passenger	Jet	B77W	3.3	0.0	2.9	0.4	6.6
Air Carrier Passenger	Jet	B788	9.3	3.9	13.1	0.1	26.4
Air Carrier Passenger	Jet	B789	68.9	10.3	68.5	10.7	158.3
Air Carrier Passenger	Jet	E190	12.0	1.2	12.0	1.2	26.4
Air Carrier Passenger	Regional Jet	CRJ7	8.3	1.2	8.8	0.7	19.0
Air Carrier Passenger	Regional Jet	CRJ9	3.2	0.4	3.3	0.3	7.4
Air Carrier Passenger	Regional Jet	E170	46.9	5.9	48.0	4.7	105.5
Air Carrier Passenger	Regional Jet	E75L	6.1	0.5	6.1	0.5	13.2
Air Carrier Total	-	-	1,137.0	167.4	1,166.2	138.2	2,608.8

Tower Category	Propulsion	Aircraft Type	Arrivals Day	Arrivals Night	Departures Day	Departures Night	Total
Air Taxi Cargo	Non-Jet	B190	0.8	0.0	0.5	0.3	1.6
Air Taxi Cargo	Non-Jet	BE99	0.6	0.0	0.5	0.1	1.3
Air Taxi Cargo	Non-Jet	C208	0.5	0.1	0.5	0.1	1.2
Air Taxi Passenger	Jet	C68A	0.5	0.0	0.5	0.0	1.0
Air Taxi Passenger	Jet	C700	0.2	0.0	0.2	0.0	0.4
Air Taxi Passenger	Non-Jet	BE20	0.0	0.2	0.0	0.2	0.5
Air Taxi Passenger	Non-Jet	C208	1.3	0.0	1.2	0.0	2.5
Air Taxi Total	-	-	3.8	0.4	3.5	0.7	8.4
General Aviation	Jet	C25M	0.5	0.0	0.5	0.0	1.1
General Aviation	Jet	C56X	0.5	0.0	0.5	0.0	1.1
General Aviation	Jet	CL35	0.3	0.0	0.3	0.0	0.5
General Aviation	Jet	E55P	0.3	0.0	0.2	0.0	0.5
General Aviation	Jet	GLF4	0.4	0.0	0.4	0.0	0.8
General Aviation	Jet	GLF5	0.1	0.0	0.1	0.0	0.3
General Aviation	Jet	LJ35	0.5	0.0	0.5	0.0	1.1
General Aviation	Non-Jet	PC12	7.6	0.3	7.3	0.6	15.8
General Aviation Total	-	-	10.2	0.3	9.9	0.7	21.0
Grand Total	-	-	1,151.0	168.1	1,179.6	139.5	2,638.3

Note: Totals may not match exactly due to rounding.

Sources: FAA OPSNET, FAA TAF, DFW Ops Memo, HMMH analysis, 2026

4.6.2 Aircraft Stage Length and Operational Profiles

Table 4-20 provides the modeled stage length distribution based on associated trip distances by aircraft type. The trip lengths flown from DFW for the Future (2036) Proposed Action Alternative are similar to the Future (2036) No Action Alternative (see **Section 4.5.2**).

Table 4-20. Modeled Departure Stage Length Distribution by Aircraft Type for Future (2036) Proposed Action Alternative

Propulsion	Aircraft Type	SL1	SL2	SL3	SL4	SL5	SL6	SL7	SL8	SL9	SLM
Jet	A20N	6.1%	63.6%	27.1%	3.2%	-	-	-	-	-	-
Jet	A21N	4.6%	53.3%	39.1%	0.8%	2.2%	-	-	-	-	-
Jet	A319	27.9%	49.5%	21.9%	0.8%	-	-	-	-	-	-
Jet	A320	19.6%	52.2%	28.1%	0.1%	-	-	-	-	-	-
Jet	A321	6.2%	59.9%	32.5%	1.1%	0.2%	-	-	-	-	-
Jet	A359	-	-	-	-	-	-	99.7%	0.3%	-	-
Jet	A35K	0.3%	1.3%	1.2%	-	2.3%	3.3%	-	23.5%	68.0%	-
Jet	A388	-	-	-	-	-	100.0%	-	-	-	-
Jet	B38M	14.8%	30.2%	46.6%	8.4%	-	-	-	-	-	-
Jet	B39M	3.9%	3.6%	92.5%	0.0%	-	-	-	-	-	-
Jet	B738	22.2%	45.8%	30.3%	1.7%	-	-	-	-	-	-
Jet	B739	7.2%	3.6%	89.3%	-	-	-	-	-	-	-
Jet	B748	-	55.4%	2.1%	-	42.6%	-	-	-	-	-
Jet	B763	22.5%	56.9%	20.6%	-	-	-	-	-	-	-
Jet	B77L	0.8%	20.7%	-	-	18.8%	30.4%	-	<0.1%	29.3%	-
Jet	B77W	0.6%	3.5%	2.4%	-	-	57.7%	-	14.5%	-	-
Jet	B788	0.8%	10.2%	10.2%	-	23.9%	18.9%	5.1%	30.7%	-	-
Jet	B789	0.4%	11.0%	4.1%	-	2.9%	27.5%	9.2%	20.0%	20.3%	4.6%
Jet	C25M	100.0%	-	-	-	-	-	-	-	-	-
Jet	C56X	100.0%	-	-	-	-	-	-	-	-	-
Jet	C68A	100.0%	-	-	-	-	-	-	-	-	-
Jet	C700	100.0%	-	-	-	-	-	-	-	-	-
Jet	CL35	100.0%	-	-	-	-	-	-	-	-	-

Propulsion	Aircraft Type	SL1	SL2	SL3	SL4	SL5	SL6	SL7	SL8	SL9	SLM
Jet	CRJ7	69.8%	30.1%	0.1%	-	-	-	-	-	-	-
Jet	CRJ9	53.5%	46.4%	0.2%	-	-	-	-	-	-	-
Jet	E170	77.3%	22.6%	0.1%	-	-	-	-	-	-	-
Jet	E190	-	93.9%	6.1%	-	-	-	-	-	-	-
Jet	E55P	100%	-	-	-	-	-	-	-	-	-
Jet	E75L	62.6%	36.0%	1.4%	-	-	-	-	-	-	-
Jet	GLF4	100%	-	-	-	-	-	-	-	-	-
Jet	GLF5	100%	-	-	-	-	-	-	-	-	-
Jet	LJ35	100%	-	-	-	-	-	-	-	-	-
Non-Jet	B190	100%	-	-	-	-	-	-	-	-	-
Non-Jet	BE20	100%	-	-	-	-	-	-	-	-	-
Non-Jet	BE99	100%	-	-	-	-	-	-	-	-	-
Non-Jet	C208	100%	-	-	-	-	-	-	-	-	-
Non-Jet	PC12	100%	-	-	-	-	-	-	-	-	-

Note: SL = Stage Length

Source: FAA OPSNET, FAA TAF, DFW Ops Memo, HMMH analysis, 2026

4.6.3 Runway Utilization for Proposed Action Alternative

The Proposed Action would not alter the location or length of the runways, nor would it alter future runway use. Runway end utilization for the Future (2036) Proposed Action Alternative is expected to be the same as the Future (2031) No Action Alternative (see **Table 4-5**).

4.6.4 Flight Tracks for Proposed Action Alternative

The Proposed Action would not alter future track and track use. Flight track locations and percent utilization for the Future (2036) Proposed Action Alternative would be expected to be the same as the Existing Conditions (see **Section 3.5**).

4.6.5 Noise Exposure Contours - Proposed Action Alternative

Figure 4-6 provides the resultant DNL contours for the Future (2036) Proposed Action Alternative. Due to the increased use of quieter aircraft, the DNL contours have reduced in size and are slightly smaller than the 2031 Proposed Action contour. In the Future (2036) Proposed Action Alternative, the DNL contours would extend away from DFW on the north side in two main lobes along the extended centerline of the outboard parallel runways, extending off airport property on the west side to Grapevine Lake and on the east side to north of Bethel Road. On the south side, the contour would extend in two main lobes along the extended centerline of the outboard parallel runways, extending off airport property on the west side just north to SH 183 and remains on airport property on the east side. The DNL 65 dB would also extend off airport property north of Runway 17L over compatible land use and south of Runway 35R. The DNL 70 dB contour would barely extend off DFW property north of outboard parallel runways to across SH 114.

Table 4-21 provides estimates of the total area, on-airport area, and off-airport area exposed to aircraft noise of at least DBL 65 dB for the Proposed Action Alternative. Approximately 11.12 square miles of land fall within the DNL 65 dB or higher noise exposure area. Of the total land area, approximately 0.67 square miles exposed

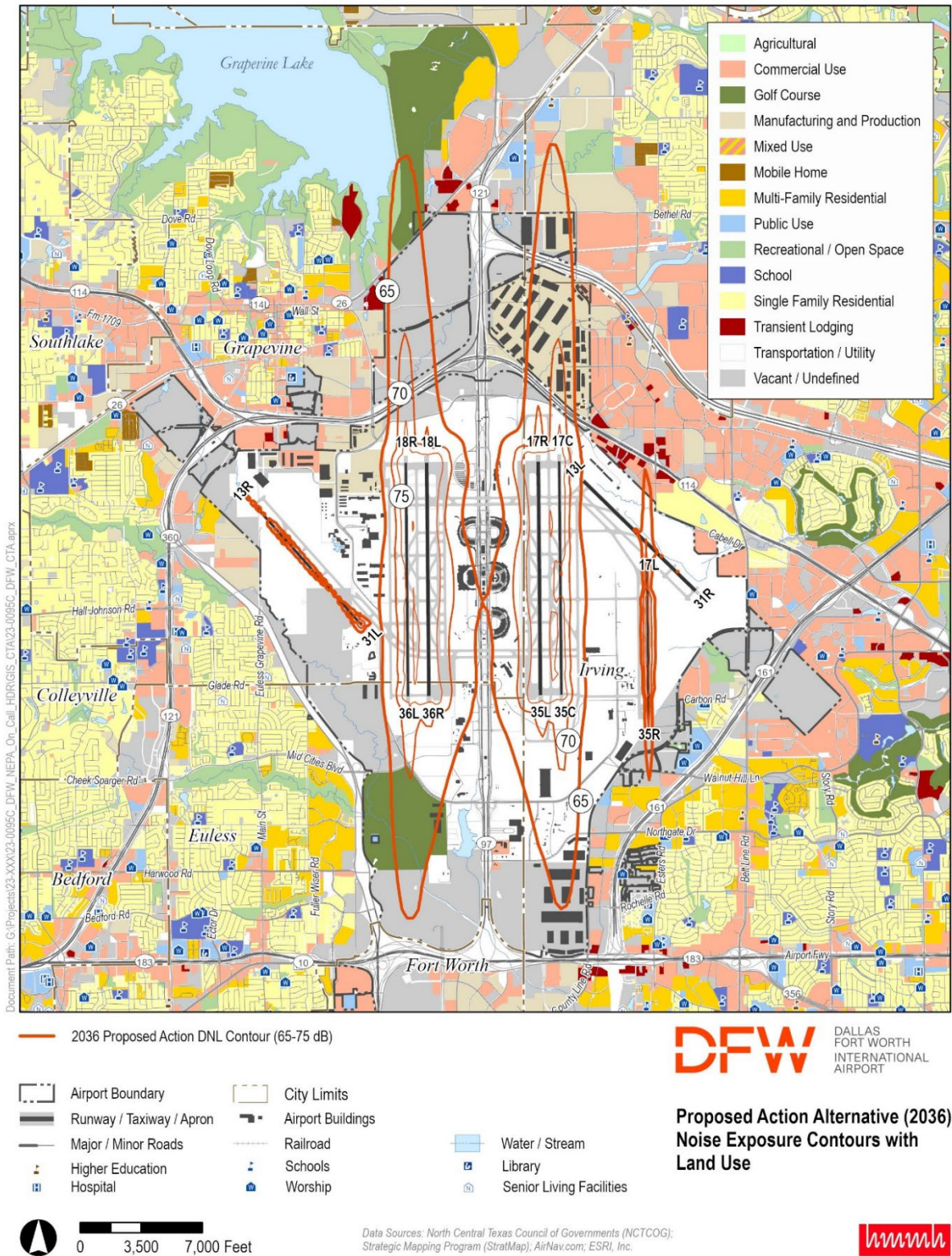
to DNL 65 dB or higher are located off airport property, with the remaining 10.45 square miles located on DFW property.

Table 4-21. Estimated Land Area within the Proposed Action Alternative Noise Exposure Contours

Contour Range	Airport Property Estimated Land Area (sq mi)	Non-Airport Property Estimated Land Area (sq mi)	Total Estimated Land Area (sq mi)
DNL 65-70 dB	6.40	0.62	7.02
DNL 70-75 dB	1.96	0.05	2.01
DNL 75+ dB	2.09	0.00	2.09
Total	10.45	0.67	11.12

Source: HMMH analysis, 2026

Figure 4-6. Proposed Action Alternative (2036) Noise Exposure Contours with Land Use



4.6.6 Noise/Land Use Compatibility - Proposed Action Alternative

Under the (2036) Proposed Action Alternative, no schools, churches, nursing homes, hospitals, historical properties, or libraries would be within any of the Proposed Action DNL contours. Furthermore, no single-family houses, multi-family or manufactured housing would be within any of the Proposed Action Alternative (2036) noise contours. There is a change in noise in 2036 between the No Action and Proposed Action Alternative but the DNL 65 dB contour does not extend as far south in 2036 due to fleet improvements and increased use of quieter aircraft, therefore no residential land use is within the DNL 65 dB contour. The DNL 65 dB contour extending north from Runway 18R/36L extends off airport property over the western edge of Mariner Point Park and a portion of the Cowboys Golf Club course and to the south, the DNL 65 dB contour extends over the Bear Creek Golf Course which is on airport property. The park and golf courses are active recreation areas and are compatible land uses within the DNL 65 dB contours. **Table 4-22** summarizes the residential population and housing units affected by noise levels exceeding DNL 65 dB for the (2036) Proposed Action Alternative noise exposure contours.

Table 4-22. Noncompatible Land Use Housing and Population under Proposed Action Alternative

Analysis Category	Housing Type	DNL 65-70 dB	DNL 70-75 dB	DNL 75+ dB	Total (DNL 65 dB or greater)
Housing Units	Single-Family Residential	0	0	0	0
Housing Units	Multi-Family Residential	0	0	0	0
Housing Units	Manufactured Housing	0	0	0	0
Total Units	-	0	0	0	0
Population	Single-Family Residential	0	0	0	0
Population	Multi-Family Residential	0	0	0	0
Population	Manufactured Housing	0	0	0	0
Total Units	-	0	0	0	0

Source: 2020 US Census Block Data, HMMH analysis, 2026

The US Census Block intersecting the 65 DNL contour has 1.81 people per unit

4.7 Comparison of the 2036 No Action and Proposed Action Alternatives

Table 4-23 provides a comparison of the estimates of the total area, on-airport area, and off-airport area exposed to aircraft noise of at least DNL 65 dB for the No Action and Proposed Action Alternatives. The noise exposure analysis results show a slight increase in both on-airport and off-airport land areas due to increased operations under the Proposed Action.

Table 4-23. Estimated Land Area within Future (2036) Noise Exposure Contour Alternatives

Alternative	Contour Range	Airport Property Estimated Land Area (sq mi)	Non-Airport Property Estimated Land Area (sq mi)	Total Estimated Land Area (sq mi)
No Action	DNL 65-70 dB	5.65	0.40	6.04
No Action	DNL 70-75 dB	1.79	0.04	1.83
No Action	DNL 75+ dB	1.85	0.00	1.85
No Action	Total	9.29	0.44	9.72

Alternative	Contour Range	Airport Property Estimated Land Area (sq mi)	Non-Airport Property Estimated Land Area (sq mi)	Total Estimated Land Area (sq mi)
Proposed Action	DNL 65-70 dB	6.40	0.62	7.02
Proposed Action	DNL 70-75 dB	1.96	0.05	2.01
Proposed Action	DNL 75+ dB	2.09	0.00	2.09
Proposed Action	Total	10.45	0.67	11.12
Difference*	DNL 65-70 dB	0.75	0.22	0.98
Difference	DNL 70-75 dB	0.17	0.01	0.18
Difference	DNL 75+ dB	0.24	0.00	0.24
Difference	Total	1.16	0.23	1.40

Note: *Difference is Proposed Action minus No Action Alternative.

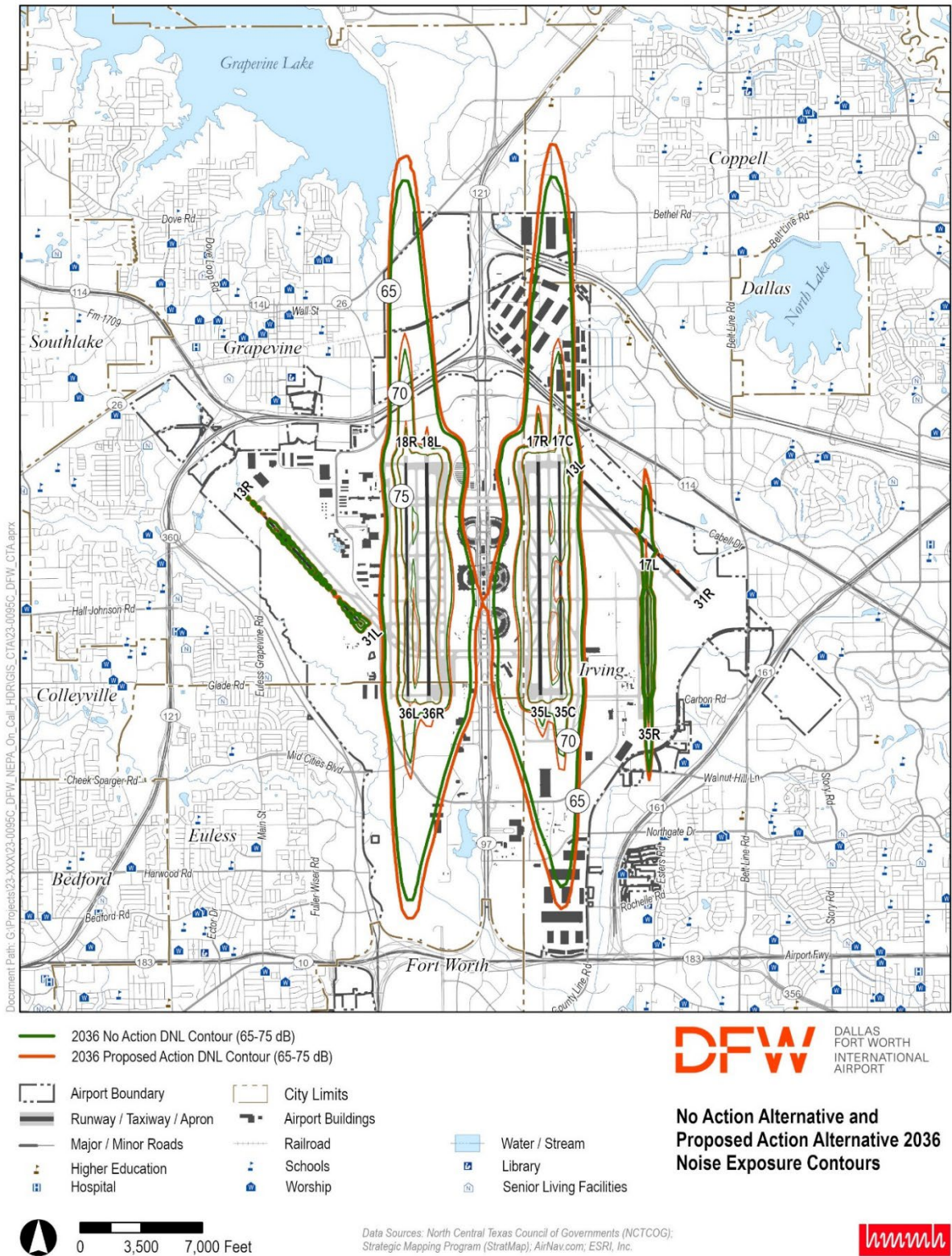
Source: HMMH analysis, 2026

4.8 Future Alternative Noise/Land Use Compatibility Evaluation

Figure 4-7 shows the comparison between the Future (2036) No Action and Proposed Action Alternatives. Noise contours are presented for the DNL 65 dB, 70 dB, and 75 dB. North of Runways 18R and 17C, the contour would extend farther to the north due to increased arrivals to Runways 18R and 17C. The contour north of Runway 17L would extend farther north than the Future (2036) No Action Alternative due to increased arrivals to Runway 17L. The area between Runways 18L and 17R would increase due to increased departures from Runways 36R and 35L.

To the south of the airport, the contour south of Runways 36L and 35C would extend farther south due to increased arrivals to Runways 36L and 35C. The area between Runways 36R and 35L would increase due to the increase in departures from Runways 18L and 17R. The contour south of 35R would extend farther south but remain over compatible land use due to increased arrivals to Runway 35R.

Figure 4-7. No Action Alternative and Proposed Action Alternative (2036) Noise Exposure Contours



Comparisons of the residential population and housing units exposed to noise levels at or exceeding DNL 65 dB for the future (2036) alternatives are provided in **Table 4-24** and **Table 4-25**. No schools, churches, nursing homes, hospitals, historical properties or libraries would be within the DNL 65 dB or greater contours.

Table 4-24. Noncompatible Land Use, Housing Units – Comparison of Future Year (2036) Alternatives

Alternative	Housing Type	DNL 65-70 dB	DNL 70-75 dB	DNL 75+ dB	Total (DNL 65 dB or greater)
No Action	Single-Family Residential	0	0	0	0
No Action	Multi-Family Residential	0	0	0	0
No Action	Manufactured Housing	0	0	0	0
No Action	Total Units	0	0	0	0
Proposed Action	Single-Family Residential	0	0	0	0
Proposed Action	Multi-Family Residential	0	0	0	0
Proposed Action	Manufactured Housing	0	0	0	0
Proposed Action	Total Units	0	0	0	0
Difference*	Single-Family Residential	0	0	0	0
Difference	Multi-Family Residential	0	0	0	0
Difference	Manufactured Housing	0	0	0	0
Difference	Total Units	0	0	0	0

Notes:

Population numbers are estimates based on the 2020 United States Census block data.

*Difference is Proposed Action minus No Action Alternative.

Source: HMMH analysis, 2026

Table 4-25. Noncompatible Land Use, Residential Population – Comparison of Future Year (2036) Alternatives

Alternative	Contour Range	DNL 65-70 dB	DNL 70-75 dB	DNL 75+ dB	Total (DNL 65 dB or greater)
No Action	Single-Family Residential	0	0	0	0
No Action	Multi-Family Residential	0	0	0	0
No Action	Manufactured Housing	0	0	0	0
No Action	Total Units	0	0	0	0
Proposed Action	Single-Family Residential	0	0	0	0
Proposed Action	Multi-Family Residential	0	0	0	0
Proposed Action	Manufactured Housing	0	0	0	0
Proposed Action	Total Units	0	0	0	0
Difference*	Single-Family Residential	0	0	0	0
Difference	Multi-Family Residential	0	0	0	0
Difference	Manufactured Housing	0	0	0	0
Difference	Total Units	0	0	0	0

Notes:

Population numbers are estimates based on the 2020 United States Census block data.

The US Census Block intersecting the 65 DNL contour has 1.81 people per unit

*Difference is Proposed Action minus No Action Alternative.

Source: HMMH analysis, 2026

4.8.1 Future (2036) Proposed Action Alternative Grid Point Evaluation

HMMH evaluated the change in noise using two different grids as described in **Section 2.3**. The NSA grid was used to determine any significant changes within the DNL 65 dB contours or any reportable changes between

DNL 60 dB and 65 dB. The Secondary Study Grid was used to determine any reportable changes within the DNL 45 dB to 60 dB contour. A significant change in noise, as defined by the FAA criteria discussed in **Section 1.2** and shown in **Table 1-1**, is a change of 1.5 dB or more in DNL in areas within the Proposed Action Alternative DNL 65 dB contours. Grid point analyses identify any reportable change in noise using a similar process to the identification of significant changes. Reportable changes are defined as:

- A change of 3 dB or more where DNL is between 60 and 65
- A change of 5 dB or more where DNL is between 45 and 60

For 2036, there are no areas of 1.5 dB increase within the Proposed Action Alternative DNL 65 dB contours; therefore, there is no significant noise impact due to the Proposed Action Alternative. There are also no 3 dB changes between the Proposed Action Alternative DNL 60 dB and 65 dB contours and no 5 dB changes between the Proposed Action Alternative DNL 45 dB and 60 dB grid points; therefore, there are no reportable changes due to the Proposed Action Alternative.

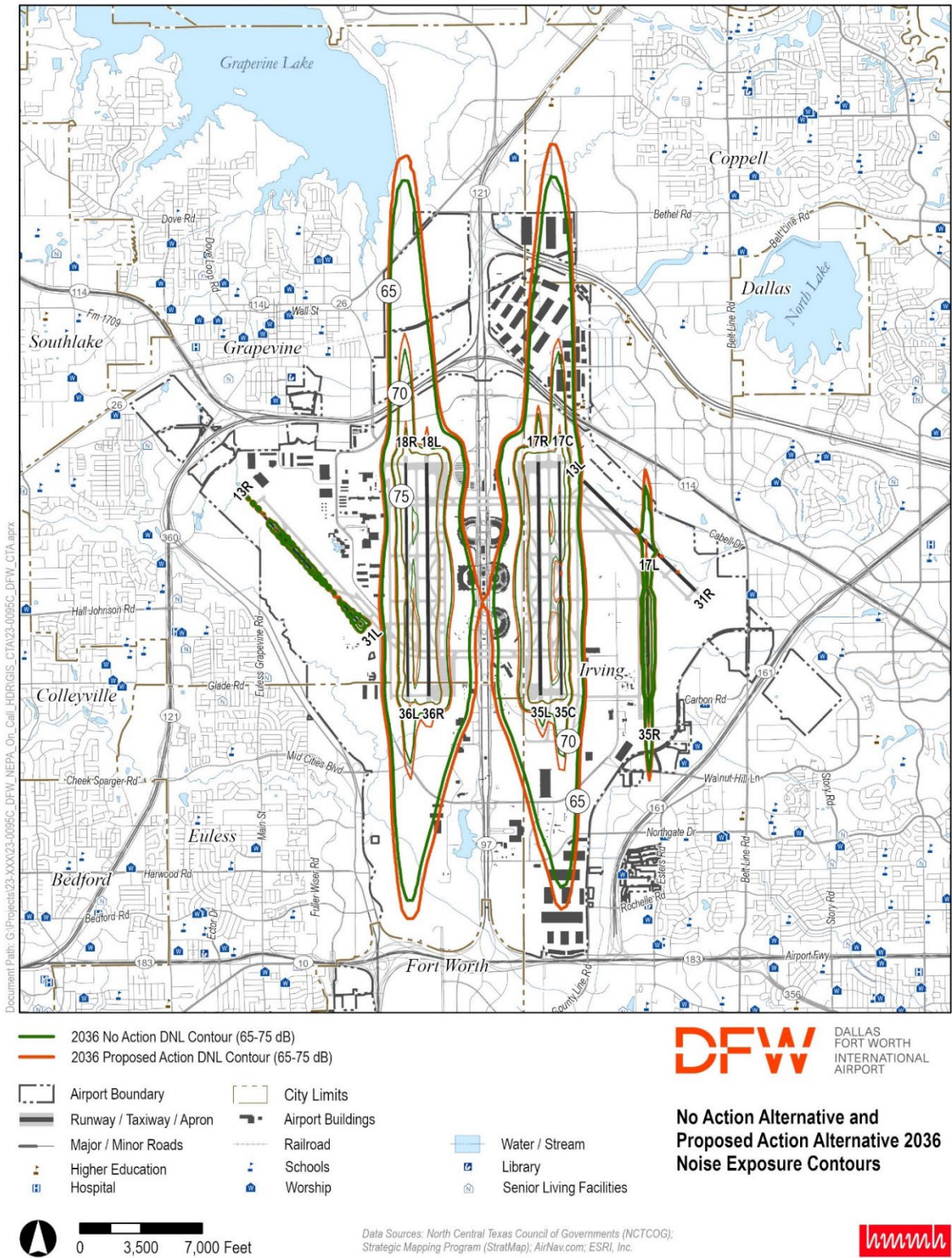
5. Mitigation

According to FAA Order 1050.1G, a significant noise impact would occur if the analysis showed that the Proposed Action Alternative would result in noise-sensitive areas experiencing an increase in noise of DNL 1.5 dB or more, at or above DNL 65 dB noise exposure when compared to the No Action Alternative for the same timeframe. The Proposed Action Alternative does not result in any area of significant noise increase; **therefore, there is no significant noise impact due to the Proposed Action Alternative, and no mitigation is required.**

There is a small area of residential land use south of Runway 35R in 2031 that would be newly exposed to DNL 65 dB due to the Proposed Action Alternative when compared to the No Action Alternative. This area of change does not exist in 2036 due to fleet improvements and increased use of quieter aircraft. This area consists of 28 residential units in 2031 of a multi-family apartment complex (see **Figure 4-4**). As there would be no significant impact, no mitigation is required for these residential units.

These housing units could be considered for future mitigation since they would be within the Proposed Action 65 DNL contours. However, DFW Airport had previously offered mitigation as part of the 1992 Environmental Impact Statement (as this area was within the 1992 EIS DNL 70 dB contour as shown in Figure 27) to these apartment complexes, but it was not accepted; therefore, DFW considers the area of these housing units a compatible land use.

Figure 5-1. Prior EA Sound Mitigation Area and Proposed Action DNL 65 dB Noise Exposure Contours



Appendix A Fundamentals of Characterizing Sound, Noise Effects, and Metrics

A.1 Introduction

This appendix introduces the fundamental terms needed to understand the noise analysis presented in this Noise Technical Report.

