Final

Environmental Assessment

Air Cargo Facility Development
Cincinnati/Northern Kentucky International Airport

Prepared For
U.S. Department of Transportation
Federal Aviation Administration

February 2019

Prepared by
Landrum & Brown

This environmental assessment becomes a Federal document when evaluated, signed, and dated by the Responsible FAA Official.

Responsible FAA Official

Date

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Acronyms

ACRONYMS

The following is a list of acronyms used in the EA.

AC	Advisory Circular
ACHP	Advisory Council on Historic Preservation
ACS	American Community Survey
AEDT	Aviation Environmental Design Tool
AFBR	Anaerobic Fluidized Bed Reactor
AGB	Aerated Gravel Bed
ALP	Airport Layout Plan
AMU	Adjusted Mitigation Units
APE	Areas of Potential Effects
APU	Auxiliary Power Unit
AST	Aboveground Storage Tank
ATCT	Airport Traffic Control Tower
AvGas	Low-lead aviation gasoline
BA	Biological Assessment
BMPs	Best Management Practices
BO	Biological Opinion
BTU	British Thermal Units
CAA	Clean Air Act of 1970, as amended
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended
CERFA	Community Environmental Response Facilitation Act of 1972
C.F.R	Code of Federal Regulations
CH_4	Methane
CO	Carbon Monoxide
CO_2	Carbon Dioxide
CO_2E	Carbon Dioxide Equivalencies
CREC	Controlled Recognized Environmental Condition
CVG	Cincinnati/Northern Kentucky International Airport
CWA	Clean Water Act of 1972 (Federal Water Pollution Control Act, as amended)
Day	7:00 am to 9:59 pm
dB	Decibel
DNL	Day-Night Average Sound Level
DOW	Kentucky Division of Water
EA	Environmental Assessment
EIS	Environmental Impact Statement

ACRONYMS

EO	Executive Order
EPA	Environmental Protection Agency
ESA	Endangered Species Act of 1973, as amended
E&A	Environment & Archaeology, LLC
FAA	Federal Aviation Administration
FEMA	Federal Emergency Management Agency
FICON	Federal Interagency Committee on Noise
FICUN	Federal Interagency Committee on Urban Noise
FIRM	Flood Insurance Rate Maps
FPPA	Farmland Protection Policy Act of 1981
GAO	General Accounting Office
GAV	Ground Access Vehicles
GHG	Greenhouse Gas
GIS	Geographic Information System
GSE	Ground Support Equipment
H_2O	Water, Water Vapor
HDO	Houston-Donaldson Study Corridor Overlay District
HFCs	Hydrofluorocarbons
HREC	Historical Recognized Environmental Conditions
HSWA	Hazardous and Solid Waste Amendments of 1984
IBCF	Imperiled Bat Conservation Fund
ICAO	International Civil Aviation Organization
ILF	In-Lieu Fee
ITS	Institute of Transportation Studies
Jet A	Jet fuel
KCAB	Kenton County Airport Board
KDFWR	Kentucky Department of Fish and Wildlife resources
KFO	Kentucky Field Office
KHC	Kentucky Heritage Council
KPDES	Kentucky Pollutant Discharge Elimination System
KSNPC	Kentucky State Nature Preserves Commission
KYDEP	Kentucky Department of Environmental Protection
KYOSA	Kentucky Office of State Archaeology
kWh	Kilowatt Hours
KYTC	Kentucky Transportation Council
L_{max}	Maximum Noise Level
LWCF	Land and Water Conservation Fund Act of 1965

ACRONYMS

L&B	Landrum & Brown
MOA	Memorandum of Agreement
MSA	Metropolitan Statistic Area
N_2O	Nitrous Oxide
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act of 1969, as amended
NFIP	National Flood Insurance Program
NH_3	Ammonia
NHPA	National Historic Preservation Act of 1966, as amended
Night	10:00 pm to 6:59 am
NKAPC	Northern Kentucky Area Planning Commission
NKMB	Northern Kentucky Mitigation Bank
NKSWMA	Northern Kentucky Solid Waste Management Area
NKU	Northern Kentucky University
NLR	Noise Level Reduction
NMFS	National Marine Fisheries Service
NO_2	Nitrogen Dioxide
NO_x	Oxides of Nitrogen
NPDES	National Pollution Discharge Elimination System
NPL	National Priorities List
NPS	National Park Service
NRHP	National Register of Historic Places
O_3	Ozone
OKI	Ohio Kentucky Indiana Regional Council on Governments
OPA	Oil Pollution Act of 1990
OTR	Ozone Transport Region
Pb	Lead
PFCs	Perfluorocarbons
PM	Particulate Matter (PM_{10} & $PM_{2.5}$)
PPA	Pollution Prevention Act of 1990
RCRA	Resource Conservation and Recovery Act of 1976, as amended
REC	Recognized Environmental Condition
RPZ	Runway Protection Zone
SARA	Superfund Amendments and Reauthorization Act of 1986
SD1	Sanitation District No. 1
SDWA	Safe Drinking Water Act
SF_6	Sulfur Hexafluoride

ACRONYMS

SHPO	State Historic Preservation Office
SIP	State Implementation Plan
SO_2	Sulfur Dioxide
SPCC	Spill Prevention Control and Countermeasure Program
TBD	To Be Determined
THPO	Tribal Historic Preservation Office
TIS	Traffic Impact Study
TSCA	Toxic Substances Control Act
$\mu g/m^3$	Micrograms per cubic meter
USACE	United States Army Corps of Engineers
U.S.C.	United States Code
USCB	United States Census Bureau
USDOI	United States Department of Interior
USDOT	United States Department of Transportation
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
UST	Underground Storage Tank
VOC	Volatile Organic Compounds

Glossary of Terms

GLOSSARY

The following glossary of terms is provided to aid the reader. Not all the terms provided are used in the EA, but are included to provide context and to assist the reader since many aeronautical terms are very similar.

Aviation Environmental Design Tool (AEDT) – A ***Federal Aviation Administration*** software system that models aircraft performance in space and time to estimate fuel consumption, emissions, noise, and air quality consequences. AEDT is a comprehensive tool that provides information to ***Federal Aviation Administration*** stakeholders on each of these specific environmental impacts. AEDT facilitates environmental review activities required under ***NEPA*** by consolidating the modeling of these environmental impacts in a single tool. AEDT 2d is the latest version.

Air Traffic Control (ATC) – An FAA service operated for the public, to ensure adequate separation of aircraft and to promote the safe, orderly, and expeditious flow of air traffic. The air traffic facility with jurisdiction over mapped and designated airspace may authorize aircraft to proceed under specified traffic conditions within ***controlled airspace***.

Airport Traffic Control Tower (ATCT) – An ***airport traffic control*** facility established on an airport to provide for safe, orderly, and expeditious flow of air traffic arriving at and departing from an airport, including airport surface areas such as runways and taxiways.

Aircraft Operation – One landing or one takeoff of an aircraft.

Airport Elevation – The highest point on an airport's usable runways, expressed in feet above ***mean sea level***.

Airport Improvement Program (AIP) – A Federal funding program for airport improvements that provides grants to public agencies — and, in somecases, to private owners and entities — for the planning and development of public-use airports that are included in the National Plan of Integrated Airport Systems. AIP is periodically reauthorized by Congress with funding appropriated from the Aviation Trust Fund. Proceeds to the Aviation Trust Fund are derived from excise taxes on airline tickets, aviation fuel, etc.

Airport Layout Plan (ALP) [1] – One of the key products of a master plan is a set of drawings that provides a graphic representation of the long-term development plan for an airport. The primary drawing in this set is the Airport Layout Plan. Other drawings may also be included, depending on the size and complexity of the individual airport.

Airport Operations – The total number of aircraft take offs (departures) and landings (arrivals) from an airport.

Ambient Noise – The total sum of noise from all sources in a given place and time. *See* also ***Natural Ambient Noise***.

Aquifer – A subsurface layer of permeable rock, sand, soil or gravel capable of bearing water.

Attenuation – An acoustical phenomenon whereby ***sound*** energy is reduced between the noise source and the receiver. This energy loss can be attributed to atmospheric conditions, terrain, vegetation, other natural features, and man-made features (e.g., sound insulation).

[1] FAA Advisory Circular 150/5070-6B

GLOSSARY

A-Weighted Decibels (dBA) – A system for measuring ***sound*** energy that is designed to represent the response of the human ear to sound. Energy at frequencies more readily detected by the human ear is more heavily weighted in this measurement system, while frequencies less readily detected are assigned lower weights. A-weighted *sound* measurements are commonly used in studies where the human response to *sound* is the object of the analysis.

Base Leg – A flight path at right angles to the landing runway off its approach end. The base leg normally extends from the downwind leg to the intersection of the extended runway centerline.

Commuter Aircraft – Generally, aircraft of designated size or seating capacity (usually 19 or fewer seats) that support scheduled air transportation services for compensation or hire in air commerce, with a frequency of at least five round trip operations per week on at least one route according to a published flight schedule. Commuter aircraft operate pursuant to a ***Federal Aviation Administration*** air carrier certificates issued under 14 C.F.R Parts 119 and 135 of the ***Federal Aviation Regulations***. (*See* 14 C.F.R. § 119.3, *Definitions*.) ***Regional Jets*** (RJs) are not "commuters," because they are large transport category aircraft and fall within the *Federal Aviation Administration's* ***air carrier aircraft*** category.

Contour – A contour line of a function of two variable is a curve along which the function has a constant value. For example, a noise contour line is a line of equal or constant noise level on a map. *See* ***Noise Contour Map***.

Crosswind Leg – A flight path at right angles to the landing runway off its upwind end.

Day-Night Average Sound Level (DNL) – A noise measure used to describe the average ***sound*** level over a 24-hour period, typically an average day over the course of a year. In computing DNL, an extra weight of ten ***decibels*** is assigned to noise occurring between the hours of 10:00 p.m. and 7:00 a.m. to account for increased annoyance when ambient noise levels are lower and people are trying to sleep. DNL may be determined for individual locations or expressed in noise contours. This metric is used in NEPA documents for airports in Arizona and all states other than California.

dBA - ***See A-Weighted Decibel*** **– Decibel (dB) –** A unit used to measure the intensity of a sound by comparing it with a given level on a logarithmic scale. ***Sound*** is energy and is measured by its pressure. Because of the enormous range of *sound* pressures to which the human ear is sensitive, the raw sound pressure measurement is converted to the ***decibel*** scale for purposes of description and analysis. Because the *decibel* scale is logarithmic, a ten-*decibel* increase in *sound* is perceived as a doubling of sound (or twice as loud) by the human ear.

Distance Measuring Equipment (DME) – A flight instrument that measures the line-of-sight distance of an aircraft from a navigational radio station in ***nautical miles***. As a transponder-based radio navigation system, DME measures the ***slant-range distance*** by timing the propagation delay of very high frequency (VHF) radio signals. Pilots use DME to determine the distance of their aircraft from a land-based transponder, which is typically collocated with a ***Very High Frequency Omnidirectional Radio Range (VOR) station.***

Downwind Leg – A flight path parallel to the landing runway in the direction opposite to landing. The downwind leg normally extends between the crosswind leg and the base leg.

GLOSSARY

Easement – The legal right of one party to cross or otherwise use someone else's land for a specified purpose.

Engine Run-ups – A routine procedure for testing aircraft systems by running one or more engines at a high power setting. Engine run-ups are normally conducted by airline maintenance personnel checking an engine or other on-board system following maintenance.

Enplanements – The number of revenue passengers boarding an aircraft at an airport during a given time period.

Equivalent Sound Level (Leq) – The ***A-weighted*** energy average ***sound*** level experienced over a given period of time. The metric is expressed as ten times the log of the total noise energy divided by the number of seconds during the period under consideration.

Executive Order 13807 – The Presidential Executive Order on establishing discipline and accountability in the environmental review and permitting process for infrastructure. This order provides that the federal government will make timely decisions with the goal of completing all federal environmental reviews and authorization decisions for major infrastructure projects within two years, measured from the date of the publication of a notice of intent to prepare an environmental impact statement. The federal lead, cooperating, and participating agencies for each major infrastructure project shall all record any individual agency decision in one record of decision.

Federal Aviation Administration (FAA) – One of several transportation modal federal government agencies under the United States Department of Transportation. The FAA is the Federal agency responsible for insuring the safe and efficient use of the nation's airspace and for supporting the requirements of national defense.

Fixed-Base Operator (FBO) – A business granted the right by an airport to operate at the airport and provide aeronautical services such as hangar space, fuel, flight training, repair, and maintenance to airport users.

Fleet Mix – The collection of differing types of aircraft operating in a particular airport environment.

Flight Track Utilization – The use of established routes for arrival and departure by aircraft to and from the runways at the airport.

General Aviation Aircraft – General aviation (GA) is the term for all civil aviation operations other than scheduled air services and non-scheduled air transport operations for remuneration or hire. GA aircraft generally include those U.S. registered civil aircraft, which operate, for private and non-commercial purposes and whose operations are not governed by 14 C.F.R. Parts 119, 121, 125, or 135. GA aircraft range in size from small single-engine propeller aircraft to large ***turbojet*** private aircraft.

Geographic Information Systems (GIS) – An information system that is designed for storing, integrating, manipulating, analyzing, and displaying data referenced by spatial or geographic coordinates.

Global Positioning System (GPS) – GPS equipment onboard an aircraft takes advantage of various radio navigation and/or *Global Positioning System* routes to guide the aircraft. GPS is a system of satellites used as reference points to enable navigators equipped with GPS receivers to determine their latitude, longitude, and altitude.

GLOSSARY

Ground Access Vehicles (GAV) – Any vehicle licensed to operate on Airport roads.

Ground Effect – Noise ***attenuation*** attributed to absorption or reflection of noise by man-made or natural features on the ground surface.

Itinerant Operation – An aircraft flight that ends at an airport different from where the flight began.

Knots – A unit of measurement of speed measured as the distance in ***nautical miles*** (6,076.1 feet) covered in one hour. (Approximately equal to 1.15 statute miles per hour.)

Land Use Compatibility – The ability of land uses surrounding the airport to coexist with airport-related activities with minimum conflict.

Landing and Takeoff (LTO) Cycle – The time that an aircraft is in operation at or near an airport. An LTO cycle begins when an aircraft starts its ***final approach*** (arrival) and ends after the aircraft has made its climb-out (departure).

Ldn - *See **DNL***. Ldn is used in place of *DNL* in mathematical equations only.

Leq - *See **Equivalent Sound Level***.

Local Operation – An aircraft flight that begins and ends at the same airport.

Localizer – The component of an ***Instrument Landing System*** that provides lateral course guidance to the runway.

Maximum Noise Level (Lmax) – The maximum ***sound*** pressure for a given event adjusted toward the frequency range of human hearing.

Mean Sea Level (MSL) – The average height of the surface of the sea for all stages of the tide; used as a reference for elevations; also called sea level datum.

National Environmental Policy Act of 1969 (NEPA) – A United States federal law that establishes the environmental review process for proposed Federal actions.

National Pollutant Discharge Elimination System (NPDES) – Federal requirement under the Clean Water Act (CWA) that any discharge of a non-point source of pollution into waters of the United States be in conformance with any established water quality management plan developed under the Clean Water Act.

Nautical Mile – A measurement of distance equal to one minute of arc on the earth's surface (6,076.1 feet or 1,852 meters).

Natural Ambient Noise – *Ambient Noise*, minus man-made sounds.

NAVAIDs (Navigational Aids) – Any electronic or visual facility used by an aircraft for navigation.

Noise Abatement – A measure or action that minimizes the amount of impact of noise on the environs of an airport. Noise abatement measures include aircraft operating procedures and use or disuse of certain runways or ***flight tracks. See also Noise Attenuation. Noise abatement reduces sound at the source.***

GLOSSARY

Noise Contour Map – A map representing average annual noise levels summarized by lines connecting points of equal noise exposure.

Noise Mitigation – A measure or action that minimizes the amount of impact of noise on the environs of an airport. Noise abatement measures include sound insulation, windows, and doors, construction of noise walls. **Noise mitigation reduces sound at the receptor.**

Profile – The position of the aircraft during an approach or departure in terms of altitude above the runway and distance from the runway end.

Propagation – ***Sound*** propagation is the spreading or radiating of sound energy from the noise source. It usually involves a reduction in sound energy with increased distance from the source. Atmospheric conditions, terrain, natural objects, and manmade objects affect sound propagation.

Public Use Airport – An airport open to public use without prior permission, and without restrictions within the physical capabilities of the facility. It may or may not be publicly-owned.

Regional Jet – A jet aircraft that falls within the air carrier aircraft category because of size and payload. For use in air commerce, the ***regional jet*** must be operated pursuant to an air carrier certificate pursuant to an air carrier certificate issued under 14 C.F.R. Parts 119 and 121 of the ***Federal Aviation Regulations***. (*See* 14 C.F.R. § 119.3, for Domestic, Flag, and Supplemental operations). *Regional jets* are not operated as commuter aircraft pursuant to 14 C.F.R. Part 135. *Regional jets* are typically jet aircraft, with approximately 35 to 90 seats. The next-generation *regional jets* are expected to seat 100 passengers.

Run-up – A routine procedure for testing aircraft systems by running one or more engines at a high power setting. ***Engine run-ups*** are normally conducted by airline maintenance personnel checking an engine or other on board systems following maintenance.

Runway Protection Zone (RPZ) – An area, trapezoidal in shape and centered about the extended runway centerline, designated to enhance the protection of people and property on the ground. It begins 200 feet (60 M) beyond the end of the area usable for takeoff or landing. The RPZ dimensions are functions of the aircraft, type of operation, and visibility minimums. (Formerly known as the clear zone.)

Runway Safety Area (RSA) – A defined surface surrounding the runway prepared or suitable for reducing the risk ordamage to airplanes in the event of an undershoot, overshoot, or excursion from the runway.

Runway Threshold – The beginning of that portion of the runway usable for landing.

Single event – One noise event. For many kinds of analysis, the ***sound*** from single events is expressed using the ***Sound Exposure Level*** metric.

Slant-Range Distance – The line-of-sight between two points, which are not at the same level relative to a specific datum. Slant-range distance is typically measured between an aircraft and a navigational radio station.

GLOSSARY

Sound – Sound is the result of vibration in the air. The vibration produces alternating bands of relatively dense and sparse particles of air, spreading outward from the source in the same way as ripples do on water after a stone is thrown into it. The result of the movement is fluctuation in the normal atmospheric pressure or sound waves.

Sound Exposure Level (SEL) – A standardized measure of a ***single (sound) event***, expressed in ***A-weighted decibels***, that takes into account all sound above a specified threshold set at least ten ***decibels*** below the maximum level. All sound energy in the event is integrated over one second.

Standard Instrument Departure Procedure (SID) – A planned ***Instrument Flight Rules air traffic control*** departure procedure published for pilot use in graphic and textual form. SIDs provide transition from the terminal to the en route *air traffic control* structure.

Standard Terminal Arrival Route (STAR) – A planned ***instrument flight rules air traffic control*** arrivals procedure published for pilot use in graphic and textual form. STARs provide a transition from the en route ***air traffic control*** structure to an ***outer fix*** or an ***instrument approach*** fix in the terminal area.

Statute Mile – A measure of distance equal to 5,280 feet.

Time Above (TA) – The amount of time that ***sound*** exceeds a given ***decibel*** level during a 24-hour period (e.g., time in minutes that the sound level is above 75 ***decibels***).

Thrust Settings – Settings on jet powered aircraft that control the power applied to the engines.

Traffic Pattern – The traffic flow prescribed for aircraft landing at, taxiing on, or taking off from an airport. The components of a typical traffic pattern are ***upwind leg***, ***crosswind leg***, ***downwind leg***, ***base leg***, and ***final approach***.

Turbojet – An aircraft powered by a jet turbine engine. The term is customarily used in ***air traffic control*** for all aircraft, without propellers, that are powered by variants of jet engines, including turbofans.

Turboprop – An aircraft powered by a turbine engine that drives an aircraft propeller. Aircraft of this type are typically used by airlines on short routes between two relatively close locations.

Upwind Leg – A flight path parallel to the approach runway in the direction of approach.

Vector – Compass heading instructions issued by ***Air Traffic Control*** in providing navigational guidance by radar.

Yearly Day-Night Average Sound Level – *see* ***DNL***.

Chapter One

CHAPTER ONE
INTRODUCTION AND BACKGROUND

This Environmental Assessment (EA), required by the National Environmental Policy Act of 1969 (NEPA), as amended (40 CFR 1500-1508)[1] and prepared in accordance with Federal Aviation Administration (FAA) Orders 1050.1F, *Environmental Impacts: Policies and Procedures* and 5050.4B, *National Environmental Policy Act (NEPA) Implementing Instructions for Airport Actions,* analyzes the potential environmental effects of a Proposed Action involving the development and operation of an air cargo facility at Cincinnati/Northern Kentucky International Airport (CVG or Airport). The EA is required under NEPA because the project will require federal actions that include FAA's approval of a change to the Airport Layout Plan (ALP) for CVG.

1.1 BACKGROUND

CVG is a publicly-owned passenger and air cargo airport operated by the Kenton County Airport Board (KCAB). CVG is located in the northeast section of Boone County, Kentucky, approximately one mile south of the Ohio River and eight miles southwest of downtown Cincinnati. The Airport encompasses approximately 7,753 acres of land and is generally bounded on the north by Interstate 275, to the east by Interstate 71/75, to the west by State Route 237 (KY 237/North Bend Road), and to the south by State Route 18 (KY 18/Burlington Pike). Access to the Airport is provided via Interstate 275, State Route 212 (KY 212), and Donaldson Highway. **Exhibit 1-1, *Airport Location*** shows the general Airport location and surroundings.

The airfield system consists of four runways, of which include three parallel runways and a crosswind runway. The three parallel runways (18L/36R, 18C/36C, 18R/36L) are oriented in a north-south direction. Runway 9/27, the crosswind runway, is oriented in an east to west direction. The Main Terminal (formerly Terminal 3) is approximately 277,000 square feet and is the only terminal at the Airport. Terminal 1 and 2 were demolished in 2016. The Main Terminal serves the operations of all airlines out of two concourses, Concourse A and Concourse B. CVG also serves as the hub for DHL Worldwide Express Operations.

1.2 DESCRIPTION OF THE PROPOSED ACTION

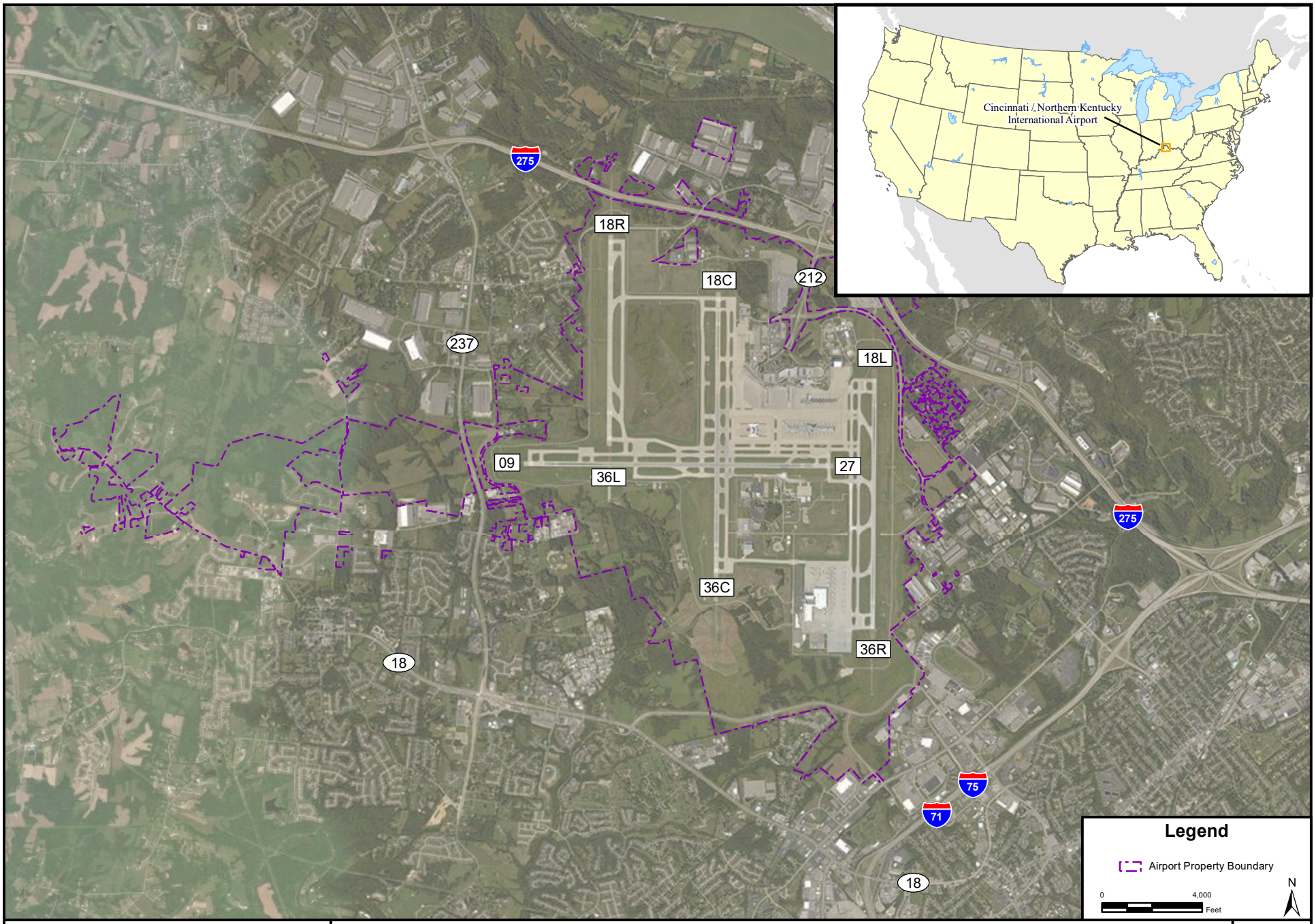
The Proposed Action consists of the development and operation of an air cargo facility at CVG. The proposed site is located on undeveloped land north of Aero Parkway and bordered on the west by Gunpowder Creek and extends east to the existing DHL facility. **Exhibit 1-2, *Project Site***, shows the general project area along with the location of the Project Site at the Airport. The Proposed Action includes the following major elements:

- Construct a primary package sortation building and support buildings (i.e., ground package sort building, equipment storage, equipment maintenance, and pilot services). The total building footprint would be up to 3.8 million square feet.
- Construct approximately 255-acre concrete aircraft parking apron and apron taxilanes.
- Construct paved employee and visitor vehicle parking garage/lots (approximately 781,000 square feet/96,000 square yards).

[1] P.L. 91-190, 42 U.S.C. 4321, et. seq., *National Environmental Policy Act*, 1969, Section 102(2)(c).

The following are supporting or enabling elements to the Proposed Action major elements:

- Prepare (clear, grub, excavate, embank, and grade) approximately 800 acres of land.
- Extend (approximately 4,200 feet in length by 60 feet wide) Wendell H. Ford Boulevard.
- Construct new on-Airport access roads that provide vehicle and truck access to the new air cargo facility.
- Improve sections of Aero Parkway, an existing four-lane divided highway, to install new entrances, turn lanes, traffic lights, and lighting.
- Transfer all or a portion of off-Airport property (totaling approximately 200 acres) to KCAB.
- Extend utilities to the project site, including electric service, natural gas, water, sanitary sewer, data/communications, and other related infrastructure.
- Modify and/or install new taxiway edge lights and airfield directional signs.
- Install exterior pole-mounted and building-mounted lighting at package sorting buildings, access roads, vehicle parking lots, truck courts, and portions of the aircraft parking aprons.
- Construct new drainage conveyances and detention ponds and/or modify the existing airfield stormwater management system.
- Install security fence and controlled-access vehicle gates and pedestrian gates.
- Expand Airport existing fueling facilities.
- Installation of up to three 60,000-gallon glycol storage tanks.
- Relocate on-Airport road south of Runway 18C/36C.



Air Cargo Facility
Environmental Assessment

Airport Location

EXHIBIT:
1-1

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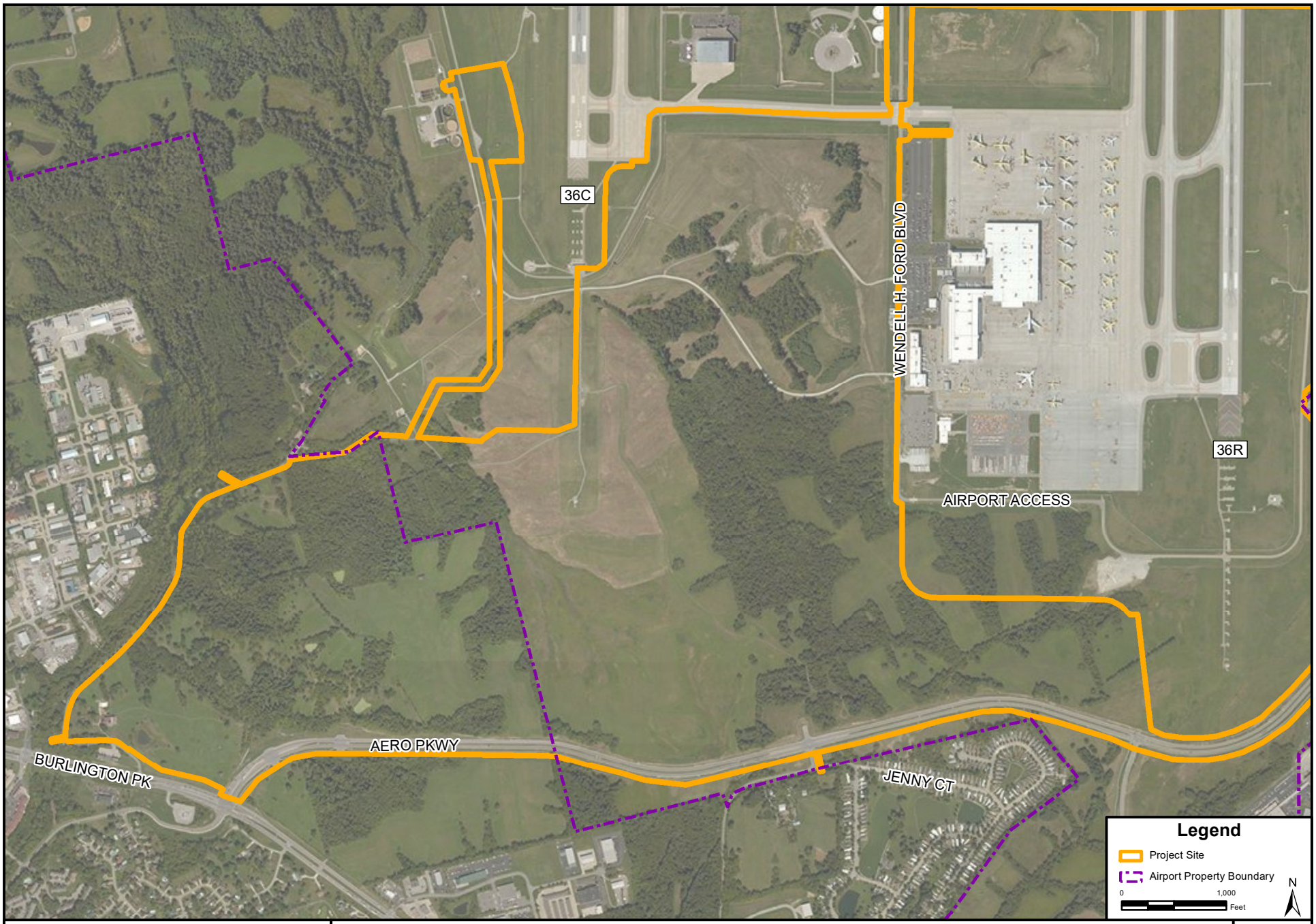

Air Cargo Facility
Environmental Assessment

Project Site

EXHIBIT:
1-2

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The following describes in more detail the conceptual elements of the Proposed Action, as shown in **Exhibit 1-3, *Proposed Action-Overview* and Exhibit 1-4, *Proposed Action - Detailed***. However, the facility's final design, development phasing, and construction schedule have not been finalized at the time of the preparation of this EA. Therefore, this document assumes a full build out to disclose maximum environmental impacts due to this project.

Construct a primary package sort building, ground package sort building, and support buildings with total building footprint of up to 3.8 million square feet

The Proposed Action includes the construction of multiple buildings with approximately 3.8 million square foot total footprint. The facility would sort packages that would move from air-to-air, air-to-ground, and ground-to-air. The project includes the construction of a primary sorting building and ancillary support buildings. The primary sorting building would be located on the south side of the airfield with access from Wendell H. Ford Boulevard and Aero Parkway. The support buildings include space for equipment storage, equipment maintenance, and pilot services.

Construct approximately 255-acre concrete aircraft parking apron and apron taxilanes

The Proposed Action includes the construction of an approximately 255-acre aircraft parking apron and apron taxilanes that would provide circulation and parking for up to 77 cargo aircraft. Ground support equipment, unit load devices, staging areas, and fuel and deicing pads would also be implemented.

Construct paved employee and visitor vehicle parking garage/lots (approximately 781,000 square feet/96,000 square yards)

The Proposed Action includes the construction of employee vehicle parking, truck courts, and vehicle circulation areas for additional trucks and cars moving to and from the air cargo facility. These areas would additionally include space for employee parking service areas, and trailer staging.

1.3 DOCUMENT CONTENT AND ORGANIZATION

This document is organized as follows:

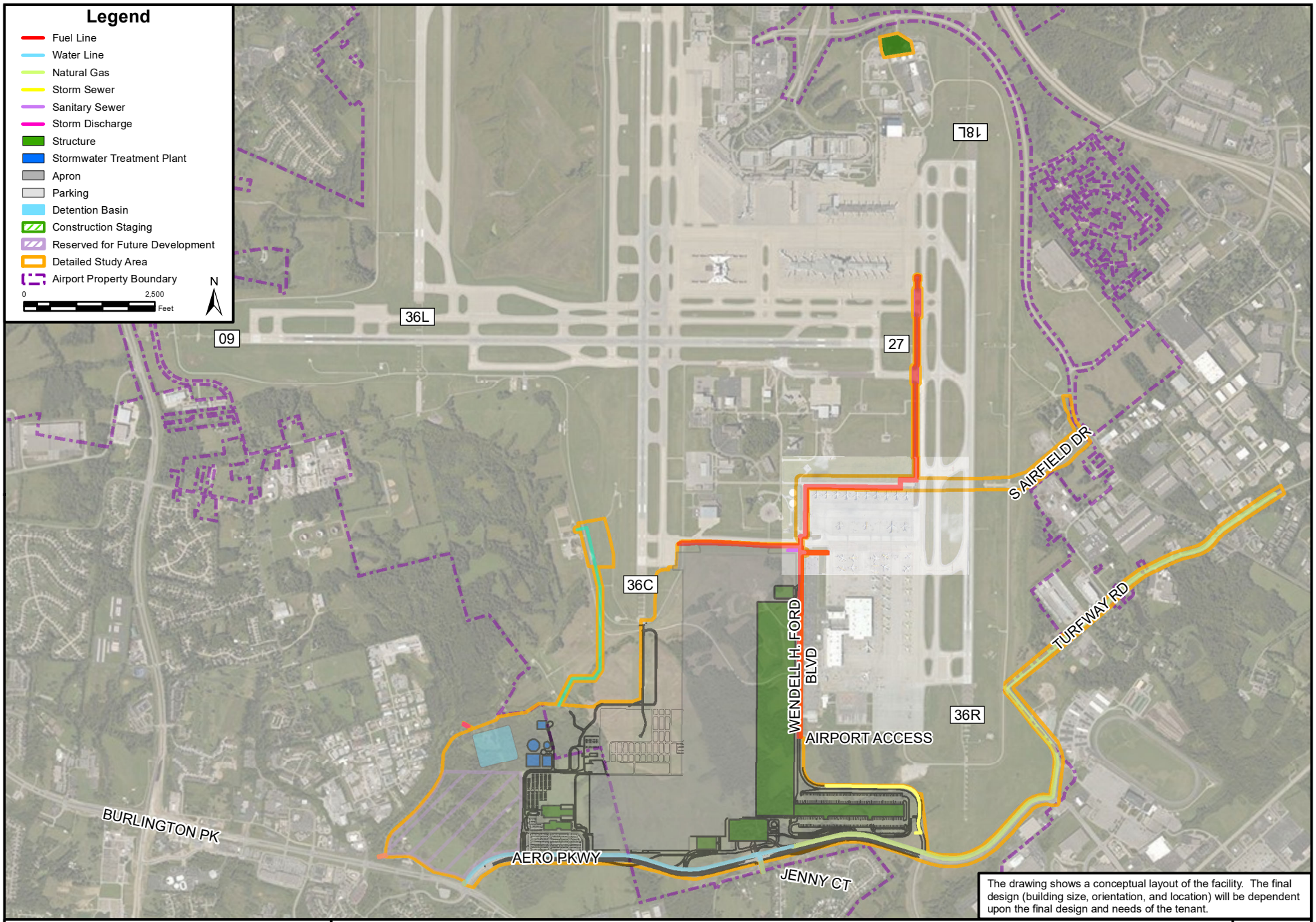
- Chapter Two describes the purpose and need for the Proposed Action
- Chapter Three describes alternatives to the Proposed Action
- Chapter Four describes the affected environment
- Chapter Five describes the potential environmental impacts of the Proposed Action and of the No Action Alternative and recommended avoidance, minimization, and/or mitigation measures
- Chapter Six describes the public involvement that was completed as part of the EA
- Chapter Seven provides a list of those responsible for preparing the EA
- Chapter Eight provides a list of references used in the preparation of the EA

An EA is a disclosure document prepared for the Federal agency (in this case the FAA) responsible for approving a proposed Federal or Federally-funded action, in compliance with the requirements set forth by the Council on Environmental Quality (CEQ) in its regulations implementing NEPA. The purpose of this EA is to investigate, analyze, and disclose the potential impacts of the Proposed Action and its reasonable alternatives. In this case, the FAA is responsible for reviewing and approving actions that pertain to airports and their operation. As such, this EA has been prepared in accordance with FAA Orders 1050.1F and 5050.4B, and consideration to guidance included in the *FAA Environmental Desk Reference for Airport Actions*.

This EA was also prepared pursuant to other laws relating to the quality of the natural and human environments, including:

- The Department of Transportation Act, 49 U.S.C., § 303 (formerly Section 4(f))
- 49 U.S.C., §40114, as amended
- 49 U.S.C., §§47101, et seq.
- Executive Order 11990, Protection of Wetlands
- Executive Order 11988, Floodplain Management
- Executive Order 11593, Protection and Enhancement of the Cultural Environment
- Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations
- Federal Aviation Act of 1958 recodified as 49 U.S.C. §§40101, et seq.
- The Airport and Airway Improvement Act of 1982, 49 U.S.C. §47108, as amended
- National Historic Preservation Act, 16 U.S.C. §470(f), as amended
- 36 CFR Part 800, Advisory Council on Historic Preservation
- Archaeological and Historic Preservation Act, 16 U.S.C. §469(a)
- Archaeological Resource Protection Act, 16 U.S.C. §470(aa)
- Farmland Protection Policy Act, 7 U.S.C. §73, and implementing regulations at 7 CFR §658
- Clean Air Act, 42 U.S.C. §§7401, et seq., and implementing regulations at 40 CFR. Parts 51 and 93
- Clean Water Act, 33 U.S.C. §§121, et seq., and implementing regulations at 33 CFR §§325 and 33 CFR §336
- 33 CFR Parts 320-330, Regulatory Programs of the Corps of Engineers
- Endangered Species Act, 16 U.S.C. §661, et seq., as amended
- Other laws, regulations, and policies as applicable

Notice about the subject project was published in The Cincinnati Enquirer on September 25, 2018. Copies of this document were made available at the CVG Centre, 77 Comair Blvd, Erlanger, KY 41018, the FAA's Memphis Airports District Office, and online at http://www.airportprojects.net/CVG-CargoFacility-EA.



