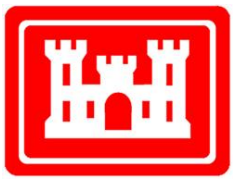
Environmental Assessment
DRAFT FINAL

Environmental Assessment
Construction of National Reconnaissance Office Facility
Wright-Patterson Air Force Base, Ohio

USACE Contract: W912QR-16-D-0008

Delivery Order: F0221

Prepared for:



U.S. Army Corps of Engineers
Louisville District
600 Dr. Martin Luther King, Jr. Place,
Room 821
Louisville, Kentucky 40202-2239

DRAFT FINAL – Revision 01; June 2018

CONTRACTOR STATEMENT OF INDEPENDENT TECHNICAL REVIEW
COMPLETION OF INDEPENDENT TECHNICAL REVIEW

Aptim Federal Services, LLC (APTIM) has completed the **DRAFT FINAL Environmental Assessment (EA) for the Construction of the National Reconnaissance Office Facility at Wright-Patterson Air Force Base**. Notice is hereby given that an independent technical review has been conducted that is appropriate to the level of risk and complexity inherent in the project, as defined in the Quality Control Plan. During the independent technical review, compliance with established policy principles and procedures, utilizing justified and valid assumptions was verified. This included review of assumptions; methods, procedures, and material used in analyses; alternatives evaluated; the appropriateness of data used and level of data obtained; and reasonableness of the results, including whether the product meets the customer's needs consistent with law and existing Corps policy.

W. H. Scoville — May 30, 2018

William H. Scoville, PE, PMP, Aptim Federal Services, LLC — Date
Independent Technical Review Team Leader

Significant concerns and the explanation of the resolution are as follows: None identified.

CERTIFICATION OF INDEPENDENT TECHNICAL REVIEW

All concerns resulting from independent technical review of the project have been fully resolved.

Cynthia A. Hassan — May 30, 2018

Cynthia A. Hassan, Aptim Federal Services, LLC — Date
Project Manager

Draft Final

FINDING OF NO SIGNIFICANT IMPACT
NATIONAL RECONNAISSANCE OFFICE FACILITY
WRIGHT-PATTERSON AIR FORCE BASE, OHIO
June 2018

Pursuant to the Council on Environmental Quality regulations for implementing the procedural provisions of the National Environmental Policy Act (NEPA), 40 Code of Federal Regulations (CFR) 1500 - 1508, Department of Defense Directive (DoDD) 6050.1 and Air Force regulation 32 CFR Part 989, the 88th Civil Engineer Group (CEG) Installation Management Division prepared an Environmental Assessment (EA) to construct a National Reconnaissance Office (NRO) Facility at Wright-Patterson Air Force Base (WPAFB, the Base), Ohio. This EA is incorporated by reference into this finding per 40 CFR 1508.13.

Purpose and Need (EA §§ 1.2 and 1.3)

The purpose of the action is to construct a 270,000 square foot (sf) facility at WPAFB to house a safe and secure data center for the NRO. The NRO is proposing to build an eastern region data center to consolidate its aging facilities infrastructure which cannot meet federal data center consolidation mandates. Existing NRO facilities will not be vacated. The creation of the new facility is to consolidate operations that exist as part of other NRO facilities and to meet the requirements of the Data Center Optimization Initiative (DCOI). A safe and secure site is needed for the construction and operation of the new data center at WPAFB, which would be a new mission critical resource for the Intelligence Community (IC).

Selection Criteria for Alternative Sites (EA § 2.2)

To be considered a reasonable alternative, the location for the proposed NRO data center had to meet three universal selection standards:

- Mission criteria: location fosters the NRO and National Air and Space Intelligence Center (NASIC) partnership and meets the IC requirement need to reduce exposure to most natural and man-made hazards.

- Capacity criteria: possesses existing network connections which fulfill all of NRO throughput and latency requirements and infrastructure and utilities to support most of the data center needs with minor modifications required.

- Environmental criteria: considerations on air quality, incompatible development, base encroachment, and land use controls.

The decision to construct the NRO facility at WPAFB would enable the AF to provide a suitable location for the NRO mission because WPAFB already possesses the infrastructure and utilities required to support the data center needs. The siting of the NRO facility (and accompanying new mission) at WPAFB would provide a safe and secure location for the NRO's mission.

Description of Proposed Action (EA § 2.0)

The Proposed Action involves the demolition of 21 temporary lodging housing facilities (TLFs) located in the Pine Estates Housing Complex in Area A at WPAFB. The 21 housing units were constructed in the 1970s and were historically utilized as Base housing until they were converted to TLFs in the early 2000s. The majority of the units are currently empty and unoccupied. The 21 units were part of the larger Pine Estates complex that consisted of 84 one- and two-story duplexes; 63 units were demolished in the early 2000s. The 21 duplex housing units would be demolished to prepare the project site for construction of a 270,000 (sf, one-story, warehouse-style facility that would be the site of the NRO data center.

In addition to the construction of the new facility, a secure perimeter fence would be installed around the data center. Approximate dimensions for the proposed facility would include:

- Length – 1,040 feet (ft)
- Maximum length of facility plus amenities (generators; heating, ventilation, air conditioning; water tank; front turn around; parking, fuel, storage) – 1,301 ft
- Width – 260 ft
- Maximum width plus amenities – 632 ft

The minimum standoff distance for the perimeter fence around the new NRO facility would be approximately 86 ft from existing infrastructure, except parking areas. Any newly constructed parking areas associated with the new NRO facility would be located outside of the NRO's secure fence but would remain within the WPAFB secure Base perimeter fence.

No Action Alternative (EA § 2.4.2)

Under the No Action alternative, the NRO facility would not be constructed at WPAFB and would result in the NRO being unable to provide a critical asset to the IC. Wright-Patterson Air Force Base provides a unique siting location for the NRO mission in that it is already a host to an IC tenant, the NASIC. No other military base would provide a suitable siting location for the NRO facility that would meet the location criteria that WPAFB provides.

The No Action alternative does not satisfy the purpose and need of providing a safe and secure location for the NRO mission and would result in:

- Continued use of aging of NRO facilities and infrastructure in the eastern region;
- Failure to share network connectivity in proximity to an existing IC office (NASIC) on the same base;
- Failure to possess existing network connections that fulfill all NRO throughput and latency requirements;
- Inability to meet the NRO's objectives for resiliency and mission diversity in conjunction with Western Data Center;
- Limited liability to reduce exposure to natural and manmade hazards in the U.S. (i.e., earthquakes, hurricanes, nuclear plants, arsenals); and
- Limited ability to foster partnership between the NRO and NASIC.

Alternatives Considered but Eliminated from Further Study (EA § 2.5)

As part of the NEPA process, potential alternatives to the Proposed Action must be evaluated. To be considered reasonable and warrant further detailed analysis, alternatives must be affordable, implementable, and meet the purpose and need for the Proposed Action. Eighteen installations were initially considered for the NRO beddown mission but eliminated from consideration early in the planning process because the sites failed to meet one or more of the selection standards. Examples of locations included: MacDill AFB in Florida, Fort Bragg in North Carolina, Langley AFB in Virginia, Norfolk Naval Base in Virginia, Fort Ambrose Powell (AP) Hill in Virginia, Scott AFB in Illinois, National Geospatial-Intelligence Agency (NGA) Arnold in Missouri, Fort Gordon in Georgia, Fort Leonard Wood in Missouri, and Fort Campbell on the Kentucky and Tennessee border. These military bases were also at higher risk for natural and/or man-made disasters. Other sites considered but eliminated had even higher levels of selection standard discrepancies. It was concluded from this process that WPAFB was the only location considered in the eastern region that met all major requirements.

In addition to the military siting locations listed above, specific locations at WPAFB were evaluated with respect to facility requirements for the NRO beddown mission and construction of a data center. Six potential site locations in Area A were considered for construction. Three of these locations were dismissed due to costs and impacts to schedule. Of the three remaining sites, two were located in proximity to the NRO's partnering organization, NASIC: one is adjacent/east of NASIC and the other is adjacent/west of NASIC. The construction

of the NRO facility in proximity to NASIC at WPAFB was eliminated for the following reasons: NASIC-occupied facilities and existing parking infrastructure would require relocation/reconstruction; re-routing of existing traffic networks surrounding NASIC would be required; an on-Base golf course would be impacted; and impacts to an existing landfill at WPAFB would occur. For these reasons, the construction of the NRO facility in close proximity to NASIC was eliminated due to disruption of existing mission critical resources provided by NASIC. Thus, the remaining project site was selected as the construction site for the NRO facility at WPAFB.

Environmental Consequences

Noise (EA Section 3.2): The Proposed Action would result in minor short-term impacts on ambient noise generated from construction-related activities (footing excavation, concrete and delivery trucks) during construction of the NRO facility. Impacts would be minor because construction activities would be carried out during normal working hours and would be short in duration. During operation of the facility, there is the potential for moderate short-term impacts due to elevated sound levels from emergency backup generators; however, impacts would be expected to be no longer than 7 days in duration. Impacts would be reduced by design and engineering controls. The Proposed Action would result in no long-term adverse impacts to noise. The No Action alternative would have no short- or long-term impacts over current conditions. Therefore, there would be no significant impacts to noise as a result of the Proposed Action or No Action.

Air Quality (EA § 3.3): The Proposed Action would result in minor short-term construction-related emissions generated on Base (particulate matter and engine exhaust emissions) because emissions would be short in duration and negligible with respect to overall conditions for the region. Moderate impacts could occur due to air emissions from emergency generators in the event of power failures. The results of the New Source Review and modeling analysis would impact the final design of the project and dictate how the air impacts would be mitigated. The Proposed Action at a minimum may require a Permit-to-Install (PTI) and a modification of the Title V operating permit. No long-term adverse impact to air quality would be expected as a result of the Proposed Action. The No Action alternative would have no short- or long-term impacts over current conditions. Therefore, there would be no significant impacts to air quality as a result of the Proposed Action or No Action.

Water Resources (EA § 3.4): The Proposed Action would result in no short- or long-term impacts to groundwater as the proposed NRO construction site is not located within the city of Dayton Source Water Protection Program boundary. The Proposed Action would result in adverse impact to surface water runoff during excavation activities. Short-term impacts to surface water would be minor because Best Management Practices (BMPs) for erosion and sedimentation controls would be implemented for construction-related activities. In addition, the NRO construction site would be required to comply with the requirements of the WPAFB stormwater permits. The municipal National Pollution Discharge Elimination System (NPDES) Storm Water Management Plan would specifically require the NRO construction site to implement stormwater protection practices, where applicable, to reduce the likelihood of pollutants entering the WPAFB storm system from construction activities. Long-term adverse impacts to surface water would be minimized due to stormwater control features that would be designed and built in order to allow the facility to comply with Section 438 of the Energy Independence and Security Act (EISA). The No Action alternative would have no short- or long-term impacts over current conditions. Therefore, there would be no significant impacts to water resources as a result of the Proposed Action or No Action.

There is no impact to the floodplain because the NRO facility would not be located in the floodplain. The Miami Conservancy District (MCD) was consulted regarding the Proposed Action. The MCD responded indicating the proposed project would not adversely affect the retarding basin. The MCD also indicated the project is located within the Huffman Retarding Basin and is, therefore, subject to restrictions set forth by MCD in Greene County Deed Book 129, Page 146 on December 16, 1922.

Biological Resources (EA § 3.5): The Proposed Action would result in minor short-term adverse impact to vegetation because the proposed NRO project site is currently a partially grass and tree-covered area (the remaining land contains 21 duplex housing units). Several trees would be removed from the project site in

preparation of new construction. The majority of the project site historically contained 63 buildings associated with the Pine Estates housing complex, therefore, construction activities would take place on previously disturbed areas. The Proposed Action would result in no long-term impacts to vegetation. The Proposed Action would result in negligible short-term impacts on wildlife and threatened and endangered species because the proposed project site is not located in an area that provides suitable wildlife habitat and proposed construction activities are not in close proximity to any threatened or endangered species to generate noise-related effects from construction activities. The project site is also not located in close proximity to wetlands or streams; therefore, no impacts to wetlands or streams would be expected as a result of the Proposed Action. Due to the frequency of the vegetation types on Base however, negligible long-term impacts on vegetation would be expected as a result of the implementation of the Proposed Action. There would be no long-term impacts to wildlife or threatened and endangered species. The No Action alternative would have no short- or long-term impacts to biological resources over current conditions. Therefore, there would be no significant impacts to biological resources as a result of the Proposed Action or No Action.

The Ohio Department of Natural Resources (ODNR) and the U.S. Fish and Wildlife Service (USFWS) were consulted regarding the Proposed Action. The ODNR, Division of Wildlife (DOW) responded indicating the proposed project is within the vicinity of records for the Indiana bat, a state and federally endangered species. Presence of the Indiana bat has been established in the area, and therefore, additional summer surveys would not constitute presence or absence in the area. The agency further recommended that if suitable bat habitat occurs within the project area, trees should be conserved and if trees must be cut, then cutting occur between October 1 and March 31 to avoid roosting bat habitat impacts. The DOW also reported several state- and federal-listed threatened and endangered mussels, fish, and a turtle species within the range of the project; however, since no in-water work is proposed within a perennial stream, the proposed project is not likely to impact these species. In addition, the DOW identified the following species within the range of the proposed project: smooth greensnake, Kirtland's snake, eastern massasauga, upland sandpiper, and northern harrier; however, due to the location, type of work proposed, and the type of habitat present at the project site, the proposed project is not likely to impact these species.

The USFWS responded indicating the project is not likely to adversely affect any federally listed species. The USFWS's determination was based on WPAFB's commitment to only cut trees on the project site that are greater than or equal to 3-inches diameter breast height only between the months of October 1 and March 31 or to perform emergence surveys to avoid adverse effects to the endangered Indiana bat and threatened northern long-eared bat.

The USFWS also stated that if during the term of the action, additional information on listed or proposed species or their critical habitat becomes available, or if new information reveals effects of the action that were not previously considered, consultation with the USFWS should be reinitiated to assess whether the determination is still valid.

Earth Resources (EA § 3.6): The Proposed Action would result in minor short-term impacts to existing soils during construction of the NRO facility. However, impacts would be minimized by implementing BMPs for erosion and sedimentation controls (e.g., silt fencing, straw bales). No long-term adverse impacts are expected from the Proposed Action. The No Action alternative would have no short- or long-term impacts over current conditions. Therefore, there would be no significant impacts to earth resources as a result of the Proposed Action or No Action.

Hazardous Materials/Waste (EA § 3.7): The Proposed Action would result in minor short-term impacts to hazardous materials/waste during demolition of the 21 Pine Estates housing units (an environmental survey was performed in 2008 prior to demolition of 63 housing units). The quantity of hazardous wastes generated from proposed construction activities would be negligible. No adverse impact to asbestos-containing material (ACM) would be expected because surveys were performed at all Pine Estates buildings in 2008 and would be handled according to the findings of the survey. Lead-based paint (LBP) surveys have not been documented for the 21 Pine Estates housing units; however, would be documented prior to demolition.

No environmental restoration program (ERP) sites have been identified within 300 ft of the project area; therefore, no impacts to ERP sites would be expected as a result of the Proposed Action. There could be short-term or long-term adverse impacts due to hazardous materials/waste as a result of potential release of diesel fuel during transport, transfer, storage, or disposal. The potential for impacts would also be minimized through proper procedures for handling stored fuels. The No Action alternative would have no short-or long-term impact to hazardous materials/waste.

Cultural Resources (EA § 3.8): The Proposed Action would result in no short- or long-term impacts to cultural resources because no National Register of Historic Places-eligible buildings are being demolished or are located in proximity to the proposed NRO project site. The No Action alternative would also have no short- or long-term impacts over current conditions. Therefore, there would be no significant impacts to cultural resources as a result of the Proposed Action or No Action.

The State Historic Preservation Office (SHPO) and the following Native American tribes were consulted regarding the Proposed Action: Cherokee Nation, Keweenaw Bay Indian Community, Sac and Fox of the Mississippi in Iowa, Saginaw Chippewa Indian Tribe, Oklahoma Seneca Cayuga Nation, and Seneca Nation of Indians. The SHPO responded indicating there are no known historic properties located within the Area of Potential Effect. Therefore, the agency concurred that the proposed undertaking would have no effect on historic properties and no further coordination with the SHPO would be necessary unless there is a change in the proposed project or archaeological remains are discovered during project implementation. Additionally, according to the WPAFB Cultural Resources Manager, the Native American tribes typically consulted for EAs only request notification when an action involves ground disturbance or when construction on-Base involves areas of previously undisturbed ground. Since the NRO project area is considered to be located in an area of partial previous ground disturbance (the TLFs are located on a portion of the proposed NRO project site), consultation with the above-referenced Native American tribes was initiated. However, the WPAFB Cultural Resources Manager does not anticipate responses from any of the Native American tribes due to the proximity of the development of the TLFs to the proposed NRO project site. In addition, a *Memorandum for Record* dated May 2, 2018 indicates the purpose of the memo is to document Section 106 consultation efforts with five tribes (Keweenaw Bay Indian Community, Sac and Fox of the Mississippi in Iowa, Saginaw Chippewa Indian Tribe, Oklahoma Seneca Cayuga Nation, Seneca Nation of Indians) that have historically shown an interest in undertakings at WPAFB. The memo highlights three points:

1. Initial responses for all consultations with the tribes were no response and/or Tribal Historic Preservation Officer had no issue with the proposed project.
2. Two follow-up phone calls were made at various times, with the most recent on May 2, 2018, since several undertakings (memo includes a total of 5 proposed projects, including the NRO proposal) were initially sent to the Tribal Historic Preservation Officers a couple years ago.
3. The tribes reiterated that they have small staffs and an enormous amount of correspondence letters and would prefer consultation only on matters concerning the Adena Mounds or inadvertent discoveries as noted in the 2018 Installation Tribal Relations Plan.