The Federal Aviation Administration (FAA) specifies how to analyze aviation noise. The Day-Night Average Sound Level (DNL) is the primary metric used to assess overall cumulative aviation noise exposure. The DNL represents the average daily sound level based on all the aviation noise occurring over the course of a year. The 24-hour period represented by DNL is referred to as the average annual day (AAD). The calculation of DNL is built on a set of more basic noise metrics, which are detailed below.

The following sections introduce basic acoustics terminology and metrics, followed by an overview of the effects of noise on human activity, community annoyance, and the current guidelines for land uses within various noise exposure levels.

A.2 Introduction to Acoustics and Noise Terminology

Noise is a very complex physical quantity. The properties, measurement, and presentation of noise involve specialized terminology that is often difficult to understand. To assist reviewers in interpreting the complex noise metrics used in evaluating airport noise, this appendix introduces six acoustical descriptors of noise, roughly in increasing degree of complexity:

- Sound Pressure Level and Decibels (dB)
- A-Weighted Decibel (dBA)
- Maximum Sound Level (L_{max})
- Sound Exposure Level (SEL)
- Equivalent Sound Level (L_{eq})
- Day-Night Average Sound Level (DNL)

These noise metrics form the basis for the majority of noise analyses conducted at U.S. airports.

A.3 Sound Pressure Level and Decibels, (dB)

All sounds come from a sound source—a musical instrument, a voice speaking, an airplane passing overhead. It takes energy to produce sound. The sound energy produced by any sound source is transmitted through the air in sound waves—tiny, quick oscillations of pressure just above and just below atmospheric pressure. The ear detects these oscillating pressures interpreting it as “sound.”

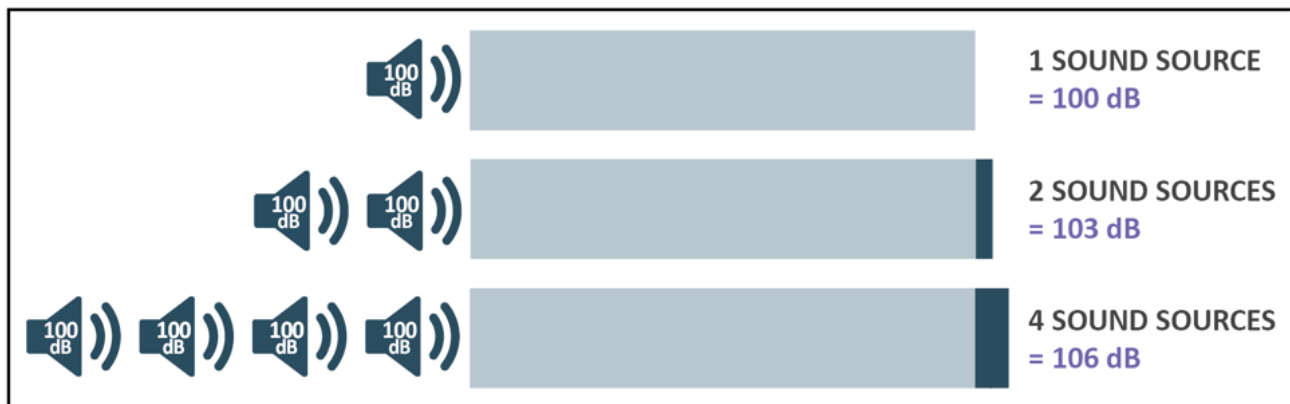
Our ears are sensitive to a wide range of sound pressures. Although the loudest sounds that we hear without pain have about one million times more energy than the quietest sounds we hear, our ears are incapable of detecting small differences in these pressures. Thus, to better match how we hear this sound energy, we compress the total range of sound pressures to a more meaningful range by introducing the concept of sound pressure level.

Sound pressure level (SPL) is measured in decibels (dB). Decibels are logarithms of a ratio, the numerator being the pressure of the sound source of interest, and the denominator being the reference pressure (equivalent to the quietest sound that an average healthy young adult can hear):

The logarithmic conversion of sound pressure to sound pressure level means that the quietest sound that we can hear (the reference pressure) has a sound pressure level of about 0 dB, while the loudest sounds that we hear without pain have sound pressure levels of about 120 dB. Most sounds in our day-to-day environment have sound pressure levels on the order of 30 dB to 100 dB.

Because decibels are logarithmic, combining decibels is unlike common arithmetic. For example, if two sound sources each produce 100 dB and they are then operated together, they produce 103 dB -- not the 200 dB we might expect. Four equal sources operating simultaneously produce another three dB of noise, resulting in a total sound pressure level of 106 dB. For every doubling of the number of equal sources, the sound pressure level goes up another three dB. **Figure A-1** illustrates this concept.

Figure A-1. Combined Sound Levels for Equal Sources



A tenfold increase in the number of sources makes the sound pressure level go up 10 dB. A hundredfold increase makes the level go up 20 dB, and it takes a thousand equal sources to increase the level 30 dB.

If one noise source is much louder than another, the two sources together will produce virtually the same sound pressure level (and sound to our ears) as the louder source alone. For example, a 100 dB source plus an 80 dB source produce approximately 100 dB when operating together (actually, 100.04 dB). The louder source "masks" the quieter one. But if the quieter source gets louder, it will have an increasing effect on the total sound pressure level such that, when the two sources are equal, as described above, they produce a level three decibels above the sound of either one by itself.

Conveniently, people also hear or interpret sound pressure in a logarithmic fashion. Two useful rules of thumb to remember when comparing sound pressure levels are (1) a 6 dB to 10 dB increase is generally perceived to

be about a doubling of loudness, and (2) changes in sound pressure level of less than about 3 dB are not readily detectable outside of a laboratory environment.

A.4 A-Weighted Decibel, sometimes denoted dBA

An important characteristic of sound is its frequency, or "pitch." This is the per-second rate of repetition of the sound pressure oscillations as they reach our ear, expressed in units known as Hertz (Hz), formerly called cycles per second.

When analyzing the total noise of any source, acousticians often break the noise into frequency bands to determine how much is low-frequency noise, how much is middle-frequency noise, and how much is high-frequency noise. This breakdown is important for two reasons:

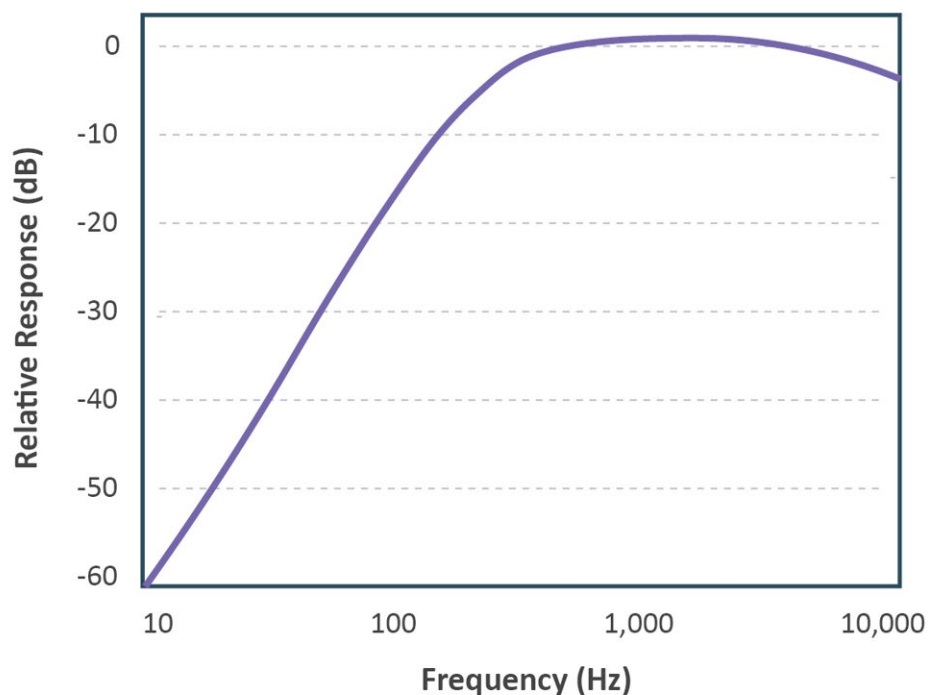
- Our ear is better equipped to hear mid and high frequencies and is less sensitive to lower frequencies. Thus, we find mid- and high-frequency noise more annoying.
- Engineering solutions to a noise problem are different for different frequency ranges. Low-frequency noise is generally harder to control.

The normal frequency range of hearing for most people extends from a low of about 20 Hz to a high of about 10,000 Hz to 15,000 Hz. People respond to sound most readily when the predominant frequency is in the range of normal conversation, typically around 1,000 Hz to 2,000 Hz. The acoustical community has defined several "filters," which approximate this sensitivity of our ear and thus, help us to judge the relative loudness of various sounds made up of many different frequencies.

The "A" filter (or "A-weighting") does this best for most environmental noise sources. A-weighted sound levels are measured in decibels, just like unweighted. To avoid ambiguity, A-weighted sound levels should be identified as such (e.g., "an A-weighted sound level of 85 dB") or in an abbreviated form (e.g., "a sound level of 85 dBA") where the "A" indicates the sound level has been A-weighted.

Government agencies in the U.S. (and most governments worldwide) recommend or require the use of A-weighted sound levels for measuring, modeling, describing, and assessing aircraft sound levels (and sound levels from most other transportation and environmental sources). **Figure A-2** depicts A-weighting adjustments to sound from approximately 20 Hz to 10,000 Hz.

Figure A-2. A-Weighted Sound Level

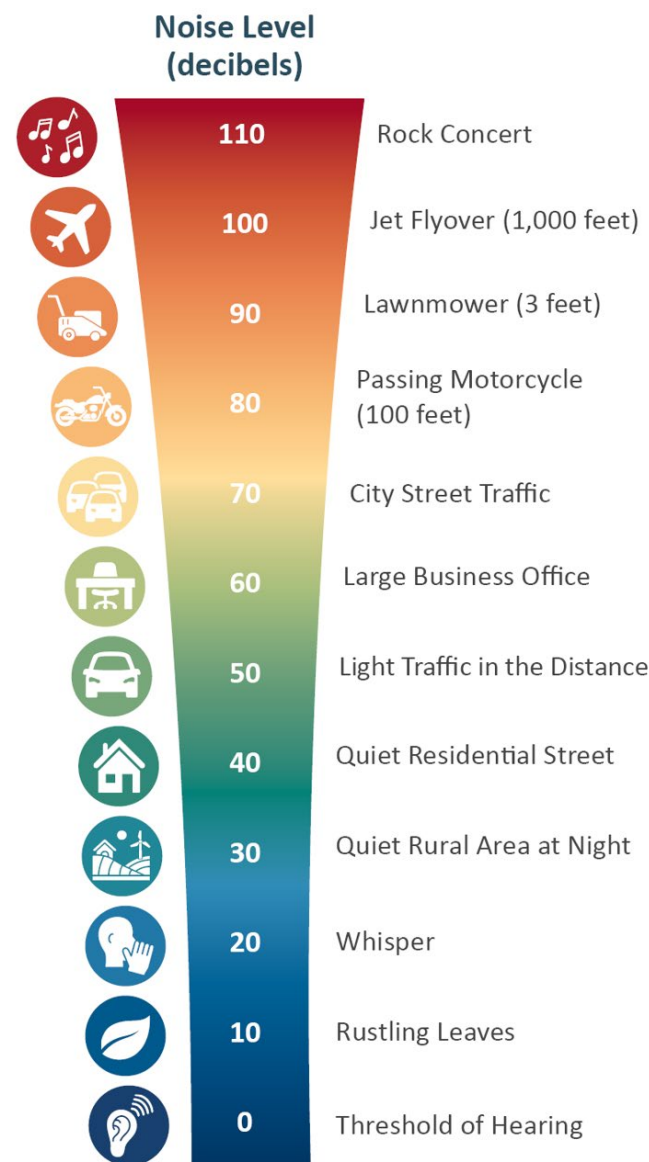


Source: HMMH, 2026

The A-weighted filter significantly de-emphasizes those parts of the total noise at lower and higher frequencies (below about 500 Hz and above about 10,000 Hz) where we do not hear as well. The filter has very little effect, or is nearly "flat," in the middle range of frequencies between 500 Hz and 10,000 Hz where we hear quite easily. Because this filter generally matches our ears' sensitivity, sounds having higher A-weighted sound levels are usually judged to be louder than those with lower A-weighted sound levels, a relationship which otherwise might not be true. It is for this reason that acousticians normally use A-weighted sound levels to evaluate environmental noise sources.

Figure A-3 depicts representative A-weighted sound levels for a variety of common sounds.

Figure A-3. Comparative A-Weighted Noise Levels

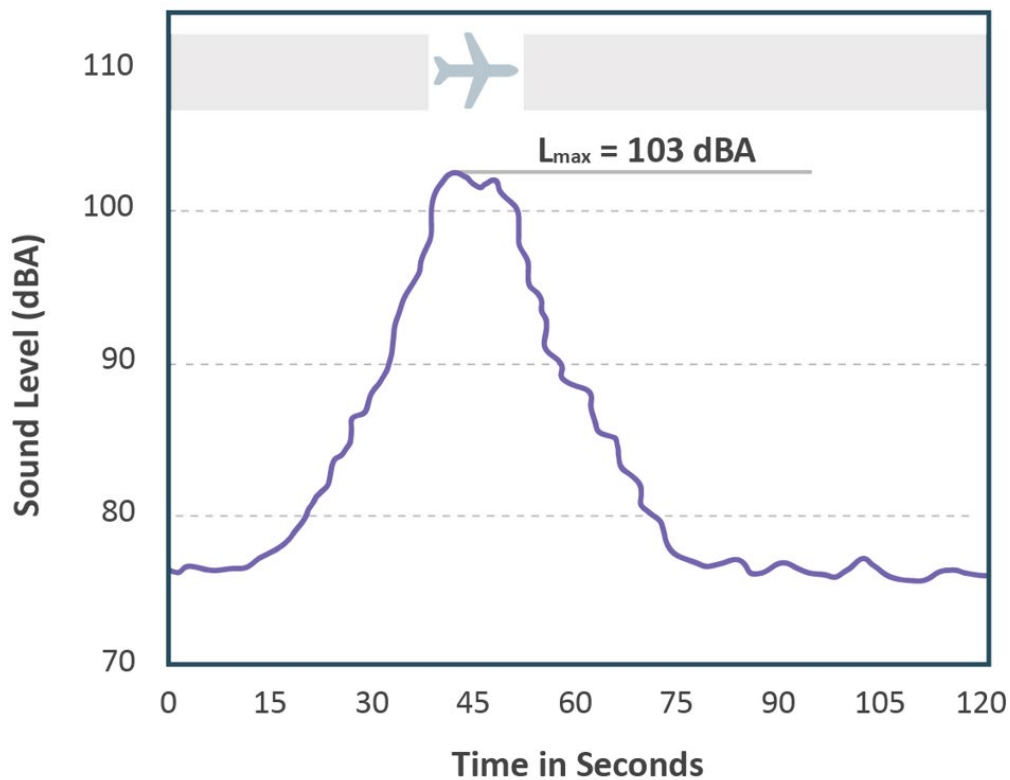


Source: HMMH, 2011

A.5 Maximum A-Weighted Sound Level, Lmax

An additional dimension to environmental noise is that A-weighted levels vary with time. For example, the sound level increases as an aircraft approaches, then falls and blends into the background as the aircraft recedes into the distance (though even the background varies as birds chirp, the wind blows, or a vehicle passes by). This is illustrated in **Figure A-4**.

Figure A-4. Variation in the A-Weighted Sound Level over Time



Source: HMMH, 2026

Because of this variation, it is often convenient to describe a particular noise "event" by its maximum sound level, abbreviated as L_{max} (or L_{Amax} , if the decibel abbreviation dB is used). In **Figure A-4**, the L_{max} is approximately 103 dB.

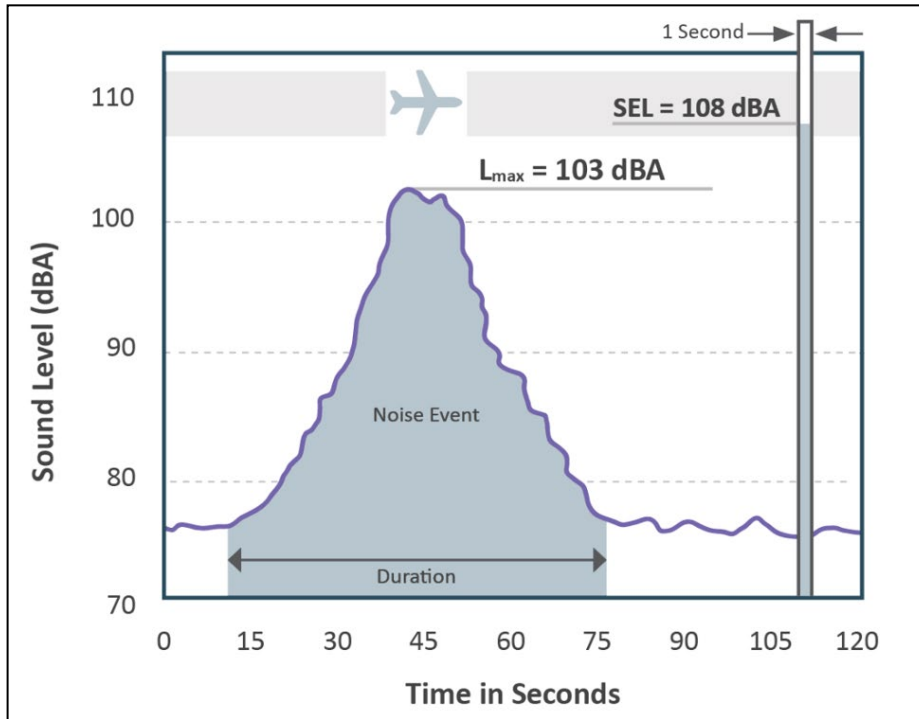
While the maximum level is easy to understand, it suffers from a serious drawback when used to describe the relative "noisiness" of an event such as an aircraft flyover; i.e., it describes only one dimension of the event and provides no information on the event's overall, or cumulative, noise exposure. In fact, two events with identical maximum levels may produce very different total exposures. One may be of very short duration, while the other may continue for an extended period and be judged much more annoying. The next sections introduce two closely related measures that account for this concept of a noise "dose," or the cumulative exposure associated with an individual "noise event" such as an aircraft flyover.

A.6 Sound Exposure Level, SEL

The most commonly used measure of cumulative noise exposure for an individual noise event, such as an aircraft flyover, is the Sound Exposure Level, or SEL. SEL is a summation of the A-weighted sound energy over the entire duration of a noise event. SEL expresses the accumulated energy in terms of the one-second-long steady-state sound level that would contain the same amount of energy as the actual time-varying level.

In simple terms, SEL "compresses" the energy into a single second. **Figure A-5** depicts this compression:

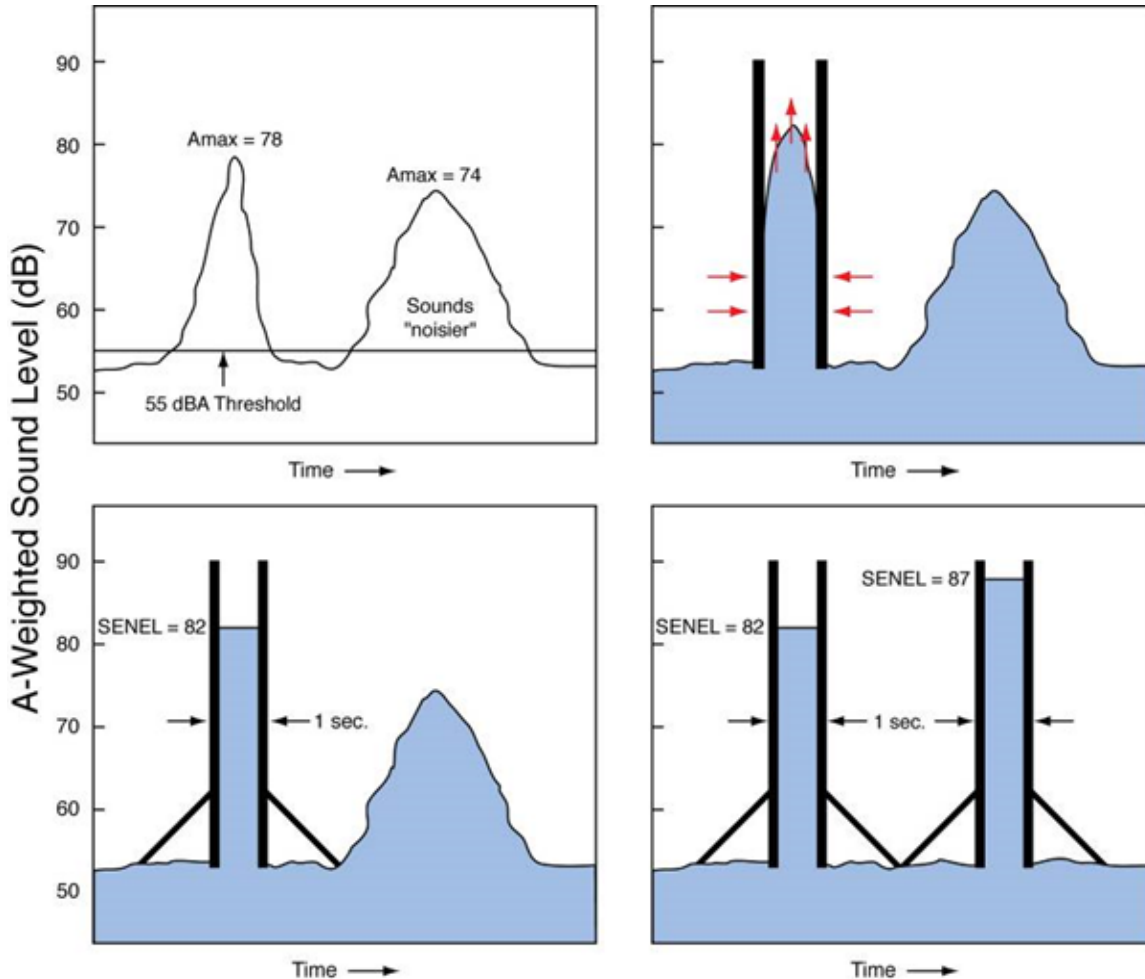
Figure A-5. Graphical Depiction of Sound Exposure Level



Source: HMMH, 2026

Note that because SEL is normalized to one second, it almost always will be higher than the event's L_{max} . In fact, for most aircraft flyovers, SEL is on the order of 5 dB to 12 dB higher than L_{max} . SEL provides a basis for comparing noise events that generally match our impression of their overall "noisiness," including the effects of both duration and level; the higher the SEL, the more annoying a noise event is likely to be. **Figure A-6** shows a comparison of two different noise events: the first has a shorter duration but a greater maximum level. More noise energy is contained in the second event, which has a higher SEL value.

Figure A-6. Graphical Comparison of SEL for Two Noise Events with Different Maximums and Durations



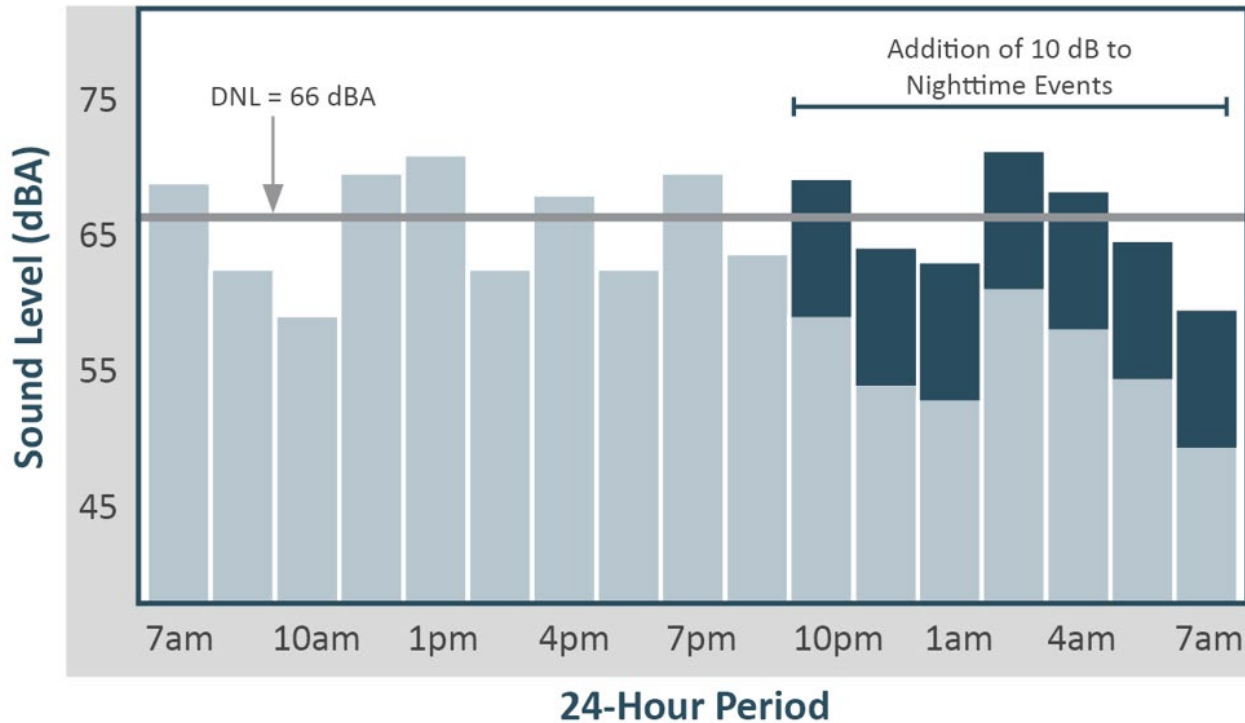
Source: HMMH, 2011

A.7 Day-Night Average Sound Level (DNL)

The previous sections describe noise metrics that account for short-term fluctuations in sound levels. DNL represents noise exposure as it occurs over a 24-hour period, with one adjustment: DNL treats noise occurring at night differently from daytime noise. The calculation adds 10 dB to events occurring between 10:00:00 p.m. and 6:59:59 a.m. This increase reflects the fact that people have a greater sensitivity to nighttime sounds. People often judge noises at night as more intrusive because background noise at night is generally lower.

Figure A-7 depicts this adjustment graphically.

Figure A-7. Example of a Day-Night Average Sound Level Calculation



Source: HMMH, 2026

DNL can be measured or estimated. It can be measured using community noise monitors; however, the measurement is limited to the specific locations where monitors are placed and to the period during which they operate, unless a permanent system is installed. Most noise studies use computer-generated DNL estimates. The computer model adds up all the SEL values for every event over an entire year of aircraft operations and computes the equivalent DNL for an AAD. Results are displayed as noise contours—lines connecting points with equal DNL. The contours usually reflect long-term (annual average) operating conditions, considering the average flights per day, how often each runway is used throughout the year, and where, over the surrounding communities, the aircraft normally fly. Sometimes color-coded grid points on a map report the computed DNL at locations of interest.

Most public agencies involved in noise regulation, including the FAA, Department of Defense, and Department of Housing and Urban Development (HUD), have adopted DNL as their primary metric.

The Federal Interagency Committee on Noise (FICON) reaffirmed the appropriateness of DNL in 1992. The FICON summary report stated, “There are no new descriptors or metrics of sufficient scientific standing to substitute for the present DNL cumulative noise exposure metric” (FICON 1992). This determination was reaffirmed in 2018 in a report from the Federal Interagency Committee on Aviation Noise (FICAN), the successor to FICON. Additionally, in response to a requirement in the FAA Reauthorization Act of 2018 stating that the FAA “evaluate alternative noise metrics to current average day-night level standard, such as the use of actual noise sampling to address community airplane noise concerns” (United States (U.S.) 2018, §188), in 2020 the FAA published a report that recommended the continued use of DNL for its decision-making regarding noise compatibility (FAA 2020). When preparing environmental noise analyses, the FAA considers a change of 1.5 dB within the DNL 65 dB contour to be “significant.” If a change of 1.5 dB is observed, analysts should look

between the 60 dB and 65 dB contours to see if there are areas of change of 3 dB or more; this is considered a “reportable impact.”

Section A.2 provided rules of thumb for interpreting moment-to-moment changes in sound level. **Table A-1** presents guidelines for interpreting changes in cumulative exposure:

Table A-1. Guidelines for Interpreting Changes in Cumulative Exposure

DNL Change	Community Response	Mitigation
0 dB – 2 dB	May be noticeable	Abatement may be beneficial
2 dB – 5 dB	Generally noticeable	Abatement should be beneficial
Over 5 dB	A change in community reaction is likely	Abatement definitely beneficial

Source: HMMH, 2021

Most public agencies dealing with noise exposure, including the FAA, Department of Defense, and Department of Housing and Urban Development (HUD), have adopted DNL in their guidelines and regulations.