Air Cargo Facility Environmental Assessment

Proposed Action - Overview

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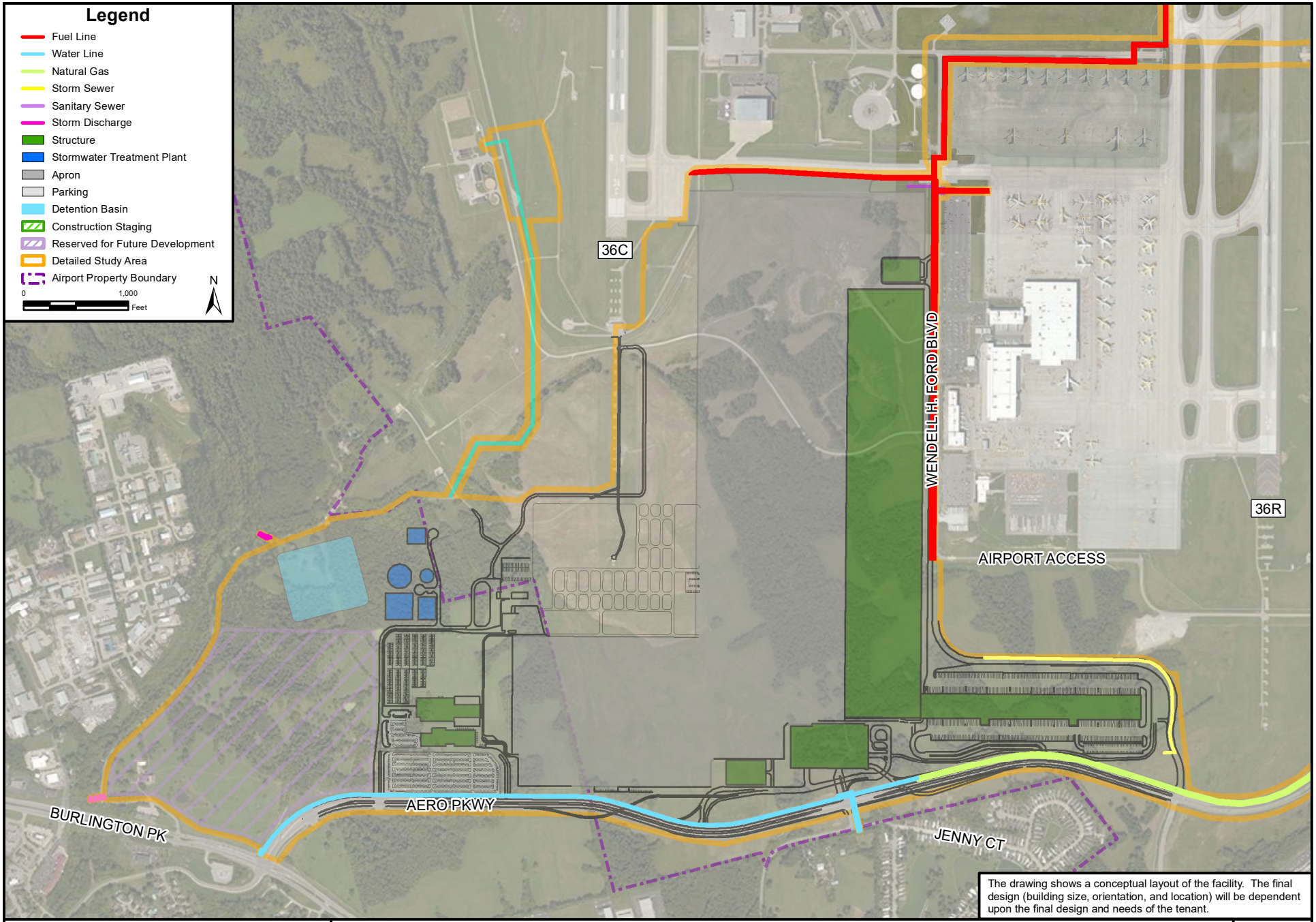

Air Cargo Facility Environmental Assessment

Proposed Action - Detailed

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Chapter Two

CHAPTER TWO
PURPOSE AND NEED

The Kenton County Airport Board (KCAB), which owns and operates the Cincinnati/Northern Kentucky International Airport (CVG or Airport), will enter into a long-term lease with an air cargo service provider for CVG to become a hub location for the provider, requiring the development and operation of an air cargo facility at CVG. The following section discusses the purpose and need for the project. The KCAB has identified needs based on the air cargo service provider's desired plans for a hub. This EA analyzes the proposed solutions (purpose) to meet the needs of the identified deficiencies.

2.1 PURPOSE AND NEED

The *purpose* of this project is to provide suitable air cargo facilities at CVG for a hub for large-scale air cargo operations on land presently owned by the KCAB (Sponsor) in a way that would be consistent with the Airport's long-term plans and meet the air cargo service provider's existing and future demands.

The *need* for the project is that the existing apron area and facilities at CVG are inadequate to meet the air cargo service provider's requirements for a delivery and sortation support facility, while still meeting the safety and design requirements of the Federal Aviation Administration (FAA).

The air cargo service provider has determined in order to meet its operational goals the integration of airside, landside, and sorting facilities is required. This integration offers limited flexibility in the variation of layout, orientation, and proximity to airside and surface transportation facilities. To meet its requirements, the air cargo service provider proposed to KCAB, at a minimum, an on-airport development site that has the following characteristics:

- A minimum of 500 contiguous acres of land;
- Direct access to the DHL cargo facility;
- Direct airfield access;
- Access to major surface transportation corridors (i.e., Interstate 71/75 and Interstate 275);
- Ability for expansion on adjacent land; and
- Constructible such that the facility would have initial operational capability in 2021.

The development of the air cargo facility would require sufficient on-airport land areas that could be co-located with existing and future air and surface transportation infrastructure. The air cargo service provider has indicated that simultaneous operations by numerous cargo aircraft, ground support, loading, and surface vehicles must occur in a highly orchestrated manner within pre-defined time-periods that are predicated on next-day delivery schedules at the company's various distribution centers. No existing facilities at CVG fully meet the air cargo service provider's operational requirements and business needs. Therefore, there is a critical need for the particular location, size, and orientation of the air cargo sorting/distribution site that meets the air cargo service provider's operational requirements. Based on the business plan for the development of the proposed air delivery and sortation support facility, the air cargo service provider determined the sorting and distribution facility must be constructed and have initial operational capability in 2021.

The development of the air cargo facility would also support KCAB's strategic goals to maintain a competitive cost structure and strong financial position and diversify airline and non-airline net revenue streams.

In addition to the purpose and need of the KCAB and of the air cargo service provider, the FAA also has specific purpose and needs to fulfill federal requirements. These are addressed in the following paragraphs.

FAA Purpose and Need

The first purpose of the federal actions necessary to implement the Proposed Action is to fulfill FAA's statutory mission to ensure the safe and efficient use of navigable airspace in the U.S. as set forth under 49 United States Code (U.S.C.) § 47101 (a)(1).

The FAA must ensure that the Proposed Action does not derogate the safety of aircraft and airport operations at CVG. Moreover, it is the policy of the FAA under 49 U.S.C. § 47101(a)(6) that airport development projects provide for the protection and enhancement of natural resources and the quality of the environment of the United States.

Additionally, the purpose of the federal actions in connection with KCAB's request to modify the existing Airport Layout Plan (ALP) is to ensure the proposed development at the airport does not adversely affect the safety, utility, and efficiency of the airport. Pursuant to 49 U.S.C. § 47107(a)(16), the FAA Administrator (under authority delegated from the Secretary of Transportation) must approve any revision or modification to an ALP before the revision or modification takes effect. The Administrator's approval reflects a determination that the proposed alterations to the airport, reflected in the ALP revision or modification, do not adversely affect the safety, utility, or efficiency of the airport.

Therefore, the need for the federal actions is to ensure that CVG operates in the safest manner possible pursuant to 49 U.S.C. § 47101(a)(1).

The second purpose of the federal actions is to fulfill the policy of the United State to support growth and development of air cargo hub airports and intermodal connections on airport property as set forth in U.S.C. § 47101 (a)(4) and (5). Additionally, specific to air cargo, 49 U.S.C. § 40101(b) further directs the FAA Administrator (under authority delegated from the Secretary of Transportation) to consider the following to be in the public interest as to air cargo transportation:

(1) encouraging and developing an expedited all-cargo air transportation system provided by private enterprise and responsive to:

(A) the present and future needs of shippers;

(B) the commerce of the United States; and

(C) the national defense.

(2) encouraging and developing an integrated transportation system relying on competitive market forces to decide the extent, variety, quality, and price of services provided.

FAA approval of the Proposed Action, and the subsequent FAA decisions related to issuing the approvals for the construction and operation of the air cargo facility would fulfill the agency's obligations and support United States national policy pursuant to 49 U.S.C. § 47101(a)(4) and (5) and 49 U.S.C § 40101(b).

2.2 IMPLEMENTATION PHASING

The air cargo facility would have initial operational capability in 2021. The construction of the sortation building would be completed under a continuous development and construction program dependent on economic an operational requirements. As discussed in Section 1.2, the project includes the construction of approximately 3.8 million square feet of building space.

2.3 REQUIRED LAND USE/ENVIRONMENTAL PERMITS AND APPROVALS

Federal

- FAA approval of modification of the ALP
- Federal environmental approval pursuant to NEPA
- Section 404/401 Permits
- Section 7
- Section 106 Compliance

State

- National Pollution Discharge Elimination System Permits (NPDES) administered by the Kentucky Division of Water

Local

- Boone County Building permits
- Stormwater
- Floodplain
- Zoning
- Cemetery Relocation approvals

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Chapter Three

CHAPTER THREE
ALTERNATIVES

The Council on Environmental Quality (CEQ) regulations implementing the National Environmental Policy Act (NEPA) require that the Federal decision-makers perform the following tasks when preparing an Environmental Assessment (EA):

- Evaluate all reasonable alternatives, including alternatives not within the jurisdiction of the Federal agency, and for alternatives which were eliminated from detailed study, briefly discuss the reasons for their having been eliminated
- Devote substantial treatment to each alternative considered in detail, including the No Action Alternative and the Proposed Action, so that reviewers may evaluate their comparative merits

This section describes the Proposed Action and alternatives to the Proposed Action, including the No Action Alternative, and evaluates the ability of each to meet the purpose and need described in Chapter Two, *Purpose and Need*. The Proposed Action, described in Section 1.2 of this EA, would fulfill the purpose and need for the project. The No Action Alternative would not meet the purpose and need; however, it is analyzed in the EA pursuant to the requirements of the CEQ, Federal Aviation Administration (FAA) Orders 1050.1F, 5050.4B, and NEPA.

Federal and state guidelines concerning the environmental review process require that all prudent, feasible, reasonable, and practicable alternatives that might accomplish the objectives of a project be identified and evaluated. Federal agencies may consider the applicant's purposes and needs and common sense realities of a given situation in the development of alternatives.[1] Federal agencies may also afford substantial weight to the alternative preferred by the applicant, provided there is no substantially superior alternative from an environmental standpoint.

3.1 DEVELOPMENT ALTERNATIVE SITES CONSIDERED FOR FURTHER ENVIRONMENTAL REVIEW

Various development alternative sites for the air cargo facility were considered for further environmental review. If the development alternative site did not meet the stated needs described in Section 2.1 of Chapter Two, the site was eliminated from further detailed environmental review. The following summarizes the development options that were thoroughly considered as alternatives to the Proposed Action at CVG.

A multi-step evaluation process took place for this EA to evaluate the various development alternative site locations. The alternatives were evaluated against the following pass or fail criteria, which are drawn from the needs presented in Chapter Two:

- <u>Does the alternative site provide minimum of 500 acres of contiguous land?</u>

  In order to efficiently accommodate the operational needs of the air cargo facility, a site of at least 500 acres is needed. Air cargo facilities typically consist at a minimum of warehouse, aircraft apron, and ground support equipment (GSE) areas. A cargo warehouse is typically comprised of truck docks and doors on the landside portion of the building. On the airside of the building, vehicles have direct access to the apron and aircraft. The aircraft apron provides area for aircraft parking adjacent to the air

[1] Guidance Regarding NEPA Regulations, CEQ, 48 *Federal Register* 34263 (July 28, 1983).

cargo warehouse building and provides sufficient space for the vehicle, GSE, and unit load devise operation and storage. This space must be large enough to accommodate freighter aircraft, aircraft tugs, cargo containers and trailers, cargo vehicles, and fueling vehicles. In addition, apron space is needed for cargo sortation, large tractor trailers, and potentially space for aircraft tail-to-tail cargo transfer and bypass containers. GSE is the support equipment at airports located on the apron. The equipment is located on the apron to support the operations of the aircraft, including ground power operations, tugs, dollies, and loading devices. GSE storage areas are also needed to park and stage GSE when not in use. These areas are often located on the apron in close proximity to aircraft parking area.

The space required for each of these areas (warehouse, apron, and GSE areas) depends on the existing and forecasted air cargo volume of the air cargo service provider. The air cargo service provider has determined, through extensive planning efforts, a minimum of 500 acres of contiguous land is needed to operate an efficient air cargo facility at CVG.

- Does the alternative site provide direct access to the DHL cargo facility?

  It is preferred that the air cargo facility be located in proximity to the existing DHL cargo facility. The air cargo service provider has various business arrangements with DHL. It is expected the two entities would continue to maintain such arrangements in the future. A successful air cargo operation is predicated upon the efficient interaction of a number of businesses with different operating requirements and facility needs. These businesses have different levels of involvement based on the nature of the cargo and the geographies through which the cargo moves. In an ideal environment, most of these operations would be co-located on the airport, creating an efficient, integrated, air cargo community. Operating costs are lower, economies of scale can be achieved, and international goods can be cleared faster and with fewer problems.

- Does the alternative site provide direct airfield access?

  To minimize aircraft taxi distances and delays, the site should have direct access to taxiway(s) that allow aircraft to move efficiently between the cargo facility site and the arrival/departure runways. The airfield access should have minimal taxi times and minimal runway crossings. Flight delays have a substantial impact on delivering packages on time. Based on analysis conducted by the Institute of Transportation Studies (ITS), University of California, Berkley, the cost of flight delay per package is approximately $0.77 for a 15-minute flight delay and approximately $3.92 for a 60-minute flight delay. Because the air cargo service provider's business is time sensitive, it is imperative the site have direct airfield access to minimize taxi distances and potential delays to aircraft operations.

- Does the alternative site provide access to major surface transportation corridors (i.e. Interstates 71/75 and Interstate 275)?

  Sites were evaluated based on their proximity and access to the surrounding interstate roadway system. The air cargo service provider plans to conduct a sort operation at CVG. As a result, delivery trucks would enter and exit the site numerous times a day. Again, because the air cargo service provider 's business is driven by time definite delivery, the site needs easy access to Interstates 71/75 and Interstate 275 to eliminate potential delays from traffic on the local roadways.

- Does the alternative site allow for expansion on adjacent land?

  The cargo carrier has identified the need to have additional land in the future as operational needs require expansion of the facility. Sites were evaluated based on the availability of available adjacent land to accommodate future growth.

- Does the alternative site allow for construction and operation of the facility in 2021?

  The cargo service provider's business model requires the ability to construct and become operational in 2021. Sites that would not allow that would be eliminated from consideration.

The following discussion documents the various development sites that were analyzed in the alternatives analysis and the recommendation of the alternative for further detailed environmental review in this EA. The three alternative sites evaluated are shown on **Exhibit 3-1, *Alternative Sites***. A summary of the alternatives analysis conducted as a part of this EA process is provided at the end of this section in Table 3-1. Each alternative site is included in the table along with a determination if the alternative would be carried forward for further environmental analysis.

3.1.1 ALTERNATIVE A (WEST SITE)

Alternative A would locate the proposed facility west of Runway 9/27. This site is approximately 320 acres and is located to the west of North Bend Road and outside of the Runway 9/27 Runway Protection Zone (RPZ).

- Does the alternative site provide minimum of 500 acres of contiguous land?
  - No, this site only has 320 acres.
- Does the alternative site provide direct access to the DHL cargo facility?
  - No, this site is the farthest site from DHL of all the alternative sites.
- Does the alternative site provide direct airfield access?
  - No, this site currently has no airfield access and to do so would require tunneling North Bend Road under a new taxiway. While feasible, even if a new taxiway was constructed, aircraft would access the airfield at the westernmost location, which is not efficient from a taxi time perspective.
- Does the alternative site provide access to major surface transportation corridors (i.e., Interstates 71/75 and Interstate 275)?
  - Yes, North Bend Road has access to Interstate 275.
- Does the alternative site allow for expansion on adjacent land?
  - Yes, but through the purchase of private land.
- Does the alternative site allow for operation of the facility in 2021?
  - No, the need to construct a tunnel for a section of North Bend Road (a public roadway) to allow the construction of an access taxiway would add substantial complexity to the design, approval, and construction process, which would be an impediment to completion and operation of the cargo facility by 2021.

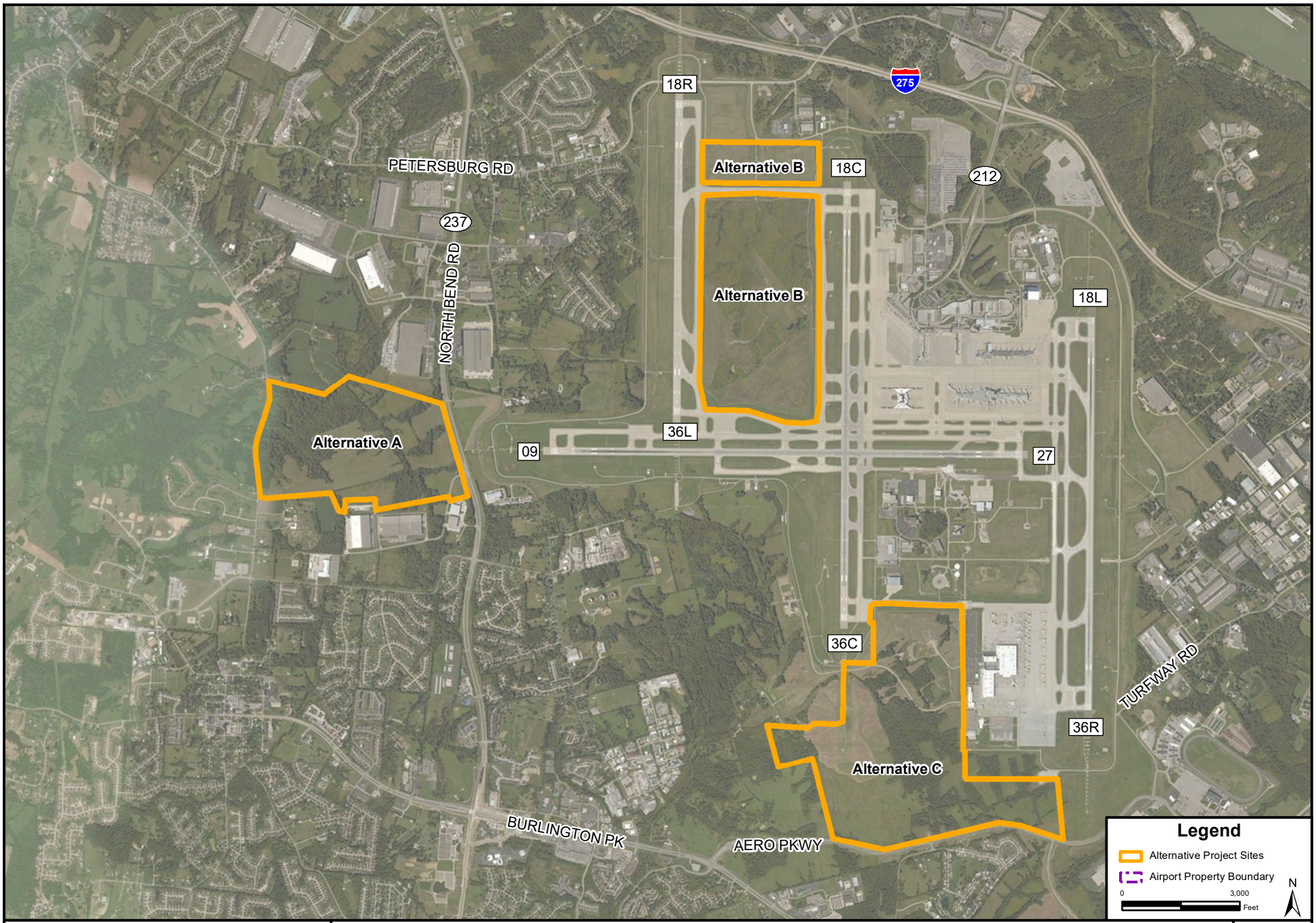
Conclusion: Alternative A could provide access to Interstate 275, a major surface transportation corridor. Additionally, the land area is prime for development as it is located on Airport-owned property and is adjacent to land that could be acquired for expansion. Conversely, the site lacks access to the DHL cargo facility and does not provide 500 acres of contiguous land. The site also provides limited airfield access as tunneling North Bend Road under a new taxiway would be required and would add complexity and time to construction. In conclusion, this alternative site would not meet criteria representing the purpose and need. Therefore, this alternative site was eliminated from further review.

3.1.2 ALTERNATIVE B (MIDFIELD SITE)

Alternative B would locate the proposed facility north of Runway 9/27, between Runway 18R/36L and Runway 18C/36C. This site is approximately 460 acres and divided on the north by Taxiway A.

- Does the alternative site provide minimum of 500 acres of contiguous land?
    - No, this site only has 460 acres.
- Does the alternative site provide direct access to the DHL cargo facility?
    - No, this site would require crossing two runways (18C/36C and 9/27) to access DHL.
- Does the alternative site provide direct airfield access?
    - Yes, this site offers access to Runways 18R/36L, 18C/36C, and 9/27.
- Does the alternative site provide access to major surface transportation corridors (i.e., Interstates 71/75 and Interstate 275)?
    - Yes, Interstate 275 is located directly north of the site and could be accessed via Loomis Road, which is currently two lanes or potentially a new Interstate 275 interchange.
- Does the alternative site allow for expansion on adjacent land?
    - No, the location has no adjacent land for expansion. There is a small parcel north of Taxiway A, but grade changes and the need to expand an existing tunnel make it difficult to access.
- Does the alternative site allow for operation of the facility in 2021?
    - Yes. However, if it is determined that roadway improvements and construction of a new interchange at Interstate 275 is necessary, this would add substantial complexity to the design, approval, and construction process, which would be an impediment to completion and operation of the cargo facility by 2021.

Conclusion: Alternative B would not provide adequate access to Interstate 275, a major surface transportation corridor, without widening roads and the potential need to construct a new interchange. Additionally, the land area is prime for development as it is located on Airport-owned property and provides direct airfield access. However, the site is not large enough to accommodate existing and potential expansion; it lacks direct access to the DHL cargo facility, and would require aircraft to cross two runways to access the DHL facility. Further, the potential need for a new interchange at Interstate 275 would add substantial complexity to the project, which would affect the ability to begin operating the facility in 2021. In conclusion, this alternative site would not meet the criteria representing the purpose and need. Therefore, this alternative site was eliminated from further review.



Air Cargo Facility Environmental Assessment

Alternative Sites

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3.1.3 ALTERNATIVE C (PROPOSED ACTION)

Alternative C (Proposed Action) is approximately 500 acres and is located north of Aero Parkway between Runway 18C/36C and Runway 18L/36R. The Proposed Action is described in Section 1.2 and shown in Exhibit 1-2.

- Does the alternative site provide minimum of 500 acres of contiguous land?
    - Yes, this site is approximately 500 acres.
- Does the alternative site provide direct access to the DHL cargo facility?
    - Yes, this site is located adjacent to DHL.
- Does the alternative site provide direct airfield access?
    - Yes, this site has access to Runway 18C/36C and short taxi times to Runways 18L/36R and 9/27.
- Does the alternative site provide access to major surface transportation corridors (i.e., Interstates 71/75 and Interstate 275)?
    - Yes, the site can access Interstate 71/75 via Aero Parkway, a 4-lane divided highway.
- Does the alternative site allow for expansion on adjacent land?
    - Yes, but through purchase of private land.
- Does the alternative site allow for operation of the facility in 2021?
    - Yes, there are no known impediments to completion by 2021.

Conclusion: Alternative C would provide access to Interstate 71/75 and 275, major surface transportation corridors. The site also provides approximately 500 acres of contiguous land, with the potential for expansion on adjacent land. The site also has direct access to the DHL cargo facility and direct airfield access. In conclusion, this alternative site would meet the purpose and need. Therefore, this alternative site was selected for further review.

Table 3-1 provides a summary of the alternatives analysis conducted as part of this EA process. The elements of each alternative are described in the table along with a determination if the alternative would be carried forward for further environmental analysis.

Table 3-1
DEVELOPMENT ALTERNATIVES ANALYSIS SUMMARY

Alternative	Meet the Screening Criteria?						Carried Forward for Detailed Environmental Review?
	500 acres of contiguous land	***Direct access to DHL facility***	***Direct airfield access***	***Access to major surface transportation corridors***	***Expansion on adjacent land***	***Operation of facility in 2021***	
A (West Site)	No	No	No	**Yes**	**Yes**	No	No
B (Midfield Site)	No	No	**Yes**	**Yes**	No	No	**Yes**
C (Proposed Action)	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**

3.2 ALTERNATIVES CARRIED FORWARD FOR DETAILED ENVIRONMENTAL REVIEW

As a result of the evaluations previously described, the only development alternative carried forward for further evaluation is the Proposed Action (Alternative C). As discussed previously, the No Action alternative will also be carried forward as required by FAA Orders 1050.1F, 5050.4B, and NEPA. **Exhibit 3-2, *Alternative Sites Carried Forward for Detailed Environmental Review***, shows both the No Action and Proposed Action areas.

3.2.1 ALTERNATIVE C (PROPOSED ACTION)

Construct a primary package sort building, ground package sort building, and support buildings with total building footprint up to 3.8 million square feet

The Proposed Action includes the construction of a multiple buildings up to 3.8 million square feet of total building footprint. The facility would sort packages that would move from air-to-air, air-to-ground and ground-to-air. The project includes the construction of a primary sorting building and ancillary support buildings. The primary sorting building would be located on the south side of the airfield with access from Aero Parkway. The support buildings include space for equipment storage, equipment maintenance, and pilot services.

Construct approximately 255-acre concrete aircraft parking apron and apron taxilanes

The Proposed Action includes the construction of an approximately 255-acre aircraft parking apron and apron taxilanes which would provide circulation and parking for up to 77 cargo aircraft. Ground support equipment, unit load devices, staging areas, and fuel and de-icing pads would also be implemented.

Construct paved employee and visitor vehicle parking garage/lots (approximately 781,000 square feet/96,000 square yards)

The Proposed Action includes the construction of employee vehicle parking, truck courts, and vehicle circulation areas for additional trucks and cars moving to and from the air cargo facility. These areas would additionally include space for employee parking service areas, unit load devices, and trailer staging.

3.2.2 NO ACTION ALTERNATIVE

Under the No Action Alternative, no development not already approved by the FAA for NEPA purposes would occur and there would not be physical impacts to any environmental resources. Because there would be no development, this alternative would not address any of the purpose and need criteria. Therefore, it is not an alternative that meets the purpose and need. However, a No Action Alternative must be included in the evaluation of environmental impacts pursuant to CEQ Regulation 40 CFR 1502.14(d). The purpose of the No Action is to serve as a baseline against which impacts from the other alternatives are assessed for significance.

In order to define the No Action Alternative for this EA, it is important to understand if it is feasible for the Airport to meet the forecasted activity and, if so, with what inefficiencies. This is done by: (1) identifying facilities that could be used to meet the forecasted activity, (2) identifying operational measures that may be implemented due to the lack of new facilities, and (3) identify the effect of the inherently inefficient operating environment. These are described below:

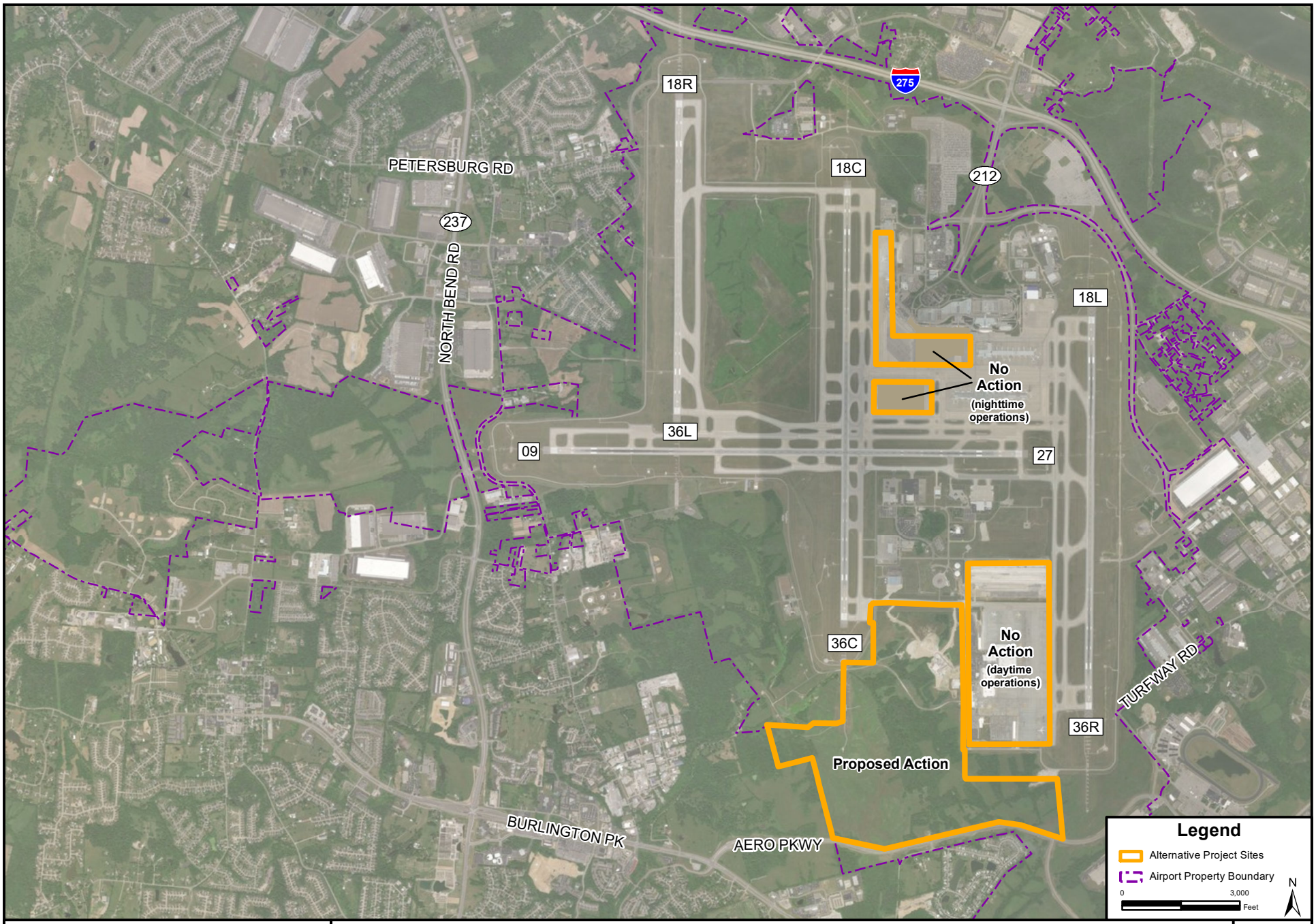
(1) Use of Facilities – Existing facilities and areas, located at various locations at CVG, could be used to accommodate the sorting needs of the air cargo service provider in the short-term but not fully in the long-term. In the short-term, using existing facilities would be highly inefficient and require the air cargo service provider to move equipment and packages across different locations on the airfield, potentially resulting in delays to delivery times of packages. For this EA it is assumed, in the No Action, the air cargo service provider would continue to utilize the existing DHL facilities (sort building and aircraft apron) during the daytime (7:00 a.m. – 9:59 p.m.), as it does today and that the existing DHL facilities would continue to provide adequate capacity. During the nighttime (10:00 p.m. – 6:59 a.m.), existing vacant cargo buildings and apron area, located on the north side of the terminal area, would need to be used to accommodate the sort operation and aircraft parking, assuming these buildings meet the air cargo service provider's sortation configuration and overall capacity requirements.

(2) Operational Measures – Additional operational measures would be needed to accommodate the nighttime operations. This would include use of additional tugs, more hand sorting (which would require more employees), longer truck idling times, longer taxi times, and busses transferring employees from existing parking facilities to the sort facilities.

(3) Inefficiencies in the System – A split operation across several locations on the airport means duplication of certain functions, less than ideal parking for trucks and employees, more truck idling and longer truck trips, and more aircraft idling times. It also does not allow the air cargo service provider to develop a tailored, purpose-built, state of the art facility that provides necessary throughput capabilities.

While the description above may be theoretically feasible, it is not reasonable that an cargo service provider would *plan* to operate in this manner. However, the purpose of this exercise is to understand if the air cargo service provider could operate without constructing new facilities. Based on the discussion above, it is determined the forecasted activity by the air cargo service provider in 2021 could be accommodated at CVG under the No Action condition, but there would be significant inefficiencies associated with the operation. Some of those inefficiencies may have a negative effect on environmental conditions.

Selection of the No Action alternative would inhibit the KCAB's obligation and commitment to provide its airport users with sufficient infrastructure and maintain a high level of service. This alternative would not accommodate the air cargo facility's expected demand by failing to provide land area available for development. However, as discussed above, the No Action alternative is required by the CEQ to be evaluated in an EA. As such, this alternative will be carried forward in the EA, assuming the air cargo service provider would operate under these conditions, and used as the baseline against which the Proposed Action will be evaluated.



Air Cargo Facility Environmental Assessment

Alternative Sites Carried Forward for Detailed Environmental Review

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Chapter Four

CHAPTER FOUR
AFFECTED ENVIRONMENT

Federal Aviation Administration (FAA) Order 5050.4B states the affected environment section of an Environmental Assessment (EA) should succinctly describe only those environmental resources the Proposed Action and its reasonable alternatives, are likely to affect. The amount of information on potentially affected resources should be based on the expected impact and be commensurate with the impact's importance. FAA Order 1050.1F and the 1050.1F Desk Reference provide information on identifying resources for evaluation in the EA.

The following describes the area around Cincinnati/Northern Kentucky International Airport (CVG or Airport). This is followed by discussions of the resources that may potentially be impacted, which include: air quality; biological resources; climate, hazardous materials, historic, architectural, archeological, and cultural resources, land use, socioeconomic conditions, natural resources and energy supply, noise and compatible land use, visual effects, and water resources. In accordance with FAA Order 5050.4B, the other resource categories are not discussed in this chapter due to lack of presence of the resource in the project. These resource categories are coastal resources, farmland, and wild and scenic rivers. Chapter Five, *Environmental Consequences*, includes a discussion about all of the resource categories, whether there are impacts of the category or not.

4.1 PROPOSED ACTION SETTING

CVG is an international airport located on approximately 7,753 acres of land within Boone County, Kentucky. The Proposed Action is located on the southern portion of the Airport, north of Aero Parkway between Runway 18C/36C and Runway 18L/36R. The Proposed Action would occur on property currently owned by the Kenton County Airport Board (KCAB) and two private parcels totaling approximately 200 acres. Exhibit 1-2, *Proposed Action*, shows the location of the Proposed Action site. Site features include a combination of grassed areas and undeveloped wooded areas. The private parcels currently have vacant structures located on the property.

For the purposes of this EA, two study areas have been defined. The General Study Area (GSA) depicts the area surrounding the Airport. A further refined Detailed Study Area (DSA) depicts the areas that may be physically disturbed with the development of the Proposed Action. Both study areas are shown on **Exhibit 4-1, *Study Areas*.**

The GSA covers approximately 60,000 acres and is defined as the area where both direct and indirect impacts may result from the development of the Proposed Action. The GSA boundary lines were squared off to follow roadways and other identifiable features where available.

The DSA covers approximately 800 acres and is defined as the areas where direct impacts may result from the Proposed Action. The DSA boundaries were developed using the description of the Proposed Action.

4.2 RESOURCES POTENTIALLY AFFECTED

4.2.1 AIR QUALITY

Regulatory Setting

An airport air quality assessment requires consideration under both the Clean Air Act of 1970, as Amended (CAA), and the National Environmental Policy Act of 1969, as Amended (NEPA). These two federal laws require distinct analyses and may be separately applicable to an airport project.

The CAA establishes standards and programs to evaluate, achieve, and maintain acceptable air quality in the United States. In accordance with CAA requirements, the United States Environmental Protection Agency (EPA) established the National Ambient Air Quality Standards (NAAQS), for six common air pollutants (known as "criteria air pollutants") that are potentially harmful to human health and welfare.[1]

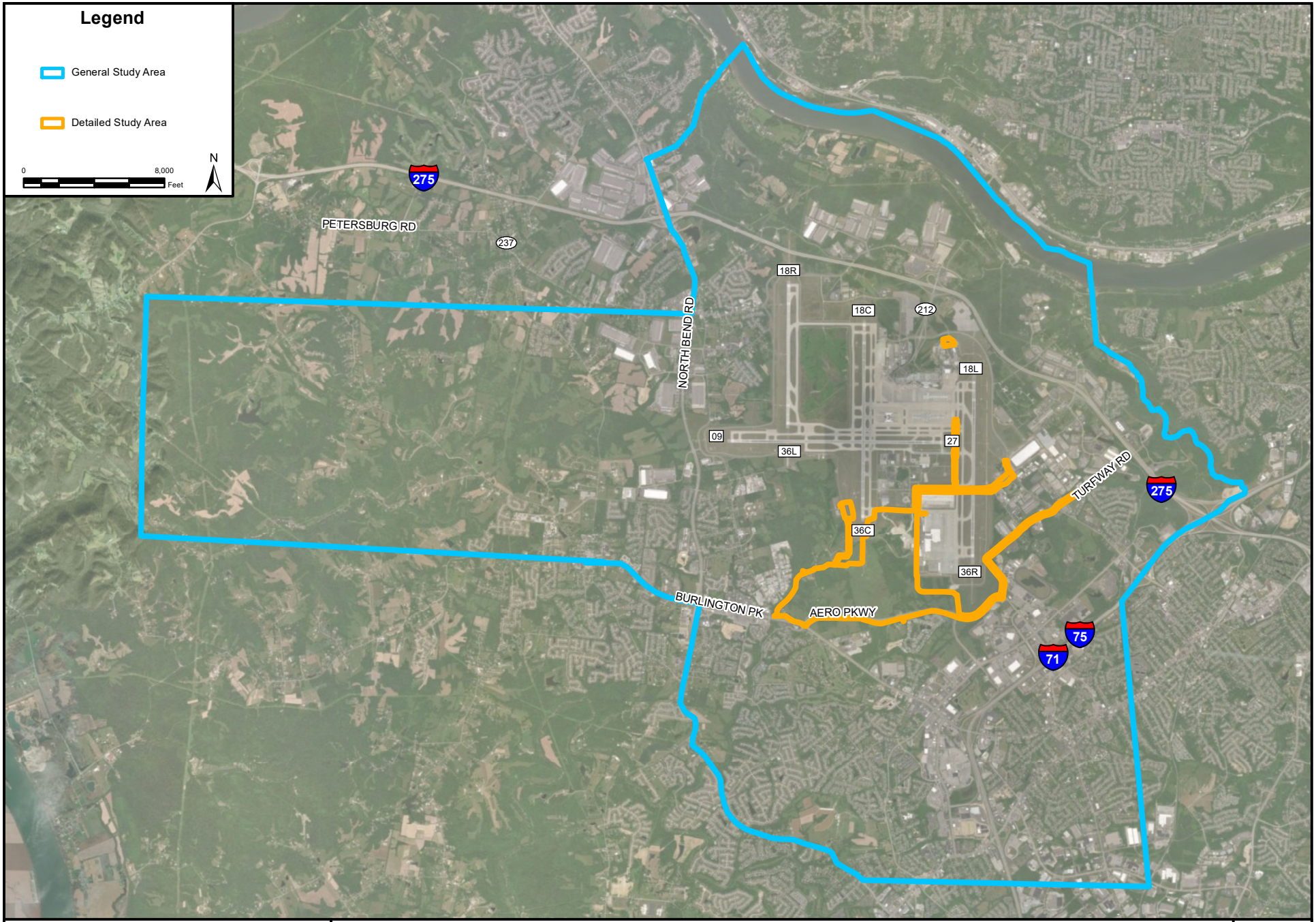
The EPA considers the presence of the following six criteria pollutants to be indicators of air quality:

- Carbon monoxide (CO);
- Nitrogen dioxide (NO_2);
- Ground-level Ozone (O_3);
- Sulfur dioxide (SO_2);
- Particulate matter (PM_{10} and $PM_{2.5}$);[2] and,
- Lead (Pb);[3]

Since 1975, lead emissions have been in decline due in part to the introduction of catalyst-equipped vehicles and the decline in production of leaded gasoline. In general, an analysis of lead is limited to projects that emit significant quantities of the pollutant (*e.g.*, lead smelters) and is generally not applied to transportation projects. For lead, a major source, as defined by EPA for a Nonattainment New Source Review permitting program would emit over 100 tons per year.