Infrastructure/Utilities (EA § 3.9): The Proposed Action could result in minor short-term impacts to utilities and traffic during the construction and demolition phase of the project. Impacts would be minimized by using proper marking, draining, and capping procedures during excavation. There would also be a temporary increase in use of roadways in and around the construction site as a result of construction traffic; however, impacts would be minor because the affected road is not heavily traveled and would be re-routed around the construction site. Long-term impacts to infrastructure and utilities could occur primarily due to the increased load on the electrical system, water system, sewer system, and natural gas system as well as usage of services, such as security forces and fire protection. Impacts would be minimized by adding new transmission lines and electrical substation and upsizing water utilities over time. Siting may be required for the emergency generators. There could be short-term or long-term adverse impacts due to hazardous materials/waste as a result of potential release of diesel fuel during transport, transfer, storage, or disposal. The diesel fuel storage proposed at the NRO facility would be surrounded by a containment dike capable of holding the stored fuel, thus reducing the risk for leaks to reach the

nearest storm water outfall. The potential for impacts would also be minimized through proper procedures for handling stored fuels. The No Action alternative would have no short- or long-term impacts over current conditions. Therefore, there would be no significant impacts to infrastructure/utilities as a result of the Proposed Action or No Action.

Safety and Occupational Health (EA § 3.10): The Proposed Action could result in potential minor impact to workers during construction activities. Impacts would be minimized by adherence to health and safety regulations and standards. The Proposed Action could result in potential long-term adverse impacts resulting from hazards associated with diesel fuel storage. Impacts would be minimized by proper fuel management and first response capabilities. No adverse impacts to security as the facility would be fenced and designed to meet required standoff distances. The No Action alternative would also have no short- or long-term impacts over current conditions. Therefore, there would be no significant impacts to safety or occupational health as a result of the Proposed Action or No Action.

Socioeconomics (EA § 3.11): The Proposed Action would result in a short-term negligible impact on the local workforce and a beneficial impact on the local economy from revenue generated from construction activities. The Proposed Action would have long-term beneficial impacts to the IC due to NRO's ability to provide a critical asset regionally. The No Action alternative would have no short-term impacts over current conditions. Therefore, would be no significant impacts to socioeconomics or environmental justice as a result of the Proposed Action or No Action.

Environmental Justice (EA § 3.12): The Proposed Action would have no short- or long-term impact on any disproportionate or low-income communities or protection of children. Therefore, there would be no significant impacts to environmental justice as a result of the Proposed Action. The No Action alternative would have no short-term impacts over current conditions. Therefore, would be no significant impacts to environmental justice as a result of the Proposed Action or No Action.

Cumulative Impacts (EA § 4.0): When added to past, present, and reasonably foreseeable actions, the Proposed Action and No Action alternative would have no significant adverse cumulative impacts on any resource.

Agency Consultation

In accordance with NEPA, 42 U.S.C. §4321 et seq. (1969), informal consultation was solicited with applicable agencies to seek input on the likelihood of environmental or other impacts resulting from the development of the Proposed Action. A summary of the outcome of consultation efforts with pertinent agencies is included as Appendix B of the EA.

Public Notice

A public notice will be posted in the *Dayton Daily News* and the *Fairborn Daily Herald* initiating a 30-day public comment period. Any comments received during this period will be included in Appendix B of the EA.

Finding of No Significant Impact (FONSI)

The Proposed Action involves constructing a facility to house a safe and secure data center facility. The construction of the NRO facility at WPAFB would meet the mandates and timelines required by the DCOI. Under the No Action alternative, the NRO would not meet federal data center consolidation mandates of the DCOI. Based upon my review of the facts and analysis contained in the EA, which is hereby incorporated by reference, I conclude that the Proposed Action would not have a significant impact on the natural or human environment. An environmental impact statement is not required for this action. This analysis fulfills the requirements of NEPA, the President's Council on Environmental Quality, and 32 CFR 989.

_____ Date: _____

NAME

TITLE

COVER SHEET

ENVIRONMENTAL ASSESSMENT
NATIONAL RECONNAISSANCE OFFICE FACILITY
WRIGHT-PATTERSON AIR FORCE BASE, OHIO

Responsible Agency: National Reconnaissance Office (NRO)

Affected Location: WPAFB, Ohio

Proposed Action: Construction of a data center facility in Area A at WPAFB.

Report Designation: Draft Final Environmental Assessment (EA)

Written comments and inquiries regarding this document should be directed to 88 Air Base Wing (ABW)/Public Affairs, 5135 Pearson Road, Building 10, Room 252, WPAFB, Ohio, 45433, 88abw.pa@us.af.mil.

Abstract: The NRO is proposing to construct a 270,000 square foot data center facility in Area A at WPAFB. The construction of the facility at WPAFB would enable the NRO to meet the Data Center Optimization Initiative (DCOI) mandates and timelines for consolidating its aging facilities and infrastructure. The analysis in the EA considers the Proposed Action and the No Action alternative, and will aid in determining whether a Finding of No Significant Impact can be prepared or whether an Environmental Impact Statement is needed.

Table of Contents

Table of Contents (continued)

List of Tables

List of Figures

List of Appendices

List of Acronyms

ABW	Air Base Wing
ACAM	Air Conformity Applicability Model
ACM	Asbestos-Containing Material
ACS	American Community Survey
AFB	Air Force Base
AF	Air Force
AFI	Air Force Instruction
AFMAN	Air Force Manual
AFPD	Air Force Policy Directive
AICUZ	Air Installation Compatible Use Zone
AIM	Architectural and Industrial Maintenance
AP	Ambrose Powell
APE	Area of Potential Effect
APTIM	Aptim Federal Services, LLC
AQCR	Air Quality Control Region
AST	Above-ground Storage Tank
ATFP	Anti-Terrorism/Force Protection
BASH	Bird/Wildlife Aircraft Strike Hazard
BHE	BHE Environmental, Inc.
BLS	Bureau of Labor Statistics
BMP	Best Management Practice
C&DD	Construction & Demolition Debris
CAA	Clean Air Act
CDC	Child Development Center
CEG	Civil Engineer Group
CEIEC	Compliance Section of the Environmental Branch in the Installation Management Division
CEIEA	Environmental Assets Section of the Environmental Branch in the Installation Management Division
CENP	Civil Engineer Portfolio Optimization Branch
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFC	Chlorofluorocarbon
CFR	Code of Federal Regulations
CGP	Construction General Permit
CHP2	Central Heating Plant 2
CO	Carbon Monoxide
CO_2	Carbon Dioxide
CO_2e	Carbon Dioxide Equivalent
CRM	Cultural Resources Manager
CWA	Clean Water Act
dB	Decibel
dBA	A-weighted Sound Level Measurement
DCOI	Data Center Optimization Initiative
DLA	Defense Logistics Agency
DLSME	Defense Land Systems and Miscellaneous Equipment
DMWM	Division of Materials and Waste Management
DOW	Division of Wildlife
DNL	Day-night Average A-weighted Sound Level
DoD	Department of Defense
DP&L	Dayton Power & Light
EA	Environmental Assessment
EIAP	Environmental Impact Analysis Process
EIFS	Economic Impact Forecast System
EIS	Environmental Impact Statement
EISA	Energy Independence and Security Act
EMS CFT	Environmental Management System Cross Functional Team
EO	Executive Order
ERP	Environmental Restoration Program
ESA	Endangered Species Act
ESOHC	Environmental Safety and Occupational Health Council
ESQD	Explosive Safety Quantity Distance
ESZ	Explosive Safety Zone
°F	Degrees Fahrenheit
FAA	Federal Aviation Administration
FEMA	Federal Emergency Management Agency
FONSI	Finding of No Significant Impact
ft	Feet
FY	Fiscal Year
GPM	Gallons Per Minute
GHG	Greenhouse Gas
GWOU	Groundwater Operable Unit
GWP	Global Warming Potential
HAP	Hazardous Air Pollutant
HMMP	Hazardous Material Management Program
HQ AFMC	Headquarters Air Force Materiel Command
HUD	U.S. Department of Housing and Urban Development
HVAC	Heating Ventilation and Air-conditioning
IC	Intelligence Community
ICRMP	Integrated Cultural Resources Management Plan
IICEP	Interagency and Intergovernmental Coordination for Environmental Planning
INRMP	Integrated Natural Resources Management Plan
IRP	Installation Restoration Program
IT	Information Technology
ITRP	Installation Tribal Relations Plan

LBP	Lead-based Paint
LTM	Long-term Monitoring
LRS	Logistics Readiness Division
MA	Metropolitan Area
MACT	Maximum Achievable Control Technology
MAJCOM	Major Command
µg/m^3	micrograms per cubic meter
MCD	Miami Conservancy District
mg/m^3	milligram per cubic meter
MSL	Mean Sea Level
MW	Megawatt
MWH	Megawatt Per Hour
NAAQS	National Ambient Air Quality Standards
NASIC	National Air and Space Intelligence Center
NAGPRA	National American Graves Protection and Repatriation Act
NEPA	National Environmental Policy Act
NESHAP	National Emission Standards for Hazardous Air Pollutants
NFPA	National Fire Protection Association
NGA	National Geospatial-Intelligence Agency
NGS	National Geodetic Survey
NH_3	Ammonia
NHPA	National Historic Preservation Act
NOA	Notice of Availability
NOAA	National Oceanic and Atmospheric Administration
NO_x	Nitrogen Oxides
NO_2	Nitrogen Dioxide
NOI	Notice of Intent
NPDES	National Pollution Discharge Elimination System
NRCS	Natural Resource Conservation Service
NRHP	National Register of Historic Places
NRO	National Reconnaissance Office
NSR	New Source Review
O_3	Ozone
OAC	Ohio Administrative Code
ODNR	Ohio Department of Natural Resources
OEPA	Ohio Environmental Protection Agency
OMB	Office of Management and Budget
ORC	Ohio Revised Code
OSHA	Occupational Safety and Health Administration
OU	Operable Unit
Pb	Lead
PBR	Permit-by-Rule
PCB	Polychlorinated Biphenyl
$PM_{2.5}$	Particulate Matter with an Aerodynamic Particle Size Less Than 2.5 Micrometers
PM_{10}	Particulate Matter with an Aerodynamic Particle Size Less Than 10 Micrometers
ppb	parts per billion
ppm	parts per million
PSD	Prevention of Significant Deterioration
PTI	Permit-to-Install
RACM	Reasonably Available Control Measure
RACT	Reasonably Available Control Technology
RAPCA	Regional Air Pollution Control Agency
RICE	Reciprocating Internal Combustion Engines
SAF	Air Force Acquisition
SARA	Superfund Amendments and Reauthorization Act
sf	Square Feet
SHPO	State Historic Preservation Office
SIP	State Implementation Plan
SO_2	Sulfur Dioxide
SOP	Standard Operating Procedure
SPC	Spill Prevention Coordinator
SPCC	Spill Prevention, Control, and Countermeasures
SSSP	Site-Specific Spill Plan
SWMP	Storm Water Management Plan
SWPP	Source Water Protection Program
SWPPP	Storm Water Pollution Prevention Plan
TLF	Temporary Lodging Facility
TMDL	Total Maximum Daily Load
tpy	tons per year
TSCA	Toxic Substances Control Act
UEC	Unit Environmental Coordinator
UFC	United Facilities Code
U.S.	United States
USACE	U.S. Army Corps of Engineers
USAF	United States Air Force
USC	United States Code
USDA	U.S. Department of Agriculture
USDOT	U.S. Department of Transportation
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish & Wildlife Service
UST	Underground Storage Tank
VOC	Volatile Organic Compound
WMA	Washington Metropolitan Area
WPAFB	Wright-Patterson Air Force Base
WQPM	Water Quality Program Manager
XP	Installation Beddown Process Manager

1.0 Purpose and Need for Action

1.1 Introduction

The National Reconnaissance Office (NRO) is proposing to construct a data center at Wright-Patterson Air Force Base (WPAFB). The NRO was established in September 1961 and became a Defense Agency in 2011 per the Department of Defense (DoD) Directive 5105.23, revision dated October 29, 2015 (NRO 2017a). The NRO develops and operates unique and innovative overhead reconnaissance systems and conducts intelligence-related activities for United States (U.S.) national security.

The NRO is proposing to build a new data center in the eastern region of the U.S. and is following the process identified in Air Force Instruction (AFI) 10-503, *Operations and Strategic Basing*. The Air Force Strategic Basing Process provides an enterprise-wide repeatable process for decision making to ensure all basing actions involving Air Force units and missions support Air Force mission requirements and comply with all applicable environmental guidance. The NRO initiated the Air Force Acquisition (SAF) basing process in early 2017. First, the NRO began with an enterprise-wide look that involved the following factors for a proposed eastern region data center: requirement, facility criteria, personnel, and location. This required the NRO to apply the factors set forth in the enterprise definition to the locations considered. That application resulted in narrowing the list of possible locations that satisfied all factors in the enterprise definition. Through the basing process, the NRO is proposing to establish an eastern region data center beddown mission at WPAFB near Dayton, Ohio.

In accordance with AFI 10-503, this Environmental Assessment (EA) has been completed to satisfy the U.S. Air Force (USAF) Environmental Impact Analysis Process (EIAP) prior to executing the strategic basing decision. This EA was prepared in accordance with:

- National Environmental Policy Act (NEPA) of 1969 (42 U.S. Code [USC] § 4321 et seq.);
- Council on Environmental Quality (CEQ) Regulations for Implementing the Procedural Provisions of NEPA (40 Code of Federal Regulations [CFR] §§ 1500-1508); and
- USAF-implementing regulations for NEPA, the EIAP, (32 CFR § 989), as amended.

The NEPA, which is implemented through the CEQ, is a federal law that requires the analysis of potential environmental impacts associated with proposed federal actions prior to the action being taken. The intent of NEPA is for federal agencies to make informed decisions based on identification of potential environmental consequences and to take appropriate actions to protect, restore, or enhance the environment. The process for implementing NEPA is outlined in 40 CFR §§ 1500-1508, Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act.

To meet federal requirements outlined in both NEPA and CEQ regulations, the Air Force (AF) codified their formal NEPA analysis in 32 CFR Part 989, EIAP. The EIAP is the Air Force's NEPA compliance program. The CEQ regulations mandate all federal agencies to use a prescribed approach to environmental impact analysis, which includes an evaluation of the potential environmental consequences, associated with a Proposed Action and considers alternative actions.

Air Force Policy Directive (AFPD) 32-70, *Environmental Quality*, states the AF will comply with applicable federal, state, and local environmental laws and regulations, including NEPA. If significant impacts are expected under NEPA, the AF would decide whether to conduct mitigation to reduce impacts below the level of significance, prepare an Environmental Impact Statement (EIS), or abandon the Proposed Action. This EA will be used to guide the AF in implementing the Proposed Action in a manner consistent with AF standards for environmental stewardship should the Proposed Action be approved.

1.2 Purpose of the Action

The purpose of the Proposed Action is to address the aging infrastructure and facilities associated with the housing of a safe and secure data center that adheres to federal consolidation mandates.

1.3 Need for the Action

The NRO needs to consolidate its aging facilities and infrastructure, which cannot meet the Data Center Optimization Initiative (DCOI) Office of Management and Budget (OMB) Memorandum M-16-19 mandates and timelines. This initiative promotes the use of green information technology (IT) by reducing the overall energy and real estate footprint of government data centers. The existing aging data centers were designed in the 1970s and modernized in the early 2000s. The power infrastructure is over 20 years old. The age of the NRO data centers makes it more cost-effective to construct new centers rather than retrofit existing centers. The DCOI (August 2016) memo requires all federal agencies to be more efficient and consolidate, or close existing data centers, which are inefficient. The NRO was directed to consolidate its disparate data centers. A safe and secure site is needed for the construction and operation of the new data center in the eastern region of the U.S., which would be a new mission critical resource at WPAFB and the Intelligence Community (IC).

1.4 Decision to be Made

This EA presents the proposal to construct a data center at WPAFB. The decision to construct this facility at WPAFB would enable the AF to provide a suitable location for the NRO mission because WPAFB already possesses infrastructure and utilities to support the data center needs.

If the analyses presented in the EA indicate that implementation of the Proposed Action would not result

in significant environmental impacts, a Finding of No Significant Impact (FONSI) would be prepared. A FONSI briefly presents reasons why the Proposed Action would not have a significant effect on the human environment and why an EIS is unnecessary. If significant environmental issues would result that cannot be mitigated to insignificance, an EIS would be required, or the Proposed Action would be abandoned and no action would be taken.

1.5 Cooperating Agency and Intergovernmental Coordination / Consultations

The NEPA requirements help ensure environmental information is made available to the public during the decision-making process and prior to an action's implementation. The Intergovernmental Coordination Act and Executive Order (EO) 12372, *Intergovernmental Review of Federal Programs*, requires federal agencies to cooperate with and consider territorial and local views when implementing a federal proposal. As mandated by 40 CFR 1501.4(b), "The agency shall involve environmental agencies, applicants, and the public, to the extent possible, in preparing assessments required by Section 1508.9(a)(1)", WPAFB is undertaking this EA, and public involvement is required as part of the analysis process. For this EA, public involvement includes notifying local, state, and federal agencies, elected officials, and the public about the Proposed Action and alternatives; soliciting agency and public comments on the EA analysis, and ultimately informing the public of AF conclusions and findings.

1.5.1 Cooperating Agency

The AF and the NRO entered into a cooperating agency agreement in November 2017. The NRO is the proponent for the Proposed Action.

1.5.2 Interagency and Intergovernmental Coordination and Consultations

In compliance with NEPA, WPAFB notified relevant stakeholders about the Proposed Action and alternatives. Intergovernmental consultation was conducted with the following agencies: Miami Conservancy District (MCD), Ohio Department of Natural Resources (ODNR), U.S. Fish and Wildlife Service (USFWS), State Historic Preservation Office (SHPO) and Native American tribes. The notification process provides these stakeholders with the opportunity to cooperate with WPAFB and provide comments on the Proposed Action. Coordination with these agencies is presented in **Appendix B** of the EA.

Executive Order 13175, Consultation and Coordination with Indian Tribal Governments, directs federal agencies to coordinate and consult with Native American tribal governments whose interests might be directly and substantially affected by activities on federally administered lands. Consistent with EO 13175, Department of Defense Instruction 4710.02, Interactions with Federally-Recognized Tribes, and AFI 90-2002, Air Force Interaction with Federally-Recognized Tribes, federally recognized tribes that are historically affiliated with lands in the vicinity of the Proposed Action have been invited to consult on all

proposed undertakings that have a potential to affect properties of cultural, historical, or religious significance to the tribes. The tribal consultation process is distinct from NEPA consultation or the interagency coordination process, and it requires separate notification of all relevant tribes. The timelines for tribal consultation are also distinct from those of other consultations. The Environmental Branch Chief is designated as the Installation Tribal Liaison Officer for WPAFB and serves as the government-to-government contact concerning tribal affairs. Government-to-government consultation is included in **Appendix B**.

