
# FINAL ENVIRONMENTAL ASSESSMENT

Alaska Cargo Cold Storage Project April 2024

| **Prepared for:** | **On behalf of the Sponsor:** | **Prepared by:** |
|---|---|---|
| U.S. Department of Transportation<br>Federal Aviation Administration<br>Alaska Region, Airports Division<br>222 W. 7th Ave., #14<br>Anchorage, Alaska 99513 | Ted Stevens Anchorage International Airport<br>5000 W International Airport Rd,<br>Anchorage, AK 99502 | DOWL<br>5015 Business Park Blvd, Suite 4000<br>Anchorage, Alaska 99503 |

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

Kristi Ponozzo
Responsible FAA Official

4/30/2024
Date

The following individuals can be contacted for additional information:

**Kristi Ponozzo**
**Federal Aviation Administration Alaska Region**
**Airports Division**
**222 W. 7th Ave., #14 Anchorage, Alaska 99513**
**(907) 271-3665**

**John Johansen**
**Deputy Airport Director, Planning and Development**
**Alaska Department of Transportation and Public Facilities**
**Ted Stevens Anchorage International Airport**
**(907) 266-2544**

This page intentionally left blank.

# TABLE OF CONTENTS

# FIGURES



# TABLES



# APPENDICES

# ACRONYMS & ABBREVIATIONS

ADEC ..... Alaska Department of Environmental Conservation
AEDC ..... Anchorage Economic Development Corporation
AFFF ..... Aqueous Film Forming Foam
AIAS ..... Alaska International Airport System
AJD ..... Approved Jurisdictional Determination
ALP ..... Airport Layout Plan
ANC ..... Ted Stevens Anchorage International Airport
AOA ..... Airport Operations Area
APE ..... Area of Potential Effect
AWMP ..... Anchorage Wetlands Management Plan
CAA ..... Clean Air Act
CEQ ..... Council on Environmental Quality
CFR ..... Code of Federal Regulations
CWA ..... Clean Water Act
dB ..... decibel
DNL ..... Day-Night Average Sound Level
DOT&PF ..... State of Alaska Department of Transportation and Public Facilities
EA ..... Environmental Assessment
EPA ..... U.S. Environmental Protection Agency
FAA ..... Federal Aviation Administration
GHG ..... Greenhouse Gas
HFC ..... Hydrofluorocarbon
IC ..... Institutional Controls
LUST ..... Leaking Underground Storage Tank
MOA ..... Municipality of Anchorage
NAAQS ..... National Ambient Air Quality Standards
NEPA ..... National Environmental Policy Act
NHPA ..... National Historic Preservation Act
PFAS ..... per- and -polyfluoroalkyl substances
PFOA ..... Perfluorooctanoic acid
PFOS ..... Perfluorooctanesulfonic acid
SHPO ..... State Historic Preservation Office

SIP ..... State Implementation Plan
SWPPP ..... Storm Water Pollution Prevention Plan
USACE ..... United States Army Corps of Engineers
USDA ..... United States Department of Agriculture
USDOT ..... United States Department of Transportation
USFWS ..... United States Fish and Wildlife Service

This page intentionally left blank.

# EXECUTIVE SUMMARY

Alaska Cargo and Cold Storage, LLC, under lease with Ted Stevens Anchorage International Airport (ANC), and in cooperation with the Federal Aviation Administration (FAA) proposes to construct an energy-efficient, climate-controlled air cargo warehouse facility and hardstand parking for cargo jets at ANC. The proposed development features may include the following:

- New Aircraft Parking Apron
- Climate-controlled Cargo Warehouse
- Hardstand Fuel Distribution
- Ground Support Equipment Shop and Parking
- Ancillary Space
- Road Connection to Postmark Drive

The proposed project will be incorporated into the Alaskan Airports Division Airport Layout Plan (ALP) and will require approval from the Federal Aviation Administration (FAA), and is subject to the National Environmental Policy Act (NEPA). Therefore an Environmental Assessment (EA) is being prepared.

A review was undertaken of the existing environmental conditions using the most current available data to identify potential environmental resources within the proposed project vicinity. This Draft EA describes the baseline conditions of resources that may be affected by the alternatives under review, including the Proposed Action and the No-Action alternatives. This Draft EA also discusses impacts to the existing environment resulting from the alternatives under review. Resources potentially affected by the Proposed Action included Air Quality, Biological Resources, Climate, Hazardous Waste, Historic and Cultural Resources, Noise, Visual Resources, Water Quality, and Wetlands. The evaluation of project impacts to protected resources show that no environmental resources will incur significant impacts as outlined in FAA by significance thresholds in FAA Order 1050.1F Section 4-3.3.

Scoping for the project was completed from May 29, 2022 to July 15, 2022. Comments received from public and agencies were incorporated into the Draft EA. The Draft EA was published for public and agency review on September 4, 2023 to open the public comment period which concluded October 15, 2023. A public meeting was held on October 3, 2023. Comments received from the public and agencies were incorporated into this Final EA. Please see Appendix G for a comment response log and reference to where in the Final EA changes were made. Changes include a sovereign nation government to government outreach summary, a brief discussion on the traffic conditions, revising the alternatives analysis to include Taxiway Zulu construction and NorthLink Aviation construction, revising the cumulative analyses to specifically include the adjacent FedEx proposal, and revising the the Climate Change section to conform with updated CEQ guidance.

This page intentionally left blank.

# 1.0 PROPOSED ACTION

Alaska Cargo and Cold Storage, LLC, under lease with Ted Stevens Anchorage International Airport (ANC), and in cooperation with the FAA proposes to construct infrastructure for climate-controlled cargo warehouse facilities at ANC.

Alaska Cargo and Cold Storage holds a 55-year lease for approximately 29 acres of airport land and is proposing to develop critical airport infrastructure to support growing cargo volumes at ANC. The proposed project features may include the following:

- New Aircraft Parking Apron (eight hardstands)
- Climate-controlled Cargo Warehouse
- Hardstand Fuel Distribution
- Ground Support Equipment Shop and Parking
- Ancillary Space
- Road Connection to Postmark Drive

The proposed project location is on the east side of the airport; east of Runway 15/33, south of Taxiway P, west of Postmark Drive, and north of the Aircraft Rescue and Fire Fighting Station. The area is in Section 28, Township 13N, Range 4W, Seward Meridian; U.S. Geological Survey Quad Anchorage A-8 NW (Figure 1).

The proposed project will be incorporated into the Alaskan Airports Division Airport Layout Plan (ALP). The State of Alaska Department of Transportation and Facilities (DOT&PF) is responsible for appropriate airport planning[1], which includes proposed updates to an ALP. ALPs are drawings used to depict current and future airport facilities. The ALP serves as a record of present and future aeronautical requirements and is a blueprint for airport development by which the airport authority and FAA can ensure that all proposed development is consistent with FAA airport design standards and safety requirements as well as airport and community land use plans.[2] Some proposed improvements require ALP approval from the FAA, and are therefore subject to the National Environmental Policy Act (NEPA). FAA completed a Section 163 determination of the Alaska Cargo and Cold Storage project on May 3, 2022 and found project components subject to FAA ALP approval include the new aircraft parking apron (Appendix A). The Section 163 determination found the other project components are not subject to FAA ALP approval, however FAA Guidance on Section 163 determinations state that if any project component is subject to NEPA, then the entire project is subject to NEPA (FAA 2022).

To meet the requirements identified above a Final Environmental Assessment (EA) is being prepared. The Final EA serves to evaluate the environmental effects of the Proposed Action,

[1] Airport planning is integral and necessary to ensure efficient development at civil airports that is consistent with local, state, and federal requirements, guidelines and goals. A key objective of airport planning is to assure the effective use of airport resources to satisfy aviation demand in a financially feasible manner.
[2] An up-to-date FAA-approved ALP ensures the safety, utility, and efficiency of the Airport and is required when an Airport is seeking financial assistance from the FAA.

which are discussed further in Chapter 3. Construction is anticipated to begin in 2025 and all improvements are anticipated to be complete within two years.

This Final EA has been prepared in accordance with NEPA (42 U.S.C. 4321), the Council of Environmental Quality (CEQ) regulations implementing NEPA (40 Code of Federal Regulations [CFR] 1500 et seq.), and requirements and guidance specific to FAA found in FAA Order 1050.1F (2015) and Order 5050.4B (2006).


*Figure 1 Location and Vicinity*

## Existing Conditions

ANC is located in Alaska's most populous city, Anchorage. Within Anchorage, ANC occupies the most western point of land, adjacent to Cook Inlet. The DOT&PF owns and operates ANC. The 4,210-acre ANC complex (excluding Lake Hood) features three runways, one helipad, 19 taxiways, and two terminals. Approximately 45 air carriers operate out of ANC, including 18 domestic and 27 international with an average of 793 flights per day as of 2019 (DOT&PF 2022).

In addition to passenger service, ANC is also a major cargo hub. As of October 2023, ANC has 22 airport-controlled hardstands publicly available for commercial cargo use. These 22 hardstands include: 3 "Papa" hardstands, 11 "Romeo" hardstands. In addition, eight gates at

the North Passenger Terminal are not dedicated for, but periodically used as commercial cargo parking. In addition, a private terminal owned by UPS has six hardstands that can accommodate freighters. The cold storage facilities that currently exist on airport property are facilities for cargo forwarding which moves freight from the producer to the user; the cold storage facilities are not available for commercial cargo storage and transfer. As of 2023, ANC ranked as the third busiest airport in the world for cargo traffic. The Anchorage Economic Development Corporation (AEDC) states on their website that the airport is an important contributor to Alaska's economy, and because ANC is 9.5 hours from 90 percent of the industrialized world, it is a critical link for the international movement of goods (AEDC 2022).

The 29 acres of leased airport land that Alaska Cargo and Cold Storage proposes to develop is mostly level, vegetated, and generally undeveloped (Figure 2). There are currently no buildings or site improvements that require electricity, gas, sanitary sewer, or water services. The site is accessed via North Tug Road, which parallels Postmark Drive. The majority of the site consists of wetlands, characterized as freshwater emergent and freshwater forested/shrub emergent wetlands. Most of the property is located outside of the secured Airport Operations Area (AOA). The approximately eight acres located inside the AOA are unvegetated and used for off-spec soil disposal and Airport Rescue & Fire training. The site can be viewed from the North Tug Road. It is located approximately 0.75 miles from the main ANC south terminal and one mile from the Knik Arm of Cook Inlet.

The land for the proposed project was acquired through two deeds, Tract II a patent deed transferred on January 9, 1967 through the Federal Airport Act instrument of transfer and Tract IV a patent deed transferred on August 30, 1961 through the Alaska Statehood Act. Because the land associated with this project within Tract II was acquired with federal funds, under Section 163(b) of the Act, the FAA has the legal authority to approve or disapprove the use of the land associated with this project. The remainder of the land is under FAA grant funding and is also subject to Section 163(b) of the Act. The purpose of the proposed development is consistent with the ALP's intended use of the land. Therefore, the FAA will not require a release of obligations in order to maintain the use of the subject parcel as depicted on the currently approved ALP.


*Figure 2 Proposed Project Area*

## 1.1 Purpose and Need

The identification of the purpose and need for a proposed project is the primary basis for developing the range of reasonable alternatives. The proposed project will develop facilities at ANC for a climate-controlled cargo warehouse, additional cargo parking spaces, and ancillary infrastructure for operations. The following provides a description of the deficiencies and needs that the proposed project would address. The purpose and need of the Federal Aviation Administration's (FAA) action is to evaluate the Alaska Department of Transportation & Public Facilities (DOT&PF) request to update their ALP associated with the proposed cargo and warehouse facilities and meet its statutory obligations under 49 U.S.C. 47101 and Section 163 of the 2018 FAA Reauthorization Act.

### 1.1.1 Purpose of the Proposed Action

The purpose of the proposed project is to construct an energy-efficient, climate-controlled air cargo warehouse facility and hardstand parking for cargo jets at ANC. The purpose of the cargo facilities is to help improve cargo deplaning and enplaning efficiency, provide parking locations for cargo jets where they can power down, and build Alaska's economy. The project would provide a facility for storing goods prior to enplaning on another carrier, or prior to distribution in

the state. It would help grow Alaska's economy by providing a much-needed climate-controlled facility for goods being transferred to and exported from the state. The proposed project would be the only leasable large-scale air cargo warehouse facility with aircraft parking to be developed at ANC that is in close proximity to the bulk of current ANC cargo aircraft parking and operations. It would increase operational efficiencies through new and improved cargo and airline support facilities, offer climate-controlled warehousing, and meet FAA and airport safety requirements.

### 1.1.2 Need for the Proposed Action

Unlike airports in other US cities of comparable population size, most activity at ANC revolves around the provision of services to the international air cargo industry. ANC now ranks number four in the world for total weight of all cargo moving through an airport and has been in the top 10 globally for at least 20 years.

Transpacific Efficiency Need: The Covid 19 pandemic created significant challenges and disruptions to global trade flows, leading to high prices, significant delays, and congestion for Transpacific air and marine cargo operations. While the effects of the pandemic have begun to subside, thereby reducing congestion, the long-term trend of strong growth remains; Boeing's 2022 World Air Cargo Forecast projects air cargo between East Asia and North America will grow at 4.4% annually through 2041. In particular, growth in food-related products from North America to Asia grew by 33% between 2011 and 2021, as a share of total tonnes. According to 2022 data from the Airports Council International (Airports Council International, 2022), the aggregate tonnage among the world's top 10 busiest cargo airports increased 15 percent year-over-year. Although ANC 2022 cargo was down 4.3 percent versus 2021, it was still up 26 percent versus 2019 to approximately 3.5 million tons of cargo (Airports Council International, 2023). Airports Council International attributes the decline to the ongoing geopolitical tensions and disruptions to global trade and supply chains. The AEDC is projecting eight percent growth through 2023, and annual tonnage increases in the two percent range each year thereafter (AEDC 2020).

Transpacific Logistics Hub: Located at the midpoint between Asia and North America, ANC is the third busiest cargo airport in the world. Most of the business at ANC is from trans-Pacific flights stopping to refuel when carrying heavy payloads. Currently, there is no place for goods and equipment to be unloaded beyond proprietary facilities (e.g., UPS and FedEx); therefore, the airport functions as a 'gas-and-go' facility for other commercial air cargo carriers. This project is a key component needed to turn ANC into a global logistics hub. Currently there is insufficient climate-controlled storage in Alaska to make it competitive as a Transpacific hub. Cold goods, including fish and seafood, produce, and pharmaceuticals, must be stored in Washington. The proposed project will enable a more efficient transfer of goods and equipment between planes at ANC through the creation of holding facilities, which would increase the efficiency of international and domestic cargo shipments. Further, this major investment in air cargo transfer is expected to provide a foundational enterprise which other companies will build upon.