A.8 The Effects of Aircraft Noise on People

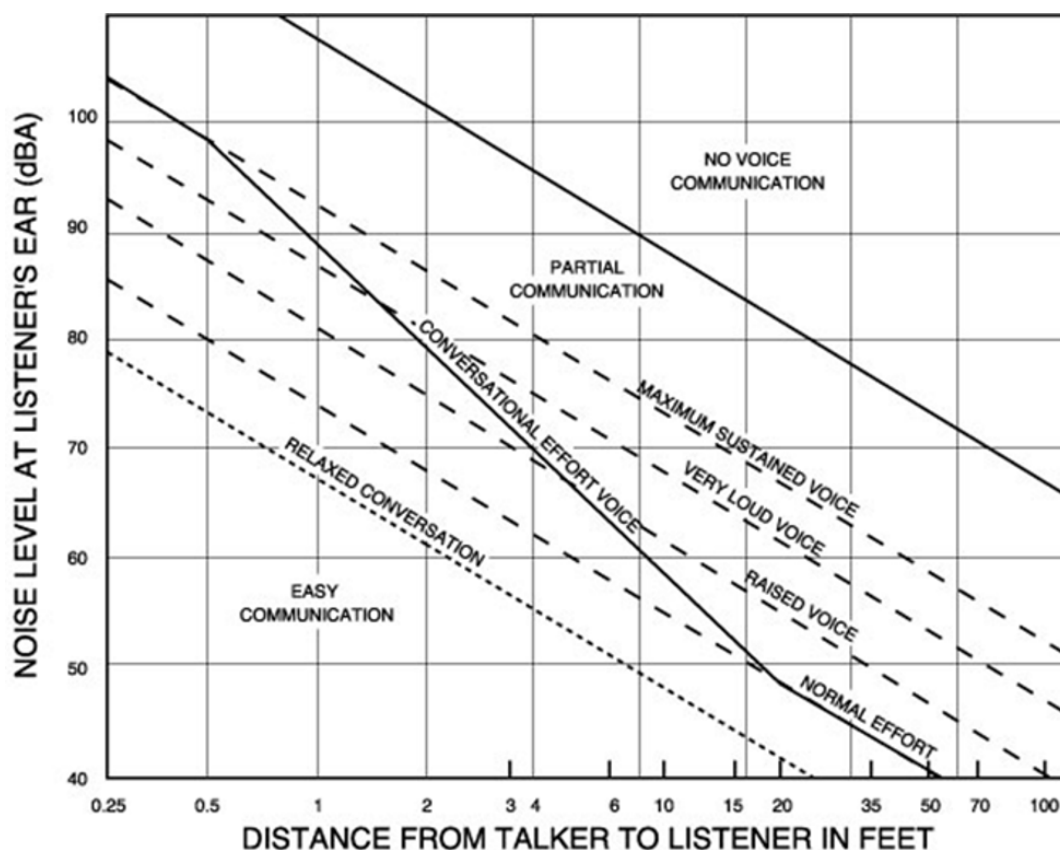
Aircraft noise can be an annoyance and a nuisance to residents living near airports. It can interfere with conversation and listening to television, disrupt classroom activities in schools, and disrupt sleep. Relating these effects to specific noise metrics helps explain how and why people react to their environment.

A.8.1 Speech Interference

Aircraft noise tends to “mask” speech, making normal conversation difficult. The sound level of speech decreases as the distance between a talker and listener increases. Additionally, as the background sound level increases, it becomes harder to hear speech. **Figure A-8** presents typical distances between talker and listener for satisfactory outdoor conversations, in the presence of different steady background noise levels for raised, normal, and relaxed voice effort. As the background level increases, the speaker must talk louder or the listeners must move closer to maintain intelligibility.

Normal conversational effort does not require hearing every word; 95 percent intelligibility is acceptable for many conversations. Listeners can infer a few unheard words when they occur in a familiar context. However, in relaxed conversation, we have higher expectations of hearing speech and generally require closer to 100 percent intelligibility. Any combination of talker-listener distances and background noise that falls below the bottom line in **Figure A-8** (thus assuring 100 percent intelligibility) represents an ideal environment for outdoor speech communication and is considered necessary for acceptable indoor conversation as well.

Figure A-8. Outdoor Speech Intelligibility



Source: EPA, 1974, Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare With an Adequate Margin of Safety, p. D-5.

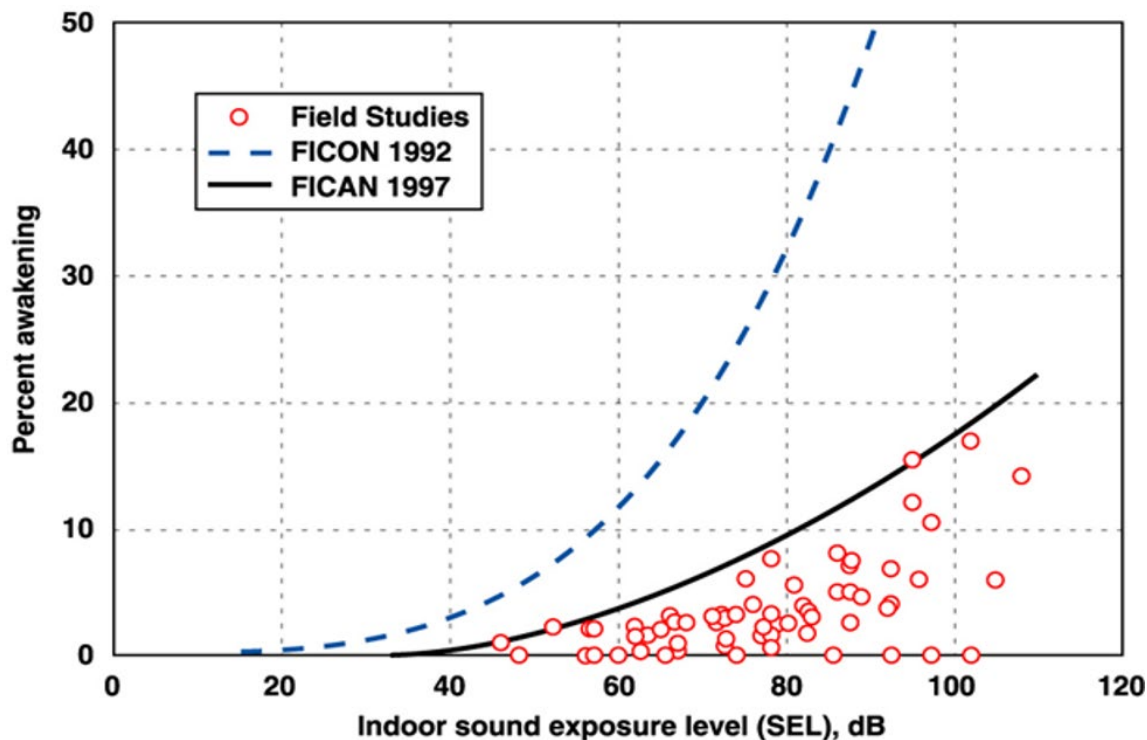
For typical communication distances of 3–4 feet (1–1.5 meters), outdoor conversations in a normal voice are intelligible if background noise is below approximately 65 dBA. If the noise exceeds this level, as might occur when an aircraft passes overhead, intelligibility would be lost unless vocal effort were increased or communication distance were decreased.

Indoors, acceptable speech generally requires a background level less than 45 dBA. With windows partly open, housing generally provides approximately 10 dBA to 15 dBA of interior-to-exterior noise level reduction. Thus, if the outdoor sound level is 60 dBA or less, there is a reasonable chance that the resulting indoor sound level will afford acceptable conversation. Closed windows typically provide about 24 dBA of noise reduction.

A.8.2 Sleep Interference

Research on sleep disruption from noise shows varying results, due to factors such as (1) sleep disturbances can occur without awakening; (2) deeper sleep requires more noise to cause arousal, and (3) the tendency to awaken increases with age and other factors. **Figure A-9** shows a summary of findings on the topic from the 1997 FICAN. It estimates the maximum percentage of people awakened from indoor aircraft SEL for long-term residential adults. An indoor SEL of 80 dB results in a maximum of 10 percent awakening.

Figure A-9. Sleep Interference



Source: FICAN, 1997, Effects of Aviation Noise on Awakenings From Sleep, p. 6, June.

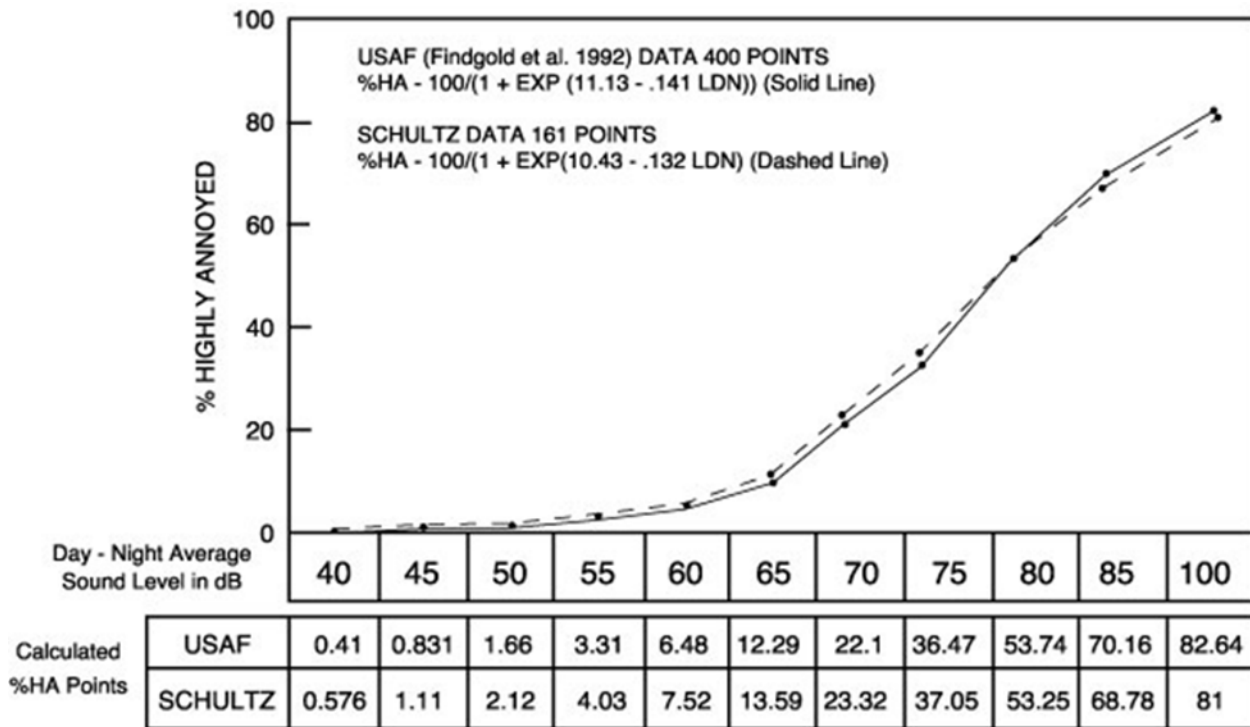
In 2008, the American National Standards Institute (ANSI) and the Acoustical Society of America (ASA) published a method for the estimation of awakenings from outdoor noise events. This standard was withdrawn in 2017 for reasons of technical inadequacy and stated that the 2008 methodology is not obviously superior to other predictive methods, such as the FICAN 1997 method described above. The results from the FAA's National Sleep Study, expected to conclude in 2026, are anticipated to update and inform U.S. policy on sleep disturbance.

A.9 Community Annoyance

Numerous psychoacoustic surveys provide substantial evidence that individual reactions to noise vary widely for a given noise exposure level. However, research has confirmed that a community's aggregate response is generally predictable and relates reasonably well to measures of cumulative noise exposure such as DNL.

Figure A-10 shows the Schultz curve, a widely recognized relationship between environmental noise and the percentage of people "highly annoyed," with annoyance being the key indicator of community response usually cited in this body of research.

Figure A-10. Percentage of People “Highly Annoyed”



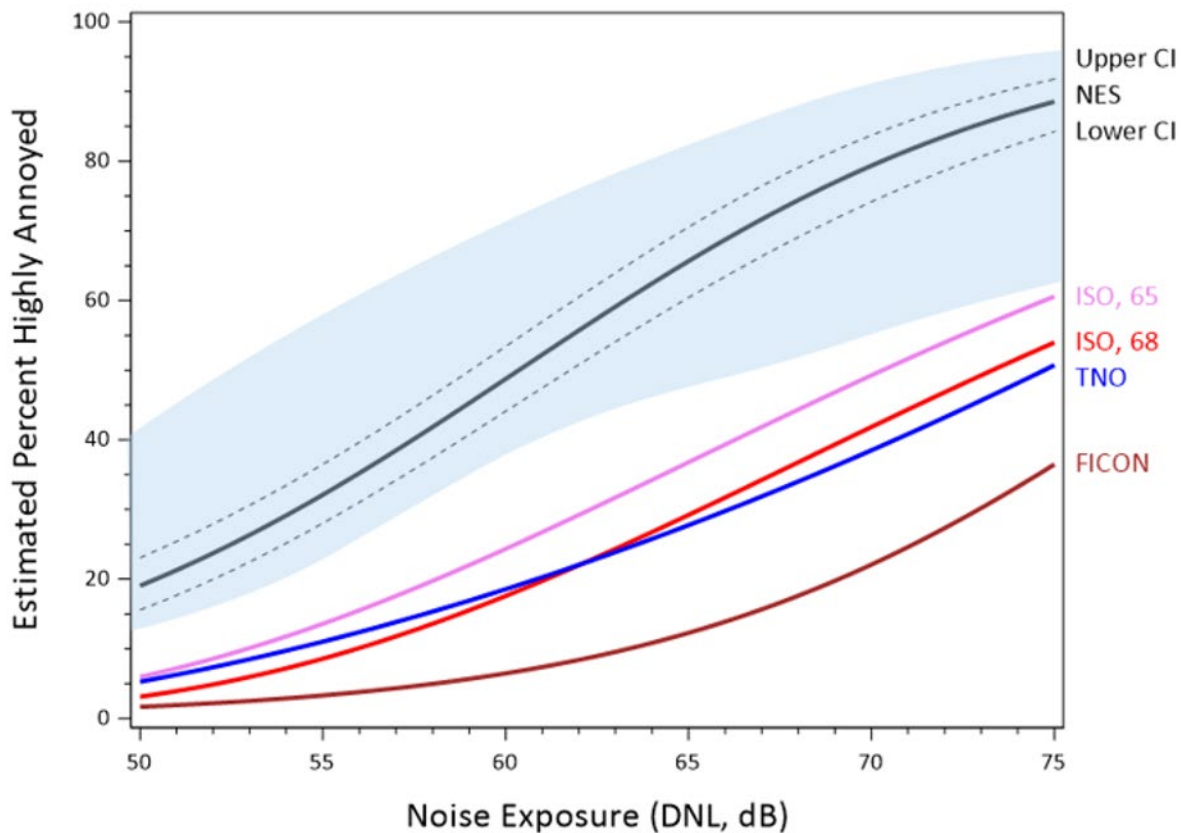
Source: FICON, 1992, Federal Agency Review of Selected Airport Noise Analysis Issues, pp. 3-6, applied using data provided by the USAF Armstrong Laboratory.

Based on data from 18 surveys conducted worldwide, the curve indicates that at levels as low as DNL 55 dB, approximately 3 percent to 4 percent of people would be “highly annoyed,” with this percentage increasing rapidly above 65 dB DNL. The study was originally conducted in 1974 and validated in 1992 by FICON.

Published in 2021, the FAA’s Neighborhood Environmental Survey (NES) was a multi-year research program to update scientific evidence on the relationship between aircraft noise exposure and its effects on communities around airports (FAA 2021). The NES resulted in an updated dose-response curve for the percentage of people highly annoyed by environmental noise at varying levels of DNL. This updated curve, provided in **Figure A-11**, shows a marked increase in the number of people highly annoyed by environmental noise at a given DNL compared to the FICON (1992) curve. **Figure A-11** also compares the national curve to three other curves from frequently cited research:

- Two community tolerance level analyses from the International Organization for Standardization (ISO) (2016), and
- The Netherlands Organisation for Applied Scientific Research (TNO) curve (2011).

Figure A-11. National Dose-Response Curve (NES), with 95 Percent Confidence Intervals (CI), and TNO, FICON and ISO Curves on Annoyance for a given DNL



Source: FAA. 2021. Analysis of the Neighborhood Environmental Survey

In 2023, the FAA initiated a review of its policies regarding civil aviation noise in response to public and stakeholder input on the FAA's ongoing research. This National Policy Review includes a review of research on the effects of exposure to aviation noise and review and possible revision of the noise metrics used to describe exposure to aircraft and vehicle noise, the defined thresholds for significant noise exposure, and thresholds for land uses compatible with airport operations (FAA 2023). Specifically, the FAA is reviewing the use of DNL as the primary noise metric for cumulative aircraft noise exposure, as well as the significance threshold for noise impact and land use compatibility.

A.10 References

Federal Aviation Administration (FAA). 2023. *Noise Policy Review, The Foundational Elements of the Federal Aviation Administration Civil Aviation Noise Policy: The Noise Measurement System, its Component Noise Metrics, and Noise Thresholds*. FAA Office of Environment and Energy. April. <https://www.faa.gov/noisepolicyreview/NPR-framing>.

FAA. 2021. *Analysis of the Neighborhood Environmental Survey*. February. <https://www.airporttech.tc.faa.gov/Products/Airport-Safety-Papers-Publications/Airport-Safety-Detail/ArtMID/3682/ArticleID/2845/Analysis-of-NES>.

FAA. 2020. *Report to Congress – Evaluation of Alternative Noise Metrics*. April 14.
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Federal Interagency Committee on Noise (FICON). 1992. *Federal Agency Review of Selected Airport Noise Analysis Issues*. Washington, DC: Federal Interagency Committee on Noise.

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<https://www.congress.gov/115/plaws/publ254/PLAW-115publ254.pdf>.

Appendix B AEDT Flight Track Utilization

The assigned model flight track percentages by runway end and operation are shown in the following tables. Track bundles (a backbone and multiple dispersion tracks) are listed with one master bundle name in the tables; each bundle consists of up to nine modeled flight tracks. Geographic depictions of the flight track locations are provided in **Section 3.5** of the Noise Technical Report.

Table B-1. AEDT Arrival Flight Track Utilization, Crosswind Runways

Runway	Track Group	Air Carrier Jet	Air Carrier Regional Jet	Air Taxi Jet	Air Taxi Non-Jet	General Aviation Jet	General Aviation Non-Jet
13L	13LAJ1	100%	100%	100%	0%	100%	0%
13L	13LAP1	0%	0%	0%	100%	0%	100%
Subtotal	-	100%	100%	100%	100%	100%	100%
13R	13RAJ1	95%	95%	95%	0%	95%	0%
13R	13RAJ2	5%	5%	5%	0%	5%	0%
13R	13RAP1	0%	0%	0%	100%	0%	100%
Subtotal	-	100%	100%	100%	100%	100%	100%
31L	31LAJ0	20%	20%	20%	0%	20%	0%
31L	31LAJ1	80%	80%	80%	0%	80%	0%
31L	31LAP0	0%	0%	0%	100%	0%	100%
Subtotal	-	100%	100%	100%	100%	100%	100%
31R	31RAJ1	100%	100%	100%	0%	100%	0%
31R	31RAP1	0%	0%	0%	100%	0%	100%
Subtotal	-	100%	100%	100%	100%	100%	100%

Sources: DFW 2018 AEDT Study and HMMH Analysis 2025

Table B-2. AEDT Departure Flight Track Utilization, Crosswind Runways

Runway	Track Group	Air Carrier Jet	Air Carrier Regional Jet	Air Taxi Jet	Air Taxi Non-Jet	General Aviation Jet	General Aviation Non-Jet
13L	13LDJ1	100%	100%	100%	0%	100%	0%
13L	13LDP1	0%	0%	0%	100%	0%	100%
Subtotal	-	100%	100%	100%	100%	100%	100%
13R	13RDJ1	100%	100%	100%	0%	100%	0%
13R	13RDP1	0%	0%	0%	100%	0%	100%
Subtotal	-	100%	100%	100%	100%	100%	100%
31L	31LDJ1	61%	61%	61%	0%	61%	0%
31L	31LDJ2	25%	25%	25%	0%	25%	0%
31L	31LDJ3	14%	14%	14%	0%	14%	0%
31L	31LDP1	0%	0%	0%	94%	0%	94%
31L	31LDP2	0%	0%	0%	6%	0%	6%
Subtotal	-	100%	100%	100%	100%	100%	100%
31R	31RDJ0	100%	100%	100%	0%	100%	0%
31R	31RDPO	0%	0%	0%	100%	0%	100%
Subtotal	-	100%	100%	100%	100%	100%	100%

Sources: DFW 2018 AEDT Study and HMMH Analysis 2025

Table B-3. AEDT Arrival Flight Track Utilization, North Flow

Runway	Track Group	Air Carrier Jet	Air Carrier Regional Jet	Air Taxi Jet	Air Taxi Non-Jet	General Aviation Jet	General Aviation Non-Jet
17C	17CAJ1A	16%	16%	16%	0%	16%	0%
17C	17CAJ1B	<1%	<1%	<1%	0%	<1%	0%
17C	17CAJ1C	12%	12%	12%	0%	12%	0%
17C	17CAJ1D	4%	4%	4%	0%	4%	0%
17C	17CAJ2A	5%	5%	5%	0%	5%	0%
17C	17CAJ2B	13%	13%	13%	0%	13%	0%
17C	17CAJ2C	10%	10%	10%	0%	10%	0%
17C	17CAJ2D	39%	39%	39%	0%	39%	0%
17C	17CAP1	0%	0%	0%	12%	0%	12%
17C	17CAP2	0%	0%	0%	73%	0%	73%
17C	17CAP3	0%	0%	0%	15%	0%	15%
Subtotal	-	100%	100%	100%	100%	100%	100%
17L	17LAJ4	15%	15%	15%	0%	15%	0%
17L	17LAJ5	51%	51%	51%	0%	51%	0%
17L	17LAJ7	35%	35%	35%	0%	35%	0%
17L	17LAP1	0%	0%	0%	89%	0%	89%
17L	17LAP2	0%	0%	0%	11%	0%	11%
Subtotal	-	100%	100%	100%	100%	100%	100%
17R	17RAJ1	6%	6%	6%	0%	6%	0%
17R	17RAJ2	18%	18%	18%	0%	18%	0%
17R	17RAJ3	26%	26%	26%	0%	26%	0%
17R	17RAJ4	7%	7%	7%	0%	7%	0%
17R	17RAJ5	21%	21%	21%	0%	21%	0%
17R	17RAJ6	9%	9%	9%	0%	9%	0%
17R	17RAJ7	13%	13%	13%	0%	13%	0%
17R	17RAP0	0%	0%	0%	100%	0%	100%
Subtotal	-	100%	100%	100%	100%	100%	100%
18L	18LAJ1	31%	31%	31%	0%	31%	0%
18L	18LAJ2	37%	37%	37%	0%	37%	0%
18L	18LAJ3	11%	11%	11%	0%	11%	0%
18L	18LAJ4	21%	21%	21%	0%	21%	0%
18L	18LAP0	0%	0%	0%	100%	0%	100%
Subtotal	-	100%	100%	100%	100%	100%	100%
18R	18RAJ1	4%	4%	4%	0%	4%	0%
18R	18RAJ2	31%	31%	31%	0%	31%	0%
18R	18RAJ3	<1%	<1%	<1%	0%	<1%	0%
18R	18RAJ4	51%	51%	51%	0%	51%	0%
18R	18RAJ5	2%	2%	2%	0%	2%	0%
18R	18RAJ6	<1%	<1%	<1%	0%	<1%	0%
18R	18RAJ7	2%	2%	2%	0%	2%	0%
18R	18RAJ8	4%	4%	4%	0%	4%	0%
18R	18RAJ9	5%	5%	5%	0%	5%	0%
18R	18RAP1	0%	0%	0%	41%	0%	41%
18R	18RAP2	0%	0%	0%	59%	0%	59%
Subtotal	-	100%	100%	100%	100%	100%	100%

Note: Totals may not match exactly due to rounding.

Sources: DFW 2018 AEDT Study and HMMH Analysis 2025

Table B-4. AEDT Arrival Flight Track Utilization, South Flow

Runway	Track Group	Air Carrier Jet	Air Carrier Regional Jet	Air Taxi Jet	Air Taxi Non-Jet	General Aviation Jet	General Aviation Non-Jet
35C	35CAJ1A	15%	15%	15%	0%	15%	0%
35C	35CAJ1B, C	<1%	<1%	<1%	0%	<1%	0%
35C	35CAJ2A	53%	53%	53%	0%	53%	0%
35C	35CAJ2B, C	<1%	<1%	<1%	0%	<1%	0%
35C	35CAJ3A	17%	17%	17%	0%	17%	0%
35C	35CAJ3B	6%	6%	6%	0%	6%	0%
35C	35CAJ4A	4%	4%	4%	0%	4%	0%
35C	35CAJ4B	3%	3%	3%	0%	3%	0%
35C	35CAP1	0%	0%	0%	19%	0%	19%
35C	35CAP2	0%	0%	0%	45%	0%	45%
35C	35CAP3	0%	0%	0%	13%	0%	13%
35C	35CAP4	0%	0%	0%	23%	0%	23%
Subtotal	-	100%	100%	100%	100%	100%	100%
35L	35LAJ1A	20%	20%	20%	0%	20%	0%
35L	35LAJ1B	22%	22%	22%	0%	22%	0%
35L	35LAJ2A	24%	24%	24%	0%	24%	0%
35L	35LAJ2B	6%	6%	6%	0%	6%	0%
35L	35LAJ3	15%	15%	15%	0%	15%	0%
35L	35LAJ4	13%	13%	13%	0%	13%	0%
35L	35LAP1	0%	0%	0%	100%	0%	100%
Subtotal	-	100%	100%	100%	100%	100%	100%
35R	35RAJ1A	1%	1%	1%	0%	1%	0%
35R	35RAJ1B	<1%	<1%	<1%	0%	<1%	0%
35R	35RAJ2	32%	32%	32%	0%	32%	0%
35R	35RAJ3A	35%	35%	35%	0%	35%	0%
35R	35RAJ3B	31%	31%	31%	0%	31%	0%
35R	35RAJ4	<1%	<1%	<1%	0%	<1%	0%
35R	35RAP1	0%	0%	0%	69%	0%	69%
35R	35RAP2	0%	0%	0%	31%	0%	31%
Subtotal	-	100%	100%	100%	100%	100%	100%
36L	36LAJ1A	40%	40%	40%	0%	40%	0%
36L	36LAJ1B	<1%	<1%	<1%	0%	<1%	0%
36L	36LAJ2A	<1%	<1%	<1%	0%	<1%	0%
36L	36LAJ2B	4%	4%	4%	0%	4%	0%
36L	36LAJ2C	7%	7%	7%	0%	7%	0%
36L	36LAJ2D	<1%	<1%	<1%	0%	<1%	0%
36L	36LAJ3A	2%	2%	2%	0%	2%	0%
36L	36LAJ3B	5%	5%	5%	0%	5%	0%
36L	36LAJ4A	26%	26%	26%	0%	26%	0%
36L	36LAJ4B	16%	16%	16%	0%	16%	0%
36L	36LAP1	0%	0%	0%	64%	0%	64%
36L	36LAP2	0%	0%	0%	11%	0%	11%
36L	36LAP3	0%	0%	0%	25%	0%	25%
Subtotal	-	100%	100%	100%	100%	100%	100%
36R	36RAJ1	26%	26%	26%	0%	26%	0%
36R	36RAJ2A	3%	3%	3%	0%	3%	0%
36R	36RAJ2B	14%	14%	14%	0%	14%	0%
36R	36RAJ3	21%	21%	21%	0%	21%	0%
36R	36RAJ4	36%	36%	36%	0%	36%	0%
36R	36RAP1	0%	0%	0%	100%	0%	100%
Subtotal	-	100%	100%	100%	100%	100%	100%

Note: Totals may not match exactly due to rounding.

Sources: DFW 2018 AEDT Study and HMMH Analysis 2025

Table B-5. AEDT Departure Flight Track Utilization, South Flow

Runway	Track Group	Air Carrier Jet	Air Carrier Regional Jet	Air Taxi Jet	Air Taxi Non-Jet	General Aviation Jet	General Aviation Non-Jet
17C	17CDJ1	21%	21%	21%	0%	21%	0%
17C	17CDJ2A	39%	39%	39%	0%	39%	0%
17C	17CDJ2B	35%	35%	35%	0%	35%	0%
17C	17CDJ3	5%	5%	5%	0%	5%	0%
17C	17CDP1	0%	0%	0%	15%	0%	15%
17C	17CDP2	0%	0%	0%	65%	0%	65%
17C	17CDP3	0%	0%	0%	21%	0%	21%
Subtotal	-	100%	100%	100%	100%	100%	100%
17L	17LDJ1	100%	100%	100%	0%	100%	0%
17L	17LDP1	0%	0%	0%	100%	0%	100%
Subtotal	-	100%	100%	100%	100%	100%	100%
17R	17RDJ1A	<1%	<1%	<1%	0%	<1%	0%
17R	17RDJ1B	<1%	<1%	<1%	0%	<1%	0%
17R	17RDJ1C	<1%	<1%	<1%	0%	<1%	0%
17R	17RDJ2A	2%	2%	2%	0%	2%	0%
17R	17RDJ2B	1%	1%	1%	0%	1%	0%
17R	17RDJ3A	13%	13%	13%	0%	13%	0%
17R	17RDJ3B	3%	3%	3%	0%	3%	0%
17R	17RDJ4A	35%	35%	35%	0%	35%	0%
17R	17RDJ4B	11%	11%	11%	0%	11%	0%
17R	17RDJ4C	18%	18%	18%	0%	18%	0%
17R	17RDJ5A	3%	3%	3%	0%	3%	0%
17R	17RDJ5B	7%	7%	7%	0%	7%	0%
17R	17RDJ6	2%	2%	2%	0%	2%	0%
17R	17RDJ7	3%	3%	3%	0%	3%	0%
17R	17RDJ8	1%	1%	1%	0%	1%	0%
17R	17RDP1	0%	0%	0%	20%	0%	20%
17R	17RDP2	0%	0%	0%	33%	0%	33%
17R	17RDP3	0%	0%	0%	39%	0%	39%
17R	17RDP4	0%	0%	0%	8%	0%	8%
Subtotal	-	100%	100%	100%	100%	100%	100%
18L	18LDJ1	<1%	<1%	<1%	0%	<1%	0%
18L	18LDJ10	6%	6%	6%	0%	6%	0%
18L	18LDJ2	7%	7%	7%	0%	7%	0%
18L	18LDJ3	2%	2%	2%	0%	2%	0%
18L	18LDJ4A	8%	8%	8%	0%	8%	0%
18L	18LDJ4B	8%	8%	8%	0%	8%	0%
18L	18LDJ4C	3%	3%	3%	0%	3%	0%
18L	18LDJ5A	4%	4%	4%	0%	4%	0%
18L	18LDJ5B	4%	4%	4%	0%	4%	0%
18L	18LDJ6	19%	19%	19%	0%	19%	0%
18L	18LDJ7	15%	15%	15%	0%	15%	0%
18L	18LDJ8	2%	2%	2%	0%	2%	0%
18L	18LDJ9	21%	21%	21%	0%	21%	0%
18L	18LDP1A	0%	0%	0%	58%	0%	58%
18L	18LDP1B	0%	0%	0%	42%	0%	42%
Subtotal	-	100%	100%	100%	100%	100%	100%
18R	18RDJ1	20%	20%	20%	0%	20%	0%
18R	18RDJ2	14%	14%	14%	0%	14%	0%
18R	18RDJ3	15%	15%	15%	0%	15%	0%

Runway	Track Group	Air Carrier Jet	Air Carrier Regional Jet	Air Taxi Jet	Air Taxi Non-Jet	General Aviation Jet	General Aviation Non-Jet
18R	18RDJ4	9%	9%	9%	0%	9%	0%
18R	18RDJ5A	15%	15%	15%	0%	15%	0%
18R	18RDJ5B	17%	17%	17%	0%	17%	0%
18R	18RDJ6	10%	10%	10%	0%	10%	0%
18R	18RDP1A	0%	0%	0%	79%	0%	79%
18R	18RDP1B	0%	0%	0%	21%	0%	21%
Subtotal	-	100%	100%	100%	100%	100%	100%

Note: Totals may not match exactly due to rounding.