A Notice of Availability (NOA) for the Draft-Final EA and FONSI will be published in the *Dayton Daily News* and the *Fairborn Daily Herald*, initiating a 30-day public review period. The Draft-Final EA and FONSI will be made available in the Greene County Public Library, Fairborn Branch. During this time, public comments may be received. The NOA and comments received will be included in **Appendix B**.

2.0 Description of the Proposed Action

The construction of a new data center at WPAFB would enable the NRO to meet the DCOI mandates and timelines. The DCOI requires all federal agencies to be more efficient and consolidate, or close existing data centers, which are inefficient. The following sections describe the Proposed Action and alternatives.

The Base is located in the southwest portion of the state of Ohio in Greene and Montgomery counties, approximately 10 miles east of the city of Dayton. The Base encompasses 8,145 acres and is classified as non-industrial with mixed development. The Base is subdivided into Areas A and B (**Figure 2-1**); Area A consists of administrative offices and contains an active airfield. Area B is located across State Route 444 to the southwest of Area A and consists primarily of research and development as well as educational functions.

2.1 Proposed Action

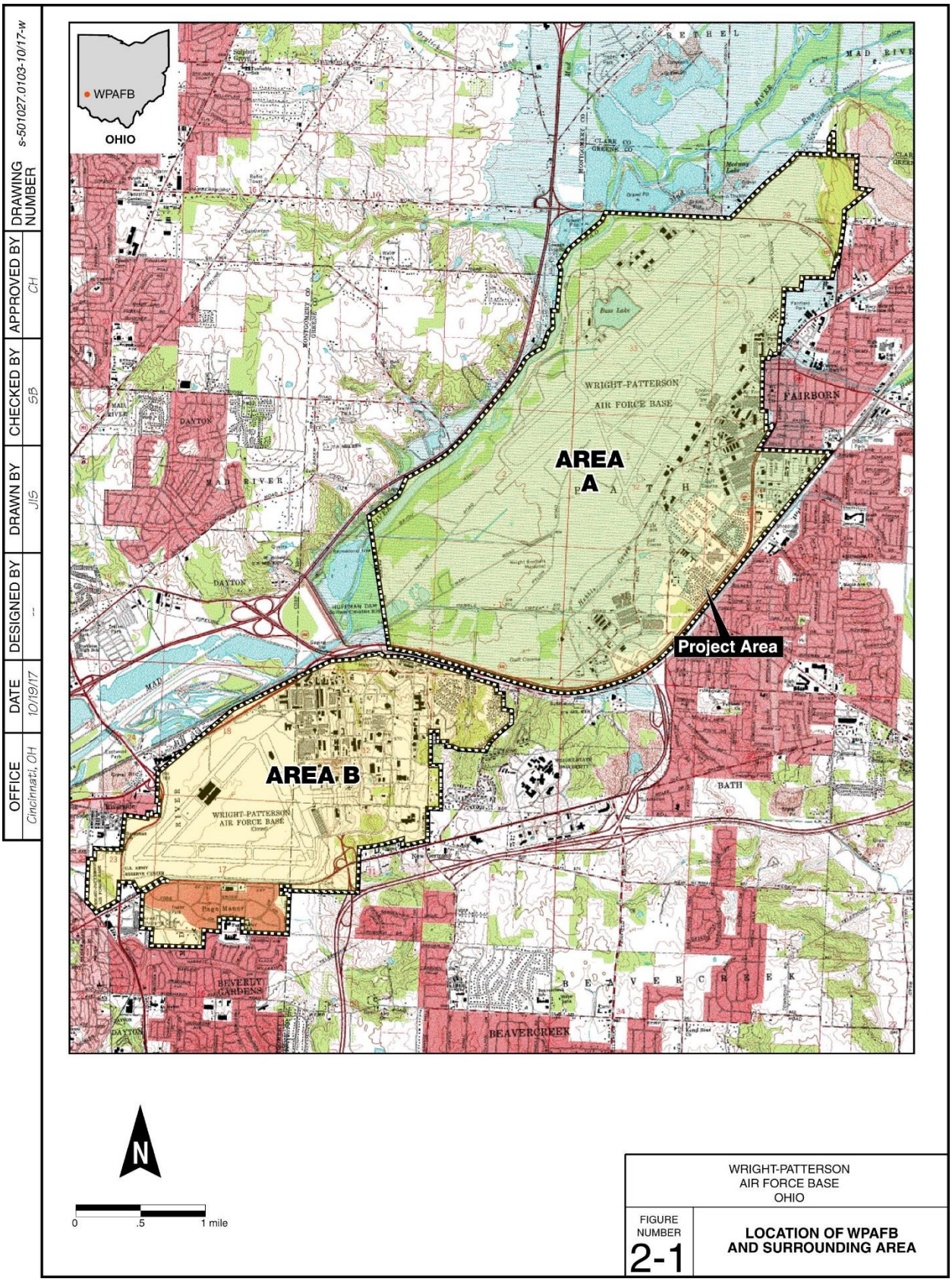
The Proposed Action involves the demolition of 21 temporary lodging facilities (TLFs) located in the Pine Estates Housing Complex in Area A at WPAFB. The duplex housing units would be demolished to prepare the project site for construction of an approximately 270,000 square foot (sf), one-story warehouse-style facility that would be the site of the NRO data center. The siting of the NRO facility (and accompanying new mission) at WPAFB would provide a safe and secure location for the NRO's mission. The Proposed Action also includes the operation and maintenance of the NRO facility.

It is noted that the existing NRO facilities would not be vacated as part of this proposed action. The creation of the new facility is to consolidate operations that exist as part of other NRO facilities and to meet the requirements of the DCOI. Therefore, there was no need to evaluate the impacts of vacating the existing NRO facilities.

2.2 Selection Standards

Considering alternatives helps to avoid unnecessary impacts and allows for any analysis of reasonable ways to a purpose. To warrant detailed evaluation, an alternative must be reasonable. To be considered reasonable, an alternative must be suitable for decision making, capable of implementation, and sufficiently satisfactory with respect to meeting the purpose of and need for the action. The NEPA regulations define reasonable alternatives as economically and technically feasible, and show evidence of common sense.

Through the basing process, the NRO considered the following military installations as possible basing locations for the eastern region data center: Arnold Air Force Base (AFB) in Tennessee, Langley AFB in Virginia, MacDill AFB in Florida, Scott AFB in Illinois, Fort Ambrose Powell (AP) Hill in Virginia, Fort Bragg in North Carolina, Fort Campbell on the Kentucky and Tennessee border, Fort Gordon in Georgia,


WPAFB
OHIO
AREA A
AREA B
Project Area
WRIGHT-PATTERSON AIR FORCE BASE
FAIRBORN
DAYTON
BEAVERCREEK
BATH
BEVERLY GARDENS
N
0
.5
1 mile
OFFICE
Cincinnati, OH
DATE
10/19/17
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WRIGHT-PATTERSON AIR FORCE BASE OHIO
FIGURE NUMBER 2-1
LOCATION OF WPAFB AND SURROUNDING AREA

1

Fort Jackson in South Carolina, Fort Leonard Wood in Missouri, Norfolk Naval Base in Virginia, National Geospatial Intelligence Agency (NGA) Arnold in Missouri, WPAFB, and five additional sites not disclosed.

The NRO worked to identify reasonable alternatives based on three universal selection standards, which were applied to all 18 installation locations. These selection standards represent capabilities that each installation must have in order to qualify as a reasonable alternative. The selection standards are as follows:

- Mission criteria: location fosters the NRO and National Air and Space Intelligence Center (NASIC) partnership and meets the IC requirement need to reduce exposure to most natural and man-made hazards.

- Capacity criteria: possesses existing network connections which fulfill all of NRO throughput and latency requirements and infrastructure and utilities to support most of the data center needs with minor modifications required.

- Environmental criteria: considerations on air quality, incompatible development, base encroachment, and land use controls.

Several NRO requirements were identified in order to fulfill the purpose of constructing a data center in the eastern region. The following requirements were screened against each alternative:

Facility Requirements

- Minimum of 20 acres of land to accommodate construction of:
  - 150,000 sf facility for approximately 3,000 racks of IT equipment
  - Supporting equipment such as generators, water retention tanks, and cooling systems
  - Minimum of 1 megawatt (MW) at initial operational capability, and up to 60 MW at maximum capacity
  - Water connection (amount to be determined, between 100-145,000 gallon per day)
  - Barriers, fence line, cameras, lighting, perimeter intrusion detection, 24/7 manning, and DoD standoff requirements
- Proximity to existing IC on the same base (0 miles) – sharing network connectivity and potentially support efforts

Personnel Requirements

- 12 to 18 contractor personnel providing constant support

Location Requirements

- Connected to relevant U.S. government networks with low latency to the Washington (D.C.) Metropolitan Area (WMA)
- At least 100 miles outside of the WMA
- A location that already hosts an IC tenant
- On U.S. government land with potential use of existing security forces
- Able to access up to 60 MWs of power
- East of the Mississippi River to support resiliency efforts

- Not prone to man-made disasters (i.e., fire, industrial spill/accident) (identified by DHS annual risk analysis)

Time Requirements

- Initial operation capacity in Fiscal Year (FY) 21, full operational capacity in FY22

Of the 18 installations determined to initially meet the basic purpose and need of the proposed action, the NRO selected WPAFB as the location for the construction of the eastern region data center because it scored well above the other locations being considered. The site surveys determined that the other locations were not appropriate because the sites failed to meet one or more of the selection standards. The WPAFB location would, therefore, best meet the purpose and need and would be analyzed further as the action alternative.

2.3 Screening of Alternatives

Development of reasonable alternatives involved discussions with representatives of:

- NRO Planning Team,
- 88th Air Base Wing (ABW) Installation Beddown Process Manager (88 ABW/XP),
- 88th Civil Engineer Group (CEG) Environmental Assets Section (88 CEG/CEIEA),
- 88 ABW/Beddown Working Group,
- Major Command (MAJCOM) Basing Process Owners (Headquarters Air Force Materiel Command [HQ AFMC]/DS/A8PC),
- NASIC, and
- 88 CEG/CENP, Land/Facility Site Team.

The original 18 military installation locations described above in Section 2.2 were screened against the selection standards. For security purposes, the full details from the screening process are not provided in this EA; however, the screening for a partial list of locations along with the major discrepancies with respect to the selection standards is presented, as follows:

- Arnold AFB
  - Does not meet network throughput/connectivity needs
  - Higher risk of natural disasters

- Fort AP Hill
  - Does not meet network throughput/connectivity needs
  - Higher risk of natural disasters
  - Higher risk of man-made disasters
  - Not at least 100 miles of the WMA

- Fort Bragg
  - Does not meet network throughput/connectivity needs
  - Higher risk of man-made disasters

- Fort Campbell
  - Does not meet network throughput/connectivity needs
  - Higher risk of natural disasters

- Fort Gordon
  - Higher risk of man-made disasters

- Fort Jackson
  - Does not meet network throughput/connectivity needs
  - Higher risk of man-made disasters

- Langley AFB
  - Higher risk of natural disasters
  - Higher risk of man-made disasters

- MacDill AFB
  - Higher risk of natural disasters

- Norfolk AFB
  - Higher risk of natural disasters
  - Higher risk of man-made disasters

- Scott AFB
  - Higher risk of natural disasters

As described above, WPAFB was selected as the location that best met the purpose and need and would be carried forward for analysis.

2.4 Detailed Description of the Alternatives

This section describes the Proposed Action and the No Action alternative. The Proposed Action analyzed in this EA would meet the selection standards of providing a safe and secure data center at WPAFB.

2.4.1 Proposed Action

The Proposed Action is to construct and operate a new NRO facility in Area A at WPAFB. Twenty-one housing units are currently located on the northern portion of the proposed construction site. These units were constructed in the 1970s and were historically utilized as Base housing until they were converted to TLFs in the early 2000s (Photograph 1, **Appendix A**); the majority of units are currently empty and unoccupied. The 21 units were part of the larger Pine Estates complex that consisted of 84 one- and two-story duplexes (WPAFB 2008). An existing roadway is located along the south portion of the TLFs (Photograph 2, **Appendix A**).

In preparation for construction, 21 housing units in the Pine Estates Housing Complex would be demolished. The demolition plan would vary for each building; however, the general elements of these demolitions would include:

- Conduct environmental survey for hazardous substances, including but not limited to: asbestos-containing material (ACM), lead-based paint (LBP), mercury-containing lamps, polychlorinated biphenyl (PCB)-containing light ballasts, and radioactive materials, prior to demolition. These materials would be handled in accordance with WPAFB guidelines.
- Conduct soil testing for presence/absence of pesticides/herbicides due to the proposed construction site being former and current residential-use and known to have formerly applied pesticides/herbicides in this area.
- Raze entire structure and system by conventional demolition.
- Demolish associated parking areas (if applicable).
- Restore pavement to match surrounding grade.
- Re-vegetate areas intended for green space (if applicable).
- Sever and cap water supply and sanitary sewer lines.

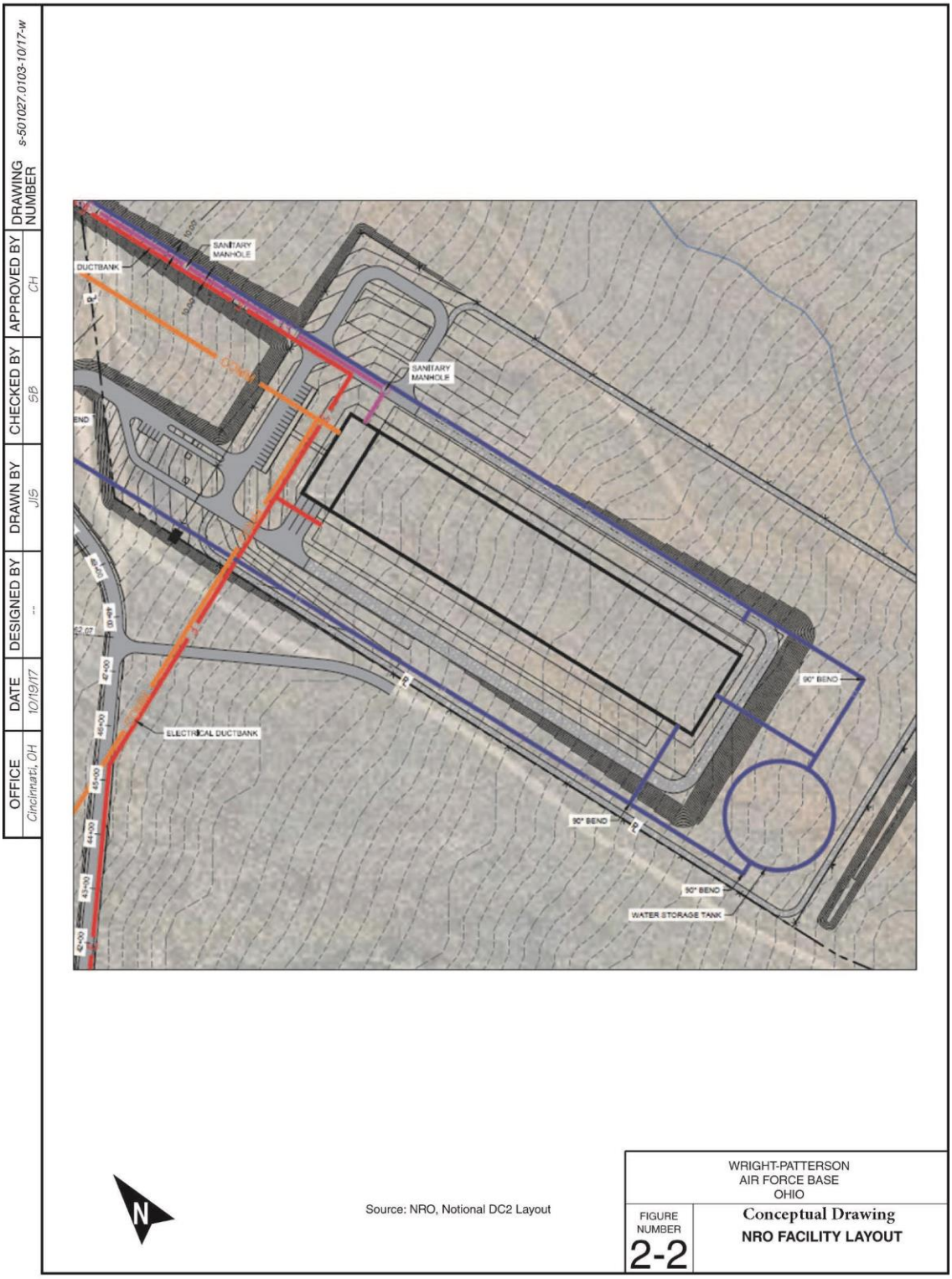
In addition to the Pine Estates housing units, the southern portion of the project site consists of a maintained grassy lawn area with several mature trees scattered throughout the area (Photograph 3, **Appendix A**). This was the former location of the 63 Pine Estates housing units that were demolished in 2008. A fruit, nut, and vegetable garden also exits along the eastern side of the project area (Photograph 4, **Appendix A**) that was originally planted in 2009. Several of the trees and the garden would be removed as part of preparation for construction of the project site. The garden is associated with the WPAFB Medical Center, located adjacent and east of the project site, and would be re-located approximately 800 feet (ft) south of its current location for continued use by the Medical Center.