State of Alaska Economic Need: Sustainable economic growth is a goal of the State of Alaska. Introducing new cargo facilities, such as hardstands and climate-controlled warehouses, will not only meet the immediate demand described above, but will also support and encourage projected long-term growth by transforming ANC from a fuel stop and crew-change site, to an all-purpose site where cargo carriers can efficiently deplane and enplane cargo, including temporarily storing cargo in a warehouse. The improvement in cargo facilities, particularly

climate-controlled facilities, is also expected to make ANC more competitive and make Alaska a more desirable transpacific cargo hub. Alaska Cargo and Cold Storage facilities would create long-term economic growth in Alaska by creating permanent job opportunities in numerous construction and operational job sectors and bringing hundreds of millions of dollars into the local economy. ANC presently supplies one in 10 jobs in Anchorage and generates $1.84 billion in economic benefit (Ted Stevens Anchorage International Airport, 2022).

ANC On-Airport Needs: As Transpacific air cargo volumes have grown, ANC has become a leading air cargo airport, creating a need for additional infrastructure to park and service planes, and store and move cargo. ANC is currently limited to the private domestic cargo carriers' warehouse and transfer facilities, none of which are leasable. The current on-airport cold storage is limited and largely confined to proprietary facilities; as such, there is limited ability to transship perishable and temperature-sensitive goods at ANC, and delays may result in loss of cargo. International cargo currently has limited holding locations, let alone climate-controlled for perishable cargo. Currently, perishable materials remain on aircrafts until the receiving aircraft arrives. A climate-controlled facility will allow for cargo to be offloaded from an aircraft, reducing the time an aircraft must wait for the receiving aircraft. As stated above, the cargo industry is a growing sector of ANC and airport cargo infrastructure is now beyond capacity during peak times, with anticipated decreases in capacity on the horizon. According to the 2023 Alaska International Airport System (AIAS) Annual Report (AIAS 2023), the AIAS sees growth in international passenger and cargo operations as well as intra-Alaska air operations. ANC has 22 airport-controlled hardstands, 14 of which are publicly available for commercial cargo use. Eight gates at the North Passenger Terminal are not dedicated to but are periodically used as commercial cargo parking. In addition, a private terminal owned by UPS has six hardstands that can accommodate freighters is expected to expand and reduce available hardstands by six (UPS hardstands are no longer available for third party lease). Further, anticipated growth of international passenger traffic would likely remove ANC's North Passenger Terminal as an option for cargo freighter parking (Ted Stevens Anchorage International Airport, 2014). One air cargo development (NorthLink Aviation) is currently under construction with an anticipated 15 hardstands to be added and available for lease, however ANC has added four new cargo carriers in 2023 and 2024. In sum, ANC is unlikely to have enough cargo aircraft parking and cargo facilities to meet current and future demands even when considering the addition of 15 hardstands under construction.

## 1.2 Federal Action Requested

The Federal Action requested of the FAA by the Sponsor is to approve ALP amendments for a new aircraft parking apron to provide connections required for Alaska Cargo and Cold Storage cargo and warehouse development. There are no proposed modifications to FAA Design Standards included in this project.

# 2.0 ALTERNATIVES

This chapter both describes the alternatives and compares the alternatives in terms of their environmental impacts and their achievement of the objectives described above in the purpose and need.

The nature of the proposed action determines the range of reasonable alternatives. (FAA Order 1050.1F at 6-2.1.) There is "no requirement for a specific number of alternatives or a specific range of alternatives to be include in an EA." (FAA Order 1050.1F at 6-2.1.)

What is proposed is a privately funded development on a particular lease lot primarily to accommodate cargo operations. Alaska Cargo and Cold Storage does not presently have the ability to develop a different area at ANC for cargo operations.

## 2.1 No-Action

Under the No Action Alternative, there would be no development of the Alaska Cargo and Cold Storage property and the site would remain unutilized airport property. The No-Action alternative would not meet the project's purpose and need.

As detailed in Section 1.1.2., projected growth of cargo operations at ANC in comparison with number of publicly available or leasable hardstands shows that ANC would remain over-capacity for cargo resources and the cargo infrastructure need for additional climate-controlled warehouse space would remain unmet. Furthermore, inefficiencies may increase in the future due to the forecast increase in cargo operations at ANC, or demand for ANC as a cargo hub may diminish due to the lack of cargo and climate-controlled warehouse infrastructure.

Under the No-Action alternative, it is also reasonably foreseeable that the Alaska Cargo and Cold Storage site will be developed otherwise for similar aeronautical purposes. FAA Order 5190.6B (Change 1, Nov. 2021) limits ANC's ability to allow nonaeronautical uses on land designated for aeronautical purposes, such as the Alaska Cargo and Cold Storage site.

## 2.2 Proposed Action (Preferred Alternative)

The Proposed Action is the preferred alternative because it is expected to meet the project purpose and need. The Proposed Action will develop the Alaska Cargo and Cold Storage site to accommodate the growing need for cargo and climate-controlled warehouse infrastructure at ANC. It is anticipated to meet the project purpose and need by meeting the ANC demand for additional climate-controlled cargo warehouse, hardstand parking, and other ancillary uses.

The site for the Proposed Action was selected because it is located at ANC within the Foreign Trade Zone and in close proximity to the main cargo ramp, aircraft parking positions, and adjacent cargo operations that presently lack commercially available climate-controlled warehousing..

The Proposed Action may include the following components (Figure 3) and is described in further detail below:

- New Aircraft Parking Apron (eight hardstands)
- Climate-controlled Cargo Warehouse

- Hardstand Fuel Distribution
- Ground Support Equipment Shop and Parking
- Ancillary/Control Space
- Road Connection to Postmark Drive

A new, approximately 29-acre concrete pad would be constructed to support the warehouse, parking apron, possible hardstand fueling locations, airside and landside loading areas, outdoor storage, vehicle parking, and emergency and maintenance vehicle access around the building. Prior to the placement of the pad, the site would be cleared, and overburden would remain on site mostly undisturbed. Additional details on preliminary design are shown in Appendix E, Wetlands (pages E-12 through E-18).

The new aircraft parking apron will include a paved surface with up to eight hardstands. The hardstands may be equipped with in-ground fuel hydrants (supplied by transportation pipelines located east of runway 15/33) and in-ground power connections. Taxilanes connect the aircraft parking apron to the north/south runway 15/33 via existing taxiways. The warehouse facility pad would have various design elements depending on function, including driving aisles and parking areas which would connect the warehouse to North Tug Road and Postmark Drive. As proposed, the warehouse would support climate-controlled cargo storage, and provide ancillary functions, such as offices. The building would be pile-supported.

For water and sewer utilities within the area trenches to the buildings would be excavated prior to placement of the concrete pad. Utilities under the proposed building would hang from the building's concrete structural foundation and would not require trenching. Electricity and telephone/internet would be "ditch witched" in small trenches to the buildings.

Staging and stockpiling will occur on the site in areas designated for development. Material would be sourced from local permitted sites and trucked in using existing roads. No improvements to roads would be necessary to truck in fill. Excavated materials, which will only result from trenching for utilities will be backfilled in the original locations.

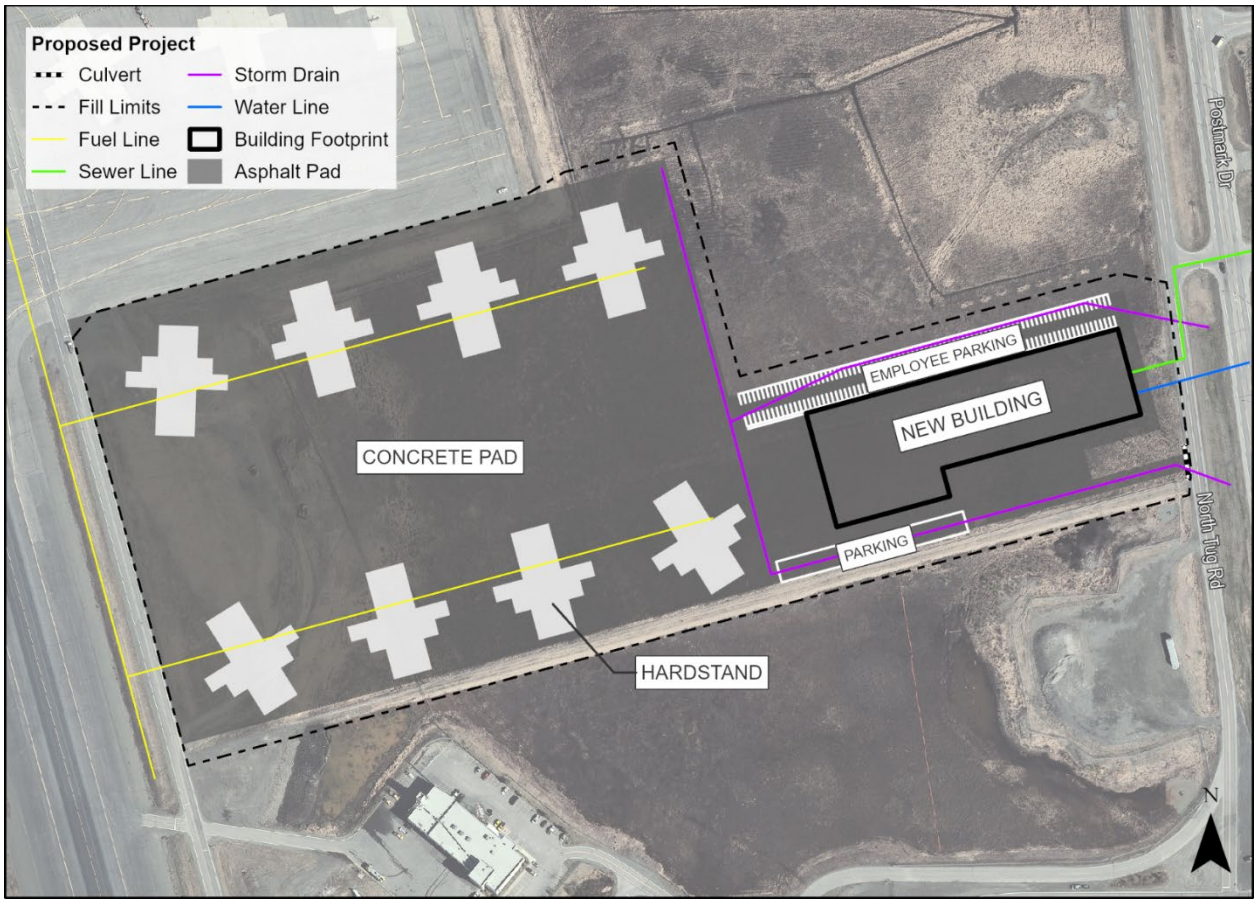


*Figure 3 Proposed Action*

## 2.3 Alternatives Development and Comparison

Alternatives developed and evaluated under this project include the No-Action alternative and the Proposed Action preferred alternative. The No-Action alternative represents baseline conditions from which the environmental impacts of the Proposed Action can be measured.

In order for an alternative to be considered, it must be reasonable, feasible, and meet the project's purpose and need. Alternatives that were considered for analysis under the purpose and need were limited to ANC property. The purpose of any proposed development would be to develop infrastructure to efficiently support air cargo and climate-controlled warehousing operations at ANC. Off-site locations to develop such infrastructure would not be reasonable or feasible. Design measures to avoid or minimize impacts of the Proposed Action were not considered alternatives, rather design changes, because the project variations all largely have the same footprint and location.

### 2.3.1 Alternatives Considered but not Carried Forward

Alternatives that were considered for analysis under the purpose and need were limited to ANC property. The purpose of any proposed development would be to develop infrastructure to allow

for efficient movement between aircraft and the facility and efficiently support air cargo operations at ANC. Locations outside ANC were dismissed primarily because of inefficient, or potentially complete lack of, access to the cargo carriers needing to enplane and deplane cargo. Locations outside of ANC were also dismissed because they were not within the Foreign Trade Zone. It is essential the proposed development be completely located on ANC property, which is a Foreign Trade Zone, in order to take advantage of air cargo transfer rights granted by the U.S. Department of Transportation (USDOT). Additionally, air cargo needs to be located near aircraft hardstands, and aircraft hardstands need to be located near existing taxiways. Therefore, off-site alternative locations to develop the proposed project would not be reasonable or feasible. In addition, the cargo transfer includes deplaning and enplaning on another carrier, or deplaning and distribution in the state. As such, the facility would be required to be adjacent other cargo facilities and adjacent a publicly accessible road.

Figure 4 shows the layout of ANC Airparks and land already leased to other entities. Alternative locations for the proposed cargo and climate-controlled facilities are listed below and a description of the feasibility of each location. For those alternatives that were considered technically feasible, screening criteria developed from the purpose and need statement to determine if the alternatives are reasonable. Screening criteria are shown in South Airpark

South Airpark is located between the Sand Lake Neighborhood and the east/west runways in