The NAAQS are summarized in **Table 4-1**. For each of the criteria pollutants, the EPA established primary standards intended to protect public health, and secondary standards to protect other aspects of public welfare, such as preventing materials damage, preventing crop and vegetation damage, and assuring good visibility. Areas of the country where air pollution levels consistently exceed these standards may be designated nonattainment by the EPA.

[1] EPA, 40 C.F.R. § 50, National Primary and Secondary Ambient Air Quality Standards (NAAQS).
[2] PM_{10} and $PM_{2.5}$ are airborne inhalable particles that are less than ten micrometers (coarse particles) and less than 2.5 micrometers (fine particles) in diameter, respectively.
[3] Airborne lead in urban areas is primarily emitted by vehicles using leaded fuels.



Air Cargo Facility Environmental Assessment

Study Areas

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Table 4-1
NATIONAL AMBIENT AIR QUALITY STANDARDS

POLLUTANT		PRIMARY / SECONDARY	AVERAGING TIME	LEVEL	FORM
Carbon Monoxide (CO)		Primary	8 hour	9 ppm	Not to be exceeded more than once per year
			1 hour	35 ppm	
Lead (Pb)		Primary and Secondary	Rolling 3-month average	0.15 µg/m3 (1)	Not to be exceeded
Nitrogen Dioxide (NO_2)		Primary	1 hour	100 ppb	98th percentile of 1-hour daily maximum concentrations, averaged over 3 years
		Primary and Secondary	1 year	53 ppb (2)	Annual Mean
Ozone (O_3)		Primary and Secondary	8 hour	0.070 ppm (3)	Annual fourth-highest daily maximum 8-hr concentration, averaged over 3 years
Particulate Matter	$PM_{2.5}$	Primary	1 year	12.0 µg/m^3	Annual mean, averaged over 3 years
		Secondary	1 year	15.0 µg/m^3	Annual mean, averaged over 3 years
		Primary and Secondary	24 hour	35 µg/m^3	98th percentile, averaged over 3 years
	PM_{10}	Primary and Secondary	24 hour	150 µg/m^3	Not to be exceeded more than once per year on average over 3 years
Sulfur Dioxide (SO_2)		Primary	1 hour	75 ppb (4)	99th percentile of 1-hour daily maximum concentrations, averaged over 3 years
		Secondary	3 hour	0.5 ppm	Not to be exceeded more than once per year

(1) In areas designated nonattainment for the Pb standards prior to the promulgation of the current (2008) standards, and for which implementation plans to attain or maintain the current (2008) standards have not been submitted and approved, the previous standards (1.5 µg/m^3 as a calendar quarter average) also remain in effect.

(2) The level of the annual NO_2 standard is 0.053 ppm. It is shown here in terms of ppb for the purposes of clearer comparison to the 1-hour standard level.

(3) Final rule signed October 1, 2015, and effective December 28, 2015. The previous (2008) O_3 standards additionally remain in effect in some areas. Revocation of the previous (2008) O_3 standards and transitioning to the current (2015) standards will be addressed in the implementation rule for the current standards.

(4) The previous SO_2 standards (0.14 ppm 24-hour and 0.03 ppm annual) will additionally remain in effect in certain areas: (1) any area for which it is not yet one year since the effective date of designation under the current (2010) standards, and (2) any area for which an implementation plan providing for attainment of the current (2010) standard has not been submitted and approved and which is designated nonattainment under the previous SO_2 standards or is not meeting the requirements of a SIP call under the previous SO_2 standards (40 C.F.R. § 50.4(3)). A SIP call is an EPA action requiring a state to resubmit all or part of its State Implementation Plan to demonstrate attainment of the required NAAQS.

Notes: ppm is parts per million; ppb is parts per billion, and µg/m^3 is micrograms per cubic meter.

Source: EPA, 40 C.F.R. § 50, National Primary and Secondary Ambient Air Quality Standards (NAAQS) accessed August 2018.

A nonattainment area is a homogeneous geographical area[4] (usually referred to as an air quality control region) that is in violation of one or more NAAQS and has been designated as nonattainment by the EPA. Some regulatory provisions, for instance the CAA General Conformity regulations, apply only to areas designated as nonattainment or maintenance.

A maintenance area describes the air quality designation of an area previously designated nonattainment by the EPA and subsequently re-designated attainment after emissions are reduced. Such an area remains designated as maintenance for a period up to 20 years at which time the state can apply for re-designation to attainment, provided that the NAAQS were sufficiently maintained throughout the maintenance period.

Affected Environment

The Airport is located within Boone County, Kentucky, which is included in the Metropolitan Cincinnati Interstate Air Quality Region. The EPA previously determined that Boone County's levels of the eight-hour concentration of ozone exceeded the federal standards defining healthful air quality. On July 5, 2017, the EPA determined the area had attained the 2008 eight-hour standard for ozone. However, in 2018, the area was designated as marginal non-attainment for the 2015 eight-hour standard for ozone.

4.2.2 BIOLOGICAL RESOURCES

Regulatory Setting

The United States Congress passed the Endangered Species Act of 1973, as Amended (ESA) 16 U.S.C. §1531 *et seq*., in 1973 to conserve those species that are endangered or threatened with extinction (federally-listed species). Under ESA, Section 7, the FAA is required to consult with the United States Fish and Wildlife Service (USFWS) and/or the National Marine Fisheries Service (NMFS) to ensure that any action the agency authorizes, funds, or carries out is not likely to jeopardize the continued existence of a listed species or result in the destruction or adverse modification of designated critical habitat.

Affected Environment

The affected environment or action area for biological resources is defined per 50 C.F.R. § 402.02 as "*all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action*."

Biological surveys and habitat assessments were completed in August 21, October 29 and 30, 2015, September 21, 22, and 23, 2016, February 2017, March 14 and 15, 2017, September 7, 2017, and January 22 and 23, 2018 for the DSA. The purpose of these surveys was to determine the presence or absence of federal or state-listed species and if potential habitat for both federal and state-listed species existed in the proposed development area at CVG. The following ground cover/vegetation types are located on the DSA: old field, urban/industrial turf, Upland mixed deciduous forest, post-agricultural disturbed forest, hayfield, hickory woodland, beech forest, palustrine emergent wetland, palustrine forested wetland, palustrine scrub/shrub wetland, and upland scrub/shrub.

[4] A homogeneous geographical area, with regard to air quality, is an area, not necessarily bounded by state lines, where the air quality characteristics have been shown to be similar over the whole area. This may include several counties, encompassing more than one state, or may be a very small area within a single county.

4.2.2.1 Threatened and Endangered Species

According to the USFWS, the following federal listed species of plants and animals, shown in **Table 4-2,** may be found in Boone County, Kentucky.

Table 4-2
FEDERAL THREATENED AND ENDANGERED SPECIES

TAXONOMIC GROUP	COMMON NAME	SCIENTIFIC NAME	FEDERAL STATUS
Mammal	Gray bat	*Myotis grisescens*	*Endangered*
Mammal	Indiana bat	*Myotis sodalis*	*Endangered*
Mammal	Northern long-eared bat	*Myotis septentrionalis*	*Threatened*
Mussels	Clubshell	*Pleurobema clava*	*Endangered*
Mussels	Fanshell	*Cyprogenia stegaria*	*Endangered*
Mussels	Northern Riffleshell	*Epioblasma torulosa rangiana*	*Endangered*
Mussels	Orangefoot pimpleback	*Plethobasus cooperianus*	*Endangered*
Mussels	Purple cat's paw	*Epioblasma obliquata*	*Endangered*
Mussels	Rabbitsfoots	Quadrula cylindrica cylindrica	*Threatened*
Mussels	Ring pink	*Obovaria retusa*	*Endangered*
Mussels	Rough pigtoe	*Pleurobema plenum*	*Endangered*
Mussels	Sheepnose	*Plethobasus cyphyus*	*Endangered*
Mussels	Spectaclecase mussel	*Cumberlandia monodonta*	*Endangered*
Plants	Running buffalo clover	*Trifolium stoloniferum*	*Endangered*

Source: USFWS Information for Planning and Conservation (IPaC) website, https://ecos.fws.gov/ipac/location/LS34QCWHZZDTZCOJ4LG4CW3T3E/resources, Accessed May 17, 2018

4.2.2.2 State Designated Threatened, Endangered, or Special Status Species

In addition to the USFWS information, the Kentucky Department of Fish & Wildlife Resources and the Kentucky State Nature Preserves Commission (KSNPC) were contacted to obtain information on threatened and endangered species. The list of species monitored by the KSNPC that may be found within Boone County is provided in **Appendix C, *Section 7 Consultation***.

4.2.2.3 Survey Findings

There are no known records of federally-protected or state-protected plant or animal species in the DSA. The habitat surveys found potentially suitable habitat for three federal threatened and endangered species: the Indiana bat, the northern long eared bat, and running buffalo clover. Approximately 244 acres of potential summer habitat for the two bat species is located within the DSA. In accordance with Section 7 of the ESA, a Biological Assessment was prepared to analyze the potential impacts of the Proposed Action on the Indiana bat and northern long-eared bat. Running buffalo clover surveys were conducted during the flowering period within the project areas identified as potential habitat during the habitat surveys. No running buffalo clover was identified during the surveys. Suitable habitat was not present for any of the other federal species in the DSA. See Appendix C for additional information on the Biological Assessment and the field surveys.

4.2.3 CLIMATE

Per FAA Order 1050.1F, the discussion of potential climate impacts should be documented in a separate section of the NEPA document, distinct from air quality.[5] Where the proposed action or alternative(s) would result in an increase in greenhouse gases (GHG) emissions, the emissions should be assessed either qualitatively or quantitatively.

GHGs are gases that trap heat in the earth's atmosphere. Both naturally occurring and man-made GHGs primarily include water vapor (H_2O), carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6). Sources that require fuel or power at an airport are the primary sources that would generate GHGs. Aircraft are probably the most often cited air pollutant source, but they produce the same types of emissions as ground access vehicles.

Research has shown there is a direct correlation between fuel combustion and GHG emissions. In terms of U.S. contributions, the General Accounting Office (GAO) reports that "domestic aviation contributes about three percent of total carbon dioxide emissions, according to EPA data," compared with other industrial sources including the remainder of the transportation sector (20 percent) and power generation (41 percent).[6] The International Civil Aviation Organization (ICAO) estimates that GHG emissions from aircraft account for roughly three percent of all anthropogenic GHG emissions globally.[7] Climate change due to GHG emissions is a global phenomenon, so the affected environment is the global climate.[8]

4.2.4 DEPARTMENT OF TRANSPORTATION ACT, SECTION 4(F)

Regulatory Setting

Section 4(f) of the United States Department of Transportation (USDOT) Act of 1966 (49 U.S.C. § 303) protects publicly owned parks, recreational areas, wildlife and waterfowl refuges of national, state, or local significance, and public and private historic sites of national, state, or local significance. Section 4(f) provides that the Secretary of Transportation may approve a transportation program or project requiring the use of publicly owned land of a public park, recreation area, or wildlife or waterfowl refuge of national, state, or local significance, or land of an historic site of national, state, or local significance, only if there is no feasible and prudent alternative to using that land and the program or project includes all possible planning to minimize harm resulting from the use. Section 4(f) applies only to transportation modal agencies within the USDOT. If the FAA is engaged with a non-USDOT agency on the NEPA review of a proposed project involving Section 4(f), the FAA must take the lead on Section 4(f) compliance.

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5 FAA, April 2015, Order 1050.1F Paragraph 4-1. Climate is considered a separate section from Air Quality.

6 *Aviation and Climate Change.* GAO Report to Congressional Committees, (2009).

7 Alan Melrose, "European ATM and Climate Adaptation: A Scoping Study," in *ICAO Environmental Report.* (2010).

8 As explained by the EPA, "greenhouse gases, once emitted, become well mixed in the atmosphere, meaning U.S. emissions can affect not only the U.S. population and environment but other regions of the world as well; likewise, emissions in other countries can affect the United States." Climate Change Division, Office of Atmospheric Programs, EPA, *Technical Support Document for Endangerment and Cause or Contribute Findings for Greenhouse Gases under Section 202(a) of the Clean Air Act* 2-3 (2009).

Section 6(f) of the Land and Water Conservation Fund Act of 1965 (LWCFA), 16 U.S.C. § 4601-8(f), prohibits the conversion of property acquired or developed with LWCFA grants for uses other than public outdoor recreation without the approval of the United States Department of Interior's (USDOI) National Park Service (NPS). The USDOI has delegated most review, consultation and assessment of Section 6(f) impacts and conversions to specified state recreation offices. When acquisition is required, Section 6(f) directs the USDOI to assure that replacement lands of at least equal fair market value and of reasonably equivalent usefulness and location are provided as a condition of such conversions. Consequently, where conversions of Section 6(f) lands are proposed for airport projects, replacement lands are required.

Affected Environment

A review of records maintained by the National Park Service (NPS), the Kentucky Heritage Council (KHC), Boone County, and the Northern Kentucky Area Planning Commission (NKAPC) was conducted to identify known Section 4(f) resources in the GSA. Potential Section 4(f) properties within and around the GSA are shown in **Exhibit 4-2, *Potential Section 4(f) Resources*** and listed in **Table 4-3**. Potential historic sites are discussed in Section 4.2.6. No LWCF lands are located within the GSA.[9] Therefore, LWCF Section 6(f) lands are not discussed further in this EA.

Table 4-3
POTENTIAL SECTION 4(f) RESOURCES

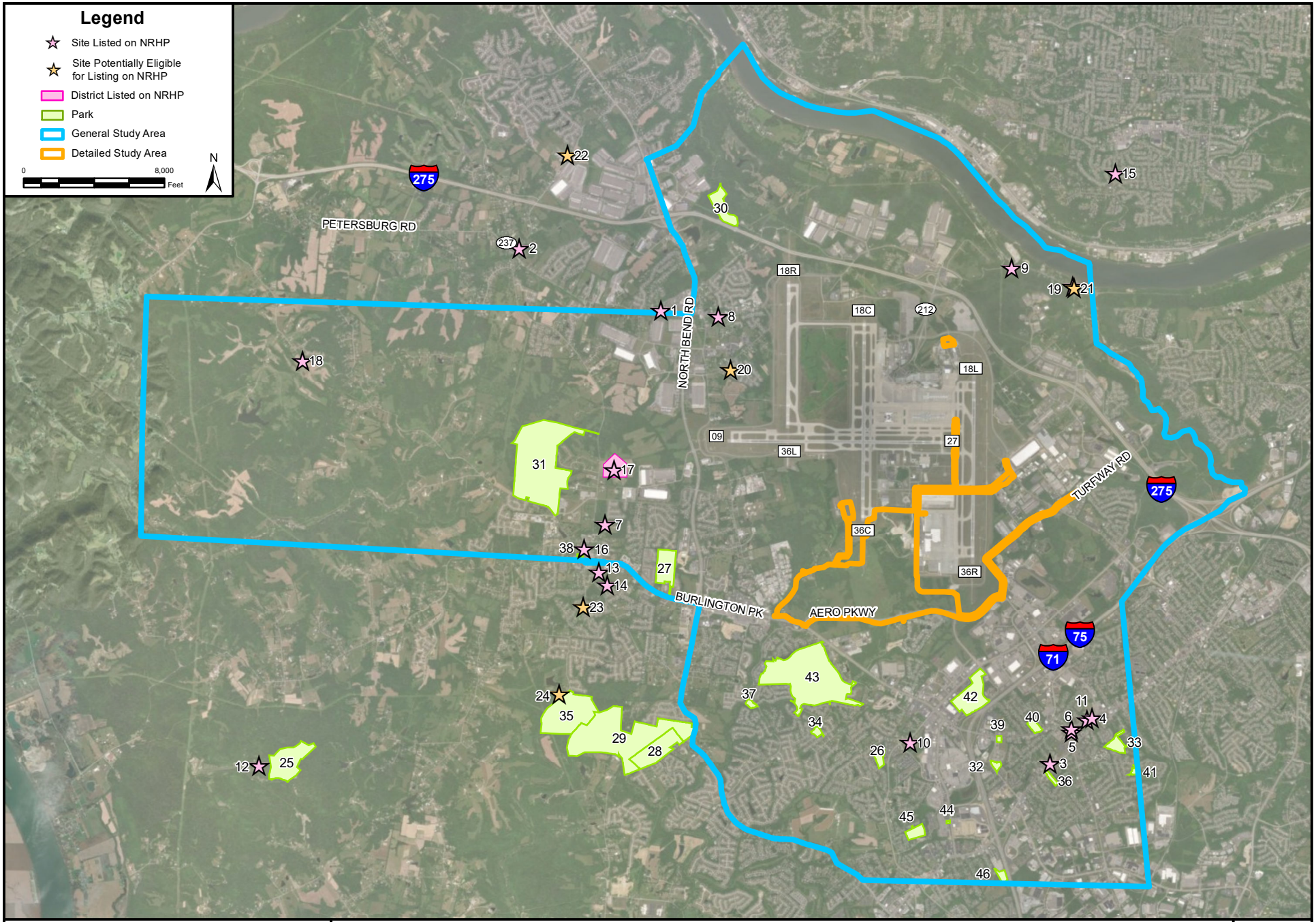
MAP ID	NAME	RESOURCE TYPE
1	A.J. Aylor House	Historic Structure
2	Allie Corn House	Historic Structure
3	Clinton Blankenbeker House	Historic Structure
4	Dr. Gladys Rouse Office and House	Historic Structure
5	Florence Fire Station	Historic Structure
6	Florence Hotel	Historic Structure
7	Frank S. Milburn Machine Shop	Historic Structure
8	Hebron Deposit Bank	Historic Structure
9	Henry and Agnes Rolsen House	Historic Structure
10	Hopeful Lutheran Church	Historic Structure
11	John Delehunty House	Historic Structure
12	Roberts, Thomas Zane, House and Workshop	Historic Structure
13	W.F. and Florence McKim House	Historic Structure
14	W.T. Delph House	Historic Structure
15	Williams, W. L., House	Historic Structure
16	Burlington Historic District	Historic District
17	Ephraim Uitz House	Historic District
18	Gaines, Benjamin R., Farm	Historic District
19	Anderson Ferry House	Historic Structure
20	Joel Garnett House	Historic Structure

[9] Land and Water Conservation Fund Coalition, 2017, Map of LWCF Funding Through Federal Land Management Agencies and State & Local Assistance Program - Resources. Available on-line: https://www.lwcfcoalition.com/tools/. Accessed June 2017.

Table 4-3, *Continued*
POTENTIAL SECTION 4(f) RESOURCES

MAP ID	NAME	RESOURCE TYPE
21	Kottmeyer House	Historic Structure
22	Marietta Graves House	Historic Structure
23	Robert Chambers House	Historic Structure
24	Sperti Farm	Historic Structure
25	Boone Cliffs	Park / Recreation
26	Boone County Pee Wee Football	Park / Recreation
27	Boone Woods Park	Park / Recreation
28	Camp Ernst Lake	Park / Recreation
29	Camp Ernst YMCA	Park / Recreation
30	Carder Dolwick Nature Preserve	Park / Recreation
31	England Idlewild Park	Park / Recreation
32	Florence Family Aquatic Center	Park / Recreation
33	Florence Nature Park	Park / Recreation
34	Fox Run Park	Park / Recreation
35	Gunpowder Creek Nature Park	Park / Recreation
36	Niblack Memorial Park	Park / Recreation
37	Oakbrook Park	Park / Recreation
38	Pete's Park	Park / Recreation
39	Skate Park	Park / Recreation
40	Stringtown Park	Park / Recreation
41	Walnut Creek Park	Park / Recreation
42	World of Golf	Park / Recreation
43	Boone Links Golf Course	Park / Recreation
44	Florence Community Plaza	Park / Recreation
45	Lincoln Woods Park	Park / Recreation
46	Florence Lions Park	Park / Recreation

Source: U.S. National Park Service, National Register of Historic Places, Kentucky Heritage Council, Boone County, Landrum & Brown analysis, 2017.



Air Cargo Facility Environmental Assessment

Potential Section 4(f) Resources

EXHIBIT: **4-2**

SOURCES:U.S. National Park Service, National Register of Historic Places, Boone County Planning Commission

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4.2.5 HAZARDOUS MATERIALS, SOLID WASTE, AND POLLUTION PREVENTION

Regulatory Setting

Primary laws passed governing the handling and disposal of hazardous materials, solid waste and pollution prevention include: Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), Resource Conservation and Recovery Act (RCRA), Pollution Prevention Act (PPA), Toxic Substances Control Act (TSCA), and the Oil Pollution Act (OPA).

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA): The CERCLA of 1980, 42 U.S.C. §§ 9601 – 9675, was amended by the Superfund Amendments and Reauthorization Act (SARA) of 1986 and the Community Environmental Response Facilitation Act (CERFA) of 1992. The purpose of CERCLA is to conduct an increasingly complex series of evaluations of federally-listed suspected hazardous waste sites to determine if those sites pose sufficient threats to human health and the environment to become eligible for federally-funded investigation and clean up under Superfund.

Resource Conservation and Recovery Act (RCRA): The RCRA of 1987, 42 U.S.C. §§ 6901 – 6992k, is intended to provide "cradle to grave" management of hazardous and solid wastes and regulation of underground storage tanks (USTs) containing chemical and petroleum products. The RCRA allows the EPA to set standards for entities producing, storing, handling, transporting, and disposing of hazardous waste. The RCRA was amended with the Hazardous and Solid Waste Amendments of 1984 (HSWA) that addressed corrective actions and permitting of hazardous waste issues.

Pollution Prevention Act (PPA): The PPA of 1990, 42 U.S.C. §§ 13101 – 13109, established that it is the national policy of the United States that, whenever feasible: (1) pollution should be prevented or reduced at the source; (2) pollution that cannot be prevented should be recycled in an environmentally safe manner; (3) pollution that cannot be prevented or recycled should be treated in an environmentally-safe manner; and (4) disposal or other release into the environment should be employed only as a last resort, and should be conducted in an environmentally-safe manner.

Toxic Substances Control Act (TSCA): The TSCA of 1976, 42 U.S.C. §§ 2601 – 2697, states that it is the policy of the United States that: (1) adequate data should be developed with respect to the effect of chemical substances and mixtures on health and the environment, and that the development of such data should be the responsibility of those who manufacture and those who process such chemical substances and mixtures; (2) adequate authority should exist to regulate chemical substances and mixtures that create an unreasonable risk of injury to health or the environment, and to take action with respect to chemical substances and mixtures which are imminent hazards; and (3) authority over chemical substances and mixtures should be exercised in such a manner as not to impede unduly or create unnecessary economic barriers to technological innovation while fulfilling the primary purpose of the TSCA to assure that such innovation and commerce in such chemical substances and mixtures do not create an unreasonable risk of injury to health or the environment.

Oil Pollution Act (OPA): The OPA of 1990, 33 U.S.C. §§ 2701 - 2762 was established to improve the nation's ability to prevent and respond to oil spills by establishing provisions that expand the federal government's ability, and provide the money and resources necessary to respond to oil spills. The OPA provided new requirements for contingency planning by both government and industry. The Oil Pollution Prevention Regulation (40 C.F.R. Part 112) was amended to incorporate requirements of the OPA, and now forms the basis of the EPA's Oil Spill Prevention, Control, and Countermeasure (SPCC) program. The SPCC program seeks to prevent oil spills from certain aboveground storage tanks (ASTs) and USTs.

Affected Environment

Hazardous Materials

Phase I Environmental Site Assessments (ESAs) were completed to evaluate potential hazardous substances contamination on the DSA. The Phase I ESAs are provided in **Appendix D, *Hazardous Materials***. The Phase I ESAs did not reveal evidence of a recognized environmental condition (REC) or Conditional RECs (CRECs) in the DSA. While there are records of potential ground contaminating events in the DSA, there is no potential for encountering hazardous substances and/or groundwater during construction activities as these are considered historical recognized environmental conditions (HRECs) and it has been determined no further action is required..

Furthermore, there are no properties listed on the National Priority List (NPL) or Resource Conservation and Recovery Act (RCRA) solid waste management units within the DSA.

Solid Waste

The solid waste at CVG is managed by the Northern Kentucky Solid Waste Management Area (NKSWMA), which serves approximately 261,000 people in Boone, Kenton, and Campbell Counties.[10] NKSWMA utilized three landfills for waste disposal in 2016: Bavarian (Boone County, Kentucky), Epperson (Grant County, Kentucky), Rumpke (Pendleton County, Kentucky). In addition to landfills, a variety of recycling, composting, and buy-back programs were utilized to handle solid waste.

According to the KCAB, approximately 7,708 tons of solid waste was generated by the airport and its tenants in 2017. The three largest generators of solid waste were the Airport, Delta Air Lines, and DHL. All 7,708 tons of waste were collected and transported by Rumpke Waste Collection and Disposal Systems to landfills in Colerain Township, Ohio and Pendleton County, Kentucky.

[10] *Northern Kentucky Solid Waste Management Area Plan – 5 Year Update 2018-2022*, 2016.

4.2.6 HISTORIC, ARCHITECTURAL, ARCHEOLOGICAL, AND CULTURAL RESOURCES

Regulatory Setting

The National Historic Preservation Act of 1966 (NHPA) (54 U.S.C. § 300101 *et seq*.) Section 106, *Protection of Historic Properties* requires federal agencies to take into account the effects of their undertakings on properties that are listed on or determined eligible for inclusion in the National Register of Historic Places (NRHP), and requires federal agencies to consult with the State Historic Preservation Office (SHPO), Tribal Historic Preservation Officers (THPO), and other parties to develop and evaluate alternatives or modifications to the undertaking that could avoid, minimize, or mitigate adverse effects on historic properties. The independent federal agency overseeing federal historic preservation and tribal programs, the Advisory Council on Historic Preservation (ACHP), is afforded a reasonable opportunity to comment on such undertakings subject to Section 106. The ACHP typically reserves its comments either for complex consultations in which it has had previous involvement or for consultations wherein a federal agency seeks ACHP comment on unresolved consultation issues. Section 106 of NHPA is the principal statute concerning such resources. It requires consideration of direct and indirect impacts from federal actions on historic, architectural, archeological, and other cultural resources.

This project also falls under the purview of the Kentucky Heritage Council (KHC),which serves as the SHPO and is responsible for the identification, protection and preservation of prehistoric resources and historic buildings, sites and cultural resources throughout Kentucky.

Affected Environment

The Area of Potential Effects (APE) is "the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties" (36 C.F.R. § 800.16(d)). For purposes of Section 106, the term "historic properties" can include architectural, archeological, or cultural resources. The determination of the APE considers the character of a project area and the potential for resources to be found.

The APE is influenced by the scale and nature of an undertaking and may be different for different kinds of effects caused by the undertaking (36 C.F.R. § 800.16(d)). The APE must include all direct and reasonably foreseeable indirect effects. Although the NHPA regulations do not define the term "indirect effect," the criteria of adverse effects cover reasonably foreseeable effects caused by the undertaking that may occur later in time, be farther removed in distance, or be cumulative (36 C.F.R. § 800.5(a)(1)).

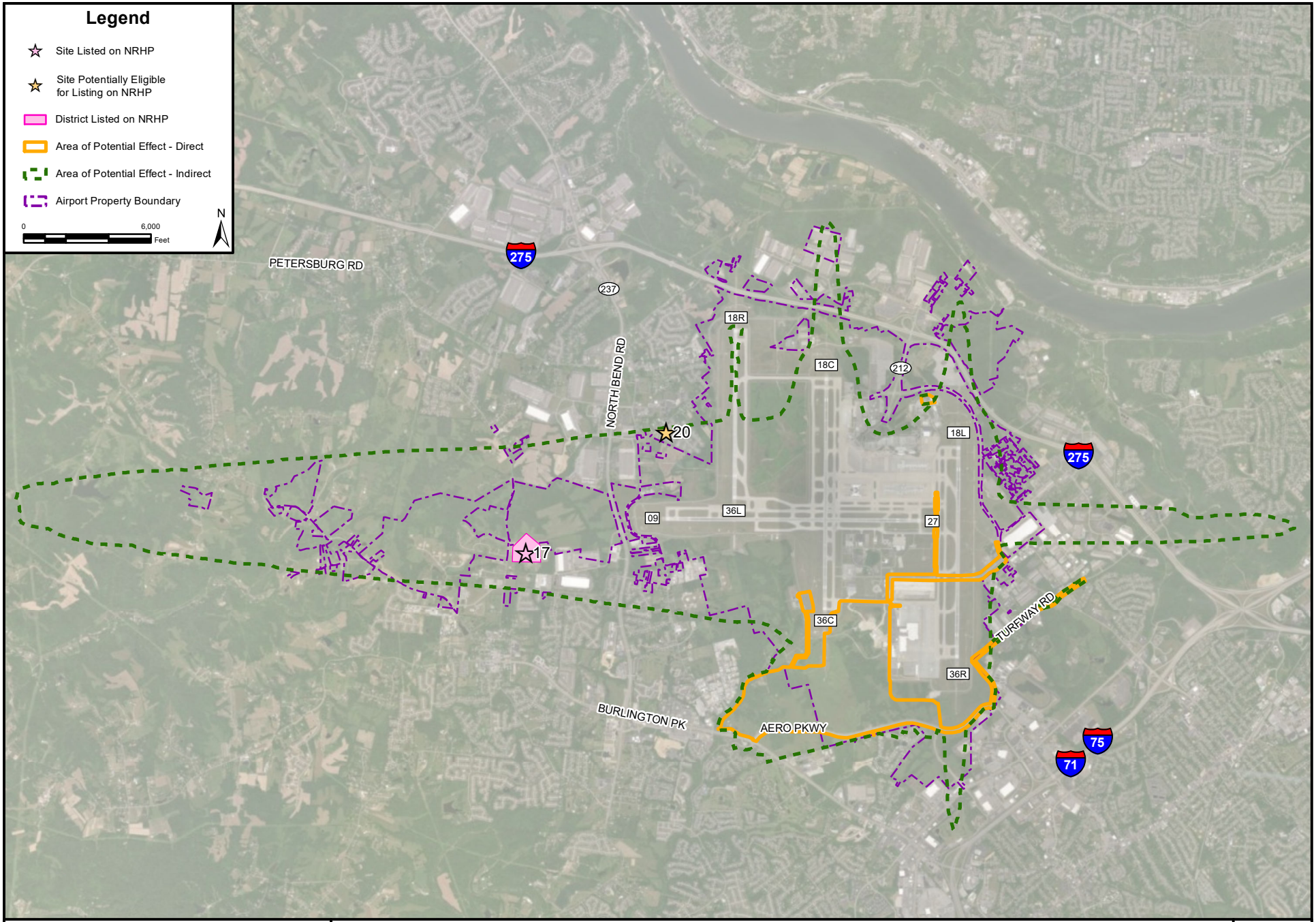
For this undertaking, impacts to historic resources associated with visual impacts or changes in setting, could cause direct and indirect effects. As a result of this effort the FAA defined two APEs - a Direct APE and an Indirect APE as shown on **Exhibit 4-3, *Direct and Indirect Areas of Potential Effect***. The Indirect APE covers approximately 1,300 acres and is defined as the area where both direct and indirect impacts may result from the development of the Proposed Action. The Direct APE covers approximately 900 acres and is defined as the area where direct impacts may result from the Proposed Action. The Direct APE boundary was developed using the area of physical disturbance. The KHC concurred with FAA delineation of the APE via email on May 21, 2018 (see **Appendix E, *Section 106 Consultation***).

Architectural, Phase I, and Phase II archeological surveys were conducted for the proposed undertaking in compliance with Section 106 of the NHPA and KHC guidelines. The purpose of the investigation was to identify any historic properties located within the Direct APE that are listed or eligible for listing in the NRHP. Historic properties may include buildings or structures, sites, objects, and even districts of importance in prehistory or history. The cultural resources investigation consisted of a records search and literature review, as well as an archeological pedestrian survey of the Direct APE. The background research included a review of the Kentucky Office of State Archaeology (KYOSA), the KHC, historical aerials from Boone County Online GIS website, and historic United States Geological Survey (USGS) maps.

Qualified archeologists conducted pedestrian surveys dating back to 1983. As described in the FAA Order 1050.1F Desk Reference, the steps taken to identify archeological sites must be identified.[11] The pedestrian survey was conducted in accordance to KHC pedestrian survey standards which allow a person to achieve 100 percent coverage of a corridor 20 meters (66 feet) wide in a single pass. In addition, surveys were conducted for aboveground resources within the Direct APE.

The surveys identified 49 sites within the direct and indirect APE, of which 37 were archaeological resources and 12 were aboveground resources. Through consultation with KHC, 33 of the archaeological sites were determined not eligible and four were determined eligible for listing in the National Register of Historic Places (NRHP). Two aboveground resources were previously identified, Ephraim Uitz House (listed on the NRHP) and the Joel Garnett House (eligible). The remaining ten aboveground resources were determined not eligible for the NRHP. **Table 4-4** provides the evaluated sites and the NRHP eligibility determination.

[11] FAA, 2015, *1050.1F Desk Reference*.



Air Cargo Facility Environmental Assessment

Direct and Indirect Areas of Potential Effect

EXHIBIT: **4-3**

SOURCES:U.S. National Park Service, National Register of Historic Places, Boone County Planning Commission

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Table 4-4
EVALUATED SITES WITHIN THE DIRECT AND INDIRECT APE

	APE	ASM SITE NUMBER	DESCRIPTION	NRHP STATUS RECOMMENDATION
Archaeological Resources				
1	Direct APE	15Be305	Prehistoric open habitations without mounds	Not eligible
2	Direct APE	15Be307	Prehistoric open habitations without mounds	Not eligible
3	Direct APE	15Be315	Middle Archaic open habitat without mounds	Not eligible
4	Direct APE	15Be320	Prehistoric open habitations without mounds	Not eligible
5	Direct APE	15Be327	Historic Farm/Residence	Not eligible
6	Direct APE	15Be328	Historic Farm/Residence	Not eligible
7	Direct APE	15Be330	Historic Farm/Residence	Not eligible
8	Direct APE	15Be331	Historic Farm/Residence	Not eligible
9	Direct APE	15Be334	Prehistoric open habitations without mounds	Not eligible
10	Direct APE	15Be338	Prehistoric open habitations without mounds	Not eligible
11	Direct APE	15Be339	Prehistoric open habitations without mounds	Not eligible
12	Direct APE	15Be340	Prehistoric open habitations without mounds	Not eligible
13	Direct APE	15Be549	Prehistoric open habitations without mounds	Not eligible
14	Direct APE	15Be550	Historic Farm/Residence	Not eligible
15	Direct APE	15Be682	Historic Cemetery	Not eligible
16	Direct APE	15Be685	Unaffiliated Prehistoric Lithic Scatter	Not eligible
17	Direct APE	15Be686	Unaffiliated Prehistoric Lithic	Not eligible
18	Direct APE	15Be687	Unaffiliated Prehistoric Lithic Scatter	Not eligible
19	Direct APE	15Be688	Historic Residence/Farmstead	Eligible
20	Direct APE	15Be689	Historic Residence/Farmstead	Not eligible
21	Direct APE	15Be690	Unaffiliated Prehistoric Lithic Scatter	Not eligible
22	Direct APE	15Be691	Historic Residence/Farmstead	Not eligible
23	Direct APE	15Be692	Historic Cemetery	Not eligible
24	Direct APE	15Be693	Unaffiliated Prehistoric Lithic Scatter	Not eligible
25	Direct APE	15Be694	Historic Residence/Farmstead	Eligible

Table 4-4, *Continued*
EVALUATED SITES WITHIN THE DIRECT AND INDIRECT APE

	APE	ASM SITE NUMBER	DESCRIPTION	NRHP STATUS RECOMMENDATION
26	Direct APE	15Be695	Unaffiliated Prehistoric Lithic Scatter	Not eligible
27	Direct APE	15Be696	Unaffiliated Prehistoric Lithic Scatter	Not eligible
28	Direct APE	15Be697	Historic Residence/Farm	Eligible
29	Direct APE	15Be698	Unaffiliated Prehistoric Lithic Scatter	Not eligible
30	Direct APE	15Be699	Unaffiliated Prehistoric Lithic Scatter	Not eligible
31	Direct APE	15Be700	Unaffiliated Prehistoric Lithic Scatter with Historic Component	Not eligible
32	Direct APE	15Be701	Unaffiliated Prehistoric Lithic Scatter with Historic Component	Not eligible
33	Direct APE	15Be702	Unaffiliated Prehistoric Lithic Scatter	Not eligible
34	Direct APE	15Be703	Historic Cemetery	Not eligible
35	Direct APE	15Be715	Historic Cemetery	Not eligible
36	Direct APE	15Be716	Historic Residence/Farmstead-Associated with BE176	Not eligible
37	Direct APE	15Be717	Historic Residence/Farmstead	Eligible*
Aboveground Resources				
38	Direct APE	Site # not assigned	Shed/outhouse (Structure)	Not eligible
39	Direct APE	Be176	Historic Residence/Farmstead-Associated with 15BE716 (Structure)	Not eligible
40	Direct APE	Be1661	Tobacco Barn (Structure)	Not eligible
41	Direct APE	Be1663	Stripping Shed (Structure)	Not eligible
42	Direct APE	Be1664	Vittitoe House (Structure)	Not eligible
43	Indirect APE	Be1667	Mayerhofer House	Not eligible
44	Indirect APE	Be1668	George Irwin House	Not eligible
45	Indirect APE	Be1669	Johnson House	Not eligible
46	Indirect APE	Be1670	Kenner House	Not eligible
47	Indirect APE	Be1671	5679 Limaburg Creek Road	Not eligible
48	Indirect APE	Be125	Ephraim Uitz House	Listed on NRHP
49	Indirect APE	Be376	Joel Garnett House	Eligible

* Phase II archeological work on this site could not be completed due to safety concerns regarding asbestos contamination on the site. Therefore, the site was determined eligible for the NRHP.

Source: Environment & Archaeology, LLC

4.2.7 LAND USE

Regulatory Setting

Special guidance relevant to land use is given in the NEPA implementing regulations, which require consideration of "[p]ossible conflicts between the proposed action and the objectives of Federal, regional, State, and local (and in the case of a reservation, Indian tribe) land use plans, policies and controls for the area concerned." The impacts on land use may include indirect impacts such as the disruption of communities, relocation, induced socioeconomic impacts, and impacts to land uses protected under USDOT Act Section 4(f). The regulations recognize that certain inconsistencies may exist between the proposed federal action and any approved state or local plan or law. Where an inconsistency exists, the NEPA document should describe the extent to which the agency would reconcile its action with the plan or law. (See 40 C.F.R. § 1506.2(d).)

Affected Environment

The DSA is located on the southern edge of the Airport in a predominantly commercial area. The land uses immediately adjacent to the DSA are a mix of commercial and residential uses and undeveloped Airport property. There is a residential area located south of the DSA on the south side of Aero Parkway and west of the DSA on the west side of Limaburg-Creek Road. The DSA has frontage on Aero Parkway, which provides automobile access. **Exhibit 4-4, *Existing Land Use***, shows the location of the DSA and the surrounding land uses.

