

Draft Environmental Assessment (DEA)

19th Street Cargo Redevelopment Project

SUBMITTED BY:

Dallas Fort Worth International Airport

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DRAFT ENVIRONMENTAL ASSESSMENT

19th Street Cargo Redevelopment Project
Dallas Fort Worth International Airport

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This Environmental Assessment becomes a federal document when evaluated, signed, and dated by the Responsible FAA official.

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ACRONYMS AND ABBREVIATIONS

µg/m ³	micrograms per cubic meter	CNG	Compressed Natural Gas
AA	American Airlines	CO	Carbon Monoxide
AAD	Average Annual Day	CO ₂	Carbon Dioxide
AAF	Aviation Activity Forecast	COMP HIST	Compliance History
AC	Advisory Circular	CWA	Clean Water Act
ACA	Airport Carbon Accreditation	CZM	Coastal Zone Management
ACHP	Advisory Council on Historic Preservation	DART	Dallas Area Rapid Transit
ACI-NA	Airport Council International – North America	dB	Decibel
ACM	asbestos containing materials	DFW	Dallas Fort Worth International Airport
ACT	Antiquities Code of Texas	DNL	Day-Night Average Sound Level
ADG	Airplane Design Group	DPS	Department of Public Safety
AEDT	Airport Environmental Design Tool	EA	Environmental Assessment
AIP	Airport Improvement Program	EAT	End–Around Taxiway
ALP	Airport Layout Plan	ECHO	Enforcement and Compliance History
ALSF-II	Approach Lighting System with Sequence Flashing Lights	eCUP	Electric Central Utility Plant
AOA	Airport Operations Area	EIS	Environmental Impact Statement
APE	Area of Potential Effects	ENF	Enforcement Action
APU	Auxiliary Power Units	EO	Executive Order
AQCR	Air Quality Control Region	EPA	U.S. Environmental Protection Agency
ARC	A.R. Consultants, Inc.	ESA	Endangered Species Act
BMP	best management practice	FAA	Federal Aviation Administration
CAA	Clean Air Act	FFS	First Flush System
CAEP	Committee on Aviation Environmental Protection	FINDS	Facility Index System/Facility Registry System
CECAP	Comprehensive Environmental and Climate Action Plan	FONSI	Finding of No Significant Impact
CEQ	Council on Environmental Quality	FPPA	Farmland Protection Policy Act
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act	FR	Federal Register
CFR	Code of Federal Regulations	FY	fiscal year
CGP	Construction General Permit	GHG	Greenhouse Gases
CH ₄	methane	GI/LID	Green Infrastructure/Low Impact Development
CMMP	Construction Materials Management Plan	GSE	Ground Support Equipment
		GWP	Global Warming Potential
		H ₂ O	Water
		IAC	International Airports Council

IATA	International Air Transport Association	PDD	Project Definition Document
IHW	Industrial Hazardous Wastes	PFAS	polyfluoroalkyl substances
IPCC	International Panel on Climate Change	PFC	Passenger Facility Charge
LPST	Leaking Petroleum Storage Tanks	PFCs	Perfluorinated Compounds
mi ²	square miles	PIO	Project Integration Office
MOVES	EPA Motor Vehicles Emissions Simulator	PM	Particulate Matter
MSW	Municipal Solid Waste	PM ₁₀	Particulate matter with a diameter less than 10 micrometers
N ₂ O	Nitrous Oxide	PM _{2.5}	Particulate matter with a diameter less than 2.5 micrometers
NAA	No Action Alternative	PPA	Pollution Prevention Act
NAAQS	National Ambient Air Quality Standards	ppb	parts per billion
NAVAIDS	Navigational Aids	ppm	parts per million
NE	Northeast	PSL	Project Support Locations
NEPA	National Environmental Policy Act	RCRA	Resource Conservation and Recovery Act
NHPA	National Historic Preservation Act	RNG	Renewable Natural Gas
NHRP	National Register of Historic Places	ROD	Record of Decision
nmi	Nautical Miles	SC-CH ₄	Social Cost of Methane
NMFS	National Marine Fisheries Service	SC-CO ₂	Social Cost of Carbon Dioxide
NO ₂	Nitrogen Dioxide	SC-GHG	Social Cost of Greenhouse Gases
NOMS	Noise and Operations Monitoring System	SC-N ₂ O	Social Cost of Nitrogen Oxides
NO _x	Nitrogen Oxides	SH	State Highway
NPDES	National Pollution Discharge Elimination System	SHPO	State Historic Preservation Office
NPL	National Priorities List	SIP	State Implementation Plan
NRCS	Natural Resources Conservation Service	SMP	Sustainability Management Plan
NRHP	National Register of Historic Places	SO ₂	Sulphur Dioxide
NRI	National River Inventory	SPCC	Spill Prevention, Counter-Measures and Control Plan
NSA	Noise Study Area	SW	Southwest
NSR	New Source Review	SW3P	Stormwater Pollution Prevention Plan
NW	Northwest	SWF/LF	Permitted Solid Waste Facility/Landfill
O ₃	Ozone	SWS	Stormwater System
OFA	Object Free Area	TAF	Terminal Area Forecast
OPSNET	FAA's Operational Network	TARL	Texas Archeological Research Laboratory
PALM	Potential Archeological Liability Map	TASA	Texas Archeological Sites Atlas
Pb	Lead	TCEQ	Texas Commission on Environmental Quality

TDG	Taxiway Design Group	TxDOT	Texas Department of Transportation
TexN	Texas NONROAD	TxVCP	Texas Voluntary Cleanup Program
THC	Texas Historical Commission	USACE	U.S. Army Corps of Engineers
THSA	Texas Historic Sites Atlas	USC	U.S. Code
tpd	tons per day	EPA	U.S. Environmental Protection Agency
TPDES	Texas Pollution Discharge Elimination System	USFWS	U.S. Fish and Wildlife Services
TPH	total petroleum hydrocarbons	UST	Underground Storage Tank
TPWD	Texas Parks and Wildlife Department	VOC	Volatile Organic Compounds
tpy	tons per year	WOTUS	Waters of the United States
TRA	Trinity River Authority		
TSCA	Toxic Substances Control Act		

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SECTION 1 INTRODUCTION

This Environmental Assessment (EA) has been prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, and the President's Council on Environmental Quality (CEQ) regulations to implement NEPA (40 Code of Federal Regulations [CFR] §1500 to 1508). NEPA requires federal agencies to analyze the environmental impacts of their proposed actions, identify and assess the reasonable alternatives to proposed actions that will avoid or minimize adverse effects of these actions, consider relevant and reasonable mitigation measures, and provide interested parties with an opportunity to participate in the environmental review process.

Under NEPA, the Federal Aviation Administration (FAA) is required to consider potential environmental impacts before funding or approving projects. All airport improvement projects that are considered to be a major federal action, including through the receipt of federal funding, must be examined from an environmental standpoint, to comply with NEPA, the Airport and Airway Improvement Act of 1982, as amended, and other pertinent laws, and regulations. FAA's NEPA policies and procedures are set forth in FAA Order 1050.1F, Environmental Impacts: Policies and Procedures (FAA, 2015), FAA Order 1050.1F Desk Reference (FAA, 2023), and FAA Order 5050.4B, NEPA Implementing Instructions for Airport Actions (FAA, 2006).¹

The purpose of this EA is to analyze the potential environmental impacts of the proposed 19th Street Cargo Redevelopment Project. This EA also includes public and agency coordination documents used to communicate the Proposed Action and results of the environmental analyses, as well as to gather input from the public and regulatory agencies consulted. FAA will use the findings in the EA to determine whether to prepare an Environmental Impact Statement (EIS) or a Finding of No Significant Impact (FONSI).

1.1 Project Sponsor

The Project Sponsor is Dallas Fort Worth International Airport (DFW), located in Dallas and Tarrant Counties, Texas.

1.2 Background

DFW is a commercial service airport that currently encompasses 17,207 acres (approximately 27 square miles [mi²]) in Dallas and Tarrant Counties, Texas. DFW has five passenger terminals (A, B, C, D, and E) and its airfield system consists of seven runways (**Figure 1-1**) separated by a spine road, International Parkway, into the east and west airfield complexes.

DFW has two main runway complexes: the east side and west side, comprised of seven runways oriented primarily in a north-south direction; four to the east (13L/31R, 17C/35C, 17L/35R, 17R/35L) and three to the west (13R/31L, 18L/36R, and 18R/36L). 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 runways 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) (**Figure 1-2**). Aircraft normally take off and land into the wind. However, runway end utilization can also be affected by aircraft type, type of activity, and if applicable any airport runway use plans.

DFW has six cargo complexes: Northeast Cargo, 5E Cargo Complex, UPS Regional Hub, American Airlines Cargo, Northwest Cargo, and International Air Cargo (IAC) (**Figure 1-3**). In 2022, Airports Council International North America (ACI-NA) ranked DFW as the 2nd busiest airport for total passengers and 10th for air cargo volume². At DFW, cargo is transported via passenger airlines, in belly cargo, as well as using cargo integrators such as UPS, DHL, FedEx, and all-cargo airlines.

¹ FAA reviewed the Proposed Action relative to Section 163 of Public Law 115-224 (known as the FAA Reauthorization Act of 2018). FAA has authority over the Proposed Action and thus, compliance with NEPA is required.

² September 2022 Press Release Airports Council International North America Airport Traffic Rankings based on 2021 data

Figure 1-1. DFW Runway Layout

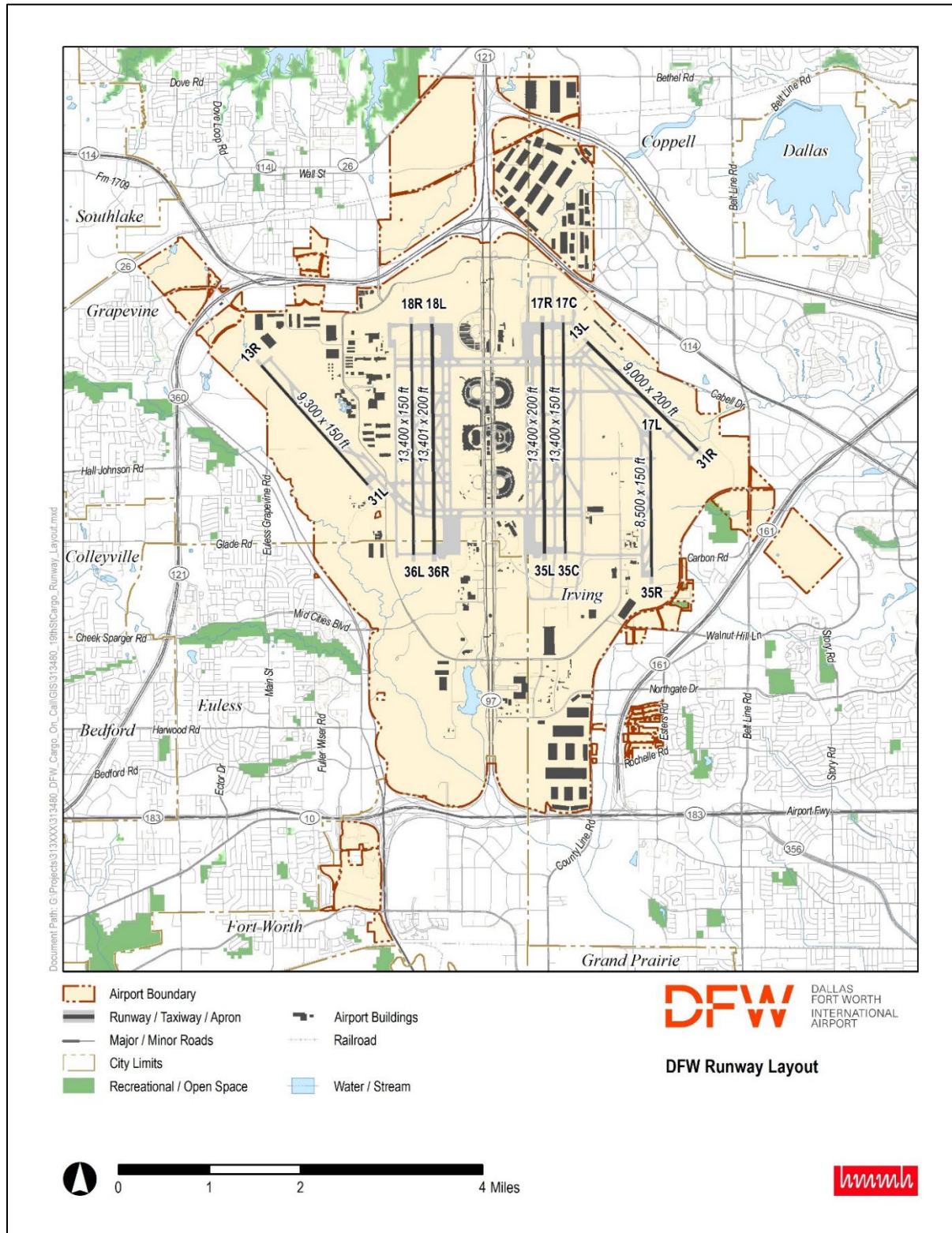


Figure 1-2. DFW Runway Operating Configuration

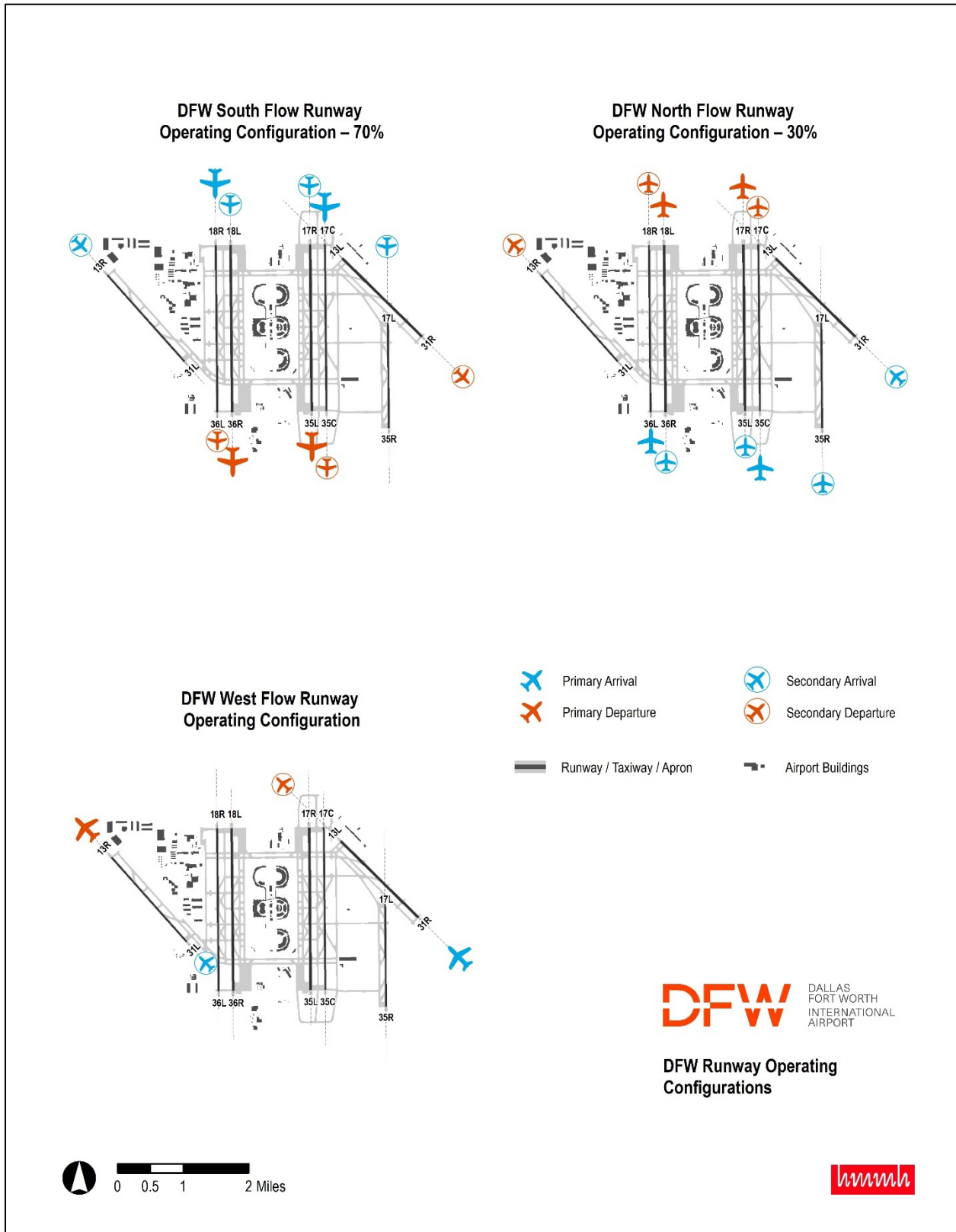
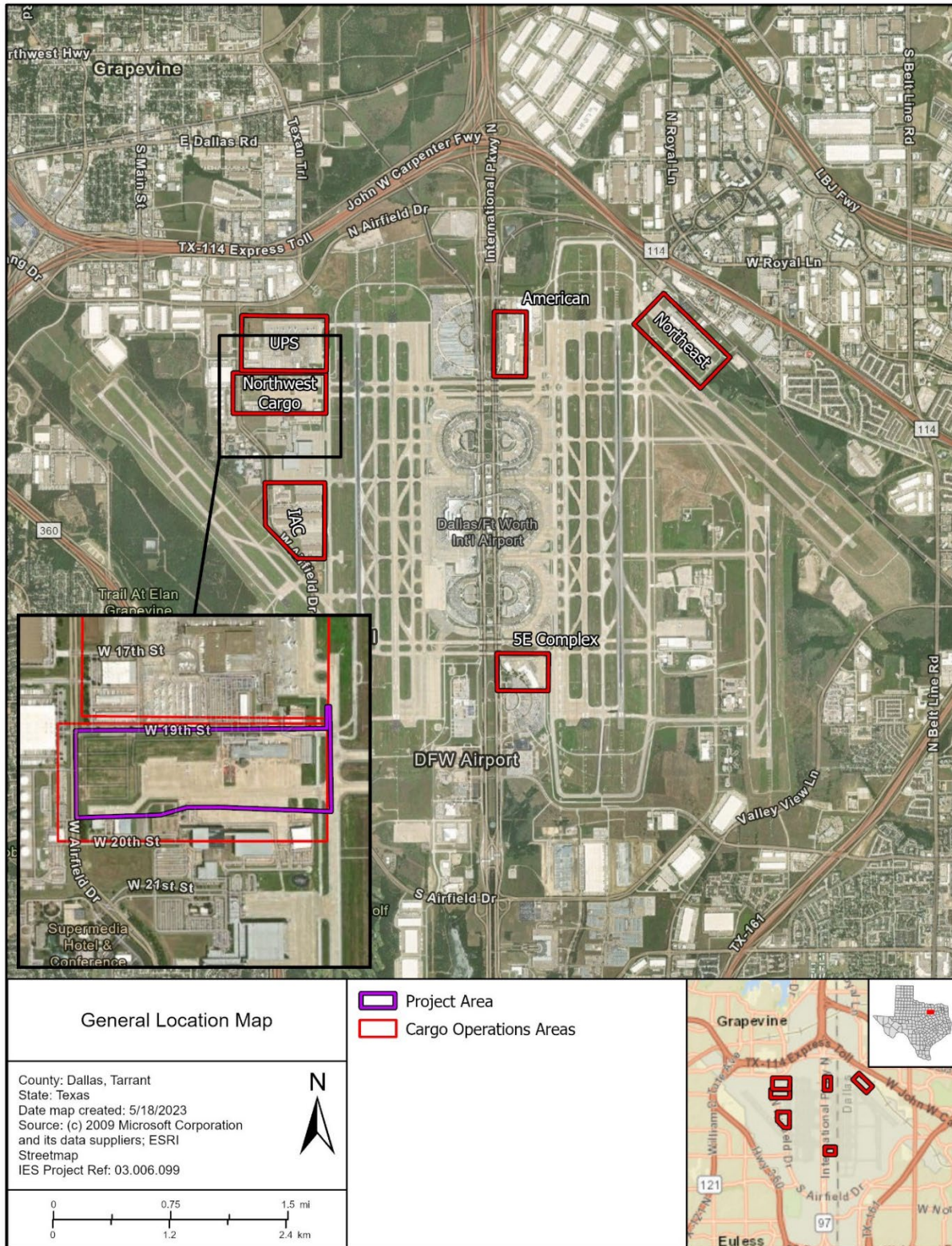


Figure 1-3. DFW Current Cargo Operations Locations



In 2019, DFW updated the airport's Aviation Activity Forecast³ (AAF), which included projections on cargo activity; the 20-year AAF indicated that 1.5 million tons of cargo would move through DFW by 2038. Cargo volumes and operations are projected to increase at an annual average growth rate of approximately 2.6 percent. DFW identified that much of the anticipated cargo growth would come from Asian and Latin American markets, which makes DFW uniquely positioned, as six of the top 10 cargo airlines operating at DFW are Asian carriers. In addition to the existing partnership with Asian cargo carriers, DFW's central location within the United States makes it the strategic gateway connection for Latin American markets. Based on actual cargo throughput and forecasted air cargo growth, the current DFW cargo facilities limit the airport's cargo growth⁴.

1.3 Proposed Action

DFW is proposing to construct the 19th Street Cargo Redevelopment Project (*Proposed Action*) to accommodate cargo growth through 2035, based on the current forecasted growth of 2.6 percent per year (**Appendix A**) (DFW 2022). The Proposed Action would include airside and landside improvements that would create an operationally functional cargo area and to provide unimpeded access to the southeast apron. The Proposed Action would provide aircraft parking positions and cargo buildings to support operations by aircraft such as the B747-8F, B747-400, and the B777-200. The Proposed Action would include the following elements:

- Demolition of one cargo building, the associated ramp, adjacent driveways, and obsolete utilities,
- Abatement of asbestos-containing materials (ACM) located within the project area prior to demolition and construction,
- Construction of two new cargo buildings, five aircraft parking positions, associated landside surface parking, and new aircraft ramp pavement,
- Reconstruction of two existing aircraft hardstand positions,
- Roadway improvements including construction of deceleration lanes and access driveways,
- Reconfiguration of Taxiways C and Z, and modifications to Taxilane Z for optimized aircraft movement,
- Construction of hydrant fuel pits, requisite distribution infrastructure, and a new vehicle fuel station,
- Construction of new Air Operations Area (AOA) access gates and AOA fence,
- Installation of lighting systems and construction of requisite utilities, including communications, electrical, stormwater, potable water, sanitary sewer, jet fuel, glycol, and natural gas, and
- Construction of an oil/water separator and requisite underground stormwater collection/management infrastructure, including underground stormwater detention.

1.4 Federal Actions

The federal actions necessary in connection with the Proposed Project include:

1. Determinations under 49 U.S. Code (USC) §§47106 and 47107, relating to the eligibility of the Proposed Action for federal funding under the Airport Improvement Program (AIP),
2. Determination under 49 USC §40117, as implemented by 14 CFR §158.25, to impose and use passenger facility charges (PFC) collected at the airport to assist with construction of potentially eligible items shown on the Airport Layout Plan (ALP),
3. Unconditional approval of the ALP to reflect the Proposed Action as summarized in **Section 1.3** and detailed in **Section 3.3** of this document (**Figure 3-2**).

³ 2020 Air Cargo Master Plan, DFW Planning Department, DFW Research and Analytics

⁴ 2022 19th Street Redevelopment – Project Definition Document (PDD), DFW Planning Department

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SECTION 2 PURPOSE AND NEED

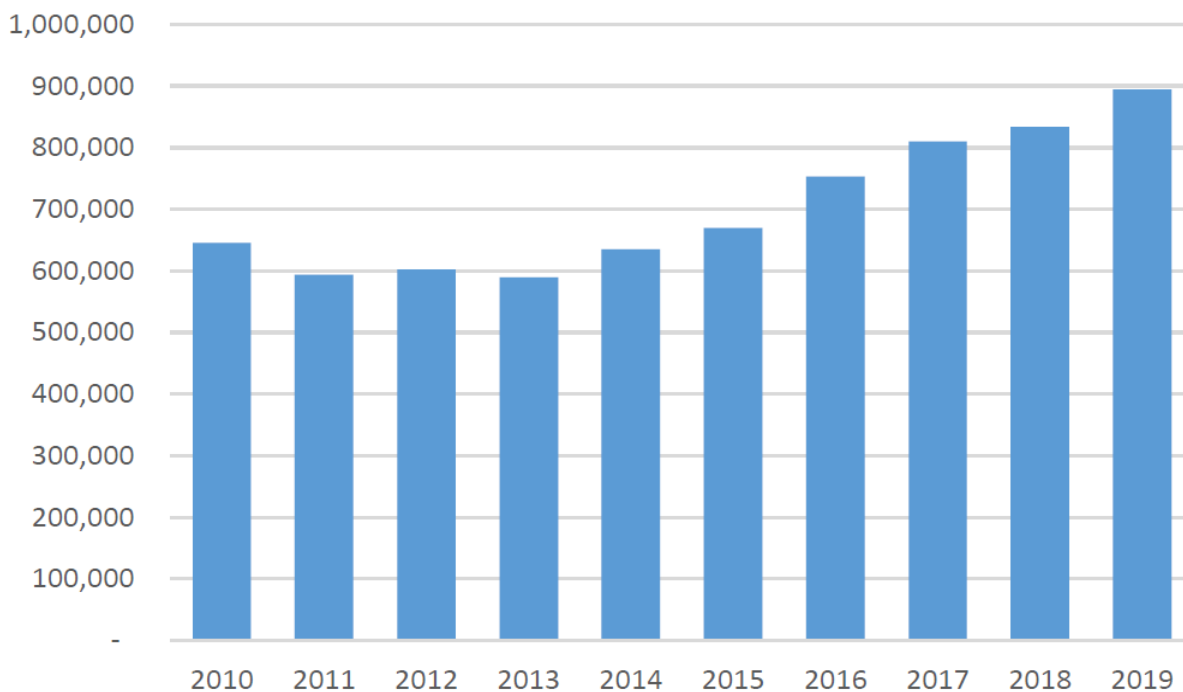
2.1 Purpose

The purpose of the 19th Street Cargo Redevelopment project is to develop optimized cargo buildings and infrastructure to efficiently meet the current and projected growth in cargo demand. Furthermore, the proposed project would provide airfield facilities to support Aircraft Design Group (ADG) VI and enhance access to the southeast apron. The proposed project would provide modern facilities that meet tenant operational requirements, reduce operating and maintenance costs, and enhance DFW's business performance. This project will expand DFW's ability to handle increased cargo tonnage through a new, rightsized facility and to accommodate additional 747-8F ramp parking positions as well as transform a portion of the airport from being outdated and underutilized to a world-class, revenue generating air cargo complex. The 19th Street Cargo Redevelopment Project would be complete and operational in 2025, which represents the project implementation year and 2030, which is included as the horizon year (5 years past the implementation year).

2.2 Need

The Proposed Action is needed to meet current and future demand for cargo operating areas. DFW currently has six cargo complexes: the Northeast Cargo, American Airlines Cargo, and the 5E Cargo areas on the east side and the Northwest Cargo, UPS, and International Air Cargo (IAC) on the west side. DFW's air cargo operations have grown substantially over the past 6 years. Since 2013, annual cargo tonnage volumes have been rapidly increasing due to an increase in cargo demand (**Figure 2-1**). From 2013 to 2019, DFW's air cargo growth rate was 5.88 percent, more than double the global average growth rate of 2.45 percent. DFW receives substantial cargo contributions from FedEx, UPS, and American Airlines; historically, these three tenants have accounted for nearly 62 percent of total air cargo tonnage at DFW. In FY22, DFW cargo volumes across all carrier types were approximately 941,587 tons. By 2038, approximately 1.5 million tons of cargo will move through DFW.

Figure 2-1. DFW Historical Annual Cargo Tonnage

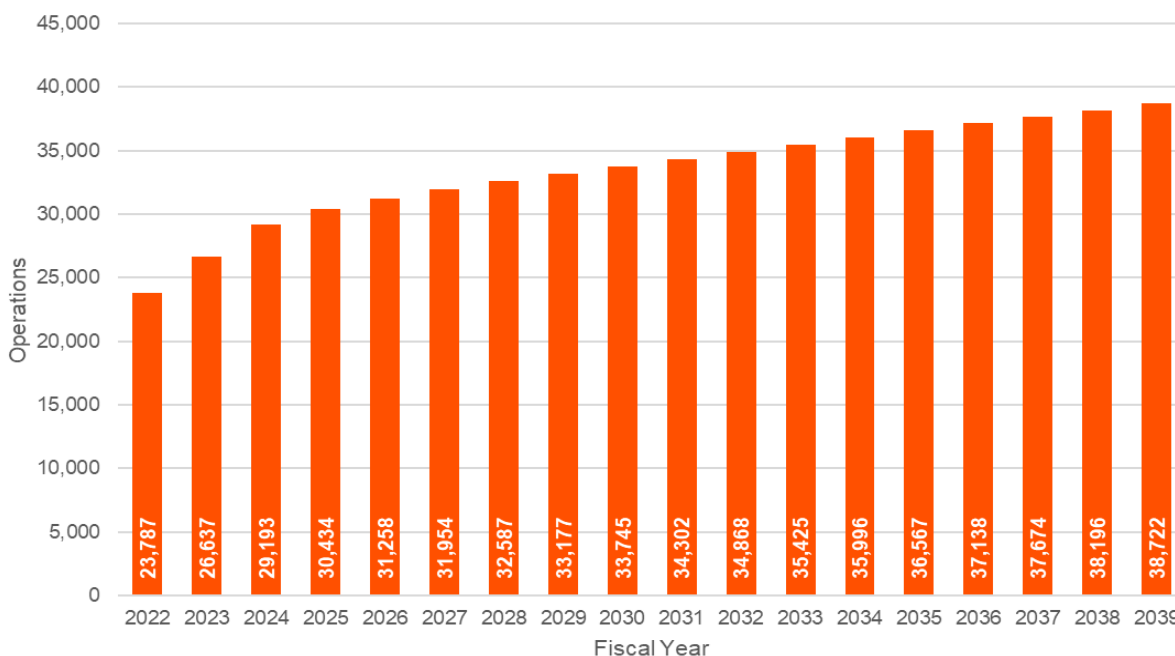


Source: Landrum and Brown Analysis, June 2020.

In 2019, DFW initiated the AAF study to forecast cargo tonnage and assess cargo facilities (**Appendix J**). The purpose of the forecasting and facilities assessment was to identify future cargo demands and determine if existing facilities can accommodate the processing and transfer of cargo from aircraft to the vehicles that move cargo to destinations. The 2019 AAF included a cargo activity forecast that projected that by 2038, DFW would support the movement of approximately 125,000 cargo tons per month (1.5 million tons of cargo per year). Cargo volumes were projected to increase at an annual growth rate of approximately 2.6 percent. Current cargo operators at DFW have stated that the facilities are currently operating at maximum capacity and to meet this projected cargo growth there is need for additional infrastructure, aprons, and building space.

The FAA 2021 Terminal Area Forecast (TAF) released in March 2022 was used to inform the forecast of aircraft operations and overall aviation activity (**Appendix K**). The FAA TAF includes the effects of the COVID-19 pandemic on the future forecast for the airport. Historically, DFW has seen consistent growth annual operations and cargo demand; it has also recovered from the COVID-19 pandemic more quickly than other large hub airports. The Operations Memo details DFW's recovery from the COVID-19 pandemic and the anticipated future growth in both commercial service and cargo demand (**Appendix L**). Cargo operations have historically been 4 percent of total commercial service operations; dedicated cargo operations are expected to grow from approximately 23,800 in 2022 to approximately 38,200 in 2038 (**Figure 2-2**) and this growth cannot be accommodated by existing infrastructure. DFW identified that much of the anticipated cargo growth would come from Asian and Latin American markets, which makes DFW uniquely positioned, as six of the top 10 cargo airlines operating at DFW are Asian carriers.

Figure 2-2. DFW Forecasted Unconstrained Cargo Growth



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

Currently, cargo movements are outpacing projections indicating that existing building capacity is inadequate to meet current and future tenant needs. Based on actual cargo throughput and forecasted air cargo growth, the existing cargo facilities (buildings and ramp space) do not have the capacity to meet the growing demand and DFW became cargo-constrained in Fall 2022. Based on input from current cargo operators at DFW, facilities are currently operating at maximum capacity. DFW is now lagging behind the global average growth rate, due to cargo space limitations. DFW needs to construct additional cargo buildings and associated apron space for the parking, loading, and unloading of aircraft. Therefore, the proposed 19th Street Cargo Redevelopment Project is needed to provide modern cargo facilities, appropriately configured taxiways, taxilanes, and airside pavement, to efficiently meet the growing cargo demand and enhance DFW's financial resilience.

SECTION 3 ALTERNATIVES

FAA Orders 1050.1F, *Environmental Impacts Policies and Procedures*, and 5050.4B, *Implementing Instructions for Airport Actions*, set forth policies and procedures to be followed when assessing the environmental impacts of aviation-related projects, in compliance with NEPA. The FAA orders require a thorough objective assessment of the Proposed Action, No Action Alternative, and all “reasonable” alternatives that would achieve the stated purpose and need of the Proposed Action. 40 CFR § 1502.14, and FAA Orders require a thorough, objective assessment of all “reasonable” alternatives that would achieve the stated purpose and need of the Proposed Action, as well as a succinct discussion of the reasons for their elimination from detailed study (40 CFR §1502.14(a)). At a minimum, the range of reasonable alternatives will include the Proposed Project and the No Action Alternative.