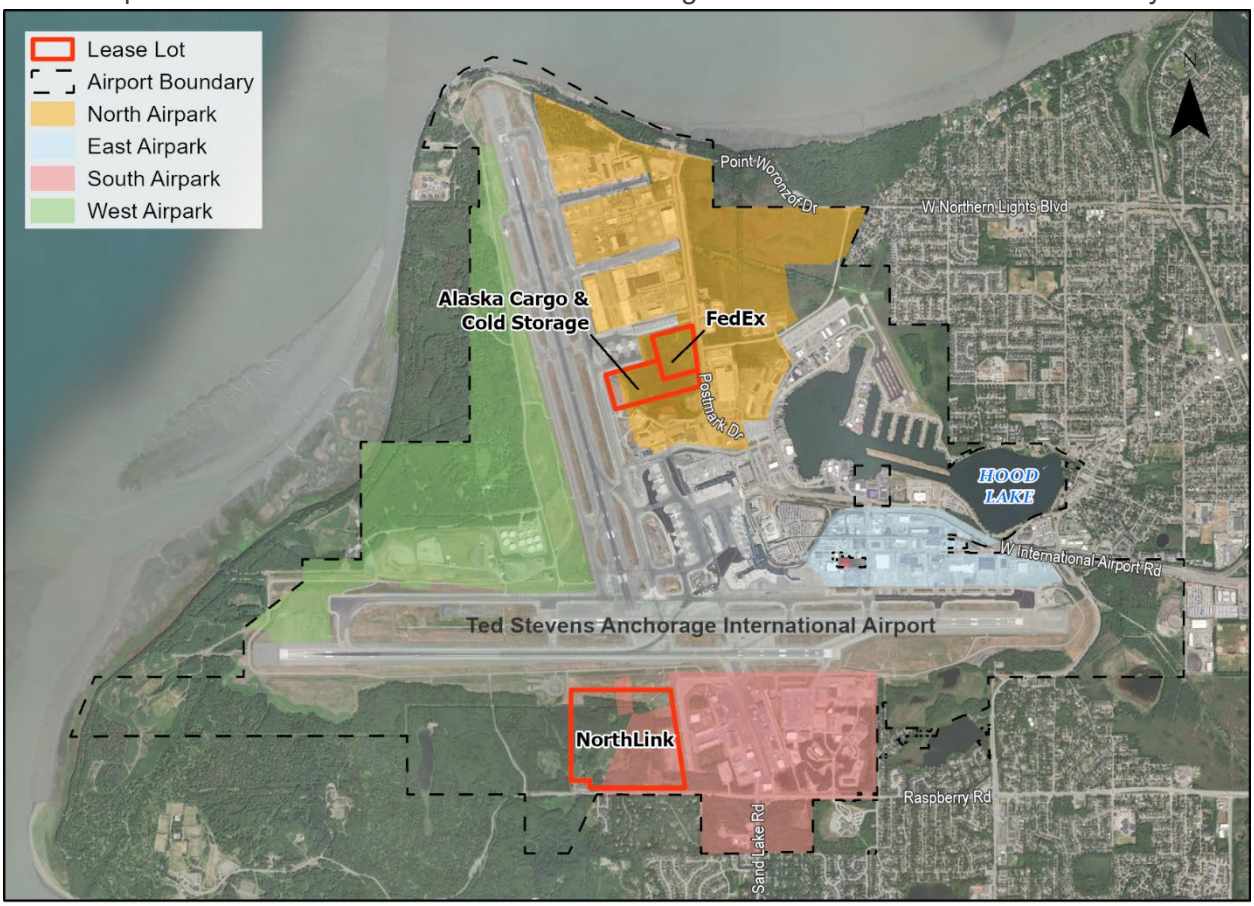


*Figure 4 ANC Existing leases*

the southern portion of the airport. The South Airpark currently has a leaseholder for the

undeveloped land adjacent Taxiway Zulu. South Airpark is largely developed or leased (NorthLink Aviation). Land to the west of the NorthLink Aviation lease lot is very near and overlaps Kincaid Park, a 4(f) protected resource. In addition, the location is distant from existing commercial cargo carriers, which largely operate in North Airpark. The location would result in inefficiencies for enplaning and deplaning due to the travel required from South Airpark to North Airpark. The size of available undeveloped land however, and the adjacency to a Taxiway Zulu extension currently under construction result in South Airpark being considered **technically feasible**.

#### *2.3.1.1 West Airpark*

West Airpark is generally undeveloped land on ANC property located west of the north/south runways. The ALP shows future conditions for the West Airpark to include and additional north/south runway, additional taxiways, and roads (Ted Stevens Anchorage International Airport 2014). The north/south runway is proposed to be sited through the middle of the West Airpark, however substantial space still exists for cargo infrastructure; the location is **technically feasible** for cargo facilities. Limiting factors are that the location is not adjacent existing air cargo hardstands limiting the practicality of air cargo transfer, and the perimeter road would need to be relocated.

#### *2.3.1.2 North Airpark*

North Airpark currently has limited undeveloped land available for additional cargo infrastructure. One location adjacent Point Woronzoff Drive is undeveloped and available for lease, however due to the size and shape, the location would have operational challenges for maneuvering aircraft on-site so the location was considered **not feasible** for the Proposed Action. Other undeveloped/unleased land exists east of Postmark Drive, however that location would not have access to runways or taxilanes. Additionally, the land east of Postmark Drive is largely wetlands of higher quality than those at the Proposed Action site. The North Airpark east of Postmark Drive was considered **not feasible** due to the tremendous infrastructure changes that would be required to connect the location to taxiways and runways.

Table 1 as well as the viability analysis. The only viable alternative beyond the No-Action is the Proposed Action.

#### *2.3.1.3 South Airpark*

South Airpark is located between the Sand Lake Neighborhood and the east/west runways in the southern portion of the airport. The South Airpark currently has a leaseholder for the undeveloped land adjacent Taxiway Zulu. South Airpark is largely developed or leased (NorthLink Aviation). Land to the west of the NorthLink Aviation lease lot is very near and overlaps Kincaid Park, a 4(f) protected resource. In addition, the location is distant from existing commercial cargo carriers, which largely operate in North Airpark. The location would result in inefficiencies for enplaning and deplaning due to the travel required from South Airpark to North Airpark. The size of available undeveloped land however, and the adjacency to a Taxiway Zulu extension currently under construction result in South Airpark being considered **technically feasible**.

#### *2.3.1.4 West Airpark*

West Airpark is generally undeveloped land on ANC property located west of the north/south runways. The ALP shows future conditions for the West Airpark to include and additional north/south runway, additional taxiways, and roads (Ted Stevens Anchorage International Airport 2014). The north/south runway is proposed to be sited through the middle of the West Airpark, however substantial space still exists for cargo infrastructure; the location is **technically feasible** for cargo facilities. Limiting factors are that the location is not adjacent existing air cargo hardstands limiting the practicality of air cargo transfer, and the perimeter road would need to be relocated.

#### *2.3.1.5 North Airpark*

North Airpark currently has limited undeveloped land available for additional cargo infrastructure. One location adjacent Point Woronzoff Drive is undeveloped and available for lease, however due to the size and shape, the location would have operational challenges for maneuvering aircraft on-site so the location was considered **not feasible** for the Proposed Action. Other undeveloped/unleased land exists east of Postmark Drive, however that location would not have access to runways or taxilanes. Additionally, the land east of Postmark Drive is largely wetlands of higher quality than those at the Proposed Action site. The North Airpark east of Postmark Drive was considered **not feasible** due to the tremendous infrastructure changes that would be required to connect the location to taxiways and runways.

*Table 1: Alternative Screening Criteria and Viability Analysis for Feasible Alternatives*

| SCREENING CRITERIA | PROPOSED ACTION | WEST AIRPARK | SOUTH AIRPARK |
|---|---|---|---|
| **Lease opportunities for each location** | **Y – A lease has been secured for the proposed action.** | **Y – The West Airpark leasing opportunities are currently pending. Leasing opportunities may become available.** | N – There are no current leasing opportunities for undeveloped land in South Airpark. |
| **ANC Master Plan conditional ALP approval** | **Y – The FAA has conditionally approved the ALP including cargo developments at the Proposed Action location** | **Y – The FAA has conditionally approved the ALP including cargo developments at the West Airpark Location** | N – The ALP shows South Airpark land use west of NorthLink lease lot proposed for “other aviation”. |
| **Access to taxiways and/or runways** | **Y – The proposed action is currently located adjacent a taxiway providing connectivity to runways.** | **Y – The West Airpark location could reasonably be constructed adjacent an existing taxiway.** | **Y – The Taxiway Zulu extension project would provide connectivity to runways.** |
| **Adjacent to roadway and other cargo facilities** | **Y – The Proposed Action location is directly connected to a roadway and adjacent existing cargo facilities.** | N – The West Airpark is located adjacent a roadway, however not adjacent to other cargo facilities or commercial cargo carriers. | **Y – The location will be adjacent NorthLink Aviation cargo facilities proposed and under construction.** |

### 2.3.2 Comparison of Environmental Impacts

Potential environmental impacts are discussed in Chapter 3. Several environmental resources are not expected to be affected by the Proposed Action. Table 2 below, compares the No-Action and the Proposed Action environmental impacts for those environmental resources that the project may affect. A discussion of the environmental resources considered but found to have no impact from the proposed project can be found in Section 3.1.

*Table 2: Comparison of Environmental Impacts by Alternative*

| RESOURCE | NO-ACTION ALTERNATIVE | PROPOSED ACTION ALTERNATIVE |
|---|---|---|
| **Air Quality** | No effect | The proposed action will bring cargo jets and CO2 emissions into a location that does not currently have those conditions. The proposed project will not increase the number of jets at ANC, it is only expected to localize the parking positions at the project area. No increase of emissions of pollutants is expected. |
| **Biological Resources** | Adverse impacts to wildlife will continue due to contaminated habitat. | The proposed project will displace, but benefit avian and terrestrial wildlife that occur on airport property. The property is contaminated with per- and -polyfluoroalkyl substances (PFAS) and wildlife that occupy the property are subject to potentially adverse human interaction (e.g., trapping and removing, or hazing). Wildlife in this area would benefit from utilizing other non-contaminated off-airport property habitat. |
| **Climate** | No effect | The project may have minor impact to the climate. It is not certain whether or not Hydrofluorocarbons (HFCs) will be used for refrigeration, if so, potential HFC emissions will be limited such that an analysis is not even warranted under NEPA. |
| **Hazardous Materials, Solid Waste, and Pollution Prevention** | Site will remain contaminated. Organic compounds (diesel range organics) may attenuate over time, however PFAS compounds will remain and potentially percolate through soils through water recharge. | The project area is contaminated with Perfluorooctanoic acid (PFOA); Perfluorooctanesulfonic acid (PFOS); diesel range organic compounds; residual range organics; and benzene, toluene, ethylbenzene and xylene. Contaminants that will be moved offsite (including contaminated water) will be cleaned prior to removal. The magnitude of contamination is expected to be reduced, however contamination will remain on site. Coordination with Alaska Department of Environmental Conservation is ongoing. |
| **Historic and Cultural Resources** | No effect | No effect. No historic properties were identified in the area of potential effect. Inadvertent discoveries of cultural resources may occur during project construction but are not anticipated due in part to the amount of previous disturbance.<br>Likelihood of encountering buried historic resources is low. |

| RESOURCE | NO-ACTION ALTERNATIVE | PROPOSED ACTION ALTERNATIVE |
|---|---|---|
| **Noise and Noise Compatible Land Use** | No effect | A preliminary noise analysis determined that noise impacts from the project operations are limited to a degree that they don't warrant a detailed analysis as described in FAA Order 1050.1F. No significant noise impacts will occur. |
| **Visual Effects** | No effect | No adverse visual impacts will occur. The proposed project is consistent with existing facilities along Postmark Drive including cargo buildings and government buildings. No scenic viewsheds occur in the vicinity. |
| **Wetlands** | No effect | 22 acres of wetlands permanently impacted. Compensatory mitigation will offset the permanent impacts to wetlands. |

# 3.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This chapter provides an overview of the existing environment, describing the resources that may be impacted by the proposed alternatives, including the No-Action alternative. Environmental impacts include direct, indirect, and cumulative impacts.

Direct impacts are caused by the Proposed Action and occur at the same time and place.

Indirect impacts are caused by the action that are later in time or farther removed in distance but are still reasonably foreseeable.

Cumulative impacts are the result of incremental impacts of the action when added to other past, present, and reasonably foreseeable future actions.

## 3.1 Environmental Impact Categories Not Affected

The following Federal Aviation Administration (FAA) environmental impact categories were analyzed and determined the resource is not present or there is no potential for impacts.

- **Coastal Resources**
- **Section 6(f) of the Land and Water Conservation Fund Act**
- **Section 4(f) of the USDOT Act**
- **Farmlands**
- **Land Use**
- **Natural Resources and Energy Supply**
- **Socioeconomics and Environmental Justice**

### Coastal Resources

There are no coastal resources within or adjacent to the project area and the State of Alaska does not participate in the Coastal Zone Management Program.

### Section 6(f) of the Land and Water Conservation Fund Act

Section 6(f) properties are those protected by the Land and Water Conservation Fund (LWCF) Act because they were purchased by LWCF money. The list of 6(f) properties is maintained by the Alaska Department of Natural Resources. There are no 6(f) properties within or adjacent the project area.

### Section 4(f) of the USDOT Act

Section 4(f) prohibits using land from publicly owned parks, recreation areas, wildlife and waterfowl refuges, and publicly or privately owned historic sites for transportation projects. The Proposed Action does not occur in or adjacent a 4(f) protected resource. No 4(f) lands will be permanently or temporarily used for the Proposed Action.

### Farmlands

The U.S. Department of Agricultural, Natural Resources Conservation Service Web Soil Survey indicates there is no designated prime or unique farmland, farmland of statewide importance, or farmland/soil of local importance in the project area.

### Land Use

The Proposed Action is consistent with the municipal, state, and federal intended uses for the land. The project area is zoned by the Municipality of Anchorage as Transitional. The project area was leased from State of Alaska ANC specifically for development purposes; the Airport Layout Plan lists the location for future cargo development. The FAA Section 163 determination found the project to be consistent with the intended use of the land, as set forth in 49 U.S.C. §§ 47107(b) and 47133.

### Natural Resources and Energy Supply

Once construction is complete, the proposed airport improvements would not have a measurable effect on the local energy supply or existing natural resources. Energy supply resources include:

- Anchorage Fueling and Service Company for fuel
- Chugach Electric Association for electricity
- ENSTAR for natural gas
- Alaska Communications for telephone
- Anchorage Water and Wastewater Utility for water and sewer

The Proposed Action will utilize measures to reduce the energy consumption required for facility operations. The proposed warehouse and cold storage facility will be Leadership in Energy and Environmental Design (LEED) certified further reducing energy consumption during facility operations through design standards based on energy efficiency.

### Socioeconomics and Environmental Justice

No adverse socioeconomic impacts are expected as a result of the proposed project. The proposed project is surrounded by airport property for approximately three-quarters of a mile on all sides. The Proposed Action will not result in acquisition of property or changes in access to public services. The Proposed Action is not expected to have an effect on the social fabric of local communities. The proposed project will provide a benefit to the local economy through job creation. No adverse impacts to housing, public services, population, or social conditions are anticipated as a result of the Proposed Action. The project is expected to benefit economic activity, employment, and income.

The Proposed Action will not meaningfully impact traffic conditions in the area because the cargo facility is expected to largely operate as enplaning and deplaning cargo on-site, not deplaning for in-state ground transportation. Deplaning cargo for local transport is expected, but very limited and not daily. Trucks that come to and from the site would be routed to International Airport Road.

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority and Low-Income Populations, directs federal agencies to identify and address disproportionately high and

adverse effects of federal projects on the health or environment of minority and low-income populations to the greatest extent practicable and permitted by law. The Executive Order is often referred to as Environmental Justice. A review of the Environmental Protection Agency Environmental Justice Mapper was conducted on October 18, 2023 to capture a one-mile buffer around the project area. The results showed community members within one-mile of the Proposed Action are within the 45th percentile in the State of Alaska for the two EJ indices, minority and low-income. The Proposed Action will not disproportionately effect minority and low-income communities.

Executive Order 13045 directs federal agencies to identify and assess environmental health and safety risks that may disproportionately affect children. The Proposed Action is located on, and entirely surrounded by, airport property. Children are not expected to frequent the area; the nearest school is approximately 1.25-miles to the east. Due to the distance from schools and other areas that children may frequent, such as playgrounds, the project is not expected to disproportionately effect children's environmental health or create safety risks.