The on-Airport portion of the DSA is located within an area that is zoned as "Airport" district and is part of the Houston-Donaldson Study Corridor Overlay District (HDO). The Airport zoning designation allows airport development and commercial, office and industrial uses. The HDO is an overlay zoning district that applies additional conditions related to design and signage while maintaining the provisions of the underlying Airport zoning district.

The off-Airport portion of the DSA is currently zoned C-4 – Commercial, I-1 – Industrial, and A-2 – Agricultural Estate. According to the Boone County Comprehensive Plan, the C-4 designation is land designed for "locally oriented commercial services, either retail, recreational or office uses, in areas located near or adjacent to interstate highways and arterial roads. These areas are either currently or expected to experience rapid growth due to the population projections and recommended land uses in the Boone County Comprehensive Plan and in other land use studies." The I-1 designation is land designed for "different types of small to large scale light manufacturing, warehouse, distribution and related service uses, which require direct accessibility to a regional transportation system." The A-2 designation is land designated to "provide low density residential development and on a limited basis agricultural uses or agricultural related uses in the context of a rural environment."

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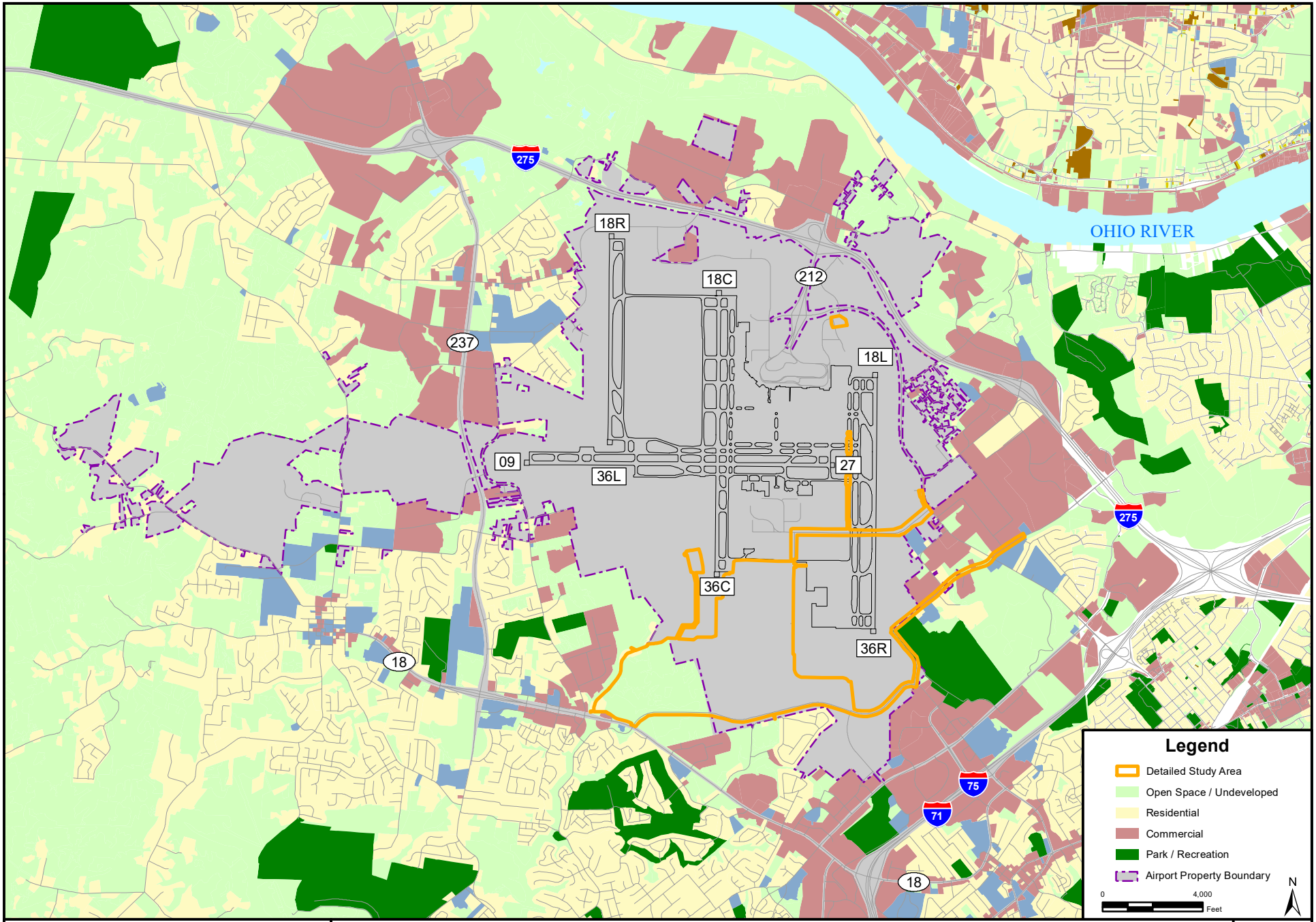

Air Cargo Facility Environmental Assessment

Existing Land Use

EXHIBIT: **4-4**

SOURCE: Boone County Planning Commission GIS Services Division, 2017. @ http://www.boonecountygis.com

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4.2.8 NATURAL RESOURCES AND ENERGY SUPPLY

Regulatory Setting

As an impact category, natural resources and energy supply provides an evaluation of a project's consumption of natural resources and use of energy supplies. As set forth in 40 C.F.R. §§1502.14 and 1502.16(e)-(f), CEQ Regulations require that, when evaluating the environmental consequences of a proposed action and its alternatives, a federal agency's environmental consequences analysis must include, among other things, energy requirements and the conservation potential of various alternatives and mitigation measures, and natural or depletable resource requirements and the conservation potential of various alternatives and mitigation measures. The following section describes the existing conditions for natural resources and energy supply at CVG.

Affected Environment

Duke Energy supplies the Airport's electricity and natural gas, Boone County Water District and the Northern Kentucky Water District supply the Airport's water utilities, Sanitation District 1 and 2 support the Airport's stormwater and sewage utilities, Cincinnati Bell provides the Airport's internet service, and Delta Fuel Storage Tanks supplies the Airport's aircraft fuel.[12] Based on information provided by KCAB staff, in 2016 the Airport's electric usage was approximately 63,500,000-kilowatt hours, water usage was approximately 17,300,000 cubic feet, and natural gas usage was approximately 142,000 million British thermal units.

4.2.9 NOISE AND NOISE-COMPATIBLE LAND USE

4.2.9.1 Noise

Regulatory Setting

For aviation noise analyses, the FAA has determined that the cumulative noise energy exposure of individuals resulting from aviation activities must be established in terms of Yearly Day-Night Average Sound Level (DNL), the FAA's primary noise metric. To evaluate aircraft noise, the FAA has a required computer model, the Aviation Environmental Design Tool (AEDT) that simulates aircraft activity at an airport. AEDT replaced the Integrated Noise Model, and the Emissions and Dispersion Modeling System as the required tool for environmental modeling of FAA actions to determine if significant noise impacts would result. AEDT 2d is the latest version.[13]

[12] Cincinnati/Northern Kentucky International Airport – 2035 Master Plan Update, *Chapter 4 - Airport Inventory*.

[13] FAA, 2017, Aviation Environmental Design Tool, Version 2d. Available on-line at: https://aedt.faa.gov/2d_information.aspx Accessed 2017.

The FAA uses the 14 C.F.R. Part 150, *Airport Noise Compatibility Planning*, land use compatibility guidelines to determine compatibility with most land uses. These guidelines are consistent with land use compatibility guidelines developed by other federal agencies such as the EPA and the United States Department of Housing and Urban Development.[14,15] A DNL of 65 decibels (dB) is the noise level at which noise-sensitive land uses (residences, churches, schools, libraries, and nursing homes) become significantly impacted. Below 65 DNL, all land uses are determined to be compatible with airport noise. Special consideration is given to noise sensitive areas within Section 4(f) properties (including, noise sensitive areas within national parks, national wildlife and waterfowl refuges and historic sites, including traditional cultural properties) where the land use compatibility guidelines in 14 C.F.R. Part 150 are not relevant to the value, significance, and enjoyment of the area in question.

Affected Environment

The 65 DNL, 70 DNL, and 75 DNL Existing noise exposure contours are shown on **Exhibit 4-5, *Existing Noise Exposure Contours***. The Existing Noise Exposure contours were based on data from January 2017 through December 2017, as it was the latest data available at the time the noise contours were prepared. **Table 4-5** summarizes the area within each noise contour level for the existing noise exposure contour. A DNL noise contour does not represent the noise levels present on any specific day, but represents the energy-average of all 365 days of operation during the year. Noise contour patterns extend from an airport along each extended runway centerline, reflective of the flight tracks used by all aircraft. The relative distance of a contour from an airport along each route is a function of the frequency of use of each runway end for total arrivals and departures, as well as its use at night, and the type of aircraft assigned to it.

Table 4-5
AREAS WITHIN EXISTING NOISE EXPOSURE CONTOURS
(IN SQUARE MILES)

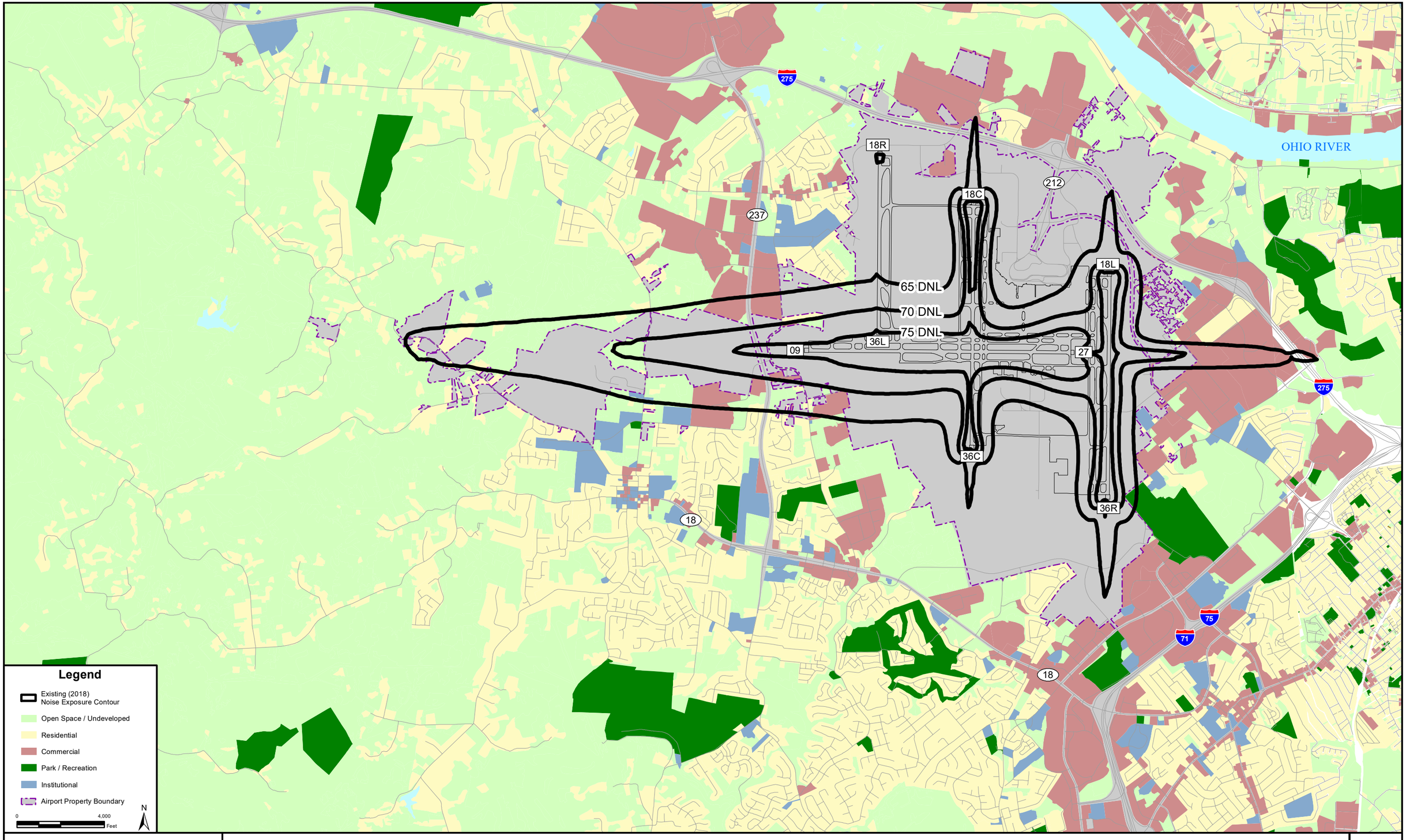
CONTOUR RANGE	EXISTING
65-70 DNL	4.0
70-75 DNL	1.8
75 + DNL	1.1
65 + DNL	7.0

Source: Landrum & Brown, 2018.

The shape of the noise contours north and south of the Airport reflect the predominant daytime use of Runways 18C/36C and 18L/36R and the dominant south/west flow of the Airport. During the daytime, the primary west/south flow of the Airport consists generally of arrivals from the north to Runways 18L, 18C, and 27, and departures to the south and west from Runways 18L, 18C, and 27. As a result, the noise contour is spiked to the north (indicating predominantly arrival operations) and more rounded and larger to the south (indicating predominantly departure operations). During the nighttime, Runway 27 is the preferred departure runway, creating the larger contour to the west of the Airport.

[14] Federal Interagency Committee on Urban Noise (FICUN), 1980, *Guidelines for Considering Noise in Land Use Planning and Control*.

[15] Federal Interagency Committee on Noise (FICON), 1992, *Federal Agency Review of Selected Airport Noise Analysis Issues*, August.



Air Cargo Facility Environmental Assessment

Existing Noise Exposure Contours

EXHIBIT: **4-5**

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4.2.9.2 Noise-Compatible Land Use

Regulatory Setting

The FAA has created guidelines regarding the compatibility of land uses with various aircraft noise levels measured using the DNL metric. These guidelines are defined in Appendix A to 14 C.F.R. Part 150. The land use compatibility table is reproduced in **Table 4-6**. These guidelines show the compatibility parameters for residential, public (schools, churches, nursing homes, hospitals, and libraries), commercial, institutional, and recreational land uses. All land uses exposed to noise levels below the DNL 65 dB noise contour are generally considered compatible with airport operations.

Table 4-6
LAND USE COMPATIBILITY GUIDELINES – 14 C.F.R. PART 150

	YEARLY DAY-NIGHT AVERAGE SOUND LEVEL (DNL) IN DECIBELS					
LAND USE	**BELOW 65**	**65-70**	**70-75**	**75-80**	**80-85**	**OVER 85**
RESIDENTIAL						
Residential, other than mobile homes and transient lodgings	Y	N(1)	N(1)	N	N	N
Mobile home parks	Y	N	N	N	N	N
Transient lodgings	Y	N(1)	N(1)	N(1)	N	N
PUBLIC USE						
Schools	Y	N(1)	N(1)	N	N	N
Hospitals and nursing homes	Y	25	30	N	N	N
Churches, auditoriums, and concert halls	Y	25	30	N	N	N
Governmental services	Y	Y	25	30	N	N
Transportation	Y	Y	Y(2)	Y(3)	Y(4)	Y(4)
Parking	Y	Y	Y(2)	Y(3)	Y(4)	N
COMMERCIAL USE						
Offices, business and professional	Y	Y	25	30	N	N
Wholesale and retail—building materials, hardware and farm equipment	Y	Y	Y(2)	Y(3)	Y(4)	N
Retail trade—general	Y	Y	25	30	N	N
Utilities	Y	Y	Y(2)	Y(3)	Y(4)	N
Communication	Y	Y	25	30	N	N
MANUFACTURING AND PRODUCTION						
Manufacturing, general	Y	Y	Y(2)	Y(3)	Y(4)	N
Photographic and optical	Y	Y	25	30	N	N
Agriculture (except livestock) and forestry	Y	Y(6)	Y(7)	Y(8)	Y(8)	Y(8)
Livestock farming and breeding	Y	Y(6)	Y(7)	N	N	N
Mining and fishing, resource production and extraction	Y	Y	Y	Y	Y	Y
RECREATIONAL						
Outdoor sports arenas and spectator sports	Y	Y(5)	Y(5)	N	N	N
Outdoor music shells, amphitheaters	Y	N	N	N	N	N
Nature exhibits and zoos	Y	Y	N	N	N	N
Amusements, parks, resorts and camps	Y	Y	Y	N	N	N
Golf courses, riding stables and water recreation	Y	Y	25	30	N	N

Table 4-6, *Continued*
LAND USE COMPATIBILITY GUIDELINES - 14 C.F.R. PART 150

(1) Where the community determines that residential or school uses must be allowed, measures to achieve outdoor to indoor Noise Level Reduction (NLR) of at least 25 dB and 30 dB should be incorporated into building codes and be considered in individual approvals. Normal residential construction can be expected to provide a NLR of 20 dB, thus, the reduction requirements are often stated as 5, 10 or 15 dB over standard construction and normally assume mechanical ventilation and closed windows year round. However, the use of NLR criteria will not eliminate outdoor noise problems.
(2) Measures to achieve NLR 25 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas or where the normal noise level is low.
(3) Measures to achieve NLR of 30 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas or where the normal noise level is low.
(4) Measures to achieve NLR 35 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas or where the normal level is low.
(5) Land use compatible provided special sound reinforcement systems are installed.
(6) Residential buildings require an NLR of 25.
(7) Residential buildings require an NLR of 30.
(8) Residential buildings not permitted.

Notes:
1. The designations contained in this table do not constitute a Federal determination that any use of land covered by the program is acceptable under Federal, State, or local law. The responsibility for determining the acceptable and permissible land uses and the relationship between specific properties and specific noise contours rests with the local authorities. FAA determinations under Part 150 are not intended to substitute federally determined land uses for those determined to be appropriate by local authorities in response to locally determined needs and values in achieving noise compatible land uses.
2. SLUCM=Standard Land Use Coding Manual.
3. Y (Yes)=Land Use and related structures compatible without restrictions.
4. N (No)=Land Use and related structures are not compatible and should be prohibited.
5. NLR=Noise Level Reduction (outdoor to indoor) to be achieved through incorporation of noise attenuation into the design and construction of the structure.
6. 25, 30, or 35=Land use and related structures generally compatible; measures to achieve NLR of 25, 30, or 35 dB must be incorporated into design and construction of structure.

Source: 14 C.F.R. § 150 *Airport Noise Compatibility Planning*, Appendix A, Table 1.

Affected Environment

There are no public schools, churches, nursing homes, hospitals, or libraries within any of the contours. Summaries of the residential population and housing units affected by noise levels exceeding 65 DNL for the Existing Noise Exposure Contours are provided in **Table 4-7**. For more information on the noise exposure contours see **Appendix F, *Noise*.**

Table 4-7
EXISTING INCOMPATIBILITIES

EXISTING CONDITIONS	65-70 DNL	70-75 DNL	75+DNL	TOTAL
RESIDENCES				
Mitigated[1]	**15**	**0**	**0**	**15**
Unmitigated	**7**	**0**	**0**	**7**
Previously Offered but Refused	5	0	0	5
Never Offered Mitigation[2]	2	0	0	2
Total	**22**	**0**	**0**	**22**
ESTIMATED POPULATION				
Mitigated[1]	**42**	**0**	**0**	**42**
Unmitigated	**21**	**0**	**0**	**21**
Previously Offered but Refused	15	0	0	**15**
Never Offered Mitigation[2]	6	0	0	**6**
Total	**63**	**0**	**0**	**63**
NOISE-SENSITIVE FACILITIES (NSF)				
Schools	0	0	0	**0**
Churches	0	0	0	**0**
Nursing Homes	0	0	0	**0**
Hospitals	0	0	0	**0**
Libraries	0	0	0	**0**

[1] Residences were mitigated through previous Part 150 Studies conducted by KCAB
[2] Residence was either built after Part 150 mitigation program, never in the 65 DNL of an official Noise Exposure Map, or an ineligible property.

Notes: Population numbers are estimates based on the 2010 U.S. Census average household size per number of housing units.

Source: Landrum & Brown, 2018.

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

4.2.10.1 Socioeconomics

Socioeconomics is an umbrella term used to describe aspects of a project that are either social or economic in nature. A socioeconomic analysis evaluates how elements of the human environment such as population, employment, housing, and public services might be affected by the Proposed Action and alternatives.

Regulatory Setting

Section 1508.14 of the CEQ Regulations requires all federal agencies to conduct a socioeconomic analysis in the event that economic or social and natural environmental effects are interrelated as a result of the proposed action and alternative(s). This would include an evaluation of how elements of the human environment such as population, employment, housing, and public services might be affected by the proposed action and alternative(s).

The Uniform Relocation Assistance and Real Property Acquisitions Policy Act of 1970, 42 U.S.C. § 61 *et seq*., and implementing regulations found at 49 C.F.R. Part 24, provides standards if acquisition of real property or displacement of people would occur as a result of implementing the proposed action.

Affected Environment

Economic Activity and Income

CVG functions as the largest airport in the Greater Cincinnati and Northern Kentucky area and is the eighth largest cargo airport in the U.S. by tonnage. The economic activity that CVG generates is a major contributor to the region's economy, contributing nearly $4.4 billion in annual total economic impact to the region.[16]

Employment

In addition to serving the Metropolitan Statistic Area (MSA) as a hub for passenger air transportation and air cargo shipping, CVG contributes to the regional economy through its operations and the operations of supporting industries. Employers who maintain staff on-site have nearly 13,500 workers, including airlines, tenants, other businesses and the KCAB.[17] Additionally, more than 31,100 jobs in the region are directly or indirectly related to the Airport and its services. Those workers earn $1.3 billion in wages and salaries. CVG's state and local tax contribution is approximately $25 million.

[16] https://www.cvgairport.com/docs/default-source/stats/cvg-fact-sheet.pdf?sfvrsn=4, accessed February 8, 2018.
[17] Ibid.

Population and Housing

The GSA contains 33 census block groups that surround the Airport—32 in Boone County and one in Kenton County. Demographic data of the population within the GSA is shown in **Table 4-8**.

Table 4-8
GENERAL STUDY AREA DEMOGRAPHIC DATA

CATEGORY	VALUE
Population & Housing	
Total Population	67,700
Total Housing Units	24,913
Age Groups	
4 years old and under	6.9%
5 – 17 years old	16.2%
18 – 64 years old	63.5%
65 years old and older	13.4%
Race	
White alone	91.5%
Black or African American alone	3.4%
American Indian and Alaska Native alone	0.4%
Asian alone	1.2%
Some other race alone	0.9%
Two or more races	2.0%
Ethnicity	
Hispanic or Latino	4.6%
Not Hispanic or Latino	95.4%
Poverty*	
Individuals living below poverty level	8.4%
Families living below poverty level	6.1%

* The HHS poverty guideline level in 2016 for a family/household of one was $11,880 and for a household/family of four was $24,300.[18]

Source: American Community Survey 2012-2016 5-Year Estimate[19]; Landrum & Brown analysis, 2018.

[18] 2014 Poverty Guidelines, U.S. Department of Health and human Services. Available on-line: https://aspe.hhs.gov/2014-poverty-guidelines. Accessed on August 28, 2017.

[19] American Community Survey 2010-2014 5-Year Estimate, U.S. Census Bureau. Available on-line: https://factfinder.census.gov/faces/nav/jsf/pages/community_facts.xhtml. Accessed August 2017.

The average household size, median household income, median family income, and per capita for each census tract block group within the GSA is shown in **Table 4-9**.

Table 4-9
GENERAL STUDY AREA DEMOGRAPHIC DATA BY CENSUS BLOCK GROUP

CENSUS TRACT	BLOCK GROUP	AVERAGE HOUSEHOLD SIZE	MEDIAN HOUSEHOLD INCOME	MEDIAN FAMILY INCOME*	PER CAPITA
642.00	1	2.85	$58,750	$63,359	$25,354
701.00	1	2.01	$31,864	$42,241	$21,862
701.00	2	3.19	$37,083	$63,173	$19,197
701.00	3	2.76	$50,313	$42,340	$20,594
701.00	4	2.28	$32,679	$26,146	$17,920
701.00	5	2.30	$40,476	$53,984	$21,885
702.00	1	1.67	$42,159	$53,828	$57,665
702.00	2	2.46	$56,172	$96,731	$28,473
702.00	3	2.93	$46,838	$62,672	$17,572
702.00	4	2.34	$51,271	$32,708	$22,103
702.00	5	1.91	$32,807	$50,966	$21,100
703.01	1	1.64	$42,098	$52,721	$23,543
703.05	1	2.40	$54,238	$67,461	$28,125
703.05	2	2.17	$71,548	$71,466	$42,184
703.05	3	1.92	$51,750	$66,458	$28,928
703.08	3	2.35	$73,703	$74,899	$32,728
703.11	1	2.51	$36,033	$42,619	$15,968
703.11	2	2.73	$48,587	$51,979	$22,393
703.12	1	3.03	$95,032	$29,612	$27,168
703.12	2	2.17	$45,563	$67,143	$24,190
703.13	1	2.78	$79,688	$85,568	$31,413
703.13	2	2.80	$86,641	$83,000	$33,701
703.14	1	3.07	$72,642	$76,250	$26,804
703.14	2	2.58	$67,083	$73,902	$30,088
704.01	2	2.71	$91,792	$99,024	$38,522
704.02	1	3.14	$82,692	$73,359	$27,295
704.02	2	2.41	$91,029	$89,934	$39,764
704.02	3	3.11	$74,922	$70,223	$26,176
704.02	4	3.27	$72,009	$85,833	$26,304
705.02	2	2.85	$55,119	$66,094	$25,108
705.03	1	2.14	$47,093	$56,523	$28,900
705.03	2	2.46	$51,392	$68,984	$27,335
705.04	2	2.94	$78,347	$85,238	$29,555

* American Community Survey 2010–2014 5-Year Estimate, most recent data available.

Source: American Community Survey 2012-2016 5-Year Estimate; Landrum & Brown analysis, 2018.

Public Services and Social Conditions

Residents of communities in the GSA have a wide range of public services available. Public services include such facilities as educational institutions, medical services, and emergency response services.

- Educational Institutions: Boone County is encompassed by two school districts, including the Boone County Unified School District and the Walton-Verona Independent School District. In the GSA, there are seven elementary schools, three middle schools, and three high schools within Boone County.[20,21]
- Medical Services: Boone County has one hospital, St. Elizabeth – Florence, which is located in the GSA. Kenton County has one hospital, St. Elizabeth – Covington, which is located approximately 11 miles east of the Airport.
- Emergency Response Services: Boone County is comprised of seven fire protection districts, including the fire protection districts of Belleview-McVille, Burlington, Florence, Point Pleasant, Union, and Walton. Between the seven fire protection districts, there are a total of 14 fire stations, including one located on Airport property.[22] Additionally, there are eight police departments within Boone County, including one located on Airport property. Furthermore, there are a total of 23 fire stations and 14 police departments within Kenton County.[23]

4.2.10.2 Environmental Justice

Environmental justice is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. *Fair treatment* means that no group of people should bear a disproportionate share of the negative environmental consequences resulting from industrial, governmental, and commercial operations or policies. *Meaningful Involvement* means that:

- People have an opportunity to participate in decisions about activities that may affect their environment and/or health;
- The public's contribution can influence the regulatory agency's decision;
- Their concerns will be considered in the decision making process; and,
- The decision makers seek out and facilitate the involvement of those potentially affected.

[20] About Boone County Schools, Boone County Schools. Available on-line: http://www.boone.k12.ky.us/administrativeDepartment.aspx?aid=18. Accessed on August, 2017.
[21] Directory, Walton-Verona Independent Schools. Available on-line: http://www.wv.kyschools.us/cms/One.aspx?portalId=324341&pageId=760781. Accessed on August, 2017.
[22] Boone County GIS. Available on-line: http://www.boonecountygis.com/. Accessed on August, 2017.
[23] Kenton County GIS. Available on-line: https://linkgis.org/mapviewer/index.html?slayer=0&exprnum=1&esearch=&submit=Open+the+Map Accessed May 17, 2017.

Regulatory Setting

Title VI of the Civil Rights Act of 1964 as amended, 42 U.S.C. §§ 2000d – 2000d-7, states that, "No person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance." Title VI expressly prohibits any discrimination in federally funded programs and projects, including those sponsored by the FAA.

Executive Order (EO) 12898, *Federal Actions to Address Environmental Justice in Minority and Low-Income Populations,* requires all federal agencies to address disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority and low-income populations.

USDOT Order 5610.2(a) defines a minority population as any readily identifiable group of minority persons living in geographic proximity to a proposed USDOT program, policy or activity including, if circumstances warrant, geographically dispersed or transient persons (such as migrant workers or Native Americans) who will be similarly affected by the proposed program, policy, or activity.

Requirements for meaningful public involvement by minority and low-income populations are addressed in Paragraph 2-5.2.b of FAA Order 1050.1F. As stated in the Order, the FAA must provide for meaningful public involvement by minority and low-income populations. In accordance with USDOT Order 5610.2(a), this public involvement must provide an opportunity for minority and low income populations to provide input on the analysis, including demographic analysis that identifies and addresses potential impacts on these populations that may be disproportionately high and adverse. The public involvement process can also provide information on subsistence patterns of consumption of fish, vegetation, or wildlife. This information should be disclosed to potentially affected populations for proposed actions and alternative(s) that are likely to have a substantial effect and for Comprehensive Environmental Response, Compensation, and Liability Act sites.

Affected Environment

The Census Bureau's American Community Survey (ACS) 2012-2016 5-Year Estimate was used to identify environmental justice populations within the project's GSA. The environmental justice populations include minority and/or low-income populations. Minority population refers to any readily identifiable group of minority persons (Black, Hispanic or Latino, Asian American, American Indian, Alaskan Native, Native Hawaiian, other Pacific Islander, or other non-White populations). Low income is defined as a person whose median household income is at or below the Department of Health and Human Services poverty guidelines.

The AEDT Version 2d used the GSA to identify census block groups composed of 50 percent or more minority populations (composed primarily of Hispanic or Latino population and American Indian populations) and/or 50 percent or more low income populations. **Table 4-10** lists the percent low-income and percent minority for the census block groups in the GSA.

None of the census block groups exceeded the 50 percent threshold for poverty level. Additionally, none of the census block groups exceeded the 50 percent threshold for minority populations. Therefore, this analysis did not identify environmental justice populations located within the GSA.

Table 4-10
GENERAL STUDY AREA DEMOGRAPHIC DATA BY CENSUS BLOCK GROUP

CENSUS TRACT	BLOCK GROUP	PERCENT OF POPULATION LIVING BELOW POVERTY LEVEL	PERCENT MINORITY POPULATION	ENVIRONMENTAL JUSTICE POPULATION PRESENT?
642.00	1	11.9	11.7	No
701.00	1	5.3	19.7	No
701.00	2	26.3	5.1	No
701.00	3	4.9	5.8	No
701.00	4	15.8	22.8	No
701.00	5	11.1	10.6	No
702.00	1	13.6	9.1	No
702.00	2	6.3	25.0	No
702.00	3	12.8	25.9	No
702.00	4	7.8	7.8	No
702.00	5	34.0	22.9	No
703.01	1	16.4	16.3	No
703.05	1	8.9	20.1	No
703.05	2	3.7	2.2	No
703.05	3	8.5	0.0	No
703.08	3	4.5	9.1	No
703.11	1	37.6	1.8	No
703.11	2	17.2	17.1	No
703.12	1	5.0	1.3	No
703.12	2	8.5	24.5	No
703.13	1	1.4	8.7	No
703.13	2	2.1	5.4	No
703.14	1	6.0	12.1	No
703.14	2	3.5	12.7	No
704.01	2	1.7	7.5	No
704.02	1	0.0	18.3	No
704.02	2	0.5	2.1	No
704.02	3	8.4	13.4	No
704.02	4	1.4	0.0	No
705.02	2	8.2	2.3	No
705.03	1	3.4	17.3	No
705.03	2	7.3	3.2	No
705.04	2	11.1	14.3	No

Source: American Community Survey 2012-2016 5-Year Estimate; AEDT 2d; Landrum & Brown analysis, 2018.

4.2.10.3 Children's Environmental Health and Safety Risks

Regulatory Setting

Pursuant to EO 13045, *Protection of Children from Environmental Health Risks and Safety Risks*, federal agencies are directed to make it a high priority to identify and assess environmental health risks and safety risks that may disproportionately affect children. Environmental health risks and safety risks include risks to health or to safety that are attributable to products or substances that a child is likely to come in contact with or ingest, such as air, food, drinking water, recreational waters, soil, or products they might use or be exposed to.

Affected Environment

Schools and day care centers are locations where the potential for a child to be exposed to environmental health risks is increased because a higher concentration of children are located in one place during the day. Currently the following schools and day care centers are within the GSA:

- Burlington Elementary School
- Immaculate Heart of Mary School
- Stephens Elementary School
- Conner Middle School
- Goodridge Elementary School
- Boone County Area Vocational School
- Conner High School
- A.M. Yealey Elementary School
- Ockerman Elementary School
- Ockerman Middle School
- St. Paul School
- Heritage Assembly School
- R.A. Jones Middle School
- Collins Elementary School
- Florence Elementary School
- Boone County High School
- Mary Queen of Heaven School
- St. Henry's High School
- Penguin Playschool
- Discover Zone Child Care
- Rainbow Child Care Center
- Y-Kids Child Care
- Crossroads Preschool
- Christ United Methodist Kids Day Out

However, as stated in Section 4.2.9, *Noise and Noise-Compatible Land Use*, there are no public schools, within any of the noise contours.

4.2.11 VISUAL EFFECTS

Regulatory Setting

FAA Order 1050.1F states that the Visual Effects environmental impacts category deals with the extent to which the proposed action would have the potential to either 1) produce light emissions that create annoyance or interfere with normal activities; or 2) affect the nature of the visual resources or visual character of the area, including the importance, uniqueness and aesthetic value of the affected visual resources, including by contrasting with, or detracting from, the visual resources and/or the visual character of the existing environment or blocking or obstructing the views of visual resources, including whether those resources would still be viewable from other locations.[24] Although there are no federal special purpose laws or requirements specific to light emissions and visual effects, there are special purpose laws and requirements that may be relevant. In addition to NEPA, laws protecting resources that may be affected by visual effects include sensitive wildlife species, Section 106 of the NHPA, Section 4(f) of the USDOT Act, and Section 6(f) of the LWCFA.

Affected Environment

Light Emissions

CVG is currently illuminated by various types of lighting on the airfield and landside facilities. Lighting that emanates from the airfield includes runway, apron, and navigational lighting such as, hold position lights, stop-bar lights, and runway and taxiway signage. Airfield lighting is located along taxiways and ramps for guidance during periods of low visibility, and to assist aircraft movement on the airfield. Aircraft lighting, such as landing lights, position and navigation lights, beacon lights, and vehicle lighting are other types of light sources on the airfield. Lights for landside facilities include buildings, roadways, and parking facilities. CVG is located in an urbanized area which is comprised of other development that is also lighted and contributes to the overall light emissions in the area.

Visual Resources / Visual Character

As previously discussed, the DSA is located on the southern edge of the Airport in a predominantly commercial area. The land uses immediately adjacent to the DSA are a mix of commercial uses and undeveloped Airport property. There is a residential area located south of the DSA on the south side of Aero Parkway and west of the DSA on the west side of Limaburg-Creek Road. The DSA features include a combination of grassed areas, streams, and undeveloped wooded areas.

[24] FAA, 2015, Order 1050.1F, *Environmental Impacts: Policies and Procedures*, Exhibit 4-1, page 4-10.

4.2.12 WATER RESOURCES

Regulatory Setting

Water resources are surface waters and groundwater that are vital to society; they are important in providing drinking water and in supporting recreation, transportation and commerce, industry, agriculture, and aquatic ecosystems. Surface water, groundwater, floodplains, and wetlands do not function as separate and isolated components of the watershed, but rather as a single, integrated natural system.

Federal Clean Water Act: The 1972 Federal Water Pollution Control Act, 33 U.S.C. § 1251 *et seq*., also known as the Clean Water Act (CWA), is intended to restore and maintain the chemical, physical, and biological integrity of the Nation's waters.

The CWA establishes the basic structure for regulating the discharge of pollutants into waters of the U.S., including jurisdictional surface waters, through Section 404 permit and Section 401 certification processes as well as the Section 402 permit process. Section 401 of the CWA (33 U.S.C. § 1341) requires any federal license or permit applicant to obtain a water quality certification if any proposed project activity may result in a discharge of pollutants into waters of the United States This certification assures that the discharge would comply with the applicable effluent limitations and water quality standards. Section 301 of the CWA (33 U.S.C. § 1311) prohibits discharges to waters of the United States except with a permit. As a condition of the permit, application of the best practicable control technology currently available is required.

Section 402 establishes a framework for regulating stormwater discharges under the National Pollutant Discharge Elimination System (NPDES) to ensure water quality standards are attained. All discharges to waters of the Commonwealth require a permit through the Kentucky Pollutant Discharge Elimination System (KPDES). If the proposed action or alternative(s) has the potential to discharge pollutants into waters of the United States through a point source, a KPDES permit will likely need to be obtained.

Safe Drinking Water Act (SDWA): The SDWA, 42 U.S.C. §§ 300(f) – 300j-26, was established to protect the health of the public by ensuring that a safe drinking water supply exists. The Sole Source Aquifer Program, authorized by Section 1424(e) of the SDWA, requires the EPA to review any federally financially-assisted projects that have the potential to contaminate a sole source aquifer or its recharge area. The Kentucky Energy and Environment Cabinet, Division of Water works to ensure public health protection through primacy of SDWA and the provision of potable water. Potable water is defined as finished water, after treatment, that is safe and satisfactory for drinking and cooking. Public water and water distribution systems in Kentucky are regulated by the Kentucky Energy and Environment Cabinet, Division of Water (DOW).

If the potential exists for contamination of an aquifer designated by the EPA as a sole or principal drinking water resource within the project area, the FAA is required to consult with the EPA regional office, tribal, state, or local officials as required by Section 1424(e) of the SDWA.

Fish and Wildlife Coordination Act of 1980: If a proposed action would impound, divert, drain, control, or otherwise modify the waters of any stream or other body of water, the Fish and Wildlife Coordination Act, 16 U.S.C. §§ 661 – 667d, is applicable, unless the project is for the impoundment of water covering an area of less than ten acres. The Fish and Wildlife Coordination Act requires the FAA to consult with the USFWS and the applicable state agency to identify means to prevent loss or damage to wildlife resources resulting from a proposed action. Separate from, but related to this Act is the Magnuson-Stevens Fishery Conservation and Management Act, which governs United States marine fisheries management. The act mandates the identification of Essential Fish Habitat for managed species, as well as measures to conserve and enhance the habitat necessary for fish to carry out their life cycles.

EO 11990, Protection of Wetlands and DOT Order 5660.1A, Preservation of the Nation's Wetlands: EO 11990 states federal actions must "... avoid to the extent possible the long and short-term adverse impacts associated with the destruction or modification of wetlands and to avoid direct or indirect support of new construction in wetlands wherever there is a practicable alternative." EO 11990 states that agencies shall provide leadership and shall take action to minimize the destruction, loss or degradation of wetlands. Agencies are also responsible for preserving and enhancing the natural and beneficial values of wetlands.

USDOT has implemented EO 11990 through policies and procedures documented in DOT Order 5660.1A, Preservation of the Nation's Wetlands. USDOT Order 5660.1A requires that transportation facilities and projects should be planned, constructed, and operated to assure the protection, preservation, and enhancement of the nation's wetlands to the fullest extent practicable, and establishes procedures for implementation of the policy.

EO 11988, Floodplain Management and DOT Order 5650.2, Floodplain Management and Protection: EO 11988 directs federal agencies to take actions to reduce the risk of flood loss, minimize flood impacts on human safety, health and welfare, and restore and preserve floodplain natural and beneficial values. To do this, the Order bans approving activities in a floodplain unless:

(1) No practicable alternative exists; and

(2) Measures to minimize adverse impacts to the floodplain's natural and beneficial values are included.