The alternatives analysis presented in this EA is consistent with the requirements of FAA Orders 1050.1F and 5050.4B. The Proposed Action is a redevelopment project located on previously developed areas within the Northwest Cargo complex of the airport. This location leverages some of the existing infrastructure; therefore, no other alternatives would meet the purpose and need as detailed in Section 2. Only those alternatives that would satisfy the purpose and need were carried forward in the environmental impact analysis. As such, this EA evaluates and analysis the No Action Alternative and the sponsor preferred Proposed Action.

3.1 Alternatives Screening Process

As indicated in **Section 2**, the purpose and need for the Proposed Action has been carefully examined and documented. This alternatives analysis was prepared to determine which alternatives might reasonably meet the purpose and need.

DFW evaluated the extent to which the following alternatives to the Proposed Action would meet the purpose and need of the project as well as the stakeholder objectives and requirements for cargo facilities. The No Action and Proposed Action alternatives were analyzed to determine whether the alternative could achieve the objectives of the Purpose and Need to accommodate the forecasted increase in cargo demand by providing the requisite building operating area, aircraft parking positions, truck loading docks, employee parking, truck staging areas, utilities, and other support services. Alternatives that would not meet the Purpose and Need, as well as stakeholder objectives were eliminated from further consideration. The stakeholders identified the following objectives and requirements:

- Facilities that would meet Industry standards from the International Air Transport Association (IATA) Cargo Facility Guidelines,
- Roadways and pavement that would meet DFW and Texas Department of Transportation (TxDOT) pavement design guidelines,
- Modern cargo buildings that would provide office space, support efficient warehouse operations, support specialized autonomous cargo handling equipment, and ground service equipment (GSE),
- Cargo buildings that would accommodate specialized cargo such as perishables, high-risk material, animals, and provide adequate space for efficient security inspection and clearance,
- Facilities that would minimize taxi-times and taxiing distances for freighter aircraft,
- Facilities that would provide sufficient aircraft ramp to accommodate peak demand for cargo terminal access and parking,
- Truck loading docks, truck parking, vehicle parking, and roadway modifications that would support freight trucks arriving and departing from the airport. Furthermore, the stakeholder requirements included safe truck queuing spaces, deceleration lanes, roadway modifications, truck access driveways and alternative access roads for employees,
- Efficient and flexible building operating space with lower construction, operating, and maintenance costs, and
- Airfield infrastructure and facilities that would:
 - Accommodate peak traffic requirements, reduce idling, and improve access and egress points,

- Add a minimum 50-foot buffer between the cargo buildings and the aircraft nose for equipment maneuvering, cargo staging, and drive aisles,
- Provide separation distances of up to 50 feet to provide clearances for parked aircraft,
- Allow for the construction of a taxilane object free area (OFA) of 145 feet to accommodate operations by B747-8F, and
- Minimize impacts to airside operations.

3.2 No Action Alternative

Inclusion of a No Action Alternative (NAA) in the environmental analysis and documentation is required under NEPA. The NAA is used to evaluate the effects of not constructing the project, thus, providing a baseline against which action alternatives may be evaluated. Under the NAA, DFW would keep its existing infrastructure and would not implement the Proposed Action. DFW would not have facilities to meet tenant needs and efficiently accommodate the growth in demand for cargo buildings and aircraft parking positions. DFW would not improve access for ADG III and ADG VI aircraft that use the southeast apron. The airport would continue experiencing high operating and maintenance costs for obsolete, aging infrastructure and would not generate additional revenue that would contribute to DFW's financial self-sufficiency.

The NAA does not meet the project Purpose and Need but is carried forward in the analysis of environmental consequences as the baseline, in accordance with NEPA, FAA Order 1050.1F: *Environmental Impacts Policies and Procedures*, and FAA Order 5050.4B: *Implementing Instructions for Airport Actions*.

3.3 Alternatives Not Carried Forward for Detailed Analysis

The Proposed Action is a redevelopment project located on previously developed areas within the Northwest Cargo complex of the airport. This location leverages some of the existing infrastructure; therefore, no other alternatives would meet the purpose and need as detailed in **Section 2**.

3.4 Proposed Action (Sponsor Preferred Alternative)

This section describes the elements of the Proposed Action and how the Proposed Action addresses the stated Purpose and Need described in **Section 2** of this Draft EA. Construction of the Proposed Action is anticipated to begin in 2024, after FAA approval and completion of the NEPA process.

The Proposed Action is located south of 19th Street and east of West Airfield Drive on DFW Airport, Tarrant County, Texas (**Figure 3-1**). The Proposed Action would include the demolition of Building 221 (American Airlines West Warehouse) and associated structures, construction of two new cargo buildings and five new aircraft parking positions, and the reconstruction and reconfiguration of two existing hardstand aircraft parking positions (**Appendix A**). The project would also include the construction of a fueling station, an oil/water separator, an underground stormwater collection tank, drainage and communications infrastructure, high-mast lighting, access roadways, AOA gates, and an AOA fence and other requisite utilities (**Figure 3-2**).

Building 1 would be 240 feet wide (west-to-east) and 740 feet long (north-to-south) with three adjacent aircraft parking positions on the east side of the proposed Building 1. Building 1 would provide approximately 178,000 square feet of warehouse space with approximately 9,100 square feet of office space. Building 1 would have primary access from West Airfield Drive, where a new left turn lane would be added to the southbound direction on West Airfield Drive and a deceleration lane would be added to the northbound direction into the main entry point. Two secondary access driveways located on West Airfield Drive and 19th Street would be constructed to serve passenger vehicles. Building 1 would provide a modern building with adequate space and flexibility to allow for the consolidation of cargo operations.

Building 2 would be 465 feet (west-to-east) and width of 260 feet (north-to-south) with two adjacent aircraft parking positions and reconfigured the landside surface parking. Building 2 would provide approximately 121,000 square feet of warehouse space with approximately 3,000 square feet of flexible office space. Trucks and passenger vehicles would access Building 2 using access driveways on 19th Street; deceleration and dedicated turn lanes would be added to 19th Street to improve access, safety, and efficiency. Building 2 would provide a modern building with adequate space efficiently support cargo operations and meet the purpose and need for the project.

Figure 3-1. 19th Street Redevelopment Project Area

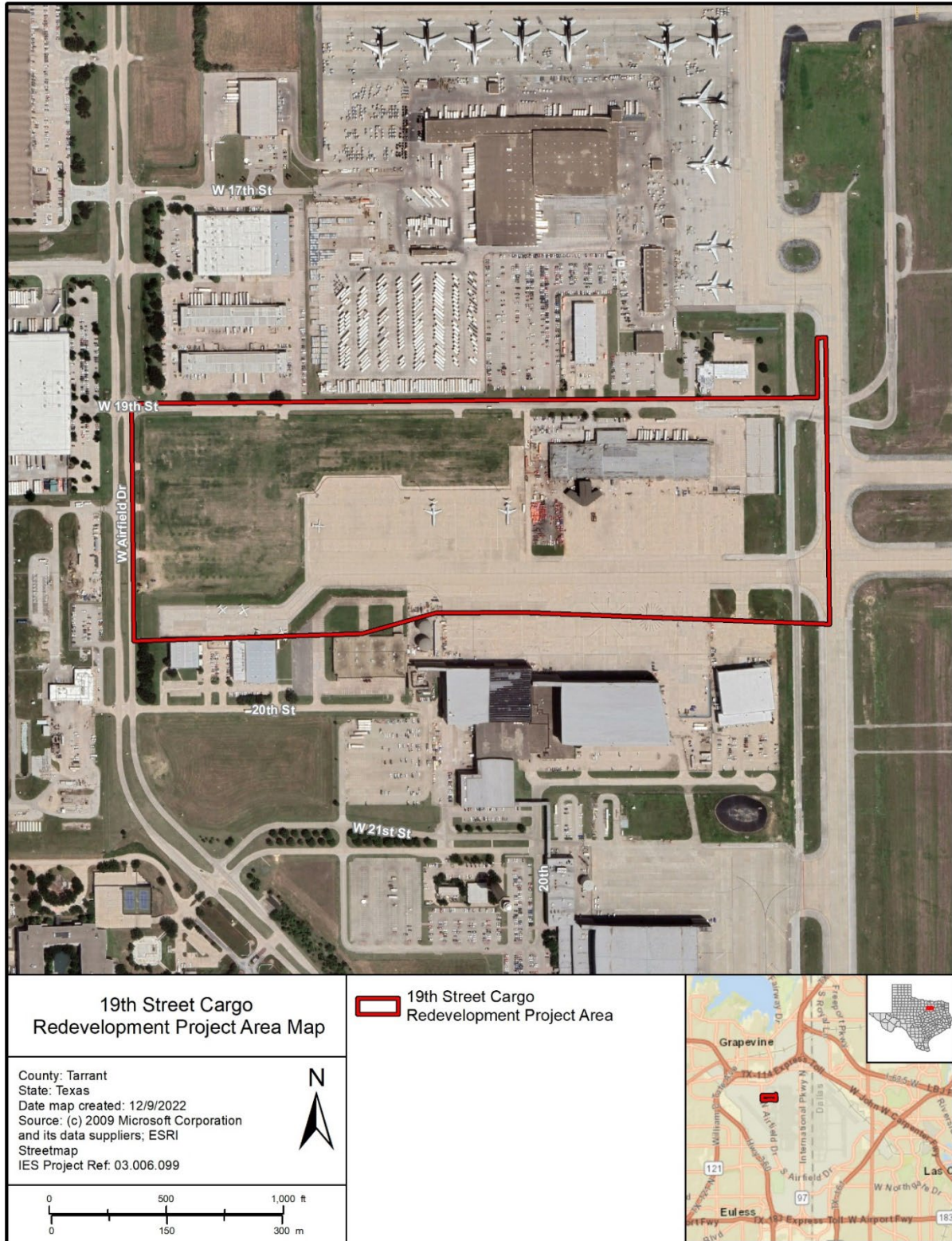
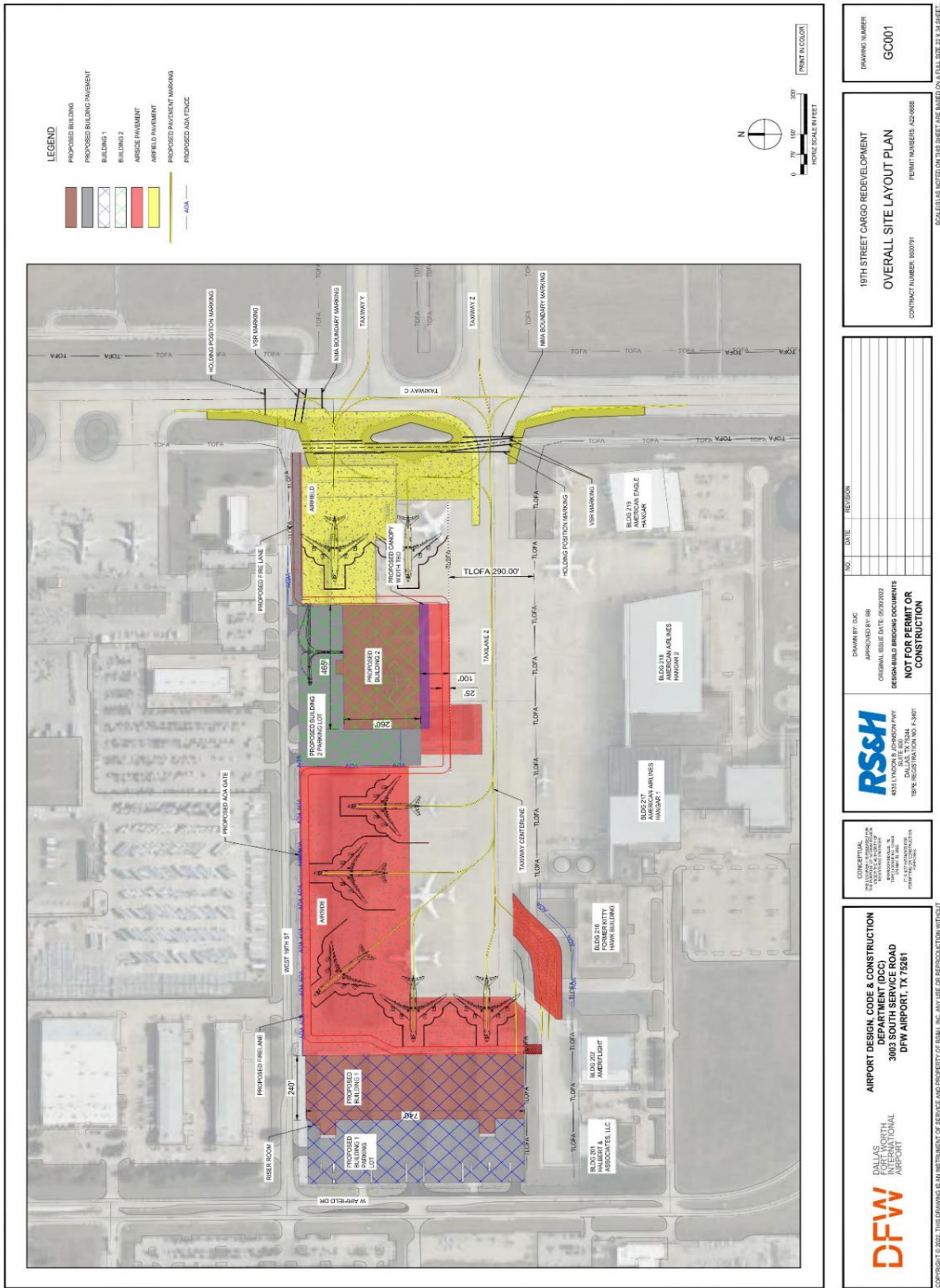


Figure 3-2. Proposed Action Preferred Alternative



In addition to the cargo buildings and aircraft parking positions, the Proposed Action would include the construction of truck loading docks, truck parking, staging, and queuing positions, and employee parking positions. The Proposed Action would also include the construction of a new aircraft entry point off Taxiway C, to provide access to the new aircraft positions associated with Building 2 as well as access from the south. Additionally, Taxiway Z and the taxiway object free area from Taxiway C to Building 1 would be modified to accommodate larger ADG VI aircraft; new apron pavement would also be constructed to support the larger aircraft utilization. Utilities, drainage infrastructure, and hydrant fuel pits would be designed and constructed to support the efficient utilization of the proposed facilities.

Construction activities would take place in 2024 and 2025 and include the following phases: demolition, staging, airfield, airside, Building 1, and Building 2. The Proposed Action construction is anticipated to take 15 months starting in early 2024, after FAA approval and completion of the NEPA process. Construction of Building 1 would begin in 2024 and take approximately 12 months to complete. An additional 2 months are anticipated for commissioning and closeout with no active construction. Operational activities would begin from Building 1 in early 2025. Construction of Building 2 is anticipated to start in mid-2024, this is contingent upon the ACM abatement and demolition of Building 221, which is anticipated to start in early 2024; ACM abatement activities would last for approximately 3 months. Construction of Building 2 is scheduled to take approximately 11 months with the end of construction being in April 2025. Commissioning and closeout are anticipated to last 2 months with no additional active construction. Operations in Building 2 would start in Summer 2025.

The proposed buildings, airside apron and taxiway enhancements as well as the landside truck loading docks, parking, roadway modifications would meet the need to provide modern and operationally efficient cargo facilities that would meet the growing demand. The Proposed Action would meet the purpose and need as well as the stakeholder objectives and requirements as outlined in **Section 3.1**.

3.5 Connected Actions

Actions that are connected to the Proposed Action would include the following:

- ACM abatement prior to the demolition of Building 221 and its associated surface infrastructure,
- Closure, abandonment, and removal of any obsolete monitoring wells that were associated with the Texas Voluntary Clean-up Program (TxVCP) commitments at DFW within and adjacent to the Northwest Cargo Area as approved by the Texas Commission on Environmental Quality (TCEQ).
- Relocation of required monitoring wells associated with an on-going TxVCP located within the project area; these monitoring wells are associated with multiple chemical plumes from past activities. Contaminants of concern include chlorinated solvents as well as jet fuel leakage. The monitoring wells would need to be relocated due to utility infrastructure and airside pavement activities located within the project area.
- Modifications to the 8-inch diameter Explorer jet fuel Pipeline⁵ located on the west side of Taxiway C and near the proposed realigned taxiway and taxiway aircraft entry points as approved by the pipeline owner and the Texas Railroad Commissions, as necessary.
- Project support locations (PSLs) that would be used for contractor mobilization, materials staging and batch plant operations. These PSLs are located on previously disturbed or landscaped parcels on airport property, south of North Airfield Drive and north of Runway 18R/36L. The project support locations would be temporary and upon project completion they would be removed, and the areas restored or stabilized in compliance with all applicable rules and regulations. The project support locations are shown on **Figure 3-3**.

⁵ Explorer Pipeline is an 8-inch pipeline supplying dedicated jet fuel to tankage at DFW (<https://www.expl.com/>).

Figure 3-3. Proposed Action PSL/Staging Area



SECTION 4 AFFECTED ENVIRONMENT

The FAA Order 5050.4B states that the affected environment section of an EA should succinctly describe only those environmental resources that the Proposed Action and its reasonable alternatives, are likely to affect. This section describes the area around the Project Area at DFW International Airport and the resources located within the area. Section 5, Environmental Consequences, includes a discussion about the potential environmental impacts that could occur with the implementation of the Proposed Action and its alternative. Section 5 also details potential mitigation measures to offset the potential impacts identified.

4.1 Environmental Setting

Pursuant to FAA Order 1050.1F, Section 6-2, this section succinctly describes the environmental conditions of the potentially affected area. The Affected Environment includes the area within and in the vicinity of the 19th Street Cargo Redevelopment Project area as shown on **Figure 3-1**, Proposed Project Site.

4.2 Description of Project Area

The Proposed Action Project Area is located west of Runway 18R/36L and is bound by West Airfield Drive to the west, 19th Street to the North, Taxiway C to the east, and Taxiway Z to the south. The Project Area has airfield access via Taxiways C and Z and landside access via West Airfield Drive and 19th Street.

4.3 Resources Categories Not Carried Forward for Detailed Analyses

CEQ regulations (§1501.9 (f)(1)) state that the lead agency shall identify and eliminate from detailed study the issues that are not significant, or that have been covered by prior environmental review, narrowing the discussion of these issues in the document to a brief presentation of why they would not have a substantial effect on the human environment. **Table 4-1** illustrates the rationale behind the elimination of the resources/impact areas that were not included in the detailed study, in accordance with CEQ §1501.9.

Table 4-1. Resources/Impact Areas Not Carried Forward for Detailed Analysis

Resource Area	Significance Threshold	Rationale for Elimination
<p>Biological Resources</p>	<p>The U.S. Fish and Wildlife Service (USFWS) or the National Marine Fisheries Service (NMFS) determines that the action would be likely to jeopardize the continued existence of a federally listed threatened or endangered species or would result in the destruction or adverse modification of federally designated critical habitat.</p>	<p><u>No impact.</u> The Proposed Action would occur on paved or previously disturbed areas of the airport. The project area is characterized as a fully developed urban setting with buildings, pavement, and only small pockets of urban herbaceous landscaping. There is no potential habitat for any state or federally listed protected species and there are no state listed unique vegetation communities present. Appendix B includes the Protected Species and Protected Habitat Assessment report for Tarrant County; this assessment was completed in compliance with the Endangered Species Act (ESA) of 1973 and the amendments of 1988, Texas Parks, and Wildlife Code (Chapters 67 and 68), the Texas Administrative Code (Section 65.171 – 65.184), the USFWS and the Texas Parks and Wildlife Department (TPWD).</p> <p>This assessment identified that that there was no available habitat for the Whooping Crane (<i>Grus americana</i>), the only federally protected species identified as occurring within Tarrant County. The Red Knot (<i>Calidris canutus rufa</i>) and Piping Plover (<i>Charadrius melodus</i>) are also federally listed species, but only considered for effect from wind energy projects. As such, the potential for adverse effects to these species from the Proposed Action is considered negligible.</p> <p>The Protected Species Assessment noted that as of September 2022, the tricolored bat (<i>Perimyotis subflavus</i>) is proposed for listing as Endangered under the ESA, due to impacts associated with the white-nose syndrome (WNS), wind turbine related mortality, habitat loss, and climate change. The tricolored bat has been found to hibernate and roost</p>

Resource Area	Significance Threshold	Rationale for Elimination
		<p>in caves, road-associated culverts, trees, and other forested habitats. Although unlikely, if bats are identified within proposed project area given it is includes previously disturbed areas, the contractor would not disturb the areas with the bats and would immediately contact DFW's Environmental Affairs Department (EAD), the FAA, and a qualified wildlife biologist for guidance.</p> <p>Similarly, the alligator snapping turtle (<i>Macrochelys temminckii</i>) has been proposed for listing as Threatened under the ESA due to loss of habitat. There are no intermittent or perennial water bodies near the project areas. Although unlikely, if alligator snapping turtles are identified within proposed project area given it is includes previously disturbed areas, the contractor would not disturb the areas and would immediately contact DFW's EAD, the FAA, and a qualified wildlife biologist for guidance.</p>
Coastal Resources	A determination by a State having an approved Coastal Zone Management (CZM) program that the proposed action would not be consistent with the applicable CZM plan, which cannot be avoided, minimized, or mitigated.	<u>No Impact.</u> There are no coastal resources located within or adjacent to the proposed project area.
Department of Transportation Act, Section 4(f)	Potential for more than a minimal physical use or deemed "constructive use" substantially impairing the use of an existing Section 4(f) property.	<u>No Impact.</u> There are no Section 4(f) properties within or adjacent to the proposed project area. The project area is characterized by airfield infrastructure, commercial development industrial buildings, and roadways, thus no parks or other public use facilities are present. In addition, the project area does not contain any structures on or eligible for listing on the National Register of Historic Places.
Land Use	The FAA has not established a significance threshold for Land Use. The FAA has not provided specific factors to consider in making a significance determination for land use in Exhibit 4-1 of FAA Order 1050.1F. The determination that significant impacts exist in the land use impact category is normally dependent on the significance of other impact categories.	<p><u>No Direct Impact.</u> The airport property is characterized by terminal buildings, cargo warehouse buildings, airport administrative buildings, operations support facilities, airfield infrastructure, roadways, and commercial development industrial buildings. Land use in the immediate vicinity consists of commercial and industrial developments, and residential areas including detached single-family houses, townhouses, and multi-family apartments.</p> <p>The proposed 19th Street Cargo Redevelopment project is located on airport property and surrounded by airport-support, commercial, and industrial facilities. The land uses within a 1-mile radius of the proposed project area are shown in Figure 4-2. The proposed project would not result in disruption of communities, relocation, or induced socioeconomic impacts. The proposed project would result in changes to resources such as air quality, water quality, surface traffic/congestion, and noise. Environmental Consequences related to changes in air emissions, traffic, water quality, and noise are discussed in Sections 5.2, 5.8, and 5.10.</p>

Resource Area	Significance Threshold	Rationale for Elimination
<p>Prime or Unique Farmland</p>	<p>Alteration of a property with a total combined score between 200 to 260 on Form AD 1006.</p>	<p><u>No Impact.</u> According to Part 523 – Farmland Protection Policy Act (FPPA) Manual, construction within an existing right-of-way purchased on or before 04 August 1984 is not subject to provisions of FPPA (NRCS 2012). The Proposed Action would occur on paved or previously disturbed ground. There are no farmlands at or near the Airport; therefore, this resource is not carried forward for detailed analysis.</p>
<p>Socioeconomic Impacts, Environmental Justice, and Children’s Environmental Health and Safety Risks</p>	<p>The FAA has not established a significance threshold for socioeconomics in FAA Order 1050.1F; however, the FAA has identified factors to consider when evaluating the context and intensity of potential environmental impacts for socioeconomics. The factors include but are not limited to, situations in which the action would have the potential to:</p> <ol style="list-style-type: none"> 1. Induce substantial economic growth in an area, either directly or indirectly (e.g., through establishing projects in an undeveloped area); 2. Disrupt or divide the physical arrangement of an established community 3. Cause extensive relocation of residents is required, but sufficient replacement housing is unavailable. 4. Cause extensive relocation of community businesses that would create severe economic hardship for the affected communities. 5. Disrupt local traffic patterns and substantially reduce the levels of service of roads serving an airport and its surrounding communities; 6. Produce a substantial loss in the community tax base; 7. Create disproportionately high and adverse human health or environmental effects on minority and low-income populations or 8. Create disproportionate health and safety risks to children. 	<p><u>No Impact.</u> An analysis of the U.S. Census Bureau tracts adjacent to the project area and existing land uses reveals that land use is primarily light industrial along with some office and undeveloped open space associated with airport uses. There are no housing units immediately adjacent to the project area, the closest housing units are approximately 1.43 miles to the northwest across Texas State Highway (SH) 114. Off-airport minority population would be less than 36 percent and low-income populations less than 11 percent, neither metric showing concentrated minority or low-income communities in the general vicinity of the project area.</p> <p>Implementation of the proposed action would be unlikely to substantially change the prevailing socioeconomic conditions because there would not be any relocation of residents, relocation of businesses located within or adjacent to the project area due to the proposed action, or a substantial loss in the tax base of any community, which would not create a disproportionately high and adverse human health or environmental effect on minority or low-income populations.</p> <p>Potential effects from the proposed action were analyzed and determined to not create any adverse noise or traffic effects outside the airport boundaries. Traffic analysis showed a decrease in level of service (LOS) to an immediately adjacent intersection to the project area from Level A to Level B during AM peak conditions, but that LOS decrease was still within acceptable limits. There would be no change to the PM peak LOS condition, which would remain at Level B. Given these factors, both an analysis of the socioeconomic conditions and environmental justice are excluded from further detailed analysis.</p> <p>There are no noise sensitive land uses within the Future No Action Alternative 65 DNL or greater contours. There are no public schools, churches, nursing homes, hospitals, or libraries within any of the contours. Furthermore, there are no single family, multi-family, or manufactured housing within any of the noise contours.</p> <p>The Proposed Action Alternative would be illuminated by the same basic types of lighting currently used on the existing cargo buildings, parking lots, and cargo ramp areas. Therefore, lighting from the Proposed Action when compared to the NAA would not significantly increase the overall light emissions due to their type, intensity, and distance from any residential areas. There are no residential or light sensitive areas within or adjacent to the project area. The location of the new lighting systems would not negatively affect aircraft operations.</p>

Resource Area	Significance Threshold	Rationale for Elimination
		<p>Additionally, implementation of the proposed action would not pollute drinking water sources adjacent to the proposed site, would not increase the level of pesticides in food crops or animals, and would not increase the level of lead contamination adjacent to areas where children are likely to be located. Also, due to restricted access, the proposed action would not pose an attractive nuisance hazard that could endanger the health and safety of local children. As a result, this issue is being excluded from detailed study.</p>
Sole Source Aquifer	<p>Exceed groundwater quality standards established by federal, state, local, and tribal regulatory agencies.</p> <p>Contaminate an aquifer used for public water supply such that public health may be adversely affected.</p>	<p><u>No Impact.</u> According to the Interactive U.S. Environmental Protection Agency (EPA) Sole Source Aquifer Map, the closest sole source aquifer, the Edward's Aquifer, is located over 100 miles south of the proposed project area.</p>
Waters of the United States (WOTUS) Including Wetlands	<p>Adversely affects a wetland's function to protect the quality or quantity of municipal water supplies, including surface waters and sole source and other aquifers.</p> <p>Substantially alters the hydrology needed to sustain the affected wetland system's values and functions or those of a wetland to which it is connected.</p> <p>Substantially reduces the affected wetland's ability to retain floodwaters or storm runoff, thereby threatening public health, safety, or welfare; adversely affect the maintenance of natural systems supporting wildlife and fish habitat or economically important timber, food, or fiber resources of the affected or surrounding wetlands.</p> <p>Promotes development of secondary activities or services that would cause the circumstances listed above to occur.</p>	<p><u>No impact.</u> Field surveys did not identify any water features within the project area. There would be no impacts to the WOTUS including wetlands because there are no jurisdictional WOTUS including wetlands within the project and staging areas. Therefore, the project would not require a permit issued by the United States Army Corps of Engineers (USACE).</p>
Wild and Scenic Rivers	<p>A determination that the effects on a Nationwide Rivers Inventory (NRI) river segment are significant or would preclude inclusion in the Wild and Scenic River System or downgrade its classification.</p>	<p><u>No Impact.</u> According to the National Wild and Scenic Rivers System (2016), there are no wild or scenic rivers or eligible rivers located within or adjacent to the proposed project area. The Proposed Action would occur on paved or previously disturbed ground. There are no wild and scenic rivers at or near DFW; therefore, this resource is not carried forward for detailed analysis.</p>

4.4 Air Quality

4.4.1 Regulatory Background

The FAA 1050.1F Desk Reference defines the study area for air quality as the entire geographic area that could be either directly or indirectly affected by the proposed project. It requires the document to discuss the current National Ambient Air Quality Standards (NAAQS), state ambient air quality standards, the attainment status of the study area, a summary of recent measured air pollutant concentrations, a description of the meteorological and topographical conditions of the study area, other conditions relevant to the study area, and any permits required (FAA, 2023).

Under the Clean Air Act (CAA), the U.S. Environmental Protection Agency (EPA) established the NAAQS, for the following six pollutants, carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO₂), ozone (O₃), particulate matter (PM), and sulfur dioxide (SO₂) (**Table 4-2**). Based on air monitoring data and in accordance with the CAA, areas within the United States are designated with respect to their attainment status with the NAAQS. Areas that meet the NAAQS are designated as attainment⁶, those that do not meet the standards are designated as nonattainment⁷, and those that are in transition from nonattainment to attainment are designated as maintenance. Ozone nonattainment areas are further classified as extreme, severe, serious, moderate, and marginal by the degree of non-compliance with the NAAQS.

Table 4-2. National Ambient Air Quality Standards

Pollutant	Averaging Time	Standard	Type of Standard	Form
CO	1-hour	35 ppm	Primary	Not to be exceeded more than once annually
	8-hour	9 ppm	Primary	Not to be exceeded more than once annually
Pb	Rolling quarter	0.15 µg/m ³	Primary Secondary	Not to be exceeded
NO ₂	1-hour	100 ppb	Primary	98 th percentile of 1-hour daily maximum concentrations, averaged over 3 years
	1 year	53 ppb	Primary Secondary	Annual Mean
O ₃	8-hour	0.070 ppm	Primary Secondary	Annual 4 th highest daily maximum 8-hour concentration, averaged over 3 years
PM ₁₀	24-hour	150 µg/m ³	Primary Secondary	Not to be exceeded more than once annually on average over 3 years
PM _{2.5}	1 year	12.0 µg/m ³	Primary	Annual mean, averaged over 3 years
	1 year	15.0 µg/m ³	Secondary	Annual mean, averaged over 3 years
	24-hour	35 µg/m ³	Primary Secondary	98 th percentile, averaged over 3 years
SO ₂	1-hour	75 ppb	Primary	99 th percentile of 1-hour daily maximum concentrations, averaged over 3 years
	3-hour	0.5 ppm	Secondary	Not to be exceeded more than once annually

Notes: ppm = parts per million; ppb = parts per billion;
µg/m³ = micrograms per cubic meter; PM_{2.5} = particulate matter with a diameter less than 2.5 micrometers (µm);
PM₁₀ = particulate matter with a diameter less than 10 micrometers (µm)

Primary standards provide public health and safety protection, including protecting the health of sensitive populations such as asthmatics, children, and the elderly.

Secondary standards provide public welfare protection, including protection against decreased visibility and damage to animals, crops, vegetation, and buildings. **Source:** EPA, 2022

⁶ An attainment area is a geographic area that meets or does better than the primary standard defined in the NAAQS.

⁷ A nonattainment area is a homogeneous geographical area (usually referred to as an air quality control region) that is in violation of one or more NAAQS and has been designated as nonattainment by the EPA.

4.4.2 Existing Conditions

The Dallas-Fort Worth metropolitan area has been designated as an attainment area for all EPA criteria pollutants except for ozone based on air quality monitoring data collected by the Texas Commission on Environmental Quality (TCEQ, 2022). The Dallas-Fort Worth metropolitan area has been designated as Air Quality Control Region (AQCR) 215 by the EPA. The Proposed Action is located at DFW within Dallas and Tarrant counties, which are part of the Dallas-Fort Worth metropolitan Ozone nonattainment area (**Figure 4-1**). The Dallas-Fort Worth metropolitan area is designated as a “severe” non-attainment area for the 2008 8-hour, 0.075 ppm Ozone standard, as of 07 October 2022, effective 07 November 2022 (87 Federal Register (FR) 60926). The attainment date for severe nonattainment in the DFW region is July 20, 2027 with a 2026 attainment year. The Dallas-Fort Worth metropolitan area is also designated as a “moderate” nonattainment area under the 2015 8-hour, 0.070 ppm Ozone standard as of 07 November 2022 (87 FR 60897) (**Table 4-3**).

The State Implementation Plan (SIP) is the cumulative record of all air pollution control strategies, emission budgets, and timetables implemented or adopted by government agencies within Texas to bring nonattainment areas into compliance with the NAAQS by a designated deadline. The SIP focuses on reducing the two primary pollutants that lead to ozone formation, volatile organic compounds (VOCs) and nitrogen oxides (NO_x).

4.4.3 General Conformity

The EPA defines General Conformity as a process to ensure that actions taken by the federal government do not interfere with a state’s plan to attain and maintain national standards for air quality. The General Conformity Rule establishes a process to determine whether a federal action conforms to the SIP. The SIP is the cumulative record of all air pollution control strategies, emission budgets, and timetables implemented or adopted by government agencies within Texas to bring non-attainment areas into compliance with the NAAQS by a designated deadline. The SIP focuses on reducing the two primary pollutants that lead to ozone formation, VOCs and NO_x. General Conformity refers to the requirements under the CAA Section 176(c) for federal agencies to show that their actions conform to the purpose of the applicable SIP. As described in 40 CFR 51 and 93, issued by the EPA, the General Conformity analysis evaluates both direct emissions and indirect emissions, as defined by the 40 CFR 93.152. “Direct emissions” are those that occur at the same time and place as the federal action. As stated in 40 CFR 93.152, “indirect emissions” are defined as emissions or precursors that are caused or initiated by the federal action and originate in the same nonattainment area or maintenance area but occur at a different time or place from the action, are reasonably foreseeable, that the agency can practically control, and for which the agency has continuing program responsibility.