The proposed NRO facility would be constructed as a one-story warehouse-style structure and would consist of approximately 270,000 sf. A secure perimeter fence would be installed around the data center. The proposed facility layout is presented on **Figure 2-2** and **Figure 2-3** presents the approximate project location on Base. The following is a summary of approximate dimensions for the proposed facility:

- Length – 1,040 ft
- Maximum length of facility plus amenities* – 1,301 ft at longest section
- Width – 260 ft
- Maximum width plus amenities – 632 ft at widest section

*Amenities include: generators; heating, ventilation, air conditioning (HVAC); water tank; front turn around, parking, fuel storage

Additional requirements for the proposed NRO facility would include the utilities and generators (approximately twenty [20] 2,500 kilowatt generator sets) to power the facility for at least seven days in the event of a power failure and adequate water retention, fuel storage, and heating/air-conditioning.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SANITARY MANHOLE
DUCTBANK
SANITARY MANHOLE
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90° BEND
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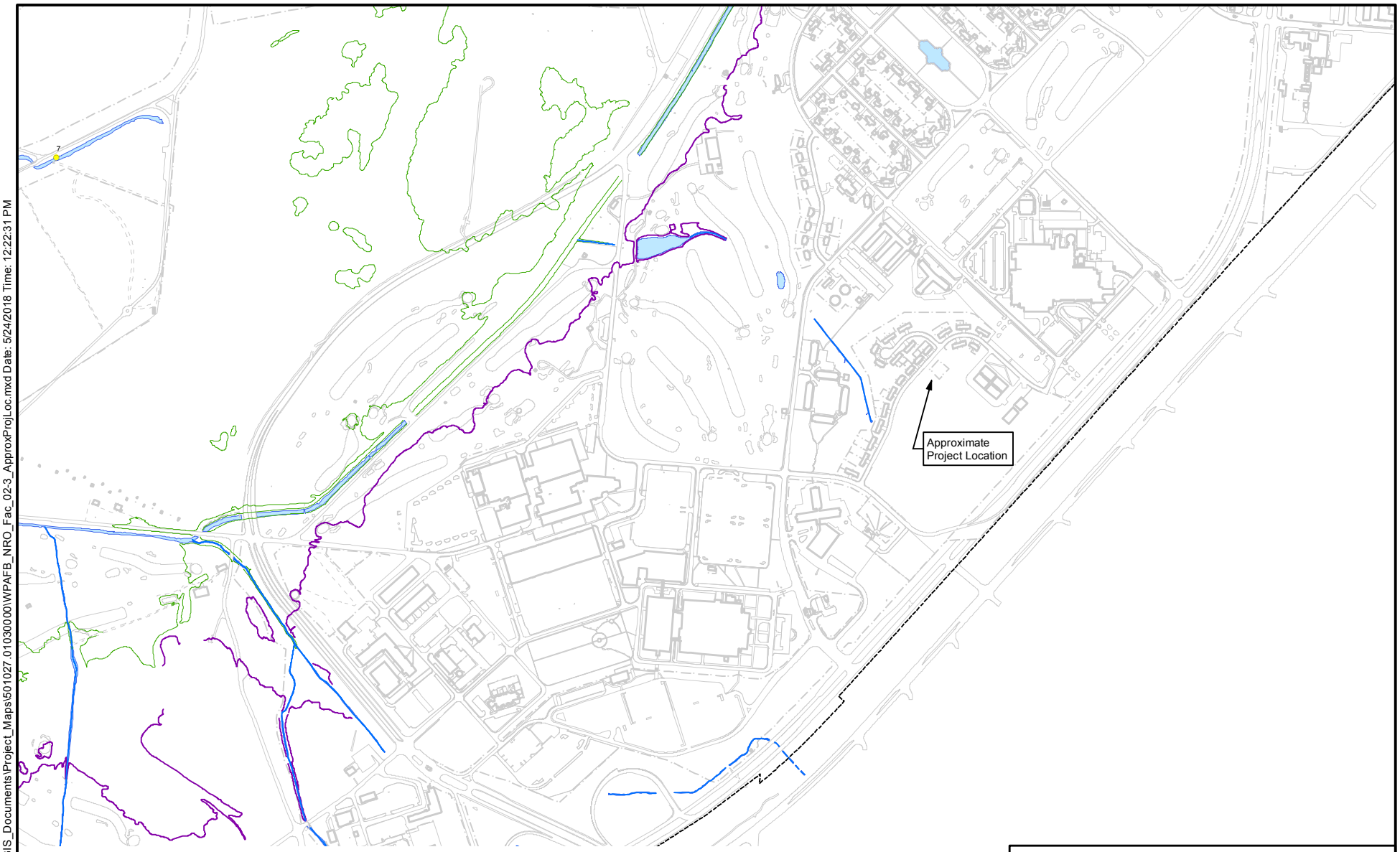
90° BEND
WATER STORAGE TANK
N
Source: NRO, Notional DC2 Layout
WRIGHT-PATTERSON
AIR FORCE BASE
OHIO
FIGURE NUMBER
2-2
Conceptual Drawing
NRO FACILITY LAYOUT

1



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Legend

- Installation Area
- Streams
- 10 Year Floodplain
- 100-Year Floodplain

Source: Integrated Natural Resources Management Plan (2015)

N

1,000 500 0 1,000

Feet

WRIGHT-PATTERSON
AIR FORCE BASE,
OHIO

National Reconnaissance Office (NRO) Facility

FIGURE NUMBER
2-3

Approximate Project Location

Other features of the proposed site would include 12 to 15 parking spaces and a loading dock with adequate space for a vehicle turn-around during deliveries. Water consumption for cooling purposes would be nearly 140,000 gallons/day. Approximately 300,000-gallons of diesel fuel storage would also be required as fuel for backup generators at the facility.

The minimum standoff distance for installation of the new perimeter fence would be 86 ft from existing infrastructure except parking areas. The proposed parking lot would be located outside the fence line (NRO 2017c).

2.4.2 No Action

Under the No Action alternative, the NRO facility would not be constructed at WPAFB and would result in the NRO being unable to provide a critical asset to the IC. Wright-Patterson Air Force Base provides a unique siting location for the NRO mission in that it is already a host to an IC tenant, NASIC. No other military base would provide a suitable siting location for the NRO facility that would meet the location criteria that WPAFB provides.

The No Action alternative does not satisfy the purpose and need of providing a safe and secure location for the NRO mission; however, it is included in the environmental analysis to provide a baseline for comparison with the Proposed Action and is analyzed in accordance with CEQ regulations for implementing NEPA. Although the No Action alternative would eliminate unavoidable adverse, short- and long-term impacts associated with the Proposed Action, the No Action alternative would not satisfy selection standards established for this project, resulting in (NRO 2017b):

- Continued use of aging NRO facilities and infrastructure in the eastern region;
- Failure to share network connectivity in proximity to an existing IC office (NASIC) on the same base;
- Failure to possess existing network connections which fulfill all NRO throughput and latency requirements;
- Inability to meet the NRO's objectives for resiliency and mission diversity in conjunction with Western Data Center;
- Limited ability to reduce exposure to natural and manmade hazards in the U.S. (i.e., earthquakes, hurricanes, nuclear plants, arsenals); and
- Limited ability to foster partnership between the NRO and NASIC.

2.5 Alternatives Eliminated from Further Consideration

Using the selection standards based on NRO's requirements (Section 2.2), 18 installations were considered for the NRO beddown mission but eliminated from consideration early in the planning process (NRO 2017b). These military bases were eliminated from consideration for siting the NRO data center because these sites did not meet one or more selection standards listed in Section 2.2. The military bases listed above were also at higher risk for natural and/or man-made disasters. Other sites considered but

eliminated had even higher levels of selection standard discrepancies. It was concluded from this process that WPAFB was the only location considered in the eastern region that met all major requirements (NRO 2017d).

In addition to the military siting locations listed above, specific locations at WPAFB were evaluated with respect to facility requirements for the NRO beddown mission and construction of a data center (Section 2.2). Six potential site locations in Area A were considered for construction. Three of these locations were dismissed due to costs and impacts to schedule. A cost/benefit analysis was performed; however, this information cannot be released due to security concerns.

Of the three remaining sites, two sites were located in proximity to the NRO's partnering organization, NASIC: one site is adjacent/east of NASIC and the other site is adjacent/west of NASIC (NRO 2017b). Other selection standards out-weighed the importance of co-locating the NRO facility with NASIC and the construction of the NRO facility in proximity to NASIC at WPAFB was eliminated for the following reasons: NASIC-occupied facilities and existing parking infrastructure would require relocation/reconstruction; re-routing of existing traffic networks surrounding NASIC would be required; an on-Base golf course would be impacted; and impacts to an existing landfill at WPAFB would occur. For these reasons, the construction of the NRO facility in close proximity to NASIC at WPAFB was eliminated due to disruption of existing mission critical resources provided by NASIC. The third site of the remaining three sites was selected as the proposed location for the NRO facility.

2.6 Comparison of Environmental Consequences

The Proposed Action is the only reasonable alternative that meets the minimum requirements identified in Section 2.2. The CEQ regulations, however, require an analysis of the No Action alternative for all actions. **Table 2-1** presents a comparison of the potential environmental consequences resulting from implementation of the Proposed Action and the No Action alternative.

Table 2-1. Comparison of Environmental Consequences

Affected Environment	Proposed Action	No Action
Noise	Short-Term: Minor impacts on ambient noise from construction activities. Impacts would be minimized because these activities would be carried out during normal working hours. During the operation of the facility, there is the potential for moderate short-term impacts due to elevated sound levels from emergency backup generators; however, impacts would be reduced by design/engineering controls and expected to be no longer than 7 days in duration. Long-Term: No impact.	Short-Term: No impact. Long-Term: No impact.
Air Quality	Short-Term: Construction-related air emissions generated on Base as a result of particulate matter and engine exhaust emissions would be minor because emissions would be short in duration and are negligible with respect to overall emissions expected for the region. Moderate impacts could occur due to air emissions from emergency generators in the event of power failures. At a minimum, a Permit-to-Install (PTI) and modification of the Title V operating permit would be needed for the generators. The results of the New Source Review and modeling analysis would impact the final design of the project and dictate how the air impacts would be mitigated. Conversely, WPAFB could develop an avoidance strategy that would satisfy air permitting requirements, mitigate air impacts, and provide greater certainty of the final design earlier in project implementation. Long-Term: No adverse impact.	Short-Term: No impact. Long-Term: No impact.
Water Resources		
Groundwater	Short-Term: No impact. Long-Term: No impact as the proposed NRO site is not located within the city of Dayton Source Water Protection Program (SWPP) boundary.	Short-Term: No impact. Long-Term: No impact.
Surface Water	Short-Term: Minor adverse impact from surface water runoff during excavation activities. Impacts would be minor because best management practices (BMPs) for erosion and sedimentation controls would be implemented. In addition, the construction site would comply with the requirements of the WPAFB's National Pollutant Discharge Elimination System (NPDES) permits by implementing the Storm Water Management Plan (SWMP). The SWMP would require implementation of stormwater protection practices (silt and/or sediment fencing, rock check dams, temporary seeding, storm drain inlet protection, dust control), where applicable, to reduce the likelihood of pollutants entering the WPAFB storm system from construction activities Long-Term: Minor adverse impact due to storm water control features that would be designed and built in order to allow the facility to comply with Section 438 of the Energy Independence and Security Act (EISA). Impacts due to an increase in impervious surface area at the proposed site would be minimized by addressing the increase in storm water flow in the design of the new facility. The stormwater system would be evaluated to determine whether increased capacity could be accommodated.	Short-Term: No impact. Long-Term: No impact.
Floodplains	Short-Term: No impact because the proposed NRO site is not located within a floodplain. Based on consultation with the Miami Conservancy District (MCD), the proposed project is located within the Huffman Retarding Basin and is subject to the restrictions set forth by the MCD in Greene County Deed Book 129, Page 146 on December 16, 1922. The MCD indicated, however, that the proposed project would not adversely affect the retarding basin. Long-Term: No impact.	Short-Term: No impact. Long-Term: No impact.

Affected Environment	Proposed Action	No Action
Biological Resources Vegetation	Short-Term: Minor adverse impact because the NRO project site is currently a partially grass and tree-covered area. Several trees would be removed from the project site in preparation of new construction. The majority of the project site contained 63 buildings associated with the Pine Estates Housing Complex; therefore, construction activities would take place on previously disturbed area. Long-Term: Negligible impact from loss of vegetation that is common elsewhere on Base.	Short-Term: No impact. Long-Term: No impact.
Wildlife	Short-Term: Negligible impact on wildlife as the proposed project site is not located in an area that provides suitable wildlife habitat; the current land use would not change; and proposed construction activities are not in close proximity to any threatened or endangered species to generate noise-related effects from proposed construction activities. Long-Term: No impact.	Short-Term: No impact. Long-Term: No impact.
Threatened and Endangered Species	Short-Term: Negligible impact on threatened and endangered species as the proposed construction site does not provide suitable habitat. Based on consultation with the U.S Fish & Wildlife Service (USFWS), trees on the project site that are greater than or equal to 3-inches diameter breast height would only be cut between the months of October 1 and March 31. Otherwise, emergence surveys would be performed to avoid adverse effects to the endangered Indiana bat and threatened northern long-eared bat. Long-Term: No impact.	Short-Term: No impact. Long-Term: No impact.
Wetlands	Short-Term: No impact as there are no wetlands near the project site. Long-Term: No impact.	Short-Term: No impact. Long-Term: No impact.
Earth Resources	Short-Term: Minor impact to existing soils during construction of the NRO facility. Impacts would be minimized by implementing BMPs for erosion and sedimentation controls. Long-Term: No adverse impact.	Short-Term: No impact. Long-Term: No impact.
Hazardous Materials/Waste	Short-Term: Minor impact to hazardous materials/waste during demolition of the 21 Pine Estates housing units. Any hazardous materials/waste would be identified and removed in accordance with the WPAFB Hazardous Material Management Plan (WPAFB 2018a) and WPAFB procedures. Hazardous materials/waste used during construction activities would not be expected to increase over existing conditions. Long-Term: Potential adverse impacts due to hazardous materials/waste as a result of potential release of diesel fuel during transport, transfer, storage, or disposal. The potential for impacts would also be minimized through proper procedures for handling stored fuels.	Short-Term: No impact. Long-Term: No impact.

Affected Environment	Proposed Action	No Action
ACM and LBP	Short-Term: No adverse impact to ACM as surveys were performed at all Pine Estates buildings in 2008 and would be handled according to the findings of the survey. Lead-based paint surveys were not documented for Pine Estates in 2008; however, would be documented prior to demolition of the TLFs. Long-Term: No impact.	Short-Term: No impact. Long-Term: No impact.
Environmental Restoration Program (ERP)	Short-term: No adverse impacts because there are no ERP sites within 3,000 ft of the NRO project site. Long-term: No impact.	Short-Term: No impact. Long-term: No impact.
Cultural Resources	Short-Term: No adverse impact because no National Register of Historic Places (NRHP)-eligible buildings are being demolished or are located in proximity to the proposed NRO project site. In addition, the proposed site would be located in an area that was previously disturbed. Based on consultation with the State Historic Preservation Office (SHPO), the proposed undertaking would have no effect on historic properties. Consultation with Native American tribes was initiated; however, no responses are anticipated because the proposed action would occur in an area where the ground was previously disturbed. Long-Term: No impact.	Short-Term: No impact. Long-Term: No impact.
Infrastructure / Utilities	Short-Term: Potential minor impacts to utilities during construction would be minimized by using proper marking, draining, and capping procedures during excavation. Minor adverse impact due to increased usage of public services (security forces and fire protection). Minor adverse impact due to construction traffic. In particular, truck traffic would increase. Damaged transportation infrastructure from construction activities would be repaired. In addition, routine traffic flow would be affected because the portion of the roadway associated with the TLFs would be demolished and part of the previous roadway would be within the footprint of the structure. Impacts would be minor because the affected road is not heavily traveled and would be re-routed around the construction site. Long-Term: Minor adverse impact because additional infrastructure (270,000 sf facility and required utility service) would require long-term public services for operation and maintenance of the NRO facility. In addition, infrastructure and utilities would be impacted due to the increased load on the electrical system, water system, sewer system, and natural gas system. Impacts would be minimized by increasing capacity. Siting may be required for the emergency generators. In addition, potential adverse impacts could occur as a result of the potential release of diesel fuel during transport, transfer, storage, or disposal. The diesel fuel storage at the NRO facility would be surrounded by a containment dike capable of holding the volume stored, thus reducing the risk for leaks to reach the nearest storm water outfall. The potential for impacts would also be minimized through proper procedures for handling stored fuels New transmission lines and an electrical substation would be added and water utilities would be upsized over time. The effect on traffic flow would be similar to short-term impacts until such time the roadways around the NRO facility could be reconstructed.	Short-Term: No impact. Long-Term: No impact.
Safety and Occupational Health	Short-Term: Potential impact to workers during construction activities. Impacts would be minimized by adherence to health and safety regulations and standards as well as the health and safety plan.	Short-Term: No impact.

Affected Environment	Proposed Action	No Action
Safety and Occupational Health (cont.)	Long-Term: Potential long-term adverse impacts resulting from hazards associated with diesel fuel storage. Impacts would be minimized by proper fuel management and first response capabilities. No adverse impacts to security as the facility would be fenced and designed to meet the required minimum standoff distance.	Long-Term: No impact.
Socioeconomics	Short-Term: Negligible impact on local workforce and a beneficial impact on the local economy from revenue generated by construction activities. Long-Term: Beneficial impact to the IC due to NRO's ability to provide a critical asset regionally. Beneficial impacts would also be expected due to the additional mission being located at WPAFB.	Short-Term: No impact. Long-Term: No impact.
Environmental Justice	Short-Term: No adverse effect on environmental justice communities or protection of children. Long-Term: No impact.	Short-Term: No impact. Long-Term: No impact.
Cumulative Impacts	When added to past, present, and reasonably foreseeable actions, the activities under the Proposed Action would have no significant adverse cumulative impacts on any resource.	When added to past, present, and reasonably foreseeable actions, the No Action alternative would have no significant adverse cumulative impacts on any resource.

1

3.0 Affected Environment and Environmental Consequences

3.1 Scope of the Analysis

This section describes the current environmental and socioeconomic conditions most likely to be affected by the Proposed Action and provides a baseline from which to identify and evaluate environmental and socioeconomic changes likely to result from implementation of the Proposed Action.

In compliance with NEPA, CEQ regulations, and 32 CFR 989, the description of the affected environment focuses on resources and conditions potentially subject to impacts. These resources and conditions include air quality, noise, water resources, biological resources, earth resources, hazardous materials/waste, cultural resources, infrastructure/utilities, safety and occupational health, socioeconomics, and environmental justice.