## 3.2 Air Quality

**Regulatory Context**

Air Quality is regulated under the Clean Air Act (CAA) by the U.S. Environmental Protection Agency (EPA). Alaska Department of Environmental Conservation (ADEC) is responsible for implementing general conformity with the national standards through a State Implementation Plan (SIP). The SIP establishes limits and work standards to limit emissions of six criteria air pollutants[3] for which the Environmental Protection Agency (EPA has established National Ambient Air Quality Standards (NAAQS).

### 3.2.1 Affected Environment

The Municipality of Anchorage (MOA) was first declared a nonattainment area for carbon monoxide (CO) in 1978. The MOA currently operates under a limited maintenance plan for carbon monoxide. The proposed action is located outside of the boundaries of the maintenance area and carbon monoxide monitoring network (Figure 5), however due to the proximity emissions of the proposed action will be considered under this EA. According to the 2011 SIP, the primary source of CO is motor vehicles. Operations at ANC account for 7.8 percent of total CO emissions (as of 2007) in the MOA. ANC has an air quality permit through the ADEC and is required to provide annual updates on emissions from operations.

[3] *Sulfur dioxide, particulate matter, nitrogen oxides, lead, carbon monoxide, and ozone.*


*Figure 5 MOA Carbon Monoxide Maintenance Area Boundary*

## 3.2.2 Environmental Consequences

### Significance Thresholds

The FAA defines the significance threshold for air quality impacts as an action that would cause pollutant concentrations to exceed one or more of the NAAQS, as established by the EPA under the CAA, for the time periods analyzed, or to increase the frequency or severity of any such existing violations.

#### *3.2.2.1 Direct and Indirect Impacts*

### No-Action

The No-Action alternative would have no effect on air quality.

### Proposed Action

The magnitude of operations at ANC are not expected to change as a result of the ACCS improvements, particularly not vehicular movements which are the primary contributor of carbon monoxide and nitrous oxides. New ground service equipment, such as container loaders or service vehicles, may be introduced to service cargo jets, however the emissions from such vehicles would be negligible. The project is not expected to emit the remaining four criteria air pollutants. The proposed climate-controlled warehouse will be Leadership in Energy and Environmental Design (commonly referred to as LEED) certified, a global recognition that the design adheres to climate and air quality benchmarks. As relates to the significance threshold, there are no existing violations of air quality standards in the proposed project area and the proposed action will conform with LEED air quality standards, which provides limitations for emissions to meet the standards. The introduction of new carbon monoxide emissions from the proposed action would result from new water heaters and furnaces in the climate-controlled warehouse. New water heater(s) and a furnace(s) are not expected to lead to substantial carbon monoxide emissions and Anchorage meets the air quality standards for all six criteria air pollutants. Construction would temporarily result in a minor increase in air pollutant emissions from earth moving activities and construction equipment emissions. However, the Proposed Action is in an area that is in attainment for all air pollutants and construction would be temporary. Dust during construction would be regulated using Best Management Practices (BMPs) and compliance with the Alaska Pollutant Discharge Elimination System Construction General Permit. Therefore, the Proposed Action is not expected to result in an exceedance of any air quality pollutants based on NAAQS standards. Due to the temporary nature of construction and the size of the Proposed Action, the Proposed Action would not result in significant air quality impacts.

The proposed climate-controlled facility will require refrigeration and will likely emit hydrofluorocarbons (HFCs), which are a known contributor to global climate change. HFCs are not regulated under the NAAQS, and as such the impact of HFC emissions and regulatory context will be discussed in the climate change section (3.4).

#### *3.2.2.2 Cumulative Impacts*

Air emissions have increased over time with the development of ANC. Other present actions contributing similar NAAQS emissions include ground service equipment operations at terminal gates and ground service equipment at other cargo facilities such as FedEx, UPS, and ACE

Cargo. FedEx is currently planning a development adjacent to the Proposed Action. Operation of the FedEx facility would not increase emissions or the amount of surface vehicle activity at the FedEx facility at the Airport. The FedEx proposal would relocate some FedEx operations from the existing facility to a new facility in order to increase operational efficiency. ANC currently has a permit and reporting requirements with ADEC. Because there is a threshold for emissions at ANC, cumulative impacts are capped at an approved ADEC rate. The Proposed Action and the FedEx facility are proposed for construction in from 2024 to 2026. Combined construction activities will increase temporary air quality impacts. However, both projects would be regulated using BMPs and will require compliance with the Alaska Pollutant Discharge Elimination System Construction General Permit. Therefore, cumulative impacts will be temporary, mitigated through BMPs, and not exceed regulatory levels of NAAQS emissions as required by the ANC air quality permit.

It is reasonably foreseeable that a reduction on fossil fuel consumption and increased reliance on alternative fuels or electric sources of energy will be adopted in the future. The 2014 ANC Master Plan update includes a discussion on a number of measures implemented to limit energy consumption and it is reasonable to expect further declines in energy consumption. Cumulative impacts resulting from this project are negligible.

## 3.3 Biological Resources

**Regulatory Context**

Biological resources include fish, wildlife, plants and their respective habitats. The following Statutes apply to resources that may occur in the project area:

The **Bald and Golden Eagle Protection Act** protects bald and golden eagles from the unauthorized capture, purchase, or transportation of the birds, their nests, or their eggs. Any action that might disturb these species requires a permit from the U.S. Fish and Wildlife Service (USFWS), which authorizes limited, non-purposeful take of bald and golden eagles.

The **Migratory Bird Treaty Act** of 1918 protects migratory birds by prohibiting private parties (and federal agencies in certain judicial circuits) from intentionally taking, selling, or conducting other activities that would harm migratory birds, their eggs, or nests (such as removal of an active nest or nest tree), unless the Secretary of the Interior authorizes such activities under a special permit.

As defined by **Executive Order 13112, Invasive Species**, 64 Federal Register 6183, (February 8, 1999), invasive species are non-native species whose introduction does or is likely to cause economic or environmental harm or harm to human health. Agencies are directed not to carry out actions that they believe are likely to cause or promote the introduction or spread of invasive species unless the benefits of such actions clearly outweigh the potential harm, and all feasible and prudent measures, and mitigation to minimize risk of harm are taken.

### 3.3.1 Affected Environment

According to the Alaska Department of Fish and Game Fish Resource Monitor (accessed October 2023), there are no streams or fish habitat in the project area. According to the U.S. Fish and Wildlife Information for Planning and Consultation mapper (accessed October 2023) no threatened or endangered species, or critical habitat, occurs in the project area. The project area is not in a marine environment and as such, no marine mammals occur in the project area.

The project area largely consists of sphagnum mosses, sedges, and shrubs. The area is open and undeveloped airport property. ANC has contracted with the U.S. Department of Agriculture (USDA) Wildlife Services (WS) for the purpose of Wildlife Hazard Management since 1996. WS has been tasked with mitigating wildlife/aviation conflicts and employs various techniques to ensure airport property is free of wildlife. In addition, the proposed action is located in an area contaminated with per- and -polyfluoroalkyl substances (PFAS). PFAS is a known toxin that can impact the health and welfare of animals or their offspring.

The project area occurs mostly within the existing ANC boundaries and runway object-free areas, which require an area devoid of obstructions, including tall vegetation such as trees. According to the Alaska Exotic Plant Information Clearinghouse online mapper, no invasive species are documented in the project area.

## 3.3.2 Environmental Consequences

### Significance Thresholds

The FAA defines the significance threshold for impacts to biological resources as when the U.S. Fish and Wildlife Service or the National Marine Fisheries Service determines that the action would be likely to jeopardize the continued existence of a federally listed threatened or endangered species, or would result in the destruction or adverse modification of federally designated critical habitat. The FAA has not established a significance threshold for non-listed species.

#### *3.3.2.1 Direct and Indirect Impacts*

### No-Action

The ecology of the land makes it suitable habitat for nesting and migratory birds. However, the context of the land creates adverse impacts to biological resources for two reasons. One, animals are more prone to human conflict on the land than if they identified another location to nest and rest. If wildlife nest or rest on the location of the proposed action they are subject to trapping and removal by USDA WS. Secondly, the site is contaminated with PFAS which is a known toxin that can adversely impact the health and welfare of animals or their offspring. The site would continue to pose a risk to the health and safety of animals and wildlife.

The project area would remain susceptible to invasive species such as bird vetch (*Vicia cracca)*, yellow toadflax (*Linaria vulgaris*), and orange hawkweed (*Hieracium aurantiacum*), which are common on undeveloped portions of airport property.

**Proposed Action**

The proposed action would place permanent fill in approximately 22 acres of undisturbed land which is also known to be wildlife habitat. If the land did not exist, wildlife would nest and rest elsewhere and would not be subject to potentially stressful removals by WS. The undisturbed land that presently acts as habitat is contaminated with PFAS. PFAS contamination can have detrimental effects on the health of wildlife and their offspring. If the location did not provide habitat for wildlife and birds the animals would choose habitat elsewhere to the benefit of their health. Eliminating the habitat would be beneficial to wildlife such that it would reduce human/animal conflict and require animals to choose habitat elsewhere, likely a location without contamination.

The project area would be less susceptible to invasive species due to the addition of an impervious surface.

#### *3.3.2.2 Cumulative Impacts*

As ANC has developed over time, wildlife habitat has been eliminated. FedEx is currently planning a development adjacent to the Proposed Action, also on Postmark Bog with similar habitat conditions. The FedEx development would eliminate up to 21.9 acres of similar habitat. Other reasonably foreseeable ANC actions include continued development of airport property in areas that may contain suitable wildlife habitat. Future development is expected such that useable space within the airport boundary is developed for aviation purposes. It is reasonably foreseeable that wildlife habitat on ANC property is eliminated. This cumulative impact provides a benefit by reducing adverse human/wildlife conflict and encouraging wildlife to take up habitat elsewhere where the animals do not pose a risk to airport security and safety. Additionally, as wildlife takes up habitat elsewhere the potential for animals to consume contaminated materials would reduce providing a benefit to wildlife health.

## 3.4 Climate

**Regulatory Context**

The CAA administered by the EPA regulates greenhouse gas (GHG) emissions from surface transportation vehicles and stationary power generation sources.

### 3.4.1 Affected Environment

Six GHGs are regulated under the CAA. They include carbon dioxide ($CO_2$), methane ($CH_4$), nitrous oxide ($N_2O$), HFCs, perfluorocarbons (PFCs), and sulfur hexafluoride ($SF_6$).

The project area is currently undeveloped and emits no climate change contributing GHGs. The wetland likely currently serves as a carbon sink, where the carbon GHG is stored and prevented entering the atmosphere. The project area currently holds no infrastructure, as such there are no associated climate resiliency risks.

Cloudy conditions, short summers, and moderate to cold temperatures characterize the climate of this area. The average annual precipitation ranges from about 15 to 30 inches to more than 100 inches in the highest mountains in the region. Later summer and fall are generally the rainiest months. The average annual snowfall ranges from about 80 to 400 inches or more. The

average frost-free period is about 60 to 80 days. At higher elevations, freezing temperatures can occur during every month.

## 3.4.2 Environmental Consequences

### Significance Threshold

FAA has not established significance thresholds for aviation or commercial space launch GHG emissions, nor has the FAA identified specific factors to consider in making a significance determination for GHG emissions (FAA 2023). However, GHG emissions should follow the basic procedure of considering the potential incremental change in $CO_2$ emissions that would result from the proposed action and alternative(s) compared to the no action alternative for the same timeframe, and discussing the context for interpreting and understanding the potential changes. Consistent with the National Environmental Policy Act Guidance on Consideration of Greenhouse Gas Emissions and Climate Change, 88 Fed. Reg. 1196 (Interim Guidance Jan. 9, 2023), the Agency will try when reasonably possible quantify GHS emissions, compare GHS emission quantities across alternative scenarios, and place emissions in relevant context.

#### *3.4.2.1 Direct and Indirect Impact*

Projected impacts of climate change for Southcentral Alaska include increased temperatures leading to milder winters, increased rain over the winter, and decreased snowpack. Precipitation is expected to increase in the form of rain, however higher temperatures would increase evapotranspiration and conditions are expected to be overall drier. The Proposed Action is expected to be resilient to the effects of climate change as the drainage infrastructure will withstand increased rain and higher temperatures in Alaska are still relatively mild.

Two regulated GHGs may be emitted at the project area, $CO_2$ (jet emissions and building energy usage ) and HFCs (refrigeration emissions). The proposed cargo improvements may result in an increase in emissions due to the refrigeration at the climate-controlled warehouse and the day-to-day operations of the warehouse (e.g. lighting and heating). The remainder of the project, including parking apron will not change the ANC fleet mix or size and will therefore not result in a net gain of $CO_2$ emissions. Overall $CO_2$ emissions from cargo jets may decrease at ANC because the jets will be provided space to park and spend less time idling waiting for a parking position to become available.

For building operation, $CO_2$ emissions were estimated based on a facility-related energy use value of six kilowatt hours (kWh) per square foot per year. The ACCS climate-controlled warehouse is proposed to be 136,000 square feet. The $CO_2$ emissions of the proposed ACCS climate-controlled warehouse were estimated based on the EPA's natural gas emissions factor of 0.0053 metric ton of $CO_2$ (based on therms per square foot per year) (EPA 2023a) and electricity emissions factor of 1067.7 metric ton of $CO_2$ from the EPA eGRid (based on kilowatt hours per square foot per year) (EPA 2023a). Based on the facility's estimated energy usage, it would produce 1,632 metric tons of $CO_2$ per year, which is equivalent to the energy use of 318 homes for one year. This is not expected to be a significant effect to climate.

GHG emissions in the form of HFCs may be emitted from the climate-controlled warehouse. An HFC free climate-controlled warehouse will be pursued, however the alternative methodology for refrigeration may not be feasible. If the climate-controlled warehouse requires the use of HFCs for refrigeration, emissions from the facility will not constitute a significant impact under NEPA. GHG emissions are often measured in $CO_2$ equivalent. HFCs have a high global

warming potential meaning that they are a more potent GHG than $CO_2$. The $CO_2$ equivalent calculation (EPA 2023) shows that approximately 13.5 metric tons of HFC constitutes 25,000 metric tons of $CO_2$. FThe proposed project's climate controlled warehouse is not yet calculated due to preliminary design stages, but generally estimated to emit far less than 13.5 metric tons of HFCs, the $CO_2$ equivalent of 3,078 homes' energy use for one year.

GHG emissions due to construction will be $CO_2$ emissions from heavy machinery such as excavators, dozers, loaders, smooth drum rollers, sheep's foot roller, ski loader, rock trucks, dump trucks, blade motor grader, and potentially scrapers. The EPA's Simplified GHG Emissions Calculator was used to quantify project emissions (EPA 2022). The estimate for total diesel fuel needed for project construction is 90,420 gallons. The estimate for total motor gasoline needed for project construction is 5,327 gallons. According to the GHG Emissions Calculator the total $CO_2$ metric ton emissions from heavy machinery during project construction is 969 metric tons over a two-year period. The project's 969 metric tons of $CO_2$ emissions is equivalent to 122 homes' energy use for one year.