USDOT Order 5650.2 contains policies and procedures for carrying out EO 11988. Based on USDOT Order 5650.2, if an action includes development within a floodplain, the analysis shall indicate if the encroachment would be a "significant encroachment," that is, whether it would cause one or more of the following impacts:

(1) The action would have a considerable probability of loss of human life;

(2) The action would likely have substantial encroachment- associated costs or extent, including interrupting aircraft service or loss of a vital transportation facility (e.g., flooding of a runway or taxiway; important navigational aid out of service due to flooding, etc.); or

(3) The action would cause notable adverse impacts on natural and beneficial floodplain values.

Moreover, the National Flood Insurance Act requires any community participating in the National Flood Insurance Program (NFIP), a voluntary floodplain management program, follow the community's Federal Emergency Management Agency (FEMA) approved floodplain management regulations. FEMA coordinates with the Kentucky Energy and Environment Cabinet, Division of Water (DOW) on the designation of floodplain boundaries within the

Commonwealth of Kentucky. DOW delegates the responsibility of adopting floodplain regulations to the Boone County, which regulates development within the floodway and, through an administrative process, concurs with the latest FEMA map revisions. Chapter 151 of the Kentucky Revised Statutes is the state statute that addresses the development of floodplain areas.

Affected Environment

The Airport lies within the Ohio River Drainage Basin. Surface drainage flows from the Airport by numerous conveyances, such as ditches, creeks, and streams, and eventually enters the Ohio River or one of its impoundments. The majority of the developed Airport is located at a topographical high point, split between outfalls of two watersheds. Runoff from the northern portion of the Airport discharges from a detention basin into Elijah Creek, while the southern portion of the Airport discharges from the Southwest Detention Facility to Gunpowder Creek.

4.2.12.1 Wetlands and Streams

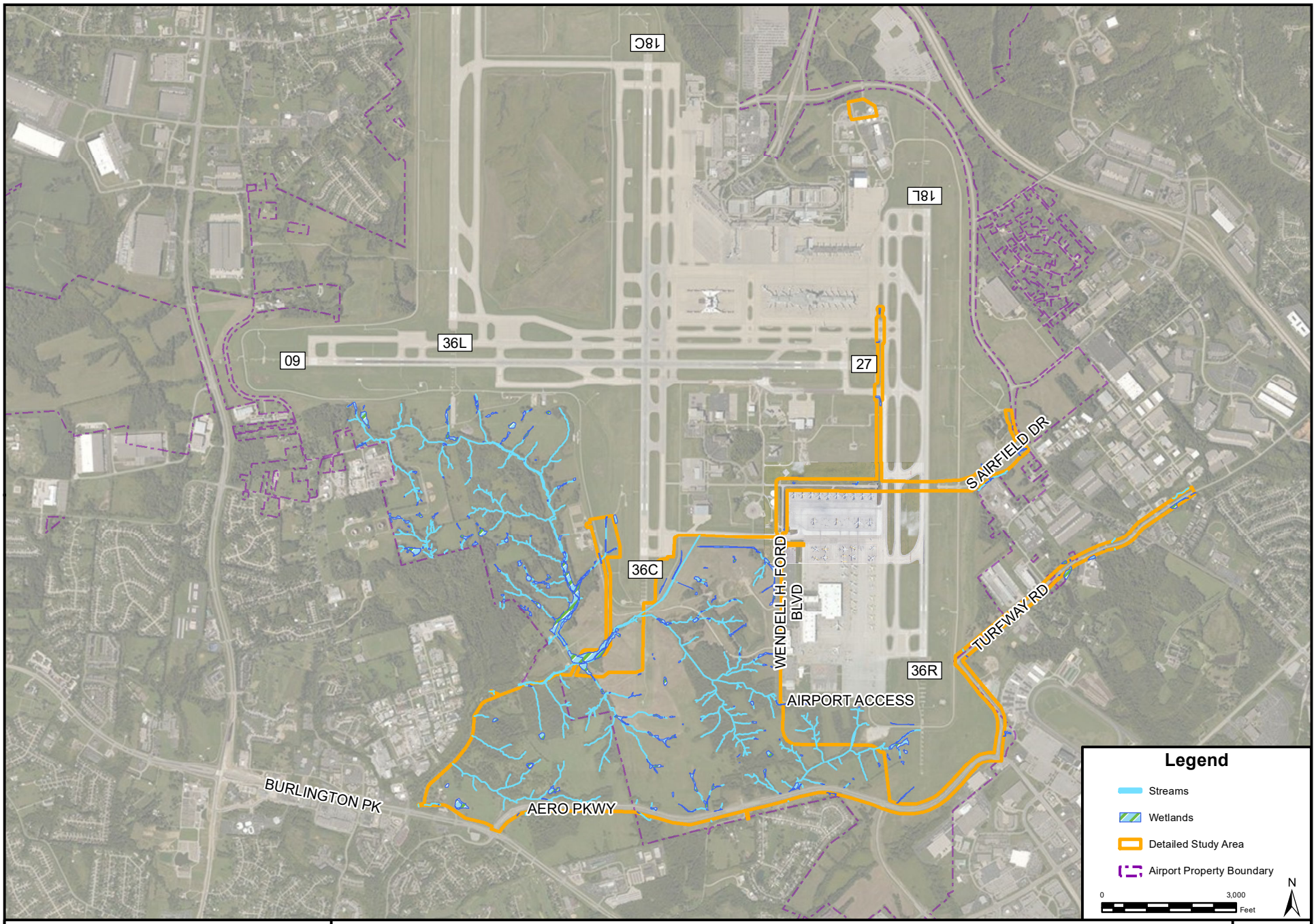
Wetland and stream delineations occurred in August and October 2015, September 2016, and February and March 2017. Linear footage of streams within the DSA consisted of 12,698 feet of ephemeral streams, 44,249 feet of intermittent streams, and 7,296 feet of perennial streams. The delineated wetlands amounted to 11.24 acres of palustrine emergent wetland, 0.08 acres of scrub-shrub wetlands, 0.51 acres of palustrine forested wetland, 0.27 acre of open water/wetland areas, and 1.48 acres of ponds. **Table 4-11** present a summary of the wetlands and streams located within the DSA. The wetlands and streams are shown on **Exhibit 4-6, *Wetlands and Streams***. More detailed information regarding the wetlands and streams is located in **Appendix G, *Water Resources*.**

Table 4-11
STREAMS AND WETLANDS LOCATED WITHIN THE DETAILED STUDY AREA

STREAMS		
	Linear Feet	**Acreage**
Ephemeral	12,698	0.68
Intermittent	43,849	4.74
Intermittent - Culverted	400	0.08
Perennial	4,869	1.95
Perennial - Culverted	2,427	0.58
Total	**64,243**	**8.03**
WETLANDS		
	Linear Feet	**Acreage**
Palustrine Emergent Wetland (PEM)	NA	11.24
Palustrine Scrub-Shrub Wetland (PSS)	NA	0.08
Palustrine Forested Wetland (PFO)	NA	0.51
Palustrine Unconsolidated Bottom Wetland (PUB)	NA	0.27
Pond	NA	1.48
Total	**NA**	**13.58**

Notes: PEM = Palustrine Emergent Wetland, PSS = Palustrine Scrub-Shrub Wetland, PFO = Palustrine Forested Wetland, PUB = Palustrine Unconsolidated Bottom Wetland

Source: Wetland and Stream Delineation Report Kenton County Airport Board CVG Air Cargo Hub Development Project ACOE Louisville District ID No. LRL-2018-00268 Boone County, Kentucky



Air Cargo Facility Environmental Assessment

Wetlands and Streams

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4.2.12.2 Floodplains

The 100-year flood has been adopted by FEMA as the base flood for floodplain management purposes. Floodplains are valued for their natural flood and erosion control, enhancement of biological productivity, and socioeconomic benefits and functions. The Flood Insurance Rate Maps (FIRM) prepared by FEMA were used to establish the boundary of the 100-year floodplain in the area to be either directly or indirectly affected by the Proposed Action. The DSA is depicted on FEMA Flood Insurance Rate Map (FIRM) Panel 120 of 325, Map Number: 21015C0120C as reproduced in **Exhibit 4-7, *Floodplains***. The southeast corner of the DSA contains 11 acres of high flood risk subject to inundation by the one percent annual-chance flood event.

4.2.12.3 Surface Waters

The main sources of hydrology to the DSA are precipitation, surface runoff from adjacent properties, and various streams (see Exhibit 4-6). In general, surface water is collected and migrated across the DSA in an east to west direction.

The two primary sources of drinking water in Kenton County are the Ohio River and the Licking River. Water is pumped from the rivers to one of three treatment plants where the water is cleaned, tested, and pumped into the distribution system. The Ohio River is located to the north and west of CVG and several tributaries flow from CVG property into the Ohio River. Topography within the DSA is gently sloping, and located within the Gunpowder Creek watershed (HUC 05090203). The DOW defines Gunpowder Creek as a warm-water aquatic habitat. The streams are not identified as a Special Resource Water. In Kentucky, stormwater discharges are regulated by the Kentucky Pollutant Discharge Elimination System (KPDES) as administered by the DOW. CVG currently holds an individual KPDES Permit (Permit No. KY0083864) for industrial activity.

4.2.12.4 Groundwater

The geology of the DSA is predominantly limestone which yields 100 to 500 gallons of water per day from wells in valleys or on broad ridges, but almost no water from drilled wells on narrow ridges or hilltops.[25] There are no public or private drinking water wells or wells used for agricultural purposes within a half-mile radius of the DSA.[26]

[25] Kentucky Geological Survey; Groundwater Resources of Boone County, Kentucky; 2004

[26] Kentucky Geological Survey; Water Well Records Search Results, Kentucky Groundwater Data Repository; Online at: http://kgs.uky.edu/kgsweb/datasearching/water/waterwellsearch.asp; Accessed: February 22, 2017

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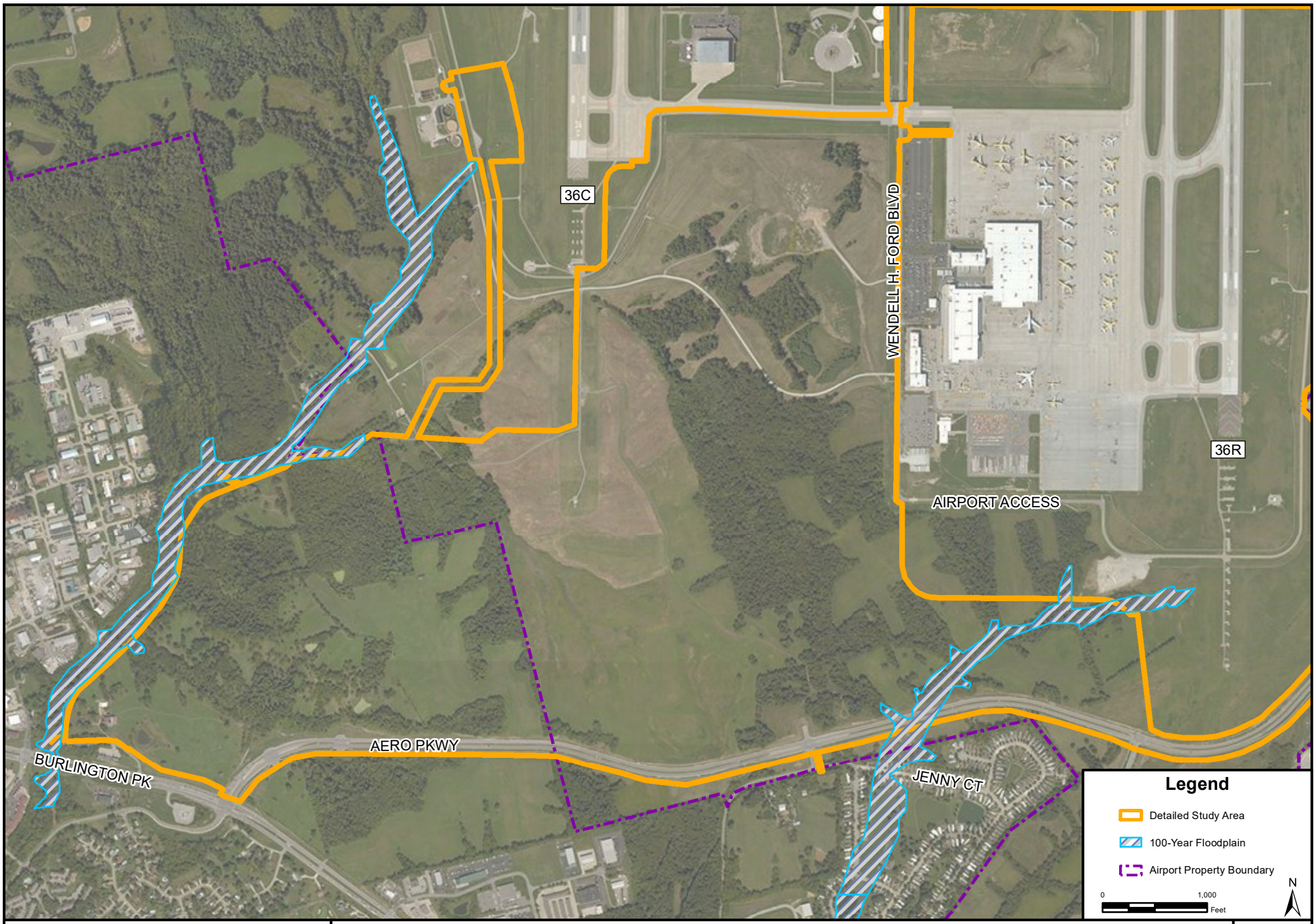

Air Cargo Facility Environmental Assessment

Floodplains

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Chapter Five

CHAPTER FIVE
ENVIRONMENTAL CONSEQUENCES AND MITIGATION MEASURES

This chapter presents the assessment of potential environmental impacts resulting from implementation of the Proposed Action and the No Action. The analysis presented in this chapter includes considerations of direct, indirect, and cumulative impacts and their significance and possible conflicts with the objectives of federal, regional, state, tribal, and local land use plans, policies, and controls for the area concerned. This chapter also presents a discussion of mitigation measures, where applicable, to avoid and minimize potential adverse environmental impacts of the Proposed Action.

5.1 ANALYSIS YEARS

The following analysis discloses the impacts for the construction of the entire air cargo facility in 2021 to disclose maximum environmental impacts due to this project. The year 2021 is used as a basis for analysis because 2021 is the projected implementation year of the Proposed Action. In addition, 2026 is used as a basis for analysis, for air quality, climate, and noise and noise-compatible land use, because it represents a condition five years beyond the opening year where the facility would experience an increase in operations.

5.2 ENVIRONMENTAL RESOURCES NOT AFFECTED

As discussed in Chapter Four, the following environmental resources are not present within the project area and would not be affected by the Proposed Action or No Action:

- Coastal resources: There are no coastal zones in the state of Kentucky.
- Farmlands: The Proposed Action does not include the conversion of any important farmlands to non-agricultural use.
- Wild and scenic rivers: A review of the Wild and Scenic Rivers System list[1] indicated that there are no designated State or National Scenic Rivers within Boone County. The nearest Wild and Scenic River to the Cincinnati/Northern Kentucky International Airport (CVG or Airport) is the Little Miami River located northeast in Ohio, approximately 20 miles from the Airport.

5.3 ENVIRONMENTAL RESOURCES POTENTIALLY AFFECTED

The remaining portion of this chapter is focused on those environmental resources that may potentially be affected by the Proposed Action or No Action. These resources are evaluated in detail in this chapter of the EA. Construction impacts are analyzed within each applicable environmental resource category. This chapter of the EA is organized to address the following topics:

- Section 5.4: Air Quality
- Section 5.5: Biological Resources

[1] *Department of the Interior, 2018, National Wild and Scenic Rivers System. Available on-line at: https://www.rivers.gov/kentucky.php Accessed June 2018.*

- Section 5.6: Climate
- Section 5.7: Department of Transportation (DOT) Act: Section 4(f) Resources
- Section 5.8: Hazardous Materials, Solid Waste, and Pollution Prevention
- Section 5.9: Historical, Architectural, Archeological, and Cultural Resources
- Section 5.10: Land Use
- Section 5.11: Natural Resources and Energy Supply
- Section 5.12: Noise and Noise-Compatible Land Use
- Section 5.13: Socioeconomics, Environmental Justice, and Children's Environmental Health and Safety Risks
- Section 5.14: Visual Effects
- Section 5.15: Water Resources
- Section 5.16: Cumulative Impacts

5.4 AIR QUALITY

This section presents the analysis of potential for significant adverse air quality impacts resulting from the No Action and the Proposed Action. The analysis of significant adverse air quality impacts was prepared using the latest version of the Aviation Environmental Design Tool (AEDT), Version 2d to develop emissions inventories.

As discussed in Section 4.2.1, Affected Environment, Boone County operates under a maintenance plan for ozone. Therefore, General Conformity regulations apply. The General Conformity Rule under the Clean Air Act of 1970 (CAA) establishes minimum values, referred to as the *de minimis* thresholds, for the criteria and precursor pollutants[2] for the purpose of:

- Identifying federal actions with project-related emissions that are clearly negligible (*de minimis*);
- Avoiding unreasonable administrative burdens on the sponsoring agency, and;
- Focusing efforts on key actions that would have potential for significant air quality impacts.

The *de minimis* rates vary depending on the severity of the nonattainment area and further depend on whether the general federal action is located inside an ozone transport region.[3] EPA defines *de minimis* as emissions that are so low as to be considered insignificant and negligible. An evaluation relative to the General Conformity Rule (the Rule), published under 40 Code of Federal Regulations (C.F.R.) Part 93,[4] is required only for general federal actions that would cause emissions of the criteria or precursor pollutants, and are:

---

2 Precursor pollutants are pollutants that are involved in the chemical reactions that form the resultant pollutant. Ozone precursor pollutants are NO_x and VOC, whereas $PM_{2.5}$ precursor pollutants include NO_x, VOC, SO_2, and ammonia (NH_3).

3 The ozone transport region is a single transport region for ozone (within the meaning of Section 176A(a) of the CAA), comprised of the States of Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, and the Consolidated Metropolitan Statistical Area that includes the District of Columbia, as given at Section 184 of the CAA.

4 EPA, 40 C.F.R. Part 93, Subpart B, *Determining Conformity of General Federal Actions to State or Federal Implementation Plans*, July 1, 2006.

- Federally-funded or federally-approved;
- Not a highway or transit project[5];
- Not identified as an exempt project[6] under the CAA;
- Not a project identified on the approving federal agency's Presumed to Conform list;[7] and,
- Located within a nonattainment or maintenance area.

When the action requires evaluation under the General Conformity regulations, the net total direct and indirect emissions due to the federal action may not equal or exceed the relevant *de minimis* thresholds unless:

- An analytical demonstration is provided that shows the emissions would not exceed the National Ambient Air Quality Standards (NAAQS); or
- Net emissions are accounted for in the State Implementation Plan (SIP) planning emissions budget; or
- Net emissions are otherwise accounted for by applying a solution prescribed under 40 C.F.R. § 93.158.

The federal *de minimis* thresholds established under the CAA are provided in **Table 5-1**. Conformity to the *de minimis* thresholds is relevant only with regard to those pollutants and the precursor pollutants for which the area is nonattainment or maintenance. Notably, there are no *de minimis* thresholds to which a federal agency would compare ozone emissions. This is because ozone is not directly emitted from a source. Rather, ozone is formed through photochemical reactions involving emissions of the precursor pollutants, nitrogen oxides (NO_x) and volatile organic compounds (VOC), in the presence of abundant sunlight and heat. Therefore, emissions of ozone on a project level are evaluated based on the rate of emissions of the ozone precursor pollutants, NO_x and VOC. The Airport is located within Boone County, Kentucky, which has been designated as marginal nonattainment for ozone. As a result, conformity to the *de minimis* threshold is relevant only with regard to the ozone precursor pollutants therefore only NO_x and VOC emissions are presented and evaluated for the No Action and Proposed Action. **Appendix B, *Air Quality*** presents all of the pollutantsemissions for both the No Action and Proposed Action.

[5] Highway and transit projects are defined under Title 23 United States Code and the Federal Transit Act.

[6] The Proposed Project is not listed as an action exempt from a conformity determination pursuant to 40 C.F.R. § 93.153(c). An exempt project is one that the EPA has determined would clearly have no impact on air quality at the facility, and any net increase in emissions would be so small as to be considered negligible.

[7] The provisions of the CAA allow a federal agency to submit a list of actions demonstrated to have low emissions that would have no potential to cause an exceedance of the NAAQS and are presumed to conform to the CAA conformity regulations. This list would be referred to as the "Presumed to Conform" list. The FAA Presumed to Conform list was published in the Federal Register on February 12, 2007 (72 FR 6641-6656) and includes airport projects that would not require evaluation under the General Conformity regulations.

If the General Conformity evaluation for this air quality assessment were to show that any of the applicable thresholds were equaled or exceeded due to the Proposed Action, more detailed analysis to demonstrate conformity would be required. This is referred to as a General Conformity Determination.[8] Conversely, if the General Conformity evaluation were to show that none of the relevant thresholds were equaled or exceeded, the Proposed Action would be presumed to conform to the applicable SIPs and no further analysis would be required under the CAA. Appendix B presents the inputs and methodology used to prepare the inventory for this EA.

Table 5-1
DE MINIMIS THRESHOLDS

CRITERIA AND PRECURSOR POLLUTANTS	TYPE AND SEVERITY OF NONATTAINMENT AREA	TONS PER YEAR THRESHOLD
Ozone (VOC or NO_x)[1]	Serious nonattainment	50
	Severe nonattainment	25
	Extreme nonattainment	10
	Other areas outside an ozone transport region	100
Ozone (NO_x)[1]	Marginal and moderate nonattainment inside an ozone transport regions (OTR)[2]	100
	Maintenance	100
Ozone (VOC)[1]	Marginal and moderate nonattainment inside an ozone transport region[2]	50
	Maintenance within an ozone transport region[2]	50
	Maintenance outside an ozone transport region[2]	100
Carbon monoxide (CO)	All nonattainment & maintenance	100
Sulfur dioxide (SO_2)	All nonattainment & maintenance	100
Nitrogen dioxide (NO_2)	All nonattainment & maintenance	100
Coarse particulate matter (PM_{10})	Serious nonattainment	70
	Moderate nonattainment and maintenance	100
Fine particulate matter ($PM_{2.5}$) (VOC, NO_x, NH_3, and SO_x)[3]	All nonattainment and maintenance	100
Lead (Pb)	All nonattainment and maintenance	25

1 The rate of increase of ozone emissions is not evaluated for a project-level environmental review because the formation of ozone occurs on a regional level and is the result of the photochemical reaction of NO_x and VOC in the presence of abundant sunlight and heat. Therefore, EPA considers the increasing rates of NO_x and VOC emissions to reflect the likelihood of ozone formation on a project level.

2 An OTR is a single transport region for ozone, comprised of the states of Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, and the Consolidated Metropolitan Statistical Area that includes the District of Columbia.

3 For the purposes of General Conformity applicability, VOC's and NH_3 emissions are only considered $PM_{2.5}$ precursors in nonattainment areas where either a State or EPA has made a finding that the pollutants significantly contribute to the $PM_{2.5}$ problem in the area. In addition, NO_X emissions are always considered a $PM_{2.5}$ precursor unless the State and EPA make a finding that NO_X emissions from sources in the State do not significantly contribute to $PM_{2.5}$ in the area. Refer to 74 FR 17003, April 5, 2006.

Sources: 40 C.F.R. § 93.153(b)(1) & (2).

8 40 C.F.R. § 93.153.

5.4.1 NO ACTION

5.4.1.1 Future (2021) No Action

The operational emissions inventory for the Future (2021) No Action is shown in **Table 5-2**.

Table 5-2
OPERATIONAL EMISSIONS INVENTORY – FUTURE (2021) NO ACTION

SOURCE	ANNUAL EMISSIONS (SHORT TONS PER YEAR)	
	VOC	NO_x
Aircraft Takeoffs and Landings	8.2	200.7
APUs	0.2	5.3
Aircraft Taxiing	17.2	13.5
GSE	30.1	100.1
Stationary Sources	0.4	7.1
Ground Access Vehicles (GAVs)	3.3	10.3
2021 No Action - Operational Total	***59.4***	***337.0***

Note: Operational activities were modeled under the assumption that the development was operational during 365 days in 2021 to account for the maximum annual operational emissions.
Because conformity to the *de minimis* threshold for Boone County is relevant only with regard to the ozone precursor pollutants, only NO_x and VOC emissions are presented and evaluated in this report.

Source: Landrum & Brown analysis, 2018

5.4.1.2 Future (2026) No Action

The operational emissions inventory for the Future (2026) No Action is shown in **Table 5-3**.

Table 5-3
OPERATIONAL EMISSIONS INVENTORY – FUTURE (2026) NO ACTION

SOURCE	ANNUAL EMISSIONS (SHORT TONS PER YEAR)	
	VOC	NO_x
Aircraft Takeoffs and Landings	14.8	354.3
APUs	0.3	10.0
Aircraft Taxiing	21.6	22.3
GSE	54.3	122.4
Stationary Sources	0.4	7.1
GAVs	4.9	15.1
2026 No Action - Operational Total	***96.3***	***531.1***

Note: Operational activities were modeled under the assumption that the development was operational during 365 days in 2021 to account for the maximum annual operational emissions.
Because conformity to the *de minimis* threshold for Boone County is relevant only with regard to the ozone precursor pollutants, only NO_x and VOC emissions are presented and evaluated in this report.

Source: Landrum & Brown analysis, 2018

5.4.2 PROPOSED ACTION

5.4.2.1 Future (2021) Proposed Action

The operational emissions inventory for the Future (2021) Proposed Action is shown in **Table 5-4**.

Table 5-4
OPERATIONAL EMISSIONS INVENTORY – FUTURE (2021) PROPOSED ACTION

SOURCE	ANNUAL EMISSIONS (SHORT TONS PER YEAR)	
	VOC	NO_x
Aircraft Takeoffs and Landings	8.2	200.7
APUs	0.2	5.3
Aircraft Taxiing	15.2	12.2
GSE	24.1	80.1
Stationary Sources	1.8	32.5
GAVs	3.7	8.8
2021 Proposed Action - Operational Total	***53.2***	***339.6***

Note: Operational activities were modeled under the assumption that the development was operational during 365 days in 2026 to account for the maximum annual operational emissions.
Because conformity to the *de minimis* threshold for Boone County is relevant only with regard to the ozone precursor pollutants, only NO_x and VOC emissions are presented and evaluated in this report.

Source: Landrum & Brown analysis, 2018

5.4.2.2 Future (2026) Proposed Action

The operational emissions inventory for the Future (2026) Proposed Action is shown in **Table 5-5**.

Table 5-5
OPERATIONAL EMISSIONS INVENTORY – FUTURE (2026) PROPOSED ACTION

SOURCE	ANNUAL EMISSIONS (SHORT TONS PER YEAR)	
	VOC	NO_x
Aircraft Takeoffs and Landings	16.7	404.2
APUs	0.4	11.3
Aircraft Taxiing	24.7	26.0
GSE	48.9	110.1
Stationary Sources	1.8	32.5
GAVs	6.0	13.2
2026 Proposed Action - Operational Total	***98.5***	***597.2***

Note: Operational activities were modeled under the assumption that the development was operational during 365 days in 2026 to account for the maximum annual operational emissions.
Because conformity to the *de minimis* threshold for Boone County is relevant only with regard to the ozone precursor pollutants, only NO_x and VOC emissions are presented and evaluated in this report.

Source: Landrum & Brown analysis, 2018

5.4.3 TOTAL EMISSIONS

The emissions inventories prepared for the Proposed Action were compared to the emissions inventories prepared for the No Action of the same future year to disclose the potential increase in emissions caused by the Proposed Action. The comparison of the emission inventories, which included an inventory of construction and operational emissions, was used for the evaluation of General Conformity as required under the CAA (including the 1990 Amendments). Because conformity to the *de minimis* threshold is relevant only with regard to the ozone precursor pollutants, only NO_x and VOC emissions are presented and evaluated in this report. **Table 5-6** evaluates the annual net impact of emissions that would be caused by the implementation Proposed Action. The annual net impact of emissions was calculated by subtracting the emissions of the No Action from those of the Proposed Action. As shown in Table 5-6 shows that neither of the relevant federal thresholds were equaled or exceeded for the Future (2021) Proposed Action or the Future (2026) Proposed Action.

In 2019 and 2020, there is an increase in net emissions due to construction activities associated with the Proposed Action. In 2021, there is an increase in net emissions of NOx and VOCs due to construction activities and usage of stationary sources associated with the Proposed Action. In 2026, there is an increase in net emissions of NO_x and VOCs due to increased aircraft activity and taxiing levels associated with the Proposed Action.

The air quality assessment demonstrates that the Proposed Action would not cause an increase in air emissions above the applicable *de minimis* thresholds. Therefore, the Proposed Action conforms to the SIP and the CAA and would not create any new violation of the NAAQS, delay the attainment of any NAAQS, nor increase the frequency or severity of any existing violations of the NAAQS. As such, no adverse impact on local or regional air quality is expected by construction of the Proposed Action. No further analysis or reporting is required under the CAA or National Environmental Policy Act (NEPA).

Table 5-6
TOTAL ANNUAL EMISSIONS

SOURCE	ANNUAL EMISSIONS (SHORT TONS)	
	VOC	NO_x
Federal de minimis Threshold	***100***	***100***
2019		
Construction - Proposed Action	23.7	28.8
2019 Proposed Action Subtotal	*23.7*	*28.8*
2019 Proposed Action Net Emissions	***23.7***	***28.8***
2020		
Construction - Proposed Action	57.7	62.0
2020 Proposed Action Subtotal	*57.7*	*62.0*
2020 Proposed Action Net Emissions	***57.7***	***62.0***
2021		
Aircraft Takeoffs and Landings - No Action	8.2	200.7
APUs – No Action	0.2	5.3
Aircraft Taxiing - No Action	17.2	13.5
GSE – No Action	30.1	100.1
Stationary Sources – No Action	0.4	7.1
GAVs - No Action	3.3	10.3
2021 No Action Subtotal	*59.4*	*337.0*
Aircraft Takeoffs and Landings - Proposed Action	8.2	200.7
APUs – Proposed Action	0.2	5.3
Aircraft Taxiing - Proposed Action	15.2	12.2
GSE – Proposed Action	24.1	80.1
Stationary Sources - Proposed Action	1.8	32.5
GAVs - Proposed Action	3.7	8.8
Construction - Proposed Action	9.7	13.3
2021 Proposed Action Subtotal	*62.9*	*352.9*
2021 Proposed Action Net Emissions	***3.4***	***15.8***
2026		
Aircraft Takeoffs and Landings - No Action	14.8	354.3
APUs – No Action	0.3	10.0
Aircraft Taxiing - No Action	21.6	22.3
GSE - No Action	54.3	122.4
Stationary Sources – No Action	0.4	7.1
GAVs - No Action	4.9	15.1
2026 No Action Subtotal	*96.3*	*531.1*
Aircraft Takeoffs and Landings - Proposed Action	16.7	404.2
APU - Proposed Action	0.4	11.3
Aircraft Taxiing - Proposed Action	24.7	26.0
GSE - Proposed Action	48.9	110.1
Stationary Sources - Proposed Action	1.8	32.5
GAVs - Proposed Action	6.0	13.2
2026 Proposed Action Subtotal	*98.5*	*597.2*
2026 Proposed Action Net Emissions	***2.1***	***66.1***

Note: Numbers may not sum due to rounding.
The net impact of emissions was calculated by subtracting the emissions of the No Action from those of the Proposed Action.

Source: Landrum & Brown analysis, 2018

5.4.4 MITIGATION, AVOIDANCE, AND MINIMIZATION MEASURES

The Proposed Action does not exceed the applicable thresholds of significance for any pollutants; therefore, no mitigation measures are required. However, the following minimization measures and best management practices are being provided to further minimize air quality impacts from the Proposed Action.

While the Proposed Action would not exceed the applicable threshold of significant for particulate matter, construction of the Proposed Action would result in a short-term increase of particulate matter (airborne fugitive dust) emissions from vehicle movement and soil excavation in and around the construction site. KCAB would ensure that measures would be taken to reduce fugitive dust emissions by adhering to guidelines included in FAA Advisory Circular (AC), *Standards for Specifying Construction of Airports*.[9] In addition, KCAB would follow 401 KAR 63:010 and 401 KAR 63:005 standards for construction of the Proposed Action.

Methods of controlling dust and other airborne particles will be implemented to the maximum possible extent and may include, but would not be limited to, the following:

- Exposing the minimum area of erodible earth;
- Applying temporary mulch with or without seeding;
- Using water sprinkler trucks;
- Using covered haul trucks;
- Reduce idling time on equipment;
- Using dust palliatives or penetration asphalt on haul roads; and,
- Using plastic sheet coverings.

In addition, when possible, the utilizing alternatively fueled equipment and reducing the idling time on equipment will be employed to minimize potential air quality impacts.

[9] FAA AC, 2014, *Standards for Specifying Construction of Airports*, Item P-156, *Temporary Air and Water Pollution, Soil Erosion, and Siltation Control*, AC 150/5370-10G.

5.5 BIOLOGICAL RESOURCES

This section presents the analysis of potential impacts to Endangered Species Act (ESA)-listed species as a result of the No Action and the Proposed Action.

5.5.1 NO ACTION

The No Action includes no physical development on the Airport. Therefore, the implementation of the No Action would have no effect on any federal or state threatened or endangered species, no effect on any biotic or critical habitat supporting a federal or state endangered or threatened species, and would not result in the development, conversion, or removal of any existing habitat.

5.5.2 PROPOSED ACTION

Federally Listed (ESA) Species

Section 7(a)(2) of the ESA requires federal agencies to insure that any action authorized, funded, or carried out by such agency is not likely to jeopardize the continued existence of any federally-listed endangered or threatened species or result in the destruction or adverse modification of critical habitat.

Gray Bat

Gray bats inhabit caves year-round. In the winter, the gray bat hibernates in deep vertical caves. In the summer, they roost in caves scattered along rivers. No karst topography[10] occurs within the Detailed Study Area (DSA) and no caves were identified within or adjacent to the DSA during the habitat surveys on February 16, 2017, September 5 through 8, 2017, and May 22 through 25, 2018. The DSA does not contain the required habitat for the gray bat. Therefore, the FAA has determined the Proposed Action would have ***no effect*** on the gray bat.

Mussels

There are seven mussel species with the potential to be located within the DSA: Clubshell (*Pleurobema clava)*, Fanshell (*Cyprogenia stegaria)*, Orangefoot pimpleback (*Plethobasus cooperianus)*, Pink Mucket (*Lampsilis orbiculata)*, Ring pink (*Obovaria retusa)*, Rough pigtoe (*Pleurobema plenum)*, and Sheepnose (*Plethobasus cyphyus)*. However, the habitat requirements for the seven mussel species are not found within the DSA. Therefore, the FAA has determined the Proposed Action would have ***no effect*** on the seven mussel species.

Running Buffalo Clover

Based on habitat assessments, suitable habitat for running buffalo clover (RBC) was present within the DSA. As a result, RBC presence-absence surveys were completed during the flowering period of May 22 through May 25, 2018. No RBC was identified during the species-specific surveys. Therefore, the FAA has determined the Proposed Action would have ***no effect*** on the RBC species.

[10] A terrain, generally underlain by limestone or dolomite, in which the topography is chiefly formed by the dissolving of rock and which may be characterized by sinkholes, sinking streams, closed depressions, subterranean drainage, and caves.

Indiana bat

The DSA contains potential habitat for the endangered Indiana bat. No known hibernacula, swarming, or summer habitat is present in Boone County. It is anticipated indirect and direct impacts to the Indiana bat would occur with the Proposed Action. Indirect impacts include forested habitat removal, noise and vibration, night lighting, collision, and water quality. Direct impacts would occur due to forested habitat removal. Approximately 244 acres of forested habitat is present within the DSA, all of which would be removed prior to the construction of the air cargo facility. The removal of forested habitat in the DSA would likely have a negative impact on the Indiana bat commuting, roosting, and foraging habitat. Therefore, the FAA has determined the Proposed Action ***may affect, is likely to adversely affect*** the Indiana bat. Mitigation measures are identified in Section 5.5.3 for the Indiana bat.

Northern long-eared bat

Northern long-eared bat habitat closely resembles Indiana bat habitat; however, the northern long-eared bat appears to be more flexible in roost tree selection. As a result, the impacts to the northern long-eared bat are the same as those for the Indiana bat previously described. It is anticipated indirect and direct impacts to the Indiana bat would occur with the Proposed Action. Indirect impacts include forested habitat removal, noise and vibration, night lighting, collision, and water quality. Direct impacts would occur due to forested habitat removal. Approximately 244 acres of forested habitat is present within the DSA, all of which would be removed prior to the construction of the air cargo facility. The removal of forested habitat in the DSA would likely have a negative impact on the northern long-eared commuting, roosting, and foraging habitat. Therefore, the FAA has determined the Proposed Action ***may affect, is likely to adversely affect*** the northern long-eared bat. Mitigation measures are identified in Section 5.5.3 for the northern long-eared bat.

Migratory Bird Treaty Act Species

Potential habitat for Migratory Bird Treaty Act Species is present within the DSA. However, due to the mobile nature of the species and the surrounding suitable habitat for these species, no impacts are expected on the migratory bird species from the construction of the Proposed Action. Therefore, the Proposed Action would not reduce the viability of the Migratory Bird Species population. In addition, the DSA does not contain supportive nesting or breeding habitat for the bald eagle with respect to the Bald and Golden Eagle Protection Act.

Determination of Effects

A Biological Assessment (BA) was prepared to be used by the FAA in its consultation with the United States Fish and Wildlife Service (USFWS). The analysis included an evaluation of the DSA for potential impacts to ESA-listed threatened and endangered species and associated critical habitat under the jurisdiction of the USFWS. Based on the analysis, the FAA has made the following findings.

- The Proposed Action "*May affect, is likely to adversely affect*" the Indiana bat.
- The Proposed Action *"May affect, is likely to adversely affect"* the northern long-eared bat.

FAA's finding was submitted to the USFWS on July 17, 2018 and received by the USFWS on July 23, 2018. The USFWS responded with a Biological Opinion dated November 28, 2018. The BO concluded the Proposed Action is *not* likely to jeopardize species and is *not* likely to destroy or adversely modify critical habitat. (See **Appendix C, *Section 7 Consultation*** for the Section 7 consultation).

5.5.3 MITIGATION, AVOIDANCE, AND MINIMIZATION MEASURES

The DSA is located outside of known forest-dwelling bat habitat; however, the USFWS Kentucky Field Office (KFO) designates the area as Potential Habitat. Rather than choosing to conduct presence or probable absence surveys for the Indiana bat and northern long-eared bat, presence of these species will be assumed in the DSA and assumed impacts will be offset by a voluntary contribution to the Imperiled Bat Conservation fund (IBCF) as detailed in the Biological Assessment. Total tree removal for the Proposed Action would be 244 acres. Payment into the IBCF will be made prior to tree clearing per the mitigation multipliers by habitat type and season in the Revised Conservation Strategy for Forest-Dwelling Bats.

The clearing, grading, and site preparation for the project is expected to last approximately 18 months. Efforts will be made to avoid removing trees in June and July. This contribution to the IBCF is expected to promote the survival and recovery of Indiana and northern long-eared bats.

5.6 CLIMATE

Although there are no federal standards for aviation-related GHG emissions, it is well-established that GHG emissions can affect climate.[11] The Council on Environmental Quality (CEQ) has indicated that climate should be considered in NEPA analyses. The following provides an estimate of GHG emissions. This report used the carbon dioxide equivalent (CO_2E) method to show relative impacts on climate change of different chemical species. The resulting CO_2E is provided for information only because no federal NEPA standard for the significance of GHG emissions from individual projects on the environment has been established. **Table 5-7** provides the CO_2E emissions inventory for the construction and operational activities for both the No Action and Proposed Action.