This section also describes the potential environmental consequences associated with implementing the Proposed Action or the No Action alternative. Each alternative is evaluated for its potential to affect physical, biological, and socioeconomic resources in accordance with 40 CFR §1508.8. Potential impacts for each resource area are described in terms of their significance. Significant impacts are those that would result in substantial changes to the environment or socioeconomic resources (as defined by 40 CFR §1508.27) and should receive the greatest attention in the decision-making process.

In evaluating the context and intensity of impacts, consideration must be given to the degree to which the action might adversely or negatively affect the resource. Consideration must be given to whether an impact affects public health or safety and whether it affects areas having unique characteristics, such as historical or cultural resources, wetlands, or ecologically critical areas. In addition, consideration must be given to the degree to which the action might adversely affect animal or plant species listed as endangered or threatened or their habitat. The level of impacts could also depend on the degree of their being controversial or posing highly uncertain, unique, or unknown risks. Adverse impacts might be found where an action sets a precedent for future actions having adverse effects, as well as in cases involving cumulative impacts. Finally, in evaluating intensity, it must be determined as to whether an action violates a law or regulation imposed for the protection of the environment.

For this EA, thresholds of change for the intensity of impacts are defined as follows:

- *Negligible*, the impact is localized and not measureable or at the lowest level of detection;
- *Minor*, the impact is localized and slight but detectable;
- *Moderate*, the impact is readily apparent and appreciable;
- *Major*, the impact is severely adverse or highly noticeable and considered to be significant; or
- *Beneficial*, the impact is considered positive for the resource area.

It is noted that impacts may also be beneficial. The degree to which impacts are beneficial or positive for a resource are similar to the definitions of intensity listed above.

3.1.1 Resources Analyzed

Analysis of potential environmental effects focuses on resource areas that are appropriate for consideration in light of a proposed action. All resource areas were initially considered, but some were eliminated from detailed examination because they were determined to have no impact as a result of implementation of the Proposed Action.

3.1.2 Resources Eliminated from Detailed Analysis

The following issues and concerns were determined to have limited potential for environmental impacts as a result of implementation of the Proposed Action and, therefore, were eliminated from further evaluation:

- *Airspace.* Proposed project activities would not result in any obstructions to airspace or hazards to airspace management at WPAFB. Therefore, there would be no impacts to airspace.

- *Land Use*. Proposed project activities would not result in any overall changes to existing land use designations at WPAFB. Current land use in the proposed project area is designated as open space/residential. Upon completion of the NRO facility, the land use would be considered administrative; however, there would be no impacts to land use. In addition, it is noted that there are several areas in Area A that are designated for recreational land use. A portion of a golf course is located less than one mile from the proposed project site. Other outdoor recreation in Area A primarily occurs near the lakes on Base; however, the lakes are located at distances greater than two miles from the proposed project site. The construction of the NRO facility would not change the recreational land use at these locations.

- *Visual Resources*. Implementation of the Proposed Action would not adversely change the views of or from WPAFB.

3.2 Noise

3.2.1 Definition of the Resource

Noise is defined as an undesirable sound that interferes with communication, is intense enough to damage hearing, or is annoying. Human response to noise varies according to the source type, characteristics of the source, distance between source and receptor, receptor sensitivity, and time of day. Sound is measured with instruments that record instantaneous sound levels in decibels (dB); decibels characterize sound levels sensed by the human ear. "A-weighted" decibels (dBA) incorporate an adjustment of the frequency content of a noise event to represent the way in which the average human ear responds to a noise event. Sound levels analyzed in this EA are A-weighted.

Noise Criteria and Regulations

Federal and local governments have established noise guidelines and regulations for the purpose of protecting citizens from potential hearing damage and from various other adverse physiological,

psychological, and social effects associated with noise. Guidelines and regulations that are relevant to the project are described below.

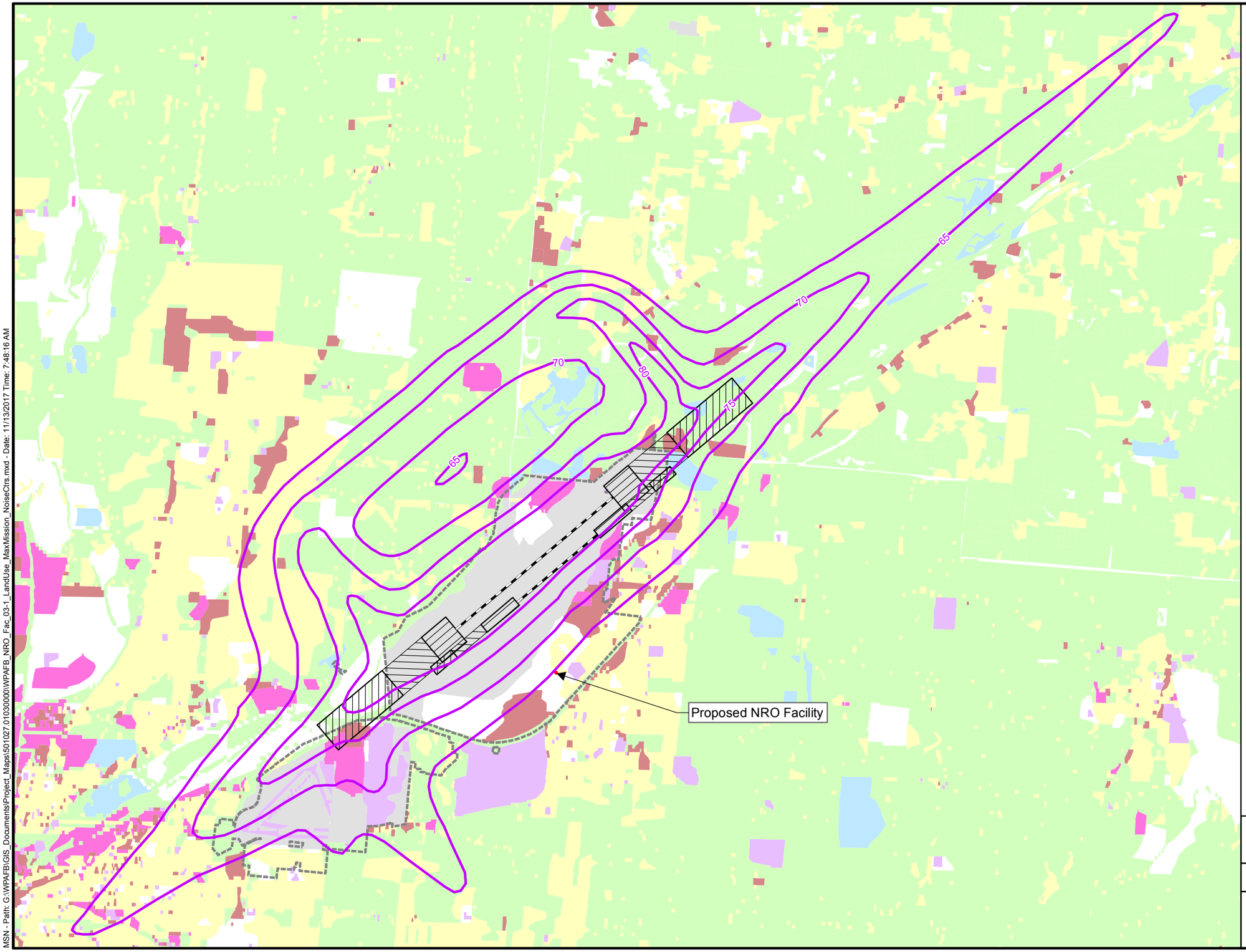
The AF land use compatibility guidelines (relative to DNL values) are documented in the *AICUZ Program Handbook* (USAF 1999). Five noise zones are used in AICUZ studies and described in DoD Instruction Number 4165.57 May, 2011 to identify noise impacts from aircraft operations. These noise zones range from DNL of 65 to 80 dBA and above. For example, it is recommended that no residential uses, such as homes, multifamily dwellings, dormitories, hotels, and mobile home parks, be located where the noise is expected to exceed a DNL of 65 dBA.

According to the AF, the Federal Aviation Administration (FAA), and U.S. Department of Housing and Urban Development (HUD) criteria, residential units and other noise-sensitive land uses are "clearly unacceptable" in areas where the noise exposure exceeds day-night A-weighted sound level (DNL) of 75 dBA, "normally unacceptable" in regions exposed to noise between the DNL of 65 to 75 dBA, and "normally acceptable" in areas exposed to noise where the DNL is 65 dBA or less. The Federal Interagency Committee on Noise developed land-use compatibility guidelines for noise in terms of DNL (U.S. Department of Transportation [USDOT] 1980). The DNL is the metric used by the AF in determining noise impacts of military airfield operations for land use planning.

If sensitive structures are located in areas within a DNL of 65 to 75 dBA, noise-sensitive structures should be designed to achieve a DNL of 25 to 30 dBA interior noise reduction. Noise-sensitive structures might include schools, concert halls, hospitals, and nursing homes. Elevated noise levels in these structures can interfere with speech, causing annoyance or communication difficulties. Some commercial and industrial uses are considered acceptable where the noise level exceeds DNL of 65 dBA. For outdoor activities, the U.S. Environmental Protection Agency (USEPA) recommends DNL of 55 dBA as the sound level below which there is no reason to suspect that the general population will be at risk from any of the effects of noise (USEPA 1974).

The AICUZ program is also intended to reduce the potential for aircraft mishaps in populated areas. As a result of this program, WPAFB has altered basic flight patterns to avoid heavily populated areas. In addition, airfield safety zones were established under AICUZ to minimize the number of people who would be injured or killed if an aircraft crashed. Three safety zones are designated at the end of all active runways: Clear Zone (CZ), Accident Potential Zone (APZ) I, and APZ II (**Figure 3-1**).

The CZ represents the most hazardous area. The APZs are outside of the CZ. The APZ I is located immediately beyond the CZ and has a high potential for accidents. The APZ II is immediately beyond APZ I and has measurable potential for accidents. While aircraft accident potential in APZs I and II does not necessarily warrant acquisition by the AF, land use planning and controls are strongly encouraged for



Legend:

- Clear Zone
- APZ I
- APZ II
- Installation Area
- Runways
- Maximum Mission DNL Noise Contours
- Residential
- Commercial
- Industrial
- Institutional
- Open Space
- Vacant and Agricultural
- Extractive (Mining/Quarry)
- Airports

NRO = National Reconnaissance Office

Source: 1995 AICUZ Study Maximum Mission

Source: Land Use - Ohio Department of Natural Resources Montgomery County Land Use data; Miami County Land Use Data; Clark County Land Use data; Greene County Land Use data.

N

6,000 3,000 0 6,000

Feet

WRIGHT-PATTERSON
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OHIO

National Reconnaissance Office (NRO) Facility

FIGURE NUMBER 3-1

Existing Land Use and Maximum Mission Noise Contours at WPAFB

MSN - Path: G:\WPAFB\GIS_Documents\Project_Maps\501027.01030000\WPAFB_NRO_Fac_03-1_LandUse_MaxMission_NoiseCtrs.mxd - Date: 11/13/2017 Time: 7:48:16 AM

the protection of the public. Compatible land uses are specified for these zones. According to AFI 32-7063, all new construction is required to comply with the AICUZ.

3.2.2 Affected Environment

Existing noise contours were analyzed using results from DoD-approved noise models in the vicinity of WPAFB. The noise contour analysis for WPAFB is presented in the *1995 AICUZ Study for Wright-Patterson AFB, Ohio* (WPAFB 1995a). Based on reasonable assumptions at the time of the 1995 AICUZ Study, a Maximum Mission/Maximum Capacity Scenario was analyzed and incorporated a potential increase in aircraft operations. Although other aircraft have been utilized at WPAFB, the Maximum Mission Model was intended to capture the maximum feasible operational capacity of the airfield and support activities. Within the limits of accuracy of the model itself, it was meant to provide a good-faith "worst-case" baseline for the surrounding communities' zoning and land-use decisions, thus limiting encroachment and preserving the capacity of the Base to host additional flying missions. Because the Maximum Mission Scenario noise contours have been, and are currently, used for noise compatibility planning around the Base, these contours are used as the baseline for the noise analysis in this EA. **Figure 3-1** depicts the baseline noise contours presented in the 1995 AICUZ Study (WPAFB 1995a).

These contour values represent existing conditions to which the potential noise levels from construction of the NRO facility and potential post-construction noise from the emergency generators can be compared. The proposed NRO facility would be located just outside the 65 DNL contour lines. There are also several noise-sensitive structures in the vicinity of the proposed NRO facility.

The concept planned for the NRO facility would include an uninterrupted emergency power supply, which is assumed to consist of twenty 2.5 MW generator sets. Although a specific generator set has not yet been selected, a representative manufacturer and model was assumed for purposes of the evaluation in this EA: the Caterpillar Model 3516C generator set (3516) consisting of a V-16 water-cooled diesel engine, which powers a generator capable of producing 2.5 MW of electric power. These generators would only be used for temporary emergency electric power and are anticipated to be in service on an as-needed basis for a maximum duration of 7 days of continuous use. It is also assumed that a powerhouse would be attached/conterminous to the NRO building and would enclose the twenty 2.5 MW generator sets, diesel day tanks, electrical load-banks, and switchgear.

Based on the size and number of generators, it is estimated that the dimensions for the powerhouse would be approximately 1,000 ft long and 150 ft wide. The building would be approximately 632 ft at the maximum dimension, which would include the powerhouse section that would contain the 20 generator sets and auxiliary equipment. Because the powerhouse containing the 20 generator sets is estimated to measure approximately 1,000 ft by 150 ft, the powerhouse would likely be located as a bump-out building section parallel to the long dimension (1,301 ft) of the NRO facility.

The generator noise is not expected to be a significant source of noise created by the Model 3516 generator sets. The primary sources of noise would include: engine noise, the engine's radiator cooler fans, and the engine's muffler. Each engine would be equipped with a muffler and exhaust pipe that would be directed upward to project residual exhaust noise vertically.

Noise mitigation measures that could be implemented into the design of the powerhouse during the design phase include: acoustic insulating material installed to provide a seal around pipes to pass through the wall to the cooling unit outside the building; air intake ventilation fans equipped with hoods designed to deflect building noise down toward the ground; rollup insulated steel doors equipped with rubber gaskets at bottom edge; and vinyl-faced, 2-inch thick, fiberglass, insulating sheets installed on the interior side of the building's sheet metal on all interior walls and the roof.

As shown in **Figure 3-2** and **Table 3-1**, four groups of currently occupied buildings are located within 800 ft of the outer boundary of the NRO facility, which would include the footprint of the generator powerhouse. The smaller footprint of the building includes the minimum NRO facility footprint without a powerhouse "bump-out". The larger footprint includes the powerhouse "bump-out", which could be located on either side of the NRO facility's longer dimension.

Table 3-1 Distances from the NRO Facility to Noise-Sensitive Building Groups

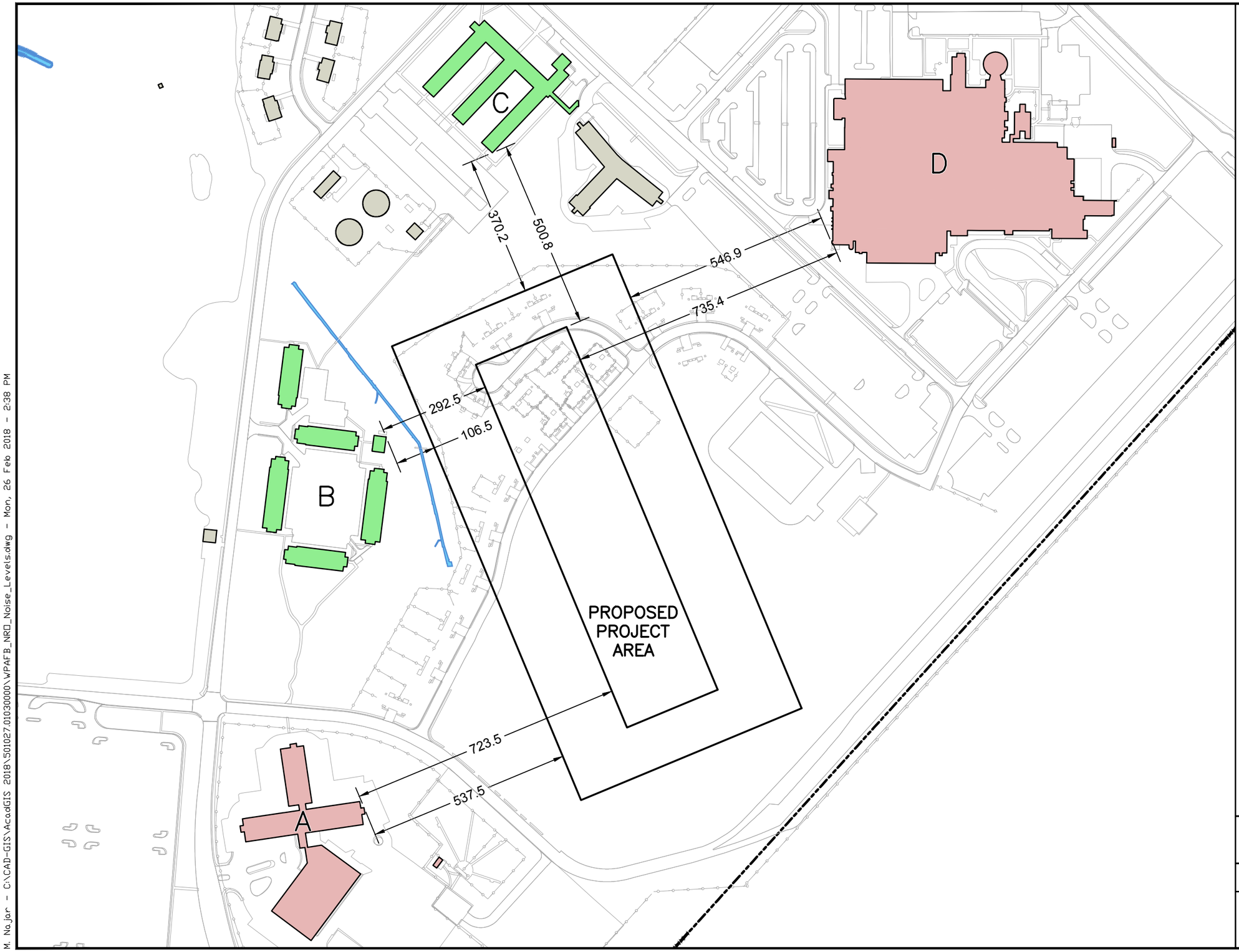
Building Group	Range of Distances from the Proposed NRO Boundary to the NRO Building (ft)[1]	Direction from NRO Facility
A	538 - 724	Southwest Corner
B	107 - 293	Northwest Corner
C	370 – 501	North
D	547 – 735	Northeast Corner

[1] Measured from the closest building in the group to the NRO facility.