Sources: DFW 2018 AEDT Study and HMMH Analysis 2025

Table B-6. AEDT Departure Flight Track Utilization, North Flow

Runway	Track Group	Air Carrier Jet	Air Carrier Regional Jet	Air Taxi Jet	Air Taxi Non-Jet	General Aviation Jet	General Aviation Non-Jet
35C	35CDJ1	4%	4%	4%	0%	4%	0%
35C	35CDJ2	13%	13%	13%	0%	13%	0%
35C	35CDJ3	3%	3%	3%	0%	3%	0%
35C	35CDJ4A	10%	10%	10%	0%	10%	0%
35C	35CDJ4B	5%	5%	5%	0%	5%	0%
35C	35CDJ5A	11%	11%	11%	0%	11%	0%
35C	35CDJ5B	9%	9%	9%	0%	9%	0%
35C	35CDJ6	45%	45%	45%	0%	45%	0%
35C	35CDP0	0%	0%	0%	39%	0%	39%
35C	35CDP1	0%	0%	0%	24%	0%	24%
35C	35CDP2	0%	0%	0%	24%	0%	24%
35C	35CDP3	0%	0%	0%	6%	0%	6%
35C	35CDP4	0%	0%	0%	6%	0%	6%
Subtotal	-	100%	100%	100%	100%	100%	100%
35L	35LDJ1A	<1%	<1%	<1%	0%	<1%	0%
35L	35LDJ1B	<1%	<1%	<1%	0%	<1%	0%
35L	35LDJ1C	<1%	<1%	<1%	0%	<1%	0%
35L	35LDJ2A	1%	1%	1%	0%	1%	0%
35L	35LDJ2B	13%	13%	13%	0%	13%	0%
35L	35LDJ2C	2%	2%	2%	0%	2%	0%
35L	35LDJ2D	<1%	<1%	<1%	0%	<1%	0%
35L	35LDJ3A	21%	21%	21%	0%	21%	0%
35L	35LDJ3B	12%	12%	12%	0%	12%	0%
35L	35LDJ4A	33%	33%	33%	0%	33%	0%
35L	35LDJ4B	2%	2%	2%	0%	2%	0%
35L	35LDJ4C	3%	3%	3%	0%	3%	0%
35L	35LDJ5A	10%	10%	10%	0%	10%	0%
35L	35LDJ5B	2%	2%	2%	0%	2%	0%
35L	35LDP1	0%	0%	0%	100%	0%	100%
Subtotal	-	100%	100%	100%	100%	100%	100%
35R	35RDJ1	100%	100%	100%	0%	100%	0%
35R	35RDP0	0%	0%	0%	100%	0%	100%
Subtotal	-	100%	100%	100%	100%	100%	100%
36L	36LDJ1	31%	31%	31%	0%	31%	0%
36L	36LDJ2A	14%	14%	14%	0%	14%	0%
36L	36LDJ2B	11%	11%	11%	0%	11%	0%
36L	36LDJ3A	14%	14%	14%	0%	14%	0%
36L	36LDJ3B	20%	20%	20%	0%	20%	0%

Runway	Track Group	Air Carrier Jet	Air Carrier Regional Jet	Air Taxi Jet	Air Taxi Non-Jet	General Aviation Jet	General Aviation Non-Jet
36L	36LDJ3C	10%	10%	10%	0%	10%	0%
36L	36LDP1	0%	0%	0%	88%	0%	88%
36L	36LDP2	0%	0%	0%	12%	0%	12%
Subtotal	-	100%	100%	100%	100%	100%	100%
36R	36RDJ1	<1%	<1%	<1%	0%	<1%	0%
36R	36RDJ10	1%	1%	1%	0%	1%	0%
36R	36RDJ1B	17%	17%	17%	0%	17%	0%
36R	36RDJ2	6%	6%	6%	0%	6%	0%
36R	36RDJ3	19%	19%	19%	0%	19%	0%
36R	36RDJ4	5%	5%	5%	0%	5%	0%
36R	36RDJ5A	1%	1%	1%	0%	1%	0%
36R	36RDJ5B	<1%	<1%	<1%	0%	<1%	0%
36R	36RDJ5C	<1%	<1%	<1%	0%	<1%	0%
36R	36RDJ6	16%	16%	16%	0%	16%	0%
36R	36RDJ7	2%	2%	2%	0%	2%	0%
36R	36RDJ8	3%	3%	3%	0%	3%	0%
36R	36RDJ9	3%	3%	3%	0%	3%	0%
36R	36RDJC	3%	3%	3%	0%	3%	0%
36R	36RDJD	19%	19%	19%	0%	19%	0%
36R	36RDJE	<1%	<1%	<1%	0%	<1%	0%
36R	36RDJF	1%	1%	1%	0%	1%	0%
36R	36RDP1	0%	0%	0%	88%	0%	88%
36R	36RDP2	0%	0%	0%	12%	0%	12%
Subtotal	-	100%	100%	100%	100%	100%	100%

Note: Totals may not match exactly due to rounding.

Sources: DFW 2018 AEDT Study and HMMH Analysis 2025

Appendix C 2026 DFW Operations Memo and FAA Approval

The following pages reproduce Appendix D from the 2026 DFW Operations Memo that was provided to the FAA for review and approval for the EA. FAA approved the use of this forecast on April 3, 2026.

The total operations numbers below represent the Fiscal Year operations totals for each Supplemental EA future condition. These were converted to Calendar Year for use in the EA and applied to the Fleet Mix percentages provided below for each future condition.

The full 2026 DFW Operations Memo²¹ and FAA Approval of the Operations Memo²² are also attached.

²¹ Submitted to FAA on April 1, 2026

²² FAA Approval dated April 3, 2026

Appendix D

As can be seen from the summary tables, the number of operations previously modeled as part of the original EA (and included within the original Operations Memo) have not changed.

The table below is an overview of the various scenarios and total annual operations with the corresponding data tables below. These overall operations are consistent with previously modeled and approved NEPA documents and demonstrate that there is no increase in operations related to this Supplemental EA.

Scenario	Operations
No action 2031	820,046
No action 2036	830,339
Proposed action 2031	890,491
Proposed action 2036	961,983
Previously modeled, original/ approved NEPA	963,235

Dallas Fort Worth
International Airport
P.O. Box 619428
DFW Airport, TX 75261-9428

No Action – 2031

Category	Propulsion Class	AEDT Aircraft Type	No Action 2031
Air Carrier	Jet	7478	0.20%
		7879	1.56%
		737700	6.75%
		737800	21.50%
		747400	0.38%
		777200	0.90%
		777300	0.56%
		7379MAX	4.66%
		747400RN	0.00%
		757PW	0.19%
		757RR	0.28%
		7673ER	0.99%
		7773ER	0.53%
		787R	0.42%
		A350-622R	0.32%
		A319-131	8.92%
		A320-211	1.60%
		A320-232	3.74%
		A320-271N	4.05%
		A321-232	21.86%
		A350-941	0.11%
		A380-841	0.11%
		DC1010	0.00%
		DC1030	0.00%
		EMB190	0.17%
		MD11GE	0.00%
		MD11PW	0.00%
	Regional Jet	CRJ9-ER	8.18%
		EMB175	7.45%
		EMB175	0.81%
	Subtotal		96.25%
Air Taxi	Jet	CNA680	0.04%
		1900D	0.05%
	Nonjet	CNA208	0.12%
		DHC6	0.06%
	Regional Jet	EMB14L	2.67%
	Subtotal		2.95%
General Aviation	Jet	CL600	0.02%
		CNA525C	0.04%
		CNA55B	0.02%
		CNA560XL	0.04%
		G650ER	0.00%
		GIV	0.03%
		GV	0.02%
		LEAR35	0.04%
	Nonjet	CNA208	0.61%
	Subtotal		0.81%
Grand Total		100.00%	
Total Operations - Per Day		2,246.7	
Total Operations - Per Year		820,046	

Dallas Fort Worth
International Airport
P.O. Box 619428
DFW Airport, TX 75261-9428

No Action – 2036

Category	Propulsion Class	AEDT Aircraft Type	No Action 2036
Air Carrier	Jet	747B	0.20%
		7679	6.00%
		737700	0.00%
		737800	5.00%
		747400	0.00%
		777200	0.00%
		777300	0.25%
		7378MAX	32.00%
		747400RN	0.00%
		757PW	0.00%
		757RR	0.00%
		7673ER	2.00%
		7773ER	0.25%
		787BR	1.00%
		A350-622R	0.00%
		A319-131	2.00%
		A320-211	0.50%
		A320-232	1.07%
		A320-271N	35.00%
		A321-232	2.00%
	A350-941	5.00%	
	A380-841	0.11%	
	DC1010	0.00%	
	DC1030	0.00%	
	EMB190	1.00%	
	MD11GE	0.00%	
	MD11PW	0.00%	
Regional Jet	CRJ9-ER	1.00%	
	EMB170	4.00%	
	EMB175	0.50%	
	Subtotal	98.88%	
Air Taxi	Jet	CNA680	0.05%
		1900D	0.06%
	Nonjet	CNA208	0.14%
		DHC6	0.07%
	Regional Jet	EMB14L	0.00%
Subtotal	0.32%		
General Aviation	Jet	CL600	0.02%
		CNA525C	0.04%
		CNA558	0.02%
		CNA560XL	0.04%
		G650ER	0.00%
		GIV	0.03%
		GV	0.01%
		LEAR35	0.04%
	Nonjet	CNA208	0.60%
Subtotal	0.80%		
Grand Total		100.00%	
Total Operations - Per Day		2,274.9	
Total Operations - Per Year		830,339	

Dallas Fort Worth
International Airport
P.O. Box 619428
DFW Airport, TX 75261-9428

Proposed Action - 2031

Category	Propulsion Class	AEDT Aircraft Type	Proposed Action 2031
Air Carrier	Jet	7478	0.20%
		7679	1.62%
		737700	6.44%
		737800	20.51%
		747400	0.61%
		777200	1.20%
		777300	0.89%
		7378MAX	4.61%
		747400RN	0.00%
		757PW	0.18%
		757RER	0.26%
		7673ER	0.96%
		7773ER	0.49%
		7878R	0.42%
		A300-622R	0.40%
		A319-131	8.55%
		A320-211	1.80%
		A320-232	3.71%
		A320-271N	3.66%
		A321-232	21.95%
		A350-941	0.11%
		A380-841	0.09%
		DC1010	0.00%
	DC1030	0.00%	
	EMB190	0.19%	
	MD11GE	0.00%	
	MD11PW	0.00%	
Regional Jet	CRJ9-ER	8.93%	
	EMB170	7.67%	
	EMB175	0.83%	
Subtotal		96.31%	
Air Taxi	Jet	CNA680	0.07%
	Nonjet	1900D	0.08%
		CNA208	0.18%
		DHC6	0.09%
	Regional Jet	EMB14L	2.53%
Subtotal		2.95%	
General Aviation	Jet	CL600	0.02%
		CNA525C	0.05%
		CNA55B	0.03%
		CNA560XL	0.04%
		G650ER	0.00%
		GIV	0.03%
		GV	0.02%
	Nonjet	LEAR35	0.01%
		CNA208	0.55%
	Subtotal		0.74%
Grand Total			100.00%
Total Operations - Per Day			2,439.7
Total Operations - Per Year			890,491

Dallas Fort Worth
International Airport
P.O. Box 619428
DFW Airport, TX 75261-9428

Proposed Action - 2036

Category	Propulsion Class	AEDT Aircraft Type	Proposed Action 2036
Air Carrier	Jet	7478	0.20%
		7879	6.00%
		737700	0.00%
		737800	5.00%
		747400	0.00%
		777200	0.00%
		777300	0.25%
		7378MAX	32.00%
		747400RN	0.00%
		757PW	0.00%
		757RR	0.00%
		7673ER	2.00%
		7773ER	0.25%
		7878R	1.00%
		A300-622R	0.00%
		A319-131	2.00%
		A320-211	0.50%
		A320-232	1.07%
		A320-271N	35.00%
		A321-232	2.00%
	A350-941	5.00%	
	A380-841	0.11%	
	DC1010	0.00%	
DC1030	0.00%		
EMB190	1.00%		
MD11GE	0.00%		
MD11PW	0.00%		
Regional Jet	CRJ9-ER	1.00%	
	EMB170	4.00%	
	EMB175	0.50%	
Subtotal		98.88%	
Air Taxi	Jet	CNA680	0.05%
	Nonjet	1900D	0.06%
		CNA208	0.14%
		DHC6	0.07%
	Regional Jet	EMB14L	0.00%
Subtotal		0.32%	
General Aviation	Jet	CL600	0.02%
		CNA525C	0.04%
		CNA55B	0.02%
		CNA560XL	0.04%
		G650ER	0.00%
		GV	0.03%
		GV	0.01%
		LEAR35	0.04%
	Nonjet	CNA208	0.60%
	Subtotal		0.80%
Grand Total		100.00%	
Total Operations - Per Day		2,636	
Total Operations - Per Year		961,983	

Dallas Fort Worth
International Airport
P.O. Box 619428
DFW Airport, TX 75261-9428

Table C-1 presents the 2024 FAA Terminal Area Forecast data that was used by DFW to develop the forecast.

Table C-1. 2024 FAA Terminal Area Forecast Issued January 2025

Fiscal Year	Air Carrier Enplanements	Commuter Enplanements	Total Enplanements	Air Carrier	Air Taxi & Commuter	GA	Military	Total	Total Ops
2018	26,573,503	6,191,939	32,765,442	578,295	78,497	6,572	160	663,524	663,524
2019	28,252,269	6,610,026	34,862,295	611,239	85,517	6,156	245	703,157	703,157
2020	17,623,662	4,844,444	22,468,106	482,529	72,186	4,388	212	559,315	559,315
2021	20,161,888	6,375,293	26,537,181	540,327	75,488	4,803	213	620,831	620,831
2022	28,770,685	6,030,477	34,801,162	585,862	71,205	6,189	170	663,426	663,426
2023	33,021,880	5,212,340	38,234,220	650,469	19,858	5,362	118	675,807	675,807
2024*	35,638,453	6,200,045	41,838,498	710,693	15,054	5,574	197	731,518	731,518
2025*	37,103,082	6,988,021	44,091,103	757,948	16,439	6,209	197	780,793	780,793
2026*	38,814,172	7,331,797	46,145,969	794,611	16,220	6,228	197	817,256	817,256
2027*	39,958,986	7,553,606	47,512,592	818,623	16,381	6,247	197	841,448	841,448
2028*	40,733,340	7,693,635	48,426,975	834,161	16,581	6,267	197	857,206	857,206
2029*	41,474,147	7,826,142	49,300,289	848,408	16,774	6,286	197	871,665	871,665
2030*	42,206,460	7,957,707	50,164,167	862,085	16,967	6,305	197	885,554	885,554
2031*	42,933,537	8,087,632	51,021,169	875,341	17,159	6,325	197	899,022	899,022
2032*	43,665,633	8,218,045	51,883,678	888,471	17,349	6,344	197	912,361	912,361
2033*	44,415,044	8,352,418	52,767,462	901,928	17,544	6,364	197	926,033	926,033
2034*	45,178,141	8,489,231	53,667,372	915,614	17,740	6,383	197	939,934	939,934
2035*	45,941,302	8,625,279	54,566,581	929,239	17,937	6,403	197	953,776	953,776
2036*	46,739,689	8,768,735	55,508,424	943,538	18,141	6,422	197	968,298	968,298
2037*	47,538,940	8,913,200	56,452,140	957,843	18,347	6,442	197	982,829	982,829
2038*	48,319,990	9,053,066	57,373,056	971,719	18,549	6,462	197	996,927	996,927

Notes: * Forecasted Values

DFW Operations Memorandum



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

Federal Aviation Administration
Southwest Region, Airports Division
Texas Airports District Office

FAA-ASW-650
10101 Hillwood Pkwy.
Fort Worth, Texas 76177

April 3, 2026

Dillon Pettyjohn
VP, Airport Planning
DFW International Airport
2400 Aviation Drive
DFW Airport, TX 75261

Federal Aviation Administration (FAA)
DFW International Airport (DFW) Aviation Activity Forecast Approval
DFW Operations Memo: Additional Gate Capacity

The FAA Texas Airports District Office approves the forecast for the DFW International Airport (DFW), as submitted on April 1, 2026, for use in the Supplemental Environmental Assessment to evaluate the Central Terminal Area expansion project and 19th Street Cargo Redevelopment project. Logical parameters are used to develop the No Action constrained scenario given gate turn limitations and insufficient cargo handling facilities. We note the forecast was developed using the predicted future activity in the FAA's FY24 Terminal Area Forecast (TAF). The current FY25 TAF has somewhat lower operations in 2036 than in the prior FY24 TAF as used in this forecast, but the difference is acceptable for use in the Supplemental Environmental Assessment. Submit any derivative forecasts for subsequent FAA approval, as may be developed for the benefit cost analysis or other projects.

The approval of the forecast does not automatically constitute a commitment on the part of the United States to participate in any development recommended in the Central Terminal Area Project or shown on the ALP. FAA approval of the baseline scenario in this forecast does not constitute justification for future projects. Justification for future projects will be made based on activity levels at the time the project is requested for development, in accordance with criteria in FAA Orders 5090.5 and 5100.38. Documentation of actual activity levels meeting planning activity levels will be necessary to justify AIP funding for eligible projects. Further, the approved forecast may be subject to additional analyses if the fundamental rationale of the forecast or the critical aircraft changes materially.

If you have any questions about this forecast approval, please call me at (817) 222-5687.

Regards,

ANDREW M
TAMANAHA

Digitally signed by ANDREW M
TAMANAHA
Date: 2026.04.03 13:57:28
-05'00'

Andrew Tamanaha, Texas ADO

DFW OPERATIONS MEMO

April 1, 2026

To: Federal Aviation Administration

Subject: Additional Gate Capacity at DFW

Objective of Memorandum. The objectives of this Operations Memorandum (Memo) are to:

- 1) Outline the Dallas Fort Worth International Airport's (DFW) concurrence and alignment with the FAA's 2024 Terminal Area Forecast (TAF) released in January of 2025
- 2) Discuss DFW's terminal and operational needs
- 3) Request FAA's approval of the aviation activity forecast and aircraft fleet mix, in which operations remain within 5% of the original activities anticipated/ approved
- 4) Provide further details in support of pending environmental reviews and federal actions for the needed commercial service terminal development projects

The FAA's TAF, by design, is an unconstrained forecast, and this memo seeks to identify the constraints at DFW Airport. The objective of this memo is to request FAA's approval of the aviation activity forecast that will be used to support the NEPA process.

This Operational Memo demonstrates that a total of 210 gates are needed to meet DFW's forecasted passenger operational demand by 2036. Additionally, **Appendix 1** demonstrates that two cargo buildings and five cargo-aircraft parking positions are needed to meet the forecasted cargo demand by 2026. This remains unchanged from DFW's original operations memo on this subject.

Since late 2021, DFW Airport has been working collaboratively with the FAA on advancing the Central Terminal Area (CTA) expansion project and 19th Street Cargo Redevelopment project. The CTA expansion project was originally envisioned as constructing two piers at Terminals A and C for a net increase of nine gates. However, DFW Airport has been rapidly recovering from the impacts of the COVID-19 pandemic, serving approximately 69.6 million passengers in Fiscal Year 2022 (FY22) and approximately 76.4 million passengers in FY23. This growth in passengers demonstrates a 9.8 percent year-over-year increase. As DFW continues to rapidly

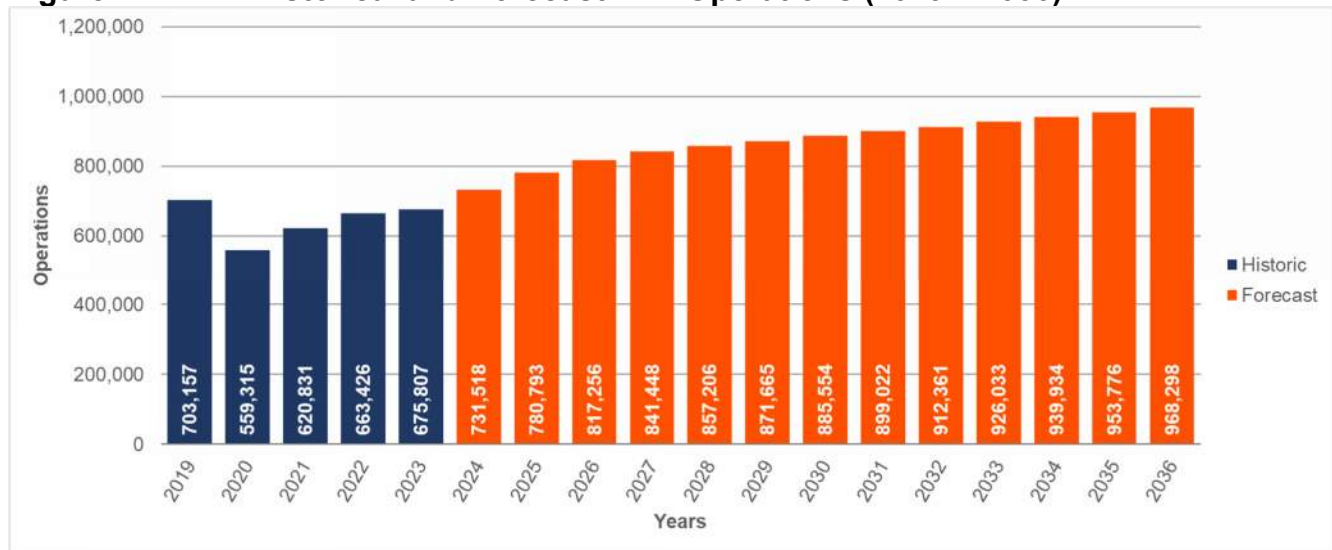
recover from the impact of the pandemic and serve forecast demand beyond 2019 levels, in both operations and passenger demand, it is critical for DFW to consider the Airport's needs beyond the initial nine gates. As the analysis detailed in this memo illustrates, additional passenger gates are necessary to meet the Airport's needs beyond the originally planned nine gates and to address demand through 2036.

This Operations Memo is formatted into the following sections for ease of review:

- FAA Forecast of Operational Activity
- Terminal Development Background
- FAA Forecast of Enplanement Activity
- Aircraft Gate Operational Needs
- Gate Turns Per Day Constraint
- Conclusion
- Appendix A
- Appendix B
- Appendix C
- Appendix D
- Appendix E

FAA Forecast Operational Activity. Figure 1 provides a graphical illustration of the historical and forecast operations, while Table 1 shows a tabulated version of the data. As shown, historical DFW operations have remained consistent until a sharp decline in 2020 due to the COVID pandemic. With the recovery in air travel post-pandemic, and the continued growth in air cargo operations, the FAA forecasts DFW’s operations to surpass 2019 operations levels by 2023 and exceed 900,000 operations by 2032.

Figure 1 – DFW Historical and Forecast TAF Operations (2019 – 2036)



Source: FAA 2024 TAF.

Table 1 – DFW Historical and Forecast TAF Operations

Historic Aircraft Operations						
TAF Year	Air Carrier	Air Taxi & Commuter	General Aviation	Military	Total Operations	Total Passenger Operations*
2019	611,239	85,517	6,156	245	703,157	668,886
2020	482,529	72,186	4,388	212	559,315	532,526
2021	540,327	75,488	4,803	213	620,831	591,182
2022	585,862	71,205	6,189	170	663,426	630,784
2023	650,469	19,858	5,362	118	675,807	643,514
Forecast Aircraft Operations						
TAF Year	Air Carrier	Air Taxi & Commuter	General Aviation	Military	Total Operations	Total Passenger Operations*
2024	710,693	15,054	5,574	197	731,518	696,717
2025	757,948	16,439	6,209	197	780,793	743,412
2026	794,611	16,220	6,228	197	817,256	778,398
2027	818,623	16,381	6,247	197	841,448	801,604
2028	834,161	16,581	6,267	197	857,206	816,712
2029	848,408	16,774	6,286	197	871,665	830,575
2030	862,085	16,967	6,305	197	885,554	843,890
2031	875,341	17,159	6,325	197	899,022	856,800
2032	888,471	17,349	6,344	197	912,361	869,587
2033	901,928	17,544	6,364	197	926,033	882,693
2034	915,614	17,740	6,383	197	939,934	896,020
2035	929,239	17,937	6,403	197	953,776	909,289
2036	943,538	18,141	6,422	197	968,298	923,212

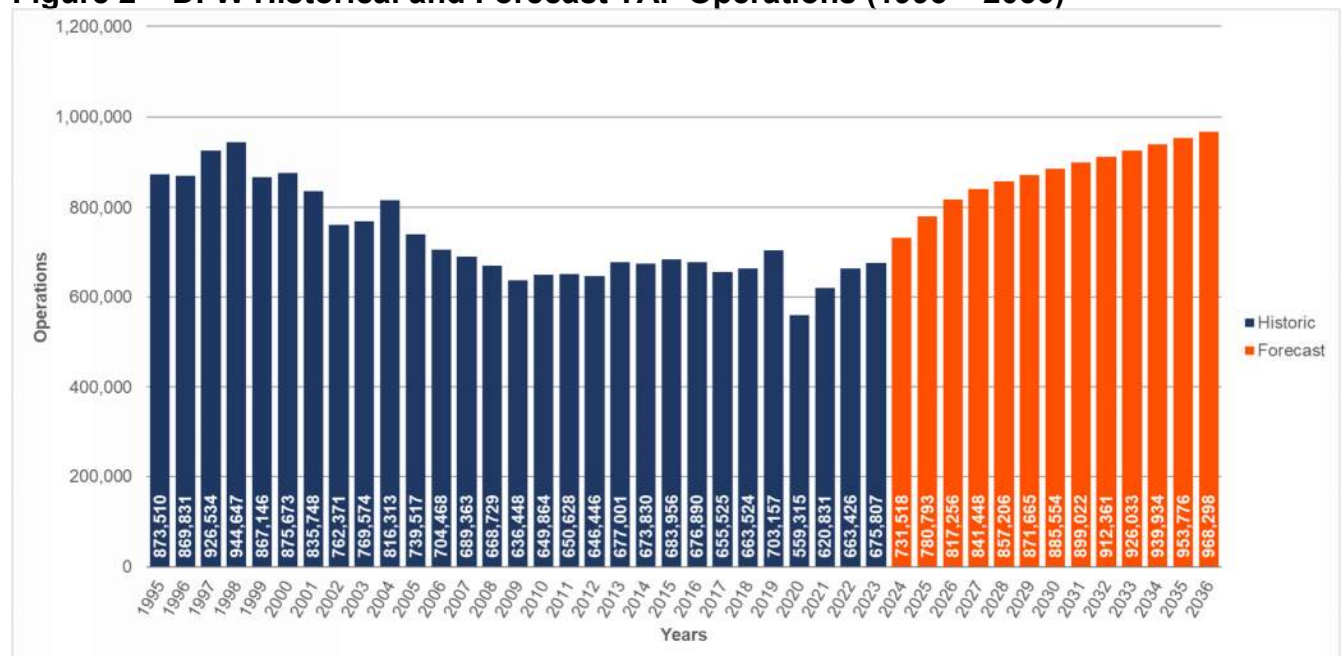
Source: FAA 2024 TAF

Notes: Data in table is based on FY.

*Total passenger operations removes Military, GA, & Air Cargo (calculated as 4% of Air Carrier + Air Taxi & Commuter, per Appendix A)

As with all operations forecasts, it is imperative to remember the past. **Figure 2** illustrates that after several decades the airport is projected to meet its historical operational peak. This demonstrates that even as the amount of aircraft parking positions change overall airport capacity largely remains related to runway configurations, not terminal development projects.

Figure 2 – DFW Historical and Forecast TAF Operations (1995 – 2036)



Source: FAA 2024 TAF

Terminal Development Background. In 2019, DFW announced plans to construct Terminal F to meet the growing needs of commercial service airlines. Shortly after this announcement, the aviation industry was greatly impacted by the COVID pandemic, and operational levels immediately experienced a decline. The unpredictable impact of the pandemic on airlines caused DFW to postpone the development and construction of Terminal F. As the industry recovered from the pandemic DFW worked with the FAA to submit and approve an operations memo in 2023 documenting the additional operational capacity requirements for airport operations through 2036. Subsequently, a FONSI for the project was approved in 2024.