5.6.1 MITIGATION, AVOIDANCE, AND MINIMIZATION MEASURES

The FAA has not identified specific factors to consider in making a significance determination for GHG emissions; therefore, no mitigation measures are required to mitigate the potential increase in GHGs attributed to the Proposed Action. However, for NEPA reviews of proposed FAA actions that would result in increased emissions of GHGs, consideration should be given to whether there are areas within the scope of a project where such emissions could be reduced. GHG emissions reduction can come from measures such as changes to more fuel efficient equipment, delay reductions, use of renewable fuels, and operational changes.

[11] See *Massachusetts* v. *E.P.A.*, 549 U.S. 497, 508-10, 521-23 (2007).

Table 5-7
TOTAL ANNUAL GHG EMISSIONS

SOURCE	ANNUAL EMISSIONS (METRIC TONS) CO_2E
2019	
Construction - Proposed Action	17,216.6
2019 Proposed Action Net Emissions	***17,216***
2020	
Construction - Proposed Action	40,988.5
2020 Proposed Action Net Emissions	***40,988.5***
2021	
Aircraft Takeoffs and Landings - No Action	27,144.4
Aircraft Taxiing - No Action	8,796.2
GAVs - No Action	2,493.0
2021 No Action Subtotal	*38,433.7*
Aircraft Takeoffs and Landings - No Action	27,144.4
Aircraft Taxiing - Proposed Action	8,526.6
GAVs - Proposed Action	2,238.4
Construction - Proposed Action	9,356.9
2021 Proposed Action Subtotal	*47,266.3*
2021 Proposed Action Net Emissions	***8,832.6***
2026	
Aircraft Takeoffs and Landings - No Action	44,423.4
Aircraft Taxiing - No Action	13,746.8
GAVs - No Action	5,062.9
2026 No Action Subtotal	*63,233.0*
Aircraft Takeoffs and Landings - Proposed Action	50,508.1
Aircraft Taxiing - Proposed Action	16,817.6
GAVs - Proposed Action	4,882.2
2026 Proposed Action Subtotal	*72,207.9*
2026 Proposed Action Net Emissions	***8,974.8***

CO_2E: Carbon Dioxide equivalent

Notes: GHG emissions for stationary sources, GSE, and APUs are not reported because AEDT does not have the capability of calculating GHG emissions for these emission sources.
Numbers may not sum due to rounding.
The net impact of emissions was calculated by subtracting the emissions of the No Action from those of the Proposed Action.

Source: Landrum & Brown analysis, 2018

5.7 DEPARTMENT OF TRANSPORTATION (DOT) ACT: SECTION 4(F) RESOURCES

This section presents the analysis of potential impacts to the U.S. Department of Transportation (USDOT) Act, Section 4(f) resources as a result of the No Action and the Proposed Action. Section 4(f) of the USDOT Act of 1966 (49 United States Code (U.S.C.) § 303) protects significant publicly owned parks, recreational areas, wildlife and waterfowl refuges, and public and private historic sites. Section 4(f) provides that the Secretary of Transportation (Secretary) may approve a transportation project requiring the use of publicly owned land of a public park, recreation area, or land of an historic site of national, state, or local significance, only if there is no feasible and prudent alternative to using that land and the project includes all possible planning to minimize harm resulting from the use.

Section 6(f) of the National Park Service (NPS) Land and Water Conservation Fund (LWCF) Act contains provisions for the protection of federal investments in land and water resources. The LWCF Act discourages the conversion of parks or recreational facilities to other uses. As stated in Section 4.2.4 of this Draft EA, there are no LWCF lands within the General Study Area (GSA) for this EA, thus there are no LWCF lands that would be affected by the Proposed Action.

Two types of impacts to a Section 4(f) resource, physical or constructive use, can occur from a Proposed Action.[12] As described in FAA Order 5050.4B, a determination is made by the FAA if the Proposed Action or a reasonable alternative would eliminate or severely degrade the intended use of the Section 4(f) resource. That is, would the Proposed Action or alternative physically or constructively use (i.e., substantially impair the use) that resource? The responsible FAA official should determine if mitigation is satisfactory to the agency having jurisdiction over the protected resource. If mitigation is unsatisfactory, more detailed, impact analysis is likely needed.

A physical use would occur if the Proposed Action or alternative(s) would involve an actual physical taking of Section 4(f) property through purchase of land or a permanent easement, physical occupation of a portion or all of the property, or alteration of structures or facilities on the property.

With respect to a physical use of historic sites, the Secretary may make a finding of *de minimis* only if—

A. the Secretary has determined, in accordance with the consultation process required under Section 106 of the National Historic Preservation Act (16 U.S.C. 470f), that—
    - the transportation program or project will have no adverse effect on the historic site; or
    - there will be no historic properties affected by the transportation program or project;
B. the finding of the Secretary has received written concurrence from the applicable State historic preservation officer or tribal historic preservation officer (and from the Advisory Council on Historic Preservation if the Council is participating in the consultation process); and
C. the finding of the Secretary has been developed in consultation with parties consulting as part of the Section 106 process.

[12] FAA, 2006, Order 5050.4B, National Environmental Policy Act Implementing Instructions for Airport Actions, Table 7-1, page 7.1-2.

With respect to physical use of parks, recreation areas, or wildlife or waterfowl refuges, the Secretary may make a finding of *de minimis* only if—

A. the Secretary has determined, after public notice and opportunity for public review and comment, that the transportation program or project will not adversely affect the activities, features, and attributes of the park, recreation area, or wildlife or waterfowl refuge eligible for protection under this section; and

B. the finding of the Secretary has received concurrence from the officials with jurisdiction over the park, recreation area, or wildlife or waterfowl refuge.[13]

The concept of constructive use is that a project that does not physically use land in a park, for example, may still, by means of noise, air pollution, water pollution, or other impacts, dissipate its aesthetic value, harm its wildlife, restrict its access, and take it in every practical sense. Constructive use occurs when the impacts of a project on a Section 4(f) property are so severe that the activities, features, or attributes that qualify the property for protection under Section 4(f) are substantially impaired. A *de minimis* impact determination is not appropriate for constructive use of a Section 4(f) property because constructive use is defined as substantial impairment, and substantial impairment cannot be considered a *de minimis* impact. The analysis in this EA uses the DNL from Section 5.12 to determine if a constructive use of the property would occur from the Proposed Action.

5.7.1 NO ACTION

Physical Use

As no physical changes to the Airport would occur under the No Action, implementation of the Future (2021) No Action or Future (2026) No Action would not result in a physical use of Section 4(f) resources.

Constructive Use

The noise exposure of the potential Section 4(f) resources under the Future (2021) No Action and Future (2026) No Action are provided in **Table 5-8**. As shown, there are four potential Section 4(f) resources within the 65+ DNL contours for the Future (2021) No Action and Future (2026) No Action.

Table 5-8
SUMMARY OF NOISE EXPOSURE AT POTENTIAL SECTION 4(F) RESOURCES – NO ACTION

MAP ID	POTENTIAL SECTION 4(F) RESOURCE	FUTURE (2021) NO ACTION	FUTURE (2026) NO ACTION
17	Ephraim Uitz House	65-70 DNL & 70-75 DNL	65-70 DNL & 70-75 DNL
20	Joel Garnett House	<65 DNL	65-70 DNL
31	England Idlewild Park	65-70 DNL & 70-75 DNL	65-70 DNL & 70-75 DNL
42	World of Golf	<65 DNL	65-70 DNL

Source: Landrum & Brown analysis, 2018.

[13] USDOT Act of 1966 (49 U.S.C. § 303).

Ephraim Uitz House[14] **–** The Ephraim Uitz House is a National Register of Historic Places (NRHP) listed property located in Burlington, KY owned by Melvin E. Elslager. The property is significant under Criteria C[15] because it is a good example of distinct architectural style (a double cell plan type and Federal style). The property is also significant under Criterion A[16] because it is a good example of what a traditional farm would look and function like in the period of significance (1842 – 1940). The property is currently in use as a residence and working farm.

Joel Garnett House[17] **–** The Joel Garnett House is an NRHP eligible property located on Conner Road near Hebron, Kentucky. It is recommended for listing on the NRHP under Criteria C because it is a good example of distinct architectural style (hall-parlor). The property is currently in use as a residence and working farm.

England Idlewild Park[18] **–** England Idlewild Park is approximately 290 acres and consists of wooded areas, open areas, and wetlands. The park offers three fishing ponds that are regularly stocked with bluegill and catfish, three large shelters, 24-Hole Championship Disc Golf Course, baseball and softball fields, basketball courts, soccer fields, a dog park, unpaved mountain bike trails, paved hiking trails with fitness stations, picnic tables, a playground, and England Idlewild Bike Park. The park is owned by KCAB and managed by Boone Country Parks and Recreation.

World of Golf[19] **–** World of Golf is located in Florence, KY and has an 18-hole golf course, miniature golf, practice range, indoor range, golf simulator and Divots Grill. It is owned by the City of Florence and operated by Landrum Golf Management.

[14] https://npgallery.nps.gov/pdfhost/docs/NRHP/Text/88003276.pdf, Accessed, July 5, 2018
[15] This criterion applies to properties significant for their physical design or construction, including such elements as architecture, landscape architecture, engineering, and artwork.
[16] To be considered for listing under Criterion A, a property must be associated with one or more events important in the defined historic context and it must retain historic integrity.
[17] https://www.bcpl.org/cbc/doku.php/joel_garnett_house, https://www.boonecountyky.org/document_center/PlanningCommission/ArchitecturalSurvey.pdf, Accessed July 5, 2018
[18] https://www.boonecountyky.org/departments/parks/england_idlewild_park_and_dog_park.aspx, Accessed, July 5, 2018
[19] https://cincinnatiusa.com/things-to-do/attractions/world-golf, Accessed, July 5, 2018

5.7.2 PROPOSED ACTION

Physical Use

Four archeological sites were determined to be eligible for listing on the NRHP under Criteria D (see Section 5.8, Historical Architectural, Archeological, and Cultural Resources) and would be directly impacted by the Proposed Action. However, based on guidance provided in the FAA Order 1050.1F Desk Reference, Section 4(f) does not apply because these NRHP sites are important chiefly for data recovery and notimportant for preservation in place. Therefore, implementation of the Future (2021) Proposed Action or the Future (2026) Proposed Action would not result in the physical use of any Section 4(f) resource to other purposes.

Constructive Use

The noise exposure of the potential Section 4(f) resources under the Future (2021) Proposed Action and Future (2026) Proposed Action is provided in **Table 5-9**. The World of Golf would shift from being entirely outside the 65 DNL under the Future (2021) No Action to partially within the 65-70 DNL under the Future (2026) No Action. The other three resources would continue to be within the same contour band under both the Future (2021) No Action and Future (2021) Proposed Action. Similarly, each of these resources continue to be within the same contour band under both the Future (2026) No Action and Future (2026) Proposed Action. These noise levels would not substantially impair the properties because the activities, features, and attributes that qualify the properties for protection under Section 4(f) would not be affected by the implementation of the Proposed Action. In addition, the Future (2021) Proposed Action and the Future (2026) Proposed Action would not cause significant air pollutant emissions, water pollutants, or other environmental impacts that could affect the properties. Therefore, the Proposed Action would not result in a constructive use of the properties.

Table 5-9
SUMMARY OF NOISE EXPOSURE AT POTENTIAL SECTION 4(F) RESOURCES – COMPARISON OF NO ACTION AND PROPOSED ACTION

MAP ID	POTENTIAL SECTION 4(F) RESOURCE	2021 NO ACTION	2021 PROPOSED PROJECT	2026 NO ACTION	2026 PROPOSED PROJECT
17	Ephraim Uitz House	65-70 DNL & 70-75 DNL	65-70 DNL & 70-75 DNL	65-70 DNL & 70-75 DNL	65-70 DNL & 70-75 DNL
20	Joel Garnett House	<65 DNL	<65 DNL	65-70 DNL	65-70 DNL
31	England Idlewild Park	65-70 DNL & 70-75 DNL	65-70 DNL & 70-75 DNL	65-70 DNL & 70-75 DNL	65-70 DNL & 70-75 DNL
42	World of Golf	<65 DNL	<65 DNL	65-70 DNL	65-70 DNL

Source: Landrum & Brown analysis, 2018.

5.7.3 MITIGATION, AVOIDANCE, AND MINIMIZATION MEASURES

The Proposed Action does not exceed the applicable thresholds of significance. No Section 4(f) protected resources would experience a physical or constructive use resulting from implementation of the Proposed Action for the future years 2021 or 2026. Therefore, no mitigation measures are required.

5.8 HAZARDOUS MATERIALS, SOLID WASTE, AND POLLUTION PREVENTION

This section assesses the potential exposure to hazardous materials, describes the potential for solid waste, and presents pollution prevention measures that would occur as a result of the No Action and Proposed Action.

5.8.1 NO ACTION

Hazardous Materials/Waste

There would be no change to hazardous materials/waste described in Section 4.2.5 for the No Action. In addition, no sites involving fuel storage, handling, or dispensing of fuels would be affected by the No Action.

Solid Waste

The No Action assumes the proposed air cargo facility would not be constructed and therefore would not result in construction debris. It is assumed the air cargo service provider would operate at existing facilities and therefore an increase in operation would occur under the No Action. Therefore, the volume of solid waste generated at the Airport would also increase. Approximately 91,000 tons of solid waste would be generated in the No Action in 2021 and approximately 152,500 tons in 2026.

5.8.2 PROPOSED ACTION

Hazardous Materials

The DSA has remained largely undeveloped. Surveys found asbestos containing materials within the areas previously used for residences. No other recognized environmental conditions (REC) or Controlled REC (CREC) were observed in the DSA. During construction, contractor staging areas would be located at various locations in the DSA. The staging areas would likely include portable above ground storage tanks for fuel storage. The construction contractor(s) would be required to implement pollution prevention, spill prevention, and response plans documenting the measures that would be taken to prevent accidental releases to the environment and, should they occur, the actions that would be undertaken to minimize the environmental impact. In addition, the contractor would be required to implement site-specific pollution prevention plans (i.e., Spill Prevention Control and Countermeasures Plan) that reduce the potential for substantial impacts associated with regulated materials. Should construction activities discover underground storage tanks, waste materials, or other sources of environmental contamination, regulatory authorities would be notified and the necessary site remediation completed. All hazardous substances and wastes used or generated by the contractors, the Airport, or the tenants would be stored, labeled, and disposed of in accordance with federal and state laws.

The use of fuel, deicing fluids, and other regulated substances necessary for routine operations at the Airport would increase due to the increase in operations at the Airport and development of the air cargo facility. The storage, use, transportation, and disposal of hazardous materials and other regulated substances is governed by federal, state, and local regulations. These regulations, combined with existing technologies and work practices developed to properly manage these substances, substantially reduce the risks of causing environmental contamination from the construction and operation of the Proposed Project. Therefore, the Proposed Action is not likely to result in significant impacts from hazardous materials or environmental contamination.

Solid Waste

Solid wastes associated with construction of the Proposed Action are expected to be comprised of waste materials typical of earthwork and paving projects. The volume of solid waste is expected to be minor during construction as most of the earthwork would involve moving dirt from one area to another area within the DSA to achieve the proper grade. Recycling of paper and plastic products could substantially reduce the amount of the construction-related solid wastes. Construction waste not diverted, recycled, or re-used would be transported to and disposed of in local permitted construction/demolition facilities or in accordance with applicable state and local requirements. Therefore, no significant construction-related solid waste impacts would occur.

The number of aircraft operations at the Airport are forecasted to increase with the Proposed Action in 2026. The forecast increase in aircraft operations would similarly increase the volume of solid waste generated at the Airport. In addition, operation of the air cargo facility would generate municipal solid wastes requiring offsite disposal. The estimated volume of solid waste generated from the air cargo facility in 2021 is approximately 91,000 tons. The estimated volume of solid waste generated from the air cargo facility in 2026 is approximately 171,600 tons. This volume of solid waste can be accommodated at the existing landfill facilities without substantially compromising capacity. According to information provided by Bavarian Trucking in 2017, the remaining capacity at the landfill is approximately 7.6 million tons. The Rumpke Landfill, in Pendleton County, 2017 Solid Waste 5-Year Plan indicates the remaining capacity at the landfill is 6 million tons.[20] Therefore, the Proposed Project, in conjunction with area recycling activities, would not significantly impact the capacity of the solid waste systems.

5.8.3 MITIGATION, AVOIDANCE, AND MINIMIZATION MEASURES

Although significant solid waste impacts would not occur with the Proposed Action, measures to minimize the solid waste stream, such as source reduction and recycling strategies, would be developed and implemented by the air cargo service provider through the development of a Recycling and Waste Management Program. This minimization measure consists of the KCAB, the air cargo service provider, on-Airport businesses, and waste handlers working together to develop and implement source reduction strategies to achieve reductions in solid waste disposal volumes generated at CVG. The specifics of this cooperative effort and the costs associated with it will be developed during the development of lease agreements between the KCAB and the air cargo service provider.

[20] Pendleton County, KY 2017 Comprehensive Plan Update, November 27, 2017

5.9 HISTORICAL, ARCHITECTURAL, ARCHEOLOGICAL, AND CULTURAL RESOURCES

This section presents the analysis of potential impacts to Historical, Architectural, Archeological, and Cultural Resources as a result of the No Action and the Proposed Action. The FAA conducted the required consultation with the Kentucky Heritage Council (KHC) under the National Historic Preservation Act of 1966, as amended (NHPA). FAA initiated consultation on July 12, 2018, with the KHC and consulting parties to provide ongoing opportunities for informal and formal review of the project's potential effect on historic resources. The Area of Potential Effect (APE) for direct and indirect impacts is described in Section 4.2.6, Historical, Architectural, Archeological, and Cultural Resources, and shown on Exhibit 4-3. The KHC concurred with FAA's delineation of the APE via email on July 20, 2018 and December 12, 2018. (See **Appendix E, *Section 106 Consultation***).

5.9.1 NO ACTION

No physical development would occur for the No Action. Therefore, no impacts to historical, architectural, archeological, or cultural resources would occur.

5.9.2 PROPOSED ACTION

This section describes the potential impacts, including direct and indirect effects, upon historical, architectural, archeological, and cultural resources due to the Proposed Action. Exhibit 4-3, in Chapter Four of this EA, depicts the Direct and Indirect APE.

Direct Effects

Architectural, Phase I, and Phase II archeological surveys were conducted for the proposed undertaking in compliance with Section 106 of the NHPA and guidelines set forth by the KHC and are discussed in Section 4.2.6, *Historical, Architectural, Archeological, and Cultural Resources*. The purpose of the surveys was to identify any historic properties located within the Direct APE that are listed or eligible for listing in the NRHP. 36 C.F.R. § 800.16(l)(1) defines the term Historic property as *"any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places maintained by the Secretary of the Interior. This term includes artifacts, records, and remains that are related to and located within such properties. The term includes properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization and that meet the National Register criteria."*[21]

In total, there are 33 archeological sites, four cemeteries, and five structures within the Direct APE that would be removed as part of the Proposed Action. The FAA has determined that 29 of the archeological sites, the four cemeteries, and the five structures are not eligible for inclusion in the NRHP. Three archeological sites (15Be688, 15Be694, and 15Be697) were determined eligible for inclusion in the NRHP. Archeological site (15Be717) was determined to have unsafe conditions to complete the Phase II archeological survey on the site. As a result, this site has been determined to be eligible for the NRHP. Therefore, FAA determined the proposed undertaking would have an Adverse Effect on Historic Properties. The Section 106 Consultation is provided in Appendix E.

[21] 36 C.F.R. § 800.16(l)(1) Definition – Historic Property.

Indirect Effects

FAA also designated an Indirect Effects APE that includes areas around CVG that experience airport noise from aircraft over flights and would experience potential impacts to the view of historic properties. FAA has determined there are two historic properties within the Indirect Effects APE, the Ephraim Uitz House and the Joel Garnett House. The Ephraim Uitz House was previously recommended as historically significant and listing in the NRHP under Criteria A (Association with Events) and Criteria C (Embodiment of Distinctive Architectural Characteristics). The Joel Garnett House was previously recommended as eligible for the NRHP under Criteria C.

In the Future (2021) No Action and Future (2026) No Action noise exposure contours, the Ephraim Uitz House would be exposed to noise levels of 65-70 DNL and the farmstead property would be partially within the 70-75 DNL. Under the Future (2021) Proposed Action and Future (2026) Proposed Action, the Ephraim Uitz House would continue to be exposed to 65-70 DNL and the farmstead property would continue to be partially within the 70-75 DNL. These noise levels would not significantly change the property's setting or diminish the integrity of the property's significant features because it would maintain its existing architecture and setting and maintain the association with past events. In addition, the Future (2021) Proposed Action and Future (2026) Proposed Action would not cause significant air pollutant emissions or water pollutants that could affect these structures (See Section 5.4 *Air Quality* and Section 5.15 *Water Resources* for additional information). Therefore, the proposed undertaking would have no adverse effect on the Ephraim Uitz House and farmstead.

In the Future (2021) No Action noise exposure contours, the Joel Garnett House would be exposed to noise levels less than 65 DNL. Under the Future (2021) Proposed Action, the Joel Garnett House would continue to be exposed to noise levels less than 65 DNL. In the Future (2026) No Action noise exposure contours, the Joel Garnett House would be exposed to noise levels of 65-70 DNL. Under the Future (2026) Proposed Action, the Joel Garnett House would continue to be exposed to noise levels of 65-70 DNL. These noise levels would not significantly change the property's setting or diminish the integrity of the property's significant features because it would maintain its existing architecture. In addition, the Future (2021) Proposed Action and Future (2026) Proposed Action would not cause significant air pollutant emissions or water pollutants that could affect these structures (See Section 5.4 *Air Quality* and Section 5.15 *Water Resources* for additional information). Therefore, the proposed undertaking would have no adverse effect on the Joel Garnett House.

5.9.3 MITIGATION, AVOIDANCE, AND MINIMIZATION MEASURES

A Memorandum of Agreement (MOA) was prepared between the FAA, KCAB, and the KHC sites 15Be688, 15Be694, 15Be697, and 15Be717. The air cargo service provider was also a signatory on the MOA. A Mitigation Plan was developed for sites 15Be688, 15Be694 and 15Be697 by the FAA, KCAB, and in consultation with the KHC, specifying the Data Recovery Plan, which is sometimes called Phase III. Phase III data recovery takes place when there will be an adverse effect to a site listed in or eligible for listing in the National Register and mitigation by excavation of all or portions of the site becomes necessary. The data recovery plan is included as an attachment to the MOA. The FAA, KCAB, and the air cargo service provider are responsible for carrying out the data recovery plan. The data recovery plan defines how fieldwork is to be conducted, as well as the structure and content of the mitigation report. The MOA also includes alternate mitigation for site 15Be717 due to the Phase II archeological work on this site not able to be completed due to safety concerns regarding asbestos contamination on the site.

Unanticipated Discovery Plan

If previously undocumented buried cultural resources are identified by contractors during construction activities, all work in the immediate vicinity of the discovery would stop until the find can be confirmed by a professional archeologist and evaluated for its significance. The air cargo service provider will notify KCAB staff of the find and it will be KCAB's responsibility to notify the FAA, KHC, and tribal officer if undocumented resources are found. If human remains are uncovered, per Kentucky Revised Statutes 72.020, the local coroner and law enforcement agency must be notified.

5.10 LAND USE

This section presents the analysis of potential land use incompatibility of the No Action and the Proposed Action, including potential conflicts with surrounding land uses and zoning with the comprehensive plans of the surrounding communities.

The FAA has not established a significance threshold for land use. The determination that significant impacts exist in the land use impact category is normally dependent on the significance of other impacts. Potential impacts on noise compatible land use are discussed in Section 5.12, Noise and Noise Compatible Land Use. Potential impacts related to potential for disruptions to communities or relocation of residences or businesses is discussed in Section 5.13, Socioeconomics, Environmental Justice, and Children's Environmental Health and Safety Risks. Regarding consistency with state and/or local plans, an inconsistency with surrounding land uses and zoning by itself does not automatically result in a significant impact.

5.10.1 NO ACTION

No physical development would occur under the No Action. Therefore, no impacts to land use would occur.

5.10.2 PROPOSED ACTION

The DSA is located on the southern edge of the Airport in a predominantly commercial area. Currently, the DSA is both on-Airport property and off-Airport property. At the time of the preparation of this document, the air cargo service provider is the owner of the off-Airport property. Negotiations are underway to transfer all of the off-Airport land to the KCAB. Once the ownership of the off-Airport land is transferred to the KCAB, the development would be considered compatible land use. The land would be zoned as "Airport" district and would be part of the Houston-Donaldson Study Corridor Overlay District.[22] The development proposed for the on-Airport property is considered a compatible land use.

In addition, the Proposed Action would not create a new wildlife attractant or create an obstruction to navigation airspace per 14 CFR Part 77, *Safe, Efficient Use, and Preservation of the Navigable Airspace.* Therefore, no impacts to land use would occur with implementation of the Proposed Action.

5.10.3 MITIGATION, AVOIDANCE, AND MINIMIZATION MEASURES

The Proposed Project would not result in significant land use impacts. Therefore, there is no mitigation required or proposed.

[22] Boone County Zoning Regulations, Boone County Planning Commission, December 4, 2013.

5.11 NATURAL RESOURCES AND ENERGY SUPPLY

This section presents the analysis of potential impacts to natural resources and energy supplies as a result of the No Action and the Proposed Action. The supply of natural resources may be impacted by a construction project because the use of dirt, rock, or gravel could diminish or deplete the supply of those and other natural resources. In addition, the operation of an airport requires energy in the form of electricity, natural gas, aviation fuel, diesel fuel, and gasoline. There are two primary sources of energy consumption at an airport – stationary facilities and aircraft operations. Stationary facilities use utility energy (electricity and natural gas) to provide lighting, cooling, heat, and hot water to buildings, the airfield, and parking areas. Aircraft operations and GSE consume fuel energy including jet fuel (Jet A), low-lead aviation gasoline (AvGas), unleaded gasoline, and diesel fuel to operate the aircraft and power GSE.

5.11.1 NO ACTION

Natural Resources

Resources such as sand, gravel, stone, concrete, asphalt water, wood, metals, plastic, and other resources are used for airport construction and maintenance. No new facilities would be constructed that would consume natural resources or other construction materials for the No Action. It is expected that small amounts of these materials would be used for general maintenance activities.

Electricity

There would be no increase in demand for electricity for the No Action. No facilities or lighting would be constructed in the No Action. Existing electricity resources would continue to power the existing facilities and accommodate the forecast demand for aircraft operations.

Natural Gas

There would be no increase in demand for natural gas for the No Action. No new facilities would be constructed that would require natural gas due to the No Action. Natural gas resources would continue to power the existing facilities and accommodate the forecast demand for aircraft operations.

Fuel Consumption

Aviation fuel demand at the Airport is a function of the number of operations at CVG and how they operate. This includes the length of time the aircraft are operating while on the ground and during takeoff and climb out, and the fuel required for the aircraft to reach the flight destination. Aircraft fuel, typically Jet-A or AvGas is provided to airport users by various suppliers that obtain and sell fuel through existing contracts and on an as-needed basis. No new facilities would be constructed that would increase the demand for fuel for the No Action. Current forecasts project growth in aircraft operations at CVG and additional aircraft movements would likely increase fuel consumption. In addition to aircraft fuel, diesel fuel and gasoline are also used to power GSE and other service vehicles at CVG. The fuel requirement for GSE is roughly related to the number of aircraft operations that are serviced, which affects the number of GSE units and the amount of time in which they operate. Aircraft operations are projected to increase for the No Action, which would result in an increase in fuel usage for GSE.

5.11.2 PROPOSED ACTION

The Proposed Action would include the construction of new facilities. Operation of these proposed facilities would require the use of electricity, natural gas, and water. Electricity is used to power and light the buildings and to light the parking areas. Natural gas is used for gas-fired water heaters, kitchen equipment, and other gas-fired appliances. The Proposed Action would increase the amount of electricity, natural and natural gas consumed at CVG. Energy conservation features would be incorporated into the design of the proposed projects where feasible.

The objective of the assessment is to determine whether the Proposed Action would have the potential to exceed the local energy supply as compared to the No Action. The FAA has not established a significance threshold for natural resources and energy supply; however, per FAA Order 1050.1F, the analysis should consider situations in which the proposed action or alternative(s) would have the potential to cause demand to exceed available or future supplies of these resources. The analysis includes a discussion of the future demands for energy and natural resources, including changes in demand for utility services, fuel consumption, and consumable materials for operation and construction activities. The assessment also determined whether there would be a requirement for the use of rare natural resources that could potentially deplete the supply of natural resources in the area.

Electricity

The Proposed Action would include the construction of new facilities. Operation of these proposed facilities would require the use of electricity to power and light the buildings and to light the parking areas. The Proposed Action would increase the amount of electricity consumed at CVG. Estimates of electricity usage were provided by the air cargo service provider and based on the proposed facilities to be constructed. The estimates did not include the use of LED lighting in order to present the maximum potential demand for electricity. It is estimated that proposed facility would require approximately 55,000-kilowatt hours (kWh) per year. The electric utility, Duke Energy Kentucky, was contacted to determine if the utility has the capacity to meet the estimated increase in demand. Duke Energy Kentucky confirmed they have sufficient capacity to supply the potential increase in electricity demand from the Proposed Action.[23] Therefore, while implementing the Proposed Action would potentially increase the demand for electricity, the potential demand would not exceed the existing and future supplies.

[23] Meeting with Duke Energy, May 2, 2018

Natural Gas

As a result of implementing the Proposed Action, additional natural gas would be needed to provide for the proposed facilities. During construction, it is not anticipated there would be any additional need for natural gas. The estimated increase in natural gas demand due to the Proposed Action is 410 million British thermal units (BTU).[24] While implementing the Proposed Action would potentially increase the demand for natural gas, the potential demand would not exceed the available current and future supplies due to existing and future natural gas capacity. The natural gas utility, Duke Energy Kentucky, was contacted to determine if the utility has the capacity to meet the estimated increase in demand. Duke Energy Kentucky stated they have sufficient capacity to supply the potential increase in natural gas demand due to implementing the Proposed Action.[25] However, a new gas line would need to be installed along Aero Parkway. The potential impacts of this new gas line are included as an element of the Proposed Action and included in the DSA. Physical impacts are assessed in Section 5.5, Biological Resources; Section 5.8, Historic, Architectural, Archeological, and Cultural Resources; and Section 5.15, Water Resources of this EA.

Fuel Consumption

No change in the number of aircraft operations would occur in the Future (2021) Proposed Action when compared to the No Action as it is assumed aircraft operations would be accommodated with existing facilities. In the Future (2026) Proposed Action, additional aircraft operations would be accommodated by the proposed air cargo facility, resulting in an increase in fuel consumption. However, due to availability of fuel in the region, any increase in demand is expected to be minimal and would not exceed the existing supplies. During construction, it is anticipated there would be increased demand for diesel fuel for construction vehicles. **Table 5-10** presents the fuel consumption for the Proposed Action compared to the No Action Alterative for each future year.

Table 5-10
FUEL CONSUMPTION

	Future (2021) No Action	Future (2021) Proposed Action	Future (2026) No Action	Future (2026) Proposed Action
Fuel Usage (gallons/day)	48,083	48,083	59,437	61,582

Source: AEDT version 2d, Landrum & Brown analysis, 2018.

[24] One BTU of heat is equal to 1/180 of the heat required to raise the temperature of one pound of water from 32 degrees Fahrenheit to 212 degrees Fahrenheit at a constant pressure of one atmosphere.

[25] Meeting with Duke Energy, May 2, 2018

Natural Resources

There would be no increased demand for natural resources due to the Proposed Action as compared to the No Action for operational purposes. However, as a result of implementing the Proposed Action, proposed construction activities would require natural resources such as steel, gravel, sand, aggregate, concrete, asphalt, water, and other construction materials. These materials are not in short supply in the Greater Cincinnati and Northern Kentucky area and consumption of these materials is not expected to deplete or cause a shortage of existing supplies.

5.11.3 MITIGATION, AVOIDANCE, AND MINIMIZATION MEASURES

Demand for energy or natural resources identified due to the Proposed Action would not exceed current or future supplies. The Proposed Action does not exceed the applicable thresholds of significance; therefore, no mitigation measures are required.

5.12 NOISE AND NOISE-COMPATIBLE LAND USE

This section presents the analysis of aircraft noise exposure to surrounding communities as a result of the No Action and the Proposed Action. Additional information on the background and characteristics of noise are provided in **Appendix F, *Noise***. The impact of airport-related noise levels upon the surrounding area is presented in terms of the number and type of noise-sensitive land uses located within the noise contours for the Proposed Action and the No Action for both 2021 and 2026. This is in accordance with FAA Order 1050.1F guidance, which specifies that an operational impact analysis should be prepared for the year of anticipated project implementation and five years after implementation.[26]

The analysis of noise exposure aroundCVG was prepared using the latest version of the AEDT, Version 2d. Inputs to the AEDT include number of aircraft operations during the time period evaluated, the types of aircraft flown, time of day aircraft operations occur, runway definition, how frequently each runway is used for arriving and departing aircraft, the routes of flight used when arriving to and departing from the runways, the proportional use of those flight routes, and the length of the trips. The AEDT calculates noise exposure for the area around the airport and outputs contours of equal noise exposure using the Day-Night Average Sound Level (DNL) metric. For this EA, equal noise contours for the levels of DNL 65, 70, and 75 dB were calculated and represent average-annual day conditions.

[26] FAA, 2015, 1050.1F Desk Reference, *Environmental Impacts: Policies and Procedures*, 11. Noise and Noise-Compatible Land Use, 11.3 Environmental Consequences.

5.12.1 NO ACTION

5.12.1.1 Future (2021) No Action

Exhibit 5-1, *Future (2021) No Action Noise Exposure Contours* reflects the Future (2021) No Action average-annual noise contours at CVG. The 65+ DNL of the Future (2021) No Action Noise Exposure Contour encompasses approximately 11.2 square miles. The Future (2021) No Action Noise Exposure Contour is larger than the Existing Noise Exposure Contour due to the forecasted increase in aircraft operations, which includes general growth in aviation demand and the expected increase in cargo operations that would occur with or without the Proposed Action.

The Future (2021) No Action Noise Exposure Contour retains a similar shape as the Existing Noise Exposure contour because runway use patterns and flight tracks are expected to remain similar.

There are no public schools, churches, nursing homes, hospitals, or libraries within any of the contours. Summaries of the residential population and housing units affected by noise levels exceeding 65 DNL for the Future (2021) No Action Noise Exposure Contours are provided in **Table 5-11**.

Table 5-11
FUTURE (2021) NO ACTION INCOMPATIBILITIES

FUTURE (2021) NO ACTION	65-70 DNL	70-75 DNL	75+DNL	TOTAL
RESIDENCES				
Mitigated[1]	**174**	**2**	**0**	**176**
Unmitigated	**85**	**4**	**0**	**89**
Previously Offered but Refused	31	2	0	33
Never Offered Mitigation[2]	54	2	0	56
Total	**259**	**6**	**0**	**265**
ESTIMATED POPULATION				
Mitigated[1]	**466**	**6**	**0**	**472**
Unmitigated	**236**	**12**	**0**	**248**
Previously Offered but Refused	84	6	0	91
Never Offered Mitigation[2]	151	6	0	157
Total	**702**	**18**	**0**	**720**
NOISE-SENSITIVE FACILITIES (NSF)				
Schools	0	0	0	**0**
Churches	0	0	0	**0**
Nursing Homes	0	0	0	**0**
Hospitals	0	0	0	**0**
Libraries	0	0	0	**0**

[1] Residences were mitigated through previous Part 150 Studies conducted by KCAB.
[2] Residence was either built after Part 150 mitigation program, never in the 65 DNL of an official Noise Exposure Map, or an ineligible property.

Notes: Population numbers are estimates based on the 2010 U.S. Census average household size per number of housing units.

Source: Landrum & Brown, 2018.

5.12.1.2 Future (2026) No Action

The Future (2026) No Action Noise Exposure Contour, showing 65, 70, and 75 DNL levels, is presented on **Exhibit 5-2, *Future (2026) No Action Noise Exposure Contours***. The 65+ DNL of the Future (2026) No Action Noise Exposure Contour encompasses approximately 13.3 square miles. The Future (2026) No Action Noise Exposure Contour retains a similar shape as the Future (2021) No Action Noise Exposure Contour, but is larger due to the forecasted increase in aircraft operations. There are no public schools, churches, nursing homes, hospitals, or libraries within any of the contours. Summaries of the residential population and housing units affected by noise levels exceeding 65 DNL for the Future (2026) Noise Exposure Contours are provided in **Table 5-12**.

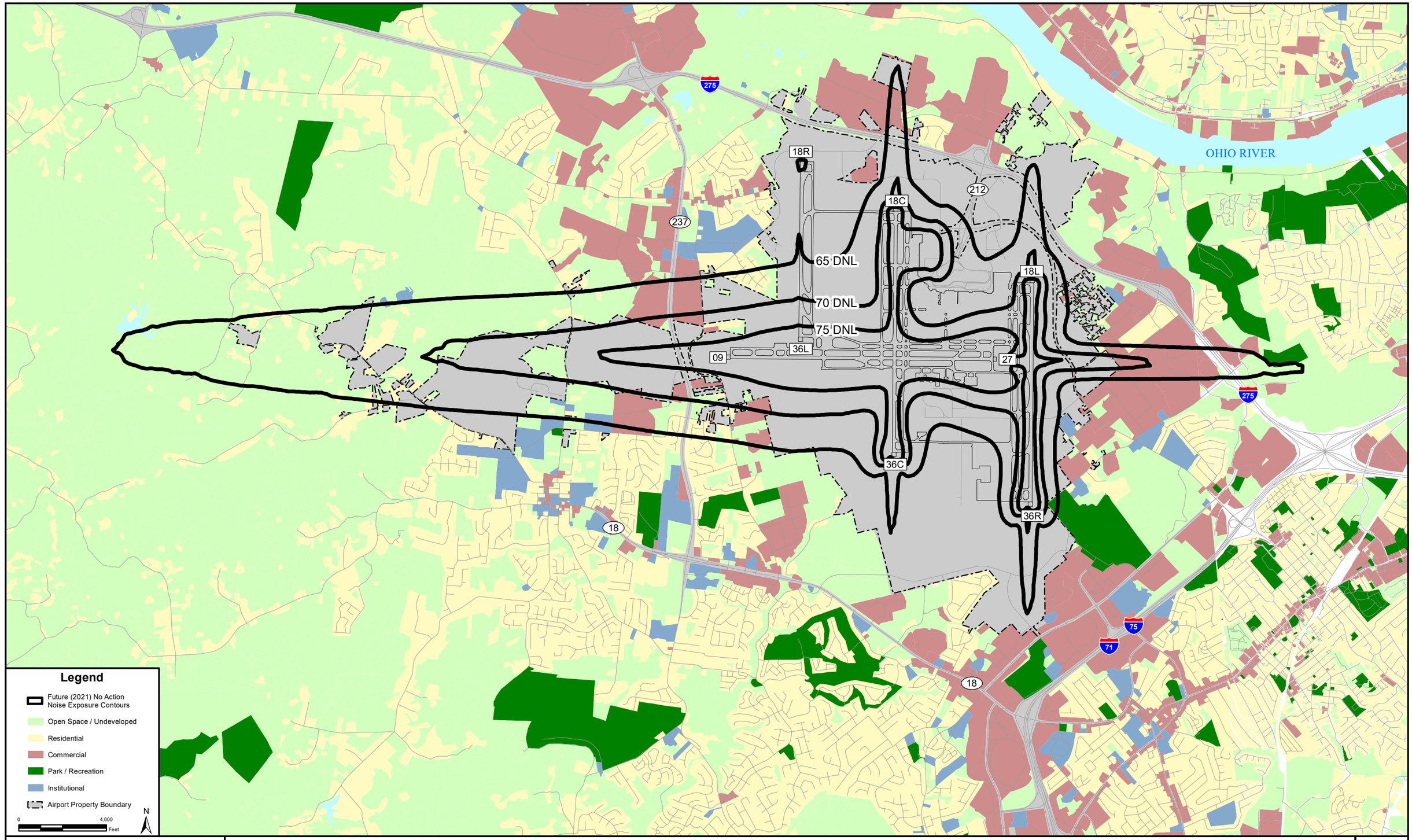
Table 5-12
FUTURE (2026) NO ACTION INCOMPATIBILITIES

FUTURE (2026) NO ACTION	65-70 DNL	70-75 DNL	75+DNL	TOTAL
RESIDENCES				
Mitigated[1]	**233**	**4**	**0**	**237**
Unmitigated	**172**	**4**	**0**	**176**
Previously Offered but Refused	43	2	0	45
Never Offered Mitigation[2]	129	2	0	131
Total	**405**	**8**	**0**	**413**
ESTIMATED POPULATION				
Mitigated[1]	**621**	**11**	**0**	**632**
Unmitigated	**411**	**12**	**0**	**423**
Previously Offered but Refused	115	6	0	122
Never Offered Mitigation[2]	296	6	0	301
Total	**1,032**	**23**	**0**	**1,055**
NOISE-SENSITIVE FACILITIES (NSF)				
Schools	0	0	0	**0**
Churches	0	0	0	**0**
Nursing Homes	0	0	0	**0**
Hospitals	0	0	0	**0**
Libraries	0	0	0	**0**

[1] Residences were mitigated through previous Part 150 Studies conducted by KCAB.
[2] Residence was either built after Part 150 mitigation program, never in the 65 DNL of an official Noise Exposure Map, or an ineligible property.