When developing the General Conformity Rule, the EPA recognized that many actions conducted by federal agencies do not result in substantial increases in air pollutant emissions in nonattainment and maintenance areas. Therefore, the EPA established threshold levels (also referred to as *de minimis* levels) for emissions of each of the criteria pollutants. If the sum of the increases in direct and indirect emissions caused by a project is calculated to be below the *de minimis* levels, no further air quality analysis is needed, and the project would not require a General Conformity Determination. The Dallas-Fort Worth metroplex is currently classified as a “severe” nonattainment area under the 2008 Ozone standard, and the resulting *de minimis* level is 25 tons per year (tpy) for NO_x or VOCs.

4.4.4 Sources of Airport Air Emissions

Emissions from the proposed 19th Street Cargo Redevelopment Project are expected to include construction emissions, including emissions from construction equipment, motor vehicles (employee commute and material delivery), and nonpoint source emissions (e.g., fugitive dust), as well as operational emissions from aircraft, GSE, and auxiliary power units (APU). Temporary construction emissions and operational emissions are subject to the CAA General Conformity requirements. **Table 4-4** provides an overview of existing taxi times and GSE run times used to model the existing operational emissions. **Table 4-5** illustrates the emissions associated with current (2022) operations.

Figure 4-1. DFW and AQCR Ozone Non-Attainment Area

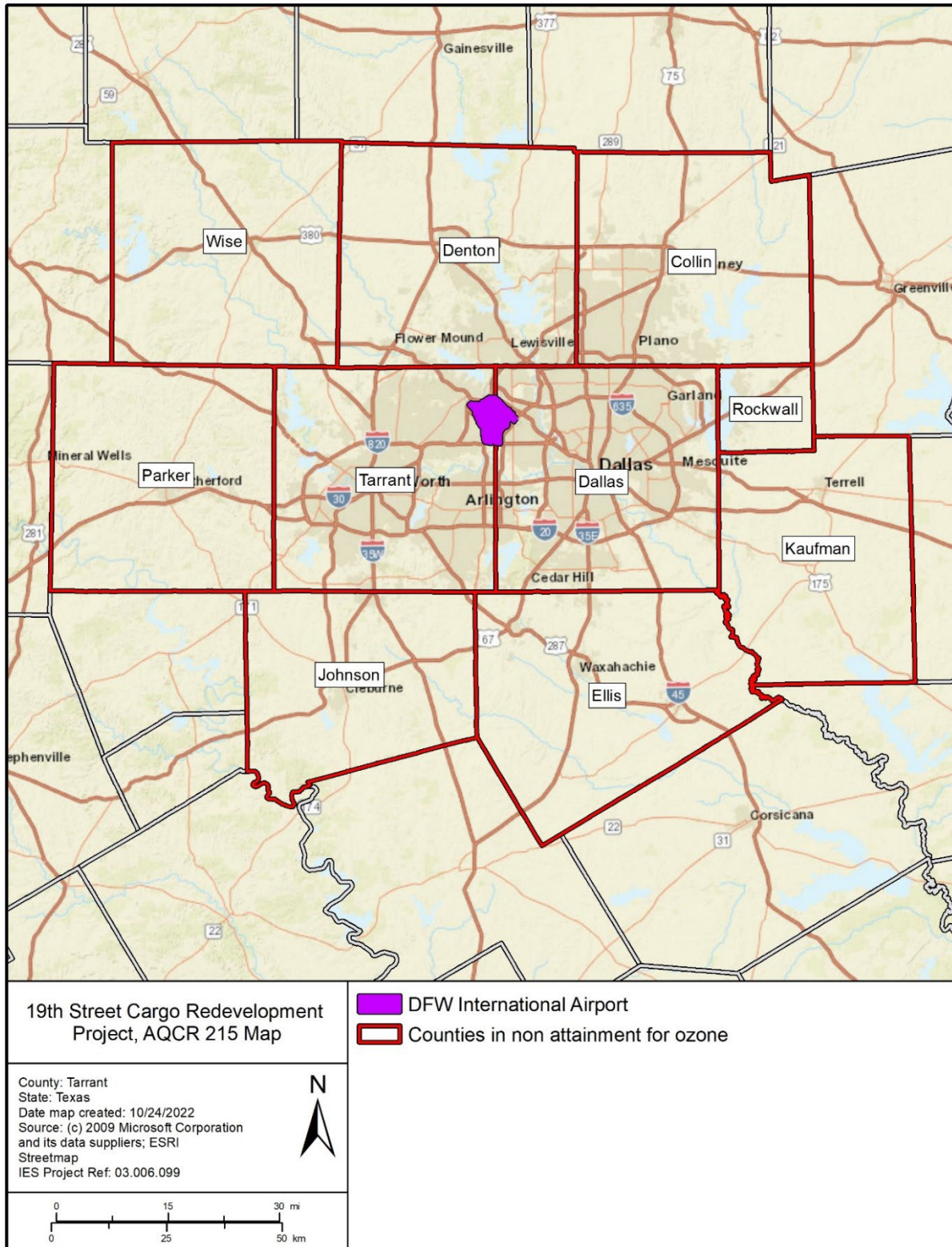


Table 4-3. Recent Air Quality at Dallas-Fort Worth-Arlington, Texas

Pollutant	Federal Standard	2021 Design Value	Active Monitoring Years	Monitoring Site	Current Status
CO	30 ppm (8-hour)	1.1 ppm	2011-2022	Hinton	Attainment
Pb	0.15 µg/m ³ (3-month)	0.02 µg/m ³ (2019-2021)	2011-2022	Frisco Stonebrook	Attainment
NO ₂	100 ppb (1-hour)	43 ppb	2011-2022	Hinton	Attainment
	100 ppb (1-hour)	39 ppb	2018-2020	Dallas North #2	Attainment
	100 ppb (1-hour)	40 ppb	2000-2022	Grapevine Fairway	Attainment
	100 ppb (1-hour)	40 ppb	1990-2022	Keller	Attainment
O ₃	0.070 ppm (2015 8-hour)	0.072 ppm	1990-2022	Keller	Nonattainment
	0.070 ppm (2015 8-hour)	0.071 ppm	1998-2022	Dallas North #2	Nonattainment
	0.070 ppm (2015 8-hour)	0.067 ppm	2011-2022	Hinton	Nonattainment
	0.070 ppm (2015 8-hour)	0.074 ppm	2000-2022	Grapevine Fairway	Nonattainment
PM ₁₀	150 µg/m ³ (24-hour)	0.00 (2019-2021) average exceedances	2009-2022	Earhart	Attainment
PM _{2.5}	12 µg/m ³ (annual)	8.4 µg/m ³	2011-2022	Hinton	Attainment
	35 µg/m ³ (24h primary)	19 µg/m ³	2011-2022	Hinton	Attainment
SO ₂	75 ppb (1-hour)	3 ppb	2011-2022	Hinton	Attainment

Notes:

ppm = parts per million;
ppb = parts per billion;
µg/m³ = micrograms per cubic meter
PM_{2.5} = particulate matter with a diameter less than 2.5 micrometers (µm);
PM₁₀ = particulate matter with a diameter less than 10 micrometers (µm)

**Design values shown in the table are from available Air Quality System (AQS) sites closest to the DFW, as determined by the EPA Interactive Map of Air Quality Monitors (<https://www.epa.gov/outdoor-air-quality-data/interactive-map-air-quality-monitors>) and the EPA Design Value Interactive Tool (<https://www.epa.gov/air-trends/design-value-interactive-tool>). All data from 2021 was current as of 24 October 2022. Design values are commonly used to classify nonattainment areas and are defined as statistics that describe the air quality status of a given location relative to the level of the NAAQS.

Source: EPA 2022b, 2022c, and 2022d.

Table 4-4. Existing Conditions: Average Taxi-times and Operational Equipment Run Times

Equipment Type	Arrivals	Departures
Aircraft	11.2 Minutes	17.8 Minutes
APU	13 Minutes	13 Minutes
GSE	AEDT defaults by equipment type	AEDT defaults by equipment type

Table 4-5. Existing Conditions – Operational Pollutant Emissions (tpy) based on 2022 Operations (656,676 CY Operations)

Source	CO	NOx	VOC	SOx	PM 2.5	PM 10	CO ₂	H ₂ O
Aircraft	2,939.35	3,494.54	388.17	324.66	33.13	33.13	874,558.58	342,894.32
GSE LTO	556.19	55.43	20.56	0.39	3.09	3.30	0.00	0.00
APU	112.09	115.01	9.48	15.99	16.05	16.05	0.00	0.00
Total	3,607.63	3,664.98	418.21	341.04	52.27	52.48	874,558.58	342,894.32

Source: HMMH, 2023

4.5 Climate

4.5.1 Regulatory Background

The Intergovernmental Panel on Climate Change (IPCC, 2021) has concluded that it is unequivocal that human influence has warmed the atmosphere, ocean and land and that human activities have caused concentrations of greenhouse gases (GHG) to increase since mid-18th century. The increase in well-mixed GHG concentrations has caused widespread changes in the earth’s climate systems, which include, but not limited to, successively warmer global surface temperature and increasing global averaged precipitation. Research has shown that there is a direct link between fossil fuel combustion and GHG emissions; sources that require fuel or power at an airport are key sources of GHGs. Aircraft jet engines, like many other vehicle engines, produce carbon dioxide (CO₂), water (H₂O) vapor, nitrous oxide (N₂O), CO, oxides of sulfur, unburned or partially combusted hydrocarbons or VOCs, particulates, and other trace compounds.

There are currently no ambient air standards for GHGs as well as no significance thresholds for aviation GHG emissions (FAA, 2015). Exhibit 3-1 of the FAA 1050.1F Desk Reference (FAA, 2023) lists the general statutes and regulations related to climate. President Biden’s 27 January 2021, Executive Order (EO) on *Tackling the Climate Crisis at Home and Abroad* notes that it will be a United States priority to press for integration of climate considerations across a wide range of international fora that address aviation, clean energy, and related topics (EO 14008, 2021). On 09 September 2021, the Biden Administration announced a series of sustainability initiatives in the aviation industry including scaling sustainable aviation fuel (SAF) production to 3 billion gallons per year by 2030 by supporting producers and research to improve air traffic and airport efficiency. SAF is a fuel which will substantially reduce aircraft fuel lifecycle emissions.

On 09 January 2023, CEQ issued *Interim Guidance⁸ on Consideration of Greenhouse Gas Emissions and Climate Change* to assist agencies in analyzing greenhouse gas and climate change effects of proposed actions. The CEQ interim guidance was made effective immediately so that agencies may make use of it immediately, while CEQ seeks public comment on the guidance. The public comment period for the guidance ended on 10 April 2023, and CEQ planned to use the comments to revise or finalize the interim guidance. The CEQ interim guidance states that agencies should quantify reasonably foreseeable direct and indirect gross and net GHG emissions increases or reductions, both for individual pollutants and aggregated in terms of carbon dioxide equivalence. Social Cost of Carbon (SC-CO₂), Methane (SC-CH₄), and Nitrous Oxide (SC-N₂O) collectively referred to as the “social cost of greenhouse gases” (SC-GHG) estimates were developed by the U.S. Government’s Interagency Working Group (IWG⁹) on SC-GHG. The SC-GHG is a framework that quantifies the monetary value of the net harm to society associated with adding a small amount of that GHG to the atmosphere in a given year. In principle, it includes the value of all climate change impacts, including (but not limited to) changes in net agricultural productivity, human health effects, property damage from increased flood risk natural disasters, disruption of energy systems, risk of conflict, environmental migration, and the value of ecosystem services. The SC-GHG, therefore,

⁸ [2023-01-CEQ interim guidance on GHG emissions and climate change.pdf \(energy.gov\)](https://www.energy.gov/2023-01-ceq-interim-guidance-on-ghg-emissions-and-climate-change.pdf)

⁹ The IWG was convened and established in 2009; it was tasked with calculating and quantifying the monetary damages associated with the incremental increase of carbon emissions in a given year. In 2017, the IWG was disbanded under Executive Order 13783 and in 2021, Executive Order 13990 re-established the IWG and directed it to ensure that SC-GHG estimates used by the U.S. Government (USG) reflect the best available science.

reflects the societal value of reducing emissions of the gas in question by one metric ton. The marginal estimate of social costs differs by the type of greenhouse gas (such as carbon dioxide, methane, and nitrous oxide) and by the year in which the emissions change occurs. It is important to note that given the newness of the CEQ interim guidance, agencies responsible for implementing NEPA, such as the FAA, have not developed formal guidance on the methods to be used. Thus, this document relies upon the recommendations of the IWG for computing SC-GHG.

4.5.2 Existing Conditions

Airport development has the potential to both affect climate change and to be affected by it. Changes in resource categories such as air quality, natural resources, and energy supply can potentially contribute to climate change by increasing the GHGs amounts emitted. The EPA indicates that transportation activities accounted for the largest portion of total U.S. GHG emissions in 2019 at 28.6 percent. Commercial aviation contributed 7.2 percent of total GHG emissions in 2019, compared to 23.6 percent from freight trucks, 17.2 percent from light-duty trucks, 2.4 percent from other aircraft, and 2.2 percent from rail (EPA, 2021d).

GHG characteristics and their rapid dispersion into the global atmosphere make GHGs different from other air pollutants evaluated in federal environmental reviews because the impacts are not localized or regional. It is difficult to isolate the GHG emissions impacts for a particular aviation project. Uncertainties are too large to accurately predict the timing, magnitude, and location of aviation’s climate impacts; however, minimizing GHG emissions and identifying potential future impacts of climate change are important for a sustainable national airspace system (FAA, 2020).

GHG emissions sources at DFW include aircraft; APUs; GSE such as aircraft tugs, loaders, tractors, fuel trucks; stationary combustion sources such as boilers, heaters, generators, incinerators; ground access vehicles such as passenger cars, airport and tenant fleet vehicles, shuttles, and rental cars; construction equipment (heavy equipment, nonroad, and on-road vehicles), electrical usage, refrigerants, and solid waste/recycling hauling and disposal (**Table 4-6**).

Table 4-6. Estimated GHG Emissions – Existing Conditions based on 2022 Baseline

Emission Source	CO ₂ e Emissions (tpy)
663,426 Aircraft Operations	1,128,616
Facilities	28,775
Tenant operated vehicles/equipment such as tugs, loaders, tractors, fuel trucks	289,460
Ground access vehicles [passenger cars, airport fleet vehicles, shuttles, etc.]	288,836

Note:

- 1/ Numbers in table above were rounded off to the nearest whole number and include Scope 1, 2, and 3 emissions
- 2/ AEDT shows that the 2022 aircraft operations fuel burned was approximately 391,038 short tons

Recognizing the imperative to measure and reduce GHG emissions generated through airport operations, DFW became the first airport in North America to be carbon neutral in 2016 and achieved 4+ level in ACI Airport Carbon Accreditation (ACA) program in 2020. The new level 4+ recognizes DFW’s commitment to decarbonization across operations. In 2017, DFW implemented the Renewable Natural Gas (RNG) Initiative, with the goal of transitioning 100 percent of DFW’s compressed natural gas (CNG) vehicle fleet to RNG recovered from local landfills. As of December 2021, over 70 percent of the natural gas used in the DFW’s vehicle fleet came from RNG. DFW’s Net Zero Roadmap details strategies to eliminate the use of fossil fuels for heating, cooling, electricity, and vehicle use by continuing to improve energy efficiency while transitioning most of the heating, refrigerants, and fuel to carbon-free sources. DFW completed the design of a Brute Force Electric Central Utility Plant in December 2020. This project is the cornerstone of DFW’s Net Zero Roadmap. By transitioning terminal heating from natural gas to renewable electricity (electric heat pumps and chillers), DFW’s largest sources of emissions will be reduced significantly.

4.6 Hazardous Materials, Solid Waste, and Pollution Prevention

4.6.1 Regulatory Background

The handling and disposal of hazardous materials, chemicals, and wastes is primarily governed by the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) (more commonly known as “Superfund”), Pollution Prevention Act (PPA), Toxic Substances Control Act (TSCA), and Resource Conservation and Recovery Act (RCRA), as amended. RCRA governs the generation, treatment, storage, and disposal of solid and hazardous wastes. CERCLA provides for consultation with natural resources trustees and cleanup of any release of a hazardous substance (excluding petroleum) into the environment. In addition to these laws, three EOs have been designated to ensure federal compliance with pollution control standards, federal right-to-know laws, and Superfund implementation. FAA Orders 1050.1F and 5050.4B do not provide a specific threshold of significance for hazardous material and solid waste impacts. However, they conclude that actions involving property listed (or potentially listed) on the National Priorities List (NPL) would be considered significant.

Solid waste is generally defined in RCRA as any discarded material that is abandoned, recycled, considered inherently waste-like, or a military munition (refer to 40 CFR 261.2 for further details). The definition of a hazardous material, hazardous substance, and a hazardous waste follow:

- *Hazardous Material* – any substance or material that has been determined to be capable of posing an unreasonable risk to health, safety, and property when transported in commerce (49 CFR Part 172, Table 172.101). This includes hazardous substances and hazardous wastes.
- *Hazardous Substance* – any element, compound mixture, solution, or substance defined as a hazardous substance under the CERCLA and listed in 40 CFR Part 302. If released into the environment, hazardous substances may pose substantial harm to human health or the environment.
- *Hazardous Waste* – a waste is considered hazardous if it is listed in RCRA regulations, or meets the characteristics described in 40 CFR Part 261, including ignitability, corrosivity, reactivity, or toxicity.

4.6.2 Existing Conditions

Because the disruption of sites and facilities containing hazardous materials (including hazardous wastes, hazardous substances, environmental contamination, and other regulated substances such as fuel, waste oil, and de-icing chemicals) can potentially impact soils, surface/groundwater, and air quality, this section provides an overview of what is known about these areas located within and in the vicinity of the proposed project area. This information is presented to help determine what effect, if any, the proposed project will have on these sites and vice versa.

For this analysis, the identification of sites known, suspected, or with the potential, to contain hazardous materials and/or environmental contamination was conducted by accomplishing the following: visual observations of existing conditions; consultation and discussions with DFW staff; review of aerial photographs; review of previous asbestos survey records; limited sampling and analytical testing of soils, groundwater, and building materials; and an electronic database search of available regulatory agency records.

4.6.2.1 Hazardous Materials, Substances, and Waste

Per the EPA’s NPL database, there are no properties listed (or proposed) on the NPL in the direct Project Area. Sixty records listed in federal and state databases were identified on DFW airport property, these properties are within the vicinity of the 19th Street Cargo Redevelopment project area (**Table 4-7**). The EDR database search report identified three TxVCP sites, multiple leaking petroleum storage tanks (LPST), ACM, and polyfluoroalkyl substances (PFAS) within the project area. All PFAS sites are shown with no violations.

Table 4-7. Federal and State Database Sites Located on DFW Property Near the Project Area

Site Name	Address	Database Type
DFWEAD2017036 - Terminal C (FID#33054)	2333 N International Parkway	Asbestos
DFW Terminal C	2330 N International Parkway	Asbestos
Terminals A, B, C, E Central Utilities	Unmapped, in proximity	Asbestos
Delta Airlines Incineration Facility	Unmapped, in proximity	Permitted Solid Waste/Liquified Waste Facility (SWF/LF), Central Registry
Central Utilities Plant Upgrade	Unmapped, in proximity	Central Registry
Transportation Security Administration (TSA)	Terminal C Lower Level	Notice of Violation Listing (ENF)
TSA	Terminal C Lower Level	Compliance History Listing (COMP HIST)
DFW Terminal C 0-5	2330 N. International Parkway	Asbestos
DFWEAD2019089 – Terminal C (FID#33054)	2330 N International Parkway	Asbestos
Terminal C High Gates Demolition and Rebuild	Terminal C Gates 33-39	Central Registry
Terminal C (HP#7080)	2330 N International Parkway	Asbestos
Terminal C – High Bay Building (FID#33043)	2500 N International Parkway	Asbestos
TSA	Terminal C Lower Level	Facility Index System/Facility Registry System (FINDS)
DFW Terminal C High Gates	2400 N International Parkway	Enforcement and Compliance History (ECHO)
Terminal C FID NO.	2330 N International Parkway	Asbestos
DFW Terminal C High Gates	2400 N International Parkway	FINDS
TSA	Terminal C Lower Level	Industrial Hazardous Wastes (IHW)
Terminal C High Gates Demolition and Rebuild	Terminal C Gates 35-39	FINDS, ECHO
DFWEAD2019026 - Terminal C (FID#33054)	2330 N International Parkway	Asbestos
TSA	Terminal C Lower Level	Central Registry
TSA	Terminal C Lower Level	FINDS, ECHO
DFW	American Airlines Incineration, Terminal 3E Near Gate No. 1	SWF/LF
American Airlines	2E 3E Connector Building	Underground Storage Tank (UST), Financial Assurance
D10 Terminal Radar Approach Control	2401 N International Parkway	UST
DFW	5E Support Area	IHW
DFW	3122 E 30 th Street	IHW, IHW Corrective Actions
DFW FLQ LOC 17L	DFW Airport	UST
DFW JHZ LOC 17R	DFW Airport	UST
DFW FLQ GS 17L	DFW Airport	UST
Runway 35R ALSF 2	DFW Airport	UST
DFW	DFW Airport	UST
National Car Rental	DFW Airport North	UST, Financial Assurance
DFW VORTAC	DFW Airport	UST
DFW CIX SSALR 18L	DFW Airport	UST
DFW JHZ SSALR 17R	DFW Airport	UST
American Airlines	HANGAR II	UST, Financial Assurance
Texaco Service Station	Unmapped, in proximity	UST, Financial Assurance

Source: EDR, 2022

DFW Northwest Cargo Area/Allied Aviation Fueling Company entered the TxVCP on 08 June 2002 with the last quarterly report submitted to TCEQ on 08 November 2022 (VCP Site 1461). TCEQ identified the site size as 418 acres with the source of release as jet fuel lines, AST, underground storage tanks (UST), chemical storage areas, container storage areas, and maintenance shops. The soil-based contaminants were identified as chlorinated solvents, metals, total petroleum hydrocarbons (TPH), and VOCs. Non-aqueous phase liquid (NAPL) contaminated the groundwater with the remediation method being natural attenuation. The monitoring well system included 196 wells. This site is shown as active. The Northwest Cargo/Allied Aviation Fueling Company VCP area is located within the proposed project area. DFW has requested discontinuance of the Post Response Action Care activities, such as monitoring wells since data from the past 4 years has shown a stable of decreasing plume (**Figure 4-2**).

4.6.2.2 Solid Waste

Solid waste at DFW is generated by various activities associated with the demolition and construction projects as well as municipal solid waste (MSW) from employees, passengers, and people accessing the airport. DFW also has a consolidated materials recycling and reuse program that provides recycling containers and a materials management site for construction projects. DFW recycles a variety of materials including, but not limited to, construction and demolition waste, paper, cardboard, wood, metal, concrete, soil, and tires. Through the Sustainability Management Plan (SMP), DFW is committed to increasing campus-wide recycling and decreasing the generation of MSW and hazardous materials.

4.7 **Historical, Architectural, Archeological, and Cultural Resources**

4.7.1 *Regulatory Background*

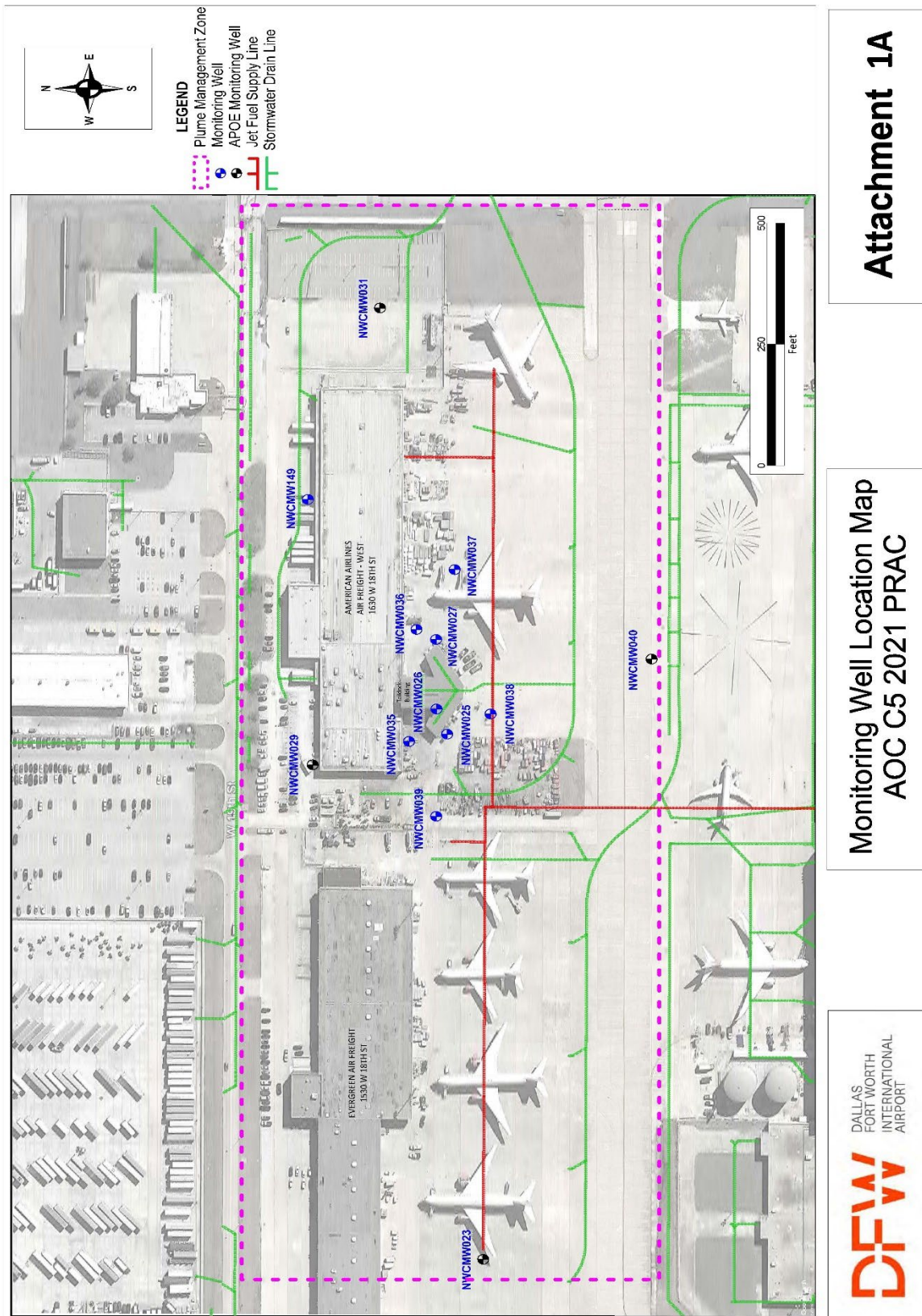
The National Historic Preservation Act (NHPA) requires federal agencies to identify significant cultural resources that may be affected by their actions and mitigate adverse effects to those resources. The NHPA (54 USC 300101), specifically Section 106 (54 USC 306108) requires the State Historic Preservation Office (SHPO), represented by the Texas Historical Commission (THC), to administer and coordinate historic preservation activities, and to review and comment on all actions licensed by the federal government that will have an effect on properties listed in or eligible for listing in the National Register of Historic Places (NRHP). NHPA Section 106 is the principal statute concerning such resources. It requires consideration of direct and indirect impacts from federal actions on historic, architectural, archaeological, and other cultural resources. The assessment of significance of a cultural resource is based on federal guidelines and regulations.

The criteria for evaluating properties for inclusion in the NRHP are codified under the authority of the NHPA, as amended (36 CFR Part 60.4 [a–d]) and the Advisory Council on Historic Preservation (ACHP) has set forth guidelines to use in determining site eligibility. Federal regulations indicate that “[t]he term ‘eligible for inclusion in the National Register’ includes both properties formally determined as such by the Secretary of the Interior and all other properties that meet National Register listing criteria” (36 CFR §800.2[e]). Based on ACHP guidelines, any cultural resource that is included in or eligible for inclusion in the NRHP is a historic property. For properties to be eligible for listing on the NRHP, they must be 50 years old and meet one of four specific criteria¹⁰ for evaluation. Properties less than 50 years of age must be evaluated for their exceptional importance at the local, state, or national level, under Criterion for Consideration G.

¹⁰ The criteria for eligibility for listing on the NRHP are:

- Criterion A: that are associated with events that have made a significant contribution to the broad patterns of our history; or
- Criterion B: that are association with the lives of persons significant in our past; or
- Criterion C: that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- Criterion D: that have yielded, or may be likely to yield, information important in prehistory or history [36 CFR Part 60.4(a–d)].

Figure 4-2. 2021 Location of Monitoring Wells within the Proposed Action Project Area



Attachment 1A

**Monitoring Well Location Map
AOC C5 2021 PRAC**



As a political subdivision of the State of Texas, DFW is required to comply with the Antiquities Code of Texas (ACT) passed in 1969. The ACT requires state agencies and political subdivisions to notify the THC of ground-disturbing activities on public land that have the potential to impact archeological sites. Advance project review and coordination by the THC is required only for undertakings with more than 5 acres or 5,000 cubic yards of ground disturbance. However, if the activity occurs inside a designated historic district, affects a recorded archeological site, or requires onsite investigations, the project will need to be reviewed by the THC regardless of project size.

4.7.2 Existing Conditions

The Area of Potential Effects (APE) is “the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties” (36 CFR 800.16(d)). Per Section 106 of the NHPA, the term “historic properties” can include architectural, archeological, or cultural resources.

For this analysis, the APE for the project encompassed approximately 51-acres located within the DFW northwest quadrant and encompassing the area associated with the proposed 19th Street Cargo Redevelopment project area. Ground disturbances associated with the proposed project will vary but will include demolition of existing concrete pavement, soil excavation, grading and erosion control. Depths of impacts associated with the proposed project will generally be within a 10-feet of the current ground surface.

4.7.2.1 Historical Resources

A file search within the Texas Historic Sites Atlas (THSA) electronic database, maintained by the THC, identified that there are no previously recorded National Register properties, historical markers, or cemeteries located within the proposed APE (THSA 2022). It was determined that ground-disturbing activities have transpired within the APE related to past land use. Prior to DFW construction in the early 1970s, the APE was primarily used for agricultural and ranching purposes as early as 1942 and presumably since the late 19th and early 20th centuries.

4.7.2.2 Archeological Resources

A file search within the Texas Archeological Sites Atlas (TASA) electronic database, maintained by the THC and the Texas Archeological Research Laboratory (TARL), identified that there are no previously recorded archeological sites, National Register properties, or cemeteries located within the proposed APE (TASA 2022). Data presented within the TxDOT Potential Archeological Liability Map (PALM) for Dallas and Tarrant Counties indicates the entire APE featured a low potential for shallow or deeply buried cultural materials within areas that have retained a reasonable contextual setting. In 2007 and 2008, AR Consultants, Inc. (ARC) conducted intensive pedestrian surveys of 1,210 acres of DFW and found there was a low probability for prehistoric sites (Shelton et al. 2008). THC concurred with ARC’s findings. Therefore, based on previous research and THC coordination, as well as current observations, the APE has a negligible potential to contain prehistoric archeological resources.

4.7.2.3 Architectural Historic-Period Resources

Since 1969, significant ground disturbances have transpired throughout the APE related to broad-scale surface grading and development of transportation infrastructure. As depicted in 1970 aerial photographs, once DFW construction began, ground disturbances associated with large-scale grading for the terminals, runways, parking lots, support buildings, hangars, and a roadway system occurred within airport property, and all pre-1969 structures in the APE were demolished. Groundbreaking for the airport began in 1969, with runway and building construction completed by the end of 1973. Through background research, it was determined that Building 221 (American Airlines West Warehouse) was constructed as part of the initial phase of DFW construction in 1973. Currently, the warehouse is still standing within the direct APE; as such, the APE contains a potential for historic-age above-ground resources. No historic-age above-ground resources were identified within the indirect APE.

4.8 Natural Resources and Energy Supply

4.8.1 Regulatory Background

CEQ regulations (§1502.16 (a)(6)) require that federal agencies consider energy requirements, natural or depletable resource requirements, and the conservation potential of alternatives and mitigation measures. Consumption of natural resources (such as water, asphalt, aggregate, wood, etc.) and use of energy supplies (such as coal for electricity, natural gas for heating, and fuel for aircraft, vehicles, or other ground vehicles) may result from construction, operation, and/or maintenance of the proposed action. Under FAA policy, facility development should exemplify the highest standards of design including principles of sustainability. All elements of the transportation system should be designed with a view to their aesthetic impact, and conservation of resources, such as energy, pollution prevention, harmonization with the community environment, and sensitivity to the concerns of the traveling public.

4.8.2 Existing Conditions

Buildings and other structures at the airport require electricity and natural gas for lighting, cooling, and heating. Electricity is used for cooling and lighting buildings, lighting for ramps, aprons, and vehicle parking areas, airfield lighting systems, roadway lighting, operating the SkyLink automated people mover (APM), and electric vehicle charging stations. DFW is located within a highly urbanized area with adequate access to natural resources for airport operations, aircraft operations, and construction projects.

DFW has implemented a sustainability program to reduce natural resources, energy, and water consumption, reduce pollution, minimize waste and seek alternative energy sources such as wind and solar. DFW's Design Criteria Manual governs building design and development and requires green building standards; Green Infrastructure/Low Impact Development (GI/LID), an EPA initiative to reduce and mitigate stormwater runoff.