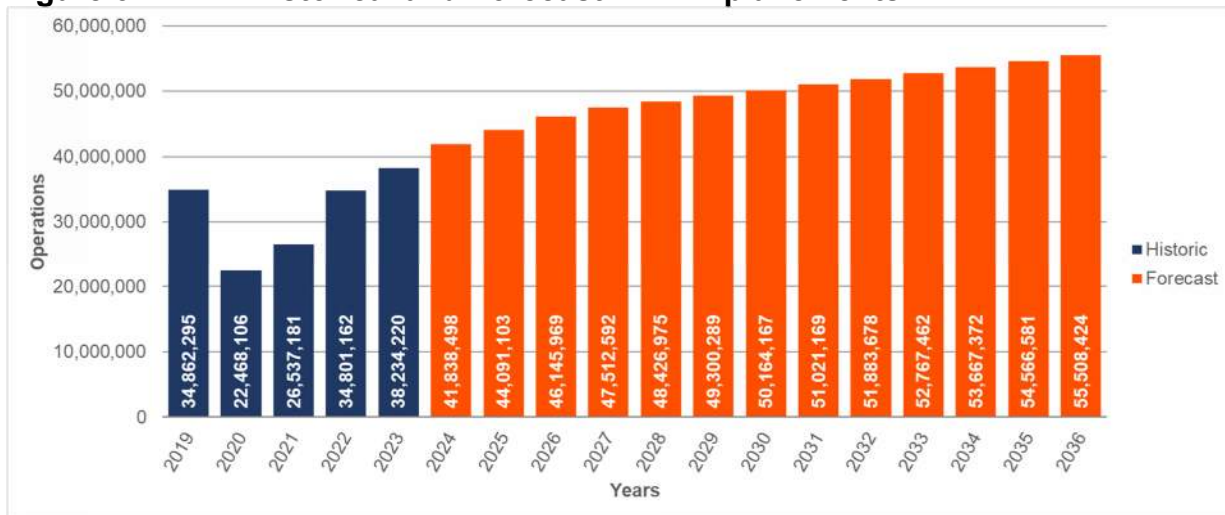
FAA Forecast of Enplanement Activity. Aviation forecasting often begins with examining forecast passenger demand, which is then translated into operations. Thus, DFW staff reviewed the 2024 TAF enplaned passenger forecast before reviewing the annual

aircraft operations forecast. The 2024 FAA TAF for historical and forecast DFW enplanements is provided in **Table 2**. In addition, **Figure 3** provides a graphical illustration of the historical and forecast DFW enplanements from **Table 2**. Historical DFW enplanements have increased from 2010 through 2019 but declined by over 35% from 2019 to 2020 due to the pandemic. After the pandemic recovery, DFW is now forecast to exceed 51.8 million enplanements by 2032.

Table 2 – DFW Historical and Forecast TAF Enplanements

Historic Passenger Enplanements			
TAF Year	Air Carrier	Commuter	Total Enplanements
2019	28,252,269	6,610,026	34,862,295
2020	17,623,662	4,844,444	22,468,106
2021	20,161,888	6,375,293	26,537,181
2022	28,770,685	6,030,477	34,801,162
2023	33,021,880	5,212,340	38,234,220
Forecast Passenger Enplanements			
TAF Year	Air Carrier	Commuter	Total Enplanements
2024	35,638,453	6,200,045	41,838,498
2025	37,103,082	6,988,021	44,091,103
2026	38,814,172	7,331,797	46,145,969
2027	39,958,986	7,553,606	47,512,592
2028	40,733,340	7,693,635	48,426,975
2029	41,474,147	7,826,142	49,300,289
2030	42,206,460	7,957,707	50,164,167
2031	42,933,537	8,087,632	51,021,169
2032	43,665,633	8,218,045	51,883,678
2033	44,415,044	8,352,418	52,767,462
2034	45,178,141	8,489,231	53,667,372
2035	45,941,302	8,625,279	54,566,581
2036	46,739,689	8,768,735	55,508,424

Source: FAA 2024 TAF.

Figure 3 – DFW Historical and Forecast TAF Enplanements

Source: FAA 2024 TAF.

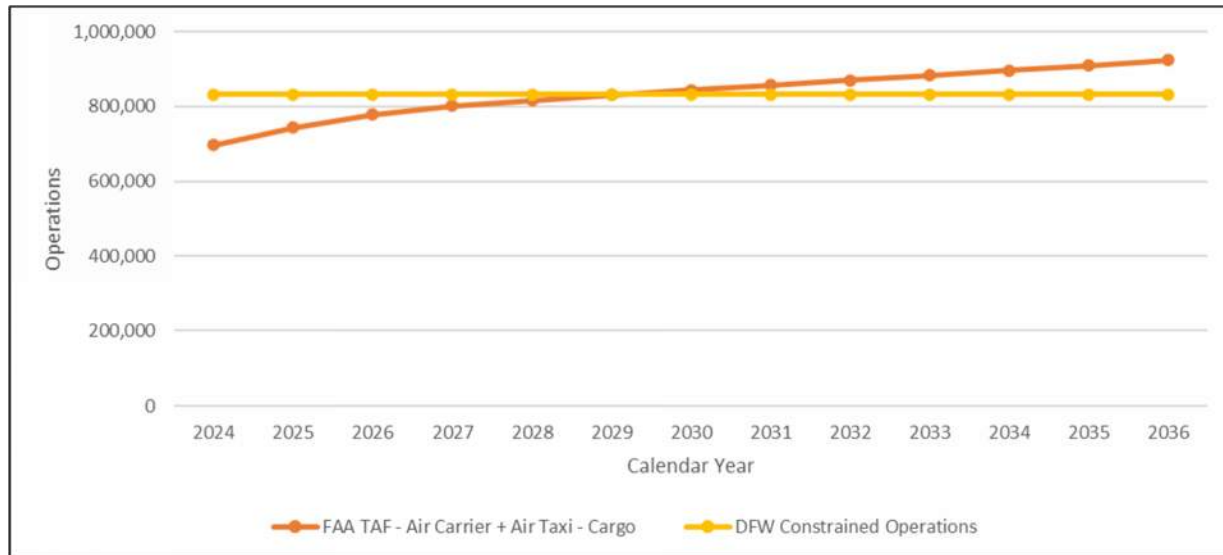
As indicated in **Figure 2**, enplanements are anticipated to grow at a similar rate as operations within the TAF.

Aircraft Gate Operational Needs. Airport gating and objectives for long-term gate utilization remain consistent from the original operations memo in 2023 but have been updated to include existing remote operational aircraft positions (ground-loaded gates) that were not previously included. These ground-loaded gates were not previously included in terms of existing total gate count as at the time the focus was on total commercial aircraft operations and total contact gates. In this version of the memo, the total number of aircraft operations remains the same and are unchanged from what was previously approved and the increased specificity of which positions were contact gates vs remote positions. These findings are repeated in **Appendix B** for clarity.

Gate Turns Per Day Constraint. Recognizing the cost and impact of providing additional gates, DFW is continually striving to become operationally more efficient. Therefore, DFW has chosen to utilize 6.5 turns per gate as a goal for gate capacity, given that this value represents the historical average maximum gate utilization described in **Appendix B**.

Based on this analysis, the airport requires additional gates as early as 2028, as shown in **Figure 4**.

Figure 4 – DFW Constrained Operations Related to the TAF – 180 Gates



Source: DFW Airport, February 2026; FAA 2024 TAF.

Note: The orange line represents Air Carrier + Air Taxi – 4% Air Cargo

The yellow line shows the number of constrained operations with 180 gates (170 gates at 6.5 turns & 10 gates at 3.5 turns)

As noted above, 6.5 turns per gate as a metric was approved to establish gate capacity at DFW. The development of 31 additional contact gates was also previously approved in the 2024 FONSI, bringing the total number of gates at DFW to 211.

Due to the Airport's desire to increase customer experience, it has been determined that 10 of the existing ground-loaded gates will be converted to 9 contact gates. **Table 3** highlights the difference between what has been approved and what is expected with regard to operations associated with the CTA development program. DFW's long-term goal remains an average of 6.5 turns per gate, however, the Airport only expects to reach 6 turns per gate on average by 2036, as highlighted in **Table 3**.

Based on FAA Order 5050.4B, *NEPA Implementing Instructions for Airport Actions*, DFW conducted analysis in the difference of operations to determine the sensitivity of various average turns per gate in 2036. Regardless of average turns per gate being 6 or 6.5 in 2036, the total number of operations expected from either metric results in a value that is less than a 15% difference from the TAF value for 2036 and the previously modeled Proposed Action scenario from the original Operations Memo.

Table 3 – Approved Operational Capacity vs. Expected Operations

	Previously Approved Operational Capacity						
	A	B	C	D	E	F	HS
# of Gates	31	42	32	30	44	22	10
Average Turns Per Gate - Goal	6.5	6.5	6.5	6.5	6.5	6.5	3.5
Total Operations	979,295						
	Expected Passenger Operations in 2036						
	A	B	C	D	E	F	HS
# of Gates	31	42	32	30	44	31	0
Anticipated Turns Per Gate	6.3	6.4	7.3	4.6	6	5.4	-
Total Operations	924,984						

Source: DFW Airport, February 2026.

Aircraft Fleet Mix & Gated Schedule. Not only will the Airport continue striving for increased turns per gate to improve operational efficiency, but the aircraft operating at DFW today are less efficient than those that will be operating at DFW in 2036. **Appendix C** compares the existing aircraft fleet mix serving DFW today with the expected fleet mix anticipated to serve DFW in 2036. Based on this comparison, newer, more efficient aircraft will replace outdated, inefficient aircraft, resulting in reduced emissions and fewer environmental impacts. **Appendix D** provides a summary of fleet mix data for both the No-Action and Proposed Action scenarios associated with the CTA Development Program.

To further highlight the impacts anticipated by not developing additional gates at DFW, **Appendix E** provides a gated schedule for the No-Action Scenario (180 Gates) and the Proposed Action Scenario (210 Gates).

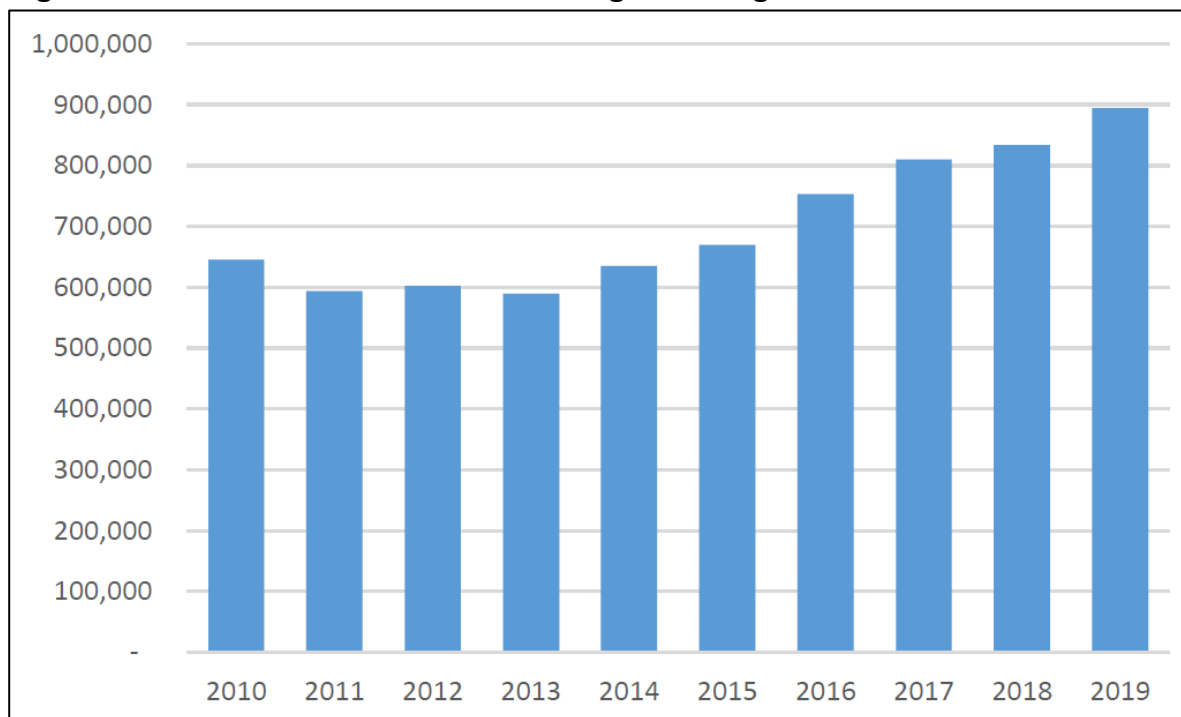
Conclusion. There is no anticipated increase in capacity at DFW by shifting 10 hard-stand positions to 9 gates at Terminal F, and there is no anticipated increase in operations above the already approved levels. What this shift does, however, is improve the overall travel experience for customers at DFW. When comparing 2024 TAF operations in Table 1 – the unconstrained demand in the most recent forecast and expected operations in Table 3, the 210-gate layout provides sufficient facilities that align with total passenger operations.

Appendix A

Cargo Development Background. The aircraft operational impact of air cargo is often difficult to forecast as cargo arrives at the airport via a number of modes, those primarily being within the belly of commercial or general aviation aircraft or via dedicated cargo operators such as Federal Express or UPS. As a result of the mixed delivery methods, cargo forecasts are often done using tonnage versus aircraft operations.

As shown in **Figure A-1**, DFW's annual cargo tonnage totals have continually grown since 2013, with a 51.7 percent increase in air cargo over the last six years and a 39 percent increase over the last ten years. DFW receives substantial cargo contributions from FedEx, UPS, and American Airlines'; historically, American Airlines, UPS, and FedEx have accounted for nearly 62 percent of total air cargo tonnage at DFW.

Figure A-1 – DFW Historical Annual Cargo Tonnage



Source: Landrum and Brown Analysis, June 2020.

As a result of this increase in cargo tonnage from 2013 through 2019, combined with an increase in cargo demand during the COVID pandemic, DFW undertook a cargo tonnage forecast along with a cargo building facility assessment. The purpose of these activities

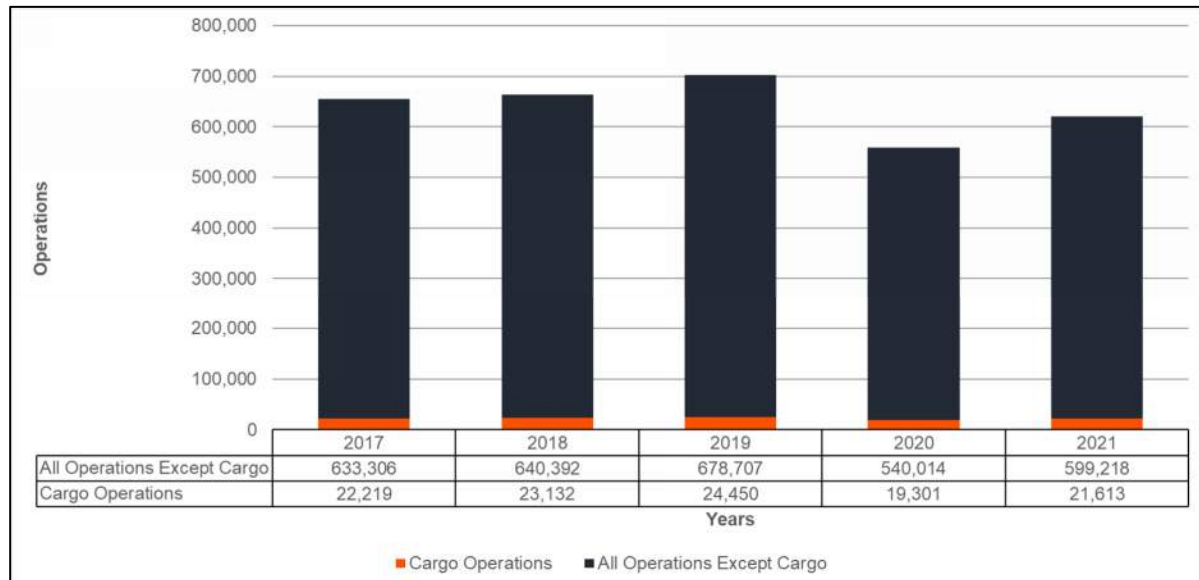
was to identify future cargo demands and determine if existing facilities can accommodate the processing and transfer of cargo from aircraft to the end destination.

The total forecast volume of air cargo at DFW was forecast to have growth in belly cargo from American Airlines, as well as growth in the overall cargo market. Total cargo tonnage was projected to increase from 911,489 tons in 2018 to approximately 1,514,889 tons in 2038, a Compound Annual Growth Rate (“CAGR”) of 2.6 percent.

For this operational memo, the portion of tonnage transported via commercial service belly operations will be separated from the “cargo only” operators at DFW. The purpose of the discussion above was to communicate the means of cargo transport and the expected growth. For the purposes of the aircraft operational impact of cargo growth, analysis in later sections will focus on “cargo only” operators at the airport.

DFW Cargo-Only Historical and Future Activity. Based on a review of operational data, historical operations by “cargo-only” operators were approximately four percent of total commercial operations. **Figure A-2** shows the historical relationship of air cargo operators within the overall commercial service operational category between 2017 and 2021.

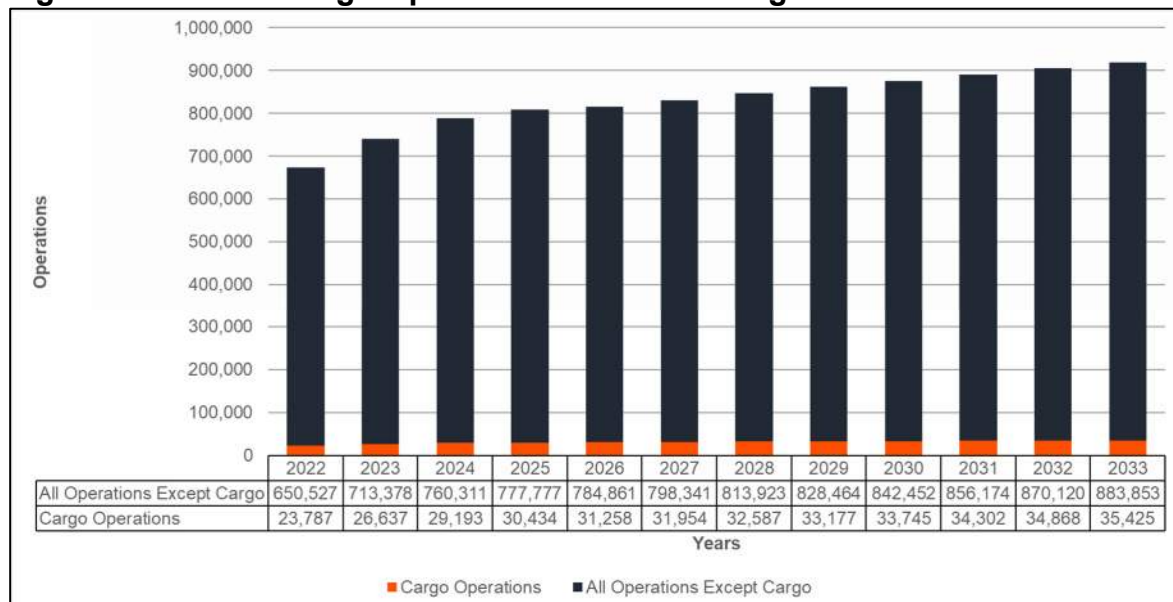
Figure A-2 – DFW Historical Cargo Operations



Source: FAA 2021 TAF; Landrum and Brown Analysis, October 2022; Centurion Planning and Design Analysis, December 2022.

Assuming a similar percentage of the total commercial service operations moving forward, **Figure A-3** illustrates the FAA TAF Commercial Service forecasts broken between air carriers and cargo carriers. These forecasts are representative of not only the TAF, but also internal DFW analysis.

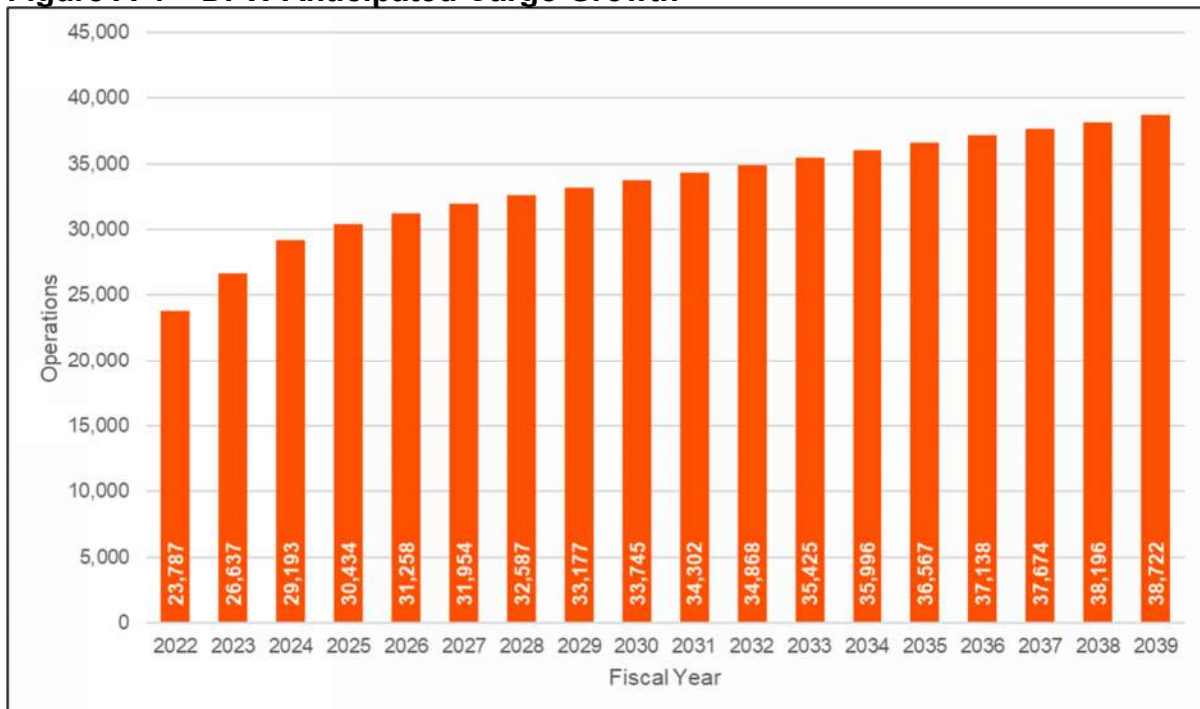
Figure A-3 – DFW Cargo Operations as a Percentage of the TAF



Source: FAA 2021 TAF; Landrum and Brown Analysis, October 2022; Centurion Planning and Design Analysis, December 2022.

Anticipated Cargo Growth. Utilizing the 2021 TAF, and the understanding that cargo-only operations have historically been 4% of commercial service operations, operational growth in the cargo-only aircraft fleet is depicted in **Figure A-4**. As shown, operations are expected to grow from approximately 23,800 in 2022 to 38,800 in 2039.

Figure A-4 – DFW Anticipated Cargo Growth

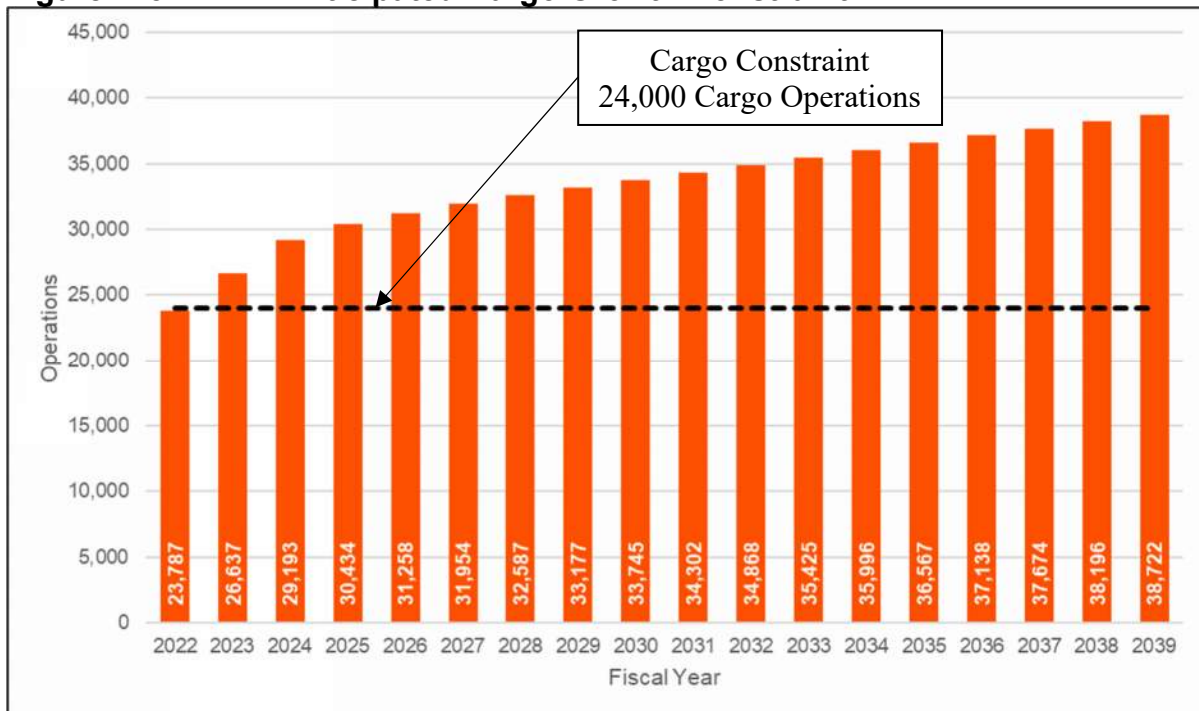


Source: FAA 2021 TAF; Landrum and Brown Analysis, December 2022; Centurion Planning and Design Analysis, December 2022.

Definition of Cargo Constraint. Based on input received from current cargo operators at DFW, facilities are currently operating at maximum capacity. To maintain cargo operations at approximately 4% of the total Air Carrier operations, additional apron and building facilities will be necessary as current operators have maximized the use of existing facilities; therefore, the constrained cargo-only aircraft operational level is determined to be the current 24,000 annual operations.

Figure A-5 illustrates the constrained operational level compared to the 2021 TAF forecast. To meet forecasted cargo demand, additional apron, and processing facilities will be necessary. The size and location of these facilities will depend on tenant and user needs.

Figure A-5 – DFW Anticipated Cargo Growth Constraint



Source: FAA 2021 TAF; Landrum and Brown Analysis, December 2022; Centurion Planning and Design Analysis, December 2022.

Cargo Facility Operational Needs. DFW has reviewed the plan for the 19th Street development with a current tenant to ensure the spatial requirements associated with the 19th Street development are consistent with industry needs. This project is anticipated to consist of two cargo facility warehouses totaling approximately 280,000 square feet and five new aircraft parking positions at an estimated two turns per day. The 19th Street project will alleviate the cargo constraint in the near term; however, it is anticipated that cargo will continue to be constrained in future without additional facilities.

Cargo Conclusion. As outlined, without creating additional facilities to include both buildings and aircraft ramp spaces, DFW cannot meet the demand forecasted by the 2021 TAF. Cargo facilities and associated infrastructure are developed on an individual site basis as is the case with the proposed 19th Street project.

Appendix B

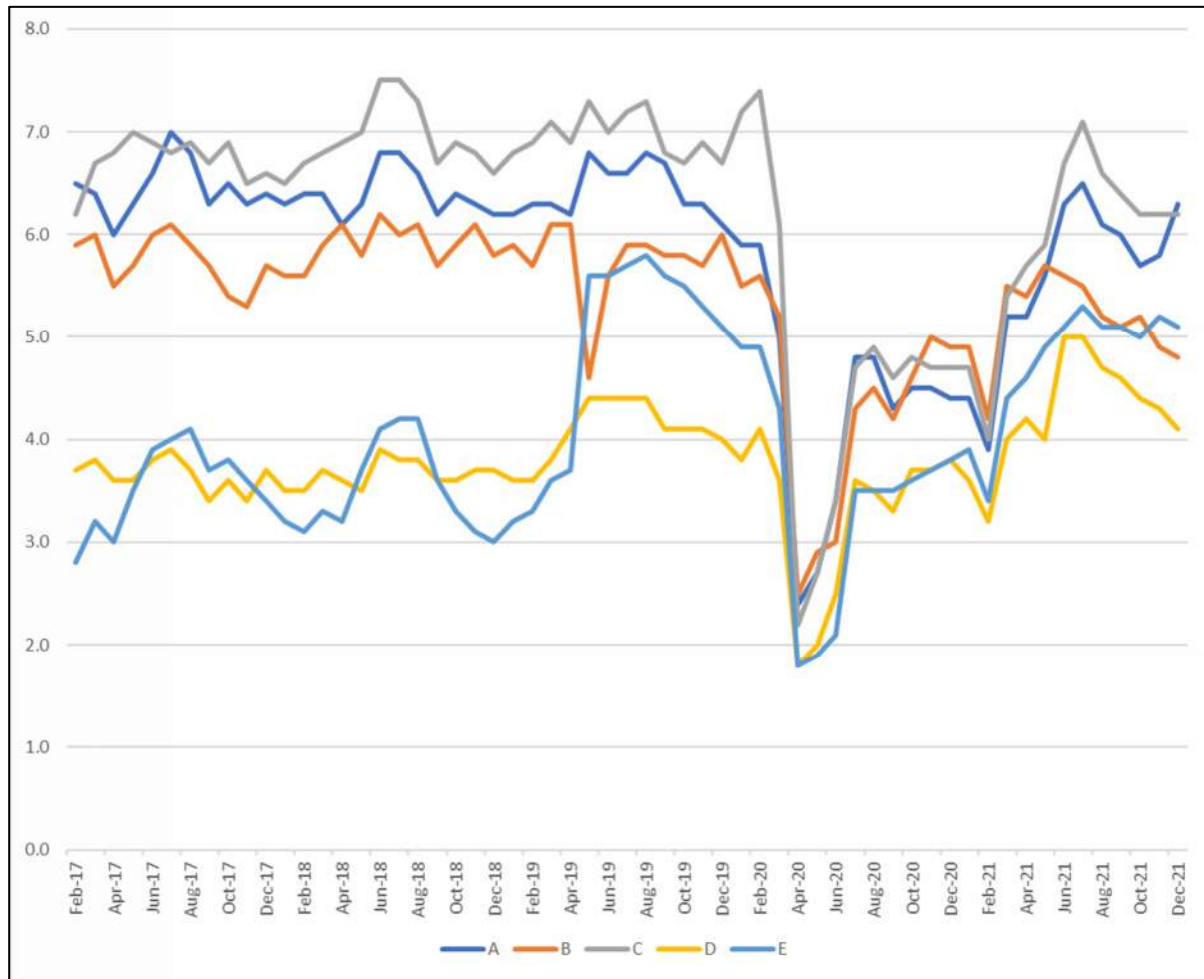
ACRP Research Report 163, *Guidebook for Preparing and Using Airport Design Day Flight Schedules*, provides planning level guidance to assist with the determination of needed commercial service passenger facilities at small, medium, and large hub airports. Within this guidebook, it is stated that:

At large airports, gating models can theoretically schedule 15 to 20 daily flights at one gate (usually the first to be gated) and only one peak-hour flight at another gate (usually the last to be gated). This scheduling does not occur in the real world. Airlines and airport operators will attempt to balance gate use to avoid overly stressing a given facility. Utilization across gates in the design day schedule should be balanced to match current use patterns. In general, airlines rarely exceed 8 to 10 daily turns per gate.