The Social Cost of Carbon (SC-$CO_2$), is a widely used method to convert emissions into familiar metrics to help federal agencies with regulating the negative and positive impact to society through a cost-benefit analysis (IWG 2021). The U.S. Government Interagency Working Group (IWG) publishes official estimates of the SC-$CO_2$, $CH_4$, (SC-$CH_4$), and $N_2O$ (SC-$N_2O$), collectively known as the social cost of greenhouse gases (SC-GHGs). The IWG does not publish estimates for the social cost of HFCs, so the societal costs can not be calculated for this project. In 2009, the IWG was established to incorporate the best available science to generate a consistent US dollar (USD) value for use across all federal agencies. In 2010, the IWG published *Social Costs of SC-$CO_2$,* developed from three integrated assessment models (IAMs). In short, the SC-$CO_2$ translates abstract metric tons of emissions into the familiar unit of USD allowing for a cost-benefit analysis. These values are important not just for the public or reader to understand the extent of impact, but also decision makers to weigh the cost of a proposed action. The IWG provides the SC-$CO_2$ across multiple discount rates and has published rates at five-year intervals, from 2020 to 2050. Construction of the Proposed Action is planned to begin in 2025. Therefore, 2025 SC-$CO_2$ rates were used in the analysis and determination of SC-$CO_2$ in USD.

*Table 3: 2025 SC-$CO_2$ rates at four discount rates and total equivalent USD amount based on emissions analysis*

| DISCOUNT RATE | SC-$CO_2$ PER METRIC TON | TOTAL SC-$CO_2$ (USD) |
|---|---|---|
| 5% average | $17 USD | $27,744 |
| 3% average | $56 USD | $91,392 |
| 2.5% average | $83 USD | $135,456 |
| 3%, 95th percentile | $169 USD | $275,808 |

In summary, the potential monetary damages year over year for facility operation are estimated to be between $27,744 and $275,808. The potential monetary damages for construction (969 metric tons over a two-year period) are estimated to be between $16,473 and $163,761.

#### *3.4.2.2 Cumulative Impacts*

FAA does not provide guidance for cumulative analysis for climate impacts. CEQ guidance for NEPA on the consideration of GHG emissions and Climate Change states “given that climate change is the result of the increased global accumulation of GHGs climate effects analysis is inherently cumulative in nature” (CEQ, 2023). The analysis presented above meets the intent of the CEQ guidance for cumulative analyses are put into context of GHG quantification for emissions (see Section 3.4.2.1 for quantification and context).

# 3.5 Hazardous Materials, Solid Waste, and Pollution Prevention

**Regulatory Context**

Executive Order 12088, *Federal Compliance with Pollution Control Standards*, requires that federal agencies comply with applicable pollution control standards – chiefly those stemming from the Comprehensive Environmental Response, Compensation, and Liability Act and the Resource Conservation and Recovery Act. The ADEC Contaminated Sites Program manages cleanup and regulation of sites with contaminated soil or groundwater in Alaska under Alaska Administrative Code Section 18 Title 75.

## 3.5.1 Affected Environment

According to ADEC Contaminated Sites database (ADEC 2022a), there are three active sites, one cleanup complete with institutional controls (IC), and 10 cleanup complete sites within 1,500 feet of the proposed project (Table 4, Figure 6). A PFAS site investigation conducted in March 2020 found soils in the project area to be contaminated with PFAS compounds and petroleum hydrocarbons (Appendix B). The contamination levels exceed ADEC Method 2, Migration to Ground cleanup levels.

*Table 4: Contaminated Sites within 1,500 feet of the Proposed Project*

| HAZARD ID | SITE NAME | STATUS | CONTAMINATION TYPE |
|---|---|---|---|
| 26519 | AIA Tanks #19, 20, 21 | Active | Petroleum |
| 27137 | AIA Aircraft Rescue and Fire Fighting Bldg PFAS | Active | PFAS and Petroleum |
| 27763 | Anchorage FedEx Ship Center UST 3 | Active | Petroleum |
| 2009 | AFSC AIA Former Fuel Vault | Cleanup Complete- IC | Petroleum |
| 24719 | Village Aviation | Cleanup Complete | Petroleum |
| 23883 | AIA Tank #22 | Cleanup Complete | Petroleum |
| 24710 | AIA Tank #20 | Cleanup Complete | Petroleum |
| 24709 | AIA Tank #23 | Cleanup Complete | Petroleum |
| 24823 | AIA - Field Maintenance Bldg. | Cleanup Complete | Petroleum |

| | | | |
|---|---|---|---|
| 23174 | Federal Express ANCR Facility | Cleanup Complete | Petroleum |
| 24891 | USPS – GMF | Cleanup Complete | Petroleum |
| 24058 | International In-Flights Catering Company | Cleanup Complete | Petroleum |
| 24034 | USPS – Anchorage General Mail Facility | Cleanup Complete | Petroleum |
| 1468 | AIA Walker Pre-Flight Area | Cleanup Complete | Petroleum |

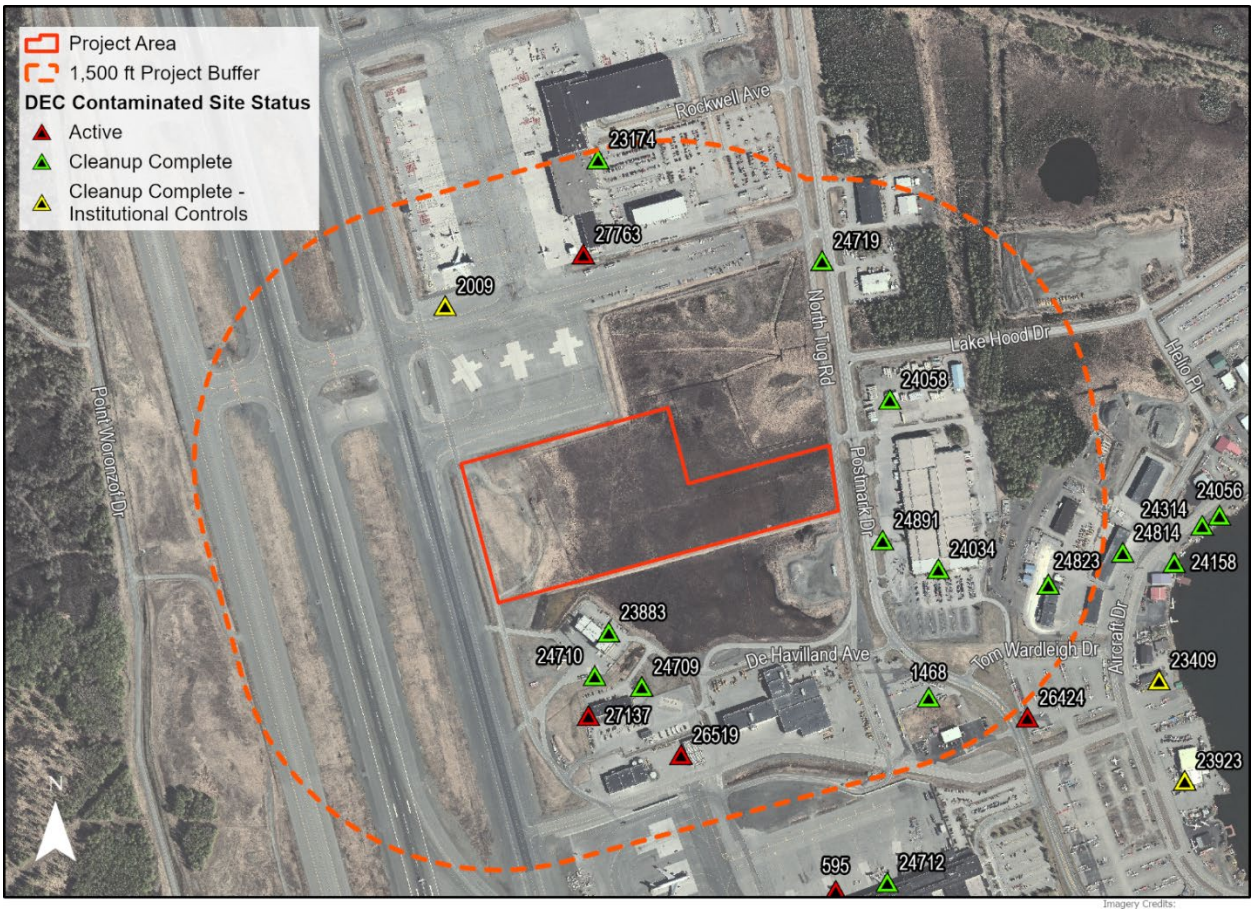


*Figure 6 Contaminated Sites in the Project Vicinity, by Hazard ID and Status*

Of the three active contaminated sites, two are leaking underground storage tanks (LUST) (Hazard IDs 26519 and 27763) leading to petroleum contamination and one site (Hazard ID 27137) is associated with aqueous film forming foam (AFFF) a known contributor to PFAS contamination.

*Hazard ID 26519: AIA Tanks #19, 20, 21*

Located over 1,000-feet from the Proposed Action, AIA Tanks #19, 20, 21 is a LUST site that was added to the ADEC Contaminated Sites Database in 2016. The site is comprised of two

15,000-gallon double-walled diesel underground storage tanks, and one 8,000-gallon double-walled gasoline underground storage tank. All three tanks had faulty retrofits which resulted in leaks of hydrocarbons. Site characterization and removal of encountered contaminated soils was conducted in 2019. Approximately five cubic yards of contaminated soil were removed and transported to another location for remediation. A request to change the status of the site to cleanup complete was denied by DEC in 2019, following the cleanup effort, due to the need for further site characterization.

*Hazard ID 27763: Anchorage FedEx Ship Center UST 3*

Anchorage FedEx Ship Center is located over 900-feet from the Proposed Action. The site was added to the ADEC Contaminated Sites Database in June 2022. The site is comprised of one 8,000-gallon LUST. No site characterization has been completed and limited sampling indicates the site is contaminated with hydrocarbon.

*Hazard ID 27137: AIA Aircraft Rescue and Fire Fighting Building PFAS*

Added to the ADEC Contaminated Sites Database in 2019, the AIA Aircraft Rescue and Fire Fighting Building PFAS site is located approximately 700-feet from the Proposed Action. The site was investigated for PFAS due to the known use of AFFF during firefighting training. Because training was conducted on or in the very near vicinity of Postmark Bog, ADEC requested a site characterization of Postmark Bog. The site characterization was conducted on to characterize proposed developments including the Proposed Action and an adjacent proposed FedEx development. The characterization indicated that Postmark Bog, as it pertains to the Proposed Action and the FedEx development is contaminated throughout with PFAS and hydrocarbons. The area has the highest levels of PFAS contamination were found along the southern edge of the Proposed Action.

## 3.5.2 Environmental Consequences

**Significance Threshold**

FAA Order 1050.1F does not define quantitative significance thresholds for hazardous materials, solid waste, and pollution. This assessment considered the following factors regarding whether the No-Action and 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.
- Involve a contaminated site with unmitigated adverse effects.
- Produce an appreciably different quantity or type of hazardous waste.
- Generate an appreciably different quantity or type of solid waste or use a different method of collection or disposal and/or would exceed local capacity.
- Adversely affect human health and the environment.

### *3.5.2.1 Direct and Indirect Impacts*

**No-Action**

The No-Action alternative would have no effect on hazardous materials, solid waste, or pollution because there would be no work performed that would generate waste or other pollutants, and no potentially contaminated soil would be disturbed. The existing PFAS contaminated soils would remain in place and PFAS compounds may continue to percolate through the soils due to rain saturation. The hydrocarbon contamination in the area may degrade over time through natural attenuation.

**Proposed Action**

As discussed above, Hazard IDs 26519 and 27763 are active contaminated sites resulting from LUSTs. Each site is over 700-feet away from the Proposed Action and there is no reporting to indicate that the LUST contamination is wide-spread. Construction and operation of the Proposed Action is not expected to involve either of the two sites.

The Proposed Action is located in an area of documented soil contamination associated with Hazard ID 27137. As described above, the area is contaminated with hydrocarbons and PFAS compounds, the highest levels of PFAS contamination occurring along the southern boundary of the Proposed Action. To construct the Proposed Action, the bog will require surcharging (placing fill on top of the land to compress the soils and sediments) to create the structural integrity for the proposed facilities. As the surcharging occurs, the contaminated bog water is expected to seep out. The surcharging will occur from one project direction to another (e.g., north to south) so that the contaminated water seeps out of the land in a uniform and predictable way. The fill will be amended with PFAS treatment. The water will be captured where it seeps out and filtered through a granular activated carbon filter which has been shown to effectively remove longer chains of PFAS, such as PFOA and PFOS, from water (EPA 2018). Additional technologies are being developed at a rapid pace and the final technology chosen to cleanup expelled water will be coordinated with ADEC. The PFAS contaminated soils will remain in place and capped with an impervious surface which will minimize the PFAS compounds percolating to groundwater through saturation by rain. Coordination with ADEC is ongoing and a final remediation plan will be approved by ADEC prior to construction (see Appendix G for coordination). The contaminated site will not be disturbed without mitigation in place for adverse impacts. Mitigation will follow guidance and regulation that exists, both state and federal, and will be approved by state authority. As such, no adverse effects to human health or the environment are expected; conversely cleaning up PFAS contaminated water would provide and environmental benefit. An Interim NEPA Contaminated Materials Management Plan with proposed details for mitigation is located in Appendix B, as well as record of consultation with ADEC.

Due to the largely undeveloped nature of the project area, the Proposed Action would generate minimal construction waste. Hazardous materials used during construction would be limited to minor amounts of fuel, lubricants, hydraulic fluids, cleaning solvents, and paint. Any construction waste generated would be disposed of at the local landfill in accordance with state and federal laws and regulations. Waste, hazardous or solid, will not be an appreciably different type or quantity than that which exists currently at other aviation facilities; fuel, lubricants, hydraulic fluids, cleaning solvents, and paints are commonly used for vehicle and aviation maintenance, which is ubiquitous throughout the airport. Solid waste will be minimal because the site does not require mass excavation or demolition. Stormwater discharges during construction would adhere to a Storm Water Pollution Prevention Plan (SWPPP) required under a Construction General Permit. Stormwater during facility operations will drain into the ANC stormwater system.

Over time, the Proposed Action may result in incidental and minor releases of hazardous materials within the project area. Depending on the quantity of hazardous materials, a spill prevention, control, and countermeasure plan may be required and implemented per 40 CFR 112 and ADEC spill prevention and response regulations outlined in 18 Alaska Administrative Code 75. In addition, the project will be required to comply with the hazardous materials, storage, and spill directives of the ANC Lease (ADA 32351), ANC Operations Manual, and all applicable airport regulations.