4.9 Noise and Noise-Compatible Land Use

This section presents the aircraft noise and compatible land use analysis conducted as part of this Draft EA. The analysis includes summaries of the operational data used in calculating noise exposure levels, how noise is characterized and described, how people respond to it, and FAA guidance on land-use compatibility with various levels of noise exposure. **Appendix D** provides detailed information on each of these aspects of noise characterization and the impact analysis.

4.9.1 Regulatory Background

It is the FAA's responsibility to analyze aviation noise impacts from federal actions. This EA follows guidance and regulations provided in FAA Order 5050.4B, *NEPA Implementing Instructions for Airport Actions*, FAA Order 1050.1F, *Environmental Impacts: Policies and Procedures*, and the 1050.1F 2020 Desk Reference (June 2023) on how the impact assessment should occur, as well as other federal statutes, regulations, and specific agency orders. A list of these is presented in **Appendix D**.

The FAA formally adopted the Day-Night Average Sound Level (DNL), as its primary metric to evaluate cumulative effects on people due to aviation activities. DNL metric is an average noise level that considers both daytime and nighttime cumulative noise over a 24-hour period in a given area. To compensate for a higher sensitivity to noise exposure at nighttime (occurring between 10:00 p.m. and 7 a.m.), DNL calculations add a-10-times weighting for each nighttime flight. This is equivalent to each nighttime event receiving a 10-decibel (dB) "penalty." Ambient sound levels during nighttime hours are typically about 10 dB lower than during daytime hours. Expressing a DNL implies decibels thus the dB nomenclature is omitted herein, e.g., 65 DNL expresses a DNL of 65 dB.

For a NEPA noise analysis, the FAA requires that the 24-hour analysis period represents the average annual day (AAD), meaning average daily aircraft operations over a 365-day period. The aircraft noise analysis for this EA uses Aviation Environmental Design Tool (AEDT) Version 3e (released on 09 May 2022). 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.

Estimates of noise effects resulting from aircraft operations can be interpreted in terms of the probable effects on human activities typical to specific land uses. The FAA has published land use compatibility designations in Part 150, Appendix A, Table 1 (reproduced in this DEA as **Table 4-8**). As stated in Part 150 Appendix A, the FAA generally considers all land uses to be compatible with aircraft-related noise levels below 65 dB, including residential, institutional, and public land uses (i.e., hotels, retirement homes, intermediate care facilities, hospitals, nursing homes, schools, preschools, and libraries). These categories are referenced throughout the EA. Above DNL 65 dB, residential areas and schools without mitigation are not compatible land uses. **Appendix D** contains the detailed Noise and Compatible Land Use Analysis Technical Report.

4.9.2 Study Area

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 will 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 60 DNL 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 NAA and With Project Alternatives. **Figure 4-3** displays the NSA on the DFW or a land use map. The NSA is approximately 4 Nautical Miles (nmi) to the east and west and 8 nmi to the north and south.

4.9.3 Existing Land Use

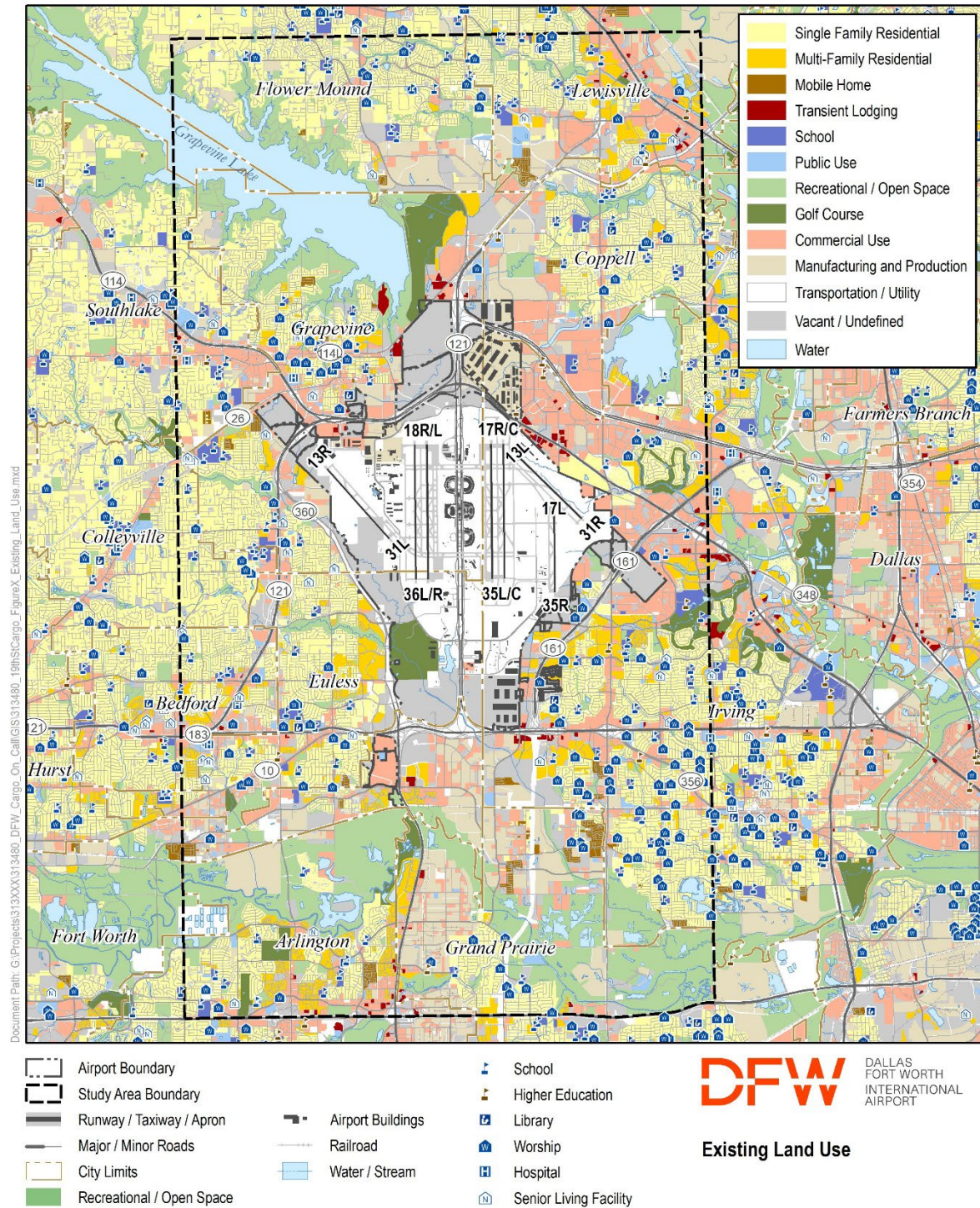
DFW is located on over 17,200 acres between the cities of Dallas and Fort Worth, Texas, and is partially located in both Dallas and Tarrant counties. DFW is located north of Texas State Highway (SH) 183 and south of SH 114. Existing land use in the study area consists of the DFW property, residential uses, commercial, and industrial land uses (see **Figure 4-3**). 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 to the northeast located in Coppell. The area directly south is commercial and industrial with residential areas located further south in Grand Prairie.

All noise sensitive sites such as schools, nursing homes, hospitals and places of worship have been identified (see **Figure 4-3**). Any potential noncompatible land use and the noise sensitive sites within the study area are evaluated in the EA.

4.9.4 Existing Noise Conditions Associated with Aircraft Operations

This section provides the description of current noise conditions within the study area from aircraft noise. Fiscal year (FY) 2022, a 12-month period spanning 01 October 2021 through 30 September 2022, was identified as the baseline year and source of data to develop the existing conditions dataset. The Existing Condition developed for this EA represents the noise exposure of aircraft operations for an AAD within the 12-month period for FY 2022. The aircraft noise modeling and analysis for the DEA was completed using the latest version of the AEDT (AEDT Version 3e). 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 produces 65 DNL, 70 DNL, and 75 DNL contours and other contours as needed. AEDT can also calculate 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.

Figure 4-3. Existing Land Use Surrounding DFW and Noise Study Area



**Table 4-8. Part 150 Land Use Compatibility
with Yearly Day-Night Average Sound Levels**

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

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

NOTES:

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.

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 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

Table 4-9 provides estimates of the total area split between on and off airport areas exposed to aircraft noise of at least 65 DNL for the existing conditions. Approximately 9.54 mi² falls within the existing condition (2022) 65 DNL or higher noise exposure area. Of the total land area, approximately 0.24 mi² exposed to 65 DNL or higher, is located off airport (the remaining 9.30 mi² are located on DFW). **Figure 4-4** shows the annual noise exposure pattern at DFW for the existing conditions. Noise contours are presented for the 65 DNL, 70 DNL, and 75 DNL. DNL contours are a graphic representation of how the noise from DFW's AAD 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.

Table 4-9. Estimated Land Area within the Existing (2022) Noise Exposure Contours

Contour Range	DFW Property Estimated Land Area (mi ²)	Non-DFW Property Estimated Land Area (mi ²)	Total Estimated Land Area (mi ²)
DNL 65-70 dB	5.61	0.21	5.82
DNL 70-75 dB	1.83	0.04	1.87
DNL 75+ dB	1.86	0.00	1.86
Total	9.30	0.24	9.54

Note: Totals may not add completely due to rounding effects
Source: HMMH, 2023

Figure 4-5 provides the DNL contours for the existing conditions over the land use map. In the existing condition, the DNL contours extend away from DFW on the north side in two main lobes over compatible land use along the extended centerline of the outboard parallel runway extending off DFW on the west side to just north of SH 26 and on the east side to just north of Bethel Road, and on the south side in two main lobes along the extended centerline of the outboard parallel runway but remaining on DFW. The 65 DNL also extends off DFW over compatible land use north of Runway 17L. The 70 DNL contour for the existing condition includes no noise sensitive land use and barely extends off DFW, north of Runways 18R and 17C to across SH 114.

4.9.5 Noise Compatible Land Use

There are no public schools, churches, nursing homes, hospitals, or libraries within any of the 65 DNL or greater contours. Furthermore, there are no single family, multi-family, or manufactured housing within any of the 2022 existing condition noise contours (see **Figure 4-5**).

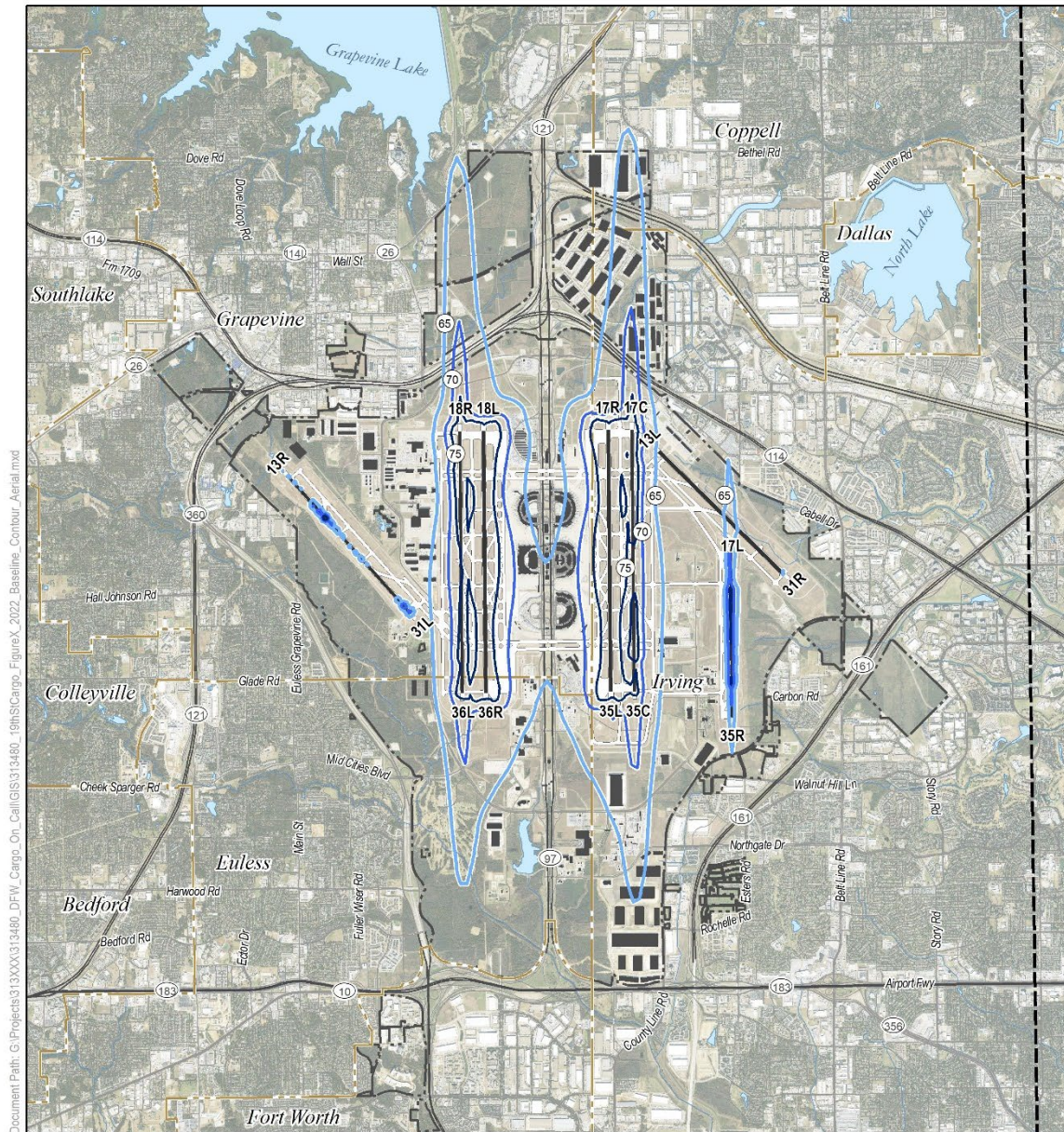
4.10 Visual Effects, Including Light Emissions

4.11.1 Background

The FAA encourages Airport Sponsors to consider the effects of light emissions and visual effects on sensitive areas in the vicinity of an airport development project. Although there are no significance thresholds established by the FAA for light emissions and visual effects, the agency recommends the following topics be considered during the analysis:

- If light emissions create an annoyance or interfere with normal activities; and
- If local, state, or federal agencies determine that visual effects are objectionable due to their contrast with existing environments.

Figure 4-4. Existing Conditions (2022) Noise Exposure Contours



Document Path: G:\Projects\313XXX\313480_DFW_Cargo_On_Call\GIS\313480_19thStCargo_FigureX_2022_Baseline_Contour_Aerial.mxd

- 65 dB DNL
- 70 dB DNL
- 75 dB DNL
- Airport Boundary
- Study Area Boundary
- Runway / Taxiway / Apron
- Airport Buildings
- Major / Minor Roads
- Railroad
- City Limits
- Water / Stream



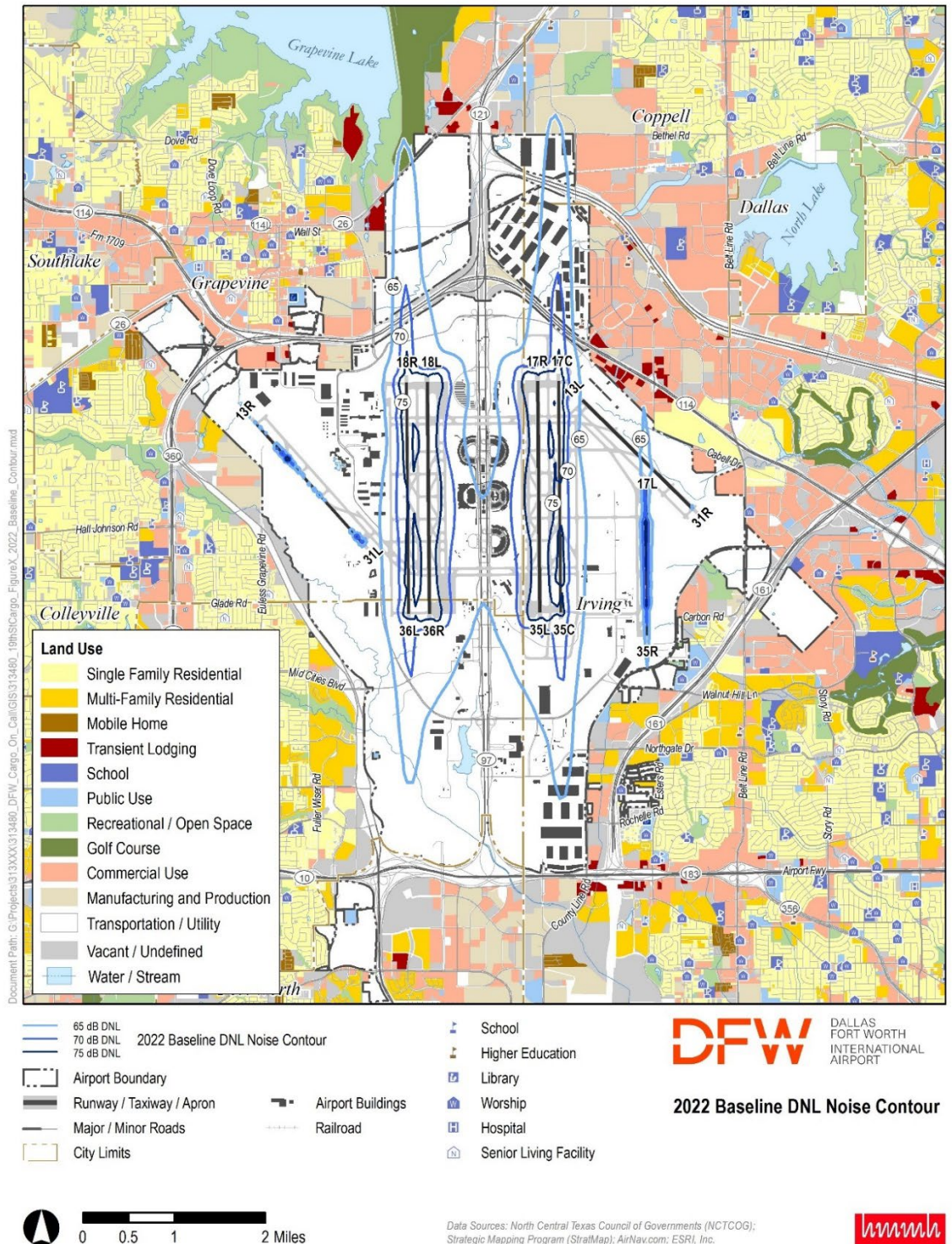
2022 Baseline DNL Noise Contour



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



Figure 4-5. Existing Conditions (2022) Noise Exposure Contours with Surrounding Lane Use



4.11.2 Existing Conditions

Light emissions sources on DFW include the runway, taxiways, terminals, navigational aids (NAVAIDS) surface parking areas, hotels, office buildings, cargo buildings, warehouses, and other structures. Mobile light sources include ground access vehicles utilizing airport roadways, aircraft, and aviation support vehicles. Light sources which may also affect the area include lighting on roadways and highways on and adjacent to the airport, as well as the surrounding urban and commercial development.

4.11 Water Resources – Surface and Stormwater Treatment

4.11.1 Regulatory Background

The Federal Water Pollution Control Act, commonly known as the Clean Water Act (CWA), passed in 1972 and last amended in 2002 was enacted to restore and maintain the chemical, physical, and biological integrity of the Nation's waters. The CWA established a federal permitting system to regulate discharges into waters of the United States (WOTUS), certify the protection of water quality, implement, and enforce the National Pollutant Discharge Elimination System (NPDES) program, and identify and characterize impaired water bodies that do not meet, or are not expected to meet, water quality standards. The TCEQ's 2020 Integrated Report for CWA Sections 303(d) and 305(b) characterizes the quality of Texas surface waters and identifies those waters that do not meet water quality standards on the Section 303(d) list, an inventory of impaired waters.

4.11.2 Existing Conditions

Surface water runoff on DFW flows into one of six sub-watersheds (Hackberry Creek, South Hackberry Creek, Estelle Creek, Grapevine Creek, Bear Creek, or Cottonwood Creek) or directly into two larger watersheds (West Fork Trinity River or Elm Fork Trinity River). Field surveys of WOTUS have been conducted on a large portion of DFW property. These field surveys have identified jurisdictional waters, tributaries, man-made drainage channels, ponds, and potential wetlands on various portions of DFW's property. No tributaries, wetlands, or water bodies were in or adjacent to the proposed project area; furthermore, no tributaries or water bodies located on DFW were listed on the TCEQ Section 303(d) list (TCEQ 2022).

Currently, drainage is managed for the Landside and the AOA through separate systems. Landside drainage, including some of the water that drains off the facility roofs, is directed to stormwater collection pipes and storm drains. It is then managed as part of DFW's overall stormwater management system. On the AOA side, water is collected in a series of storm drains. This stormwater is directed to type-D inlets and oil/water separators before it is drained into the stormwater system.

DFW operates a stormwater pretreatment collection system and retreatment facility for stormwater associated with industrial activity. The stormwater associated with industrial activity includes first-flush stormwater discharge from the aircraft parking aprons, gates, hangars, maintenance areas, fuel farm, and parking lots. The first-flush stormwater is directed by diverter boxes to the on-site pretreatment facility. After pretreatment, stormwater is conveyed to the Trinity River Authority (TRA) Central Plant in Irving, Texas, although there is an option to discharge to Bear Creek.

SECTION 5 ENVIRONMENTAL CONSEQUENCES

The potential environmental impacts resulting from the construction and operation of the reasonable alternatives and measures taken for mitigation of these effects are presented in this section. The following alternative scenarios are examined:

<u>Alternative</u>	<u>Description</u>
No Action	Under the NAA, DFW would keep its existing infrastructure and would not implement the Proposed Action. DFW would not have facilities to meet tenant needs and efficiently accommodate the growth in demand for cargo buildings and aircraft parking positions. DFW would not improve access for ADG III aircraft that use the southeast apron. The airport would continue experiencing high operating and maintenance costs for obsolete, aging infrastructure and would not generate additional revenue that would contribute to DFW’s financial self-sufficiency.
Proposed Action	The Proposed Action Alternative, the sponsor’s preferred alternative, includes the project as identified in Sections 1.4 Proposed Action, 2.0, Purpose and Need, and 3.2 Proposed Action . The proposed project includes the construction of modern, optimized cargo buildings and apron pavement as well as airfield taxiway and taxilane enhancements that will support efficient cargo operations. The Proposed Action would result in a change in the number of aircraft cargo operations. The Proposed Action would add five cargo aircraft parking positions at two turns per day which would result in a net increase of approximately 7,300 landing and takeoff cargo operations per year (about 0.95 percent increase in overall airport operations).

5.1 Summary of Environmental Consequences

Potential environmental effects resulting from the construction and operation of the Proposed Action and measures taken for mitigation of these effects are presented and evaluated in this EA. A summary of evaluated environmental effects on each applicable resource category is summarized in **Table 5-1**.

Table 5-1. Summary of Environmental Consequences

Impact Area	Significance Threshold	No Action Alternative	Proposed Action Alternative	Connected Actions
Air Quality	<p>Pollutant concentrations to exceed one or more of the NAAQS for any of the time periods analyzed</p> <p>Increase the frequency or severity of any such existing violations.</p>	<p><i>No Impact.</i> Since there would be no construction and project related emissions, there would be no additional air quality effects, other than those currently produced through existing operational emissions.</p>	<p><i>Adverse Impact.</i> The increase in cargo operations will generate additional operational emissions from aircraft, APU, and GSE. Through modeling it was determined that the full implementation and future years will have NO_x emissions in excess of the current Severe non-attainment NAAQS threshold of 25 tpy. The above <i>de minimis</i> increase will be mitigated through the General Conformity Determination.</p>	<p><i>Adverse Impact.</i> Operational emissions would not be changed due to the construction of the proposed connected actions. Construction-related activities and equipment would cause a short-term increase in air emissions that would be below the <i>de minimis</i> threshold.</p>

Impact Area	Significance Threshold	No Action Alternative	Proposed Action Alternative	Connected Actions
Climate	There are no significance thresholds for aviation...GHG emissions.	<u>No Impact.</u> Since there would be no construction and project related GHG emissions, there would be no additional air quality effects, other than those produced through existing operational emissions	<u>Minor Impact.</u> The construction and increase in cargo operations would generate additional GHG emissions; this would amount to an increase of approximately 3% compared to the future NAA. Section 5.3. provides a detailed analysis of the Climate resource category	<u>Minor Impact.</u> The construction of connected actions would generate additional GHG emissions; this would amount to an increase of approximately 3% compared to the future NAA. Section 5.3. provides a detailed analysis of the Climate resource category.
Hazardous Materials, Solid Waste, and Pollution Prevention	<p>The action would have the potential to violate applicable federal, state, tribal, or local laws or regulations regarding hazardous materials and/or solid waste management;</p> <p>Involve a contaminated site (including but not limited to a site listed on the National Priorities List);</p> <p>Produce an appreciably different quantity or type of hazardous waste;</p> <p>Generate an appreciably different quantity or type of solid waste or use a different method of collection or disposal and/or would exceed local capacity; or</p> <p>Adversely affect human health and the environment.</p>	<u>No Impact.</u> There are no impacts from hazardous materials expected as no construction or other activities would occur. This Alternative would not generate hazardous materials or solid waste impacts or increase the amount of waste generated beyond that expected from regular airport activity levels.	<p><u>Minor Impact.</u> No properties listed (or proposed) on the NPL in the direct Project Area. A database review revealed:</p> <p>60 records listed in federal and state databases were identified near proposed project area</p> <p>3 TxVCP sites, multiple LPSTs, ACM, and PFAS within the project area.</p> <p>The monitoring wells associated with the active TxVCP would be maintained, closed, or replaced in compliance with the program.</p> <p>The ACM will be abated and managed in compliance with all applicable federal, state, and local regulations.</p> <p>All PFAS sites are shown with no violations.</p> <p>Additionally, any contaminated media found within the project site would be handled in accordance with the CMMP.</p>	<u>Minor Impact.</u> The Connected Actions have potential to involve contaminated media, such as ACM. The TxVCP sites and associated monitoring wells will be managed, closed, and replaced in compliance with all applicable regulations. ACM would be abated in accordance with the CMMP and in compliance with applicable regulations.

Impact Area	Significance Threshold	No Action Alternative	Proposed Action Alternative	Connected Actions
			<p>Additional solid waste would be generated by the construction and demolition activities in the short-term, and the new operational activities going forward. Each building would generate at least one MSW dumpster and one recyclables dumpster. Regionally there is sufficient MSW and construction debris capacity. DFW also has a robust recycling program to reduce materials going to regional landfills further lessening the effects.</p>	
<p>Historical Architectural, Archeological, and Cultural Resources</p>	<p>There are no significance thresholds for historical, architectural, archeological, or cultural resources.</p>	<p><u>No Impact.</u> No construction or other activities would occur that could potentially disturb cultural resources.</p>	<p><u>No Impact.</u> Based on research, field observation, and coordination with the SHPO, no impacts to cultural resources are anticipated under the Proposed Action. (see Appendix E for SHPO concurrence)</p>	<p><u>No impact.</u> A background review revealed that the connected actions will impact APE portions that have been heavily disturbed by previous activities at DFW. As such, no cultural resources are anticipated to be affected by the connected actions.</p>
<p>Natural Resources and Energy Supply</p>	<p>There are no significance thresholds for natural resources and energy supply</p>	<p><u>No Impact.</u> There would be no additional energy demand as no construction or other activities would occur.</p>	<p><u>No Impact.</u> Although, there would be an increase in demand for fuel and energy from additional cargo operations, lighting systems, and signage, the local distribution infrastructure has adequate capacity to accommodate the increased demand. Furthermore, the demand would not exceed the regional supply of energy or convertible natural resources.</p>	<p><u>No Impact.</u> Although, there would be an increase in demand for fuel and energy from additional cargo operations, lighting systems, and signage, the local distribution infrastructure has adequate capacity to accommodate the increased demand.</p>

Impact Area	Significance Threshold	No Action Alternative	Proposed Action Alternative	Connected Actions
<p>Noise and Noise-Compatible Land Use</p>	<p>The action would increase noise by DNL 1.5dB or more for a noise sensitive area that is exposed to noise at or above the DNL 65 dB noise exposure level, or that will be exposed at or above the DNL 65dB level due to a DNL 1.5dB or greater increase, when compared to the NAA for the same timeframe.</p>	<p><i>No Impact.</i> Noise levels would not substantially change because no construction would occur, and aircraft operations and aircraft ground movements would be similar to current activity levels.</p>	<p><i>No Impact.</i> The additional cargo operations would utilize existing runways and would not cause a DNL 1.5 dB increase in noise experienced by noise sensitive, noncompatible land-uses adjacent to DFW.</p>	<p><i>No Impact.</i> Connected actions would not cause changes in noise exposure. Construction, demolition, or batch plant activities could result in temporary changes in noise levels. The sites associated with the connected actions are on airport property and surrounded by compatible land-uses.</p>
<p>Visual Effects including Light Emissions</p>	<p>There are no significance thresholds for visual effects including light emissions.</p>	<p><i>No Impact.</i> No change in visual effects or light emissions would occur since there would be no new construction.</p>	<p><i>No Impact.</i> The amount of light emissions within the project area would increase as a result of the installation of new lighting systems. Along with an overall increase in light emissions through the increased development of DFW, the combined increase would only be minimal as compared to existing light emissions.</p>	<p><i>No Impact.</i> The connected actions would result in the installation of new high mast lights, which would increase the amount of light emissions within the project area. However, the changes in light emissions would be minimal when compared to existing light emissions.</p>
<p>Water Resources</p>	<p>Exceed water quality standards established by Federal, state, local, and tribal regulatory agencies</p> <p>Contaminate public drinking water supply such that public health may be adversely affected</p>	<p><i>No Impact.</i> There would be no impacts on water quality, as no construction or other activities would occur.</p>	<p><i>Minor Impact.</i> Potential impacts to surface water quality are associated with soil erosion during the construction phase and the added volume of stormwater runoff from new impervious surfaces following project completion. These actions are being minimized through new stormwater collection systems, which are being built to incorporate the additional impervious surfaces.</p>	<p><i>Minor Impact.</i> Potential impacts to surface water quality are associated with soil erosion during the construction phase and the added volume of stormwater runoff from new impervious surfaces following project completion. These actions are being minimized through new stormwater collection systems, which are being built to incorporate the additional impervious surfaces.</p>

5.2 Air Quality

This section describes the potential consequences to air quality that would result from the implementation of the Proposed Action in comparison to the No Action Alternative. Section 5.2 also presents the results of an analysis performed to evaluate the change in air pollutants emissions as a result of the construction and operation of the Proposed Action Alternative. Additional documentation describing the analysis methodology, assumptions, supporting data, and detailed results is provided in **Appendix F**.

5.2.1 Significance Thresholds

As identified in FAA Order 1050.1F, the threshold for significance for air quality impacts is defined as when “the [federal] action would cause pollutant concentrations to exceed one or more of the NAAQS, as established by the EPA under the CAA, for any of the time periods analyzed, or to increase the frequency or severity of any such existing violations.”

Because DFW is in a non-attainment area for ozone and a federal action is proposed, the FAA is required under the CAA General Conformity regulation to ensure that the action conforms to the applicable SIP. Under the General Conformity rules, if the air quality assessment for the Proposed Action were to show that any of the federal *de minimis* thresholds established under the CAA were equaled or exceeded, more detailed analyses to demonstrate conformity with the SIP would be required. This more detailed analysis process is known as a General Conformity Determination. Conversely, if the analysis were to show that none of the relevant thresholds were equaled or exceeded, the Proposed Action at DFW would not require a General Conformity Determination and FAA would not require any further analysis under NEPA.

5.2.2 Forecast Aircraft Operations Modeling Methodologies

The 19th Street Cargo Redevelopment Project would be complete and operational in 2025, which represents the project implementation year and 2030, which is included as 5 years past implementation.

The FAA 2021 Terminal Area Forecast (TAF) released in March 2022 for DFW was used for the operational forecast. The FAA TAF includes the effects of the COVID-19 pandemic on the future forecast for the airport. Using the FAA 2021 TAF data, DFW developed a forecast to cover the 2 future years analyzed in this EA (2025 and 2030). Since the initial development of the forecast, which used the FAA’s 2021 TAF, the FAA released its updated 2022 TAF. The 2022 TAF forecasted fewer operations than the 2021 forecast, with approximately 5 percent fewer operations in the near term (late 2020s) and 2 percent fewer in the out years (2030s). DFW has seen a consistent growth trend in its annual operations and enplaned passengers. It has also recovered from the pandemic more quickly than other large hub airports. Given DFW’s recovery, as evidenced by robust operational rankings and a review of the 2022 TAF, which reflects lower growth levels, DFW determined that the 2021 TAF is more relevant to the existing and anticipated operating environment. The growth rate within the 2021 TAF more accurately mirrors DFW’s recovery from the COVID-19 pandemic and DFW’s anticipated future growth.

Similar to existing conditions, approximately 40 percent of the military operations were distributed into Air Carrier operations and the remaining 60 percent were distributed into General Aviation operations. This is shown in the AAD counts for each alternative in **Table 5-2**. The proposed project would add 7,300 additional annual cargo operations in the proposed implementation year (2025) and 5 years post implementation (2030), as well. This resulted in the totals for each category and each future year listed in **Table 5-2**.