Because sound pressure decreases with increasing distance from the sound source, the sound level measured as dBA is greatest at the portion of the building that is closest to the sound sources (the radiator cooler fans), and is the least at the portion of the building that is farthest from the sound sources.

All six building units of Building Group B are projected to experience sound levels above the 65 dBA threshold deemed "normally acceptable" in areas exposed to noise where the DNL is 65 dBA or less, as described in the *AICUZ Program Handbook* (USAF 1999). Only a small portion of Buildings A and D are projected to experience sound levels above this 65 dBA threshold.

Mechanical sound pressure data was obtained from Caterpillar for the diesel-fueled Model 3516 generator set. This sound pressure data includes sound created by the 16-cylinder diesel engine and sound created by the air-cooled generator.



Legend:

- Occupied Building
- To be potentially demolished

N

250 125 250

Feet

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OHIO

NRO Facility EA

FIGURE NUMBER 3-2

Distances to Facilities Nearest to Proposed Project

M. Major - C:\CAD-GIS\AcadGIS 2018\501027.01030000\WPAFB_NRD_Noise_Levels.dwg - Mon, 26 Feb 2018 - 2:38 PM

The Caterpillar sound level data for the Model 3516 (as dBA) included sound measurements at three distances from the engine: 1 meter, 7 meters, and 15 meters. Although sound data was also obtained when the generator set was running at power loads ranging from 10 percent to 100 percent, levels were found to be the same at all power loads between 10 percent and 100 percent; therefore, the only variable in the sound level data provided by Caterpillar is the distance from the generator set.

The Caterpillar data for the Model 3516 reported a sound level of 105 dBA at 1 meter (3.28 ft), 94 dBA at 7 meters (22.97 ft), and 88 dBA at 15 meters (49.21 ft). Sound levels were estimated at Building Groups A, B, C, and D that are attributed to mechanical sound. Sound data includes a reduction of sound by approximately 25 dBA by a powerhouse building exterior walls. Because sound pressure decreases with increasing distance from the sound source, the sound level in dBA is greatest at the portion of the building that is closest to the sound source, and is the least at the portion of the building that is farthest from the sound source.

Building Groups A, B, C, and D are expected to experience sound levels (originating only from mechanical engine sources located within an enclosed powerhouse) well below the 65 dBA threshold deemed "normally acceptable" in areas exposed to noise where the DNL is 65 dBA or less, as described in the AICUZ Program Handbook (USAF 1999).

3.2.3 Environmental Consequences

Noise impact analyses typically evaluate potential changes to existing noise environments that would result from implementation of a proposed action. Potential changes in the noise environment can be beneficial (i.e., if they reduce the number of sensitive receptors exposed to unacceptable noise levels), negligible (i.e., if the total area exposed to unacceptable noise levels is essentially unchanged), or adverse (i.e., if they result in increased noise exposure to unacceptable noise levels).

3.2.3.1 Proposed Action

Implementation of the Proposed Action would have minor, temporary effects on the noise environment during the construction phase of the NRO project. Noise impacts would be experienced by workers directly involved in construction activities and WPAFB personnel working in buildings near the construction site.

Noise impacts to construction workers would result from the use of construction equipment and trucks. Based on the estimated noise measurements for equipment discussed in this section and the sound level increases, persons at a distance of approximately 50 ft from the work area could experience sound levels greater than 25 dB over the background level used in land use compatibility planning and environmental assessments (i.e., 65 dB). Therefore, minor short-term adverse impacts from noise in the construction work area would occur. Noise levels would be more intense in the immediate construction work area as a result of construction equipment (i.e., electric drill – 95 dB, power saw – 110 dB, chain saw/hammer on

nail – 120 dB, jackhammer/power drill – 130 dB); however, effects would be minimized because workers would be responsible for adhering to health and safety regulations.

The nearest noise-sensitive structures to the proposed NRO project site would be those adjacent to the construction site, which are located at distances greater than 500 ft from the proposed project site. Personnel in occupied buildings near the NRO project site would experience short-term intermittent noise impacts; however, demolition and construction related noise would occur during normal working hours, would be temporary, short in duration, and comparatively minor. No long-term adverse noise impacts would result from the Proposed Action to either construction workers or personnel in the vicinity of the proposed NRO project site.

Because the noise environment on Base and in the vicinity of WPAFB is dominated by military aircraft overflights, additional noise produced by construction activities would not affect sensitive receptors on or off the Base. The proposed NRO project site is located in a noise zone less than 65 dB (**Figure 3-1**). Impacts on ambient noise levels from the construction site would result from activities involving construction equipment. Noise levels associated with common construction equipment trucks are 83-93 dB at 50 ft (Center for Hearing and Communication [Center] 2017).

As discussed in Section 3.2.1, the AICUZ program is also intended to reduce the potential for aircraft mishaps in populated areas. All new construction must comply with AICUZ. The proposed location for the NRO facility is outside of the CZ, APZ I, and APZ II (**Figure 3-1**).

Once in operation, primary impacts to noise from the NRO facility would be associated with the emergency generators. The NRO project location would be located within the projected 60-65 dBA baseline noise contours. The specific location of the proposed NRO facility and adjacent Building Groups A, B, C, and D (**Figure 3-2**) are projected to lie within the approximate 62 – 64 dBA noise contours.

Impacts would range from minor to moderate, depending upon the side of the building and direction the generators would be facing. As a result of sound created by the 20 generator sets cooler fans and muffler exhausts, all six buildings in Building Group B are projected to experience sound levels above the 65 dBA threshold deemed "normally acceptable" in areas exposed to noise where the DNL is 65 dBA or less, as described in the *AICUZ Program Handbook* (USAF, 1999). These buildings are potentially slated for demolition. If demolition occurs, there would be no adverse impact to these buildings from noise.

The sound created by the 20 generator set's cooler fans and muffler exhausts would only impact a small portion of Building Groups A and D that are nearest the sound sources and directly face the cooler fans and muffler exhausts. These buildings would be projected to experience sound levels above this 65 dBA threshold deemed "normally acceptable" in areas exposed to noise where the DNL is 65 dBA or less.

For mechanical sound transmitted through the insulated walls and baffled wall openings, all four Building Groups are included in this assessment, Building Groups A, B, C, and D are projected to experience sound levels well below the 65 dBA threshold deemed "normally acceptable" in areas exposed to noise where the DNL is 65 dBA or less.

If the NRO facility powerhouse would be located on the west side of the NRO facility (facing Building Groups A and B), the six buildings that comprise the Building Group B would be expected to experience sound levels that far exceed 65 dBA. Equipment and technology is available to partly enclose, absorb and deflect sound created by the cooler unit's fans. More effective engine mufflers are also available to upgrade the performance of the "base level" Industrial Grade engine exhaust mufflers that were used in this assessment. However, the cost of this technology and equipment, and the ability of these improvements to reduce sound levels from 80 dBA to less than 65 dBA is not known.

It is noted that Building Groups B and C are potentially to be slated for demolition. It would be more cost-effective to remove Building Group B than to install additional noise-reduction technology.

If the NRO facility powerhouse would be located on the west side of the NRO facility (facing Building Groups A and B), sound levels at Building Group A are projected to range between 60 and 66 dBA. If the powerhouse would be located on the west side of the NRO facility and Building Group B would be demolished, the sound levels would be below 65 dBA for all three remaining groups A, C, and D.

Alternatively, if the powerhouse would be located on the east side of the NRO facility (facing Building Group D), sound levels at Building Group B would be projected to range between 38 and 53 dBA. By locating the powerhouse on the east side of the NRO facility, however, the sound levels at Building Group D would be expected to range between 53 and 67 dBA. Construction of the powerhouse on the east side of the NRO facility and installation of enhanced exhaust mufflers would result in sound levels below 65 dBA for all four building groups.

It is noted that this evaluation was based on assumptions about the type of generator and the characteristics of the powerhouse and noise controls. Once the NRO facility has been designed, it is assumed that a more detailed, site-specific noise study would be performed.

3.2.3.2 No Action

The No Action alternative would have no adverse impact on noise quality.

3.3 Air Quality

3.3.1 Definition of the Resource

Air quality within a defined geographical region is most often determined by measuring the concentration of various pollutants in the atmosphere. The measured levels of pollutants found in ambient air are

expressed in units of parts per million (ppm) or in micrograms per cubic meter (µg/m^3). Air quality in a region is affected not only by the types and quantities of atmospheric pollutants emitted by polluting sources in an area, but also by the surface topography forming air basins and the prevailing meteorological conditions. Some air pollutants may also be naturally occurring.

The federal Clean Air Act (CAA) directed the USEPA to develop, implement, and enforce strong environmental regulations that would ensure clean and healthy ambient air quality. The CAA authorized the USEPA to develop National Ambient Air Quality Standards (NAAQS) to protect public health and welfare. The NAAQS are numerical concentration-based standards for pollutants that have been determined to impact human health and the environment. The USEPA currently enforce both primary and secondary NAAQS for six criteria air pollutants including ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), particulate matter (coarse particulates equal to or less than 10 microns in diameter [PM_{10}] and fine particulates equal to or less than 2.5 microns in diameter [$PM_{2.5}$]), and lead (Pb).

The primary NAAQS represent maximum levels of background air pollution that are considered safe, with an adequate margin of safety to protect public health. Secondary NAAQS represent the maximum pollutant concentration necessary to protect vegetation, crops, and other public resources along with maintaining visibility standards for public welfare. **Table 3-2** presents the primary and secondary NAAQS.

Table 3-2. National Ambient Air Quality Standards

Pollutant	Standard Value [6]		Standard Type
Carbon Monoxide (CO)			
8-hour average	9 ppm	(10 mg/m^3)	Primary
1-hour average	35 ppm	(40 mg/m^3)	Primary
Nitrogen Dioxide (NO_2)			
Annual arithmetic mean	0.053 ppm	(100 µg/m^3)	Primary and Secondary
1-hour average[1]	0.100 ppm	(188 µg/m^3)	Primary
Ozone (O_3)			
8-hour average[2]	0.070 ppm	(137 µg/m^3)	Primary and Secondary
Lead (Pb)			
3-month average[3]		0.15 µg/m^3	Primary and Secondary
Particulate < 10 micrometers (PM_{10})			
24-hour average[4]		150 µg/m^3	Primary and Secondary
Particulate < 2.5 micrometers ($PM_{2.5}$)			
Annual arithmetic mean[4]		12 µg/m^3	Primary
Annual arithmetic mean[4]		15 µg/m^3	Secondary
24-hour average[4]		35 µg/m^3	Primary and Secondary
Sulfur Dioxide (SO_2)			
1-hour average[5]	0.075 ppm	(196 µg/m^3)	Primary
3-hour average[5]	0.50 ppm	(1,307 µg/m^3)	Secondary

Pollutant	Standard Value [6]	Standard Type

Notes:
1 In February 2010, USEPA established a new 1-hr standard at a level of 0.100 ppm, based on the 3-year average of the 98th percentile of the yearly distribution concentration, to supplement the existing annual standard.
2 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. In March 2008, the USEPA revised the level of the 8-hour standard to 0.075 ppm based on the 3-year average of the annual fourth-highest daily maximum 8-hour concentration.
3 In November 2008, USEPA revised the primary lead standard to 0.15 µg/m³. USEPA revised the averaging time to a rolling 3-month average, not to be exceeded.
4 In December 2012, USEPA revised the level of the annual $PM_{2.5}$ primary standards to 12 µg/m³ and retained the secondary level of the annual $PM_{2.5}$ standard at 15 µg/m³ and retained the level of the existing 24-hour $PM_{2.5}$ standard. With regard to primary standards for particle generally less than or equal to 10 µm in diameter (PM_{10}), USEPA retained the 24-hour standard and revoked the annual PM_{10} standard.
5 In June 2010, USEPA established a new 1-hr SO_2 standard at a level of 75 parts per billion (ppb), based on the 3-year average of the annual 99th percentile of 1-hour daily maximum concentrations. The USEPA also revoked both the existing 24-hour and annual primary SO_2 standards.
6 Parenthetical value is an approximately equivalent concentration for CO, NO_2, O_3 and SO_2.

ppb = parts per billion; µg/m³ (micrograms per cubic meter)
ppm = parts per million; mg/m³ (milligrams per cubic meter)

The criteria pollutant O_3 is not usually emitted directly into the air, but is formed in the atmosphere by photochemical reactions involving sunlight and previously-emitted pollutants or "O_3 precursors". These O_3 precursors consist primarily of nitrogen oxides (NO_x) and volatile organic compounds (VOCs) that are directly emitted from a wide range of emissions sources. For this reason, regulatory agencies attempt to limit atmospheric O_3 concentrations by controlling NO_x and VOC pollutants (also identified as reactive organic gases).

The USEPA has recognized that particulate matter emissions can have different health affects depending on particle size and, therefore, developed separate NAAQS for coarse particulate matter PM_{10} and fine particulate matter $PM_{2.5}$. The pollutant $PM_{2.5}$ can be emitted from emission sources directly as very fine dust and/or liquid mist or formed secondarily in the atmosphere as condensable particulate matter typically forming nitrate and sulfate compounds. Precursors of condensable $PM_{2.5}$ can include SO_2, NO_x, VOC, and ammonia (NH_3). Secondary (indirect) emissions vary by region depending upon the predominant emission sources located within the area. The state air agency considers these sources when determining which precursors are considered significant for $PM_{2.5}$ formation and identified for ultimate control.

The CAA and USEPA delegated responsibility for ensuring compliance with NAAQS to the states and local agencies. Each state or local agency is required to develop air pollutant control programs and promulgate regulations that focus on meeting NAAQS and maintaining healthy ambient air quality levels. These programs are detailed in State Implementation Plans (SIPs) that must be approved by USEPA. A SIP is a compilation of regulations, strategies, schedules, and enforcement actions designed for a state to achieve and maintain compliance with all NAAQS. Any changes to the compliance schedule or plan (e.g., new regulations, emissions budgets, controls) must be incorporated into the SIP and approved by the USEPA.

The CAA required that the USEPA promulgate general conformity regulations. These regulations are designed to ensure that federal actions will conform to the state SIP so as not to impede with local efforts

to achieve or maintain attainment with the NAAQS. The General Conformity Rule found in 40 CFR 93 requires a conformity determination for all federal actions located in nonattainment or maintenance areas for NAAQS unless otherwise exempted. Maintenance areas are defined as areas that were once designated as nonattainment and have since been re-designated in 40 CFR Part 81 to attainment, meeting the provisions of Section 107(d)(3)(E) of the CAA and have a maintenance plan approved under Section 175A of the CAA. Federal actions may be assumed to conform if total indirect and direct project emissions are below *de minimis* levels presented in 40 CFR 93.153. The threshold levels (in tons of pollutant per year) depend upon the nonattainment or maintenance area status that USEPA has assigned to a region for each NAAQS. Once the net change in nonattainment or maintenance area pollutants are calculated, the federal agency must compare them to the *de minimis* thresholds to verify if a conformity determination is required.

Title V of the CAA Amendments of 1990 requires states and local agencies to implement permitting programs for major stationary sources. A major stationary source is a facility (e.g., plant, base, or activity) that has the potential to emit more than 100 tons annually of any one criteria air pollutant, 10 tons per year (tpy) of a hazardous air pollutant (HAP), or 25 tpy of any combination of HAPs. However, lower pollutant-specific "major source" permitting thresholds may apply in certain nonattainment areas. For example, the Title V permitting threshold for an "extreme" O_3 nonattainment area is 10 tpy of potential VOC or NO_x emissions. The overall purpose of the Title V permitting rule is to establish regulatory control over large, industrial-type activities and monitor their impact on air quality.

Federal New Source Review (NSR), including Prevention of Significant Deterioration (PSD), is a preconstruction permitting program that requires stringent pollution controls when air emissions increases are "significant" from proposed new major stationary sources or major modifications at existing sources. To be "significant", a proposed project's net emission increase must meet or exceed the rate of emissions listed in 40 CFR 52.21(b)(23)(i) for criteria pollutants; or (1) a proposed project is within 10 kilometers of any Class I area, and (2) regulated pollutant emissions would cause an increase in the 24-hour average concentration of any regulated pollutant in the Class I area of 1 $\mu g/m^3$ or more [40 CFR 52.21(b)(23)(iii)]. The PSD regulations also define ambient air increments, limiting the allowable increases to any area's baseline air contaminant concentrations, based on the area's designation as Class I, II, or III [40 CFR 52.21(c)].

Greenhouse Gases (GHGs) are gases that have been determined by science to trap heat in the atmosphere. The GHGs are generated and emitted by both natural processes and human activities. The accumulation of GHGs in the atmosphere naturally helps regulate the earth's temperature but is believed to contribute to global climate change as defined by USEPA. The GHGs can include water vapor, carbon dioxide (CO_2), methane, nitrous oxide, O_3, and several hydrocarbons and chlorofluorocarbons. Each GHG has an estimated global warming potential (GWP) value, which is a function of its atmospheric lifetime and its ability to absorb and radiate infrared energy emitted from the earth's surface. The GWP of an individual

GHG provides a relative basis for calculating its CO_2 equivalent (CO_2e), the amount of CO_2 equivalent to the emissions of that gas. The CO_2 has a GWP of 1, and is therefore, the standard by which all other GHGs are measured and compared. Facilities evaluating their baseline GHG emissions consider both direct and indirect emissions. Indirect GHG emissions are the result of facility activities that cause other entities to emit GHGs (i.e., electricity usage). Specific sources are required to report certain GHG annual emission levels to the USEPA under 40 CFR part 98 mandatory GHG reporting regulations. Executive Order 13693, *Planning for Federal Sustainability in the Next Decade* provides strategic guidance to federal agencies in the management of GHG emissions.