One of the primary activities that contribute to water pollution at airports around the country is the use of glycol-based aircraft deicing fluids. Glycol mixed in a stormwater discharge has the potential to migrate to receiving waters and reduce available oxygen to aquatic life. The glycol use at ANC will not change as a result of the project because the project is not increasing the fleet size or mix at ANC. Stormwater discharges at ANC are regulated and authorized under and Alaska Pollutant Discharge Elimination System General Permit (AKR061000, expires 10/31/2024). Industrial facilities are required to be co-permittees, develop a SWPPP and adhere to the stipulations of the ANC General Permit during operations.

#### *3.5.2.2 Cumulative Impacts*

Any releases of hazardous materials over time are expected to be remediated by primary, secondary, and tertiary spill response mechanisms, and stormwater collection facilities in the event that stormwater becomes contaminated. The mechanisms include:

- Primary containment: Mobile fluid spill kits stocked with absorbent socks, pads, pillows, and loose absorbents to prevent fuel from entering storm drains.
- Secondary containment: Oil/water separator in storm water system prevents any fuel that enters the storm water system from exiting.
- Tertiary containment: Closure of valves connecting storm water system to systems off-property contains spilled fuel on the property.

Due to the spill response mechanisms, the proposed project it not expected to add additional hazardous substances and will clean up PFAS contaminated water on-site as it is expelled from the ground during surcharging. FedEx is currently planning a development adjacent to the Proposed Action, also on PFAS contaminated land. FedEx has in place an ADEC approved plan for remediation of the contamination, leading to an overall decrease in abundance of PFAS. Long term, the proposed project and the FedEx development will decrease overall contamination abundance at ANC and ensure contaminated materials do not migrate off site. Details regarding remediation of PFAS can be found in Appendix B. Annual water quality monitoring is currently conducted and would continue to be done in accordance with the APDES permit issued to ANC and would continue to occur beyond construction of the Proposed Action. Groundwater sampling in the Postmark Bog is conducted annually by DOT&PF. The number of samples and frequency of sampling may increase as more information is gathered about the extent of contamination within the area. The samples are analyzed for PFAS compounds and petroleum hydrocarbons. ADEC is notified if any samples exceed maximum contaminant levels for the targeted analytes. Samples are also collected by DOT&PF from the stormwater system to monitor for potential contamination. Details regarding the treatment plan can be found in Appendix B. ANC manages airport-wide PFAS and is responsible for coordinating with ADEC on long term monitoring and management.

# 3.6 Historical and Cultural Resources

**Regulatory Context**

Historic properties are afforded special consideration by Section 106 of the National Historic Preservation Act of 1966, as amended (NHPA). Historic properties are cultural resources that are listed on, or determined eligible for, inclusion on the National Register of Historic Places. Historic properties may include archaeological artifacts or features, and historic standing structures more than 45 years old.

## 3.6.1 Affected Environment

The area of potential effects (APE) is that area within which direct and indirect effects may occur to archaeological, historical, or other cultural resources as a result of proposed project activities. The combined direct and indirect APE consists of the 29-acre proposed project area. There are no standing structures within the APE. Ground cover consists of wetland marsh and areas of pooling water. Numerous buried utility lines cross the lease area and evidence of past ground disturbance can be seen in the western portion of the parcel.

The affected environment was identified through a desktop records review of sources of archaeological, historic, and ethnographic cultural resource data including the Alaska Historic Resources Survey, a database maintained by Alaska Department of Natural Resources, Office of History and Archaeology. In addition, DOWL incorporated a review of historic aerial imagery and remotely-sensed data to assess the degree of previous development activities and disturbance and to identify high-potential landforms for archaeological properties. The inventory included agency and consulting party outreach, archival and database research, and reviews of previous literature and reports concerning the history of ANC and FAA's presence in Alaska and Anchorage. No previously documented historic resources or areas of high potential to contain historic resources were identified in the project area.

DOWL completed a pedestrian archaeological and historic resources survey across the entire APE on June 20, 2022. The parcel is water-saturated and has been disturbed in several locations and has been used by ANC for multiple decades and was therefore considered low potential for containing intact archaeological or historic resources. No historic resources were identified in the APE as a result of the survey.

## 3.6.2 Environmental Consequences

**Significance Thresholds**

The FAA has not established significance a threshold for Historical, Architectural, Archaeological, and Cultural Resources. Factors to consider when making significance determination include a finding of *Adverse Effect* through the Section 106 process.

### *3.6.2.1 Direct and Indirect Impacts*

**No-Action**

Under the No-Action alternative, none of the proposed project components would be constructed and no ground disturbing activities would occur. Although there are no documented

cultural resources in the project area, under the No-Action alternative there is no chance of disturbing an undocumented cultural resource.

**Proposed Action**

The APE consists of those areas within the proposed construction disturbance footprint. The Proposed Action is unlikely to impact any significant historical, architectural, archaeological, or cultural resources. No such resources have been documented within or adjacent to the APE. Portions of the project area are previously disturbed. Moreover, the project area does not exhibit features such as lookout points, fish streams, or good tool stone that would increase the likelihood of encountering buried archaeological resources. The APE, therefore, has low probability for undiscovered cultural resources.

A Findings Letter was sent to the State Historic Preservation Office (SHPO) on July 19, 2022, requesting a finding of *No Historic Properties Affected*. The SHPO responded with a concurrence letter agreeing to a finding of *No Historic Properties Affected* on August 5, 2022. Tribal consultation letters were sent to Chickaloon Moose Creek Native Association, Chickaloon Village Tribal Council, Cook Inlet Region Inc., Cook Inlet Tribal Council, Eklutna Inc., Knikatnu Inc., Knik Tribal Council, and Native Village of Eklutna on February 2, 2024. One response of "no comments on the tribal trust or subsistence issues…" was received from Eklutna Inc. on February 12, 2024. No other responses were received regarding tribal consultation. Appendix C shows Section 106 documentation.

#### *3.6.2.2 Cumulative Impacts*

There are no direct or indirect impacts expected from the proposed project, therefore there is not measurable accumulation of impacts and a cumulative impact analysis does not apply. FedEx is currently planning a development adjacent to the Proposed Action. A cultural resources review under Section 106 of the FedEx property also resulted in a finding of no historic properties effected.

## 3.7 Noise and Noise Compatible Land Use

**Regulatory Context**

Guidance and requirements for the assessment of aviation noise for compliance with NEPA are detailed in FAA Order 1050.1F. Per this guidance, noise exposure must be calculated using the FAA's primary noise metric for assessing the environmental impact of noise exposure, yearly Day-Night Average Sound Levels (DNL).

The compatibility of existing and planned land uses with proposed FAA actions is usually determined in relation to the level of aviation noise. Compatible use guidelines can be found in Table 1 in Appendix A of 14 CFR Part 150, *Land use Compatibility with Yearly Day-Night Average Sound Levels*. Per part 150, noise exposure levels of less than 65 DNL are considered compatible with residential and other noise-sensitive land uses. Examination of noise levels below 65 DNL is only necessary if there is substantial noise impact within the 65 DNL contour.

### 3.7.1 Affected Environment

The study area for noise consideration is the area within the DNL 65 decibel (dB) contour published in the FAA-approved *Ted Stevens Anchorage International Airport FAR Part 150 Noise Compatibility Study Update* (ANC 2015). Figure 7 shows existing noise conditions in 2009, and Figure 8 shows predicted 2020 noise contours as modeled in the 2015 study. The DNL 65 dB contour includes western half of the Proposed Action, while the eastern half of the project area is in the DNL 60 dB contour. The area is currently undeveloped and as such, no noise emissions are produced from the project area. Additionally, the existing conditions are flat, with grasses and low shrub vegetation, as such the site does not currently act to attenuate existing airport noise.

### 3.7.2 Environmental Consequences

**Significance Thresholds**

FAA Order 1050.1F establishes that noise impacts would be significant if the action would increase noise by DNL 1.5 dB 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 65 dB level or greater increase, when compared to the no action alternative for the same timeframe. For example, an increase from DNL 65.5 dB to 67 dB is considered a significant impact, as is an increase from DNL 63.5 dB to 65 dB.

FAA Order 1050.1F, Paragraph 14.4i requires the following information be disclosed for the current condition:

- The number of people living or residences within each noise contour above DNL 65 dB, and
- The location and number of noise sensitive uses (e.g., historic sites, schools, hospitals, nursing homes, certain recreation uses, and places of worship) exposed to DNL 65 dB or greater, and
- Mitigation measures in effect or proposed and their relationship to the proposal.

Noise sensitive areas within Section 4(f) properties should receive special consideration if the value or purpose of the area can be attributed to a low noise environment. For these areas, land use compatibility may need to meet more stringent thresholds than the DNL 65 dB level and the guidelines in FAA noise regulations (14 CFR 150).

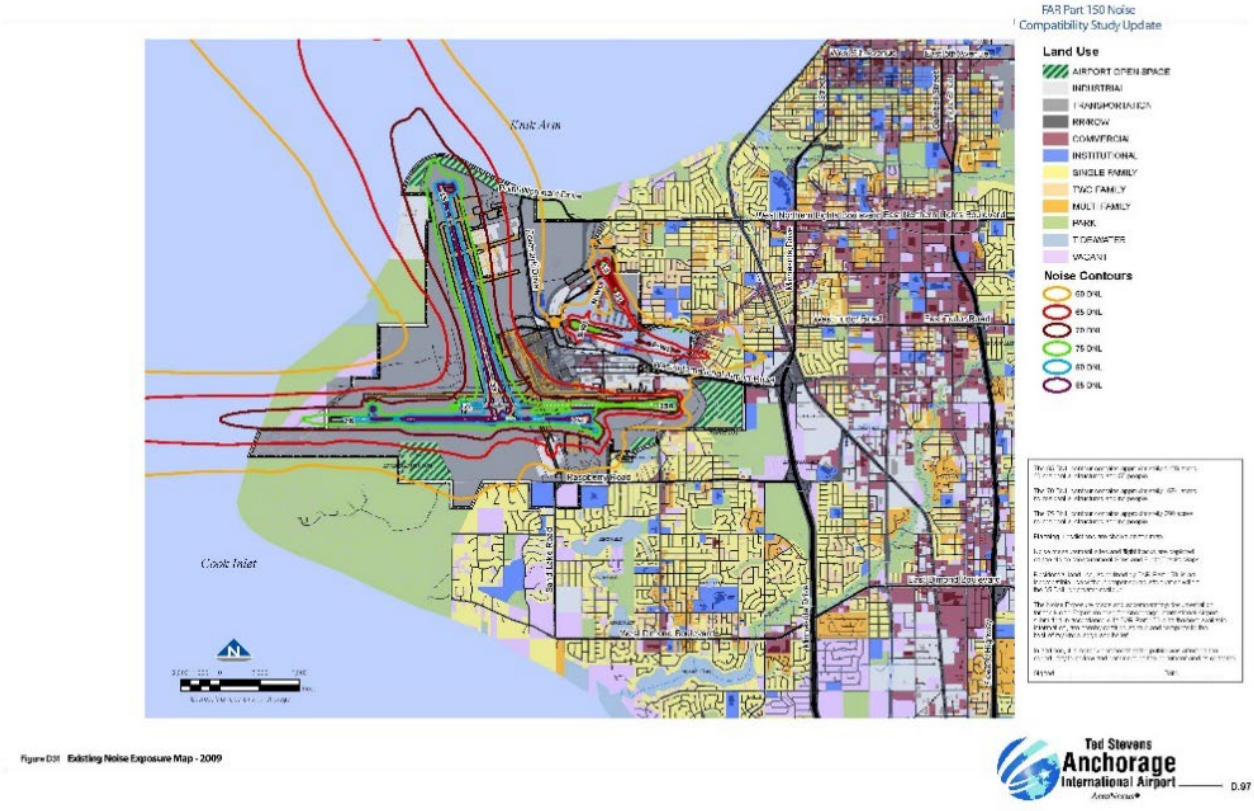


*Figure 7 ANC Existing Noise Exposure Map*

#### *3.7.2.1 Direct and Indirect Impacts*

**No-Action**

Under the No-Action alternative, none of the proposed project components would be constructed, thus the noise exposure would remain consistent with present noise conditions (within the DNL 60 and 65 dB contours).

**Proposed Action**

A preliminary noise analysis determined that noise impacts from the project operations are limited to a degree that they don't warrant a detailed analysis as described in FAA Order 1050.1F Desk Reference (please see Noise Analysis in Appendix D). The noise analysis used the Airport Equivalent Method (AEM) as a screening tool to evaluate noise impacts. AEM is a mathematical procedure that provides an estimated noise contour area of a specific airport given the types of aircraft and the number of operations (take offs or landings) for each aircraft. The tool requires input of additional landings and take offs to evaluate changes to noise

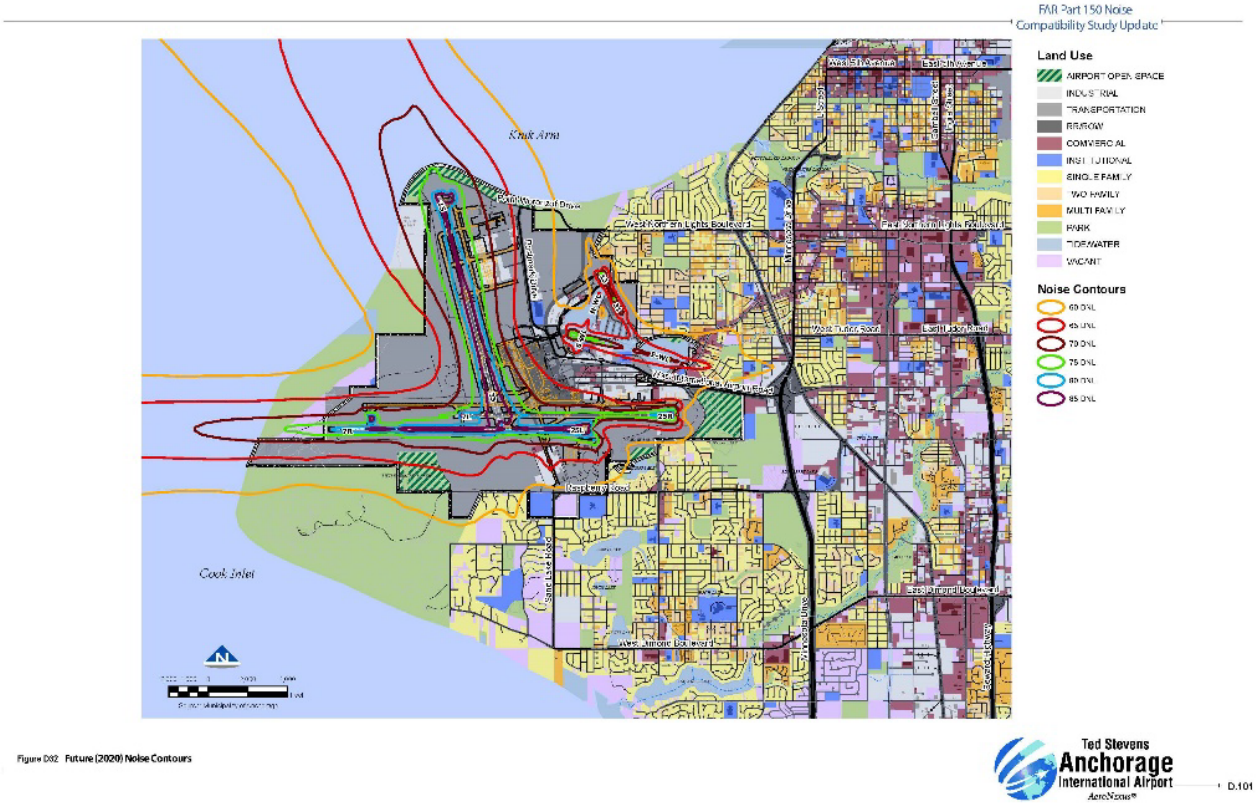


*Figure 8 ANC Predicted Noise Conditions, 2020*

contours. Although there will be no increase in airport activity due to the Proposed Action, the noise analysis used 18 additional landings and take offs as an absolute worst alternative case in order to evaluate noise impacts with the AEM tool. Eighteen additional landings and take offs (36 operations) represents an abundance of caution in evaluating noise at this location, however the screening resulted in a finding that the proposed project does not reach or exceed the production of DNL 1 dB of additional noise, as such no additional noise analysis is warranted. No significant noise impacts will occur.