As recommended in the paragraph above, an evaluation of current use patterns and historic gate turn utilization was performed to determine an appropriate constrained gate turns per day metric for DFW.

DFW Historic Gate Turn Activity. Figure B-1 illustrates data obtained for the monthly turns per gate from 2017 through 2021. A review of this information revealed that the Airport's ability to exceed more than 7 turns per day was localized to activity in Terminal C. From February of 2017 through February of 2020, Terminal A daily turns per gate were within the 6 to 7 range and Terminal B was primarily within the 5 to 6 range. Terminals D and E experience much lower turns per gate per day, Terminal D accommodates the vast majority of international operations and Terminal E accommodates the regional and non-hub airlines.

Figure B-1 – DFW Average Turns per Gate per Day – Monthly (02/2017 – 12/2021)



Source: DFW Airport, December 2022.

Figure B-2 consolidates the data above and provides an overview of the annual average DFW historical aircraft turns per gate, per year from 2017 to 2021. An evaluation of the data prior to the COVID impact found the terminals performed in the following manner beginning in 2017 through 2020:

- Terminal A – average 6.43 turns per day
- Terminal B – average 5.8 turns per day
- Terminal C – average 6.87 turns per day
- Terminal D – average 3.8 turns per day
- Terminal E – average 3.93 turns per day

(Please note that the raw data used for this analysis is included as **Appendix 1**).

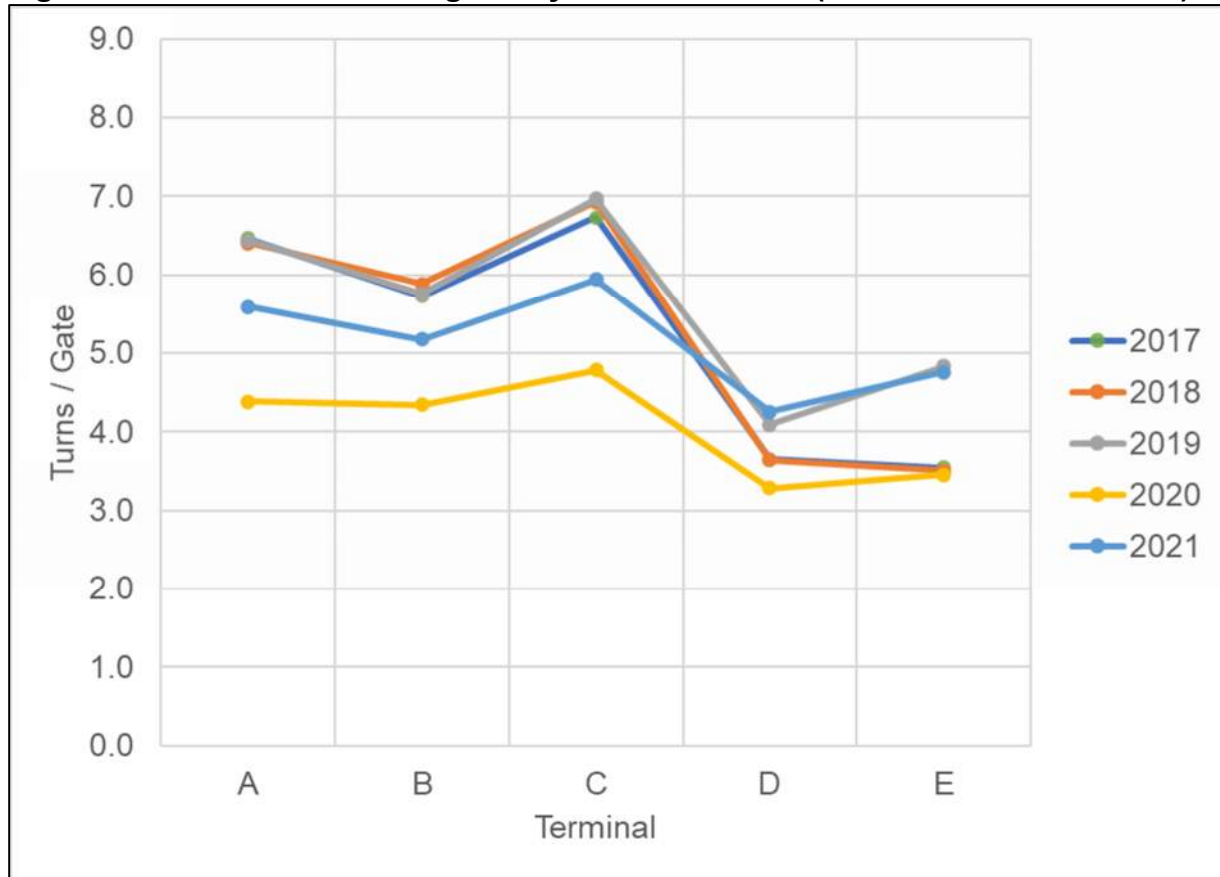
DFW Current Gate Turn Activity. Based on Aerobahn operations data for 12-months ending September 2022, DFW Airport accommodated over 655,000 Air Carrier and Air Taxi operations. From these operations, the Airport experienced an average of approximately 5.2 turns per gate across all available gates¹. **Figure B-3** provides an overview of the average daily number of turns per gate grouped by terminal over this timeframe.

While turns per gate for the Airport averages out to 5.2, **Figure B-4** helps visualize the high and low number of turns per gate for each terminal, which make up that average.

Depending on the terminal, an average of 4.3 to 6.1 turns per gate is currently experienced. Terminals A and C are historically the highest, in terms of gate turns, with an average of 5.8 and 6.1 turns per day, respectively, which is primarily driven by their operations type. The lower average turns per gate at Terminals B, D and E are a result of the types of operations accommodated in these terminals (i.e., international operations, regional operations, etc.)

¹ While DFW normally operates 180 gates (170 contact gates and 10 ground-loaded hardstands), there is occasionally a slight variance in the total due to construction activity and/or MARS configurations being utilized.

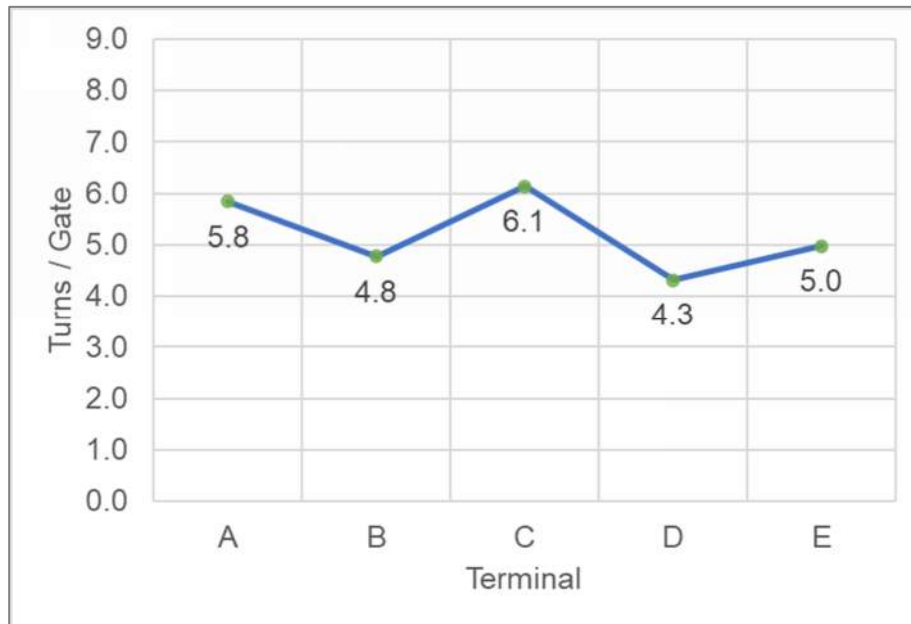
Figure B-2 – Historical Average Daily Turns Per Gate (02/01/2017 – 12/31/2021)



	A	B	C	D	E	Average
2017	6.5	5.7	6.7	3.7	3.5	5.2
2018	6.4	5.9	6.9	3.6	3.5	5.3
2019	6.4	5.8	7.0	4.1	4.8	5.6
2020	4.4	4.3	4.8	3.3	3.5	4.1
2021	5.6	5.2	5.9	4.3	4.8	5.1

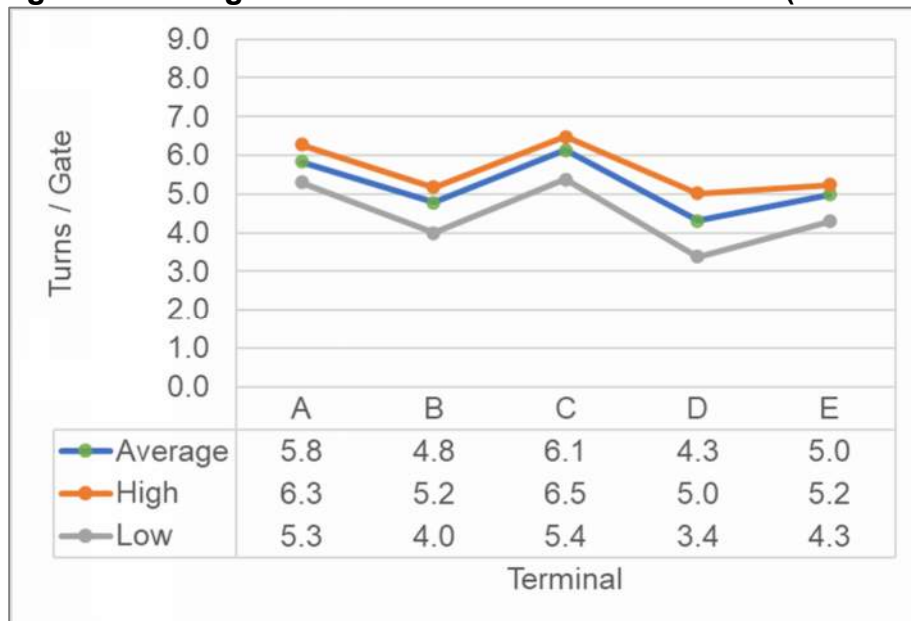
Source: DFW Airport, December 2022.

Figure B-3 – Average Daily Turns Per Gate (10/01/2021 – 09/30/2022)



Source: DFW Airport Data (Aerobahn), September 2022.

Figure B-4 – High & Low Number of Turns Per Gate (10/01/2021 – 09/30/2022)



Source: DFW Airport Data (Aerobahn), September 2022.

Appendix 1

Operations (Arr + Dep)								Available Gates								Average Daily Gate Utilization							
Year	Month	Days/ Month	A	B	C	D	E	Year	Start Month	End Month	A	B	C	D	E	By Month							
																Year	Month	A	B	C	D	E	
2017	2	28	9394	13955	9687	4809	5697	2017	1	12	26	42	28	23	36	2017	2	6.5	5.9	6.2	3.7	2.8	
2017	3	31	10264	15524	11581	5417	7253	2018	1	12	26	42	28	23	36	2017	3	6.4	6.0	6.7	3.8	3.2	
2017	4	30	9383	13754	11399	4935	6582	2019	1	4	26	42	28	23	36	2017	4	6.0	5.5	6.8	3.6	3.0	
2017	5	31	10163	14740	12212	5187	7822	2019	5	12	26	42	28	23	42	2017	5	6.3	5.7	7.0	3.6	3.5	
2017	6	30	10282	15047	11615	5242	8389	2020	1	3	26	42	28	23	42	2017	6	6.6	6.0	6.9	3.8	3.9	
2017	7	31	11306	15799	11796	5492	8904	2020	4	10	26	42	24	23	42	2017	7	7.0	6.1	6.8	3.9	4.0	
2017	8	31	10927	15453	11996	5287	9044	2020	11	12	26	42	24	23	44	2017	8	6.8	5.9	6.9	3.7	4.1	
2017	9	30	9892	14249	11301	4739	8024	2021	1	4	26	42	24	23	44	2017	9	6.3	5.7	6.7	3.4	3.7	
2017	10	31	10548	14185	12010	5086	8483	2021	5	12	26	42	24	27	44	2017	10	6.5	5.4	6.9	3.6	3.8	
2017	11	30	9824	13258	10951	4750	7748	2022	1	5	26	42	24	27	44	2017	11	6.3	5.3	6.5	3.4	3.6	
2017	12	31	10379	14871	11472	5225	7522	2022	6	12	26	42	28	27	44	2017	12	6.4	5.7	6.6	3.7	3.4	
2018	1	31	10188	14679	11285	4993	7246									2018	1	6.3	5.6	6.5	3.5	3.2	
2018	2	28	9247	13088	10441	4495	6195									2018	2	6.4	5.6	6.7	3.5	3.1	
2018	3	31	10341	15351	11830	5222	7277									2018	3	6.4	5.9	6.8	3.7	3.3	
2018	4	30	9574	15255	11558	5016	6956									2018	4	6.1	6.1	6.9	3.6	3.2	
2018	5	31	10208	15228	12233	4948	8258									2018	5	6.3	5.8	7.0	3.5	3.7	
2018	6	30	10598	15508	12584	5334	8857									2018	6	6.8	6.2	7.5	3.9	4.1	
2018	7	31	11032	15570	13022	5418	9281									2018	7	6.8	6.0	7.5	3.8	4.2	
2018	8	31	10611	15794	12606	5364	9371									2018	8	6.6	6.1	7.3	3.8	4.2	
2018	9	30	9689	14301	11226	4974	7808									2018	9	6.2	5.7	6.7	3.6	3.6	
2018	10	31	10302	15313	12003	5092	7449									2018	10	6.4	5.9	6.9	3.6	3.3	
2018	11	30	9801	15247	11452	5070	6707									2018	11	6.3	6.1	6.8	3.7	3.1	
2018	12	31	9948	15141	11466	5235	6764									2018	12	6.2	5.8	6.6	3.7	3.0	
2019	1	31	10006	15361	11785	5175	7191									2019	1	6.2	5.9	6.8	3.6	3.2	
2019	2	28	9139	13377	10770	4643	6704									2019	2	6.3	5.7	6.9	3.6	3.3	
2019	3	31	10199	15023	12272	5429	7984									2019	3	6.3	6.1	7.1	3.8	3.6	
2019	4	30	9689	15261	11575	5694	7948									2019	4	6.2	6.1	6.9	4.1	3.7	
2019	5	31	10975	12044	12646	6300	14500									2019	5	6.8	4.6	7.3	4.4	5.6	
2019	6	30	10328	14031	11806	6107	14173									2019	6	6.6	5.6	7.0	4.4	5.6	
2019	7	31	10668	15337	12583	6305	14751									2019	7	6.6	5.9	7.2	4.4	5.7	
2019	8	31	11020	15479	12713	6220	15052									2019	8	6.8	5.9	7.3	4.4	5.8	
2019	9	30	10385	14558	11464	5633	14207									2019	9	6.7	5.8	6.8	4.1	5.6	
2019	10	31	10158	15054	11630	5817	14195									2019	10	6.3	5.8	6.7	4.1	5.5	
2019	11	30	9851	14432	11597	5672	13319									2019	11	6.3	5.7	6.9	4.1	5.3	
2019	12	31	9859	15692	11670	5719	13391									2019	12	6.1	6.0	6.7	4.0	5.1	
2020	1	31	9460	14267	10778	5434	13276									2020	1	5.9	5.5	7.2	3.8	4.9	
2020	2	29	8910	13674	10365	5468	12466									2020	2	5.9	5.6	7.4	4.1	4.9	
2020	3	31	8073	13426	9041	5174	11783									2020	3	5.0	5.2	6.1	3.6	4.3	
2020	4	30	3738	6189	3239	2489	4552									2020	4	2.4	2.5	2.2	1.8	1.8	
2020	5	31	4377	7629	3964	2781	4864									2020	5	2.7	2.9	2.7	2.0	1.9	
2020	6	30	5320	7493	4937	3443	5349									2020	6	3.4	3.0	3.4	2.5	2.1	
2020	7	31	7740	11125	6940	5144	9105									2020	7	4.8	4.3	4.7	3.6	3.5	
2020	8	31	7733	11601	7334	4979	9065									2020	8	4.8	4.5	4.9	3.5	3.5	
2020	9	30	6706	10641	6568	4593	8806									2020	9	4.3	4.2	4.6	3.3	3.5	
2020	10	31	7232	11976	7197	5280	9485									2020	10	4.5	4.6	4.8	3.7	3.6	
2020	11	30	6964	12633	6710	5151	9854									2020	11	4.5	5.0	4.7	3.7	3.7	
2020	12	31	7123	12861	6946	5397	10377									2020	12	4.4	4.9	4.7	3.8	3.8	
2021	1	31	7173	12871	7037	5147	10728									2021	1	4.4	4.9	4.7	3.6	3.9	
2021	2	28	5709	9989	5403	4126	8420									2021	2	3.9	4.2	4.0	3.2	3.4	
2021	3	31	8431	14332	8081	5723	11953									2021	3	5.2	5.5	5.4	4.0	4.4	
2021	4	30	8166	13722	8149	5727	12260									2021	4	5.2	5.4	5.7	4.2	4.6	
2021	5	31	9044	14875	8833	6645	13402									2021	5	5.6	5.7	5.9	4.0	4.9	
2021	6	30	9763	14166	9713	8081	13496									2021	6	6.3	5.6	6.7	5.0	5.1	
2021	7	31	10434	14338	10554	8362	14432									2021	7	6.5	5.5	7.1	5.0	5.3	
2021	8	31	9826	13524	9787	7861	13820									2021	8	6.1	5.2	6.6	4.7	5.1	
2021	9	30	9349	12966	9265	7371	13361									2021	9	6.0	5.1	6.4	4.6	5.1	
2021	10	31	9232	13452	9280	7445	13628									2021	10	5.7	5.2	6.2	4.4	5.0	
2021	11	30	9124	12255	8931	7045	13825									2021	11	5.8	4.9	6.2	4.3	5.2	
2021	12	31	10114	12423	9271	6782	13827									2021	12	6.3	4.8	6.2	4.1	5.1	
2022	1	31	9677	11944	8740	6383	13114									2022	1	6.0	4.6	5.9	3.8	4.8	
2022	2	28	7727	9387	7234	5115	10592									2022	2	5.3	4.0	5.4	3.4	4.3	
2022	3	31	9885	11846	9029	6339	13098									2022	3	6.1	4.5	6.1	3.8	4.8	
2022	4	30	8922	12500	8964	6949	13375									2022	4	5.7	5.0	6.2	4.3	5.1	
2022	5	31	9291	12457	9647	7869	13819									2022	5	5.8	4.8	6.5	4.7	5.1	
2022	6	30	9211	12784	10058	8125	13716									2022	6	5.9	5.1	6.0	5.0	5.2	
2022	7	31	9564	12847	10654	8408	14001									2022	7	5.9	4.9	6.1	5.0	5.1	
2022	8	31	9274	12361	11221	7626	13891									2022	8	5.8	4.7	6.5	4.6	5.1	
2022	9	30	8912	12275	10671	7007	13289									2022	9	5.7	4.9	6.4	4.3	5.0	

Appendix C

Category	Propulsion Class	AEDT Aircraft Type	Existing (2026)	2036
Air Carrier	Jet	7478	0.20%	0.20%
		7879	1.56%	6.00%
		737700	6.20%	0.00%
		737800	19.83%	5.00%
		747400	0.31%	0.00%
		777200	0.90%	0.00%
		777300	0.47%	0.25%
		7378MAX	4.69%	32.00%
		747400RN	0.00%	0.00%
		757PW	0.23%	0.00%
		757RR	0.33%	0.00%
		7673ER	1.15%	2.00%
		7773ER	0.47%	0.25%
		7878R	0.41%	1.00%
		A300-622R	0.41%	0.00%
		A319-131	8.92%	2.00%
		A320-211	1.65%	0.50%
		A320-232	3.74%	1.07%
		A320-271N	4.47%	35.00%
		A321-232	21.24%	2.00%
		A350-941	0.10%	5.00%
		A380-841	0.11%	0.11%
		DC1010	0.00%	0.00%
		DC1030	0.00%	0.00%
		EMB190	0.18%	1.00%
		MD11GE	0.00%	0.00%
		MD11PW	0.00%	0.00%
	Regional Jet	CRJ9-ER	9.04%	1.00%
		EMB170	8.24%	4.00%
		EMB175	0.89%	0.50%
	Subtotal			95.76%
Air Taxi	Jet	CNA680	0.05%	0.05%
	Nonjet	1900D	0.06%	0.06%
		CNA208	0.14%	0.14%
		DHC6	0.07%	0.07%
	Regional Jet	EMB14L	3.12%	0.00%
Subtotal			3.44%	0.32%
General Aviation	Jet	CL600	0.02%	0.02%
		CNA525C	0.04%	0.04%
		CNA55B	0.02%	0.02%
		CNA560XL	0.04%	0.04%
		G650ER	0.00%	0.00%
		GIV	0.03%	0.03%
		GV	0.01%	0.01%
		LEAR35	0.04%	0.04%
	Nonjet	CNA208	0.60%	0.60%
Subtotal			0.80%	0.80%
Grand Total			100.00%	100.00%

Appendix D

As can be seen from the summary tables, the number of operations previously modeled as part of the original EA (and included within the original Operations Memo) have not changed.

The table below is an overview of the various scenarios and total annual operations with the corresponding data tables below. These overall operations are consistent with previously modeled and approved NEPA documents and demonstrate that there is no increase in operations related to this Supplemental EA.

Scenario	Operations
No action 2031	820,046
No action 2036	830,339
Proposed action 2031	890,491
Proposed action 2036	961,983
Previously modeled, original/ approved NEPA	963,235

No Action – 2031

Category	Propulsion Class	AEDT Aircraft Type	No Action 2031
Air Carrier	Jet	7478	0.20%
		7879	1.56%
		737700	6.75%
		737800	21.50%
		747400	0.38%
		777200	0.90%
		777300	0.56%
		7378MAX	4.66%
		747400RN	0.00%
		757PW	0.19%
		757RR	0.28%
		7673ER	0.99%
		7773ER	0.53%
		7878R	0.42%
		A300-622R	0.32%
		A319-131	8.92%
		A320-211	1.60%
		A320-232	3.74%
		A320-271N	4.05%
		A321-232	21.86%
		A350-941	0.11%
		A380-841	0.11%
		DC1010	0.00%
		DC1030	0.00%
		EMB190	0.17%
		MD11GE	0.00%
		MD11PW	0.00%
	Regional Jet	CRJ9-ER	8.18%
		EMB170	7.45%
		EMB175	0.81%
Subtotal		96.25%	
Air Taxi	Jet	CNA680	0.04%
	Nonjet	1900D	0.05%
		CNA208	0.12%
		DHC6	0.06%
	Regional Jet	EMB14L	2.67%
Subtotal		2.95%	
General Aviation	Jet	CL600	0.02%
		CNA525C	0.04%
		CNA55B	0.02%
		CNA560XL	0.04%
		G650ER	0.00%
		GIV	0.03%
		GV	0.02%
	LEAR35	0.04%	
	Nonjet	CNA208	0.61%
Subtotal		0.81%	
Grand Total		100.00%	
Total Operations - Per Day		2,246.7	
Total Operations - Per Year		820,046	

No Action – 2036

Category	Propulsion Class	AEDT Aircraft Type	No Action 2036
Air Carrier	Jet	7478	0.20%
		7879	6.00%
		737700	0.00%
		737800	5.00%
		747400	0.00%
		777200	0.00%
		777300	0.25%
		7378MAX	32.00%
		747400RN	0.00%
		757PW	0.00%
		757RR	0.00%
		7673ER	2.00%
		7773ER	0.25%
		7878R	1.00%
		A300-622R	0.00%
		A319-131	2.00%
		A320-211	0.50%
		A320-232	1.07%
		A320-271N	35.00%
		A321-232	2.00%
		A350-941	5.00%
		A380-841	0.11%
		DC1010	0.00%
		DC1030	0.00%
	EMB190	1.00%	
	MD11GE	0.00%	
	MD11PW	0.00%	
	Regional Jet	CRJ9-ER	1.00%
		EMB170	4.00%
		EMB175	0.50%
Subtotal		98.88%	
Air Taxi	Jet	CNA680	0.05%
	Nonjet	1900D	0.06%
		CNA208	0.14%
		DHC6	0.07%
	Regional Jet	EMB14L	0.00%
Subtotal		0.32%	
General Aviation	Jet	CL600	0.02%
		CNA525C	0.04%
		CNA55B	0.02%
		CNA560XL	0.04%
		G650ER	0.00%
		GIV	0.03%
		GV	0.01%
	LEAR35	0.04%	
	Nonjet	CNA208	0.60%
Subtotal		0.80%	
Grand Total		100.00%	
Total Operations - Per Day		2,274.9	
Total Operations - Per Year		830,339	

Proposed Action - 2031

Category	Propulsion Class	AEDT Aircraft Type	Proposed Action 2031
Air Carrier	Jet	7478	0.20%
		7879	1.62%
		737700	6.44%
		737800	20.51%
		747400	0.61%
		777200	1.20%
		777300	0.89%
		7378MAX	4.61%
		747400RN	0.00%
		757PW	0.18%
		757RR	0.26%
		7673ER	0.95%
		7773ER	0.49%
		7878R	0.42%
		A300-622R	0.40%
		A319-131	8.55%
		A320-211	1.80%
		A320-232	3.71%
		A320-271N	3.66%
		A321-232	21.95%
		A350-941	0.11%
		A380-841	0.09%
		DC1010	0.00%
	DC1030	0.00%	
	EMB190	0.19%	
	MD11GE	0.00%	
	MD11PW	0.00%	
Regional Jet	CRJ9-ER	8.93%	
	EMB170	7.67%	
	EMB175	0.83%	
Subtotal		96.31%	
Air Taxi	Jet	CNA680	0.07%
	Nonjet	1900D	0.08%
		CNA208	0.18%
		DHC6	0.09%
	Regional Jet	EMB14L	2.53%
Subtotal		2.95%	
General Aviation	Jet	CL600	0.02%
		CNA525C	0.05%
		CNA55B	0.03%
		CNA560XL	0.04%
		G650ER	0.00%
		GIV	0.03%
		GV	0.02%
	Nonjet	LEAR35	0.01%
		CNA208	0.55%
Subtotal		0.74%	
Grand Total		100.00%	
Total Operations - Per Day		2,439.7	
Total Operations - Per Year		890,491	