3.3.2 Affected Environment

Regional Climate

The climate of the southwestern region of Ohio is humid and temperate with warm summers and cold winters. Average minimum and maximum temperatures are between 21 and 36 degrees Fahrenheit (°F) in January and 45 and 85 °F in July. The average annual precipitation is 38.43 inches, with June typically being the wettest month and October the driest month. The prevailing winds are from the southwest, with average monthly wind speeds between 3 and 7 knots.

Regional Air Quality

Air Quality Control Regions (AQCRs) are federally designated areas that are required to meet and maintain federal ambient air quality control standards. Regions may include nearby locations of the same state or nearby states that share the same air pollution problems. Areas that lie within the AQCRs are regulated under the authority of the CAA and may be designated by the USEPA as attainment or nonattainment. These designated areas within the AQCR are required to comply with the NAAQS. Through the CAA, Congress has stated that the prevention and control of air pollution belongs at the state and local level, thus the USEPA has delegated enforcement of the PSD and Title V programs to the Ohio Environmental Protection Agency (OEPA). The OEPA has adopted the NAAQS by reference, thereby requiring the use of the standards within the state of Ohio.

Wright-Patterson AFB

The Base is located in Greene and Montgomery counties, which is part of the Metropolitan Dayton Intrastate AQCR (40 CFR 81.34). EPA regulatory areas are designated as attainment or nonattainment areas and lie within AQCRs. Ambient air quality for the Metropolitan Dayton Intrastate AQCR was formerly classified as an attainment/maintenance area for the 2008 8-hour O_3 standard (USEPA 2012a) and is proposed to be attainment/maintenance for the 2015 8-hour O_3 (OEPA 2016); attainment for the NO_2 annual standard and unclassifiable/attainment for the new 1-hour standard NO_2 (USEPA 2012b); attainment for the SO2 3-hour standard and unclassifiable/attainment for the new 1-hour standard (USEPA 2013); and attainment for the Pb and CO standards. The ambient air quality for $PM_{2.5}$ is classified as attainment for the 24-hour standard and re-designated to attainment/maintenance for the annual standard. For the new annual $PM_{2.5}$ NAAQS, the OEPA submitted a report in December 2013

recommending that Montgomery and Greene Counties' be designated as "unclassified/attainment". This designation was approved by the USEPA effective April 15, 2015 (USEPA 2015).

Air quality is typically good near WPAFB and is generally affected only locally by military and civilian vehicle emissions, particulate pollution from vehicle traffic, emissions from wastewater treatment plants, industrial sources, and construction activities. Mobile sources, such as vehicle and aircraft emissions, are generally not regulated at the local level and are not covered under existing stationary source permitting requirements. Stationary emissions sources at WPAFB include natural gas-fired boilers; research and development sources, such as laboratory fume hoods and test cells; paint spray booths; refueling operations; and emergency power generators.

The Base is under the jurisdiction of USEPA Region 5 and the OEPA. The Regional Air Pollution Control Agency (RAPCA), under the authority of the OEPA, conducts annual compliance inspections at WPAFB. The Base has long had an aggressive program of internal audits and inspections to ensure continual compliance with all applicable air permit terms and conditions. Detailed records are maintained to demonstrate compliance with emission limits and reports are submitted in a timely manner to the local regulatory agency.

The WPAFB air emissions inventory includes over 1,400 emissions sources. All air sources at WPAFB are identified with a four-digit number on a yellow sticker affixed to the source. The Air Program Manager at WPAFB requires notification prior to installation, removal, or relocation of any air source. Most of the stationary sources at WPAFB are classified by OEPA to be insignificant or *de minimis* because of low potential emission levels. Insignificant emission levels are defined in Ohio Administrative Code (OAC) rule 3745-77-01(V)(3) to be less than or equal to 5 tpy of any regulated air pollutant other than a HAP and not more than 20 percent of an applicable major source threshold. *De minimis* sources are exempt from air permitting requirements provided the emission source meets the requirements of OAC rule 3745-15-05.

The most recent renewal of the Title V operating permit was issued to WPAFB on January 18, 2017. There are 24 permitted significant emissions units identified in the permit, most of which were boilers and paint spray booths. All significant emissions units must have specific air permit conditions established by a Permit-to-Install (PTI) before being listed in the Title V operating permit. Modification or replacement of these sources may require a PTI application depending upon the size and the total scope of the project. Insignificant sources listed in the Title V permit may have permit conditions in a PTI or reporting requirements depending on the regulatory qualifications that categorize a source as significant. Insignificant sources that were specifically issued a PTI must be evaluated individually prior to commencing work to assure that the terms and conditions of the issued PTI are maintained for any sources that are added or modified by this project. Insignificant sources that were permitted-by-rule

(PBR) may be modified or relocated without notification provided the terms and conditions of the PBR are maintained.

Insignificant sources that are *de minimis* or to which only generally applicable requirements apply may undergo additions, removals, and relocations and do not require a modification of the Title V permit provided the changes do not exceed insignificant emission levels.

3.3.3 Environmental Consequences

The environmental consequences to local and regional air quality conditions near a proposed federal action are determined based on the increases in regulated pollutant emissions relative to existing conditions and ambient air quality. For the purposes of this EA, the impact in NAAQS "attainment" areas would be considered significant if the net increases in pollutant emissions from the federal action would result in any one of the following scenarios:

- Cause or contribute to a violation of any national or state ambient air quality standard
- Expose sensitive receptors to substantially increased pollutant concentrations
- Exceed any Evaluation Criteria established by a SIP

As mentioned in Section 3.3.2, the counties where WPAFB is located are classified as fully in attainment for all current NAAQS.

Impacts on air quality in NAAQS "nonattainment" areas are considered significant if the net changes in project-related pollutant emissions result in any of the following scenarios:

- Cause or contribute to a violation of any national or state ambient air quality standard
- Increase the frequency or severity of a violation of any ambient air quality standard
- Delay the attainment of any standard or other milestone contained in the SIP

For air sources from federal actions that do not require review for air permitting, the primary tool used to evaluate air impacts is the application of the Air Conformity Rule. Because WPAFB is located in counties that are in full attainment for all NAAQS, a conformity applicability analysis would not be required to determine whether the Proposed Action is subject to the Air Conformity Rule. However, the AF has developed an Air Conformity Applicability Model (ACAM) to assist with evaluating air impacts that can also be used when a conformity applicability determination is not required.

For air sources from federal actions that do require review for air permitting, the process of applying for air permits provides a much more in-depth analysis of the impacts than this EA. This EA will identify potential air regulations impacting the federal action but will not include emission modeling that may reveal adverse impacts during air permitting. For example, federal PSD regulations define air pollutant emissions to be significant if the source is within 10 kilometers of any federal Class I area (e.g., wilderness area greater than 5,000 acres or national park greater than 6,000 acres) and emissions would cause an increase in the concentration of any regulated pollutant in the Class I area of 1 $\mu g/m^3$ or more

[40 CFR 52.21(b) (23) (iii)]. For the purposes of this EA, such an impact to a Class I area would be considered adverse, however, this specific impact can only be determined using refined air dispersion modeling conducted for a PSD permit application or in conjunction with a General Conformity determination.

Air Quality Regulations Applicable to the Proposed Action

Stationary Sources and New Source Review. Local and regional pollutant impacts resulting from direct and indirect emissions from stationary emission sources under the Proposed Action are addressed through federal and state permitting program requirements under NSR regulations (40 CFR 51 and 52). Local stationary source permits are issued by OEPA and enforced by RAPCA. As noted previously, WPAFB has appropriate permits in place and has met all applicable permitting requirements and conditions for existing stationary devices. The Proposed Action includes substantial electrical power and water heating and cooling requirements. Due to the quantity of emergency power generation associated with the Proposed Action, air permits would be required for this project.

The PSD significant emission rates triggering applicability includes 40 tpy NO_x, 100 tpy CO, and 10 tpy $PM_{2.5}$. Potential emission calculations from the emergency power generation engine are reported in Appendix C. Based on the emissions from these generators alone, which were calculated using only 500 hours of operation each, PSD would apply to the Proposed Action because the CO emission increase is significant. Emission rates from all stationary sources must be includes for determining PSD applicability, including indirect emission increases attributed to this project from existing permitted sources. All emission increases from associated sources must be considered to ensure the increase in actual emissions do not impact any NAAQS, which is determined as part of the New Source Review process. All emission increases must also be considered when developing a PSD avoidance strategy that would be included in the air permit to make the strategy federally enforceable as a practicable matter. The Proposed Action at a minimum would require a PTI and modification of the Title V operating permit.

National Emissions Standards for Hazardous Air Pollutants. Because WPAFB has the potential to emit more than 25 tpy of HAPs, certain HAP-emitting activities on Base are subject to regulation under federal National Emissions Standards for Hazardous Air Pollutants (NESHAP), which are promulgated in 40 CFR Parts 61 and 63. These NESHAP require emissions control measures and detailed recordkeeping to show compliance with NESHAP restrictions on the types of materials, such as paints, adhesives, and solvents, which can be used in specific operations. Specific NESHAP to which activities at WPAFB are subject include:

- 40 CFR 63 Subpart GG, Aerospace NESHAP
- 40 CFR 63 Subpart ZZZZ, Reciprocating Internal Combustion Engines (RICE) Maximum Achievable Control Technology (MACT)
- 40 CFR 63 Subpart DDDDD, Industrial, Commercial, and Institutional Boilers (Boiler MACT)
- 40 CFR 61 Subpart M, Asbestos Remediation

In addition, WPAFB would also be subject to the Defense Land Systems and Miscellaneous Equipment (DLSME) NESHAP when that rule is promulgated. This rule would cover military surface coating operations other than those subject to the Aerospace and Shipbuilding NESHAP. The intent is to simplify compliance with DoD facilities that are currently forced to comply with multiple overlapping and sometimes conflicting, NESHAP, including the Miscellaneous Metal Parts and Products Coating NESHAP, Plastic Parts and Products Coating NESHAP, Metal Furniture Coating NESHAP, Large Appliance Coating NESHAP, and Fabric and Other Textiles Coating NESHAP. The USEPA currently has no date set for publication of a draft DLSME NESHAP.

Any new boilers proposed for installation with the Proposed Action would be subject to the Boiler MACT depending upon the size of the individual boilers. Any new emergency generators would be subject to the RICE MACT and must meet the appropriate engine Tier standards. The Base must ensure that all required notifications are submitted to USEPA and all required work practice standards and emission controls are in place prior to boiler and generator startup to ensure all air quality standards are met.

Ohio NO_x Reasonably Available Control Technology (RACT) Regulations. The OAC rule 3745-110, "Nitrogen Oxides – Reasonably Available Control Technology" applies to new stationary internal combustion engines that are 2,000 horsepower or larger including those fired by gas or diesel fuel. Emergency standby stationary internal combustion engines that operate less than five hundred hours during any consecutive twelve-month period are exempt. However, specific records identifying operating hours must be kept per OAC rule 3745-110-03(K)(2). The Proposed Action includes emergency standby generators large enough for this rule to apply. The Base must ensure that these engines comply with the NO_x RACT standards or are appropriately permitted so that they are exempted.

Fugitive Dust Regulations. The OAC rule 3745-15-07 declares dust escaped from any source that causes damage to property to be a public nuisance. Pursuant to OAC rule 3745-17-08(A)(2), the OEPA Director may require any source that causes or contributes to such a nuisance to submit and implement a control plan that employs reasonably available control measures to prevent fugitive dust from becoming airborne. Because the Proposed Action would include demolition and construction activities that have the potential to generate noticeable amounts of dust particles larger in size than PM_{10}, reasonably available control measures (RACM) should be employed by the general contractor to minimize the impact to the neighboring community. The RACM can include, but are not limited to:

- Maintain a written Dust Control Plan onsite
- Apply water or other dust control chemicals to roads and surfaces as applicable
- Cover open-bodied trucks during the transport of material
- Promptly remove debris from paved surfaces to minimize and prevent re-suspension
- Plan material and equipment delivery routes to minimize contact of dust with nearby occupants

Architectural and Industrial Maintenance Coating Regulations. The OAC rule 3745-113, Architectural and Industrial Maintenance (AIM) Coatings, applies to any person who supplies, sells, offers for sale, or manufactures any AIM coating for use within the state of Ohio, as well as any person who applies or solicits the application of any AIM coating within the state of Ohio. At a minimum, the coating specifications for construction activities must conform to the VOC content standards identified in the OAC rule 3745-113-03 for each specific AIM coating type anticipated for application. The localized environmental impacts of the coating applications may be reduced by specifying the use of no-VOC or low-VOC content coatings used in construction.

Open Burning Regulations. The OAC rule 3745-19, Open Burning Standards, prohibits the open burning in restricted areas without approval from OEPA. Only specific activities identified in the rule may be allowed for open burning with proper notice. The Proposed Action includes the removal of up to 100 trees from the project site for preparation of the new building. Burning the trees onsite for disposal is not an allowable activity permitted by this rule. Alternative disposal methods for the trees should be evaluated, which would include finding an economic reuse project like mulching or lumber sales.

Greenhouse Gases. The GHG emissions from the Proposed Action have been quantified to the extent feasible for informational and comparison purposes. The GHG temporary construction emissions were estimated using CO_2e off-road equipment and on-road vehicle emission factors provided in the ACAM. Direct potential GHG emissions were estimated for backup power production assuming 60 megawatt per hour (MWH) would be produced for seven days in onsite diesel generators. Indirect potential GHG emissions were estimated for electrical consumption assuming 60 MWH of continuous consumption. The CO_2e emission level calculations are reported in **Appendix C** at approximately 6,200 metric tons for temporary construction activities; 20,200 metric tons for direct potential emissions; and 410,000 metric tons for indirect emissions from electricity usage. Given the substantial increase with indirect GHG emissions from the Proposed Action, WPAFB must evaluate electricity sources prior to project approval to ensure the 2025 renewable energy targets established for the base can still be met. This could include solar or fuel cell technology installations or purchasing electricity generated from such sources.

3.3.3.1 Proposed Action

Direct and Indirect Emissions

Demolition/Resurface/Construction Activities. Under the Proposed Action, a dozen main projects have been identified for constructing the new NRO facility. To a varying degree, each project has activities that can be categorized into one or several activities including: site preparation and excavation; foundation and flooring construction; building or equipment erection; painting or coating of surfaces; trenching for conduit or piping; and worker commuting. Assumptions used for each activity as inputs to the ACAM emission estimation modules are identified in **Appendix C**.

Demolition/renovation/installation activities would result in emissions of criteria pollutants from the equipment engine exhaust and particulate matter emitted as fugitive dust from demolition/trenching activities and the movement of refuse material and equipment. Additionally, vehicle emissions from the delivery and refuse removal trucks are included along with worker commuter emissions. Because each module in the ACAM only includes the number of workers operating the equipment, a separate category for transient worker commuting was included to account for those contractors performing specific equipment installation, testing, and project supervision. Additionally, VOC emissions may result from any painting or surface coating needed for the project. All criteria pollutant emissions from the construction activities would be temporary. The emissions for the Proposed Action are assumed to occur in one calendar year and are summarized for each project in **Table 3-3**.

Table 3-3. Annual Criteria Pollutant Emissions at WPAFB Associated with the Proposed Action Non-Permitted Sources

Air Pollutant Emissions Source	VOC Emissions (tpy)	NO_x Emissions (tpy)	CO Emissions (tpy)	PM_{10} Emissions (tpy)	$PM_{2.5}$ Emissions (tpy)	SO_2 Emissions (tpy)
Proposed Action						
Demolition Duplex	0.51	3.52	2.85	8.80	0.16	0.007
Demolition Roadway	0.19	1.35	1.04	3.66	0.06	0.003
Site Preparation	0.35	2.44	1.76	16.05	0.11	0.005
Relocate Garden	0.06	0.46	0.33	0.74	0.02	0.001
Building Construction	6.80	4.10	3.03	9.46	0.19	0.008
Water Tank System	0.63	2.11	1.71	3.76	0.10	0.004
Parking and Roads	0.21	1.24	0.98	4.35	0.06	0.002
Perimeter Fencing	0.19	1.29	1.02	2.25	0.06	0.003
UPS/Power Yard	0.38	2.56	2.03	2.44	0.12	0.005
HVAC Yard	0.32	2.18	1.68	2.60	0.10	0.004
Guardhouse/Lighting	0.31	1.87	1.52	0.69	0.08	0.004
Fuel Tank Area	0.37	2.42	1.95	0.46	0.11	0.005
Transient Workers Commuting	1.84	1.74	19.98	0.04	0.04	0.011
Total Emissions	**12.16**	**27.28**	**39.88**	**55.30**	**1.21**	**0.062**
Steady Emissions	**0.05**	**0.05**	**0.59**	**0.001**	**0.001**	**0.0003**
Significant Impact Rates (ACAM)	**100**	**100**	**100**	**100**	**100**	**100**
Exceeds Significant Impact Rate (ACAM)	**No**	**No**	**No**	**No**	**No**	**No**

Note: Tpy = tons per year

Analysis. The information presented in **Table 3-3** shows that NO_x, VOC, SO_2, $PM_{2.5}$ and other criteria pollutant emissions are projected to increase temporarily for project installation activities of the Proposed Action. In accordance with the USAF EIAP guide, it is recommended to use the Significant Indicators provided in the ACAM to qualify if the emission levels have the potential for significant impact.

Comparing **Table 3-3** to the ACAM Conformity Threshold Values used for making ACAM applicability determinations, the Proposed Action would not result in any net emission increases during construction above ACAM Significant Emission Rates when evaluating the project on an annual basis. Furthermore, recurring emissions after the construction period would not result in a net emission increase above ACAM trigger rates. **Appendix C** details the emission factors, calculations, and estimates used in the ACAM to estimate emissions for the Proposed Action.

Stationary Source Emissions

Emergency Generators and Boilers. Under the Proposed Action, up to 20 emergency generators rated at 2,500 kilowatt would be installed in addition to an unspecified number of small heating boilers. Potential emission levels for the generators are provided in **Table 3-4** and **Appendix C**. The emission factors for the generators are based on allowable emission rates provided from Tier 4 engine standards for diesel fuel and Tier 2 engine standards for natural gas fuel. In all cases when limiting operation to 500 hours per engine per year, the CO emission rates are above 100 tpy and would trigger PSD applicability. The CO emission rates would also trigger OEPA modeling requirements based on criteria established in Engineering Guide 69 (OEPA 2014). The results of the New Source Review and modeling analysis would impact the final design of the project and dictate how the air impacts would be mitigated, including potential increased costs from add-on control devices or stack configuration alterations.