Construction of the Proposed Action would result in varying levels of noise generation subject to change based on the construction intensity and distance to a given receptor. As a logarithmic unit of measurement, the decibel cannot be added or subtracted linearly. Some guidelines for understanding changes in noise levels follow.

- If two sounds of the same level are added, the sound level increases by approximately 3 dB. For example: 60 dB + 60 dB = 63 dB.

- The sum of two sounds of a different level is only slightly higher than the louder level. For example: 60 dB + 70 dB = 70.4 dB.

- Sound from a “point source,” such as construction equipment, decreases approximately 6 dB for each doubling of distance.

- Although the human ear can detect a sound change as faint as 1 dB, the typical person does not perceive changes of less than approximately 3 dB.

- A 10 dB change in sound level is perceived by the average person as a doubling, or halving, of the sound’s loudness.

Construction noise typically dissipates at a rate of approximately 6 dB for each doubling of distance (between the noise source and the receptor, which is the location that is representative of where the sound would be experienced (e.g., a residence)). Based on anticipated equipment that would be used during construction of the Proposed Action, the typically noisiest construction equipment with mufflers (independent of background ambient noise levels) used during excavation and grading was the basis for this analysis. These pieces of equipment may generate a noise level of approximately 88 dB at 50 feet from the noise source. Based on a sound dissipation rate of 6 dB per doubling of distance, a sound level of 88 dB at 50 feet from the noise source would be approximately 82 dB at a distance of 100 feet, 76 dB at a distance of 200 feet, and so on. That sound dissipation rate and the corresponding attenuation estimates are conservative in that they do not take into account any intervening shielding (including landscaping or trees) or barriers, such as structures or hills between the noise source and noise receptor, which would further reduce noise levels. (Federal Highway Administration, 2006).As reported in the Airport’s FAR Part 150 Compatibility Study Update, a semi-permanent noise monitor was set up at 3190 Bridle Lane, which is at the approximate location of the nearest residential land use to the project study area (ANC 2015). The ambient noise at this monitoring site was recorded at 59.3 dB in the winter and at 64.9 dB in the summer. Therefore, due to the distance from the closest sensitive noise receptor, noise attenuation from the project study area, and typical ambient noise levels, construction noise would not likely be perceptible at the nearest residence to the project study area.

Project construction will abide by the Anchorage Noise Control Ordinance (AMC 15.70). Thus, and for example, work on nights, weekends, or holidays would require a Noise Permit. If the sound levels for construction triggered a requirement for a construction Noise Permit, the Municipality of Anchorage could place such conditions on the permit as deemed necessary or advisable by the Municipality, thus further addressing as appropriate the eventuality of temporary noise impacts. Abatement methods such as proper maintenance of construction equipment would help further reduce impacts.

#### *3.7.2.2 Cumulative Impacts*

There are no direct or indirect impacts expected from the proposed project, therefore there is not measurable accumulation of permanent impacts and a cumulative impact analysis does not apply. Although there is no perceptible increase in noise from the Proposed Action, it is important to disclose that FedEx is currently planning a development adjacent to the Proposed Action. Operation of the FedEx facility would not result in an increase in activity as certain operations would be moved from the existing facility to the new facility. Cumulative impacts of both the FedEx facility and the Proposed Action are negligible as demonstrated by the Proposed Action Noise Analysis (Appendix D) and the understanding that FedEx is not increasing operations. Cumulative noise impacts airport-wide are studied and disclosed in the FAR Part 150 Noise Compatibility Study (ANC 2015).

The Proposed Action and the FedEx facility are proposed for construction from 2024 to 2026, there may be overlap as the Proposed Action is expected to go to construction in 2025. Combined construction activities will increase temporary noise impacts. However, both projects are subject to the same noise ordinance requirements. Cumulatively, the consistency of noise may increase (more loud noises throughout the day), however cumulatively construction of the two projects together is not expected to increase dB output. Both projects are subject to the same inversely proportional relationship between source sound pressure and distance from the sounds source (-6 dB per doubling of distance). According to the inversely proportional relationship between source sound pressure and distance from the sounds source, the 65dB contour of construction equipment noise would be approximately 800 feet. The noise changes to 58dB at 1600 feet. No sensitive land exists within 1600 feet of either property.

# 3.8 Visual Resources / Visual Character

**Regulatory Context**

There are no federal special purpose laws or requirements specific to light emission and visual effects. Relevant special purpose laws include Section 106 of the NHPA and Section 4(f) of the USDOT Act; both laws require consideration of visual impacts to protected resources.

## 3.8.1 Affected Environment

Baseline conditions for visual resources and visual character near the Proposed Action include airport infrastructure and governmental buildings. To the north of the proposed project is hardstands and Taxiway Papa. To the west is Taxiway Romeo and the main north/south runway. To the east is Postmark Drive and the US Postal Service Post Office. Lastly to the south of the project area are government or airport related buildings such as Field Maintenance Facility, Airport Police and Fire, and Anchorage Fueling and Service Company. The character of the surrounding area is generally a built environment of aviation support infrastructure and facilities.

## 3.8.2 Environmental Consequences

**Significance Thresholds**

The FAA has not established a significance threshold for light emissions or visual resources / character. Factors to consider include the extent to which the action would have the potential to:

- Create annoyance or interfere with normal activities from light emissions
- Affect the visual character of the area, including the importance, uniqueness, and aesthetic value of the affected visual resources
- Contrast with the visual resources and/or visual character in the study area
- Block or obstruct the views of visual resources, including whether these resources would still be viewable from other locations

### *3.8.2.1 Direct and Indirect Impacts*

The Proposed Action is not expected to have light impacts that substantially alter the character of the area; the proposed project area is on airport property adjacent to existing aviation

facilities with security lighting. The climate-controlled warehouse would be up to 75 feet tall. Turnagain is the nearest neighborhood to the proposed facilities, approximately 0.85 miles away. The proposed facilities will not be visible to the neighborhood due to distance, vegetative buffers, and the existing infrastructure between the neighborhood and the proposed facilities. Earthquake Park is the nearest recreational resource to the proposed project, approximately 0.85 miles away. Earthquake Park and associated trails are vegetated, obscuring views of the airport and subsequently obscuring views of the proposed facilities.

Light emissions already exist in the area and the addition of the Proposed Action is not expected to interfere with normal activities. The proposed project is consistent with the land uses in the surrounding area and will not be visible from the nearest residential area, nor the nearest recreational area.

#### *3.8.2.2 Cumulative Impacts*

The cumulative impact of the proposed project is not expected to be significant because it is consistent with the existing visual character of airport property. Airport property in the area has existing aviation facilities, runways, taxiways, and terminals. FedEx is currently planning a development adjacent to the Proposed Action. The visible portions of the proposed FedEx consist of two buildings, vehicle parking, aircraft apron, a new connection to Postmark Drive, and a perimeter fence; all in support of air cargo activities. The Proposed Action and the proposed FedEx facility are consistent with the current visual resources in the surrounding area and will not create a significant interference with normal activities.

## 3.9 Water Resources

Floodplains

Floodplains in the area are shown on Federal Emergency Management Agency Flood Insurance Rate Map 0200050740D (effective 9/25/2009). The project area is in a Zone X, defined as an area of minimal flood hazard. The project is not expected to have any floodplain impacts.

Wild and Scenic Rivers

The National Park Service's National Wild and Scenic Rivers System (WSRS) list and Nationwide Rivers Inventory (NRI) indicates there are no designated units of the WSRS or NRI-designated waters in the project area or vicinity.

Surface Water and Groundwater – According to FAA Order 1050.1F Desk Reference (FAA 2023), surface waters include streams, lakes, rivers, lakes, ponds, estuaries, and oceans. A review of the U.S. Geological Survey National Hydrography Dataset shows there are no waterways or waterbodies within the project area.

Although no waterways or waterbodies occur in the project area construction and operation of the Proposed Action would have the potential for water quality issues such as increased surface runoff. However, as identified in the CMMP prepared for the Proposed Action (Appendix B), soil handling during construction would be conducted in a manner that prevents the release of contaminants to surface water and is protective of the water quality standards presented in the ADEC's 18 AAC 70 Water Quality Standards regulations. Storm water management procedures would be outlined in the project SWPPP and ESCP prepared by the Contractor. Groundwater

generated during construction would be managed in accordance with the terms and conditions of the ADEC Excavation Dewatering Permit, AKG002000. A dewatering and best practices plan would be prepared by the Contractor and submitted to ADEC for approval prior to the start of dewatering. The plan would include details of the treatment system design and processes.

Storm water runoff resulting from the addition of an impervious surface would flow into a culvert under North Tug Road which connects to a storm drainpipe that discharges directly into Knik Arm. The discharge of stormwater from airport property is regulated under Clean Water Act Section 402 through an Alaska Pollutant Discharge Elimination System permit.

According to the Environmental Protection Agency's Sole Source Aquifer web-mapper (accessed October 2023), no sole source aquifers exist in Alaska. Groundwater in the Postmark Bog area has been measured at around 100 feet below ground surface (ADEC 2022b). Limited excavation for utility installations may be between zero and 25 feet below ground and is not expected to reach 100 feet below ground surface – the depth of groundwater, as such no impacts to groundwater are expected.

Wetlands

**Regulatory Context**

The Clean Water Act (CWA) establishes the basic structure for regulating the discharge of pollutants into waters of the United States, which includes wetlands. Section 404 of the CWA establishes a program to regulate the discharge of dredged or fill material into waters of the United States. Section 401 of the CWA ensures that federal actions do not impair water quality.

Executive Order 11990 directs all federal agencies to avoid adverse impacts associated with the destruction or modification of wetlands, to the extent practicable. The stated purpose of this Executive Order is to "minimize the destruction, loss or degradation of wetlands and to preserve and enhance the natural and beneficial values of wetlands."

### 3.9.1 Affected Environment

The MOA classifies about 22 acres within the 29-acre proposed project area as a Class A wetland (Figure 9) and specifies the area as Site #26D in its Wetlands Management Plan (MOA 2014). A 2019 Wetland Delineation and functional assessment report by the DOT&PF (DOT&PF 2019) confirmed the presence and extent of the wetland as mapped by MOA and the USFWS National Wetlands Inventory (USFWS 2022). Most of the area consists of Freshwater Emergent Wetland, with some Freshwater Forested/Shrub Wetland on the north and west edges. The MOA Wetlands Management Plan indicates that the site is significant due to nesting and migratory bird habitat, stormwater treatment and attenuation values.

An Approved Jurisdictional Determination was requested from the U.S. Army Corps of Engineers (USACE) to determine if wetlands mapped within the study area are navigable waters, interstate waters, part of a tributary system, adjacent wetlands, or impoundments, and therefore subject to Section 404 of the CWA. An Approved Jurisdictional Determination (AJD) obtained in June 2021 found that there are adjacent wetlands ((a)(4) waters) under CWA jurisdiction within the project area (Appendix E). According to the AJD, a direct hydrologic surface connection between wetland #26D and Knik Arm is maintained through artificial features, including a culvert under North Tug Road which connects to a storm drainpipe that discharges directly into Knik Arm.


*Figure 9 Wetlands in the Project Area*

## 3.9.2 Environmental Consequences

### Significance Thresholds

FAA Order 1050.1F determines significance based on whether the Proposed Action would:

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

- Be consistent with applicable state wetland strategies.

#### *3.9.2.1 Direct and Indirect Impacts*

**No Action**

The No-Action alternative would not require modification to, or placement of fill within wetlands, as no construction would take place.

**Proposed Action**

The Proposed Action would fill and result in unavoidable permanent impacts to about 22 acres of wetlands. According to the Anchorage Wetlands Management Plan (AWMP)(MOA 2014), the wetland is a part of site number 26D, “Postmark Drive West”. According to the AWMP functions lost by the permanent impacts include groundwater recharge, water quality, stormwater attenuation, aesthetic and noise buffer, and migratory and nesting bird habitat. Although the wetland provides good habitat for migratory and nesting birds, U.S. Department of Agriculture has a contract with ANC for wildlife hazard mitigation, including the Postmark Bog location. Nesting and migratory birds are regularly removed from airport property, including Postmark Bog due to the inherent hazard to aviation. The wetland’s significant function as wildlife habitat is diminished by the hazard mitigation program.

The primary function of the Postmark Bog wetland is stormwater runoff attenuation from airport impervious surfaces. Complete avoidance of impacts to wetlands is not possible to meet the project’s purpose and need. The size of the facility is necessary to help meet the demand for various storage types (cold, heated, and general) as well as equipment and aircraft staging and storage. The footprint of the pad has been minimized by decreasing the pad and driveway side slopes. In addition, by placing the building on piles, the amount of fill placed has been minimized. A USACE Individual Permit was approved on June 30, 2023 (Appendix E). The permit includes special conditions for wetland mitigation credits to be purchased prior to construction to compensate for the loss of functions of Postmark Bog. A total of 23.965 credits must be acquired to offset the loss of acreage and functions due to the Proposed Action. Table 5 summarizes the wetland impacts expected to occur as a result of this project.