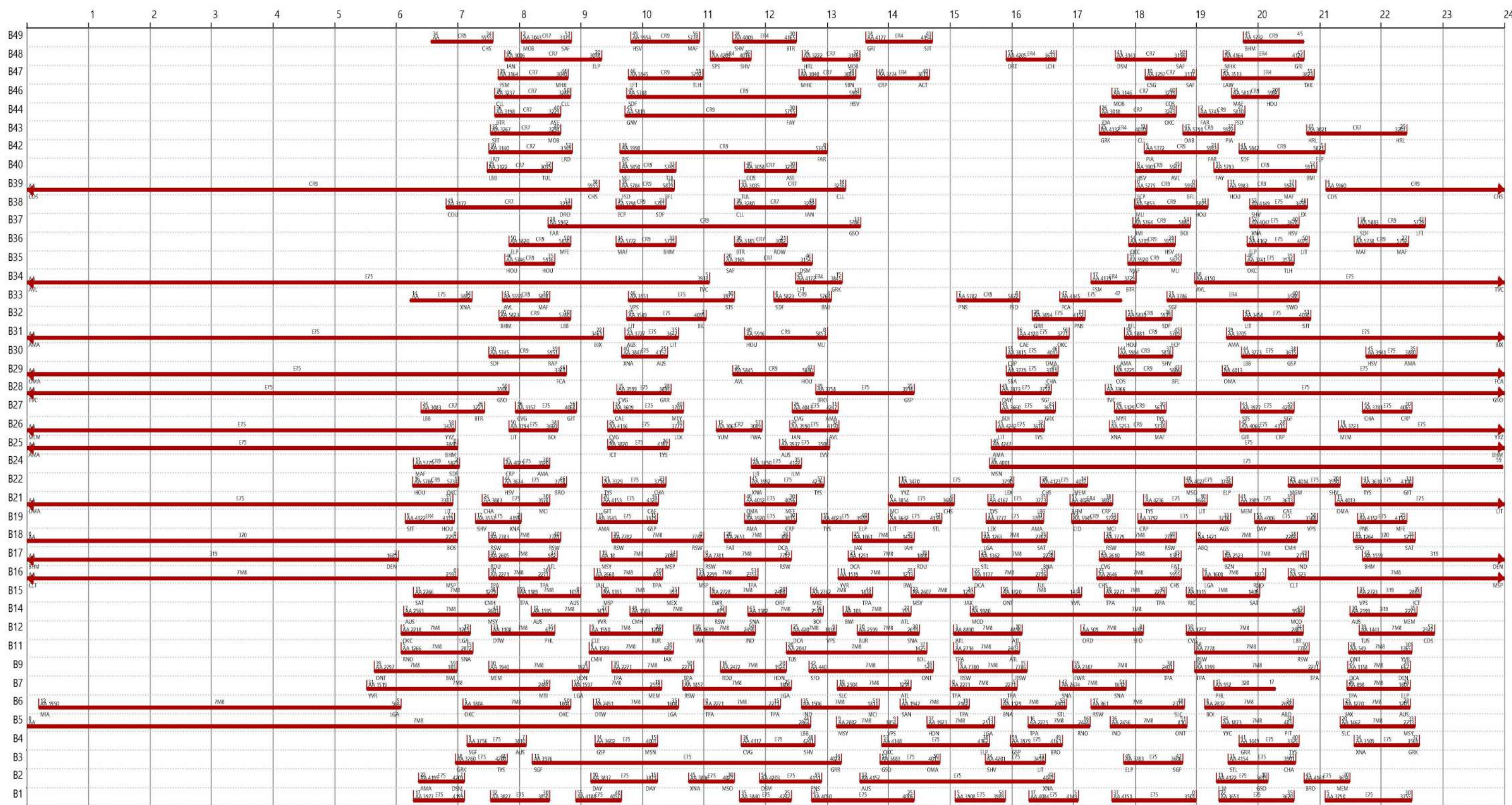
Proposed Action - 2036

Category	Propulsion Class	AEDT Aircraft Type	Proposed Action 2036
Air Carrier	Jet	7478	0.20%
		7879	6.00%
		737700	0.00%
		737800	5.00%
		747400	0.00%
		777200	0.00%
		777300	0.25%
		7378MAX	32.00%
		747400RN	0.00%
		757PW	0.00%
		757RR	0.00%
		7673ER	2.00%
		7773ER	0.25%
		7878R	1.00%
		A300-622R	0.00%
		A319-131	2.00%
		A320-211	0.50%
		A320-232	1.07%
		A320-271N	35.00%
		A321-232	2.00%
		A350-941	5.00%
		A380-841	0.11%
		DC1010	0.00%
		DC1030	0.00%
		EMB190	1.00%
		MD11GE	0.00%
		MD11PW	0.00%
	Regional Jet	CRJ9-ER	1.00%
		EMB170	4.00%
		EMB175	0.50%
	Subtotal		98.88%
Air Taxi	Jet	CNA680	0.05%
	Nonjet	1900D	0.06%
		CNA208	0.14%
		DHC6	0.07%
	Regional Jet	EMB14L	0.00%
	Subtotal		0.32%
General Aviation	Jet	CL600	0.02%
		CNA525C	0.04%
		CNA55B	0.02%
		CNA560XL	0.04%
		G650ER	0.00%
		GIV	0.03%
		GV	0.01%
		LEAR35	0.04%
	Nonjet	CNA208	0.60%
	Subtotal		0.80%
Grand Total		100.00%	
Total Operations - Per Day		2,636	
Total Operations - Per Year		961,983	

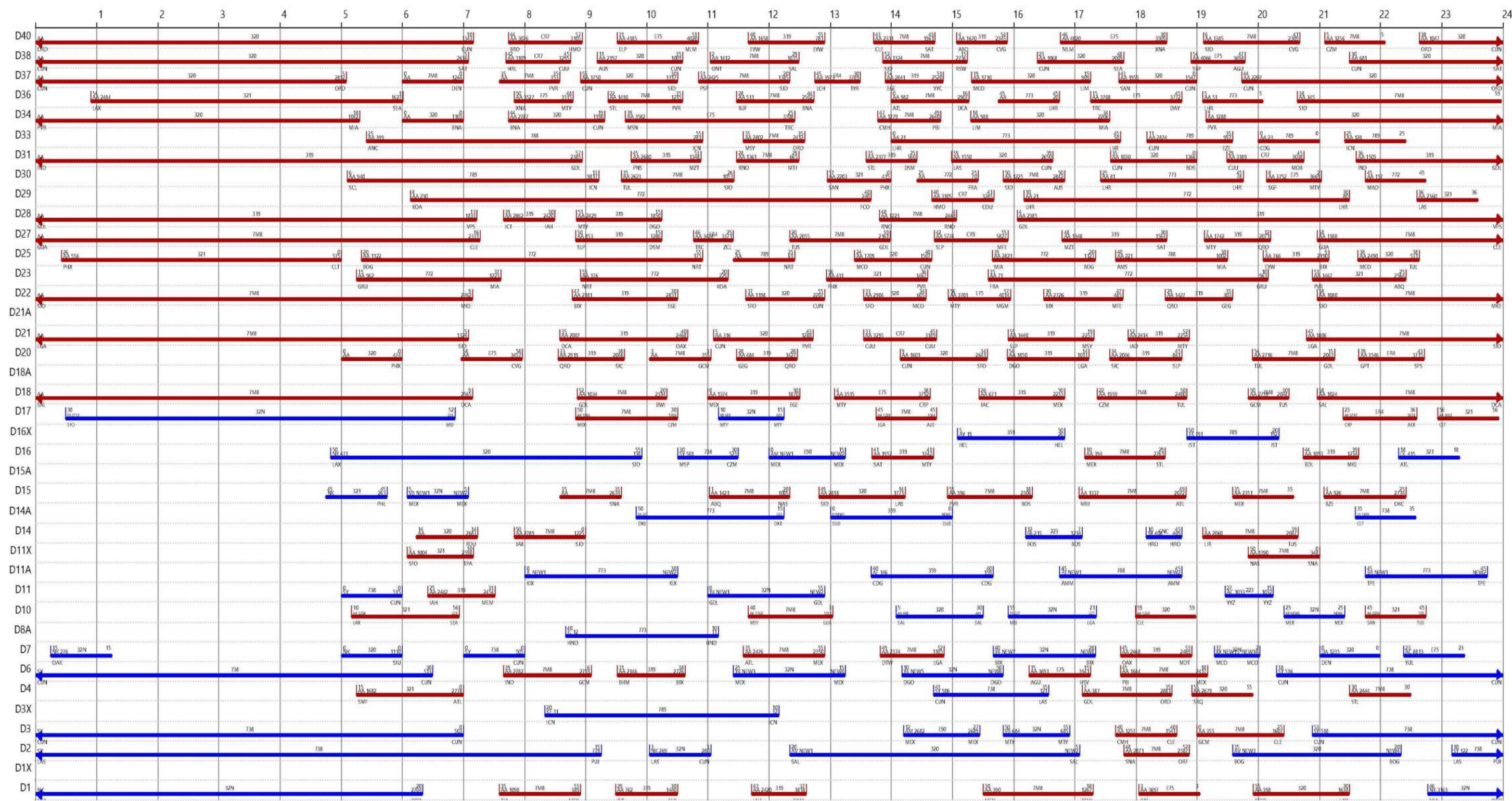
Appendix E

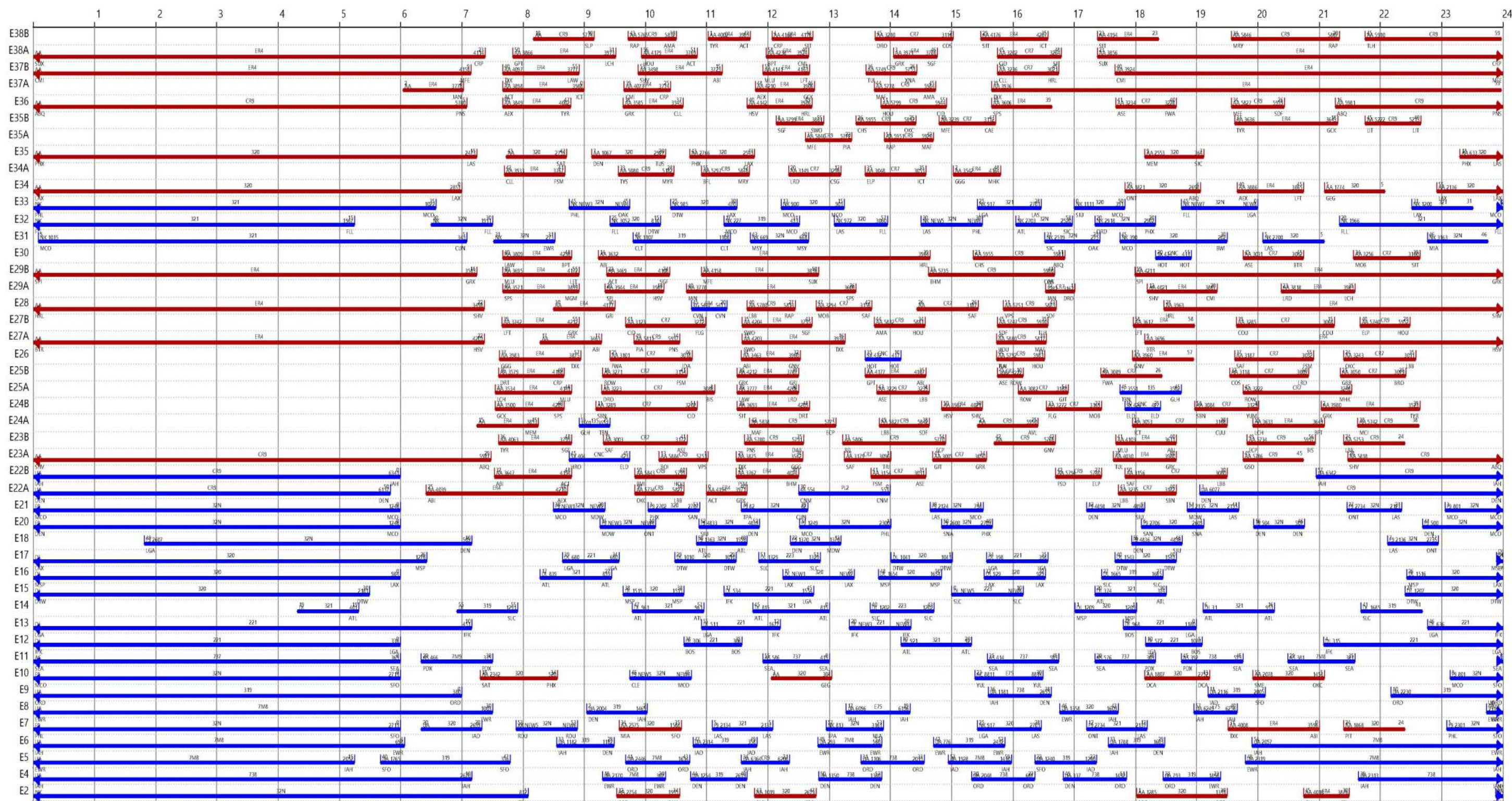
No-Action Scenario Gate Plots

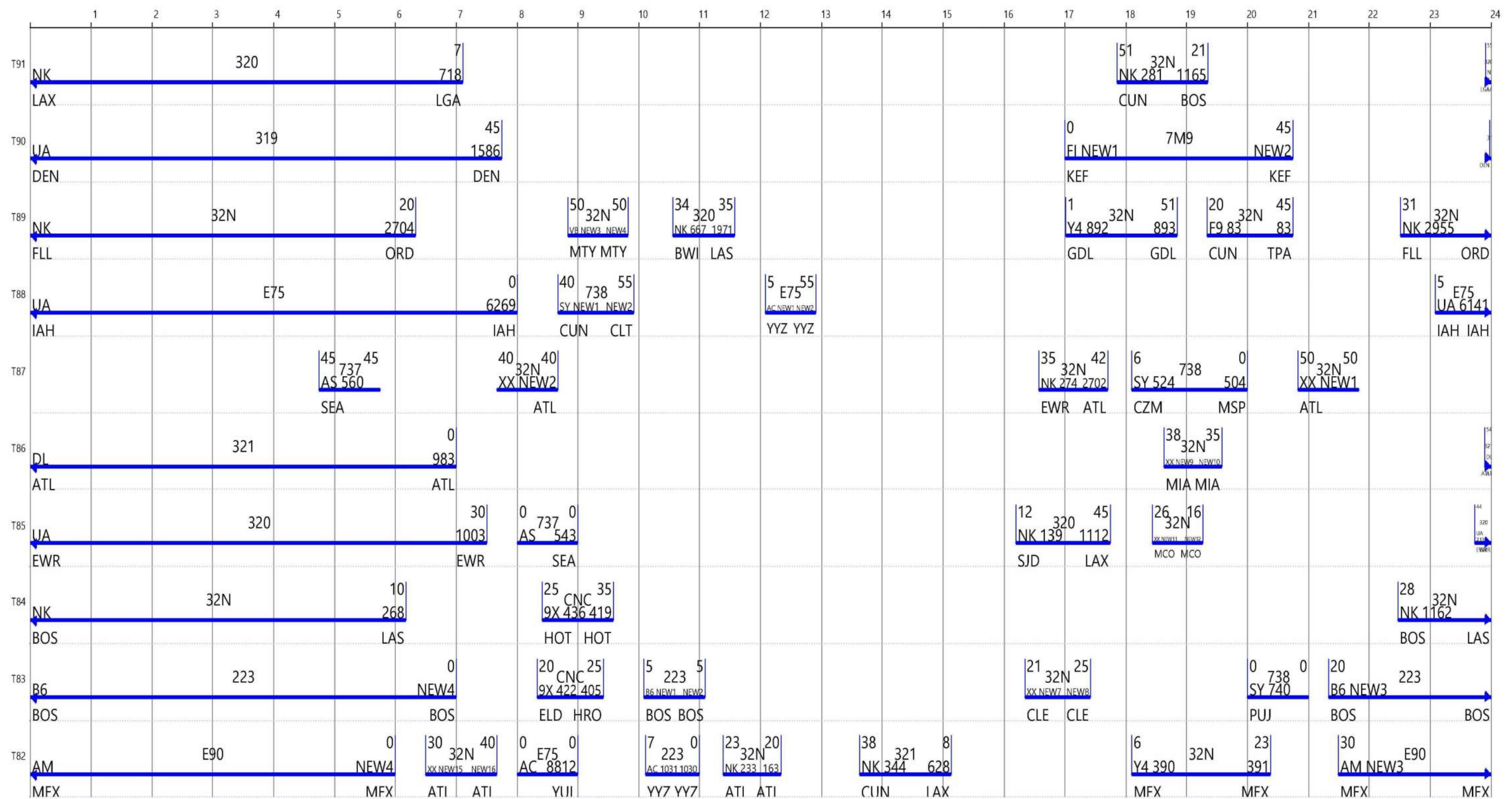




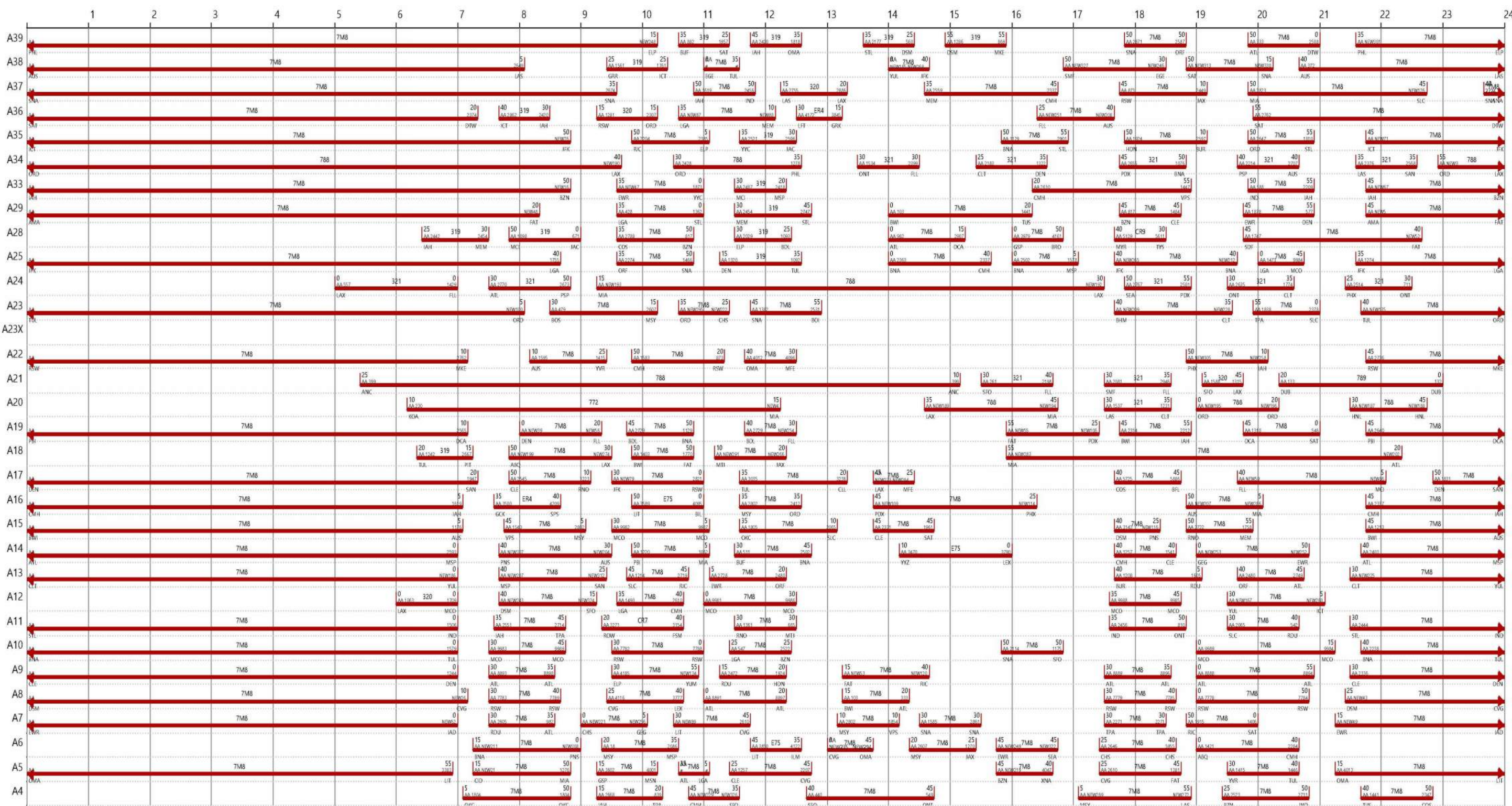
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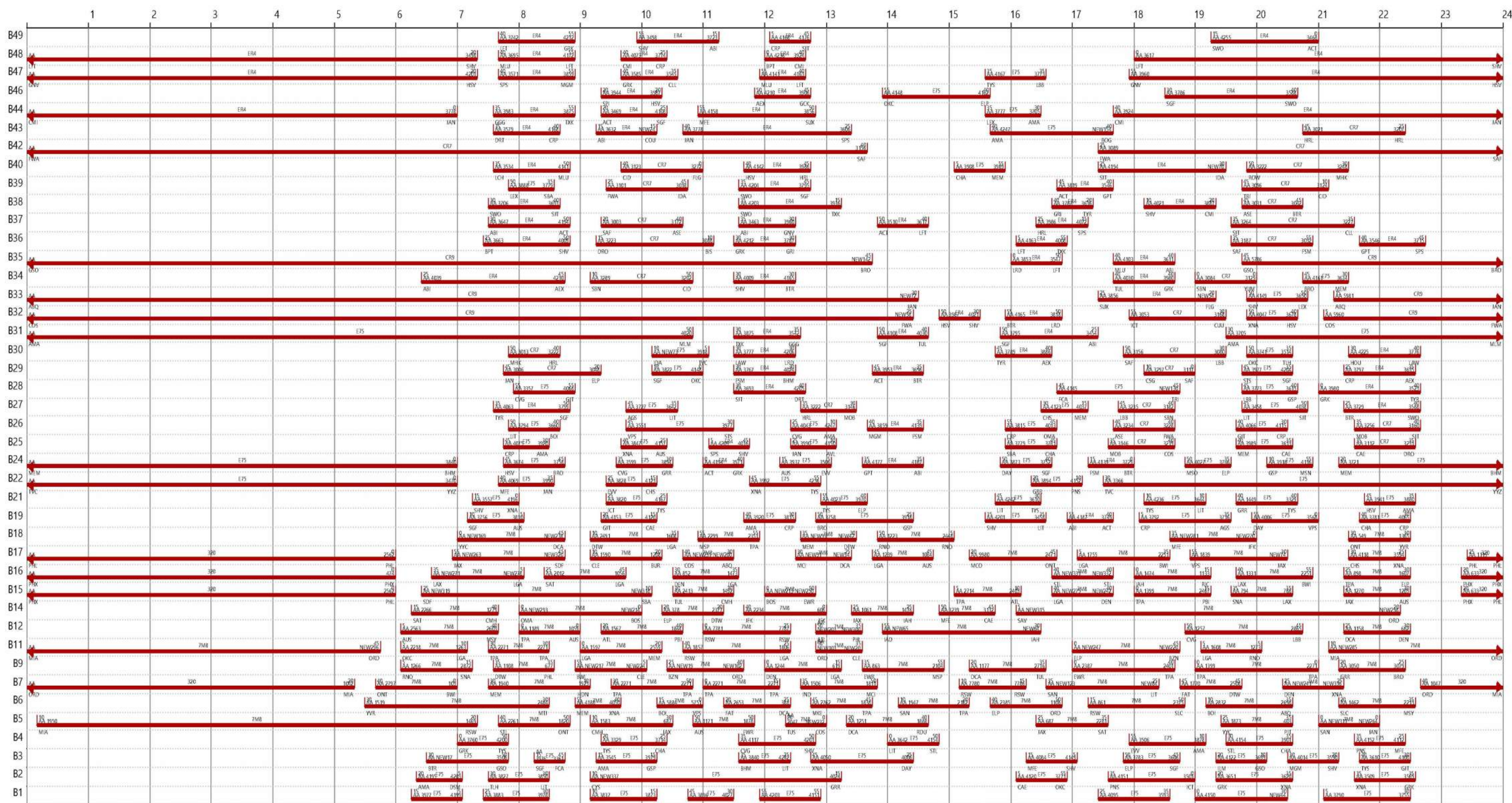