Table 5-2. Forecast Annual and Average Annual Day (AAD) Aircraft Operations (FY) for Implementation Year 2025 and Implementation Year + 5 (2030)

Alternative	Modeling Scenario	Air Carrier	Air Taxi	General Aviation	Military	Total
No Action	2025	753,559	40,796	6,343	213	800,911
	AAD 2025	2,064.8	111.8	17.7	0.0	2,194.3
With Proposed Action	2025	760,859	40,796	6,343	213	808,211
	AAD 2025	2,084.8	111.8	17.7	0.0	2,214.3
No Action	2030	779,846	24,187	6,442	213	810,688
	AAD 2030	2,136.8	66.3	18.0	0.0	2,221.1
With Proposed Action	2030	787,146	24,187	6,442	213	817,988
	AAD 2030	2,156.8	66.3	18.0	0.0	2,241.1

Source: FAA 2021 TAF, Centurion Planning and Design
HMMH, 2023

5.2.3 No Action Alternative

The NAA would not involve any construction activities; therefore, no construction emissions would be associated with the NAA. Air cargo operations would continue to use the existing cargo complexes and there would be no net increase in cargo operations at DFW airport. As such, there would be no additional air quality effects other than those already occurring at the airport. Aircraft operational emissions include taxi-in, taxi-out, and flight operations below mixing height. **Table 5-3** shows operational emissions inventory for 2025 and **Table 5-4** shows operational emissions inventory for 2030. As shown in **Tables 5-3** and **5-4**, aircraft are the source that accounts for the greatest airport emissions.

**Table 5-3. No Action Alternative
Operational Pollutant Emissions (tpy) for CY 2025 (801,398 CY Operations)**

Source	CO	NOx	VOC	SOx	PM _{2.5}	PM ₁₀	CO ₂	H ₂ O
Aircraft	3,667.0	4,628.53	462.42	418.12	43.03	43.03	1,126,340.11	441,607.83
GSE LTO	622.59	59.37	23.89	0.49	3.55	3.81	0.00	0.00
APU	122.40	145.86	10.64	19.59	19.13	19.13	0.00	0.00
Total	4,411.99	4,833.75	496.95	438.20	65.72	65.97	1,126,340.11	441,607.83

Source: HMMH, 2023

**Table 5-4. No Action Alternative
Operational Pollutant Emissions (tpy) for CY 2030 (811,200 CY Operations)**

Source	CO	NOx	VOC	SOx	PM _{2.5}	PM ₁₀	CO ₂	H ₂ O
Aircraft	3,679.21	4,850.22	449.65	430.67	44.07	44.07	1,160,125.17	454,854.30
GSE LTO	607.63	53.40	23.79	0.51	3.46	3.71	0.00	0.00
APU	122.24	151.60	10.63	20.13	19.40	19.40	0.00	0.00
Total	4,409.08	5,055.22	484.07	451.31	66.92	67.18	1,160,125.17	454,854.30

Source: HMMH, 2023

5.2.4 Proposed Action Alternative

Emissions from the Proposed Action are expected to include construction emissions from construction equipment, motor vehicles (employee commute and material delivery), and nonpoint source emissions (e.g., fugitive dust), as well as operational emissions from increased cargo aircraft operations, fuel delivery, and GSE. Pollutants expected from the project include ozone precursors—NO_x and VOCs, criteria air pollutants such as Pb, ozone, CO, NO_x, PM_{2.5}, PM₁₀, SO_x, and hazardous air pollutants (e.g., benzene, toluene, ethylbenzene, and xylene). Construction emissions and operational emissions are subject to the CAA General Conformity requirements.

5.2.4.1 Construction Emissions

The Proposed Action construction emissions were analyzed for anticipated construction years: 2024 and 2025 (**Appendix F**). The Proposed Action would result in temporary air quality effects resulting from demolition and construction activities. An air quality analysis was completed to estimate construction emissions and determine the Proposed Action's potential construction -related air quality impacts. The methodology used to prepare the DFW emissions inventories is consistent with the requirements outlined in the latest FAA Aviation Emissions and Air Quality Handbook (Version 3, Update 1), which provides both regulatory context and technical direction for completing airport-related air quality impact assessments.

The Proposed Action would generate ozone precursor, and criteria air pollutant emissions from heavy-duty construction equipment activity, truck haul trips, and construction worker and vendor truck trips to and from the project areas. Construction emissions include both on-road mobile and off-road source categories. Mobile source exhaust and fugitive dust emissions would be generated from on-road vehicles and construction equipment, including but not limited to dump trucks, mixers, passenger vehicles, flatbed trucks, and tractor trailers. Fugitive VOC emissions would be generated by asphalt drying. Diesel-powered off-road construction equipment and traffic to and from the construction site would also generate GHGs. The assessment of construction air quality impacts considered the previously mentioned sources. DFW purchases 100 percent renewable electricity; as such, there would be no indirect GHG emissions associated with electricity generation for construction of the Proposed Action.

Construction equipment usage would cause a short-term increase in air emissions. The estimated construction emissions from diesel-powered on-road vehicles and off-road construction equipment were modeled using the TCEQ Texas NONROAD version 2 (TexN2.2 Utility) and EPA Motor Vehicles Emissions Simulator, version 3 (MOVES3). At the recommendation of the TCEQ, the TexN2.2 model was used to estimate Texas-specific (at the county level) emissions from nonroad mobile sources, excluding commercial marine vessels, locomotives, drilling rigs, and aircraft. (see **Appendix F**). MOVES3 is required by the EPA for developing nonroad construction emissions estimates for NEPA reviews, state implementation plan revisions, national emissions inventories, and reasonable further progress analyses. Emissions were calculated using the activity estimates for each project component combined with the most recent emission factors from the EPA MOVES3 and in accordance with EPA AP-42 guidance. Refer to **Appendix F** for the construction emissions analysis technical report.

Table 5-5 shows the estimated construction emissions¹¹ of NO_x, VOCs, PM₁₀, and PM_{2.5} by emissions sources. Proposed Action construction activities are anticipated from February 2024 to April 2025. The estimated maximum annual emissions associated with the construction of the Proposed Action would be below the severe non-attainment ozone *de minimis* levels of 25 tpy for NO_x or VOC. A concrete batch plant would be necessary to support the construction of the Proposed Action. The batch plants would be authorized under the TCEQ New Source Review (NSR) permitting program and is not evaluated under the General Conformity requirements (40 CFR 93.153 (d)(1)).

¹¹ Table 5-5 does not include CO, SO_x, and Pb emissions because the DFW AQCR 215 is in attainment and meets the NAAQS for these criteria pollutants.

**Table 5-5. Proposed Action Alternative Construction
Criteria Pollutant Emissions (tpy) by Construction Activity Year 2024 and 2025**

Emission Source	NOx	CO	VOCs	SO ₂	PM ₁₀	PM _{2.5}
Airfield	1.44	0.72	0.10	0.002	0.11	0.11
Airside	1.89	0.95	0.14	0.002	0.15	0.15
Building 1	2.65	1.35	0.21	0.003	0.21	0.20
Building 2	1.71	0.87	0.14	0.002	0.13	0.13
Fugitive Dust	--	--	--	--	88.23	9.81
On road	0.45	5.12	0.25	0.005	0.47	0.12
2024 Totals	8.14	9.01	0.84	0.01	89.31	10.52
Airfield	0.32	0.16	0.02	0.001	0.02	0.02
Airside	0.42	0.21	0.3	0.001	0.03	0.03
Building 1	0.59	0.30	0.05	0.001	0.05	0.05
Building 2	0.38	0.20	0.03	0.001	0.03	0.03
Demolition	0.47	0.19	0.03	0.001	0.03	0.03
Staging	0.15	0.07	0.01	0.001	0.01	0.01
Fugitive Dust	--	--	--	--	49.02	5.45
On road	1.38	1.13	0.09	0.003	0.78	0.22
2025 Totals	3.69	2.29	0.26	0.01	49.98	5.84

Source: HDR, 2022

Notes:

¹ * Calendar Year 2025 was actually modeled as 2023 in both MOVES3 and TexN2.2; however, due to a shift in the construction schedule, the work scheduled for 2023 was shifted to 2025.

² Per 40 CFR 93 § 153, since the DFW area is classified as severe nonattainment for O₃, de minimis thresholds of 25 tpy would apply for O₃ precursors: NOx and VOCs.

5.2.4.2 Operational Related Emissions

The Proposed Action is expected to result in changes in operational emissions from the additional cargo aircraft operations which include taxi-in, taxi-out, and flight operations below mixing height. The emissions inventory for the Proposed Action Alternative in 2025 and 2030 are provided in **Tables 5-6** and **5-7**, respectively, which show that aircraft account for the greatest airport emissions.

**Table 5-6. Proposed Action Alternative
Operational Criteria Pollutant Emissions (tpy) for CY 2025 (808,698 CY Operations)**

Source	CO	NOx	VOC	SOx	PM _{2.5}	PM ₁₀	CO ₂	H ₂ O
Aircraft	3,808.08	4,807.20	481.53	431.03	43.76	43.76	1,161,117.46	455,242.77
GSE LTO	630.41	73.90	28.21	0.53	4.57	4.86	0.00	0.00
APU	123.41	148.18	10.76	19.83	19.35	19.35	0.00	0.00
Total	4,561.90	5,029.28	520.49	451.40	67.69	67.98	1,161,117.46	455,242.77

Source: HMMH, 2023

**Table 5-7. Proposed Action Alternative
Operational Criteria Pollutant Emissions (tpy) for CY 2030 (818,500 CY Operations)**

Source	CO	NOx	VOC	SOx	PM _{2.5}	PM ₁₀	CO ₂	H ₂ O
Aircraft	3,820.34	5,029.16	468.77	443.59	44.80	44.80	1,194,954.12	468,511.28
GSE LTO	615.38	67.91	28.10	0.55	4.47	4.76	0.00	0.00
APU	123.25	153.93	10.75	20.37	19.62	19.62	0.00	0.00
Total	4,558.97	5,250.99	507.62	464.51	68.89	69.18	1,194,954.12	468,511.28

Source: HMMH, 2023

Table 5-8 provides the comparison between the future No Action and the Proposed Action operational emissions. As shown, the Proposed Action emissions would increase minimally for all sources; aircraft are the source that accounts for the greatest airport emissions. The increase in aircraft emissions results directly from the forecasted growth in cargo aircraft operations for the Proposed Action Alternative compared with the No Action Alternative, where cargo growth is constrained by lack of facilities and infrastructure.

**Table 5-8. Net Operational Emissions
Proposed Action Alternative – No Action Alternative Operational Criteria Pollutant Emissions (tpy)**

Emission Source	Alternatives	NOx	VOCs	CO	SO ₂	PM ₁₀	PM _{2.5}
Aircraft	With Proposed Action	4,807.20	481.53	3,808.08	431.03	43.76	43.76
	No Action	4,628.53	462.42	3,667.0	418.12	43.03	43.03
	Difference	178.68	19.11	141.08	12.91	0.73	0.73
GSE LTO	With Proposed Action	73.90	28.21	630.41	0.53	4.86	4.57
	No Action	59.37	23.89	622.59	0.49	3.81	3.55
	Difference	14.53	4.31	7.82	0.04	1.05	1.02
APU	With Proposed Action	148.18	10.76	123.41	19.83	19.35	19.35
	No Action	145.86	10.64	122.40	19.59	19.13	19.13
	Difference	2.32	0.12	1.01	0.24	0.22	0.22
2025	Net Operational Emissions Totals	195.53	23.54	149.91	13.19	2.00	1.97
Aircraft	With Proposed Action	5,029.16	468.77	3,820.34	443.59	44.80	44.80
	No Action	4,850.22	449.65	3,679.21	430.67	44.07	44.07
	Difference	178.93	19.12	141.13	12.92	0.73	0.73
GSE LTO	With Proposed Action	67.91	28.10	615.38	0.55	4.76	4.47
	No Action	53.40	23.79	607.63	0.51	3.71	3.46
	Difference	14.51	4.31	7.75	0.04	1.05	1.02
APU	With Proposed Action	153.93	10.75	123.25	20.37	19.62	19.62
	No Action	151.60	10.63	122.24	20.13	19.40	19.40
	Difference	2.32	0.12	1.01	0.24	0.22	0.22
2030	Net Operational Emissions Totals	195.77	23.55	149.89	13.20	2.00	1.97

Source: HMMH, 2023

5.2.5 Construction and Operational Emissions - Combined

Table 5-9 lists the primary criteria pollutants generated by the Proposed Action during both construction and operational activities in 2024 (construction only), 2025 (implementation year, both construction and operation), and 2030 (operation only).

Table 5-9. Total Construction and Operational Emissions for Construction Year, Implementation Year, and +5 Years

Emission Source	NOx	VOCs	CO	SO ₂	PM ₁₀	PM _{2.5}
Construction Emissions	8.14	0.84	9.01	0.01	89.31	10.52
Operational Emissions	0.00	0.00	0.00	0.00	0.00	0.00
2024 Totals	8.14	0.84	9.01	0.01	89.31	10.52
Construction Emissions	3.69	0.26	2.29	0.01	49.98	5.84
Operational Emissions	195.53	23.54	149.91	13.19	2	1.97
2025 Totals	199.22	23.8	152.2	13.2	51.98	7.81
Construction Emissions	0.00	0.00	0.00	0.00	0.00	0.00
Operational Emissions	195.77	23.55	149.89	13.20	2.00	1.97
2030 Totals	195.77	23.55	149.89	13.20	2.00	1.97

Source: HDR 2022 and HMMH, 2023

5.2.6 Clean Air Act General Conformity

As previously stated, DFW Airport is located an area designated by the USEPA as a “*severe nonattainment*” area for an ozone standard promulgated by the USEPA in 2008. The DFW metroplex area is designated as a “*moderate nonattainment*” area for an ozone standard promulgated in 2015. CAA SIP conformance requirements [CAA Section 176 (c)] would apply to the Proposed Action if project-related emissions of ozone precursors: NOx or VOCs exceed *de minimis* thresholds. The 2008 ozone *de minimis* threshold is 25 tpy for both ozone precursor pollutants and presents the more restrictive *de minimis* level compared to the 2015 standard.

Therefore, the Proposed Action must demonstrate conformity to the SIP if project-related VOC or NOx emissions from both construction and operations are equal to or greater than 25 tons in any evaluated year. Based on the detailed analysis in **Appendix G**, estimated construction emissions would be well below the *de minimis* thresholds. The project-related operational emissions of NOx will exceed this *de minimis* level, and as a result, a General Conformity Determination is required. The General Conformity Determination including coordination with TCEQ are included as **Appendix G**,

5.2.7 Conformity Determination

The purpose of a General Conformity Determination is to document the results of the General Conformity applicability analysis, and to demonstrate that the emissions associated with the Proposed Action conform to the current SIP. **Table 5-10** summarizes the total direct and indirect project-related emissions and notes how those emissions compare to the applicable *de minimis* thresholds. One way to demonstrate conformance with the CAA regarding ozone is to document that precursor emissions are accounted for in the applicable SIP’s Attainment Demonstration [40 CFR Section 93.158(a)(1)]. The SIP directly applicable to the Proposed Action is the latest approved revision to the SIP, *the Dallas-Fort Worth and Houston-Galveston-Brazoria Serious Classification Reasonable Further Progress (RFP) State Implementation Plan Revision for the 2008 Eight-Hour Ozone National Ambient Air Quality Standard* (Project No. 2019-079-SIP-NR; 04 March 2020), approved by EPA on 24 April 2023 with the effective date of 24 May 2023.

To determine whether the Proposed Action emissions are accounted for in the DFW Serious RFP SIP Revision. FAA and DFW Airport staff met with TCEQ to review the Proposed Action and its expected emissions. TCEQ reviewed the Proposed Action emissions inventories, general conformity analysis, and general conformity determination and met with DFW and FAA to discuss analysis results. During those coordination meetings, TCEQ noted the attainment year emissions inventories approved in the SIP (Dallas-Fort Worth and Houston-Galveston-Brazoria Serious Classification RFP SIP Revision for the 2008 Eight-Hour Ozone National Ambient Air Quality Standard [Project No. 2019-079-SIP-NR; 04 March 2020]) as well as the quantification of overall excess creditable RFP emissions reductions available after meeting the milestone-year emissions reduction targets for NOx and VOC and establishing motor vehicle emissions budgets (MVEB) for transportation conformity (40 CFR §93.101). To assess conformity to the SIP for the

Table 5-10. Total Direct and Indirect Project (Proposed Action) Related Emissions (De minimis Threshold is 25 tpy for either NO_x or VOCs)

Year	Emissions Source	Is a General Conformity Determination Required?	NO _x (tpy)	NO _x (tpd)	VOC (tpy)	VOC (tpd)
2024	Construction – Non-Road	No	7.69	0.021	0.59	0.002
	Construction – On-Road		0.45	0.001	0.25	0.001
	Total Project-related Emissions		8.14	0.022	0.84	0.002
2025	Construction – Non-Road	Yes, for NO _x emissions	2.31	0.006	0.17	0.000
	Construction – On-Road		1.38	0.004	0.09	0.000
	Operational – Non-Road		195.53	0.536	23.54	0.064
	Total Project-related Emissions		199.22	0.550	23.80	0.064
2030	Construction	Yes, for NO _x emissions	N/A	N/A	N/A	N/A
	Operational- Non-Road		195.77	0.536	23.55	0.065
	Total Project-related Emissions		195.77	0.540	23.55	0.065

Source: HDR 2022 and HMMH, 2023

Proposed Action, TCEQ allocated the overall excess creditable RFP emissions reductions quantified in the applicable SIP according to source categories based on the RFP emissions reductions attributed to each source category. TCEQ compared emissions for the Proposed Action to those allocations. TCEQ confirmed that the maximum amount non-road source category emissions could increase due to projects not included in the approved SIP without changing the result of the RFP demonstration are 4.97 tons per day (tpd) NO_x and 4.77 tpd VOC. For on-road source category emissions, those amounts are 26.26 tpd NO_x and 12.55 tpd VOC

Based upon the emissions noted in **Table 5-10**, the emissions for the Proposed Action in tons per day are outlined below:

- Year 2025
 - On-Road Emissions for the Proposed Action are 0.004 tpd NO_x
 - Non-road Emissions for the Proposed Action are 0.542 tpd NO_x
- Years 2026-2030 (the reasonably foreseeable horizon)
 - Non-road Emissions for the Proposed Action are 0.536 tpd NO_x

In compliance with General Conformity regulations, TCEQ has reviewed the draft General Conformity Analysis and Determination for the Proposed Action and specifically checked for the project’s conformance to the current approved SIP (**Appendix G: General Conformity Determination and TCEQ Coordination**). Upon completion of the public review and comment period, FAA and TCEQ will complete the General Conformity process. Documentation of coordination efforts and any written concurrence will be included as an appendix to this DEA.

5.2.8 Mitigation and Best Management Practices

Operational emissions from the Proposed Action would exceed the General Conformity Rule applicability *de minimis* levels of 25 tpy for NO_x (see **Table 5-10**). As discussed in the General Conformity Determination, the Proposed Action would not delay attainment of the ozone standard (for which the DFW Metroplex is designated as Severe Nonattainment). TCEQ has informed the FAA that their concurrence with the Draft General Conformity Determination is forthcoming and will provide a letter as soon as possible.

The letter will be uploaded to <https://www.dfwairport.com/business/about/publications/> and accessible for review once it is received. Specific measures to mitigate and reduce the NO_x and VOC emissions (as precursors to ozone formation) would not be necessary. However, the Proposed Action will implement best management practices (BMPs) in an effort to reduce construction and operational project related emissions.

DFW is committed to implementing BMPs to reduce public health and environmental effects during construction and operation of the Proposed Action to the extent practicable. These BMPs are described in DFW's existing construction application review procedures, the Sustainability Management Plan, Green Building Standards, and the project specific Dust Control Plans implemented by contractors. DFW procedures and plans include overall design and construction standards for airport projects and aligns with DFW's ongoing efforts to implement more environmentally sustainable buildings and infrastructure.

All construction activities would be conducted consistent with all pertinent federal, state, and local laws, regulations, and standards as appropriate and/or adopted by DFW. The Proposed Action would be constructed in accordance with the provisions of the current version of FAA AC 150/5370-10, Standard Specifications for Construction of Airports. BMPs and measures that could be implemented to reduce pollutant emissions and minimize any temporary adverse effects on air quality include:

- Implementation of Dust Control Plan to reduce construction dust; control measures may include spraying water on dirt piles and streets/roads and reducing dust-generating activities in periods of high winds,
- Use of onsite dumpsters for scrap metal from construction, repair, and demolition activities,
- Use of the East Materials Management Site (East MMS) for onsite recycling or construction and demolition debris,
- Use of highly efficient off-road internal-combustion engine construction equipment that is EPA Tier-4 certified,
- Use of ultra-low sulfur diesel fuel in diesel-powered construction equipment, where practicable,
- Use of heavy-duty off-road diesel equipment with an engine model year of 2010 or later,
- Use of heavy-duty alternative fuel vehicles with an engine model year of 2010 or later,
- Limiting unnecessary idling times on diesel-powered engines, and
- Use of Low- and Zero-Emission on-road vehicles as well as use electrically powered equipment rather than diesel power equipment, where available.

5.3 Climate

Climate change is a global phenomenon that can have local impacts. As discussed in **Section 4.3**, scientific measurements show that Earth's climate is warming, with concurrent impacts including warmer air temperatures, increased sea level rise, increased storm activity, and an increased intensity in precipitation events. Research has shown there is a direct correlation between fuel combustion and GHG emissions.

Although there are no regulatory standards for CO₂ or other GHGs, the USEPA and the FAA traditionally work within the standard setting process of the International Civil Aviation Organization's (ICAO's) Committee on Aviation Environmental Protection (CAEP). The ICAO/CAEP leads the effort to establish international emission standards and related requirements that individual nations later adopt into domestic law. In 2009, based primarily on the scientific assessments of the United States Global Change Research Program, the National Research Council, the IPCC, and the USEPA issued a finding that it is reasonable to assume that changes in climate caused by elevated concentrations of GHG in the atmosphere endanger the health and welfare of current and future generations. By 2016, the USEPA acknowledged that scientific assessments "highlight the urgency of addressing the rising concentration of CO₂ in the atmosphere." In 2016, the ICAO/CAEP agreed on the first-ever international standards to regulate CO₂ emissions from aircraft. That same year, the USEPA formally announced that GHG emissions from certain classes of aircraft engines contribute to climate change. In 2017, the ICAO adopted a new aircraft CO₂ emission standard intended to reduce the impact of aviation GHG emissions on the global climate. The USEPA adopted the same GHG emissions standard on 11 January 2021, the first aircraft GHG-related standard in

United States history. The standard applies to civil subsonic jet aircraft and larger civil subsonic propeller-driven aircraft designed after January 2020 or in production by 2028.

In January 2023, CEQ issued the *Interim Guidance on Consideration of Greenhouse Gas Emissions and Climate Change*. In this interim Guidance, the CEQ states that “NEPA reviews should quantify proposed actions’ GHG emissions, place GHG emissions in appropriate context and disclose relevant GHG emissions and relevant climate impacts and identify alternatives and mitigation measures to avoid or reduce GHG emissions” (CEQ 2023). As such, when conducting climate change analyses in NEPA reviews, agencies should consider: (1) the potential effects of a proposed action on climate change, including by assessing both GHG emissions and reductions from the proposed action; and (2) the effects of climate change on a proposed action and its environmental impacts (CEQ 2023). Analyzing reasonably foreseeable climate effects in NEPA reviews helps ensure that decisions are based on the best available science and account for the urgency of the climate crisis. Climate change analysis also enables agencies to evaluate reasonable alternatives and mitigation measures that could avoid or reduce potential climate change-related effects and help address mounting climate resilience and adaptation challenges (CEQ 2023).

5.3.1 Significance Thresholds

Neither the FAA 1050.1F Desk Reference (2023), nor the 2023 CEQ interim guidance has established a set of GHG emissions thresholds for aviation or commercial space launch. Specific factors to consider in making the significance determination for GHG emissions have not been determined yet.

5.3.2 Methods

For this analysis, GHG emissions were quantified to enable the FAA to make an informed decision whether the Proposed Action would have the potential to cause significant climate change effects. GHG emissions inventories were modeled using MOVES3, and TxN2.2 for the construction emissions and AEDT version 3e for the operational emissions; in accordance with FAA guidance, aircraft GHG emissions were modeled for up to 10,000 ft AGL. The inventories were conducted to provide the estimate of the annual rate of GHG emissions attributable to airport sources (direct and indirect) for the No Action Alternative and the Proposed Action. The GHG emissions inventories were prepared using the same data and assumptions as developed for the air quality criteria pollutant emissions inventories. A comparison was made of the GHG inventories between the No Action Alternative and the Proposed Action to determine if there was an increase or reduction in GHG emissions attributed to the Proposed Action. **Appendix F** presents the methodology and inputs used to prepare the GHG emissions inventories. GHGs differ from each other in their ability to absorb energy and how long they stay in the atmosphere. The Global Warming Potential (GWP) was developed to allow comparisons of the global warming impacts of different gases by converting each gas amount to a carbon dioxide equivalent (CO_{2e}). GWPs provide a common unit of measure, which allows for one emission estimate of these different gases.

GWPs based on a 100-year period (GWP 100) provided in the FAA’s Aviation Emissions and Air Quality Handbook Version 3 Update 1 and based on the IPCC, Sixth Assessment Report (AR6) are used in this evaluation. CO₂ has a GWP of one (1) because it is the gas used as the reference point. Methane does not last as long in the atmosphere as CO₂; however, it absorbs much more energy. Therefore, 1 ton of methane has 34 times more heat capturing potential than 1 ton of CO₂. The amount of CH₄ emissions would be multiplied by 34 to determine its CO_{2e} value. Nitrous oxides last in the atmosphere far longer than CO₂. The amount of NO_x emissions would be multiplied by 265 to determine its CO_{2e} value. The GHG emissions inventories are presented in terms of metric tons per year of CO_{2e}.

GHG emissions inventories were developed for the following:

- No Action Alternative (2024, 2025, and 2030), and
- Proposed Action Alternative (2024, 2025, and 2030)

5.3.3 No Action Alternative

Under the No Action Alternative, the existing airport facilities would remain in place; there would not be any additional construction activities and cargo operations would continue to be constrained by the lack building and aircraft apron space. Therefore, there would be no additional climate-related effects not already occurring or expected to occur. The emissions presented in **Table 5-11** for aircraft emissions and fuel usage represent flight emissions up to 10,000 feet directly from AEDT along with APU and GSE. According to FAA Air Quality Guidance CH₄ emissions from aircraft gas turbine engines burning Jet A fuel are reported as 0; this is because years of scientific research and measurements conducted at the exhaust exit plane of commercial aircraft gas turbine engines have repeatedly indicated that CH₄ emissions are consumed over the full emission flight envelope. As a result, the USEPA published that: "...methane is no longer considered to be an emission from aircraft gas turbine engines burning Jet A at higher power settings and is, in fact, consumed in net at these higher powers." In accordance with the following statements in the 2006 IPCC Guidelines (IPCC 2006), the FAA does not calculate CH₄ emissions for either the domestic or international bunker commercial aircraft jet fuel emissions inventories. "Methane (CH₄) may be emitted by gas turbines during idle and by older technology engines, but recent data suggest that little or no CH₄ is emitted by modern engines. Current scientific understanding does not allow other gases (e.g., N₂O and CH₄) to be included in calculation of cruise emissions." (IPCC 1999).

Table 5-11. Estimated GHG (metric tpy) associated with the No Action Alternatives in 2024, 2025, and 2030

Year	Emissions Source/Activity	CO ₂	CH ₄	N ₂ O	CO _{2e}
2024*	Construction	N/A	N/A	N/A	N/A
2025 (Future NAA)	Operational	1,443,673.27	0	46.00	1,455,781.00
2030 (Future NAA + 5 years)	Operational	1,487,433.00	0	47.00	1,499,909.00

Note: *In 2024, under the No Action Alternative, there would be no construction-related emissions. Operational emissions would be similar to existing conditions.

5.3.4 Proposed Action Alternative

Sources of emissions for the Proposed Action include emissions of GHG from construction operations including construction equipment, motor vehicles, and operational emissions. These sources contribute to GHGs such as CO₂, CH₄, and N₂O, primarily due to fuel combustion. While emissions of HFCs, PFC1s, and SF₆ linked with refrigeration, air conditioning, and other coolants also occur at airports, these are at far lesser amounts (FAA, 2015) and are expected to be relatively negligible for this Project.

The Proposed Action construction emissions were analyzed for anticipated construction years 2024 through 2025 (**Appendix F**). The Proposed Action would result in GHG emissions from the demolition and construction activities as well as GHG emissions from increased cargo aircraft operations. The Proposed Action would generate GHG emissions from heavy-duty construction equipment activity, truck haul trips, and construction worker and vendor truck trips to and from the project areas. Construction emissions include both on-road mobile and off-road source categories. Mobile source exhaust emissions would be generated from on-road vehicles and construction equipment, including but not limited to dump trucks, mixers, passenger vehicles, flatbed trucks, and tractor trailers. GHG emissions of CO₂, CH₄, and N₂O were evaluated. A GHG emissions analysis was completed using the EPA's MOVES3, to determine the Proposed Action's potential GHG emissions-related impacts. The methodology used to prepare the DFW GHG emissions inventories is consistent with that described in **Section 5.2.3** above for air quality. **Table 5-12** shows the annual GHG emissions summary in metric tpy.

Table 5-12 shows the estimated GHG that would be released due to the construction and operation of the 19th Street Cargo Redevelopment Project (Proposed Action). As shown in **Table 5-12**, the construction and operation of the proposed 19th Street Cargo Redevelopment Project would result in minimal increase in the GHG emissions at DFW. There are no significance thresholds established for climate impacts, GHGs associated with the Proposed Action were calculated in accordance with the latest FAA guidelines (1050.1F) for climate impacts.

Table 5-12. GHG Emissions (metric tpy) resulting from the Proposed 19th Street Cargo Redevelopment

Year	Emissions Source/Activity	CO ₂	CH ₄	N ₂ O	CO _{2e}
2024	Construction	4,503.71	0.06	0.164	4,551.87
2025 (Build Out Year)	Construction & Operational	47,911.10	0.02	1.51	48,297.37
2030 (Build Out + 5 years)	Operational	46,123.00	0.00	1.46	46,509.00

Note:

1/ Per the [2014 IPCC Fifth Assessment Report](#) CO₂ equivalent for N₂O is calculated by multiplying the N₂O emissions by the GWP of 265. The CO₂ equivalent for CH₄ is calculated by multiplying the CH₄ emissions by the GWP of 28.

2/ According to FAA Air Quality Guidance CH₄ emissions from aircraft gas turbine engines burning Jet A are reported as zero; this is because years of scientific research and measurements conducted at the exhaust exit plane of commercial aircraft gas turbine engines have repeatedly indicated that CH₄ emissions are consumed over the full emission flight envelope.

Table 5-13 shows a comparison of the No Action Alternative GHG emissions and the Proposed Action GHG emissions that would be generated during the construction and operation of the 19th Street Cargo Redevelopment project. The Proposed Action would result in a minimal increase when compared to the No Action Alternative in 2024, 2025, and 2030. As shown in **Table 5-13**, when compared to the No Action Alternative, the CO_{2e} emissions that would be added by the Proposed Action would result in an incremental change of approximately 3 percent. As such, the construction and operation of the 19th Street Cargo Redevelopment Project would not cause a significant impact that is not already occurring under the No Action Alternative.

Table 5-13. Comparison of Proposed Action and No Action Alternatives GHG Emissions (metric tons)

Emissions Source/Activity	CO ₂	N ₂ O	CH ₄	CO _{2e}
2024 Construction of Proposed Action	1,123,732.86	35.48	0.16	1,133,167.99
No Action	1,119,229.15	35.42	-	1,128,616.12
Net Change/Difference	4,503.71	0.06	0.16	4,551.87
2024 Percent Change compared to No Action GHG Emissions	0.40%	0.17%	0%	0.40%
2025 Construction & Operation of Proposed Action	1,491,568.63	47.20	0.025	1,504,078.74
No Action	1,443,673.27	45.69	-	1,455,781.44
Net Change/Difference	47,895.36	1.51	0.03	48,297.30
2025 Percent Change compared to No Action GHG Emissions	3%	3%	0%	3%
2030 Proposed Action	1,533,556.12	48.54	-	1,546,418.25
No Action	1,487,433.46	47.08	-	1,499,908.75
Net Change/Difference	46,122.66	1.46	-	46,509.49
2030 Percent Change compared to No Action GHG Emissions	3%	3%	0%	3%

5.3.5 Estimated Social Cost of GHG Emissions from the 19th Street Cargo Redevelopment Project

The CEQ's *Interim Guidance on Consideration of Greenhouse Gas Emissions and Climate Change* provides guidance to assist federal agencies better assess and disclose climate impacts as they conduct environmental reviews under NEPA. This guidance is interim but is to be implemented upon release. This interim guidance recommends agencies contextualize greenhouse gas emissions by developing the social cost of carbon dioxide equivalents (SC-CO_{2e}) for their proposed actions. In compliance with the CEQ Interim Guidance (2023), the Social Cost of GHG emissions from the proposed 19th Street Cargo Redevelopment Project were calculated. These financial cost estimates provide additional context on project related GHG emissions and allow decision makers and the public to make the comparisons necessary to evaluate the significance of a Project's climate change effects. SC-CO_{2e} is an estimate of the economic costs, or damages, of emitting one additional ton of carbon dioxide into the atmosphere, and thus

the benefits of reducing emissions¹² (Brookings Institute, 2021). The calculated costs translate climate impacts into the more accessible metric of dollars and also help stakeholders understand the tradeoffs associated with an action when compared to the no build alternative.

The estimated social cost of GHG emissions provides an aggregated monetary measure (in U.S. dollars) of the future stream of damages and associated physical damages (e.g., changes in net agricultural productivity, human health effects, property damage from increased flood risk natural disasters, disruption of energy systems, risk of conflict, environmental migration, and the value of ecosystem services) associated with specified quantities of GHG resulting from the Proposed Action. To provide a contextualized monetary measure of the three main greenhouse gases, the social cost of GHG (SC-GHG) was calculated for the CO₂ equivalents of CO₂, CH₄, and N₂O emissions for the No Action and Proposed Action Alternatives. **Table 5-14** shows the Social Cost of Carbon Dioxide Equivalents (SC-CO₂e) associated with the construction and operation of the Proposed Action. These costs were calculated using the IWG 2021 *Technical Support Document (TSD): Social Cost of Carbon, Methane, and Nitrous Oxide* developed under EO 13990.