The proposed project would result in impacts that meet or exceed the significance thresholds stated above. However, the USACE as the regulatory agency dictates mitigation requirements such that impacts will be offset by the appropriate amount of compensatory mitigation. The credits for mitigation to offset wetland impacts were determined at a ratio of 1.75 to 1. Compensatory mitigation as determined by the USACE will be applied to bring the overall level of impact to wetlands below significant. USACE evaluated impacts to wetlands in their environmental document, called a Statement of Findings, found in Appendix F.

*Table 5: ACCS Facility Permanent Wetland Impacts*

| PROJECT COMPONENT | AREA (ACRES) | VOLUME (CY) |
|---|---|---|
| Aircraft Apron | 13.8 | 422,238 Total |
| Heavy Duty Concrete | | 33,334 |
| MOA Type II | | 44,446 |
| MOA Type III | | 277,789 |
| Surcharge | | 66,669 |
| Building | 3.2 | 96,096 Total |
| MOA Type II | | 10,445 |
| MOA Type III | | 69,983 |
| Surcharge | | 15,668 |
| Parking Area | 1.0 | 28,822 Total |
| Asphalt | | 554 |
| Base Course | | 586 |
| MOA Type II | | 3,257 |
| MOA Type III | | 19,540 |
| Surcharge (MOA Type III) | | 4,885 |
| Drive Aisles | 3.6 | 105,866 Total |
| Asphalt | | 2,000 |
| Base Course | | 2,117 |
| MOA Type II | | 11,763 |
| MOA Type III | | 72,342 |
| Surcharge | | 17,644 |
| **Total** | **21.6** | **653,022** |

#### *3.9.2.2 Cumulative Impacts*

According to the Anchorage Wetlands Management Plan (2014), Postmark Bog has lost approximately 27 acres of wetlands since 1996. The proposed action would fill an additional 21.6 acres of wetlands. Reasonably foreseeable actions include the adjacent FedEx development, also located on Postmark Bog. The FedEx development proposed to fill and additional 14.32 acres of wetlands for a cumulative impact of 35.92 acres. It is reasonably foreseeable that the Postmark Bog wetlands will be filled entirely by aviation developments. The USACE requires mitigation for unavoidable impacts to jurisdictional wetlands. The amount of mitigation required has been determined by the USACE as the jurisdictional regulatory agency and will offset the loss of Postmark Bog wetlands. The total credits required by both FedEx and the Proposed Action for compensatory mitigation is 36.62 credits.

Although we are not directly relying on the USACE environmental analysis, we note that they reached a similar conclusion. Specifically, the USACE concluded that cumulative impacts were not significant in the Department of the Army Environmental Assessment and Statement of Findings associated with the Individual Permit for the Proposed Action (POA-2021-00121): "When considering the direct and indirect impacts that will result from the proposed activity, in relation to the overall direct and indirect impacts from past, present, and reasonably foreseeable future activities, the incremental contribution of the proposed activity to cumulative impacts in

the area described in section 9.2, are not significant. Compensatory mitigation will be required to offset the impacts of the proposed activity to eliminate or minimize its incremental contribution to cumulative effects within the geographic area described in Section 9.2. Mitigation required for the proposed activity is discussed in Section 8.0." Please see Appendix E for the Department of the Army Environmental Assessment and Statement of Findings.

# 4.0 ENVIRONMENTAL COMMITMENTS

The Proposed Action will adhere to all federal, state, and local laws. In addition, construction of the Proposed Action will include measures to avoid, minimize, and mitigate potential environmental impacts through standard operating procedures and best management practices. Table 6 shows proposed environmental commitments that arose from coordination with regulatory agencies. In addition to the environmental commitments the proposed project will adhere to all permit stipulations that may arise during the permitting process.

*Table 6: Environmental Commitments*

| TOPIC | COMMITMENT |
|---|---|
| Hazardous Materials | • If excess soils are generated that require treatment or disposal, coordination with ADEC will be required prior to treatment of disposal.<br>• Dewatering will require a DEC approved treatment plan (approved CMMP) prior to dewatering activities. |
| Wetlands | Compensatory mitigation will be provided for unavoidable impacts to jurisdictional wetlands. |

# 5.0 PUBLIC AND AGENCY INVOLVEMENT

**Regulatory Context**

The intent of public involvement is to inform the public and solicit comments. CEQ defines the requirements for public involvement in NEPA under 40 CFR § 1506.6. In summary, under CEQ guidelines agencies shall make diligent efforts to involve the public. Additionally, FAA requirements for public involvement while completing an EA are discussed in FAA Order 1050.1F. Paragraph 6-2.2(b) of the Order states that the FAA or applicant must involve the public, to the extent practicable, in preparing EAs. Under FAA Order 1050.1F, public involvement is determined on a case-by-case basis, and scoping (a method for soliciting comments) is optional.

Agency involvement for EAs is discussed in paragraph 6-2.2(d) and recommends contacting appropriate entities to obtain information concerning potential environmental impacts.

## 5.1 Public Involvement

Alaska Cargo and Cold Storage began public outreach in May 2022 to inform the public about proposed developments to the Alaska Cargo and Cold Storage site. Public involvement included publishing the Notice of Intent to Prepare an Environmental Assessment in the Anchorage Daily News, which opened a comment period from May 29th to July 1st 2022. An additional public comment period to solicit feedback on the Draft EA was opened September 4, 2023 and closed October 15, 2023. A public meeting was held on October 3, 2023. Notification of the Draft EA availability and the scheduled public meeting was provided as follows:

- Legal ad in the Anchorage Daily News
- Notification on the State of Alaska Online Public Notification System
- Notification through the State of Alaska GovDelivery
- Postcards sent to businesses within one mile (approximately 100)
- Email to the Federation of Community Councils

Public Involvement materials can be found in Appendix F.

One public comment was received during the initial scoping and discussed a primary concern of pollutants and hazardous materials spills as they relate to impacts to humans and biological resources. One formal comment was received at the October 3, 2023 public meeting and discussed a recommendation for in-ground power for jets so that they can turn off the auxiliary power units while parked. General discussion topics at the public meeting included ANC-wide cumulative impacts including noise and air quality, concerns of additional traffic on West Northern Lights Boulevard, general interest in the Section 404 CWA permit and mitigation, and discussion on contamination and remediation techniques. A comment response log can be found in Appendix F.

Additional public involvement that should be considered is the outreach associated with the ANC Master Plan update (Ted Stevens Anchorage International Airport, 2014). The public involvement process for the ANC Master Plan update is the preliminary outreach to solicit

comments on what should go where on airport property. The substantial public outreach efforts were conducted over 18 months from 2012 to 2014. The ALP was approved in 2014, including the proposed location being designated for cargo facilities.

## 5.2 Agency Involvement

Agency scoping was conducted with agencies that may have jurisdictional resources within or near the project area. Scoping materials including a background letter and a preliminary environmental research report were sent to agencies on June 10, 2022 (Appendix G). Agencies were sent a Notice of Availability of the Draft EA and Notice of a Public Meeting on September 12, 2023.

Agency comments during scoping were specific to wetlands and contamination. ADEC stated that a plan for construction dewatering would be required prior to construction. The proposed plan, as described in Section 3.5.2, is in development with ADEC and will require approval prior to ground disturbing activities. The MOA Planning Department requested clarification of a sentence in the scoping documents as it related to contaminated water cleanup. A response was sent to provide a summary of the methodology expected for contaminated water cleanup, no further requests were received. No agency comments were received on the Draft EA.

*Table 7: Agency Responses to Scoping*

| AGENCY | SUMMARY RESPONSE TO SCOPING |
|---|---|
| Alaska Department of Environmental Conservation, Contaminated Sites Program | Contamination is known to exist on-site. Restrictions on use or disposal will be in place. A plan will be required for dewatering or disposal of soils. |
| Alaska Department of Environmental Conservation, Drinking Water Program | No concern, project is not near an active public water system. |
| Alaska Department of Environmental Conservation, Solid Waste Program | No concern, no solid waste sites exist at the project location. |
| Alaska Department of Natural Resources, State Historic Preservation Office | No concern, no historic properties are in the immediate vicinity. |
| Environmental Protection Agency | Recommends consideration of climate change, and avoidance, minimization, and mitigation for impacts to wetlands. |
| Municipality of Anchorage, Planning Department | Request for information on how contaminated water will be treated and how coordination with ADEC will occur |

# 6.0 LIST OF PREPARERS

| NAME | POSITION AND AFFILIATION | ROLE |
|---|---|---|
| Theresa Dutchuk | DOWL | Main Author |
| Donna Robinson | DOWL | Support Author |
| Emily Corley | DOWL | Support Author |
| Gretchen Dana | DOWL | Support Author |
| Jake Anders | DOWL | Support Author |
| Gina Stevens | DOWL | Document Format |
| Joe Jacobson | McKinley Capital | EA Review |
| Matt VanGoethem | MCG Explore Design | EA Review |
| Jason Gamache | MCG Explore Design | EA Review |
| Tenor Engineering Group | - | Noise Analysis |

# 7.0 REFERENCES

ADEC. 2011. Technical Revisions to: State Air Quality Control Plan Vol. II: Analysis of Problems, Control Actions Section III.B: Anchorage Transportation Control Program.

ADEC. 2022a. Division of Spill Prevention and Response. Contaminated Sites. https://dec.alaska.gov/spar/csp/. Accessed October 2022.

ADEC. 2022b. January 2022 PFAS Site Characterization Report: ARFF Station/Postmark Bog. ADEC File:2100.38.028.39. https://dec.alaska.gov/Applications/SPAR/PublicMVC/CSP/SiteReport/27137. Accessed June 2023.

AEDC. 2020. 2020 3-Year Economic Outlook Report. https://aedcweb.com/project/2020-3-year-outlook-report/. Accessed July 2022.

AEDC. 2022. Air Service. https://aedcweb.com/tsaia/air-service/. Accessed April 2022.

Airports Council International. 2021. ACI World data reveals COVID-19's impact on world's busiest airports. https://aci.aero/2021/04/22/aci-world-data-reveals-covid-19s-impact-on-worlds-busiest-airports/. Accessed April 2022.

Airports Council International. 2022. The Top 10 Busiest Airports in the World Revealed. https://aci.aero/2022/04/11/the-top-10-busiest-airports-in-the-world-revealed/. Accessed July 2022.

Airports Council International. 2023. The Top 10 Busiest Airports in the World Revealed. https://aci.aero/2023/04/05/international-travel-returns-top-10-busiest-airports-in-the-world-revealed/. Accessed October 2023.

ANC. 2015. FAR Part 150 Noise Compatibility Study Update. https://dot.alaska.gov/anc/documents/ANC%20FAR%20Part%20150%20Noise%20Compatibility%20Study%20Update.pdf. Accessed March 2024.

AIAS. 2023. Alaska International Airport System Annual Report. https://dot.alaska.gov/aias/assets/FY2023-AIAS-Annual-Report.pdf. Accessed March 2024.

Boeing. 2022. World Air Cargo Forecast 2022-2041. https://www.boeing.com/resources/boeingdotcom/market/assets/downloads/Boeing_World_Air_Cargo_Forecast_2022.pdf. Accessed January 2023.

CEQ. 2023. National Environmental Policy Act Guidance on Consideration of Greenhouse Gas Emissions and Climate Change. https://www.federalregister.gov/documents/2023/01/09/2023-00158/national-environmental-policy-act-guidance-on-consideration-of-greenhouse-gas-emissions-and-climate. Accessed October 2023.

DOT&PF. 2019. CFAPT00422 AIA Cargo Parking N1, N2, and N3. Wetland Delineation Report and Functional Assessment.

DOT&PF. 2022. Ted Stevens Anchorage International Airport. Airport Facts. https://dot.alaska.gov/anc/about/facts.shtml. Accessed April 2022.

EPA. 1999. Technical Support for Development of Airport Ground Service Equipment Emission Reductions. https://nepis.epa.gov/Exe/ZyPDF.cgi/P1001U8S.PDF?Dockey=P1001U8S.PDF. Accessed March 2024.

EPA. 2018. Reducing PFAS in Drinking Water with Treatment Technologies. https://www.epa.gov/sciencematters/reducing-pfas-drinking-water-treatment-technologies. Accessed August 2022.

EPA. 2022. Simplified GHG Emissions Calculator. https://www.epa.gov/climateleadership/simplified-ghg-emissions-calculator. Accessed April 2023.

EPA. 2023a. eGrid Power Profiler. https://www.epa.gov/egrid/power-profiler#/AKGD. Accessed January 2024.

EPA. 2023b. Greenhouse Gas Equivalencies Calculator. https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator. Accessed October 2022.

FAA. 2006. Order 5050.4B. National Environmental Policy Act (NEPA) Implementing Instructions for Airport Actions. https://www.faa.gov/airports/resources/publications/orders/environmental_5050_4/media/5050-4B_complete.pdf. April 28, 2006.

FAA. 2015. Order 1050.1F. Environmental Impacts: Policies and Procedures. https://www.faa.gov/air_traffic/environmental_issues/ared_documentation/media/Order_1050_1F(07162015_final_version).pdf. July 16, 2015.

FAA. 2023. 1050.1F Desk Reference. https://www.faa.gov/media/71921.

FAA. 2022. Memorandum: Updated Instructions to Airports District Offices and Regional Office of Airports Employees Regarding Airport Layout Plan Reviews and Projects Potentially Affected by Section 163 of the FAA Reauthorization Act of 2018. https://www.faa.gov/sites/faa.gov/files/2022-08/Section-163-Instructions-2022-08.pdf, August 3, 2022.

Robert L. Hershey, Louie Turner. 1974. Taxiing noise of jet aircraft. Journal of the Acoustical. Society of America. 56 (S1): S34–S35. https://doi.org/10.1121/1.1914133

IWG. 2021. "Technical Support Document: Social Cost of Carbon, Methane, and Nitrous Oxide." Interagency Working Group on Social Cost of Greenhouse Gases, United States Government 48.

Maritime News. 2022. https://maritime-news.com/these-ports-are-causing-the-most-congestion-in-the-global-supply-chain-new-cnbc-charts-show/. Accessed October 2022.

MOA. 2014. Anchorage Wetlands Management Plan. https://www.muni.org/departments/ocpd/planning/physical/envplanning/documents/anchorage%20wetlands%20management%20plan-2014.pdf. Accessed October 2022.

Ted Stevens Anchorage International Airport. 2014. 2014 Master Plan Update. https://dot.alaska.gov/anc/about/masterPlan.shtml. Accessed July 2022.

Ted Stevens Anchorage International Airport. 2022. https://ancairport.com/about/. Accessed July 2022.

Trading Economics. 2022. United States Imports. https://tradingeconomics.com/united-states/imports. Accessed July 2022

USFWS. 2022. National Wetlands Inventory. https://www.fws.gov/wetlands/data/Mapper.html. Accessed October 2022.