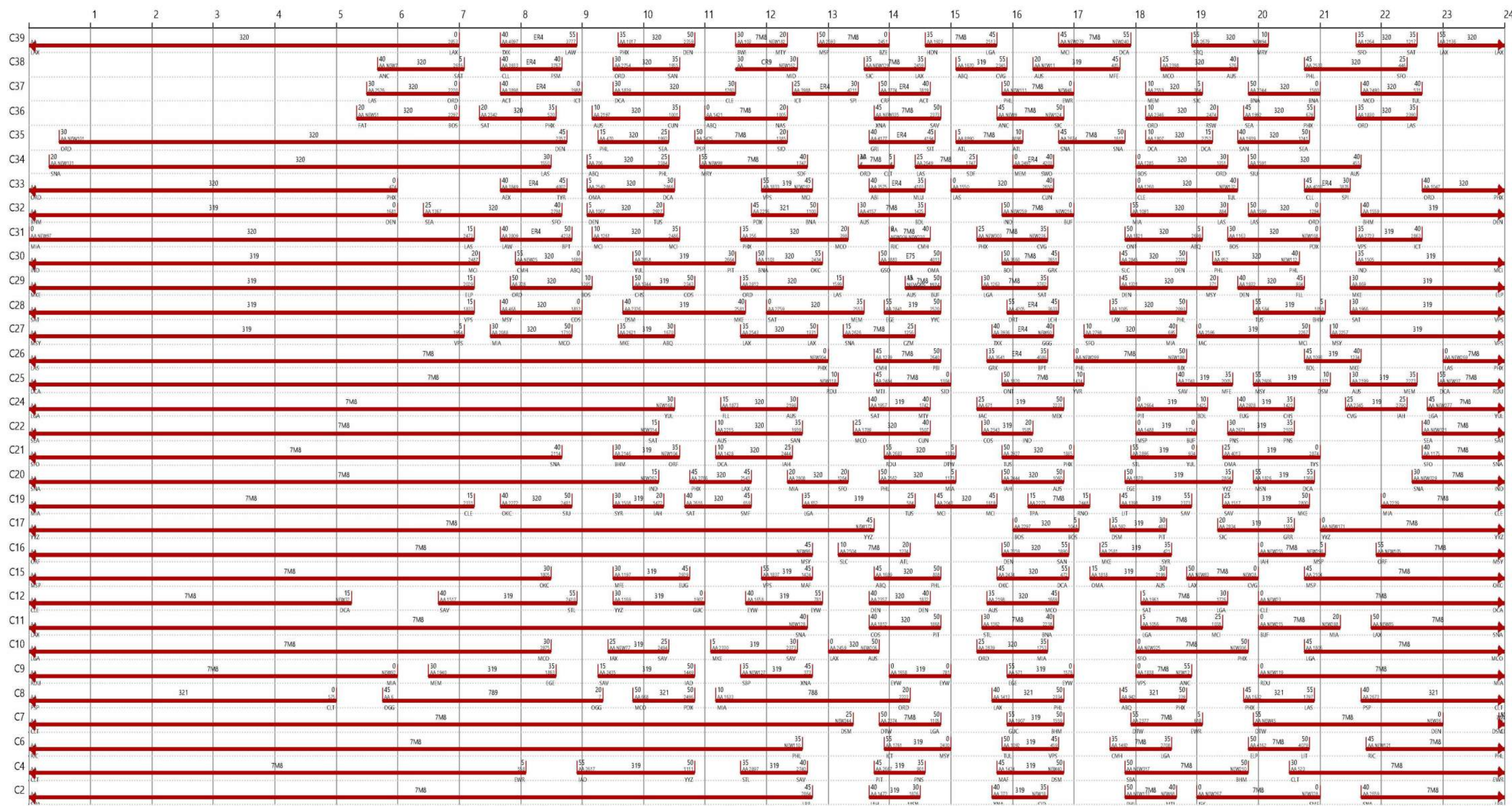


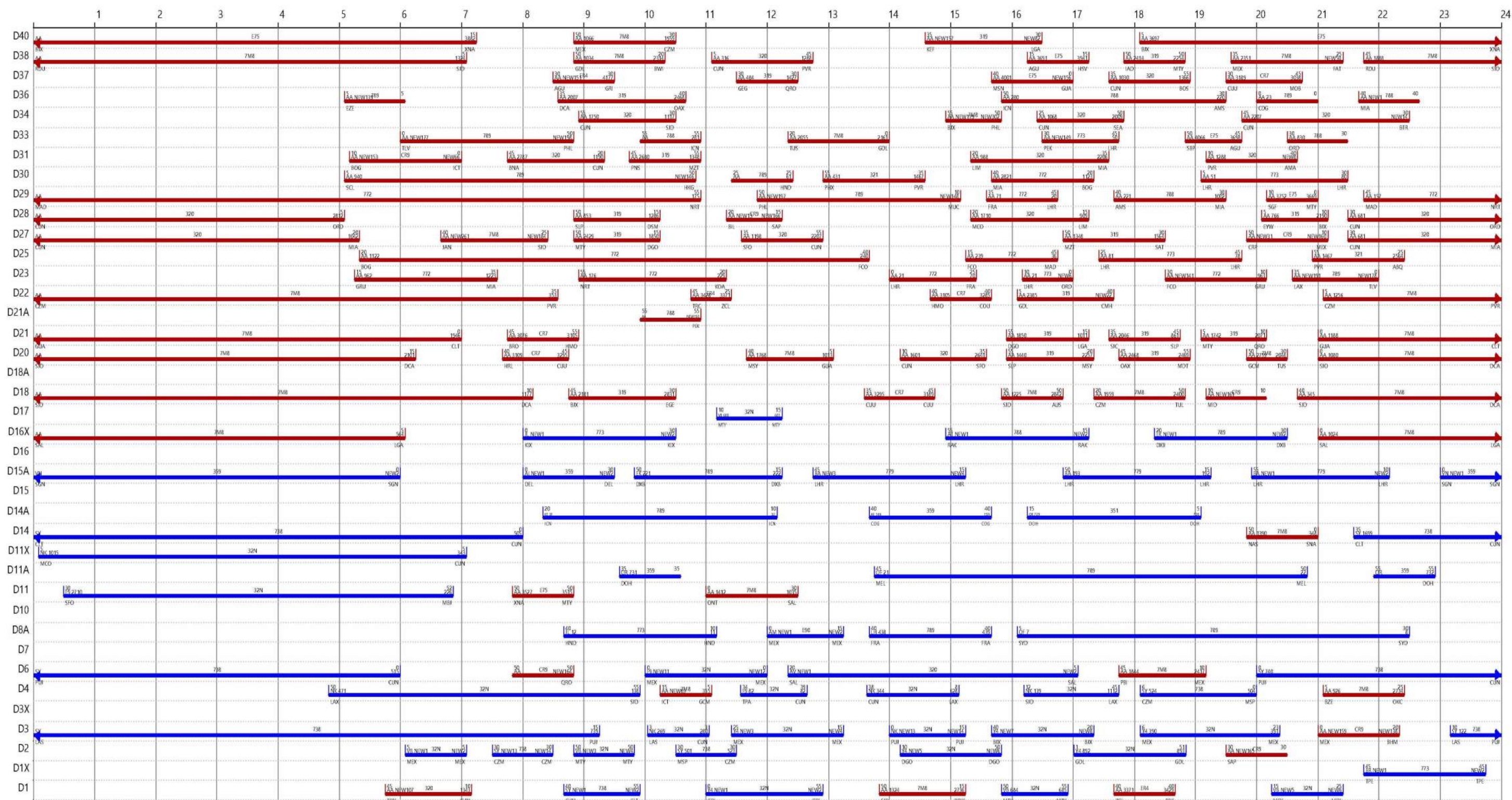


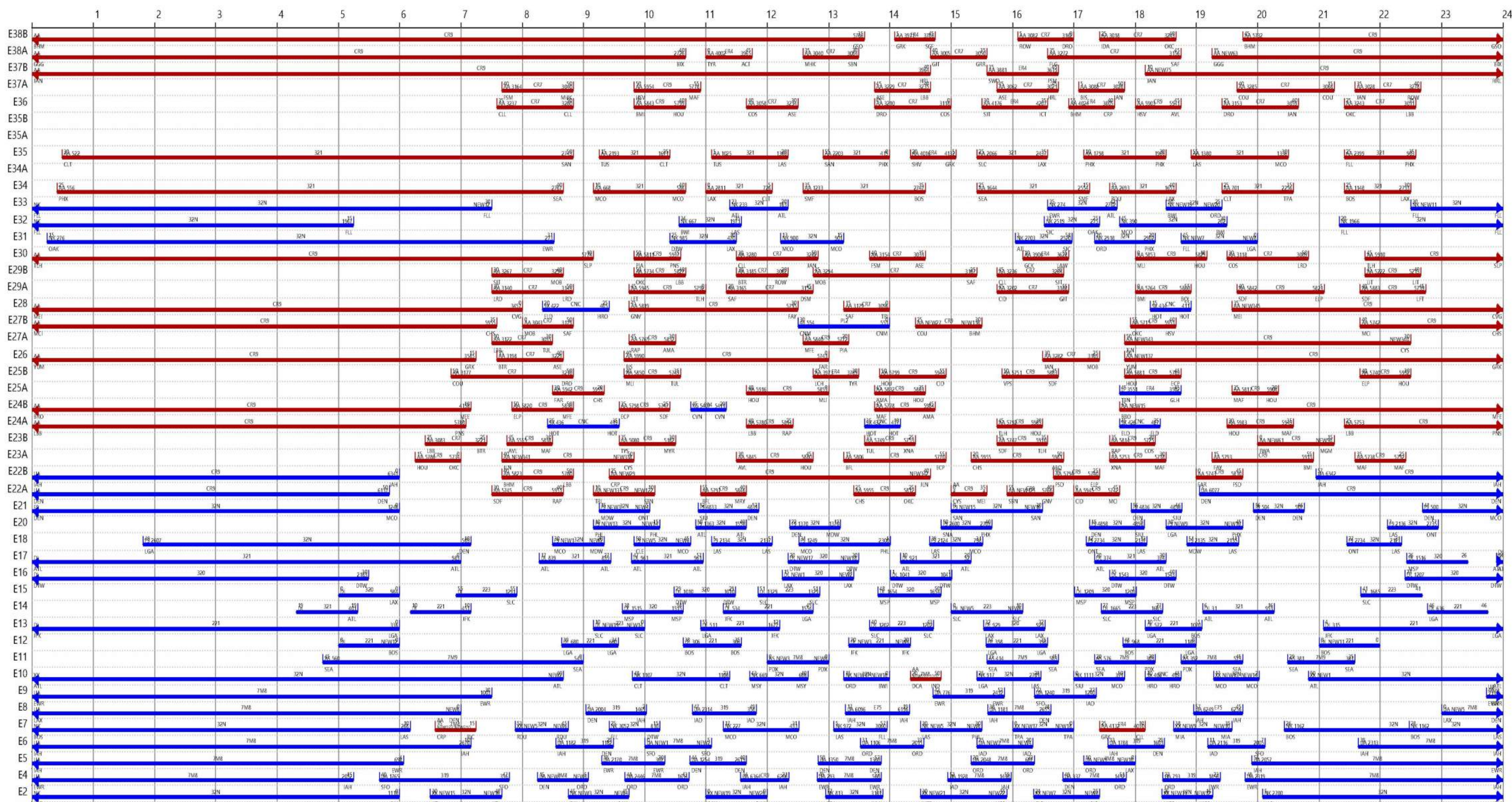
Proposed Action Scenario Gate Plots

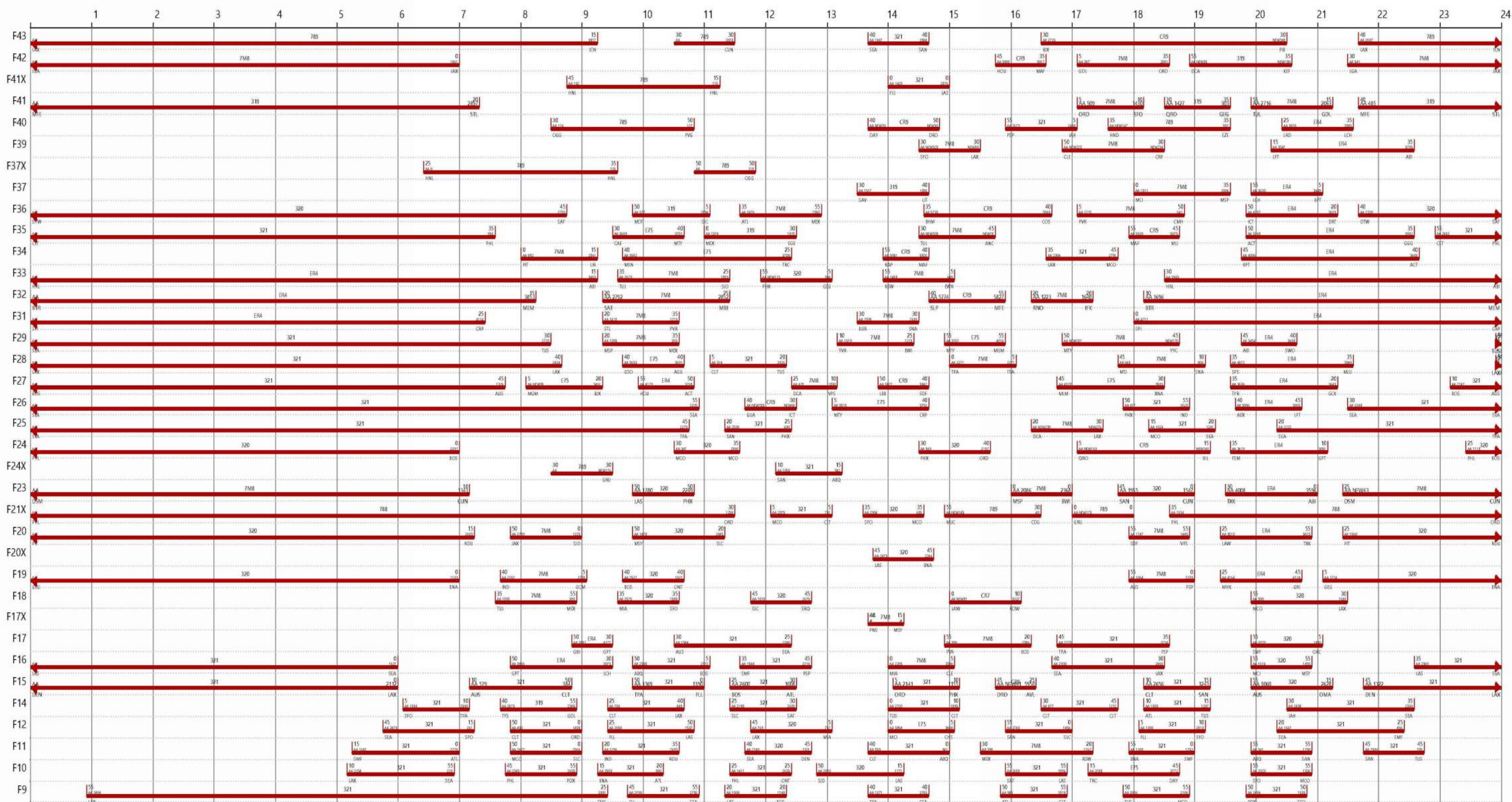












Appendix D Comparison Between the Supplemental CTA EA and CTA EA Results

This appendix compares the Supplemental CTA EA DNL 65 dB noise results to the Previously Approved CTA EA DNL 65 dB noise results. Due to changes in existing operational levels and the fleet mix at DFW, FAA requested the Supplemental EA include updated noise and emission results.

The Existing Conditions for the Supplemental EA has been updated and represents 2024 whereas the Existing Conditions for the CTA EA represented 2022. As shown in **Table D-1**, operations at DFW in 2024 were greater than in 2022. **Table D-1** also shows the increased size of regional aircraft shifting from 50-seat models (Air Taxi) to 70-set or greater models (Air Carrier).

Table D-1 Annual Existing Condition Operations Modeled for the Supplemental CTA EA and the CTA EA

Alternative	Annual Format	Air Carrier	Air Taxi	General Aviation/Military	Total
2024	Supp EA CY	722,398	14,870	5,935	743,203
2022	CTA EA FY	585,963	71,205	6,258	663,426
Difference		136,435	-56,335	-323	79,777

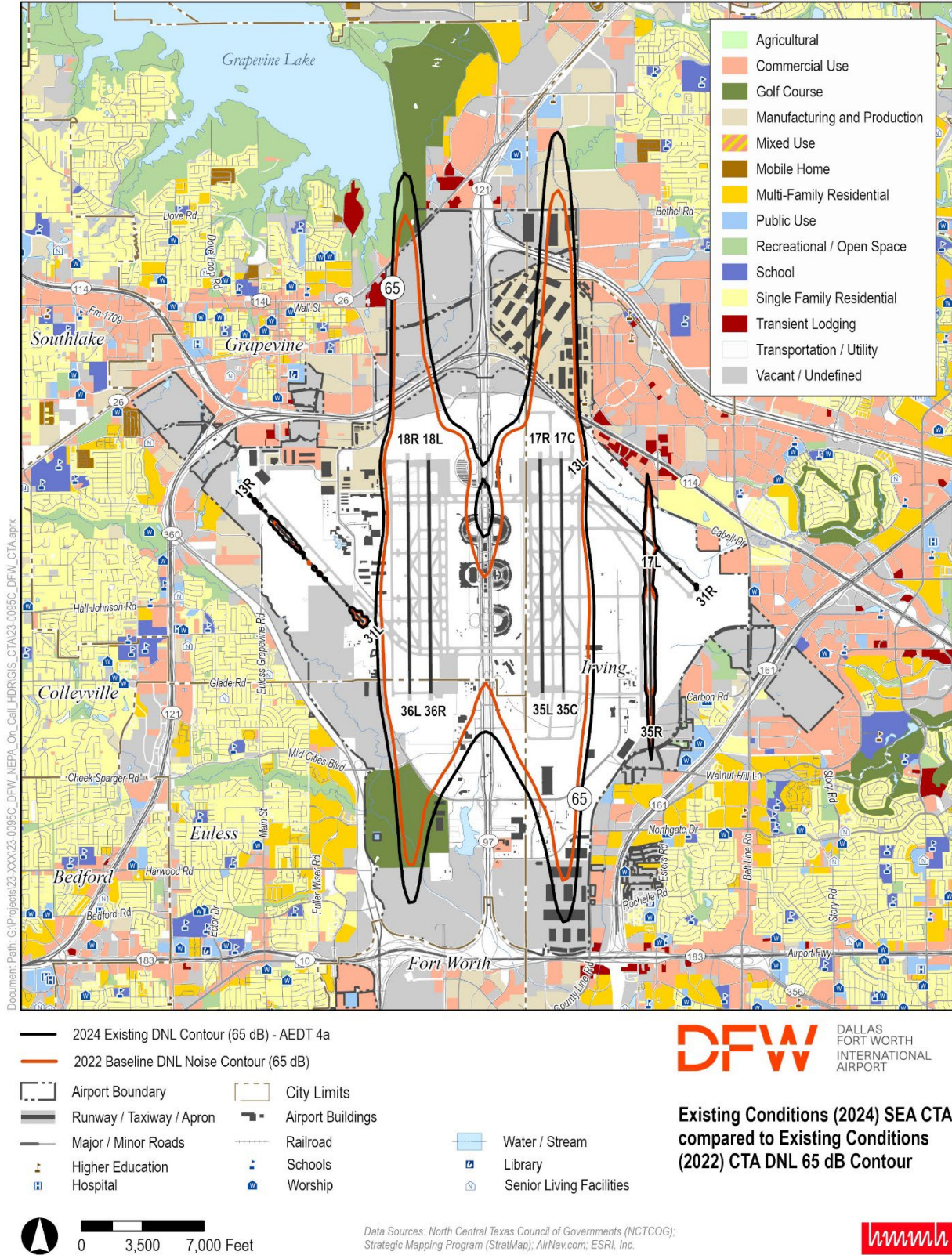
Notes: Supp EA – Calendar Year (CY), CTA EA – Fiscal Year (FY)

Sources: Supp EA – FAA OPSNET, HMMH analysis, 2026

CTA EA – FAA OPSNET, HMMH 2023

The Existing Conditions contour for the Supplemental EA is larger than the Existing Conditions contour shown in the CTA EA due to the increase in operations at DFW and the changes in the fleet mix since 2022. The Supplemental EA was run using AEDT 4a and the CTA EA was run using AEDT 3e. The runway use was similar between the two years except for slightly higher use of Runway 17C for arrivals in 2024. A comparison of the two DNL 65 dB contours is shown in **Figure D-1**.

Figure D-1. Comparison of Existing Conditions (2024) Supplemental CTA EA and Existing Conditions (2022) CTA EA



The total annual future operations modeled for the two EA's are similar (differ by approximately 3,000 annual operations) as shown in **Table D-2**. In 2036, the Air Carrier and Air Taxi are different as the 50 seat and smaller regional jets have been replaced with larger regional jets moving those operations to the Air Carrier category. The Supplemental EA (2036) Proposed Action, also has a minor increase in General Aviation operations between the No Action and Proposed Action. Night operations increased in the Existing Conditions and this was carried through into the forecast years for the Supplemental EA.

The CTA EA noise contours were run using Fiscal Year (FY) operations, but Calendar Year (CY) results are required to be presented in the EA. For the CTA EA, a screening analysis was done for each alternative to demonstrate only a minor increase would result if CY results were used in the CTA EA. For the Supplemental EA, the operations modeled have already been adjusted to CY. The actual operations modeled and noise contours shown for CTA EA represented the FY therefore those numbers are shown below.

Table D-2. Annual Forecast Operations Modeled for the Supplemental CTA EA and the CTA EA

Alternative	Annual Format	Air Carrier	Air Taxi	General Aviation/Military	Total
No Action 2031	Supp EA CY	792,172	24,176	6,729	823,078
No Action 2031	CTA EA FY	789,196	24,165	6,674	820,035
Difference		2,976	11	55	3,043
Proposed Action 2031	Supp EA CY	860,584	26,334	6,593	893,512
Proposed Action 2031	CTA EA FY	857,544	26,258	6,674	890,476
Difference		3,040	76	-81	3,036
No Action 2036	Supp EA CY	824,151	2,664	6,648	833,463
No Action 2036	CTA EA FY	799,475	24,105	6,774	830,354
Difference		24,676	-21,441	-126	3,109
Proposed Action 2036	Supp EA CY	954,814	3,087	7,702	965,603
Proposed Action 2036	CTA EA FY	928,457	27,994	6,774	963,225
Difference		26,357	-24,907	928	2,378

Notes: Supp EA – Calendar Year (CY), CTA EA – Fiscal Year (FY)

Sources: Supp EA - FAA 2024 TAF, DFW Ops Memo, HMMH analysis, 2026

CTA EA – FAA 2021 TAF, Centurion Planning and Design, HMMH 2023

The same runway use was applied to the forecast operations in both EA's, therefore the differences between the Supplemental EA and the CTA EA noise contours are due to the changes in fleet mix, total operations, night operations and the AEDT version used. Compared to the CTA EA (2031) forecast, the Supplemental EA (2031) forecast;

- Reduces older and less efficient 737700, 777300 and 747400 operations and increases newer A320-Neo, A321 and 7773ER operations.
- Increased overall operations by approximately 3,000 operations.
- Increased the percentage of Night arrivals by five percent and Night departures by two percent.
- Modeled using AEDT 4a and the CTA EA was run using AEDT 3e.

The future Supplemental EA No Action and Proposed Action (2031) contours are similar in width on airport property but larger off airport than the CTA EA No Action and Proposed Action (2031) contours as shown in **Figure D-2** and **Figure D-3**.

Figure D-2. Comparison of No Action (2031) Supplemental CTA EA and (2031) CTA EA Noise Contours

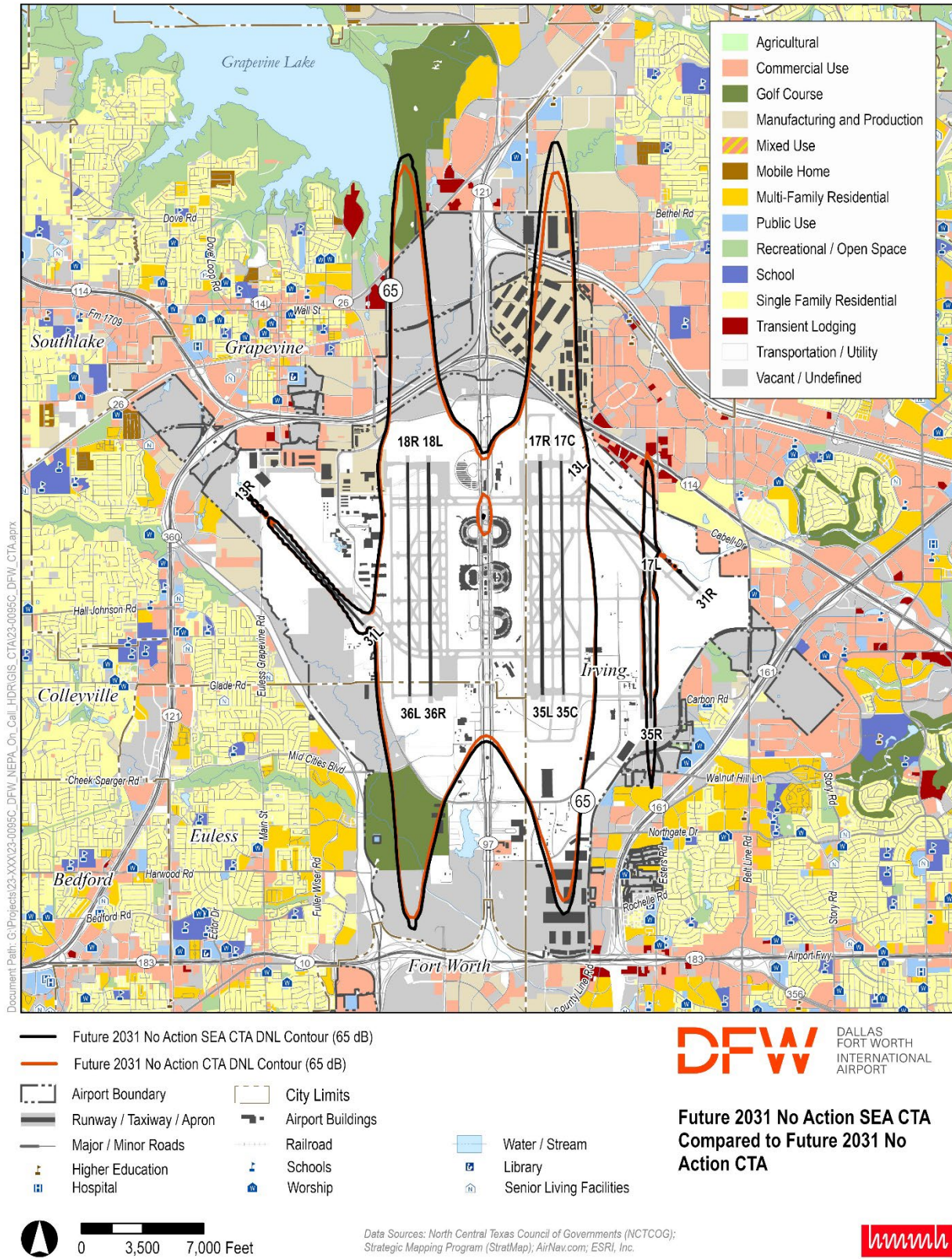
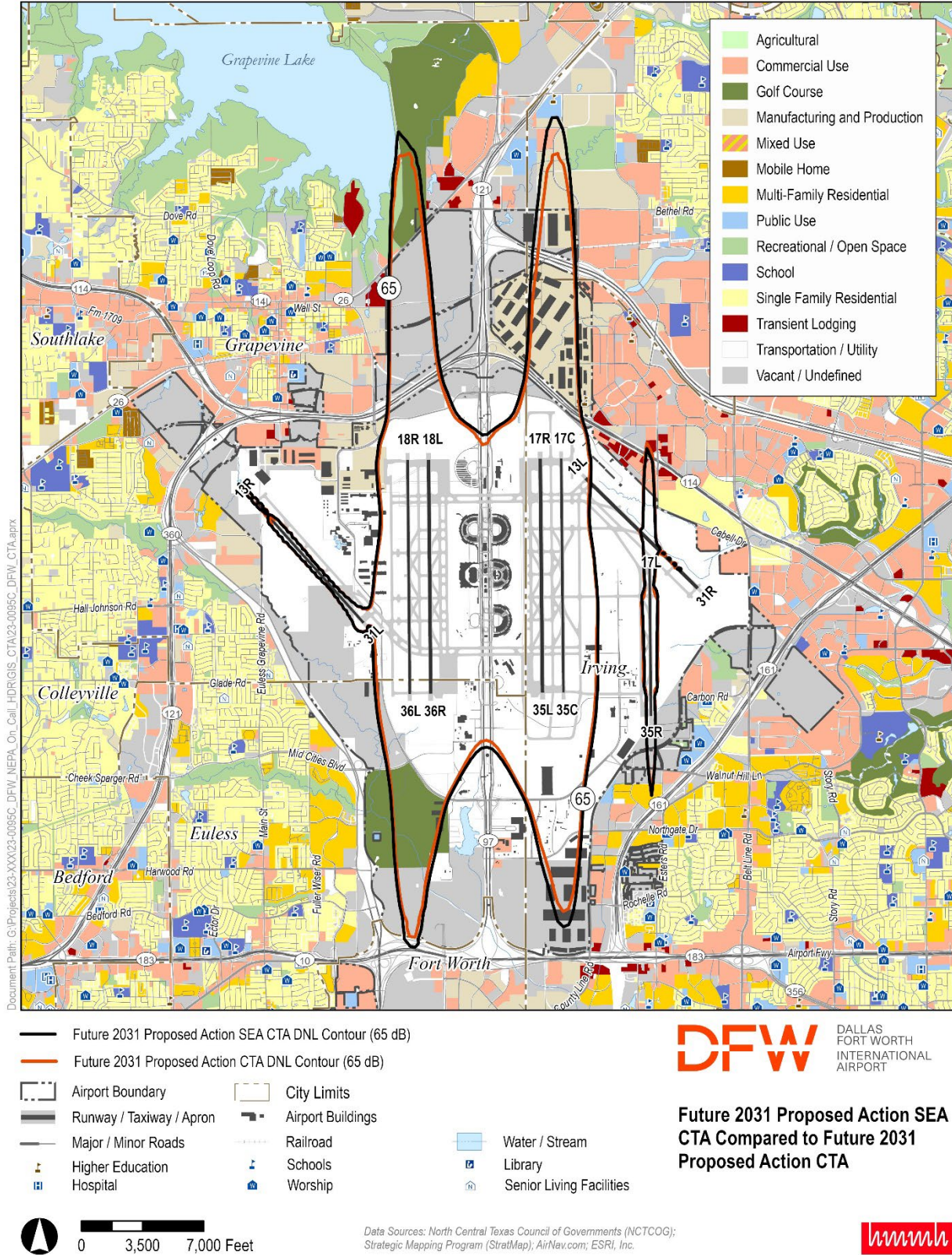


Figure D-3. Comparison of Proposed Action (2031) Supplemental CTA EA and (2031) CTA EA Noise Contours



As with the 2031 modeling, the same runway use was applied to the 2036 forecast operations in both EA's, therefore the differences between the Supplemental EA and the CTA EA noise contours are due to the changes in fleet mix, total operations, night operations and the AEDT version used. Compared to the CTA EA (2036) forecast, the Supplemental EA (2036) forecast;

- Reduces older and less efficient 737700, 737800, A319, A320, A321, 777300, 747400 operations and increases newer A320-Neo, 7378MAX, A350 and 7879 operations.
- Reduces CRJ9, E170, E175 Air Taxi operations and increases Air Carrier E190 and fuel efficient narrowbody aircraft.
- Increased overall operations by approximately 3,000 operations.
- Increased Night arrivals by five percent and Night departures by two percent.
- Modeled using AEDT 4a and the CTA EA was run using AEDT 3e.

The future Supplemental EA No Action and Proposed Action (2036) contours are smaller in width on airport property and similar off airport than the CTA EA No Action and Proposed Action (2036) contours due to the higher use of newer fuel-efficient aircraft even though the Supplemental EA fleet mix consists of a higher percent of Air Carrier aircraft compared to the CTA EA as shown in **Figure D-4** and **Figure D-5**.

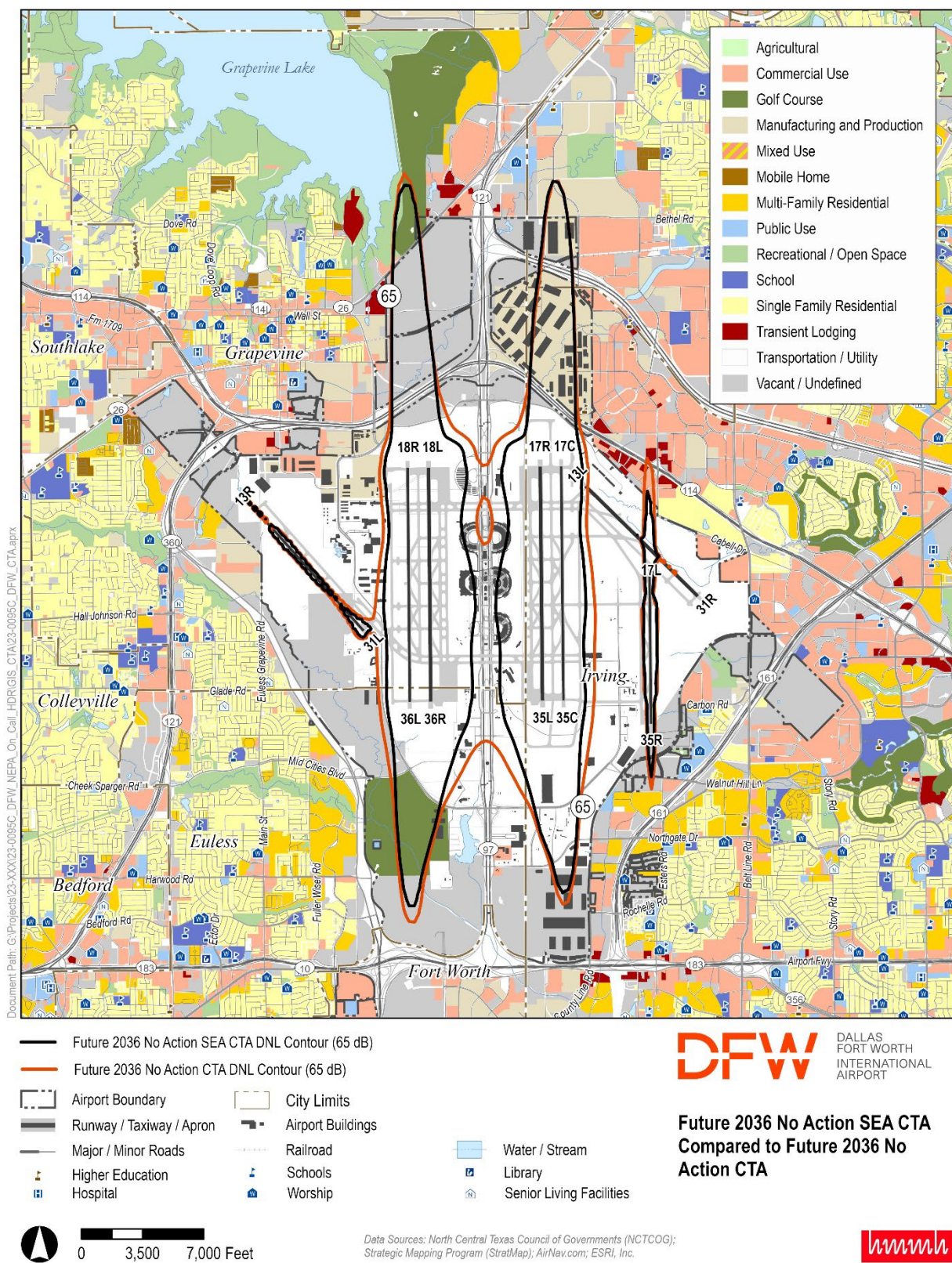
These changes make sense when comparing selected current model aircraft to newer aircraft models as shown in **Table D-3**.

Table D-3. Average Decibel Reduction Between Current Model and Next Generation Model Aircraft

Current Model	Next Generation Model	Arrivals	Departures
737800	7378MAX	-2 dB	-5 dB
A320-232	A320-270N	-1 dB	-2 dB
777300	7879	-3 dB	-3 dB

Source: AEDT 3f

Figure D-4. Comparison of No Action (2036) Supplemental CTA EA and (2036) CTA EA Noise Contours





A north arrow pointing upwards and a scale bar labeled 0, 3,500, and 7,000 Feet.

Data Sources: North Central Texas Council of Governments (NCTCOG); Strategic Mapping Program (StratMap); AirNav.com; ESRI, Inc.