Table 5-14. Proposed Action Alternative Estimated Social Cost of Carbon Dioxide Equivalents (SC-CO₂e) in U.S. Dollars by IWG Average Discount Rate

Year	Project Emissions (tpy)	5%	3%	2.5%	3% 95th Percentile
2024	4,551.87	\$75,122.29	\$252,731.57	\$372,674.76	\$755,012.66
2025	48,297.30	\$820,935.16	\$2,734,302.21	\$4,019,485.85	\$8,186,800.85
2030	46,509.49	\$904,331.00	\$2,881,818.20	\$4,174,837.56	\$8,699,734.50

Source: HDR 2023, Social costs were calculated using the IWG Technical Support Document 2021

The SC-GHGs were calculated using the IWG average discount rates: 5 percent, 3 percent, 2.5 percent and the 95th percentile damage estimate using the 3 percent discount rate. The 5 percent, 3 percent, and 2.5 percent discount rates reflect the average damages from the multiple simulations at each of the three discount rates. The 95th percentile of damages estimated by applying the 3 percent discount rate reflect higher-than-expected economic impacts from climate change and the associated future economic effects; this is a low probability and high damage scenario that represents an upper bound of damages within the 3% discount rate model. The calculations of social costs for the four discount rates (5%, 3%, 2.5%, and 95th percentile of the 3%) were completed for GHG emissions in 2024, 2025, and 2030. The term “discount rate” refers to the reduction or discount in value per year as a future cost or benefit is adjusted to be comparable with a current cost or benefit from a proposed project. For this analysis, all three discount rates were used to estimate a range of global social costs from the increase in GHG emissions from the Proposed Action.

The social cost of GHG is estimated to range from \$75,122 to \$755,012 in 2024, when the Proposed Action is under construction. In 2025, the social cost is estimated to be between \$820,935 and \$8,186,800; this increase in estimated cost is due to continued construction activities as well as the implementation of the Proposed Action. In 2030, the estimated social cost is between \$904,311 and \$8,699,734; this is due to the continued operation of cargo aircraft associated with the Proposed Action. Although the actual project emissions decrease from 2025 to 2030, the assigned monetary value of a ton of each GHG increases; thereby, causing the slight increase in overall costs for all four discount rates. This range in costs represents the potential social costs associated with adding GHGs to the atmosphere in a given year. It includes the value of all climate change impacts, including (but not limited to) changes in net agricultural productivity, human health effects, property damage from increased flood risk natural disasters, disruption of energy systems, risk of conflict, environmental migration, and the value of ecosystem services.

The foregoing social costs are estimates only and are subject to change depending on a variety of factors. They are provided for disclosure and context, but such estimated costs may not actually result.

¹² Rennert, et al. 2001. The social cost of carbon. Advances in long-term probabilistic projections of population, GDP, emissions, and discount rates. Brookings Institute. Fall. <https://www.brookings.edu/articles/the-social-cost-of-carbon/#:~:text=The%20social%20cost%20of%20carbon%20is%20an%20estimate%20of%20the,the%20United%20States%20and%20abroad.>

5.3.6 Climate Preparedness and Adaptation

The environmental consequences section for climate also includes a discussion of the extent to which the Proposed Action and No Action Alternative could be affected by future climate conditions. DFW is aware that climate change, including severe weather events, floods, heat, inclement weather, and drought may have periodic impacts on DFW's operations. These risks are not new to DFW and North Texas; DFW has taken measures to reduce climate-related effects through implementation of sustainable design and site development guidelines as well as by developing and implementing practices and programs to improve resiliency and reduce risk.

Since 2010, DFW has reduced Scopes 1 and 2 carbon emissions by 80 percent and reduced energy costs by 23 percent; DFW also transitioned to using 100 percent wind generated electricity at DFW owned facilities. As the largest carbon-neutral airport in North America and the first in the world to achieve Level 4+ Airport Carbon Accreditation, DFW has also committed to achieving Net-Zero carbon emissions by 2030, 20 years ahead of goals set by the aviation industry. DFW continues to invest in sustainability and climate action initiatives to reduce emissions, improve efficiency, and proactively prepare to adapt the climate risks. DFW's sustainability initiatives which were developed to also help with climate risk preparedness and adaptation include:

- Tree conservation corridors to reduce urban heat island effect,
- Landscaping with native plants, designated floodplain buffer zones to protect water quality and preserve floodplain storage capacity,
- Purchasing 100 percent renewable electricity,
- Using renewable natural gas and renewable diesel, facilitating delivery of SAF,
- Investing and operating the electric Central Utility Plant (eCUP),
- Enhancing thermal energy storage systems to reduce cooling demands and costs,
- Electrifying fleet vehicles, busses, and GSE and installing the requisite charging stations,
- Turning waste into resources (using recycled materials instead of raw materials),
- Supporting transit-oriented development and enhancing DART and Trinity Metro access on the airport, and
- Evaluating strategies and opportunities to enhance energy efficiency, redundancy, and resiliency through onsite energy storage, net zero energy buildings, and microgrids.

5.3.7 Climate Impacts on Environmental Justice Communities

Climate change is a global phenomenon, thus environmental justice populations¹³ near DFW would not disproportionately bear climate change impacts from the Proposed Action. The Proposed Action would not result in disproportionately high and adverse impacts to minority and/or low-income populations when

¹³ According to EO 14096 (21 April 2023), environmental justice means the just treatment and meaningful involvement of all people, regardless of income, race, color, national origin, Tribal affiliation, or disability, in agency decision-making and other Federal activities that affect human health and the environment so that people: (i) are fully protected from disproportionate and adverse human health and environmental effects (including risks) and hazards, including those related to climate change, the cumulative impacts of environmental and other burdens, and the legacy of racism or other structural or systemic barriers; and (ii) have equitable access to a healthy, sustainable, and resilient environment in which to live, play, work, learn, grow, worship, and engage in cultural and subsistence practices. The EO preamble indicates that, "*Communities with environmental justice concerns face entrenched disparities that are often the legacy of racial discrimination and segregation, redlining, exclusionary zoning, and other discriminatory land use decisions or patterns. These decisions and patterns may include the placement of polluting industries, hazardous waste sites, and landfills in locations that cause cumulative impacts to the public health of communities and the routing of highways and other transportation corridors in ways that divide neighborhoods. These remnants of discrimination persist today. Communities with environmental justice concerns exist in all areas of the country, including urban and rural areas and areas within the boundaries of Tribal Nations and United States Territories. Such communities are found in geographic locations that have a significant proportion of people who have low incomes or are otherwise adversely affected by persistent poverty or inequality. Such communities are also found in places with a significant proportion of people of color, including individuals who are Black, Latino, Indigenous and Native American, Asian American, Native Hawaiian, and Pacific Islander. Communities with environmental justice concerns also include geographically dispersed and mobile populations, such as migrant farmworkers.*"

compared with the No Action Alternative. There are no known unique climate-related risks or concerns with the Proposed Action to environmental justice communities.

5.3.8 Avoidance, Minimization, and Mitigation Measures

An estimate of project construction GHG emissions is provided for informational purposes only; FAA has not identified specific factors to consider in making a significance determination for GHG emissions. Currently, there are no accepted methods for determining significance applicable to aviation or commercial space launch projects. The foregoing social costs are estimates only and are subject to change depending on a variety of factors. The estimates of emissions and the associated social costs do not reflect the actions that are being taken locally and internationally to consider reductions in aviation-related greenhouse gas emissions. Therefore, these estimates are considered potentially conservatively high. The estimated social costs of GHGs are provided for disclosure and context [but such estimated costs may not actually result]. They are provided for disclosure and context, but such estimated costs may not actually result. As such, no specific mitigation measures are proposed.

As noted in **Chapter 4**, DFW has voluntarily implemented aggressive best practices and measures to reduce emissions and improve efficiency as well as committed to achieving Net Zero carbon by 2030. Climate risks are being managed through sustainable design initiatives and policies as well as updates to the Design Manual, and other mitigation measures. These measures include reducing energy demand, ensuring a sustainable energy supply, investing in resilient energy infrastructure, and pursuing innovative technologies and energy management practices. The new eCUP scheduled to open in 2025 is one of the key solutions helping DFW adapt to climate change as well as reduce emissions and air quality impacts.

Although DFW has taken various measures to prepare and adapt to climate change risks and impacts, these risks would be present regardless of the alternative selected and would not be exacerbated by the Proposed Action. When considering the potential increase in GHG emissions due to the Proposed Action in the context of DFW's sustainable development requirements and climate action commitments, strategies, and goals, the Proposed Action would not have an adverse significant impact on climate.

5.4 Hazardous Materials, Solid Waste, and Pollution Prevention

5.4.1 Significance Thresholds

According to the FAA Order 1050.1F (2015), the FAA has not established a significance threshold for hazardous materials, solid waste, or pollution prevention. Order 1050.1F provides additional factors to consider, such as:

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

5.4.2 No Action Alternative

No impacts from hazardous materials and solid waste are expected as a result of the NAA, as no construction activities would occur. DFW would continue implementing its Contaminated Media Management Plan (CMMP) and waste management policies; furthermore, DFW would continue to maintain the existing monitoring wells as required by the 2020 Agreed Order Closure Agreement with the TCEQ. Therefore, there would be no hazardous materials or solid waste impacts not already occurring or expected to occur.

5.4.3 Proposed Action Alternative

5.4.3.1 Hazardous Materials

As previously discussed in **Section 4.6**, there is potential for the Proposed Action to disturb ACM as well as soil and groundwater with chlorinated solvents and total petroleum hydrocarbons (jet fuel). An asbestos survey was performed on Building 221, which identified ACM. Prior to building demolition, an experienced, permitted asbestos abatement contractor will abatement all ACM within the building. All abatement activities will be completed in compliance with all federal, state, and local regulations.

The contaminated media (chlorinated solvents and jet-fuel) would likely be disturbed during demolition and construction activities. Existing jet fuel lines in conflict with the proposed development, would either be removed from the ground or abandoned in place; requisite new jet fuel lines and hydrant fuel pits would be installed. Soil management and preliminary soil testing with the potential for detailed soil testing would likely be necessary during construction. Groundwater monitoring wells would be closed and relocated as needed (see **Figure 4-2**). Additionally, underground stormwater detention infrastructure would not be constructed near the existing monitoring well locations (**Figures 5-1** and **5-2**). All activities conducted in the TxVCP area will be overseen by DFW staff and coordinated with TCEQ to ensure on-going compliance with the VCP guidelines and all applicable regulations.

DFW maintains a CMMP that provides information and guidance on potential environmental concerns that may be encountered during the disturbance, excavation, and relocation of soils. All activities that involve disturbing or excavating soil would be performed in accordance with the CMMP and other applicable requirements.

Construction activities associated with the Proposed Action are expected to involve, the short-term use of hazardous and non-hazardous materials, and generation of wastes common to construction including reclaimed concrete, concrete wash-out liquids, petroleum hydrocarbon-based fuels, lubricants, oils, paints, and cleaning solvents. These materials would be handled, stored, and disposed of and in accordance with all applicable federal, state, or local regulations. As part of the DFW construction permitting process, DFW would require all contractors to submit detailed waste management reports and abide by those plans along with all applicable regulatory requirements.

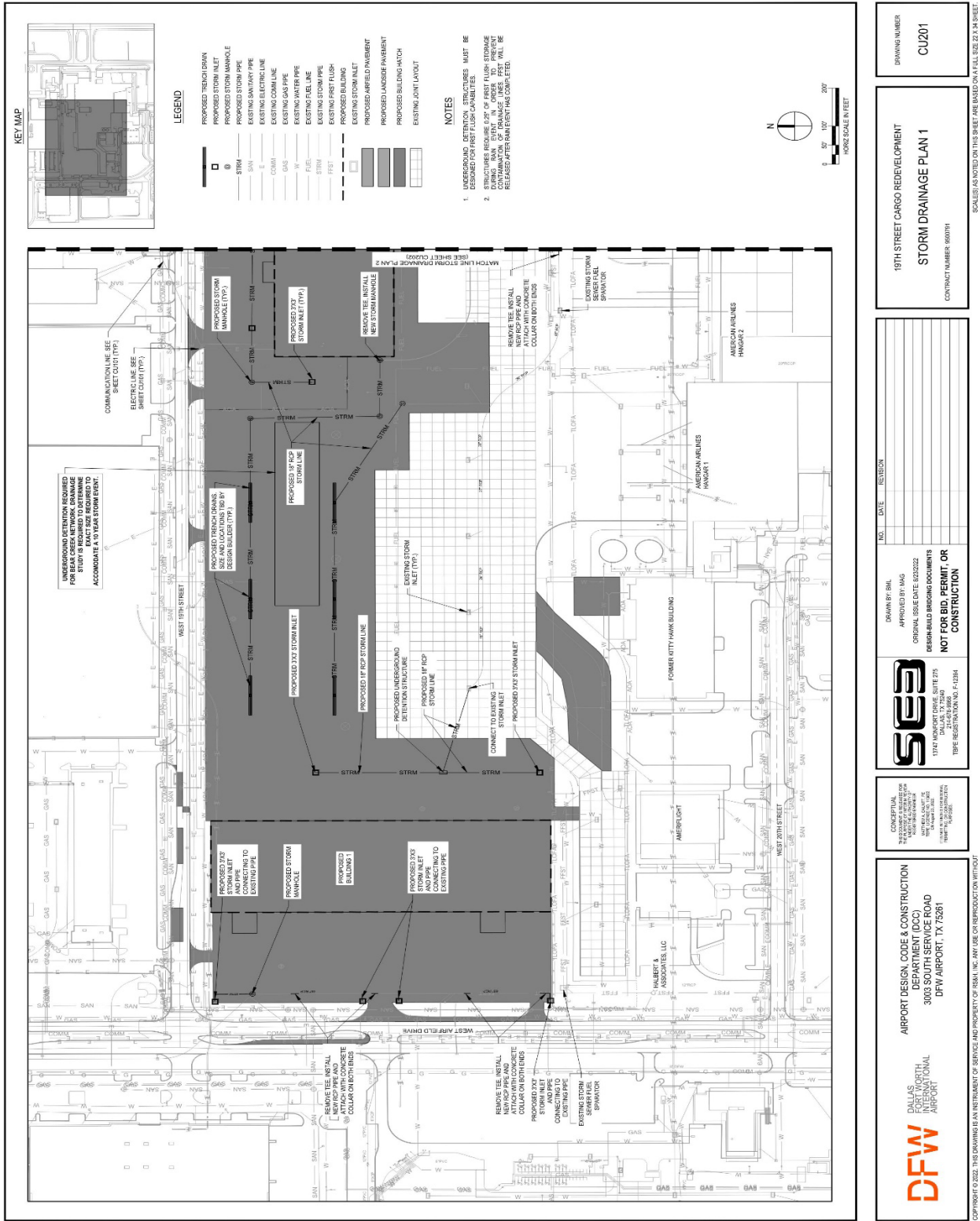
5.4.3.2 Solid Waste

Solid waste would be generated from construction and demolition debris associated with the Proposed Action. The Proposed Action would neither generate an unmanageable volume of solid waste nor affect DFW's existing solid waste management program. This solid waste would be disposed of in compliance with all applicable regulations. Waste management and disposal facilities are available in the Dallas Fort Worth area to accommodate the proper disposal of solid waste. There are several active, permitted landfills near DFW. Recycling of materials from demolition activities would be utilized to the extent possible.

5.4.3.3 Pollution Prevention

A Spill Prevention, Control, and Countermeasures (SPCC) Plan would be developed to document the measures that would be taken to prevent accidental release of any hazardous or regulated substances to the environment. In the event of a release, the SPCC would also include the corrective actions that would be deployed to minimize the environmental impact. Furthermore, appropriate materials management measures would be followed to prevent pollution and to minimize the use and manage disposal of hazardous and non-hazardous substances. With these measures, no significant impacts related to hazardous materials would occur because of the Proposed Action.

Figure 5-1. Proposed Underground Stormwater Detention Areas and Stormwater Infrastructure (West Side).



5.4.4 Mitigation

No significant impacts related to hazardous materials or solid waste would occur as a result of the Proposed Action due to DFW's robust hazardous material, hazardous wastes, and solid wastes policies, which would be in place for the project-related activities. As such, the Proposed Action would not have the potential to (1) violate applicable laws and regulations; (2) the Proposed Action does not involve a site listed on the NPL; (3) the Proposed Action does not produce an appreciably different quantity or type of hazardous waste; (4) generate an appreciably different quantity or type of solid waste or use a different method of collection or disposal and/or would not exceed local capacity; or (5) adversely affect human health and the environment.

DFW would comply with all federal, state, and local requirements with regard to generation, handling, and disposing of any waste produced during the construction of the proposed project. As part DFW's construction permitting process, DFW would require all contractors to submit detailed soil management and waste management plans and abide by those plans along with all applicable regulatory requirements. The contractor would develop a waste management plan and any contaminated media encountered during the construction of Proposed Action would be handled in accordance with the CMMP.

All asbestos abatement activities would be monitored by an Asbestos Inspector licensed by the DSHS to aid identification methods and procedures. The construction contractor would take appropriate measures to prevent, minimize, and control spills and release of hazardous materials in the construction staging yards and throughout the project area. Special provisions and contingency language would be included in the project's construction plans and specifications to manage hazardous materials and/or petroleum contaminated media according to applicable federal, state, and local regulations.

The Proposed Action would not have a significant impact on solid waste collection, landfill capacity, and waste disposal operations; therefore, mitigation is not required.

5.5 Historical, Architectural, Archeological, and Cultural Resources

5.5.1 Significance Thresholds

According to the FAA Order 1050.1F (July 2015), the FAA has not established a significance threshold for historical, architectural, archeological, and cultural resources. The FAA Order does note that a factor to be considered is whether the Proposed Action would result in an *Adverse Effects* finding through the NHPA Section 106 process.

5.5.2 No Action Alternative

Under the NAA, no impacts would occur to cultural resources because no construction or other activities would occur to potentially disturb cultural resources.

5.5.3 Proposed Action Alternative

For this analysis, the direct APE for the project encompassed the entire project area, containing all project sites within the urbanized west side of DFW. Ground disturbances associated with the Proposed Action would include pavement demolition, excavation, grading, and erosion control. Depths of impacts associated with the proposed project would generally be within 10 feet of the current ground surface.

A NHPA Section 106 Consultation for Historic Properties was completed for the Proposed Action (**Appendix E**). Based on the results of this analysis and previous investigations, the proposed project area has been exposed to previous ground disturbance and contains a low potential for containing either prehistoric or historic-age cultural resources. The Section 106 analysis concluded that no historic properties were present and there were no adverse effects from the project. On 02 January 2023, the SHPO concurred with the findings of the report.

5.5.4 Mitigation

No mitigation measures are proposed for historic or archeological resources. If any cultural resources are unearthed during construction, DFW would require that the operators immediately stop construction activities in that area. The project environmental consultant should then be contacted to initiate further consultation with THC prior to resuming construction activities.

5.6 Natural Resources and Energy Supply

5.6.1 Significance Thresholds

In accordance with FAA Order 1050.1F Desktop Reference (June 2023), the proposed action alternatives and connected actions were examined to identify any resulting measurable effects on local supplies of natural resources or energy. FAA Order 1050.1F (July 2015) has not established any significance thresholds for natural resources or energy supply. The Order requires that the Proposed Action and any connected actions be evaluated to identify any major changes that would have a measurable effect on local supplies of natural resources or energy. However, the FAA Order 1050.1F states that the use of natural resources other than for fuel, be examined, only if the action involves the need for unusual materials or those that are in short supply. The FAA Order 1050.1F further states that for most actions, changes in energy demands or other natural resource consumption will not result in significant impacts.

5.6.2 No Action Alternative

Under the NAA, the existing airport facilities would remain in place; there would not be any additional construction activities and cargo operations would continue to be constrained by the lack of building and aircraft apron space. Therefore, there would be no additional natural resources and energy supply effects not already occurring or expected to occur.

5.6.3 Proposed Action Alternative

Under the Proposed Action Alternative, there would be an increase in energy demand. The proposed project would include additional cargo warehouse buildings, lighting systems, and signage, which would increase electric power usage. However, there is sufficient capacity, and the local distribution infrastructure is expected to accommodate the increased demand. During construction of the Proposed Action, a temporary increase in fuel consumption is expected. However, no significant fuel supply impacts are expected. DFW Airport is a carbon neutral airport and uses 100 percent renewable energy for all its energy needs. No significant energy supply impacts are expected. In addition, no impacts to the existing energy infrastructure are anticipated.

5.6.4 Mitigation

No significant energy or natural resource impacts are anticipated. DFW is committed to sustainability and the continued reduction in natural resources and energy consumption. DFW is the only airport in North America to have achieved Level 4+ Transition certification through the Airport Carbon Accreditation (ACA). This accreditation level indicates that DFW has offset all residual carbon emissions over which it has control using internationally recognized offsets (ACA 2022). Since 2010, DFW has reduced absolute carbon emissions by 79 percent. DFW continues to move toward Net Zero Carbon and has identified 12 primary opportunity areas to continue carbon reductions, these include (1) on-site renewables, (2) DFW fleet electrification, (3) GSE electrification, (4) anaerobic digester, (5) renewable propane, (6) tree conservation, (7) deep energy retrofits, (8) RNG, (9) carbon removal, (10) Electric CUP, (11) 100 percent renewable electricity, and (12) gate electrification (DFW FY2020 ESG Report). As indicated by this list, the Electric Central Utility Plan and the other Proposed Action components are essential elements that mitigate natural resources and energy supplies utilized by DFW.

5.7 Noise and Noise Compatible Land Uses

5.7.1 Future (2025) No Action Alternative

Under the 2025 NAA, there would be no changes to the use of the 19th Street Cargo Facilities at DFW, cargo operations would be constrained due to lack of sufficient facilities and overall operational levels would grow to almost 801,000 operations.

5.7.1.1 Noise Exposure Contours

Table 5-15 provides estimates of the total area split between on and off airport areas exposed to aircraft noise of at least 65 DNL for the NAA. Approximately 11.66 mi² fall within the NAA (2025) 65 DNL or higher noise exposure area. Of the total land area, approximately 0.46 mi² exposed to 65 DNL or higher, is located off-DFW (the remaining 11.21 mi² are located on DFW property). **Table 5-15** summarizes the areas of noise exposure within each noise contour level (65 DNL, 70 DNL, and 75 DNL noise contours) for the NAA. **Figure 5-1** shows the annual noise exposure pattern at DFW for the NAA. Noise contours are presented for the 65 DNL, 70 DNL, and 75 DNL.

Table 5-15. Estimated Land Area within the No Action Alternative Future (2025) Noise Exposure Contours

Contour Range	Airport Property Estimated Land Area (mi ²)	Non-Airport Property Estimated Land Area (mi ²)	Total Estimated Land Area (mi ²)
DNL 65-70 dB	6.84	0.41	7.25
DNL 70-75 dB	2.11	0.05	2.15
DNL 75+ dB	2.26	0.00	2.26
Total	11.21	0.46	11.66

Source: HMMH, 2023

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.

Figure 5-3 provides the resultant DNL contours for the Future NAA. In the Future NAA, the DNL contours extend away from DFW on the northside in two main lobes along the extended centerline of the outboard parallel runway extending off DFW property to just north of Bethel Road, and on the southside in two main lobes along the extended centerline of the outboard parallel runway but remaining on DFW property. The 70 DNL contour barely extends off DFW property north of Runways 18R and 17C to across SH 114.

5.7.1.2 Noise Compatible Land Uses

There is no noise sensitive land use within the Future NAA 65 DNL or greater contours. There are no public schools, churches, nursing homes, hospitals, or libraries within any of the contours. Furthermore, there are no single family, multi-family, or manufactured housing within any of the Future NAA (2025) noise contours as shown in **Figure 5-4**.

5.7.2 Future (2025) Proposed Action Alternative

The Proposed Action Alternative is comprised of the demolition of one building and related infrastructure, configuration of two aircraft hardstand positions and the construction of two new cargo buildings and aircraft parking positions. The proposed changes will increase cargo capacity at DFW. Both buildings are expected to open in early 2025 with an additional five aircraft parking spaces. Therefore, 2025 is included in the EA as the implementation year.

The project would add five new positions at two turns per day or 20 additional daily operations (7,300 additional annual operations). Therefore, eight additional 747-400 daily operations and 12 additional 777-300 daily operations were added to the number of operations and fleet mix for the Future 2025 Proposed Action Alternative compared to the Future 2025 NAA.

Figure 5-3. No Action Alternative Future Year (2025) Noise Exposure Contours

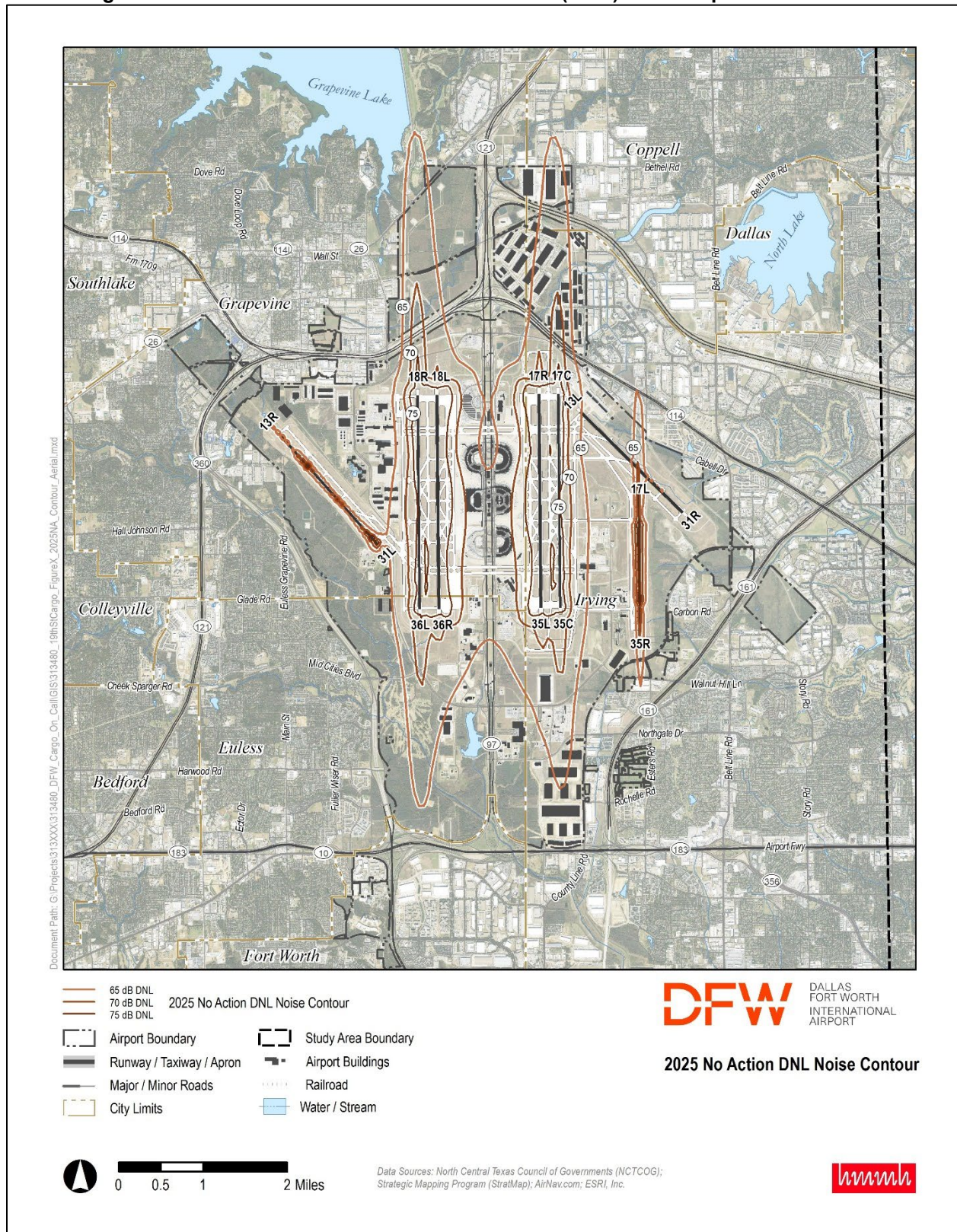
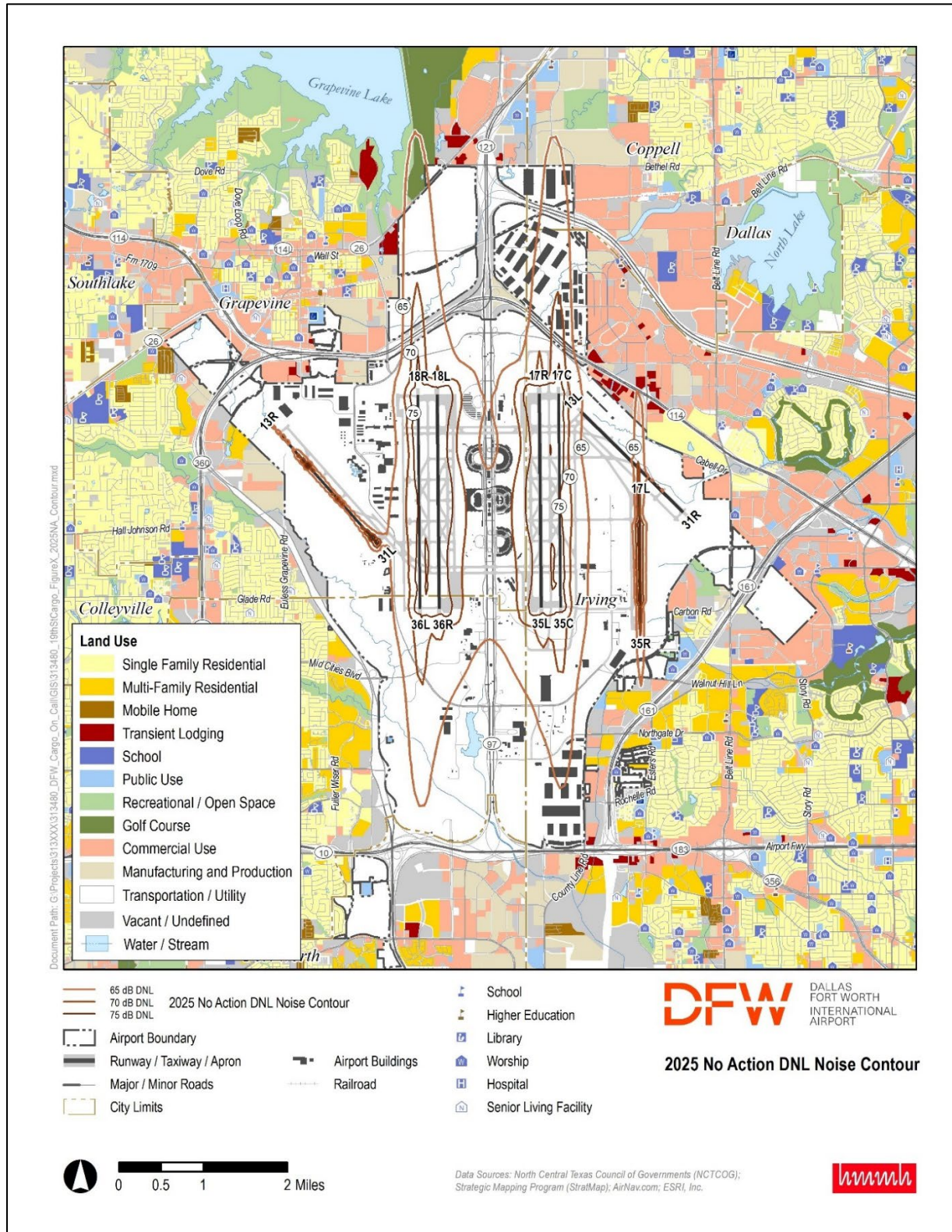


Figure 5-4. No Action Alternative Future Year (2025) Noise Exposure Contours with Surrounding Land Uses



5.7.2.1 Noise Exposure Contours

Each phase representing that portion of the redevelopment project was modeled in AEDT and then combined to generate a complete Proposed Action Alternative contour set. **Table 5-16** provides estimates of the total area split between on and off airport areas exposed to aircraft noise of at least 65 DNL for the Proposed Action Alternative. Approximately 11.95 mi² falls within the Proposed Action Alternative (2025) 65 DNL or higher noise exposure area. Of the total land area, approximately 0.51 mi² exposed to 65 DNL or higher, is located off-airport (the remaining 11.46 mi² are located on DFW property). **Table 5-16** summarizes the areas of noise exposure within each noise contour level (65 DNL, 70 DNL, and 75 DNL noise contours) for the Proposed Action Alternative. **Figure 5-5** shows the annual noise exposure pattern at DFW for the Proposed Action Alternative. Noise contours are presented for the 65 DNL, 70 DNL, and 75 DNL.