Notes: Population numbers are estimates based on the 2010 U.S. Census average household size per number of housing units.

Source: Landrum & Brown, 2018.



Air Cargo Facility Environmental Assessment

Future (2021) No Action Noise Exposure Contours

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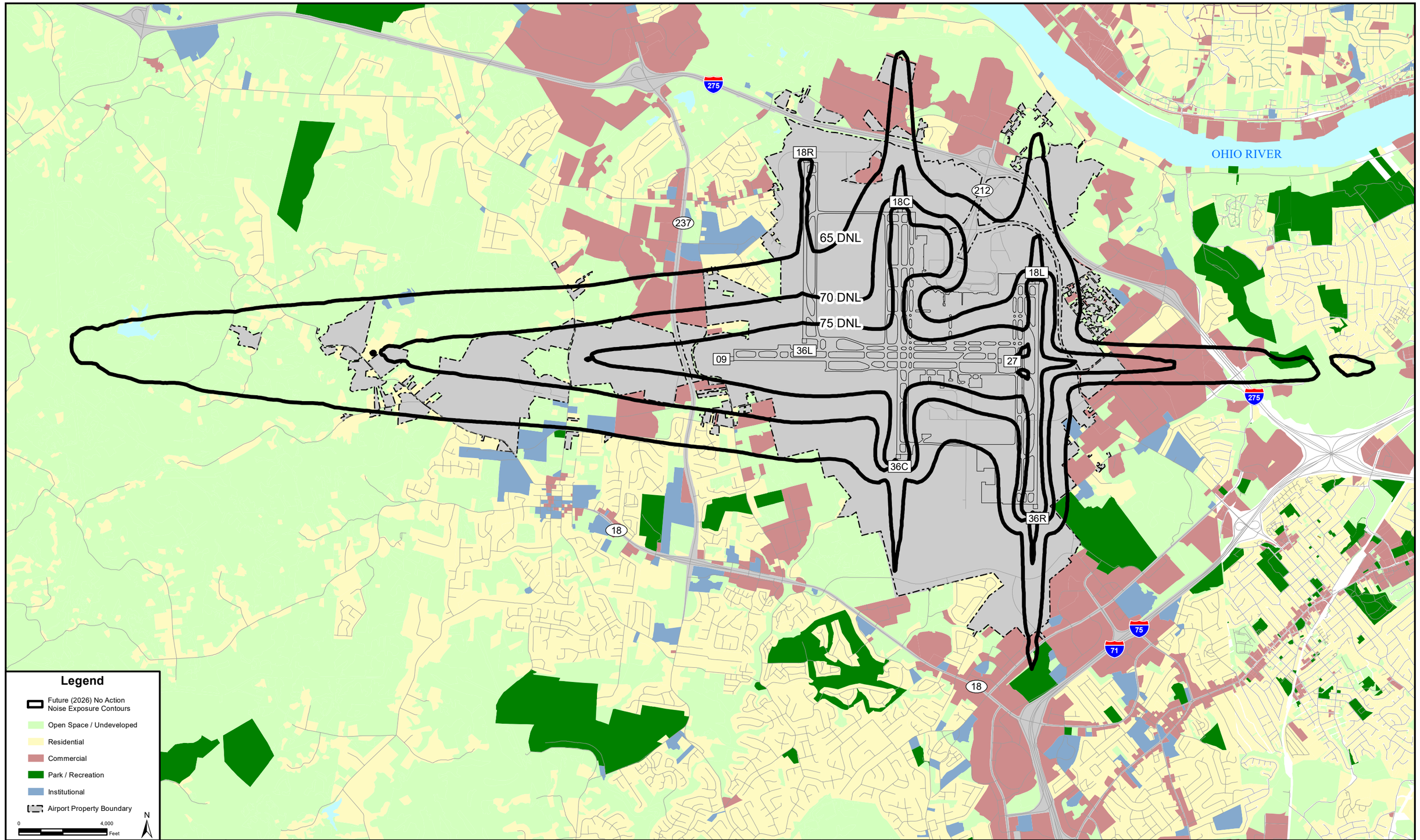

Air Cargo Facility Environmental Assessment

Future (2026) No Action Noise Exposure Contours

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5.12.2 PROPOSED ACTION

5.12.2.1 Future (2021) Proposed Action

The Future (2021) Proposed Action Noise Exposure Contour, showing 65, 70, and 75 DNL levels, is presented on **Exhibit 5-3, *Future (2021) Proposed Action Noise Exposure Contours***. The 65+ DNL of the Future (2021) Proposed Action Noise Exposure Contour encompasses approximately 11.2 square miles. Summaries of the residential population and housing units affected by noise levels exceeding 65 DNL for the Future (2021) Proposed Action Noise Exposure Contours are provided in **Table 5-13**.

Table 5-13
FUTURE (2021) PROPOSED ACTION INCOMPATIBILITIES

FUTURE (2021) PROPOSED ACTION	65-70 DNL	70-75 DNL	75+DNL	TOTAL
RESIDENCES				
Mitigated[1]	**174**	**2**	**0**	**176**
Unmitigated	**85**	**4**	**0**	**89**
Previously Offered but Refused	31	2	0	33
Never Offered Mitigation[2]	54	2	0	56
Total	**259**	**6**	**0**	**265**
ESTIMATED POPULATION				
Mitigated[1]	**466**	**6**	**0**	**472**
Unmitigated	**236**	**12**	**0**	**248**
Previously Offered but Refused	84	6	0	91
Never Offered Mitigation[2]	151	6	0	157
Total	**702**	**18**	**0**	**720**
NOISE-SENSITIVE FACILITIES (NSF)				
Schools	0	0	0	**0**
Churches	0	0	0	**0**
Nursing Homes	0	0	0	**0**
Hospitals	0	0	0	**0**
Libraries	0	0	0	**0**

[1] Residences were mitigated through previous Part 150 Studies conducted by KCAB.
[2] Residence was either built after Part 150 mitigation program, never in the 65 DNL of an official Noise Exposure Map, or an ineligible property.

Notes: Population numbers are estimates based on the 2010 U.S. Census average household size per number of housing units.

Source: Landrum & Brown, 2018.

The Future (2021) Proposed Action Noise Exposure Contour is similar in shape and size to the Future (2021) No Action Noise Contour. There would be no change to the number of arrivals and departure, nor would there be any change to runway use or flight tracks. Under the Future (2021) No Action, run-ups would occur on the north airfield to the east of Runway 18C. Under the Future (2021) Proposed Action, run-ups would occur at the proposed cargo facility on the south airfield. Therefore, the size of the Future (2021) Proposed Action noise contour increases within the south airfield between Runway 36C and Runway 36R and decreases within the north airfield east of Runway 18C.

A noise impact would be considered to be significant if there were an increase of 1.5 decibel (dB) or more over noise-sensitive facilities within the 65 DNL contour when comparing the No Action and Proposed Action of the same corresponding year.[27] The Future (2021) Proposed Action, compared to the Future (2021) No Action, and the area of 1.5 DNL increase within the 65 DNL is shown on **Exhibit 5-4, *Future (2021) No Action Noise Exposure Contours Compared to Future (2021) Proposed Action Noise Exposure Contours***. The 1.5 dB increase area remains over compatible Airport-owned land. Therefore, no significant noise impacts would occur with the Proposed Action. As shown in **Table 5-14**, there are no new residences or Noise Sensitive Facilities (NSF) exposed to 65 DNL.

Table 5-14
NEW RESIDENCES AND NOISE-SENSITIVE FACILITIES EXPOSED TO 65 DNL IN THE FUTURE (2021) PROPOSED ACTION NOISE EXPOSURE CONTOUR

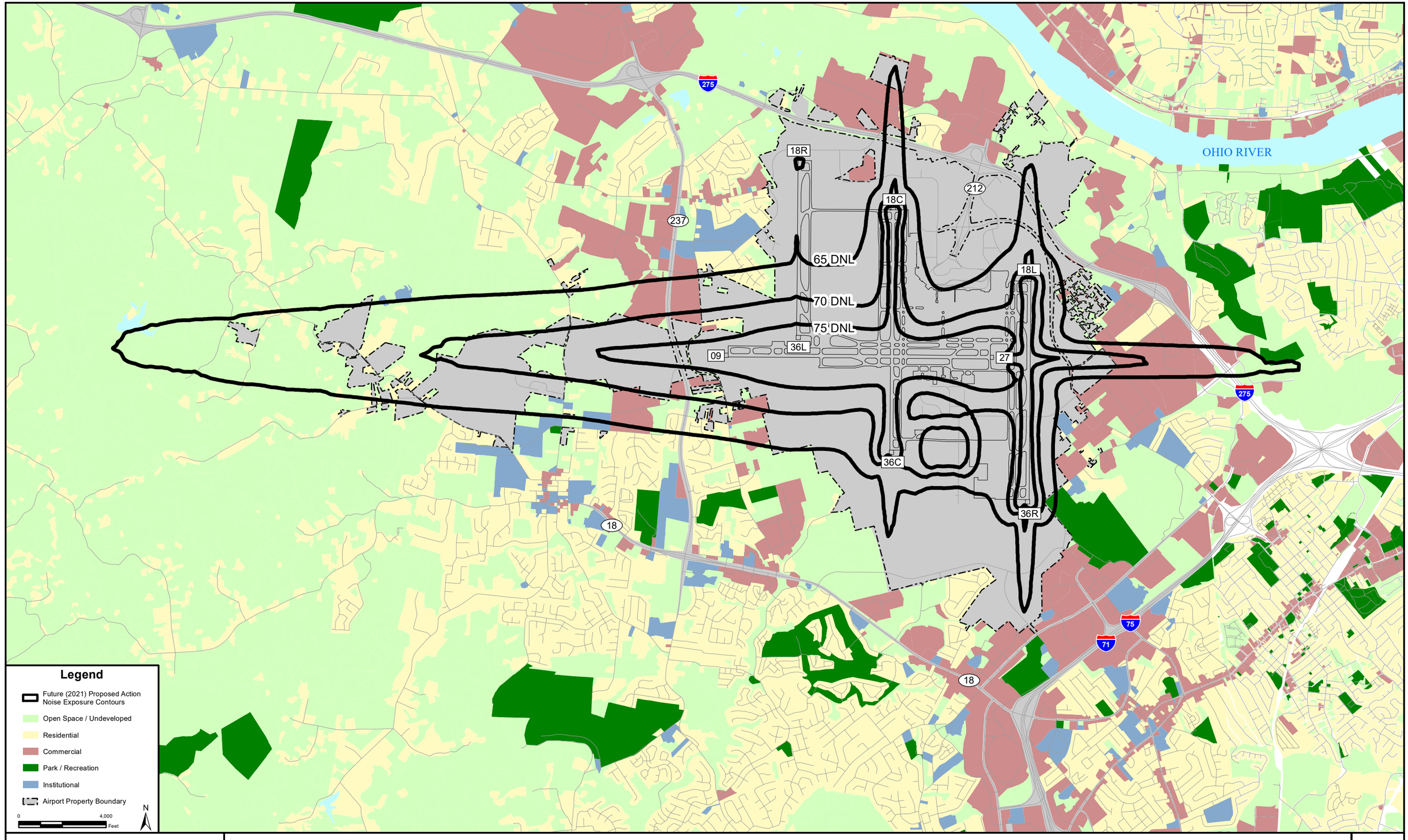
NEWLY IN FUTURE (2021) PROPOSED ACTION	65-70 DNL	70-75 DNL	75+DNL	TOTAL
RESIDENCES				
Mitigated[1]	**0**	**0**	**0**	**0**
Unmitigated	**0**	**0**	**0**	**0**
Previously Offered but Refused	0	0	0	0
Never Offered Mitigation[2]	0	0	0	0
Total	**0**	**0**	**0**	**0**
ESTIMATED POPULATION				
Mitigated[1]	**0**	**0**	**0**	**0**
Unmitigated	**0**	**0**	**0**	**0**
Previously Offered but Refused	0	0	0	0
Never Offered Mitigation[2]	0	0	0	0
Total	**0**	**0**	**0**	**0**
NOISE-SENSITIVE FACILITIES (NSF)				
Schools	0	0	0	**0**
Churches	0	0	0	**0**
Nursing Homes	0	0	0	**0**
Hospitals	0	0	0	**0**
Libraries	0	0	0	**0**

[1] Residences were mitigated through previous Part 150 Studies conducted by KCAB.
[2] Residence was either built after Part 150 mitigation program, never in the 65 DNL of an official Noise Exposure Map, or an ineligible property.

Notes: Population numbers are estimates based on the 2010 U.S. Census average household size per number of housing units.

Source: Landrum & Brown, 2018.

[27] FAA Order 1050.1F, Environmental Impacts: Policies and Procedures, Section 4.3-3 Significance Thresholds.



Air Cargo Facility Environmental Assessment

Future (2021) Proposed Action Noise Exposure Contours

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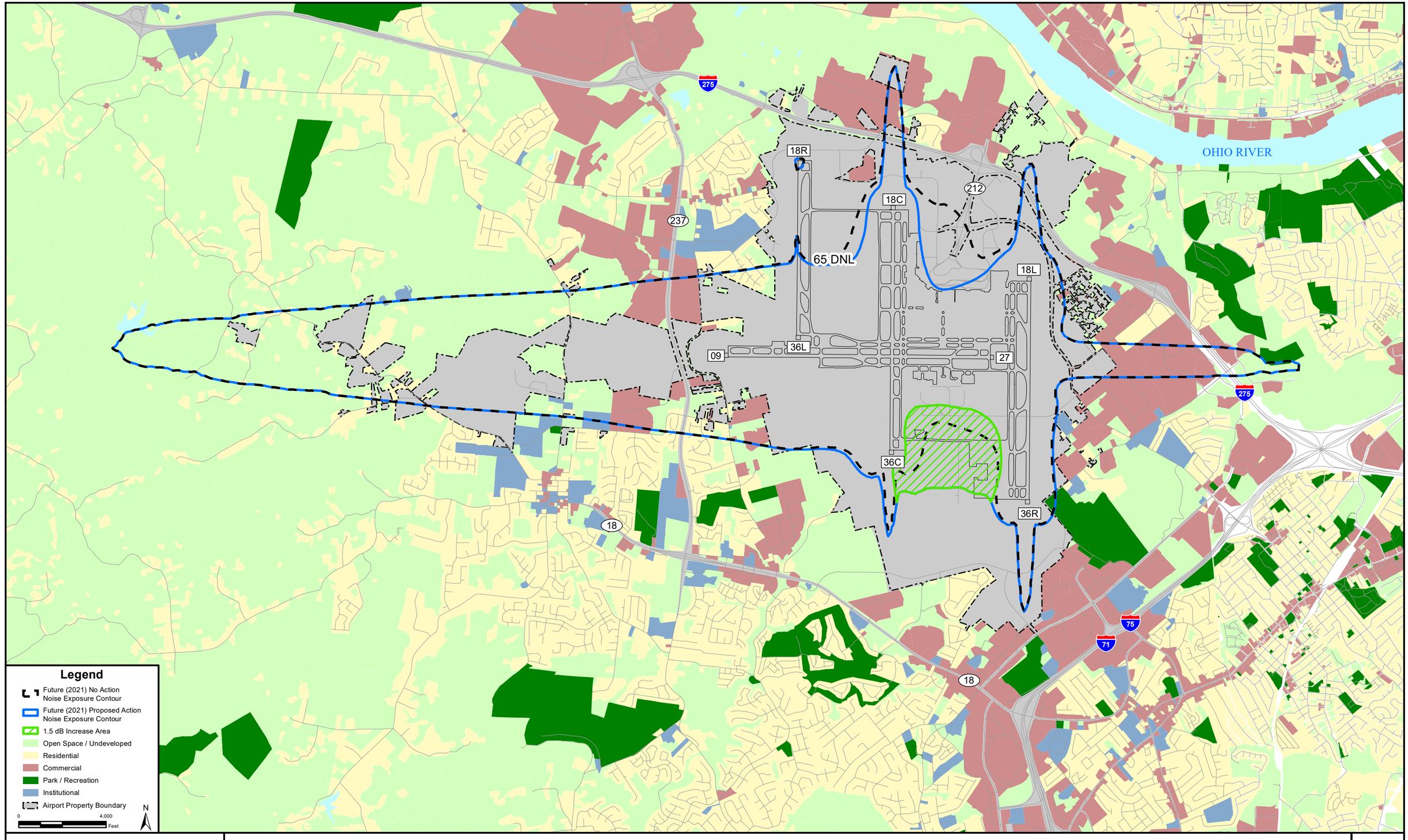

Air Cargo Facility Environmental Assessment

Future (2021) No Action Noise Exposure Contours Compared to Future (2021) Proposed Action Noise Exposure Contours

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5.12.2.2 Future (2026) Proposed Action

The Future (2026) Proposed Action Noise Exposure Contour, showing 65, 70, and 75 DNL levels, is presented on **Exhibit 5-5, *Future (2026) Proposed Action Noise Exposure Contours***. The 65+ DNL of the Future (2026) Proposed Action Noise Exposure Contour encompasses approximately 13.9 square miles. Summaries of the residential population and housing units affected by noise levels exceeding 65 DNL for the Future (2026) Proposed Action Noise Exposure Contours are provided in **Table 5-15**.

Table 5-15
FUTURE (2026) PROPOSED ACTION INCOMPATIBILITIES

FUTURE (2026) PROPOSED ACTION	65-70 DNL	70-75 DNL	75+DNL	TOTAL
RESIDENCES				
Mitigated[1]	**245**	**6**	**0**	**251**
Unmitigated	**209**	**5**	**0**	**214**
Previously Offered but Refused	44	3	0	47
Never Offered Mitigation[2]	165	2	0	167
Total	**454**	**11**	**0**	**465**
ESTIMATED POPULATION				
Mitigated[1]	**650**	**17**	**0**	**667**
Unmitigated	**477**	**14**	**0**	**491**
Previously Offered but Refused	118	9	0	126
Never Offered Mitigation[2]	359	6	0	365
Total	**1,127**	**31**	**0**	**1,158**
NOISE-SENSITIVE FACILITIES (NSF)				
Schools	0	0	0	**0**
Churches	0	0	0	**0**
Nursing Homes	0	0	0	**0**
Hospitals	0	0	0	**0**
Libraries	0	0	0	**0**

[1] Residences were mitigated through previous Part 150 Studies conducted by KCAB
[2] Residence was either built after Part 150 mitigation program, never in the 65 DNL of an official Noise Exposure Map, or an ineligible property.

Notes: Population numbers are estimates based on the 2010 U.S. Census average household size per number of housing units.

Source: Landrum & Brown, 2018.

The Future (2026) Proposed Action Noise Exposure Contour retains a similar shape as the Future (2026) No Action Noise Exposure Contour, but is larger due to the increase in aircraft operations that would occur as a result of the implementation of the Proposed Action. Similar to 2021, the primary difference in the shape of the Future (2026) Proposed Action noise contour compared to the Future (2026) No Action noise contour is due to the location of the aircraft run-ups associated with the cargo facility.

Exhibit 5-6, *Future (2026) No Action Noise Exposure Contours Compared to Future (2026) Proposed Action Noise Exposure Contours* shows the Future (2026) Proposed Action compared to the Future (2026) No Action and the area of 1.5 dB increase within the 65 DNL. The 1.5 DNL increase area remains over compatible Airport-owned land. Therefore, no significant noise impacts would occur with the Proposed Action. However as shown in **Table 5-16**, there are 52 new residences exposed to 65 DNL. Of the 52 residences, 14 were mitigated through a previous Part 150 Study, two were offered mitigation but refused, and 36 were never offered mitigation. Of the 36 residences never offered mitigation five were either built after the previous mitigation program or were considered ineligible due to the type of construction and 31 are newly in the 65 DNL.

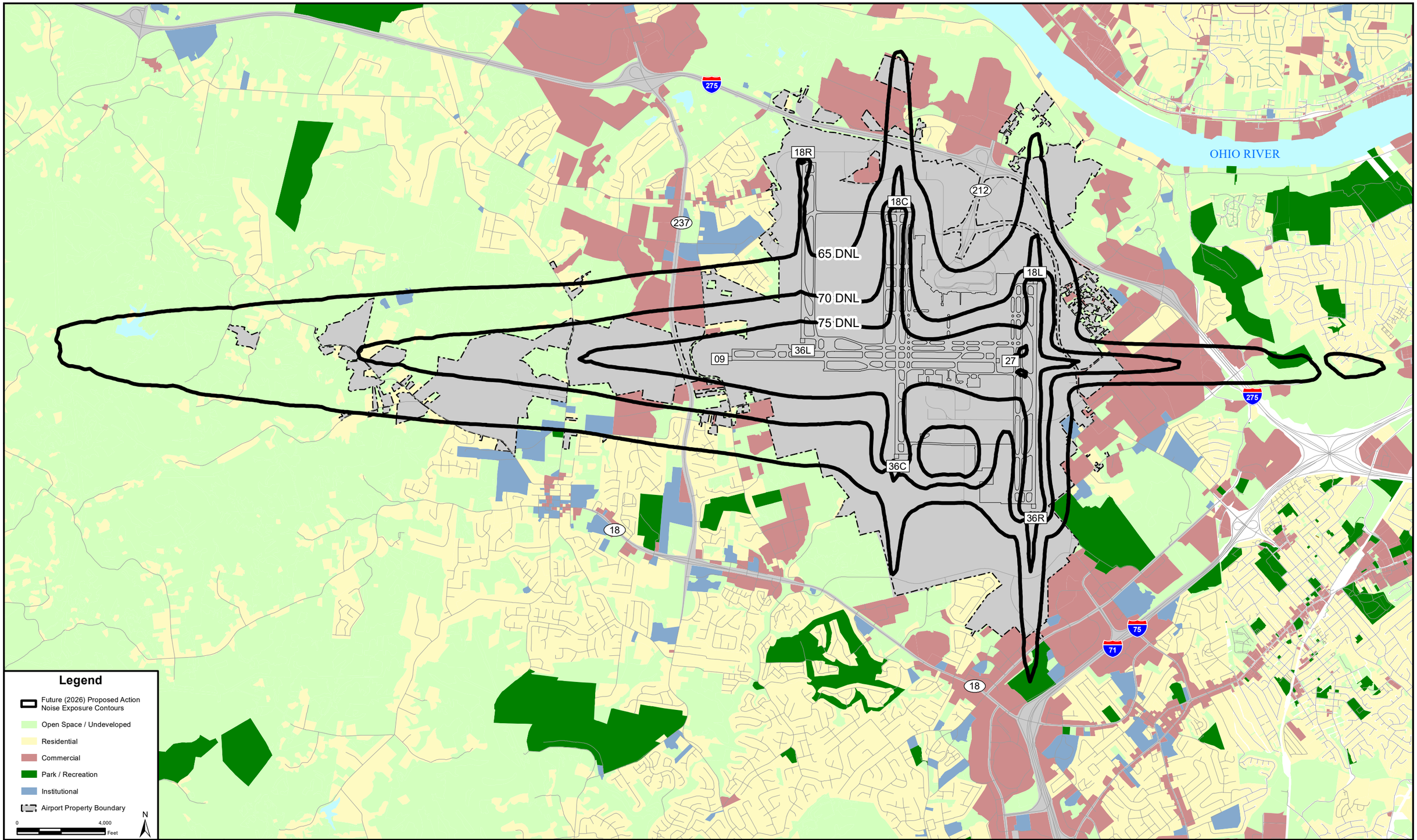
Table 5-16
NEW RESIDENCES AND NOISE-SENSITIVE FACILITIES EXPOSED TO 65 DNL IN THE FUTURE (2026) PROPOSED ACTION NOISE EXPOSURE CONTOUR

NEWLY IN FUTURE (2026) PROPOSED ACTION	65-70 DNL	70-75 DNL	75+DNL	TOTAL
RESIDENCES				
Mitigated[1]	**14**	**0**	**0**	**14**
Unmitigated	**38**	**0**	**0**	**38**
Previously Offered but Refused	2	0	0	**2**
Never Offered Mitigation[2]	36	0	0	**36**
Total	**52**	**0**	**0**	**52**
ESTIMATED POPULATION				
Mitigated[1]	**35**	**35**	**0**	**69**
Unmitigated	**68**	**68**	**0**	**136**
Previously Offered but Refused	5	5	0	**9**
Never Offered Mitigation[2]	63	63	0	**127**
Total	**102**	**102**	**0**	**205**
NOISE-SENSITIVE FACILITIES (NSF)				
Schools	0	0	0	**0**
Churches	0	0	0	**0**
Nursing Homes	0	0	0	**0**
Hospitals	0	0	0	**0**
Libraries	0	0	0	**0**

[1] Residences were mitigated through previous Part 150 Studies conducted by KCAB
[2] Residence was either built after Part 150 mitigation program, never in the 65 DNL of an official Noise Exposure Map, or an ineligible property.

Notes: Population numbers are estimates based on the 2010 U.S. Census average household size per number of housing units.

Source: Landrum & Brown, 2018.



Air Cargo Facility Environmental Assessment

Future (2026) Proposed Action Noise Exposure Contours

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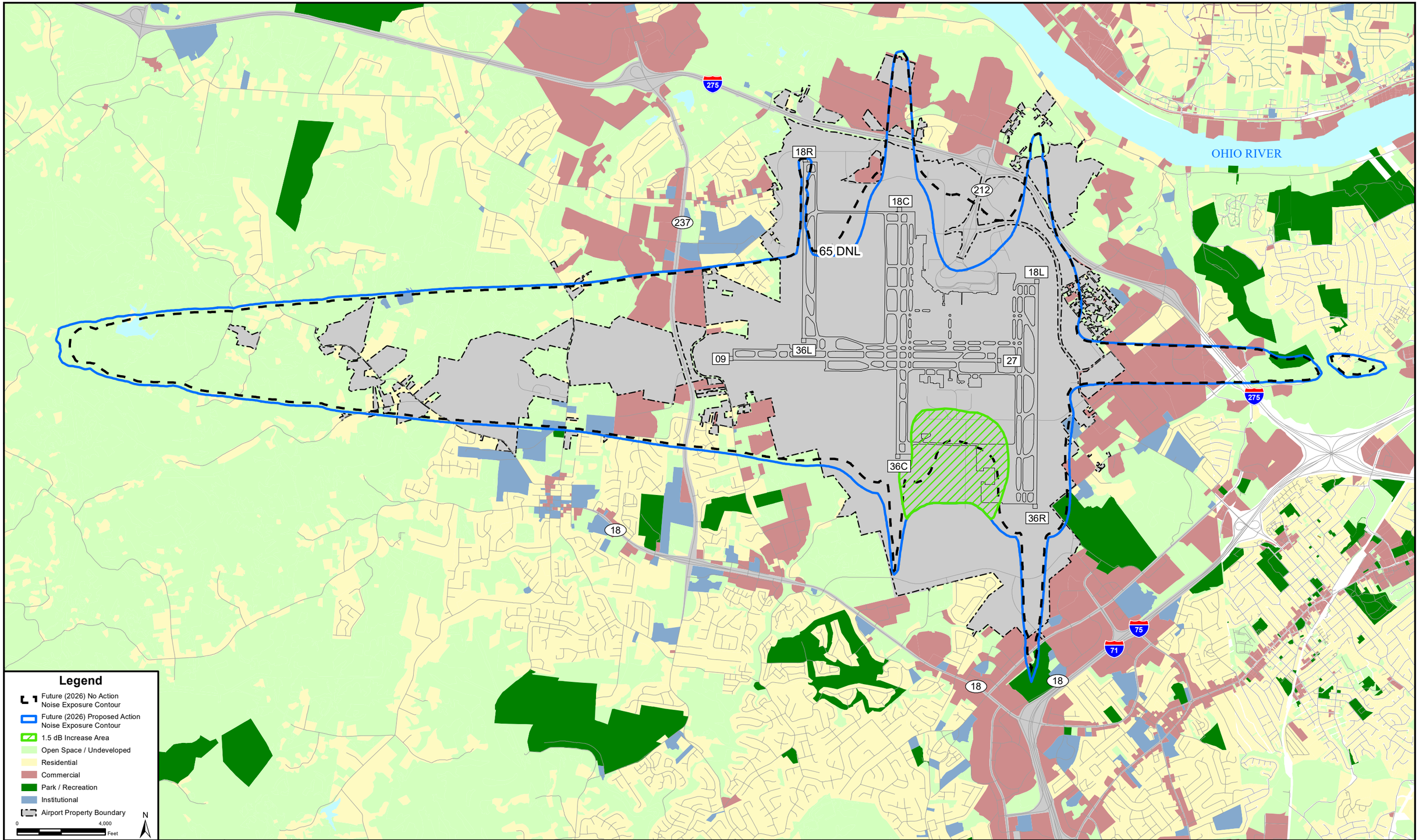

Air Cargo Facility Environmental Assessment

Future (2026) No Action Noise Exposure Contours Compared to Future (2026) Proposed Action Noise Exposure Contours

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Construction

Table 5-17 depicts an estimate of the typical maximum sound level energy from various types of construction equipment that is likely to be used during construction of the Proposed Action. The total sound energy would be a product of a machine's sound level, the number of such machines in service, and the average time they operate.

Construction activities associated with the Proposed Action would result in temporary noise impacts to the residential areas surrounding the DSA. However, major construction activities would be limited to daylight hours. Additionally, noise from construction equipment would likely not be discernible from other background noise sources such as aircraft and roadway noise in most locations.

Table 5-17
CONSTRUCTION EQUIPMENT NOISE

Construction Equipment	Typical Maximum Sound Level (Lmax) in dB(A) at 50 feet
Dump Truck	76
Concrete Mixer Truck	79
Chain Saw	84
Crane	81
Jackhammer	89
Scraper	84
Man Lift	75
Dozer	82
Tractor	84
Paver	77
Roller	80
Generator	81
Impact Pile Driver	101
Rock Drill	81
Pump	81
Pneumatic Tools	85
Backhoe	78

Source: Federal Highway Administration, *Construction Noise Handbook, 9.0 Construction Equipment Noise Levels and Ranges*. Available online at https://www.fhwa.dot.gov/Environment/noise/construction_noise/handbook/handbook09.cfm Accessed May 2018.

5.12.3 MITIGATION, AVOIDANCE, AND MINIMIZATION MEASURES

No significant noise impacts would occur due to the Proposed Action in 2021 or 2026; therefore, no mitigation measures are required. However, in 2026 it is acknowledged that 43 residences may be newly exposed to 65 DNL. Given that the certainty of these impacts is unclear, it is not prudent to offer mitigation at this time. In order to address these potential impacts, KCAB commits to updating the 2006 Part 150 Study Update a full calendar year after opening of the air cargo facility to analyze noise impacts and to determine if updates to the current noise abatement program, including offering mitigation, would minimize impacts to residences in the 65+ DNL contour.

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

This section presents the analysis of potential impacts to socioeconomic impacts, environmental justice impacts, and children's environmental health and safety risks that would occur as a result of the No Action and the Proposed Action.

5.13.1 NO ACTION

Socioeconomic Impacts

Socioeconomic impacts are assessed to determine the effect that the proposed airport development would have on human environment such as population, employment, housing, and public services. The types of socioeconomic impacts that typically arise from airport development are:

- Inducing substantial economic growth in an area, either directly or indirectly (e.g., through establishing projects in an undeveloped area);
- Disrupting or dividing the physical arrangement of an established community;
- Causing extensive relocation when sufficient replacement housing is unavailable;
- Causing extensive relocation of community businesses that would cause severe economic hardship for affected communities;
- Disrupting local traffic patterns and substantially reducing the levels of service of roads serving an airport and its surrounding communities; or
- Producing a substantial change in the community tax base.

Inducing Growth: With or without the development of the new air cargo facility, it is assumed the air cargo service provider would continue to operate at existing facilities and grow at CVG, as described in Chapter 3. As a result, it is anticipated the air cargo service provider would directly employ approximately 2,720 people by 2021 and 4,550 people by 2026 from the surrounding local communities. It is also expected, that indirect economic growth in the surrounding communities would occur to support the operation and the employees.

Disrupting Communities: The No Action would not disrupt or divide an established community. Therefore, no impacts to socioeconomic resources would occur as a result of disruption to an established community.

Relocation of Residences: The No Action would not result in the acquisition or relocation of residential properties. Therefore, no impacts to socioeconomic resources would occur as a result of relocation of residences.

Relocation of Businesses: The No Action would not result in relocation of community businesses located on or off-Airport. Therefore, no impacts to socioeconomic resources would occur as a result of relocation of businesses.

Disruptions of Local Traffic Patterns: The No Action would not result in modifications to off-Airport roadways. However, a reduction in the level of service on roads serving the Airport is expected from the increased traffic from employees and delivery trucks.

Substantial Loss in Community Tax Base: The No Action would not result in a substantial loss in community tax base. Therefore, no impacts to socioeconomic resources would occur as a result.

Environmental Justice

As previously described in the regulatory setting in Chapter Four, Executive Order (EO) 12898, *Federal Actions to Address Environmental Justice in Minority and Low-Income Populations,* requires all federal agencies to address disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority and low-income populations. The EO also directs federal agencies to incorporate environmental justice as part of their overall mission by conducting their programs and activities in a manner that provides minority and low-income populations an opportunity to participate in agency programs and activities.

The USDOT Order 5610.2(a) provides definitions for minority and low income populations:

a. Low-Income means a person whose median household income is at or below the Department of Health and Human Services poverty guidelines.

b. Minority means a person who is:

   (1) Black: a person having origins in any of the black racial groups of Africa;

   (2) Hispanic or Latino: a person of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race;

   (3) Asian American: a person having origins in any of the original peoples of the Far East, Southeast Asia, or the Indian subcontinent;

   (4) American Indian and Alaskan Native: a person having origins in any of the original people of North America, South America (including Central America), and who maintains cultural identification through tribal affiliation or community recognition; or

   (5) Native Hawaiian and Other Pacific Islander: people having origins in any of the original peoples of Hawaii, Guam, Samoa, or other Pacific Islands.

c. Low-Income Population means any readily identifiable group of low-income persons who live in geographic proximity, and, if circumstances warrant, geographically dispersed/transient persons (such as migrant workers or Native Americans) who will be similarly affected by a proposed USDOT program, policy or activity.

d. Minority Population means any readily identifiable groups of minority persons who live in geographic proximity, and if circumstances warrant, geographically dispersed/transient persons (such as migrant workers or Native Americans) who will be similarly affected by a proposed USDOT program, policy or activity.

The EO relates to requirements in Title VI of the *Civil Rights Act of 1964* (Title VI), the NEPA, the *Uniform Relocation Assistance and Real Property Acquisition Policies Act* (Title 49 C.F.R. § 24), and other applicable statutes and regulations. Title VI provides that no person will, on the grounds of race, color, religion, sex, national origin, marital status, disability, or family composition, be excluded from participation in, be denied the benefits of, or be otherwise subject to discrimination under any program of the federal, state, or local government. Title VIII of the *1968 Civil Rights Act* guarantees each person equal opportunity in housing.

FAA Order 1050.1F provides guidance for the preparation of environmental justice analysis in support of an EA. The action would have the potential to lead to a disproportionately high and adverse impact to an environmental justice population, i.e., a low-income or minority population, due to:

- Significant impacts in other environmental impact categories; or
- Impacts on the physical or natural environment that affect an environmental justice population in a way that the FAA determines are unique to the environmental justice population and significant to that population.

Disproportionately high and adverse effect on minority and low-income populations means an adverse effect that:

1. Is predominately borne by a minority population and/or a low-income population; or
2. Will be suffered by the minority population and/or low-income population and is appreciably more severe or greater in magnitude than the adverse effect that will be suffered by the nonminority population and/or non-low-income population.

Based on a review of the direct and indirect effects and the population characteristics of the area around the Airport, no impact category would have significant impacts. Therefore, no impacts to minority or low-income populations would occur under the No Action.

Children's Environmental Health and Safety Risks

EO 13045, *Protection of Children from Environmental Health Risks and Safety Risks,* requires all federal agencies to make it a high priority to identify and assess environmental health risks and safety risks that may disproportionately affect children; and shall ensure that its policies, programs, activities, and standards address disproportionate risks to children that result from environmental health risks or safety risks. No physical development would occur for the No Action. Therefore, no impacts to children's environmental health and safety risks would occur.

5.13.2 PROPOSED ACTION

Socioeconomic Impacts

Inducing Growth: With the development of the new air cargo facility, it is anticipated the air cargo service provider would directly employ approximately 2,720 people by 2021 and 5,120 people by 2026 from the surrounding local communities. The Future (2021) Proposed Action and the Future (2021) No Action have the same number of employees because it is assumed all of the forecasted activity would be accommodated at existing facilities at CVG. The Future (2026) Proposed Action, results in an increase of approximately 285 employees over the Future (2026) No Action. This increase is due to the air cargo facility accommodating all of the forecasted activity, where it was assumed the Future (2026) No Action would not accommodate all of the activity. It is also expected that indirect economic growth in the surrounding communities would occur to support the operation and the employees.

Disrupting Communities: The Proposed Action would not disrupt or divide an established community. Therefore, no impacts to socioeconomic resources would occur as a result of disruption to an established community.

Relocation of Residences: The Proposed Action would not result in the acquisition or relocation of residential properties. Therefore, no impacts to socioeconomic resources would occur as a result of relocation of residences.

Relocation of Businesses: The Proposed Action would not result in relocation of community businesses located on or off-Airport. Therefore, no impacts to socioeconomic resources would occur as a result of relocation of businesses.

Disruptions of Local Traffic Patterns: The Proposed Action, along with other planned development along Aero Parkway, would cause an increase in surface traffic. A Draft Traffic Impact Study (TIS) was prepared to describe and measure the impact of traffic generated by the proposed development on the existing roadway system. The TIS was coordinated with the Kentucky Transportation Council (KYTC), KCAB, Boone County, and the City of Florence. The TIS recommended roadway improvements for potential impacts related to the proposed air cargo facility. These recommendations are included in **Appendix H, *Traffic***. In addition, the State Kentucky and the Ohio Kentucky Indiana Regional Council on Governments (OKI) will be conducting a planning study for the region. With the implementation of the roadway improvements, no impacts to socioeconomic resources would occur as a result of disruptions of local traffic patterns.

The Proposed Action has the potential to change surface vehicle traffic patterns during construction. Standard traffic engineering techniques would be utilized to maintain traffic during construction. However, temporary construction impacts could include increased commercial traffic on neighborhood roads, increased traffic congestion, increased travel distances, and increased travel times for drivers. Normal neighborhood vehicular traffic patterns could also be disrupted if drivers chose to cut-through neighborhoods to avoid congestion induced by construction activities.