Table 5-16. Estimated Land Area within the Proposed Action Alternative (2025) Noise Exposure Contours

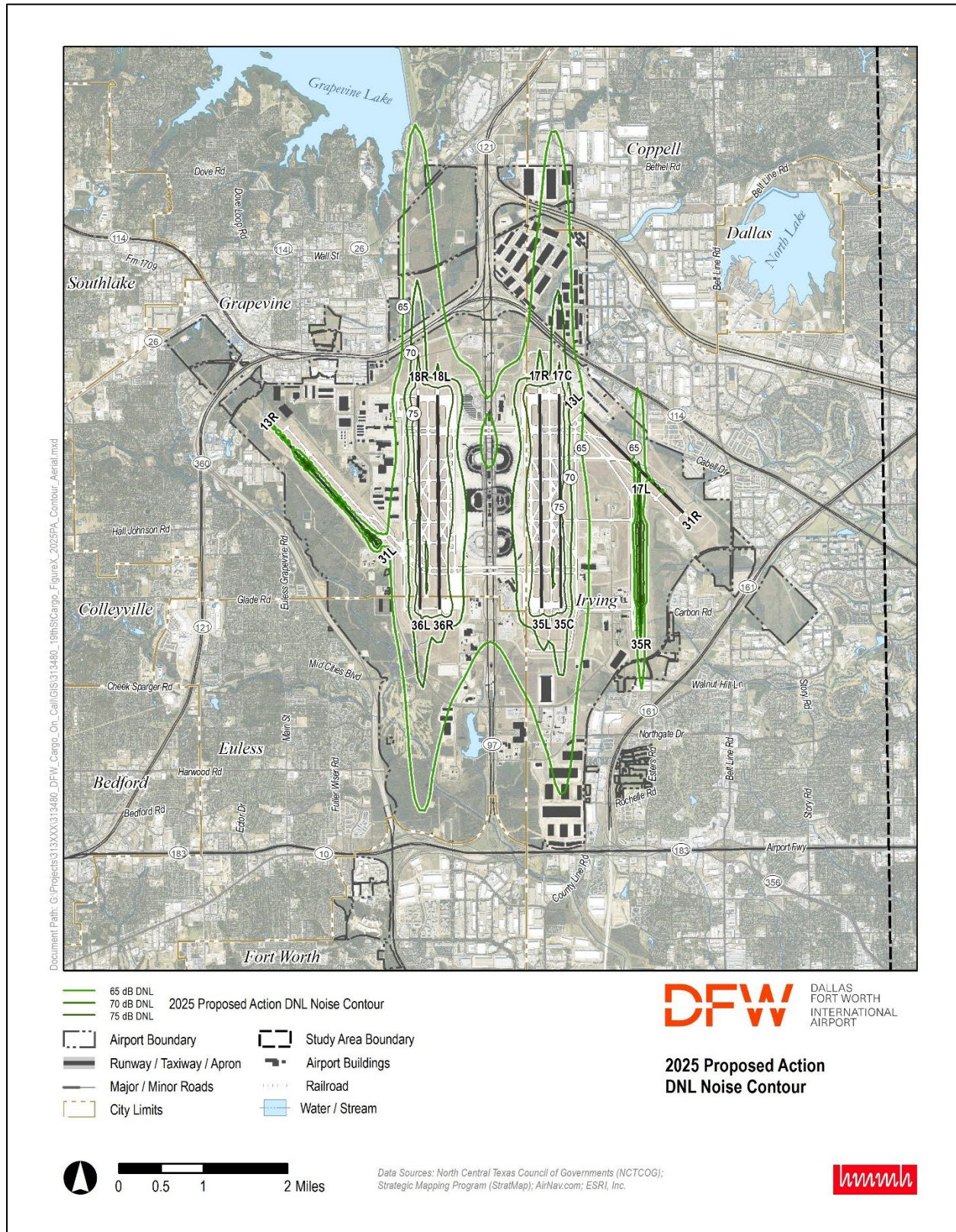
Contour Range	Airport Property Estimated Land Area (mi ²)	Non-Airport Property Estimated Land Area (mi ²)	Total Estimated Land Area (mi ²)
DNL 65-70 dB	7.00	0.46	7.45
DNL 70-75 dB	2.15	0.05	2.19
DNL 75+ dB	2.31	0.00	2.31
Total	11.46	0.51	11.95

Source: HMMH, 2023

Similar to the 2025 NAA, 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 5-5 provides the resultant DNL contours for the Proposed Action Alternative. In the Proposed Action Alternative, the DNL contours 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 to just north of Bethel Road. On the south side, the contour extends in two main lobes along the extended centerline of the outboard parallel runways but remains on airport property. The 65 DNL does extend off airport property north of Runway 17L and south of Runway 35R over compatible land use. The 70 DNL contour for the Proposed Action Alternative (2025) includes no noise sensitive land use and barely extends off DFW property north of Runways 18R and 17C to across SH 114.

Figure 5-5. Proposed Action Alternative Future Year (2025) Noise Exposure Contours



5.7.2.2 Noise Compatible Land Uses

There are no public schools, churches, nursing homes, hospitals, or libraries within any of the contours. Furthermore, there are no single family, or manufactured housing within any of the Proposed Action Alternative (2025) noise contours (**Figure 5-6**).

5.7.2.3 Comparison of Future (2025) No Action Alternative and Proposed Action Alternative

Table 5-17 provides estimates of the total area split between on and off airport areas exposed to aircraft noise of at least 65 DNL for the 2025 NAA and Proposed Action Alternatives. The noise exposure analysis results showed a slight increase in the estimated on and off-airport land area; this was due to the increased cargo operations during the Proposed Action. The noise analysis results showed that the 2025 Proposed Action would increase the estimated land area within the DNL 65+ dB noise exposure contour as compared to the 2025 NAA.

Figure 5-7 shows the comparison between the Future 2025 NAA and Proposed Action Alternative. Noise contours are presented for the 65 DNL. North of Runways 18R and 17C, the contour extends further to the north due to increased cargo arrivals to Runways 18R and 17C. The contour north of Runway 17L extends further north than the 2025 NAA due to increased arrivals to Runway 17L. The contour between Runways 18L and 17R expanded due to increased departures from Runways 36R and 35L.

Table 5-17. Estimated Land Area within Future Year (2025) Noise Exposure Contour Alternatives

Contour Range	Airport Property Estimated Land Area (mi ²)	Non-Airport Property Estimated Land Area (mi ²)	Total Estimated Land Area (mi ²)
DNL 65-70 dB	6.84	0.41	7.25
DNL 70-75 dB	2.11	0.05	2.15
DNL 75+ dB	2.26	0.00	2.26
No Action Alternative Total	11.21	0.46	11.66
DNL 65-70 dB	7.00	0.46	7.45
DNL 70-75 dB	2.15	0.05	2.19
DNL 75+ dB	2.31	0.00	2.31
Proposed Action Alternative Total	11.46	0.51	11.95
DNL 65-70 dB	0.16	0.05	0.20
DNL 70-75 dB	0.04	0.00	0.04
DNL 75+ dB	0.05	0.00	0.05
Difference (Proposed Action – No Action) Total	0.25	0.05	0.29

Source: HMMH, 2023

To the south of the airport, the contour south of Runways 36L and 35C extends further to the south due to increased arrivals to Runways 36L and 35C. Since the DNL contours are primarily on airport property and do not extend into any areas of non-compatible land use there are zero persons within the DNL 65 dB contour. There are no public schools, churches, nursing homes, hospitals, or libraries within any of the 65 DNL or greater contours. Furthermore, there are no single family, multi-family, or manufactured housing within any of the 65 DNL or greater contours.

Figure 5-6. Proposed Action Alternative Future Year (2025) Noise Exposure Contours and Surrounding Land Uses

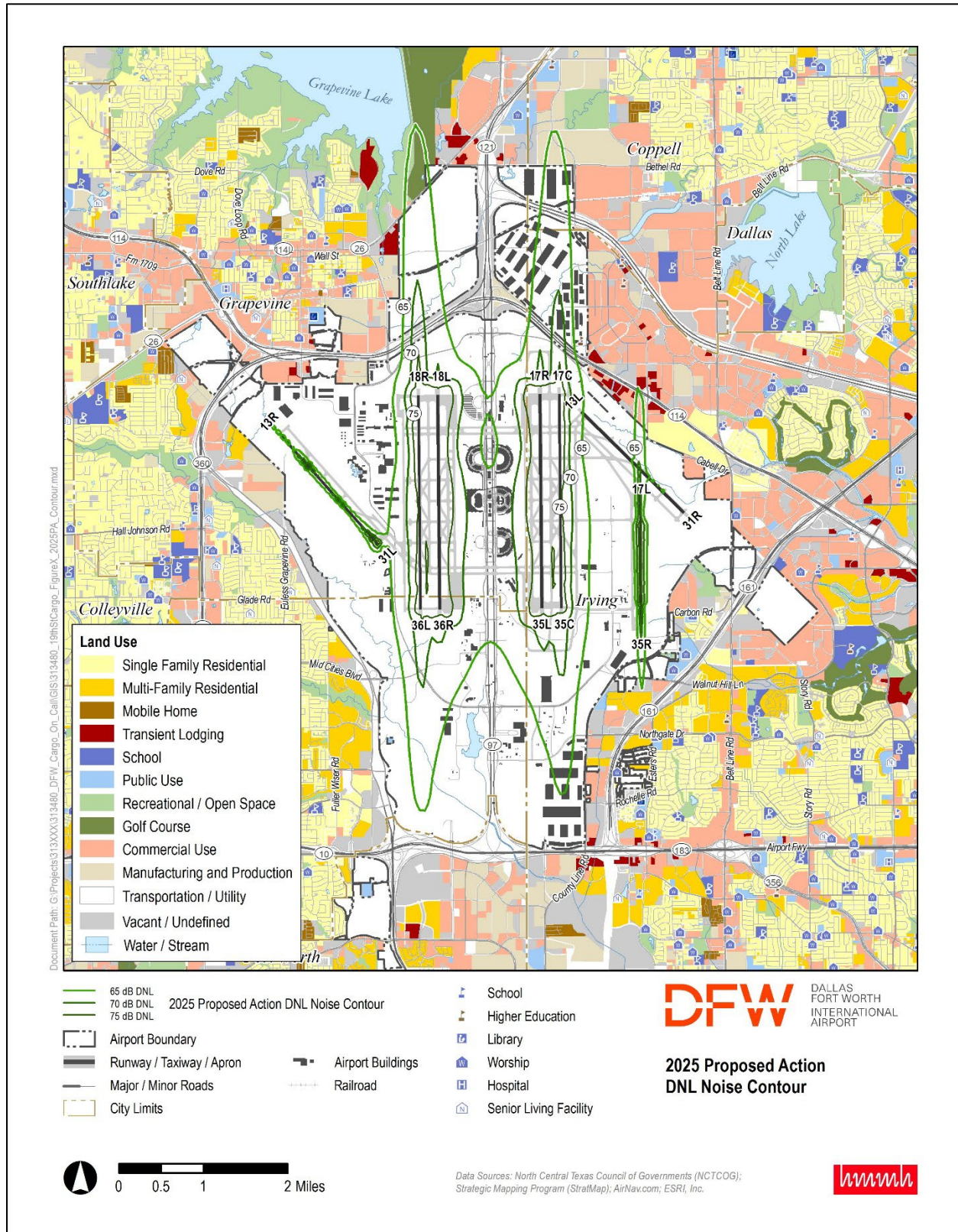
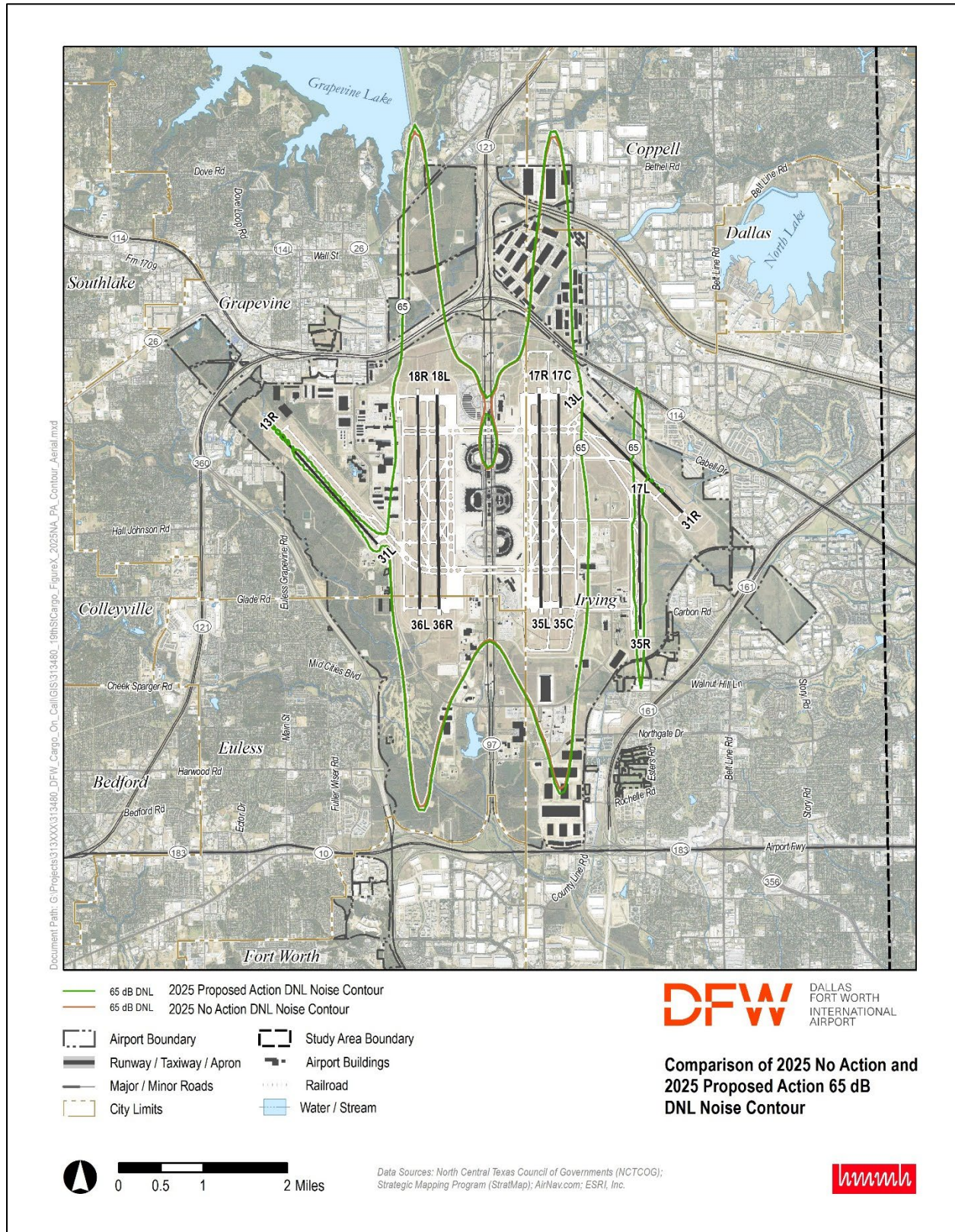


Figure 5-7. No Action Alternative and Proposed Action Alternative Future Year (2025) Noise Exposure Contours



5.7.3 Future (2030) No Action Alternative

Under the Future (2030) NAA, there would be no changes to the use of the 19th Street Cargo Facilities at DFW, cargo operations would be constrained due to lack of sufficient facilities and overall operational levels would grow to almost 811,000 operations.

5.7.3.1 Noise Exposure Contours

Table 5-18 provides estimates of the total area split between on and off airport areas exposed to aircraft noise of at least 65 DNL for the Future (2030) NAA. Approximately 11.88 mi² falls within the Future (2030) NAA 65 DNL or higher noise exposure area. Of the total land area, approximately 0.49 mi² exposed to 65 DNL or higher, is located off-DFW (the remaining 11.39 mi² are located on DFW property). **Table 5-27** summarizes the areas of noise exposure within each noise contour level (65 DNL, 70 DNL, and 75 DNL noise contours) for the Future (2030) NAA. **Figure 5-8** shows the annual noise exposure pattern at DFW for the Future (2030) NAA. Noise contours are presented for the 65 DNL, 70 DNL, and 75 DNL.

Similar to existing conditions and Future (2025) alternatives, 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.

Table 5-18. Estimated Land Area within the Future (2030) No Action Alternative Noise Exposure Contours

Contour Range	Airport Property Estimated Land Area (mi ²)	Non-Airport Property Estimated Land Area (mi ²)	Total Estimated Land Area (mi ²)
DNL 65-70 dB	6.95	0.44	7.39
DNL 70-75 dB	2.14	0.05	2.19
DNL 75+ dB	2.30	0.00	2.30
Total	11.39	0.49	11.88

Source: HMMH, 2023

Figure 5-8 provides the resultant DNL contours for the Future (2030) NAA. In the Future (2030) NAA, the DNL contours extend away from DFW on the northside in two main lobes along the extended centerline of the outboard parallel runway extending off DFW property to just north of Bethel Road, and on the southside in two main lobes along the extended centerline of the outboard parallel runway but remaining on DFW property. There is no noise sensitive land use within the Future (2030) NAA 65 DNL or greater contours. The 70 DNL contour barely extends off DFW property north of Runways 18R and 17C to across SH 114.

5.7.3.2 Noise Compatible Land Uses

There are no public schools, churches, nursing homes, hospitals, or libraries within any of the contours. Furthermore, there are no single family, multi-family, or manufactured housing within any of the Future (2030) NAA noise contours as shown in **Figure 5-9**.

5.7.4 Future (2030) Proposed Action Alternative

The Future Year (2030) Proposed Action Alternative is the implementation year (2025) plus 5 years. The proposed project will be completed in 2025. Therefore, there would be no additional cargo operations added for the Future Year (2030) Proposed Action Alternative as compared to the Future Year (2025) Proposed Action Alternative. Similar to Future Year (2025) Proposed Action Alternative, 8 additional 747-400 daily operations and 12 additional 777-300 daily operations were added to the number of operations and fleet mix for the Future Year (2030) Proposed Action Alternative compared to the Future Year (2030) NAA.

Figure 5-8. Future Year (2030) No Action Alternative Noise Exposure Contours

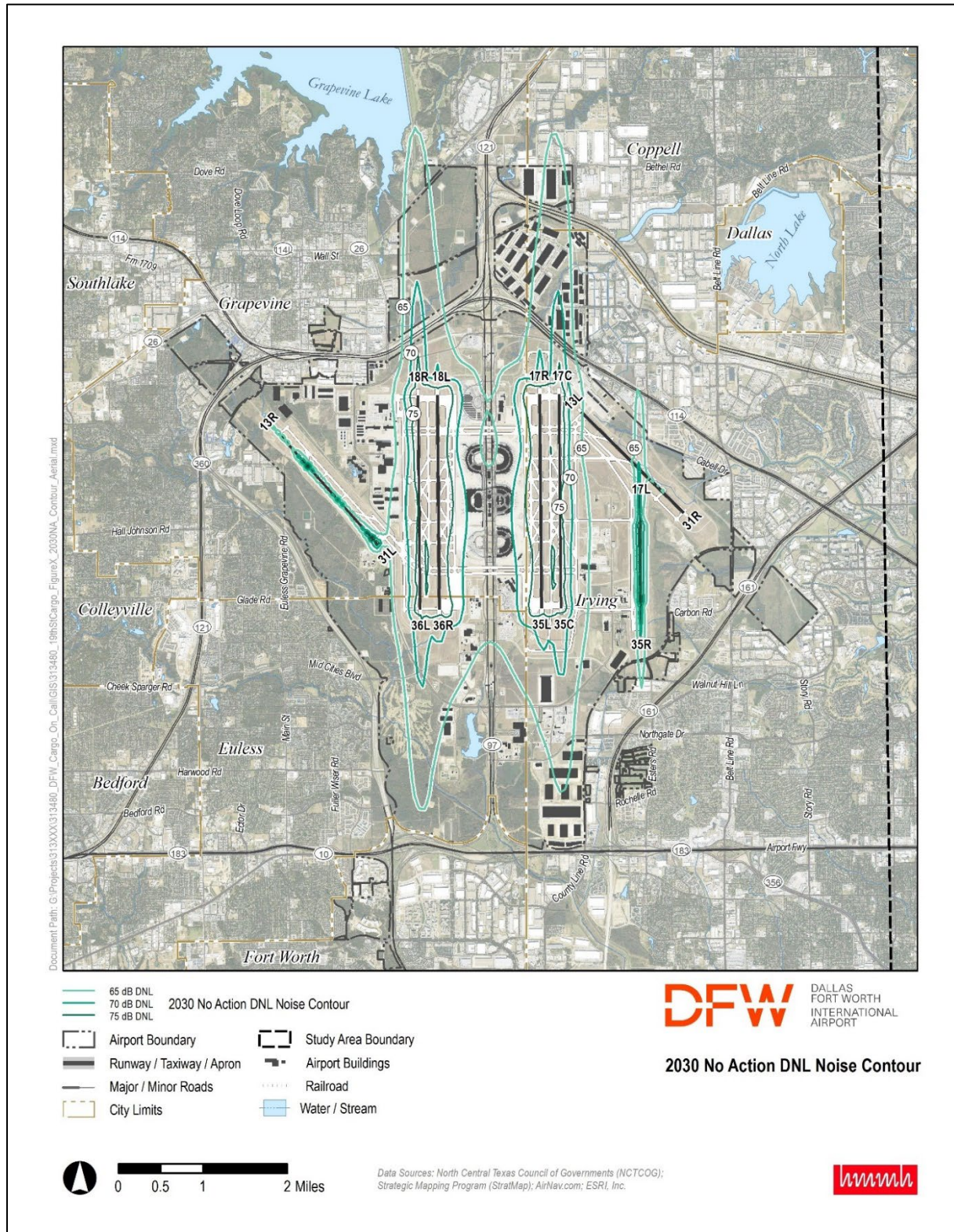
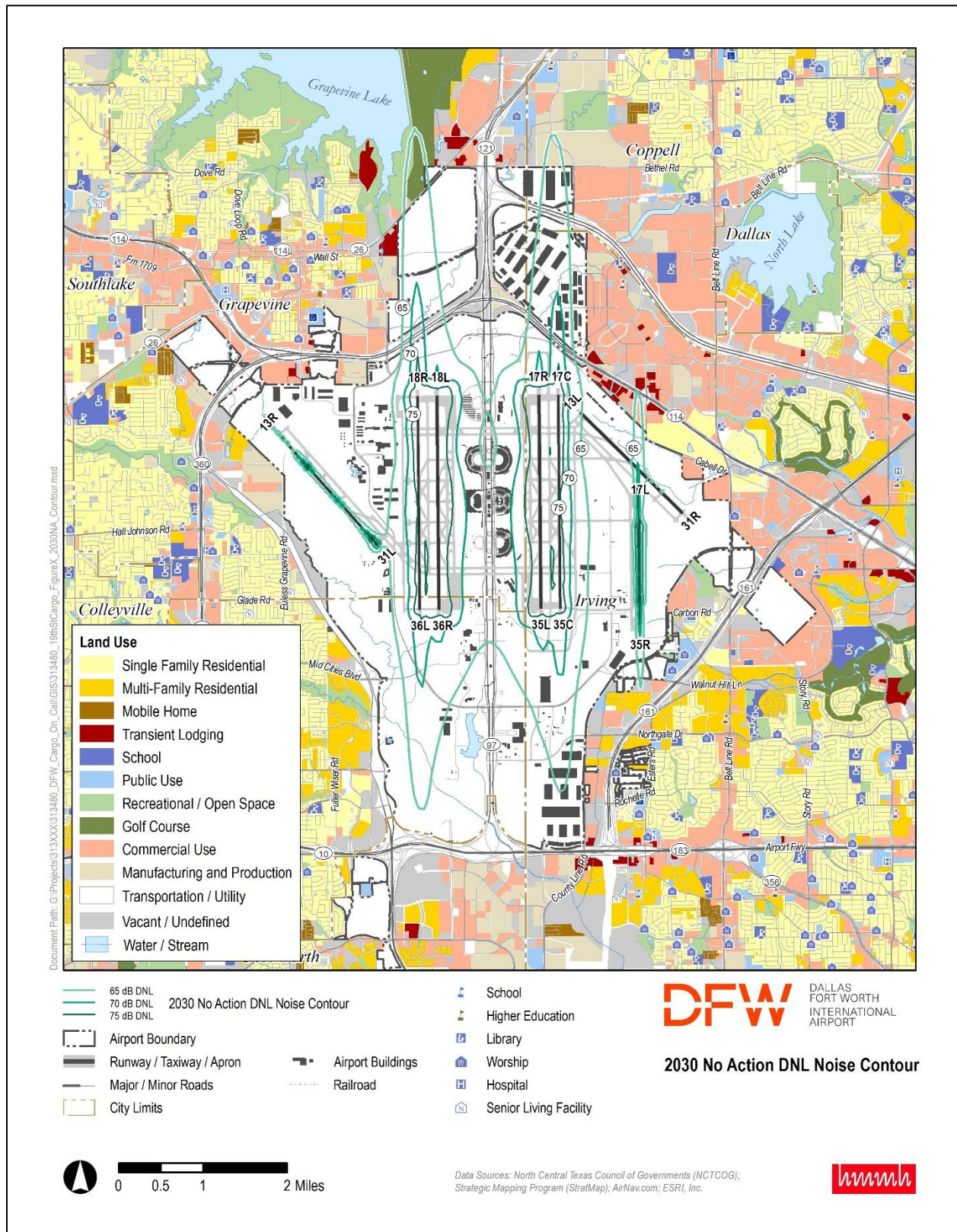


Figure 5-9. Future Year (2030) No Action Alternative Noise Exposure Contours and Surrounding Land Uses



5.7.4.1 Noise Exposure Contours

Each phase representing that portion of the redevelopment project was modeled in AEDT and then combined to generate a complete Proposed Action Alternative contour set. **Table 5-19** provides estimates of the total area split between on and off airport areas exposed to aircraft noise of at least 65 DNL for the Future Year (2030) Proposed Action Alternative. Approximately 12.20 mi² falls within the Future Year (2030) Proposed Action Alternative 65 DNL or higher noise exposure area. Of the total land area, approximately 0.54 mi² exposed to 65 DNL or higher, is located off-airport (the remaining 11.66 mi² are located on DFW property). **Table 5-19** summarizes the areas of noise exposure within each noise contour level (65 DNL, 70 DNL, and 75 DNL noise contours) for the Future Year (2030) Proposed Action Alternative. **Figure 5-10** shows the annual noise exposure pattern at DFW for the Proposed Action Alternative. Noise contours are presented for the 65 DNL, 70 DNL, and 75 DNL.

Table 5-19. Estimated Land Area within the Future Year (2030) Proposed Action Alternative Noise Exposure Contours

Contour Range	Airport Property Estimated Land Area (mi ²)	Non-Airport Property Estimated Land Area (mi ²)	Total Estimated Land Area (mi ²)
DNL 65-70 dB	7.12	0.49	7.61
DNL 70-75 dB	2.19	0.05	2.24
DNL 75+ dB	2.35	0.00	2.35
Total	11.66	0.54	12.20

Source: HMMH, 2023

5.7.4.2 Noise Compatible Land Uses

There are no public schools, churches, nursing homes, hospitals, or libraries within any of the contours. Furthermore, there are no single family or manufactured housing within any of the Future Year (2030) Proposed Action Alternative noise contours. **Figure 5-11** illustrates the Future Year (2030) Proposed Action Alternative noise exposure contours with the surrounding land uses.

5.7.4.3 Comparison of Future (2030) No Action Alternative and Proposed Action Alternative

Table 5-20 provides estimates of the total area split between on and off airport areas exposed to aircraft noise of at least 65 DNL for the Future Year (2030) NAA and Proposed Action Alternatives. The noise exposure analysis results showed a slight increase in the estimated on and off-airport land area; this was due to the increased cargo operations during the Future Year (2030) Proposed Action Alternative. The noise analysis results showed that the Future Year (2030) Proposed Action Alternative would increase the estimated land area within the DNL 65+ dB noise exposure contour as compared to the Future Year (2030) NAA (**Figure 5-12**).

Table 5-20 shows the comparison between the Future Year (2030) NAA and Proposed Action Alternative. Noise contours are presented for the 65 DNL. North of Runways 18R and 17C, the contour extends further to the north due to increased arrivals to Runways 18R and 17C. The contour north of Runway 17L extends further north than the 2030 NAA due to increased arrivals to Runway 17L. The area between Runways 18L and 17R increased due to increased departures from Runways 36R and 35L.

To the south of the airport, the contour south of Runways 36L and 35C extends further to the south due to increased arrivals to Runways 36L and 35C. The area between Runways 36R and 35L increases due to the increase in departures from Runways 18L and 17R. Since the DNL contours are primarily on airport property and do not extend into any areas of noncompatible land use there are zero persons within the DNL 65 dB contour. There are no public schools, churches, nursing homes, hospitals, or libraries within any of the 65 DNL or greater contours. Furthermore, there are no single family, multi family, or manufactured housing within any of the 65 DNL or greater contours.

Figure 5-10. Future Year (2030) Proposed Action Alternative Noise Exposure Contours

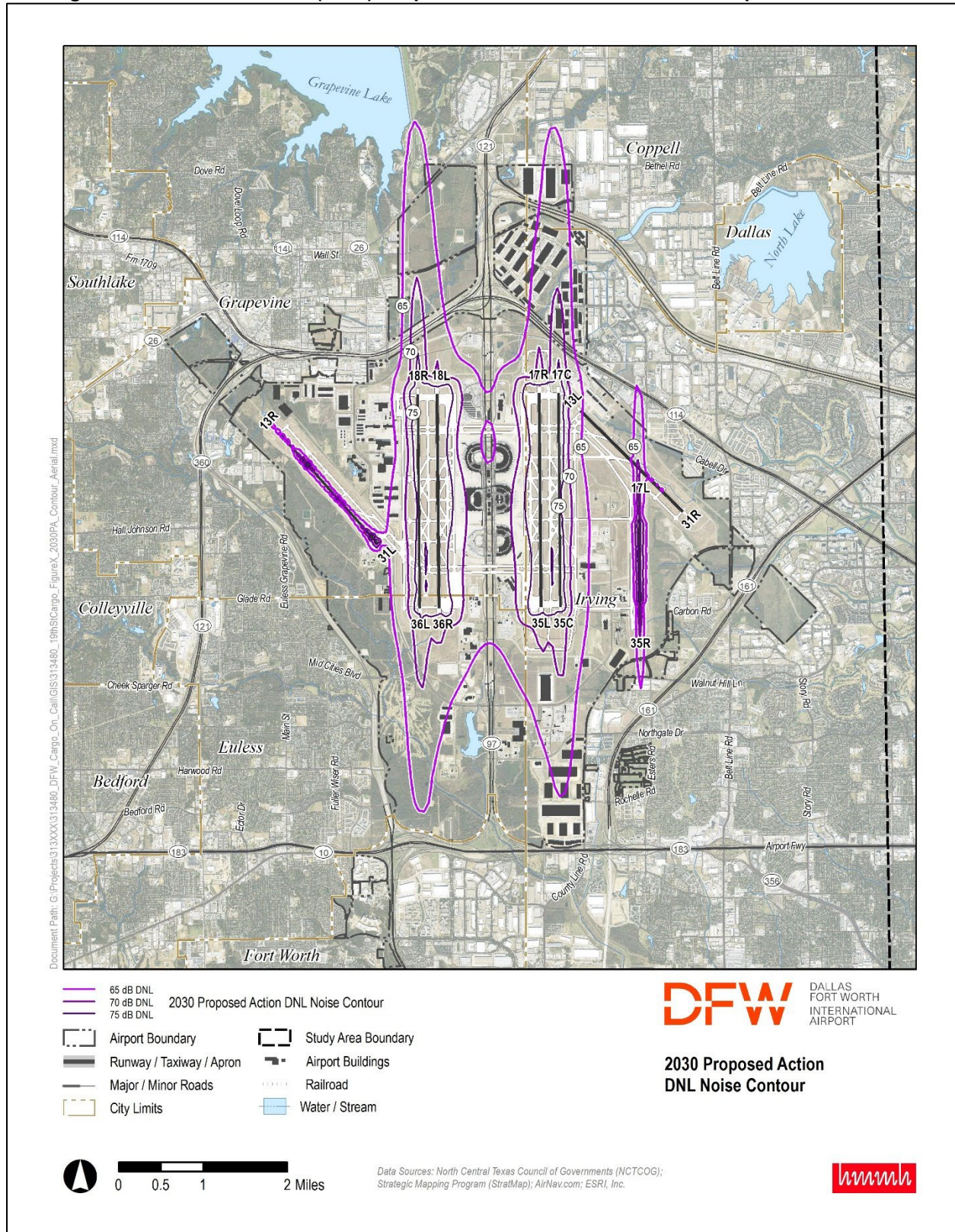


Figure 5-11. Future Year (2030) Proposed Action Alternative Noise Exposure Contours with Surrounding Land Uses

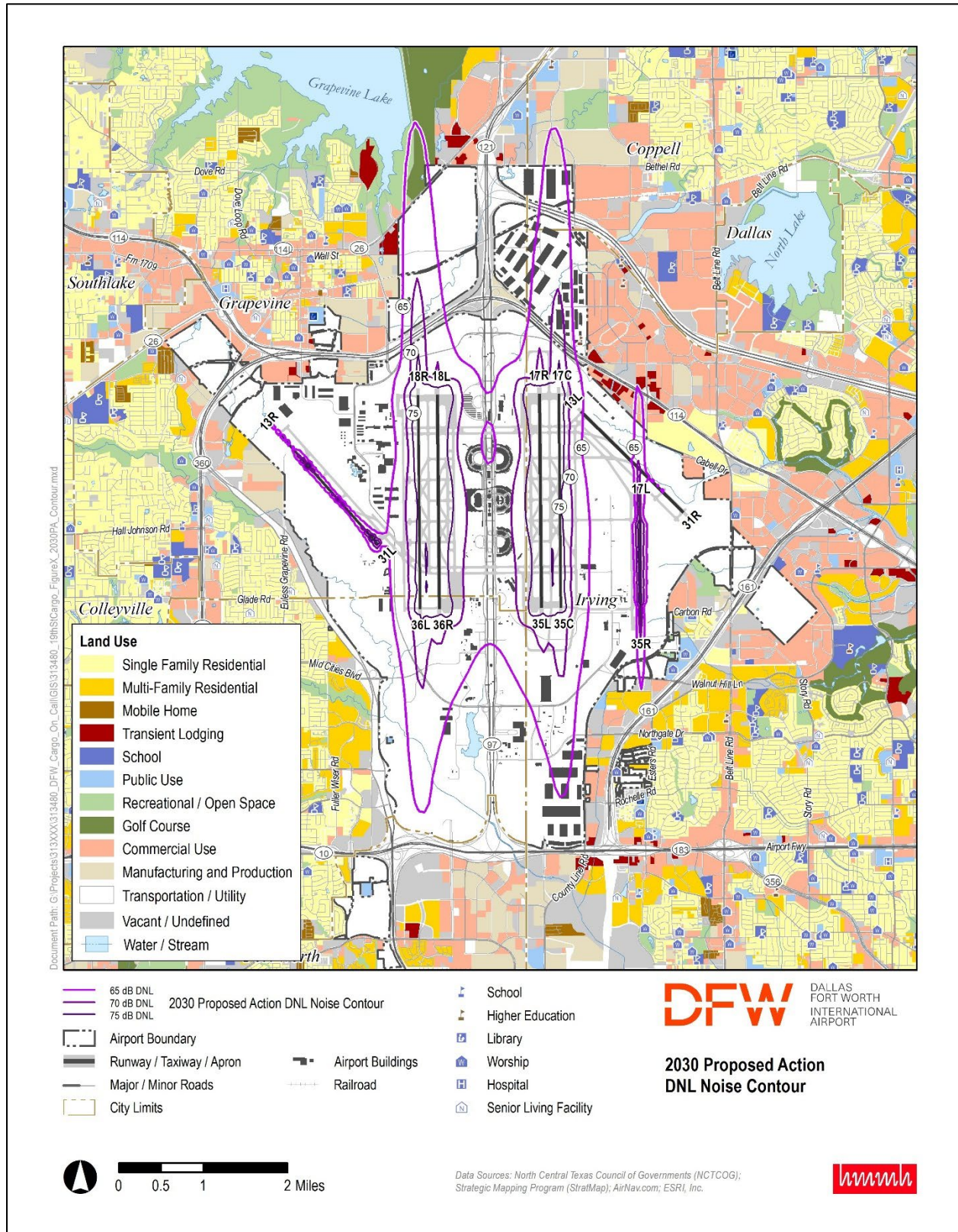


Table 5-20. Estimated Land Area within Future Year (2030) Noise Exposure Contours by Alternative

Contour Range	Airport Property Estimated Land Area (mi ²)	Non-Airport Property Estimated Land Area (mi ²)	Total Estimated Land Area (mi ²)
DNL 65-70 dB	6.95	0.44	7.39
DNL 70-75 dB	2.14	0.05	2.19
DNL 75+ dB	2.30	0.00	2.30
No Action Alternative Total	11.39	0.49	11.88
DNL 65-70 dB	7.12	0.49	7.61
DNL 70-75 dB	2.19	0.05	2.24
DNL 75+ dB	2.35	0.00	2.35
Proposed Action Alternative Total	11.66	0.54	12.20
DNL 65-70 dB	0.17	0.05	0.22
DNL 70-75 dB	0.05	0.00	0.05
DNL 75+ dB	0.05	0.00	0.05
Difference (Proposed Action – No Action) Total	0.27	0.05	0.32

Source: HMMH, 2023

5.7.5 Mitigation

A significant noise impact would occur if the analysis showed that the Future Years 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 NAA for the same timeframe. Neither Future Year Proposed Action Alternative results 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.

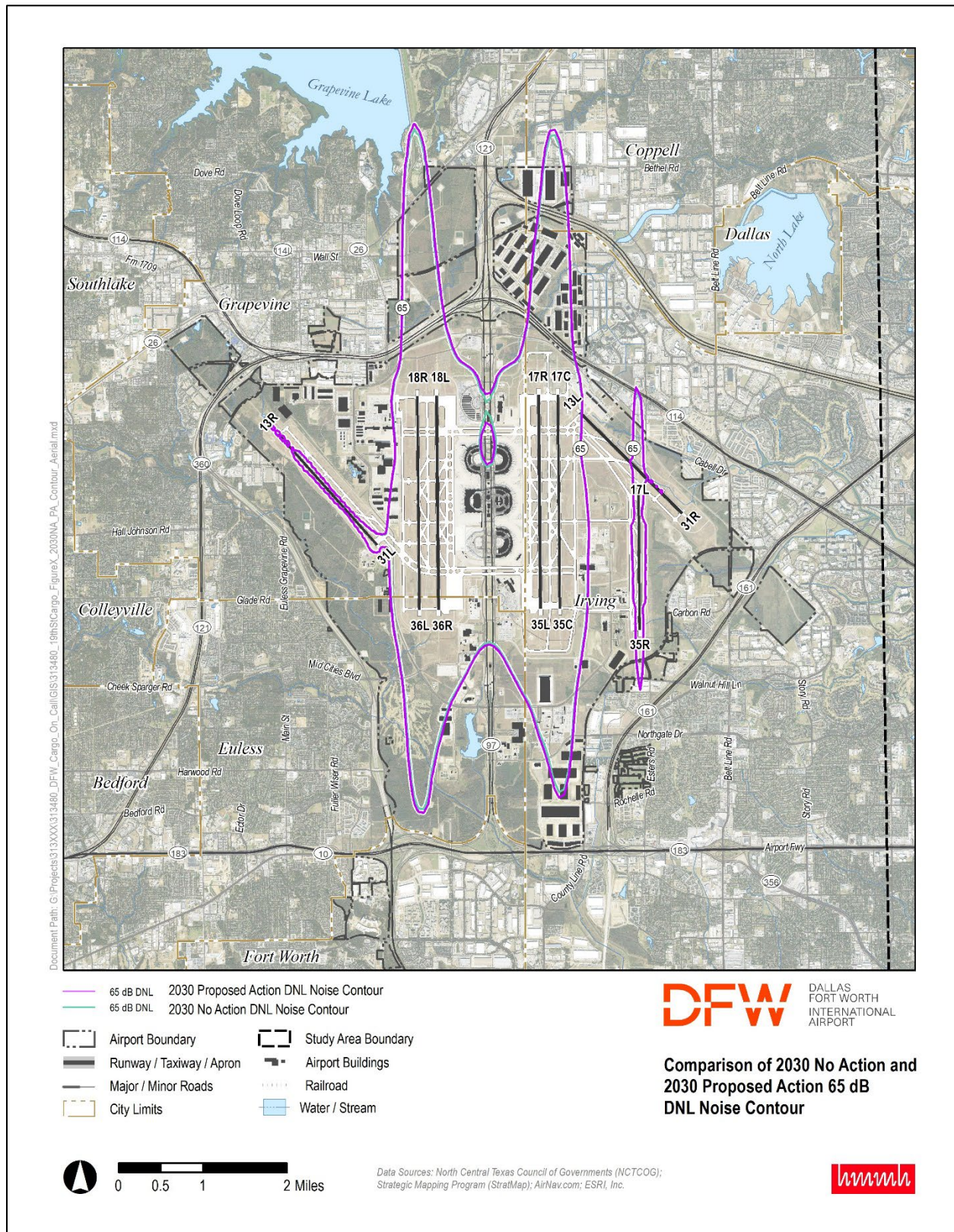
5.8 Visual Effects, Including Light Emissions

According to the FAA Order 1050.1F (February 2020), the FAA has not established a significance threshold for light emissions, visual resources, or visual character, all combined into visual effects. FAA has indicated that factors that should be taken into consideration include annoyance or interference of normal activities associated with light emissions or the affects to the visual character due to light emission, including importance, uniqueness, and aesthetic value. Other factors include blocking or obstructing the views of visual resources, the contrast of the proposed actions with the visual resources within the study area, and the proposed action effects on the visual character, importance, uniqueness, and aesthetic value of the visual resource.

5.8.1 No Action Alternative

Under the NAA, no new substantial effects from light emissions would result since no new construction would be undertaken. Therefore, there would be no additional visual effects not already occurring or expected to occur.

Figure 5-12. Future Year (2030) No Action Alternative and Proposed Action Alternative Noise Exposure Contours



5.8.2 Proposed Action Alternative

Light emissions include any light that emanates from a light source into the surrounding environment. Sources of light emissions within the existing DFW project area include high mast lights, building lights, navigation aids (NAVAIDS), and visual aids. The NAVAIDS facilities are comprised of multiple lighting systems, including the Approach Lighting System with Sequence Flashing Lights (ALSF-II). Visual aids located on runways and taxiways include high intensity runway edge lights, runway centerline lights, runway touchdown zone lights, runway status lights, runway end identifier lights, taxiway lead-on and lead-off lights, precision approach path indicators, taxiway edge lights and reflectors, taxiway centerline lights, and runway guard lights.

The Proposed Action Alternative would be illuminated by the same basic types of lighting currently used on the existing cargo buildings, parking lots, and cargo ramp areas. Therefore, lighting from the Proposed Action when compared to the NAA would not significantly increase the overall light emissions due to their type, intensity, and distance from any residential areas. There are no residential or light sensitive areas within or adjacent to the project area. The location of the new lighting systems would not negatively affect aircraft operations.

5.8.3 Mitigation

Light emissions created by the Proposed Action would not be significant enough to cause substantial annoyance for people in the vicinity nor interfere with normal airport activities. Therefore, no mitigation measures are recommended for light emissions.

5.9 Waters Resources – Surface and Stormwater Treatment

Consistent with FAA guidelines from the FAA Order 1050.1F (July 2015) and FAA Order 1050.1F Desk Reference (June 2023), this assessment was conducted with the primary aim of identifying the principal sources of water pollution and/or consumption connected with the construction and operation of the Proposed Projects (FAA, 1985).

5.9.1 Significance Thresholds

The FAA's significance threshold for surface water is presented in the following statement:

A significant impact exists if the action would: exceed water quality standards established by Federal, state, local, and tribal regulatory agencies; or contaminate public drinking water supply such that public health may be adversely affected. In addition to the threshold above, Exhibit 4-1 of FAA Order 1050.1F provides additional factors to consider when evaluating the context and intensity of potential environmental impacts for surface waters. Please note that these factors are not intended to be thresholds. If these factors exist, there is not necessarily a significant impact; rather, the FAA must evaluate these factors in light of context and intensity to determine if there are significant impacts. Factors to consider that may be applicable to surface waters include, but are not limited to, situations in which the proposed action or alternative(s) would have the potential to: adversely affect natural and beneficial water resource values to a degree that substantially diminishes or destroys such values; adversely affect surface waters such that the beneficial uses and values of such waters are appreciably diminished or can no longer be maintained and such impairment cannot be avoided or satisfactorily mitigated; or present difficulties based on water quality impacts when obtaining a permit or authorization.

5.9.2 No Action Alternative

Under the NAA, there would be no project-related impacts on water quality, as no project-related construction activities would occur. As a result, the quantity and quality of stormwater runoff, impacts to groundwater, and production of wastewater would remain largely unaffected. Therefore, there would be no impacts to stormwater not already occurring or expected to occur.

5.9.3 Proposed Action Alternative

The greatest potential impacts to surface water quality connected to the Proposed Action are associated with soil erosion, materials staging, and batch plant operations during the construction phase. Short-term

impacts to surface waters can result from construction activities creating increases in sedimentation and turbidity levels downstream. These construction activities may include pavement demolition, grading, and excavation of subsurface utilities.

The proposed project area is primarily located within an existing impervious area. Since most of the project area is adjacent to existing buildings, impervious surface, and highly maintained mixed herbaceous cover, the construction of the Proposed Action would not be expected to result in a material change in the stormwater runoff rates, discharge volumes, and pollutant characteristics of the stormwater runoff. DFW's existing stormwater treatment facilities (the first flush stormwater pre-treatment system) would be able to accommodate the stormwater runoff quantities.

The DFW Floodplain Manager reviewed conceptual design plans and drainage analysis which includes two new underground detention structures to capture stormwater from the cargo aircraft apron; the capacity of the detention structures would be determined during final design. The detention structures would be connected to the existing stormwater collection system (SWS) and First Flush Stormwater System (FFS) (see **Figures 5-1** and **5-2**). Based on the conceptual design and drainage analysis, effects from the Proposed Action would not adversely affect the existing velocities, create adverse conditions within the existing conveyance piping system, increase the 100-year floodplain, or increase the downstream inundation areas. The Proposed Action would comply with the guidelines and recommendations contained in the FAA AC 150/5320-5D Surface Drainage Design. Maintenance activities would include controls to clean pavement surface from any leaked fluids to reduce contamination of stormwater.

Water quality impacts would be fully minimized through the development and implementation of a Storm Water Pollution Prevention Plan (SW3P), BMPs, and structural controls, in compliance with the CWA Texas Pollutant Discharge Elimination System (TPDES) Construction General Permit (CGP) requirements as well as any other federal, state, and local requirements. Therefore, no significant adverse impacts would occur relative to surface waters.

5.9.4 Mitigation

At DFW, construction-related surface water quality impacts from stormwater runoff are minimized by BMPs as required by DFW's Design Criteria Manual revision 2 with Updates through 2022 (DFW 2022). These BMPs are designed to minimize soil erosion and the transport of debris and sediment in stormwater runoff. Implemented BMPs include silts fences, rock check dams, settling ponds, and good general housekeeping practices. In addition, all stormwater discharges from construction activities at DFW that result in the disturbance of 1 or more acres must comply with the TPDES permit conditions already established for DFW. A CGP SW3P, and all associated requirements would be implemented for the Proposed Action. Because of these water resource management policies and programs that are already in place at DFW, impacts to surface waters associated with the Proposed Action would not be expected to be significant; therefore, no mitigation would be required.

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SECTION 6 CUMULATIVE IMPACTS

According to the CEQ, a cumulative impact is “the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period time” (40 CFR §1508.7).

6.1 Past, Present, and Reasonably Foreseeable Future Actions

Past, present, and reasonably foreseeable future actions must be considered in determining whether there are potential cumulative impacts. Past actions are actions that occurred in the past and may warrant consideration in determining the environmental impacts of an action. Present actions are any other actions that are occurring in the same general time frame as the proposal. Reasonably foreseeable future actions are those that may affect projected impacts of a proposal and are not remote or speculative. **Table 6-1** identifies recent past, present, and reasonably foreseeable future actions within the vicinity of DFW.

Table 6-1. Past, Present, and Reasonably Foreseeable Future Actions

Project	Description	Status	Agency
DFW Central Terminal Area Expansion project	Terminal expansion and modernization project	In planning	DFW
DFW Ramp Efficiency and East Arfield Vault Project	Airfield ramp modifications and construction of new electrical vault for the east airfield	Planning & Start of construction	DFW
Cotton Belt (Silver) Line	New transit rail line	Under Construction	Dallas Area Rapid Transit (DART)
Department of Public Safety (DPS) Firing Range	Construction of modular building at DPS 4 for indoor shooting	Complete	DFW
DPS K9 Outdoor Dogs Runs	Extension of K9 outdoor dog runs and construction of canopies and sidewalks	Complete	DFW
American Airlines (AA) Campus Master Plan	Demolition and construction of several AA owned buildings located on DFW property	Under Construction	DFW
ARFF Station Consolidation East and West Locations	Consolidation of four existing ARFF stations into two new stations and associated roadway improvements	In Planning	DFW
Southwest (SW) Consolidated Campus	Design-Build strategic, world- class operations and infrastructure development consolidated campus. The Southwest Consolidated Campus will be designed to enhance operational readiness through use of the latest technology enterprises (hardware and software)	Underway	DFW

Project	Description	Status	Agency
Commerce Center	The project will include the construction of one warehouse/distribution building. The building will have loading docks with cross-dock configuration (loading on both sides) and trailer parking	Complete	DFW
Taxiway F Rehabilitation	The Taxiway F Rehabilitation includes demolition and reconstruction of asphalt shoulders along the full length of Taxiway F, removal and replacement of concrete panels on Taxiway F, concrete widening at the intersections of Taxiway F, and upgrades to taxiway lighting system.	Complete	DFW
Project Blue Sky – AA Headquarters	Demolition of old Sabre facility and construction of new AA headquarters	Complete	DFW
Northeast (NE) EAT	The NE EAT project site is in the NE quadrant, north of the thresholds of Runways 17R and 17C. The NE EAT will enable arriving aircraft on Runway 35C to exit the runway and taxi around Runways 17R and 17C using the EAT and enter the CTA on Taxiway J, without crossing an active runway. The NE EAT would also enable aircraft arriving on Runway 35R and 31R to use the same taxiing movements once exiting Taxiway Q.	Complete	DFW
Runway 18R/36L Rehabilitation	Rehabilitation of Runway 18R/36L and associated infrastructure	Complete	DFW
Northbound Access Road	Access road to bypass revenue plaza	Complete	DFW
Northwest (NW) Logistics	Car dealerships north of Mustang Drive and the addition of three warehouses and canopies to Group One Audi	Complete	DFW
Terminal C – High C Gates Demolition and Rebuild	Demolition and Rebuild of Terminal C Gates 33, 35-37, and 39	Complete	DFW
Terminal F Ramp	Expand Terminal F Ramp for Hardstand; install infrastructure for hydrants/deicing	Complete	DFW
Taxiway Y Bridge	Upgrading for Type VI aircraft	Complete	DFW
International Parkway	The project includes the reconstruction of the International Parkway roadway, north and south airfield drive bridges, and upgrades and modifications to the High Mast Lighting System.	Under Construction	DFW
Weber Gruene	The proposed project will consist of three industrial logistics buildings for the use of warehouse, distribution, office, logistics, and other uses	Under Construction	DFW
Project Integration Office (PIO)	The project is a part of the holistic design-build contract and includes the design, construction, and delivery of a PIO building.	Under Construction	DFW

Project	Description	Status	Agency
SW End-Around Taxiway (EAT)	Programming and Design services for the SW EAT	Under Construction	DFW
Passport 125	The project would include the construction of a concrete tilt wall industrial building, loading docks, and requisite utilities	Under Construction	DFW
Commerce Centers 2 and 3	The Project consists of concrete tilt wall industrial buildings developed in two main phases	Under Construction	DFW
Commerce Center 4	The proposed project consists of one concrete tilt-wall industrial distribution building	Under Construction	DFW
Runway 17L/35R Storm Drainpipe	The project is comprised of rehabilitation and replacement of storm drainpipes on Runway 17L/35R and all associated connecting taxiways within the runway environment	Under Construction	DFW
Pavement Remediation	This project will conduct needed pavement repairs across the AOA. These repairs include joint seal, crack repair, spall repair, and select panel replacement.	Under Construction	DFW
Soil Slope Remediation	This project is to remediate each of the soil slope failures and bridge wing wall wash outs	Under Construction	DFW
Passport Park East	Passport Park is a proposed mixed- use development capable of accommodating multiple big box retail anchors, junior anchors, and supporting specialty retail shops and restaurants. It will be located within the southeast (SE) quadrant of DFW Airport	Under Construction	DFW
East-West Connector from SH 360 to Rental Car Drive	Construction of east-west connector with up to 4 lanes, divided	Finalizing for Construction	TxDOT/DFW
Runway 17R/35L Rehabilitation	Rehabilitation of runway 17R-35L and associated infrastructure	Finalizing for Construction	DFW
Electric Central Utility Plan (eCUP) and Associated Utility Delivery Systems	The proposed project would include construction and operation of an Electric CUP along with rehabilitation, expansion, and upgrade of the main utility services distribution network.	Finalizing for Construction	DFW
Bear Creek Business Park	The proposed project is located on the southwest corner of the Airport and is proposed to be a business park with industrial and mixed. Use/retail buildings	In planning	DFW
Walnut Hill	The project consists of an industrial building and associated loading docks and utilities	Under Construction	DFW

Project	Description	Status	Agency
Passport Park West	Passport Park West will be developed as a single phase modern industrial park. The proposed project will include 7 buildings totaling over 2.7 million square feet which consist of 4 cross-dock distribution centers and 3 rear-load warehouses	In Planning	DFW
Employee Lot 5E	This proposed project is for reconstruction of Employee Parking Lot 5E due to significantly deteriorating pavement conditions	In Planning	DFW
OTHER TRANSPORTATION RELATED PROJECTS			
SH 121	Reconstruct Interstate Highway (IH) Loop 635 and Farm-to-Market Road (FM) 2499 interchanges	Complete	TxDOT
SH 161	Widen and reconstruct 4 to 8 general purpose lanes	Under Development	TxDOT
SH 183	Reconstruct 6 general purpose lanes; construct 0 to 2 concurrent High-Occupancy Vehicle (HOV)/managed lanes	Construction Scheduled	TxDOT
SH 114	Construction of up to 2 lane frontage road and ramp modifications, long term reconstruction of the remaining components of DFW Connector	Construction Scheduled	TxDOT
IH 635	Construction of up to 2 lane frontage road and ramp	Complete	TxDOT
TEXrail Corridor Rail Line	Construction of new commuter rail line	Complete	North Central Texas Council of Governments (NCTCOG)
Trinity Metro Rail Station at DFW Airport	New transit rail connection, DFW intermodal connection to Cotton Belt	Complete	Federal Transit Administration (FTA)
OFFICE/ WAREHOUSE PROJECTS NEAR DFW			
Irving IT Park Phase II	Multi-tenant office development south of SH 161	Under Construction	Private Development
Avion Business Park	Multi-tenant office development located northeast of SH 114	Under Construction	Private Development
Logistics Center 12	Multi-tenant flex warehouse office space located south of SH 161	Under Construction	Private Development
HOTEL PROJECTS NEAR DFW			
Hyatt Hotel Extended Stay at DFW	Extended stay hotel north of South Airfield Drive and east of the North Service Road. Will have 125 rooms.	Announced	DFW Hyatt Complex
Lifestyle Hotel Campus	Hotel campus located northeast of SH 114 with 325 rooms	Under Construction	Private Development
RESIDENTIAL HOUSING PROJECTS NEAR DFW			

Project	Description	Status	Agency
Elan Grapevine	Multi-family development west of Bear Creek, east of U.S. Highway (US) 360, with 324 units	Under Construction	Private Development
The Reserve at Bear Creek	Townhome development west of Bear Creek and east of US 360 with 71 units	Under Construction	Private Development
Sahyog Lifestyle Living	Single family residential development with 31 units north of SH 161	Under Construction	Private Development

6.2 Impact Areas

6.2.1 Air Quality

Other proposed airport development actions at DFW may produce air emissions from increased operations and/or construction activities. The timing of each project is dependent on several factors including, customer and airline demands, industry trends, and availability of funding. Definitive schedules of projects that would occur during the Proposed Action project-related construction schedule were not available at the time of this environmental review. The uncertainty related to the implementation schedules of future airport development projects, in conjunction with the Proposed Action, precludes meaningful quantification of potential cumulative impacts to air quality. However, for past projects within the boundaries of DFW, an air quality construction emissions inventory was completed under the NEPA process. Each project where construction emissions have been inventoried, emissions have been below *de minimis* levels. In addition, when future airport projects are ripe for construction, an air quality construction emissions inventory will be completed. The direct and cumulative impacts of these projects will be quantified and evaluated in the NEPA documentation submitted for FAA review.

6.2.2 Climate

The Proposed Action would result in GHG emissions. The reasonably foreseeable future actions identified in **Table 6-1** would also generate GHG emissions. When GHG emissions from both the Proposed Action are aggregated with GHG emissions from previously approved projects, there is potential for a cumulative increase in GHG emissions. Since aviation activity at DFW represents such a small number of United States and global emissions, and due to the related uncertainties involving the assessment of such emissions regionally and globally, the incremental contribution of the Proposed Action cannot be adequately assessed given the current state of the science and assessment methodology.

Currently, there are no accepted methods of determining significance for aviation project-related GHG emissions, given the small percentage of emissions contributed. Consistent with FAA 1050.1F Desk Reference, a projection of the GHG emissions was estimated. The analysis in this EA relies on a combination of the AEDT 3e, MOVES3, and TexN2.2 to calculate GHG emissions associated with the No Action and Proposed Action Alternative (see **Section 5.2.4**). Since the FAA has not established significance thresholds for climate, this section focuses on the disclosure of GHG emissions rather than on the effect determination.

Operational sources of CO₂ would occur during construction of the Proposed Action and after it has been completed. The potential for cumulative impacts to GHG emissions would result from the emissions associated with previously approved baseline projects (i.e., reasonably foreseeable emissions). These projects are considered to be present and/or reasonably foreseeable future actions and are forecast to continue through implementation of the Proposed Action.

There are currently no regulatory standards for GHG emissions. Therefore, the estimated increase in airport-related emissions for the Proposed Action Alternative does not require mitigation. Regardless, DFW is committed to using best practices to reduce effects on public health and the environment during construction and operation of the Proposed Action. These best practices are described in DFW's

Sustainability Management Plan¹⁴ and also outlined in DFW's initiatives to achieve net-zero carbon by 2030¹⁵. DFW has long standing partnerships with local cities, the U.S. Department of Energy, the FAA, as well as the North Central Texas Council of Governments (NCTCOG), to collaborate, develop and implement strategies that help reduce emissions and support climate preparedness, adaptation, and resiliency. Recently, the NCTCOG awarded DFW funding to purchase Zero Emission electric Cobuses that support hardstand aircraft operations. Over the past five years, the USDOE has provided DFW with funding and expertise to develop and deploy solutions that reduce emissions, optimize energy, and enhance resilience. Over the past 10 years, FAA has provided DFW with more than \$10 million grant funds to support fleet electrification and the purchase of electric vehicle charging infrastructure so as to reduce emissions from criteria and greenhouse gas air pollutants. Furthermore, DFW is partially owned by City of Dallas and benefits from the city's Comprehensive Environmental and Climate Action Plan (CECAP¹⁶) which includes strategies to reduce regional emissions that contribute to climate change.

6.2.3 Hazardous Materials

Through a preliminary review, several of the proposed DFW development actions could involve work in or near areas having known soil contamination or facilities and infrastructure with ACM. This would be subject to TxVCP involving buildings or locations at which potentially hazardous materials are used or stored. Other proposed area development actions may also involve sites with soil contamination and locations at which potentially hazardous materials are used or stored. The project sponsors would comply with federal, state, and local regulations governing hazardous materials and wastes.

The other airport projects, outside transportation projects, and private development projects would generate additional MSW and construction wastes. Growth in the DFW Metroplex has resulted in increased demand for services including solid waste collection and disposal services. Implementation of the other projects, particularly the land development projects, would result in further increased demand for solid waste handling/disposal facilities. Solid waste disposal services would be the responsibility of the local municipalities. There are several active, permitted landfills in the DFW area and there is no substantial collective capacity issues indicating that cumulative solid waste disposal would be of concern. The projects are not expected to have substantial impacts to any active, permitted landfill in the DFW area.

In summary, the limited hazardous material, pollution, and solid waste impacts of the Proposed Action, when considered in addition to similar impacts of other on- or off-airport projects would not be expected to lead to additional substantial impact in these areas.

6.2.4 Solid Waste

Since the Proposed Action is not expected to induce activity, the generation of MSW attributable to the Proposed Action is not expected to be materially different from the NAA. Given no expected increase in the MSW generation, no substantial cumulative impacts are expected. Other proposed future airport projects and nearby developments would generate additional MSW. Growth of the DFW Metroplex has resulted in the increased demand for various services including solid waste collection and disposal services. The implementation of other land development projects would result in further demand for solid waste handling and disposal services. Solid waste and disposal services and facilities would be the responsibility of local municipalities. There are several active, permitted landfills near DFW, and there is no substantive capacity issues indicating that solid waste handling and disposal would be of concern. The Proposed Action, and other area development projects would not be expected to have any cumulative impacts on active, permitted landfills within the DFW area.

¹⁴ [DFW Sustainability Management Plan](#) and [Sustainability Report](#)

¹⁵ [DFW Net-Zero by 2030 Sustainability North Stars](#)

¹⁶ The [Dallas Comprehensive Environmental Climate Action Plan](#) is a comprehensive roadmap that outlines the activities that the City will undertake to improve quality of life, to reduce greenhouse gas emissions, to prepare for the impacts of climate change, and to create a healthier and more prosperous community. It builds upon our understanding of future impacts from climate change, other environmental challenges facing Dallas, and the data from the 2015 City of Dallas greenhouse gas inventory. The CECAP leverages existing efforts by the City and builds upon an active public outreach and engagement effort to solicit input from businesses, community organizations, residents, and stakeholders, to create an effective and equitable Dallas plan that everyone can implement.

6.2.5 Historical, Architectural, Archeological, and Cultural Resources

There are no recorded historic sites or NRHP eligible historical resources within the areas associated with the proposed other airport development actions. Several recorded archeological sites are located on or near the airport. However, the sites are not considered eligible for inclusion on the NRHP, and the proposed airport development projects appear to have little potential to affect recorded or unrecorded sites.

It is possible that the other area development actions could directly or indirectly impact historical or archeological resources. Federal and state funded projects with potential for substantial impacts to archeological or historic resources would coordinate the potential impacts with the SHPO, document the project's impacts in the environmental documentation, and include mitigation measures if warranted.

The Proposed Action would not be expected to cause impacts to historic, architectural, archeological, or cultural resources. Therefore, the Proposed Action, when considered in addition to potential impacts of other on- or off-airport projects would not be expected to lead to additional substantial historic, architectural, archeological, or cultural resources impacted.

6.2.6 Water Resources – Surface Waters and Stormwater Treatment

Other proposed airport development actions could have the potential to exceed applicable water quality standards. Similar to the Proposed Action, the development actions would have construction-related impacts and several projects would result in additional stormwater run-off. It is assumed that similar design, controls, and BMPs would be implemented on projects at DFW to minimize water quality impacts. Implementation of other area development actions could also result in temporary and permanent impacts from land clearing, construction, and operations of the facilities. It is expected that major development actions would also include measures and practices to minimize impacts and not exceed water quality standards.

The limited water quality impacts of the Proposed Action, when considered in addition to similar impacts of other on- and off-airport projects would not be expected to lead to additional substantial water quality impacts.

6.3 Secondary and Induced Impacts

The Proposed Action and Connected Actions would not result in any substantial secondary (induced) impacts in terms of shifts in population movement and growth or changes in public service demands. Direct, indirect, and induced changes in business and economic activity from the proposed project would include a temporary increase in employment, output, and income associated with construction. The temporary increase in construction jobs would be expected to be filled by local workers. If needed, temporary non-local workers would be easily accommodated in the DFW Metroplex area. These impacts would support the anticipated long-term economic growth of the regional economy. The ability of DFW to continue to accommodate the efficient movement of passengers and cargo supports local economic development goals. Overall, the Proposed Action and Connected Actions would not result in significant secondary (induced) impacts.

No specific thresholds for significance for secondary (induced) impacts have been established in FAA Order 1050.1F, Exhibit 4-1, Significance Determination for FAA Actions. However, the proposed project would not include shifts in patterns of population movement or growth; public service demands; or changes in business and economic activity. Since the proposed project would not involve substantial induced or secondary impacts on surrounding communities, as described above, a significant impact threshold would not be exceeded.

The limited secondary (induced) impacts of the Proposed Action, when considered in addition to similar impacts of other on- or off-airport projects, are not expected to lead to substantial cumulative secondary impacts.

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SECTION 7 AGENCY COORDINATION

The development of this EA included coordination with affected Federal and State agencies. This coordination process informs the public and agencies and allows an opportunity to identify any possible environmental concerns during the EA process.

7.1 Agency Coordination

DFW consulted with FAA, TCEQ, EPA, and the THC during the development of the EA. Agency coordination with TCEQ and EPA consisted of scoping letters submitted to various divisions within the EPA and TCEQ on 28 October 2022 (**Appendix I**).

TCEQ provided comments on 04 November 2022, indicating that there would be no significant long-term effects so long as BMP were in place for construction and waste disposal activities. TCEQ requested an analysis of potential air quality effects, which were performed for this EA and found to be above the *de minimis* thresholds. As such, a General Conformity Determination was entered into as described in **Section 5.3.4 – Conformity Determination**.

No comments were received from EPA.

The THC was provided information through a cultural resources assessment associated with the 19th Street Cargo Redevelopment Project on 05 December 2022. THC provided concurrence on 02 January 2023 that no adverse effects to historic resources would result from the proposed project activities.

7.2 Public Involvement

DFW and FAA, to meet the NEPA and CAA requirements for public notification and comment, will place the Draft EA and Draft General Conformity Determination reports in publicly accessible locations via appointment with DFW. Additionally, notification will be provided for the opportunity to request a public meeting during the 30-day public comment period. These notifications will be published in the following:

- Dallas Morning News
- Fort Worth Star Telegram
- Al Día
- DFW Airport Website

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SECTION 8 PREPARERS

As required by FAA Order 5050.4A, paragraph 77, the names and qualifications of the principal persons contributing information to this PDEA are identified. It should be noted, in accordance with Section 1502.6 of the CEQ regulations, the efforts of an interdisciplinary team, consisting of technicians and experts in various fields were required to accomplish this study. Specialists involved in this EA included those in such fields as airport planning; noise assessment and abatement; land use planning; air quality; biology; historic, architectural, and archaeological resources; and other disciplines. It should also be noted, while an interdisciplinary approach has been used, all decisions made regarding the content and scope of this EA are those of DFW Airport.

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SECTION 9 REFERENCES

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APPENDIX A
DFW 19th Street Buildings 1 and 2 Project Definition Document

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APPENDIX B
Protected Species and Protected Habitat Assessment Report

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APPENDIX C
Hazardous Materials, Voluntary Clean-Up Program, and Asbestos Survey Report

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APPENDIX D
Noise Analysis Report

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APPENDIX E

Cultural and Historic Resources Survey Reports and SHPO Concurrence

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APPENDIX F

Air Quality Analysis – Construction and Operational Emissions – Reports

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APPENDIX G
General Conformity Determination Report

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APPENDIX H
Traffic Impact Analysis and Traffic Management Plan

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APPENDIX I
Agency Coordination

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APPENDIX J
Terminal Area Forecast

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APPENDIX K
DFW Aircraft Operations Memo

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