A construction management plan would be prepared which, based on the selected contractor(s) haul plan, would specify hours of operation, haul routes, and similar controls. It is expected that such a plan would be consistent with normal contracting practices. It is likely that a contractor would avoid scheduling haul activities during extreme congestion periods or weather conditions because it could increase costs to the contractor and affect the schedule.

During construction, traffic to and from the site would also increase and could potentially result in a reduction in the level of service of the local roadways. The majority of soil hauling would occur within the DSA to achieve the proper grade. A small amount of construction debris and trash removal would occur during construction and Wendell Ford Boulevard and Aero Parkway would be used for the hauling. To mitigate this potential impact, traffic on local roadways would be maintained during construction activities through the use of flaggers, arrow boards, and traffic control devices in order to reduce any potential congestion on the roads.

Substantial Loss in Community Tax Base: The Proposed Action would not result in a substantial loss in community tax base. The Proposed Action has the potential to increase the community tax base. Therefore, no adverse impacts to socioeconomic resources would occur as a result.

Environmental Justice

Under the Proposed Action, no significant or disproportionate impacts would be expected to occur to minority or low-income populations. As stated in Chapter Four, the AEDT did not identify census block groups composed of minority populations and/or 50 percent or more low income populations within the GSA. Therefore, potential indirect impacts from the Proposed Action would not disproportionately affect any one area and no significant environmental justice impacts would occur.

Children's Health and Safety Risks

Implementation of the Proposed Action would not be expected to create environmental health risks or safety risks for any persons, regardless of age. Therefore, there would be no potential significant impact to children's environmental health and safety under the Proposed Action.

5.13.3 MITIGATION, AVOIDANCE, AND MINIMIZATION MEASURES

The TIS being prepared for the Proposed Action will recommend roadway improvements for potential impacts to the local roadways as appropriate.

5.14 VISUAL EFFECTS

This section presents the analysis of potential visual effects, including impacts related to light emissions and visual resources and visual character, as a result of the No Action and the Proposed Action. Visual effects include the extent to which a proposed action would produce light emissions that create annoyance or interfere with activities, or contrast with, or detract from, the visual resources and/or the visual character of the existing environment.

Per FAA Order 1050.1F, light emission impacts are typically related to; the extent to which any lighting or glare associated with the proposed action or alternative(s) would create an annoyance for people in the vicinity; would interfere with their normal activities including work and recreation; or would contrast with or detract from the visual resources and/or the visual character of the existing environment. Visual resources include buildings, sites, traditional cultural properties, and other natural or manmade landscape features that are visually important or have unique characteristics. Visual character refers to the overall aesthetics of the existing landscape.

There are no federal special purpose laws or requirements specific to light emissions and visual effects although other special purpose laws, such as the NHPA or Section 4(f) of the USDOT Act have specific provisions for visual impacts to protected resources. In order to determine the potential visual effects, the Proposed Action conditions are compared to the No Action conditions to determine if there is a potential for annoyance and adverse impacts.

5.14.1 NO ACTION

Light Emissions

There would be no change to light emissions for the No Action.

Visual Resources and Visual Character

There would be no change to the existing visual resources or visual character for the No Action.

5.14.2 PROPOSED ACTION

Light Emissions

The Proposed Action would include development that would increase light emissions from the illumination of the proposed new buildings and parking areas. The potential lighting sources that could impact the closest residential area would be located in the parking lots and security lighting on the buildings. The parking lot lights would be directed at a downward angle and therefore would not impact the residences. The security lighting would illuminate the immediate area surrounding the building and would also be shielded or directed at angles that would not cause lighting impacts to the residences. Light emissions during the construction

of the Proposed Action are not anticipated to cause any impact to the surrounding areas as most of the construction would occur during daytime hours. No significant increase in light intensity is expected to occur within residential areas due to: Aero Parkway and tree lines separating the proposed air cargo facility from residences (located approximately 550 feet to the south of the DSA) and the existing light emissions in the vicinity of the Proposed Action sites. Therefore, no significant impacts from light emissions would occur.

Visual Resources and Visual Character

As previously discussed, the DSA is located on the southern edge of the Airport in a predominantly commercial area. The Proposed Action would not affect the nature of the visual character of the area have the potential to contrast with the visual character, or to block/obstruct views of visual resources. In addition, Aero Parkway and a tree line separate the residences from the development. Therefore, the visual character would not change from the No Action and would not result in a significant impact.

5.14.3 MITIGATION, AVOIDANCE, AND MINIMIZATION MEASURES

The Proposed Action does not exceed the applicable thresholds of significance for light emissions, visual resources, or visual character. Therefore, no mitigation measures are required. However, angular adjustments would be made to lighting to direct light at appropriate angles to minimize potential light impacts to the closest residences.

5.15 WATER RESOURCES

This section presents the analysis of potential impacts to water resources as a result of the No Action and the Proposed Action.

5.15.1 NO ACTION

Wetlands / Streams

No physical development would occur for the No Action. Therefore, no impacts to wetlands would occur.

Floodplains

No physical development would occur for the No Action. Therefore, no impacts to floodplains would occur.

Surface Waters

No physical development would occur for the No Action. Therefore, no impacts to the Gunpowder Creek watershed would occur.

Groundwater

No physical development would occur for the No Action. Therefore, no impacts to groundwater would occur.

5.15.2 PROPOSED ACTION

Wetlands/Streams

As discussed in Chapter Four, field surveys were conducted in the DSA. The Proposed Action would result in wetland and streams within the DSA being impacted through filling or culverting. **Table 5-18** details the impacts on wetlands and streams from the Proposed Action for the air cargo facility at CVG.

Table 5-18
WETLAND AND STREAM IMPACTS

Stream		
	Linear Feet	**Acreage**
Ephemeral	12,698	NA
Intermittent	42,710	NA
Perennial	3,655	NA
Total	**59,063**	**NA**
Wetland		
	Linear Feet	**Acreage**
Palustrine Emergent Wetland (PEM)	NA	8.78
Palustrine Scrub-Shrub Wetland (PSS)	NA	0.08
Palustrine Forested Wetland (PFO)	NA	0.51
Palustrine Unconsolidated Bottom Wetland (PUB)	NA	0.27
Pond	NA	0.89
Total	**NA**	**10.53**

Source: Environment and Archaeology, 2018

Implementation of the Proposed Action would not result in significant impacts to wetlands and streams because compensatory mitigation will be provided. A detailed compensatory mitigation plan would be required to obtain the necessary authorizations to construct the Proposed Action. With implementation of a mitigation plan to compensate for the losses of wetland and streams resulting from the construction of the Proposed Action, the environmental impact of the Proposed Action would not be significant. The Proposed Action would impact approximately 12,698 linear feet of ephemeral streams, 42,710 linear feet of intermittent streams and 3,655 linear feet of perennial streams. In addition, 10.53 acres of wetland would be impacted. Coordination with the U.S. Army Corps of Engineers (USACE) and Kentucky Division of Water (DOW) is underway to obtain the appropriate permits per the U.S. Clean Water Act and identify mitigation requirements. All permit and mitigation conditions would be met; therefore, no significant impacts would occur to wetlands and streams. Section 5.15.3 outlines detailed mitigation measures for the impacts to the streams and wetlands.

In order for the USACOE to issue a CWA permit, the proposed activity must comply with the CWA Section 404 (b) (1) Guidelines. As discussed in Chapter Three, *Alternatives*, the other two alternative sites do not meet the project purpose; therefore they are considered not practicable. As no other alternative site was determined practicable, the Proposed Action is identified as the least environmentally damaging practicable alternative that meets the overall purpose of the proposed project. Implementation of the Proposed Action would meet the requirements of EO 11990 *Protection of Wetlands and* DOT Order 5660.1A *Preservation of the Nation's Wetlands*, because there is no less environmentally damaging practicable alternative to constructing the proposed project than the Proposed Action.

Floodplains

The Proposed Action would include development within the 100-year floodplain. As discussed in Chapter Two, *Purpose and Need*, and Chapter Three, *Alternatives* no other alternative sites meet the project purpose. Therefore, it is not practicable to implement the Proposed Action without constructing in an area currently in the 100-year floodplain. Although avoidance and minimization was incorporated into the project design, complete avoidance of floodplain impacts is not practical due to the air cargo facility design and layout that is dictated by the air cargo service provider's business model.

The Proposed Action would impact approximately 13 acres of a 100-year floodplain designated Zone AE[28]. However, these impacts would not be significant and would not result in: 1) a considerable probability of the loss of human life; 2) likely future damage associated with the encroachment that could be substantial in cost or extent, including interruption of service or loss of vital transportation facility; or 3) a notable adverse impact on natural and beneficial floodplain values. Design measures considered to minimize floodplain encroachments may include special flood related design criteria, elevating facilities above base flood levels, locating nonconforming structures and facilities out of the floodplain, or minimizing fill placed in floodplains. The air cargo facility would include a storm sewer to collect runoff from upstream areas and bypass it around the development to the existing outfall under Aero Parkway. However, if floodplain modeling conducted during final design indicates the proposed development has the potential to impact downstream elevations, the storm sewer would be tied into one of the detention facilities to provide further peak flow attenuation upstream of the outfall. As a result, this encroachment would not be significant.

Floodplain Management coordination would be required for the construction of the Proposed Action. The DOW requires permitting and documentation for a determination of compliance with state laws and regulations and of the effects of the project on the floodway and the flooding of the stream.

Surface Waters

The construction and implementation of the Proposed Action would result in impacts to surface waters. New detention facilities and outfalls are proposed for the development to provide post-construction stormwater quantity and quality control for stormwater runoff, in accordance with Northern Kentucky Sanitation District No. 1 (SD1) stormwater regulatory requirements for new and redevelopment. Although a majority of the DSA currently drains to the CVG Southwest Detention Facility, the existing detention facility does not have sufficient capacity to manage flows from the Proposed Action.

Separate stormwater management facilities are proposed for the western majority of the DSA and the southeastern portion of the DSA, based on the proposed drainage divide. The proposed detention basins would reduce post-construction stormwater discharge rates in accordance with SD1 stormwater quantity control requirements. These include restricting post-development discharge rates to less than pre-development runoff rates for the 2, 10, 25, 50, and 100-year design storms. Additionally, the 2-year storm post-development discharge rate would be controlled to meet SD1's "$Q_{critical}$" criteria, which is intended to protect the downstream receiving water from potentially erosive flows.

[28] Zone AE is an area inundated by the 1 percent annual chance flooding event.

The proposed detention basins would also reflect the following additional design features and characteristics to comply with SD1 requirements for stormwater quantity control and quality control basins (dry extended detention basins), as well as FAA requirements for managing hazardous wildlife attractants:

- Maximum 48-hour drawdown time with no standing water, steep side slopes, and vegetation that minimizes attraction of wildlife, to comply with FAA criteria.
- Steep side slopes that are coordinated between SD1 and FAA requirements.
- Incorporation of an internal berm if needed to satisfy SD1 requirements for a 3:1 length to width ratio and FAA requirements for a narrow, linearly shaped basin.
- Access road and ramp into basin, with paved low flow channel to facilitate sediment removal and maintenance.

West Detention Basin: The West Detention Basin is proposed to meet SD1 requirements for stormwater runoff from the western majority of the air cargo facility that would drain to Gunpowder Creek. It would serve approximately 500 acres of development, including the sortation building, the aircraft apron, ground support equipment (GSE) landside and airside facilities, and adjacent development. The basin would discharge stormwater to a new outfall at Gunpowder Creek.

The West Detention Basin is proposed to be an unlined, open surface detention basin with a footprint of approximately 11 acres and a detention capacity of 44 million gallons. The basin capacity is subject to change based on final modeling in the design process and regulatory review by SD1. The West Detention Basin would discharge to a new outfall that drains into Gunpowder Creek. The outfall would include the following design features:

- Emergency overflow spillway on top of basin berm;
- Piped outlets from basin multi-stage outlet structure;
- Paved apron with baffles or other energy dissipation features to reduce velocities and potential for stream erosion;
- Paved or riprap spillway channel routing flows from all basin outlets to stream; and
- Riprap or other erosion control and channel protection within stream at channel outlet.

The outfall channel would be constructed along the existing slope north of the proposed detention basin. The channel would be oriented in a northwesterly direction to align flows with existing stream flows in Gunpowder Creek to the extent possible and reduce the potential for erosion along the opposite stream bank. As previously noted, erosion control features may need to be installed within Gunpowder Creek at the outfall tie-in point, potentially both above and below the high-water mark, and on both sides of the stream. The precise placement and extent of these features would be determined based on the results of stream erosion control modeling (associated with the $Q_{critical}$ criteria) and SD1 coordination.

Deicer would be collected from the aircraft apron and conveyed to West Detention Basin. The aircraft apron would be divided into four areas, each segregated individually based on deicer concentration. Low concentration deicer would be treated using an aerated gravel bed (AGB). High concentration deicer would be treated using an anaerobic fluidized bed reactor (AFBR). Effluent from the treatment systems would discharge to the stormwater detention basin.

Southeast Detention Basins: The Southeast Detention Basins are proposed to meet SD1 requirements for stormwater runoff from the southeastern portion of the DSA. These basins would discharge to the south through existing culverts under Aero Parkway, which drain to Powder Creek, a tributary of Gunpowder Creek. It would serve approximately 100 acres of development, including the area south of the sortation building and east of the apron, and a portion of the relocated Wendell Ford Boulevard. The basin would discharge stormwater to one of the two existing outfalls north of Aero Parkway to remain consistent with pre-development conditions to the extent possible, supporting regulatory requirements.

Several basins would be required to manage the post-construction stormwater flows. The Southeast Detention Basins are proposed to be unlined, open surface detention basin with a detention capacity of approximately 10 million gallons. The basin capacity is subject to change based on final modeling in the design process and regulatory review by SD1. The proposed basins would discharge to one of the two existing outfalls along Aero Parkway.

Permitting

SD1 requires a Land Disturbance Permit to demonstrate compliance with post-construction stormwater management requirements (for quantity and quality control) in SD1's *Storm Water Rules and Regulations* document and *Storm Water Best Management Practices Manual.* A Grading Permit can be acquired to allow grading activities to proceed in advance of the Land Disturbance Permit.

The new outfalls would require permit coverage under Kentucky Department of Environmental Protection's (KYDEP) National Pollutant Discharge Elimination System (NPDES) [29] permitting program for stormwater discharges associated with industrial activity. The permit may establish water quality based effluent limits for select parameters based on the results of a reasonable potential analysis that examines the potential for exceedance of state water quality standards. Limits may include parameters associated with deicing activities (e.g., chemical oxygen demand) to protect in-stream levels of dissolved oxygen.

Depending on the final height of the basin berm, the West Basin may trigger classification as a dam by the DOW (berm height of at least 25 feet above existing grade, or storage capacity of at least 50 acre-feet above existing grade). Coordination will occur with DOW during the design to confirm if a permit will be required.

Groundwater

The DSA is in a well-developed area with public water available. As noted in Chapter Four, Affected Environment, there are no drinking water wells or agricultural wells within a one-mile radius of the DSA. Construction and operation of the proposed development would abide by all applicable regulations related to spill prevention and control regulations to prevent spills from causing significant adverse impacts to groundwater. Therefore, no significant impacts to groundwater are anticipated.

[29] Clean Water Act, Section 402, National Pollutant Discharge Elimination System permit.

5.15.3 MITIGATION, AVOIDANCE, AND MINIMIZATION MEASURES

KCAB has initiated securing the anticipated compensatory mitigation requirement through the purchase of credits from the Northern Kentucky University (NKU) In-Lieu Fee (ILF) Payment Program and the Kentucky Department of Fish and Wildlife Resources (KDFWR). Jurisdictional waterbody impacts (wetlands) would require a 2:1 mitigation ratio. Perennial stream impacts for poor quality streams require a 1.5:1 ratio and a 3:1 ratio for excellent streams. Poor quality intermittent stream impacts require a 1:1 ratio and average quality intermittent stream impacts require a 1.5:1 ratio. Ephemeral streams would require a 0.5:1 ratio. The ILF Payment Program requires an increase of 20 percent for temporal loss. Therefore, the mitigation units require a 20 percent increase. Wetland impacts are rounded to the nearest tenth of an acre. The mitigation requirements for Proposed Action are shown in **Table 5-19**.

Table 5-19
MITIGATION REQUIREMENTS FOR WETLAND AND STREAM IMPACTS

WATERBODY	AMOUNT (ACRE/LINEAR FT.)	QUALITY	RATIO	IN-LIEU FEE	ADJUSTED MITIGATION UNITS (AMU)
Wetlands (all types)[1]	10.53 acres		2:1	1.2	25.3 acres
Perennial Stream	3,038 linear ft.	Poor	1.5:1	1.2	5,468 linear ft.
Perennial Stream	617 linear ft.	Excellent	3:1	1.2	2,221 linear ft.
Intermittent Stream	1,524 linear ft.	Average	1.5:1	1.2	2,743 linear ft.
Intermittent Stream	41,186 linear ft.	Poor	1:1	1.2	49,423 linear ft.
Ephemeral Stream	12,698 linear ft.	Poor	0.5	1.2	7,619 linear ft.
Total Wetland	**10.53 acres**				**25.3 acres**
Total Stream	**59,063 linear ft.**				**67,474 linear ft.**

[1] Jurisdictional waters of the U.S.

Source: Environment & Archaeology, LLC

Based on the initial conversations with NKU and KDFWR, credits are available for purchase and KCAB initiated final negotiations with NKU and KDFWR.

Stormwater facilities would meet all applicable state and local regulations and stormwater discharges would comply with the terms of the Kentucky Pollution Discharge Elimination System (KPDES). A KPDES permit would be obtained. Best Management Practices (BMPs) would be incorporated into the construction. Contractors would be required to comply with all applicable federal, state, and local laws and regulations, including FAA guidance contained in AC 150/5370-10G, *Standards for Specifying Construction of Airports*, including Item P-156 Temporary Air and Water Pollution, Soil Erosion and Siltation Control; AC 150/5320-15A *Management of Airport Industrial Waste*; and AC 150/5320-5D, *Subsurface Drainage Design*.

5.16 CUMULATIVE IMPACTS

This section describes the past, present, and reasonably foreseeable future actions relevant to cumulative impacts. The analysis of cumulative impacts recognizes that while the impacts of individual actions may be small, when combined with the impacts of past, present, and reasonably foreseeable future actions on populations or resources in and around CVG, the impacts could be potentially significant.

Cumulative impacts are defined by the CEQ in 40 C.F.R. § 1058.7 as: "The impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions." Additionally, the CEQ further explained in *Considering Cumulative Effects under the National Environmental Policy Act* that "each resource, ecosystem, and human community must be analyzed in terms of its ability to accommodate effects, based on its own time and space parameters." Therefore, a cumulative effects analysis normally will encompass geographic boundaries beyond the immediate area of the Proposed Action, and a time-frame, including past actions and foreseeable future actions, in order to capture these additional effects.

The evaluation of cumulative impacts in this EA considers the past, present, and reasonably foreseeable future projects or actions undertaken by KCAB and other parties such as Boone County.

5.16.1 DEFINING THE CUMULATIVE IMPACT STUDY AREA AND TIMEFRAMES

For the purposes of this EA, other projects at the Airport or projects within the GSA as shown in Exhibit 4-1 will be considered to be within the overall Cumulative Impact Study Area. The FAA 1050.1F Desk Reference Section 15.2 states "*The study area for cumulative impacts analysis is the same area defined for a project's direct and indirect impact analysis. Thus, the study area will be different for each impact category.*" The Cumulative Impact Study Area(s) is consistent with the FAA 1050.1F Desk Reference using the DSA and the GSA and the specific study areas identified in Chapter Four, *Affected Environment* for each resource category.

The projects to be included in the Cumulative Impact analysis were identified through coordination with the KCAB, Boone County, Kenton County, City of Florence, City of Burlington, and the City of Hebron. The past actions are defined as those that were completed within the last five years from 2013 to 2018. Present actions are any other actions that are occurring in the same general timeframe as the proposal. Present actions for this EA are defined as those completed in 2018 or where construction is ongoing. Reasonably foreseeable future actions are actions that may affect projected impacts of a proposal and are not remote or speculative. Reasonably foreseeable future actions are defined as those planned to be completed between 2019 and 2024. This window of time represents a timeframe that is long enough to identify potential follow on impacts, yet near enough that realistic predictions of projects and impacts can be made. Potential projects beyond 2024 would be considered speculative. This section identifies those past, present, and reasonably foreseeable future projects.

5.16.2 PAST ACTIONS

Past actions that have occurred within the past five years in the Cumulative Impact Study Area are identified in **Table 5-20**.

Table 5-20
PAST ACTIONS

PROJECT NAME	LOCATION	DESCRIPTION	CURRENT STATUS
Interchange modification of Mall Road and I-75	Florence, KY	Add a southbound on-ramp to I-75	Completed
Single point urban interchange	Burlington, KY	Intersection of KY18 & KY237	Completed
Demolition of Terminal 1 & 2	Airport property	Demolition of Terminals 1 & 2	Completed
Development of non-aeronautical land	Airport property	Commercial development	Completed
A-One Pallet	Florence	Grading and concrete	Completed
Logistics One Tenant Improvements	Florence	Parking lot, fence sidewalk & guard house	Completed
Proposed Mattress Firm	Florence	5,004 square foot building	Completed
United Installs	Erlanger	14,988 square foot office and warehouse	Completed
Mubea	Florence	2 New Buildings - 119,416 square feet	Completed
Steve Greis RV & Boat Storage	Hebron	Boat & RV Storage	Completed
Team EPS Site Plan	Hebron	New building, parking area	Completed
James Sebree Site	Hebron	Storage building	Completed
Logistics One-CVG Lot 6A	Florence	Grading only	Completed
O'Reilly Auto Parts	Burlington	New building	Completed
AAA Cooper Transportation	Burlington	Office/Warehouse	Completed
US 25 Industrial Park Lot 10	Florence	Office with docks and parking	Completed
CVG-9 Parking Expansion	Hebron	Parking lot expansion	Completed
Meggitt Parking Lot Addition	Erlanger	Concrete Pad	Completed
Airpark International, Lot 26	Hebron	142,030 square foot distribution center	Completed
Fairways at Meadowood Ph C	Burlington	57 Units/14 Buildings/11 Acres	Completed
Logistics One at CVG	Florence	541,20 square foot building	Completed
Reigler Office	Florence	New office	Completed
Dominion Development	Florence	Office building	Completed
Anderson Contracting Point Pleasant	Hebron	Proposed warehouse	Completed

Table 5-20, *Continued*
PAST ACTIONS

PROJECT NAME	LOCATION	DESCRIPTION	CURRENT STATUS
Tente Casters	Hebron	16 space parking addition	Completed
Bluestar Building Addition	Hebron	Building addition	Completed
Brass Tap	Florence	New Building	Completed
Victory Lane Oil Change	Florence	Addition to building, parking lots	Completed
Litton Lane Parking Expansion	Hebron	Parking expansion	Completed
AutoZone #6094	Burlington	New building and parking	Completed
Point Pleasant Church of Christ	Hebron	New building and parking addition	Completed
CVG Site 6B East	Florence	Construction of industrial building	Completed
Tanner's Cove	Hebron	15 lots using approved plan	Completed
United Conveyor & Machinery	Hebron	Construction of 3,000 square foot building	Completed
Dunkin Donuts	Florence	2,150 square foot restaurant w/drive-thru	Completed
Cube-It Self Storage	Hebron	Self-storage buildings	Completed

Source: KCAB; https://transportation.ky.gov/Planning/Planning%20Studies%20and%20Reports/IMR%20Mall%20Road%20-%20Executive%20Summary.pdf

5.16.3 PRESENT ACTIONS

Present actions that are ongoin g in the Cumulative Impact Study Area are identified in **Table 5-21**.

Table 5-21
PRESENT ACTIONS

PROJECT NAME	LOCATION	DESCRIPTION	CURRENT STATUS
KY237	Hebron, KY	Add lanes	Under construction
Veterans Way	Burlington, KY	Two lane extension between KY 18 and KY 237	Under construction
Intersection of Idlewild Road and Jefferson Street	Burlington, KY	Sidewalk & realign Intersection	Under construction
Burlington Sanitary Sewer Project	Burlington, KY	Replace sanitary sewer on Allen Fork Creek between Rogers Ln & SD1 pump station off Orient St.	Completed March 2018
Lynx Hangar Development	Airport property	Aircraft maintenance hangar	Under construction
CVG CONRAC	Airport property	Construction of consolidated rental car facility	Under construction
Logistics One	Florence, KY	Construction of 540,000 square foot building	Under construction
Dominion Development	Florence, KY	Construction of office building	Under construction
Evergreen Apartments	Florence, KY	Construction of 90 townhome units	Under construction
Mineola Concrete Plant	Erlanger, KY	Demo, clearing & grading of site for concrete plant	Under construction
Whitestone Links	Florence, KY	106,652 square foot building	Under construction
Kona Ice	Florence, KY	Storage buildings	Under construction
Menards	Florence, KY	Proposed Menards Store	Under construction
Fairfield Inn & Suites	Florence, KY	4-Story Hotel	Under construction
Tru By Hilton	Florence, KY	Site development	Under construction
StoryPoint	Union, KY	Building, parking & utilities	Under construction
Central Bank	Union, KY	2,786 square foot bank	Under construction
Holiday Inn Express & Suites	Florence, KY	Proposed 90 room hotel with 107 parking spaces	Under construction

Table 5-21, *Continued*
PRESENT ACTIONS

PROJECT NAME	LOCATION	DESCRIPTION	CURRENT STATUS
Rider's Automotive	Florence, KY	New building	Under construction
St. Henry District H.S. Fine Arts	Erlanger, KY	29,845.6 square foot building	Under construction
Boonus, LLC/HBC Radiomatic	Hebron, KY	11,000 square foot building addition	Under construction
Panera Bread and Retail Shell	Union, KY	7,522 square foot building with parking	Under construction
Staybridge Inn & Suites	Florence, KY	70,436 square foot hotel	Under construction
Verizon Retail Store	Florence, KY	Proposed Verizon Retail Store	Under construction
Union Connection	Union, KY	Construct a 21,327 square foot of two buildings	Under construction
Best Way Transfer Station	Burlington, KY	Solid waste station with weigh station and driveway	Under construction
Faithful Friends Site Plan	Hebron, KY	New building 1800 square foot & parking	Under construction
Quality Inn & Suites Parking Lot Ad	Erlanger, KY	Construction of parking lot	Under construction
CVG Site 6B West Logistics Three	Florence, KY	Grading & erosion control for future building construction	Under construction

Source: KCAB; https://www.boonecountyky.org/document_center/PlanningCommission/FutureRoadProjects.pdf; http://www.sd1.org/Projects/SD1ProjectsinBooneCounty.aspx

5.16.4 REASONABLY FORESEEABLE FUTURE ACTIONS

Reasonably foreseeable future actions that may occur within the next five years in the Cumulative Impact Study Area are identified in **Table 5-22**.

Table 5-22
REASONABLY FORESEEABLE FUTURE ACTIONS

PROJECT NAME	LOCATION	DESCRIPTION	CURRENT STATUS
Pleasant Valley Road	Florence, KY	Extension from Valley View Drive to Rogers Ln	Anticipated in the next five years
Add Auxiliary Lanes on I-75	Mt Zion Road to U.S. 42	Design and right-of-way are underway.	Anticipated in the next five years
Improve Safety on KY 717 (Turfway Road)	Florence, KY	Change 90-degree turn.	Anticipated in the next five years
Extend Multi-Use Path from Stephens Elementary	Burlington, KY	Along KY 237 to KY 20 and Cougar Path, County Project, SNK Funds, 2019 Bid Date	Anticipated in the next five years
Extend Center Turn Lane on Ted Bushelman Boulevard	Florence, KY	From Doering Drive to Aero Parkway, Airport Project, SNK Funds, Hiring Engineer	Anticipated in the next five years
Construct Sidewalk & Multi-Use Path on Dolwich Drive	Erlanger, KY	From Mineola Pike to I-275, Erlanger Project, SNK Funds, 2019 Bid date	Anticipated in the next five years
CVG Common Use Cargo Facilities	Airport property	Construction of cargo hangars	Anticipated in the next five years
DHL South Airfield Development	Airport property	Development of a new cargo distribution building, apron expansion, employee parking lot, at the DHL facility on the southeast side of CVG property	Anticipated in the next five years
Development of non-aeronautical land	Airport property	Commercial development	Anticipated in the next five years
NEPA Document to Change the ATCT Tower Order	Airport property	NEPA document to analyze the potential impacts due to changes in the Tower Order runway use directives. This NEPA document would incorporate measures OP-17 and OP-19 from the 2006 Part 150 Study.	Anticipated in the next five years
United Installs Detention Pond (Wall)	Erlanger, KY	Site plan	Anticipated in the next five years
Airpark International, Lot 25	Hebron, KY	Site plan	Anticipated in the next five years
Reladyna Site Improvements	Hebron, KY	Site plan	Anticipated in the next five years
Obara Corp Manufacturing	Florence, KY	Building addition	Anticipated in the next five years
Anderson Manufacturing	Hebron, KY	32,160 square foot building	Anticipated in the next five years

Source: KCAB; https://www.boonecountyky.org/document_center/PlanningCommission/FutureRoadProjects.pdf

5.16.5 CUMULATIVE IMPACT COMPARISON

Cumulative impacts must be evaluated relative to the direct and indirect effects of the Proposed Action for each environmental category. Significant cumulative impacts are determined according to the same thresholds of significance used in the evaluation of each environmental category in the environmental consequences discussion.

For environmental resources where construction and implementation of the Proposed Action would have no environmental impact, there is no potential for an adverse cumulative environmental impact to occur. Therefore, the following discussion of cumulative impacts discusses only those environmental categories where environmental impacts could result from implementation of the Proposed Action. Those categories are: air quality; biological resources; historic architectural, archeological, and cultural resources; noise and noise-compatible land use; traffic impacts; and water resources.

5.16.5.1 Air Quality

As discussed in Section 5.4, *Air Quality*, the increase in emissions due to construction and implementation of the Proposed Action would not exceed the applicable thresholds and are therefore not significant. Construction activities associated with the Proposed Action would result in temporary emissions from construction equipment, trucks, and fugitive dust emissions from site demolition and earthwork. The impacts would occur within the immediate vicinity of the construction site and would be mitigated through best management practices to reduce emissions, particularly fugitive particle emissions, during construction

While the Proposed Action would contribute to the cumulative emissions of air pollutants in Boone County, the cumulative effect of the net air emissions would not cause or contribute to any new violation of the NAAQS, would not increase the frequency or severity of an existing violation, and would not delay timely attainment of any standard. Therefore, the cumulative impact on air quality is not significant.

5.16.5.2 Biological Resources

As discussed in Section 5.5, *Biological Resources*, the Proposed Action would result in impacts to the Indiana bat and the northern long-eared bat due to the removal of 244 acres of habitat for the full build out of the air cargo facility. Through formal ESA Section 7 consultation with the USFWS suitable mitigation options, including mitigation through payment into the IBCF were determined.

Implementation of the Proposed Action combined with the implementation of one or more of the past, present, and reasonably foreseeable future actions would not result in a cumulative impact to biological resources because each of these projects is required to have their own protective measures to avoid, minimize, and provide habitat compensation during implementation of their project. Therefore, implementation of the Proposed Action, when combined with other past, present, or reasonably foreseeable projects would not result in significant adverse impacts to biological resources.

5.16.5.3 Historical, Architectural, Archeological, and Cultural Resources

As discussed in Section 5.9, *Historical, Architectural, Archeological, and Cultural Resources*, the Proposed Action would result in adverse impacts to three historical resources. Through formal Section 106 consultation and development of an MOA with the KHC, suitable mitigation options were agreed upon.

Implementation of the Proposed Action combined with the implementation of one or more of the past, present, and reasonably foreseeable future actions would not result in a cumulative impact to historical, architectural, archeological, and cultural resources because each projects would be required to adhere to measures to avoid, minimize, and provide mitigation during implementation of their project. Therefore, implementation of the Proposed Action, when combined with other past, present, or reasonably foreseeable projects would not result in significant adverse impacts to historical, architectural, archeological, and cultural resources.

5.16.5.4 Noise and Noise-Compatible Land Use

As discussed in Section 5.12, *Noise and Noise-Compatible Land Use*, the Proposed Action would not result in significant noise increases, defined as an increase of 1.5 dB or more within the DNL 65 dB contour over noise sensitive land uses. However, additional residences would be located within the +65 DNL contour. However, this is not considered a significant impact. A noise impact would be considered to be significant if there were an increase of 1.5 decibel (dB) or more over noise-sensitive facilities within the 65 DNL contour when comparing the No Action and Proposed Action of the same corresponding year.

Implementation of the Proposed Action combined with the implementation of one or more of the past, present, and reasonably foreseeable future actions would not result in a cumulative impact to noise and noise-compatible land uses because each project with a significant impact due to noise is required to have their own mitigation measures to minimize impacts during implementation of their project. Therefore, implementation of the Proposed Action, when combined with other past, present, or reasonably foreseeable future projects would not result in significant adverse impacts to noise and noise-compatible land uses.

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

As discussed in Section 5.13, *Socioeconomics, Environmental Justice, and Children's Health and Safety Risks*, the Proposed Action would result in disruptions to local traffic patterns. Through consultation with the local jurisdictions and traffic agencies, mitigation measures will be recommended to reduce impacts when the Proposed Action is implemented.

Implementation of the Proposed Action combined with the implementation of one or more of the past, present, and reasonably foreseeable future actions would not result in a cumulative traffic impact, because the TIS prepared for this EA included the other roadway projects into the traffic analysis. Therefore, implementation of the Proposed Action, when combined with other past, present, or reasonably foreseeable future projects would not result in significant adverse traffic impacts.

5.16.5.6 Water Resources

As discussed in Section 5.15, *Water Resources*, the Proposed Action would result in impacts to streams and wetlands located in the DSA. Coordination with the USACE has determined that a permit under Section 404 of the CWA would be required for construction of the Proposed Action. Permitting under Section 401 of the CWA would also be required for the Proposed Action. Furthermore, a NPDES permit would need to be obtained.

The storage volume necessary to attenuate the 100-year onsite surface water flows due to the Proposed Action would be met through the construction of on-site detention basins. As a result, the proposed detention basins would provide a cumulatively beneficial impact.

Implementation of the Proposed Action combined with the implementation of one or more of the past, present, and reasonably foreseeable future actions would not result in a cumulative impact to water resources because each of these projects is required to have their own protective measures and permits to avoid and minimize impacts during implementation of their project.

The other past, present, or reasonably foreseeable future projects would be required to comply with all existing and future water quality regulatory criteria and permit requirements. In addition, these past, present, or reasonably foreseeable future projects would also be required to develop BMPs that would ensure that concentrations of pollutants of concern do not exceed regulatory criteria. Therefore, there would be no significant cumulative impacts to water resources.

5.16.6 CONCLUSION

The level of cumulative impacts anticipated to occur within these environmental resource categories is not significant due to the types of past, present, and reasonably foreseeable future projects, the extent of the built environment in which they would occur, the lack of certain environmental resources in the area, and the mitigation measures identified for the Proposed Action. Therefore, implementation of the Proposed Action would not result in significant cumulative environmental impacts.

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Chapter Six

CHAPTER SIX
PUBLIC INVOLVEMENT

6.1 DRAFT ENVIRONMENTAL ASSESSMENT

To satisfy requirements for public involvement, an advertisement announcing the availability of the Draft Environmental Assessment (EA) was published in the *Cincinnati Enquirer* on September 25, 2018. The advertisement provided the public meeting date, time, and location, informed the public on how to obtain a copy of the Draft EA, and initiated the public comment period. Copies of this notice are provided in **Appendix A, *Agency and Public Involvement***. The Draft EA was available at the locations identified below during normal business hours.

Kenton County Airport Board Offices
77 Comair Boulevard
Erlanger, KY 41018

Federal Aviation Administration
Memphis Airports District Office
2600 Thousand Oaks Blvd, Suite 2250
Memphis, TN 38118-2462

The Draft EA was made available for review online at the following website:

https://www.airportprojects.net/CVG-AirCargo-EA

In addition, the following agencies listed were sent a notice of the Draft EA availability for review via email or letter.

Ms. Kimberly J. Simpson
U.S. Army Corps of Engineers: Louisville District
600 Dr. Martin Luther King, Jr. Place
Louisville, KY 40201

Ms. Jessica Miller
U.S. Fish and Wildlife Service
JC Watts Federal Building – Room 265
330 West Broadway
Frankfort, KY 40601

Mr. Craig Potts
Kentucky Heritage Council
300 Washington Street
Frankfort, KY 40601-1824

Mr. Larry Taylor
Kentucky Department for Environmental Protection
Office of the Commissioner
300 Sower Boulevard
Frankfort, KY 40601

Mr. Christopher Militscher
Chief, NEPA Program Office
U.S. Environmental Protection Agency
Region 4
Sam Nunn Atlanta Federal Center
61 Forsyth Street, SW
Atlanta, GA 30303-8960

The comment period ended on **Tuesday November 6, 2018**. No public comments were received on the Draft EA. Four agencies provided comments on the Draft EA, which are provided in Appendix A.

6.2 PUBLIC INVOLVEMENT

A public meeting was held on October 25, 2018 from 5:00 p.m. to 7:00 p.m. The meeting was held on the 1st floor of the CVG Centre located at 77 Comair Boulevard, Erlanger, Kentucky 41018. Presentation boards displayed at the public meeting are included in Appendix A.

Notice of the public meeting and a link to the Draft EA were also placed on the CVG Airport website (http://www.cvgairport.com). Both the public meeting and Draft EA were also discussed at the quarterly Boone County Ad-Hoc Meeting attended by Kenton County Airport Board (KCAB) and Boone County officials, and a Boone County meeting to discuss local roads held on October 22, 2018. This meeting was attended by officials from Boone County; City of Florence; Commonwealth of Kentucky Highway District 6; KCAB; Transit Authority of Northern Kentucky (TANK), consultants, and Ohio, Kentucky, Indiana Regional Council of Governments.

Chapter Seven

CHAPTER SEVEN
LIST OF PREPARERS

7.1 FEDERAL AVIATION ADMINISTRATION (FAA)

Kristi Ashley, Environmental Protection Specialist, provided input throughout the process and responsible for the review of the Environmental Assessment.

7.2 KENTON COUNTY AIRPORT BOARD (KCAB)

Barb Schempf, A.A.E., IAP, Vice President of Planning & Development, provided input and direction on goals for the Airport facility in regards to the Environmental Assessment

Alison Chadwell, PE, PTOE, LEED AP, Senior Project Manager/Engineer, provided input and Airport information throughout the process and responsible for managing and review of the Environmental Assessment.

Debbie Conrad, Senior Project Manager, provided input and Airport information throughout the preparation of the Environmental Assessment.

7.3 LANDRUM & BROWN, INCORPORATED (L&B)

Sarah Potter, Associate Vice President, responsible for project management, technical input, and principal author of the Environmental Assessment.

Rob Adams, Officer, provided input and review of the Environmental Assessment.

Chris Sandfoss, Managing Consultant, provided technical input and assisted with the preparation of the Environmental Assessment.

Charles Babb, Managing Consultant, responsible for preparing the air quality analysis.

Chuck Lang, Senior Consultant, responsible for the preparation of the graphics for the Environmental Assessment.

Gabriela Elizondo, Analyst, assisted with the preparation of the Environmental Assessment.

7.4 ENVIRONMENT & ARCHAEOLOGY, LLC (E&A)

Jeff Tingle, President, assisted with the preparation of the Historic, Architectural, Archeological, and Cultural Resources; Biological Resources; and Wetlands/Streams analysis.

Courtney Stoll, MA, RPA, Principal Investigator, assisted with the preparation of the Historic, Architectural, Archeological, and Cultural Resources field surveys and analysis.

Christina Lovins, Vice President/Senior Biologist, assisted with the preparation of the Biological Resources and Wetlands/Streams Analysis.

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Chapter Eight

CHAPTER EIGHT
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