Table 3-4. Criteria Pollutant Emissions at WPAFB Associated with the Proposed Action 20 Emergency Generators

Air Pollutant Emissions Source	Hours Operation (hr/yr)	NO_x Emissions (tpy)	CO Emissions (tpy)	PM Emissions (tpy)	NMHC Emissions (tpy)
Tier 4 (Diesel)	500	19.37	101.17	0.87	5.49
	8.760	339.30	1772.44	15.19	96.22
Tier 2 (Diesel)	500	184.99	101.17	5.78	184.99
	8,760	3241.03	1772.44	101.28	3241.03
Tier 2 (Gas/Spark)	500	78.04	127.18	N/A	78.04
	8,760	1367.31	2228.21	N/A	1367.31
Significant Impact Rates (PSD)		**40**	**100**	**15**	**40**
Exceeds Significant Impact Rate (PSD)	**500 Hours Tier 4**	**No**	**Yes**	**No**	**No**

Alternatively, WPAFB could develop a PSD avoidance strategy that will satisfy air permitting requirements, mitigate air impacts, and provide greater certainty of the final design earlier in the project implementation. Potential PSD avoidance strategies could include a combination of the following:

- Limiting the hours of operation of the generators or total annual fuel consumption through federally enforceable permit terms.
- Selecting dual-fueled generators to run off either diesel or natural gas.

- Obtaining emission rate guarantees from the engine suppliers that are better than Tier 4 diesel standards and Tier 2 gas standards; and/or emission rate guarantees for add-on controls.
- Specifying alternative energy generation technologies like solar, fuel cell, and battery storage.

Because a general conformity applicability determination was not required to be completed, the air emissions impact analysis was based on comparisons with the PSD Significant Emission Rates. The determinations made in this EA are contingent upon the accuracy of assumptions made in deriving the emission calculations. If the actual project plans were to change substantially, then additional analysis may be required and may impact PSD applicability.

3.3.3.2 No Action

The No Action alternative would have no adverse impact on air quality because there would be no increase in emissions from baseline conditions.

3.4 Water Resources

3.4.1 Definition of the Resource

Water resources include groundwater, surface water, and floodplains. Evaluation of water resources examines the quantity and quality of the resource and its demand for various purposes.

Groundwater

Groundwater consists of the subsurface hydrologic resources and is an essential resource often used for potable water consumption, agricultural irrigation, and industrial applications. Groundwater can be described in terms of its depth from the surface, aquifer or well capacity, water quality, surrounding geologic composition, and recharge rate.

Surface Water

Surface water resources consist of lakes, rivers, and streams. Storm water is an important component of surface water systems because of its potential to introduce sediments and other contaminants that could degrade lakes, rivers, and streams. Storm water flows, which may be exacerbated by high proportions of impervious surfaces associated with buildings, roads, parking lots, and airfields are important to the management of surface water. Storm water systems convey precipitation away from developed sites to appropriate receiving surface waters. Higher densities of development require greater degrees of storm water management because of the higher proportions of impervious surfaces that occur from buildings, parking lots, and roadways.

Floodplains

Floodplains are areas of low-level ground present along rivers, stream channels, or coastal waters and might be subject to periodic or infrequent inundation due to rain or melting snow. Flood potential is evaluated by the Federal Emergency Management Agency (FEMA), which defines the 100-year

floodplain for this section of the Mad River as 813.4 ft, above mean sea level (MSL). The 100-year floodplain is the area that has a one percent chance of inundation by a flood event in a given year.

Executive Order 11988, *Floodplain Management*, requires federal agencies to determine whether a proposed action would occur within a floodplain and typically involves consultation of appropriate FEMA Flood Insurance Rate Maps. Executive Order 11988 directs federal agencies to avoid floodplains unless the agency determines that there is no practicable alternative. Where the only practicable alternative is to site in a floodplain, a specific step-by-step process must be followed to comply with EO 11988 outlined in the FEMA document *Further Advice on EO 11988 Floodplain Management*.

All floodplain-related construction activities must be coordinated with the MCD for approval. The MCD through the *Land Use Agreement* (dated January 7, 2000) and the MCD *Policy and Procedure for Permits in Retarding Basins* regulates all construction on land within the Huffman Dam Retardation Basin and more than 5 ft below the spillway elevation of 835 ft, above MSL.

3.4.2 Affected Environment

Groundwater

The Base is located in the Great Miami River Valley, which is filled with glacial deposits of sand and gravel. The glacial outwash deposits are very permeable and exhibit high transmissivity and hydraulic conductivity. The Miami Valley Buried Aquifer system is a highly productive source of water for the millions of people in southwest Ohio. The USEPA designated the Miami Valley Buried Aquifer system as a sole-source aquifer in 1988, requiring USEPA Region 5 approval on all new projects to ensure continued use as a drinking water supply (53 Federal Register 15876). The buried aquifer system provides drinking water for more than 1.6 million people in southwest Ohio (Debrewer 2000).

Groundwater can also be found in large volumes in the Silurian-age (415 to 465 million years ago) limestone and dolomite bedrock underneath the buried valley aquifer system. Private wells and smaller public systems typically use this bedrock aquifer because, though not as productive as the buried aquifer, it is adequate for such uses (MCD 2002). Underneath the limestone and dolomite bedrock is Ordovician-age (465 to 510 million year ago) bedrock shales and limestones of the Richmond Group. The lower bedrock aquifer system generally produces less than 5 gallons per minute (gpm) and is only productive enough for livestock use.

The buried valley aquifers coincide with the present Great Miami River and its tributaries. Water underground generally follows the same flows as surface waters with upland areas serving as recharge areas and groundwater divides (MCD 2002). At WPAFB, the Mad River follows the course of the Mad River Buried Aquifer, part of the Miami Valley Buried Aquifer system. South of Huffman Dam (a flood control dam that is managed by the MCD), a till zone divides the Mad River Buried Aquifer into an upper water table unit and a lower confined unit. However, north of the dam and in other parts of the buried

valley aquifer, till zones occur less frequently as discontinuous, less-permeable zones within the more permeable outwash deposits (WPAFB 1995b).

Most of the wells in the outwash deposits yield between 750 and 1,500 gpm, but can vary from less than 200 to more than 4,000 gpm (WPAFB 1995b). The city of Dayton groundwater production wells at Huffman Dam are screened at depths of over 100 ft below ground surface.

Operable Units Environmental Setting

The Base has grouped confirmed or suspected sites requiring investigation and characterization into 11 geographically-based operable units (OUs), designated as OUs 1 through 11. The NRO project site is not located within any OUs. Operable Unit 4 (OU4) is the nearest OU, which is located approximately 3,750 ft southwest of the NRO project site. General groundwater flow through OU4 is to the west and toward the Mad River. Groundwater at OU4 is monitored under the Groundwater Operable Unit (GWOU) and the Long-Term Monitoring (LTM) Program. The NRO project site is also not located within the 1- or 5-year travel time well-head protection area for the Area A water supply wells and is not located with the city of Dayton Source SWPP boundary (Dayton 2017).

Surface Water

The Base is in the Mad River Valley. The Mad River originates approximately 40 miles north of Springfield, Ohio, flows south and southwest past WPAFB to its confluence with the Great Miami River in Dayton, Ohio, and flows into the Ohio River. Sustained flow of the Mad River originates from groundwater discharge of glacial deposits upstream of Huffman Dam. The Mad River approaches WPAFB from the north and flows along the western border of Area A. The OEPA has divided the Mad River watershed into five areas: headwaters; Mad River between Kings and Chapman Creeks; Buck Creek; Mad River from Chapman to Mud Creeks; and the lower Mad River (Mud Creek to the Great Miami River). Mud Creek enters the Mad River 2,000 ft north of the State Route 235 bridge, near the northwest corner of Area A. The Base lies adjacent to the northernmost portion of the lower Mad River segment.

The OEPA has identified the lower segment of the Mad River, which flows through WPAFB, as an impaired water under Section 303(d) of the Clean Water Act (CWA) for not meeting aquatic life and recreation use standards (OEPA 2010).

The USEPA has established the total maximum daily load (TMDL) of effluent for the Mad River in the *Mad River Total Maximum Daily Loads for Sediment and Turbidity* (USEPA 2007). A TMDL specifies the maximum amount of a pollutant that a water body can receive and still meet water quality standards, and allocates pollutant loadings among point and nonpoint pollutant sources. The TMDL for the Mad River watershed has been set at 120 percent of natural sediment loading. According to the report, the

natural sediment loading in the basin is approximately 894 tons/square mile/year based on an annual average.

The WPAFB Storm Water Management Plan (SWMP) and the Storm Water Pollution Prevention Plan (SWPPP) (prepared to comply with the CWA and the Ohio Water Pollution Control Act) provides descriptions of storm drainage areas and their associated outfalls, potential storm water pollution sources, and material management approaches to reduce potential storm water contamination (WPAFB 2016a). The SWMP covers all areas and non-industrial activities within the limits of WPAFB and was last updated in July 2016. Storm water protection for industrial activities is covered in the SWPPP, which was last updated in September 2016 (WPAFB, 2016b).

The SWMP addresses the specific storm water management requirements of municipal National Pollutant Discharge Elimination System (NPDES) General Permit No. OHQ000003 (WPAFB 2016a), while the SWPPP addresses the requirements of the industrial NPDES Permit No. IO00001 (WPAFB, 2016b). The current version of this permit is IO00001*GB (the two-letter suffix changes with each renewal of the permit).

The SWPPP and SWMP provide specific BMPs to prevent surface water contamination from activities such as construction, storing and transferring of fuels, storage of coal, use of deicing fluids, storage and use of lubrication oils and maintenance fluids, solid and hazardous waste management, and use of deicing chemicals. Implementation of the following BMPs reduce the likelihood of pollutants entering the WPAFB storm system from construction activities: silt fences, sediment basins, rock check dams, temporary seeding, storm drain inlet protection, and dust control.

There are 20 defined drainage or “Outfall Areas” and 23 NPDES discharge monitoring points on Base that are addressed under the NPDES permit (WPAFB 2016b). All storm water from WPAFB flows into the Mad River. Surface water in the WPAFB area includes the Mad River, Trout Creek, Hebble Creek, Twin Lakes, Gravel Lake, and wetland areas. These surface water features are recharged by both precipitation and groundwater. Trout Creek and Hebble Creek provide drainage of surface water runoff at WPAFB.

Trout Creek is located in the western portion of Area A and discharges to the Mad River north of Huffman Dam. Hebble Creek passes through the southwestern portion of Area A and discharges to the Mad River several hundred ft north of Huffman Dam. Gravel Lake, Twin Lake East and Twin Lake West are located in the southwest portion of Area A. These lakes were created as a result of gravel quarrying activities at WPAFB. Currently, the lakes are maintained as recreational areas for Base personnel and their families.

Floodplains

A large portion of WPAFB and most of Area A lies within the Mad River floodplain. The 10-year floodplain is at 803.8 ft above MSL, and the 100-year floodplain is at 813.4 ft above MSL as calculated using the North American Vertical Datum of 1988 (National Geodetic Survey [NGS] 2017). The proposed NRO facility is located at an elevation of 832 ft above MSL and is not located within a flood hazard as established by FEMA (FEMA 2017).

3.4.3 Environmental Consequences

Evaluation criteria for impacts on water resources are based on water availability, quality, and use; existence of floodplains; and associated regulations. Impacts would be adverse if proposed activities result in one or more of the following:

- Reduces water availability or supply to existing users
- Overdrafts groundwater basins
- Exceeds safe annual yield of water supply sources
- Affects water quality adversely
- Endangers public health by creating or worsening health hazard conditions
- Threatens or damages unique hydrologic characteristics
- Violates established laws or regulations adopted to protect water resources

The groundwater and surface water systems that surround WPAFB are closely interconnected. Potential runoff contaminants from construction activities that could impact surface water quality could also impact groundwater quality. Therefore, they are analyzed together.

Storm water runoff in urban areas is one of the leading sources of water pollution in the U.S (USEPA 2018a). In December 2007, Congress enacted the Energy Independence and Security Act (EISA) establishing strict stormwater runoff requirements for federal development and redevelopment projects. Section 438 of EISA requires federal agencies to develop and redevelop facilities with a footprint that exceeds 5,000 sf in a manner that maintains or restores the pre-development site hydrology to the maximum extent technically feasible. Federal agencies can comply using a variety of storm water management practices often referred to as "green infrastructure" or "low impact development" practices, including reducing impervious surfaces and using vegetative practices, porous pavements, cisterns and green roofs (USEPA 2018a).

3.4.3.1 Proposed Action

Proposed building construction would have no impact on groundwater at the project site. The proposed project site is currently a partial grass and tree-covered lawn area. The north portion of the project site also currently contains 21 duplex residential dwellings. Based on the relatively brief amount of time the soil would be exposed from construction to re-vegetation of the site, infiltration or precipitation may increase slightly and the impact of the release of construction-related materials (i.e., in the event of a minor spill) would be minimal to the upper water bearing zone below the surficial layer.

Construction activities would have minor adverse short-term impact on surface water quality in the vicinity of the project site. Best management practices would be implemented during construction activities (facility construction and parking lot installation) to prevent excessive soil erosion, runoff, and minor spills and to comply with EISA 438, which requires construction sites be returned to pre-development hydrology. In addition, the NRO construction site would be required to comply with the requirements of the WPAFB stormwater permits. The details regarding the BMPs required under both permits are provided in the SWMP. The municipal NPDES SWMP would specifically require the NRO construction site to implement the following stormwater protection practices, where applicable, to reduce the likelihood of pollutants entering the WPAFB storm system from construction activities: silt and/or sediment fencing, rock check dams, temporary seeding, storm drain inlet protection, and dust control (WPAFB 2016a).

Greater than one acre of soil at the proposed NRO construction site would be disturbed during construction activities; therefore, contractors would be required to obtain stormwater permitting coverage under the OEPA NPDES General Storm Water Permit for Construction Activities (OHC000004), which is also known as the Construction General Permit (CGP) (WPAFB 2016a). This requires the contractor to develop a Notice of Intent (NOI) for coverage under the CGP and a SWPPP for the construction site. These documents must be approved by the Water Quality Program Manager (WQPM) prior to submittal to the OEPA by the contractor. Coverage under the CGP must be granted to the contractor from OEPA prior to breaking ground on the NRO project. These procedures ensure that the contractor, who is the permittee, fulfills the responsibilities outlined in the CGP throughout the duration of the project.

The WPAFB General Environmental Specification also regulates contractors to:

- Restore disturbed soil areas that previously supported vegetation
- Control litter
- Recycle construction and demolition waste (preferably through the WPAFB Recycling Center) or properly dispose offsite
- Prepare a SPCC Plan for each location where hazardous waste or hazardous materials are stored
- Properly manage hazardous materials and hazardous wastes

Long-term minor adverse impacts could occur due to increases in impervious surfaces resulting from the construction of the facility and associated parking areas in a previously vegetated area. Impacts would be minimized by designing surface water/storm water systems to flow away from the NRO facility into an existing concrete-lined above ground channel (referred to as Drainage Ditch 6) located in the southern portion of the proposed NRO project site. The drainage system was part of the former Pine Estates Housing Complex that was demolished in 2008. The drainage ditch then flows below ground to bypass a small pond on the nearby golf course then discharges into a larger pond that is also located on the golf course. The larger pond does have a small overflow drainage that discharges to Hebble Creek.

The concrete-lined drainage ditch and downstream below-ground line would need to be evaluated to determine whether they could accommodate additional stormwater flow. During very lengthy and heavy rains, WPAFB's downstream storm channels have overflowed. It is very likely that new detention ponds would need to be constructed and/or downstream ponds would need to be added to increase the capacity.

According to EO 11988, *Floodplain Management*, any new construction in the regulatory floodplain must apply accepted flood protection to reduce the risk of flood-associated damages; minimize the impacts of floods on human safety, health, and welfare; and restore and preserve the natural and beneficial values served by floodplains. The NRO project site is not located within a floodplain.

As part of the Interagency and Intergovernmental Coordination for Environmental Planning (IICEP) process for this EA, WPAFB requested input from MCD on the Proposed Action (**Appendix B**). The MCD responded indicating the proposed project is located within the Huffman Retarding Basin and is subject to the restrictions set forth by the MCD in Greene County Deed Book 129, Page 146 on December 16, 1922. Additionally, the MCD indicated the proposed project would not adversely affect the retarding basin.

3.4.3.2 No Action

The No Action alternative would have no adverse impact on water resources.

3.5 Biological Resources

3.5.1 Definition of the Resource

Biological resources include native or naturalized plants and animals, and the habitats, such as wetlands, forests, and grasslands, in which they exist. Sensitive and protected biological resources include plant and animal species listed as threatened or endangered by the USFWS or a state.

Wetlands are an important natural system and habitat because of the diverse biologic and hydrologic functions they perform. These functions include water quality improvement, groundwater recharge and discharge, pollution mitigation, nutrient cycling, wildlife habitat detention, and erosion protection. Wetlands are protected as a subset of the "the waters of the United States" under Section 404 of the CWA.

The term "waters of the United States" has a broad meaning under the CWA and besides navigable water, incorporates deepwater aquatic habitats and wetlands. The U.S. Army Corps of Engineers (USACE) defines wetlands as "those areas that are inundated or saturated with ground or surface water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted to life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas" (33 CFR Part 328).

The Supreme Court heard oral arguments in October 2017 on the issue of whether jurisdiction to hear challenges to the Waters of the United States under the Clean Water Rule lies with the federal district courts (as numerous states, industry groups, and environmental organizations contend) or with the federal appeals courts, as the USACE and the USEPA contend. The Clean Water Rule became effective in August 2015 (a regulatory publication by the USEPA and USACE to clarify water resource management in the U.S. under a provision of the Clean Water Act of 1972) but in October 2015, a federal court blocked the rule's implementation nationwide. The legal question of which federal court (district or appeals) should review the challenges to the Clean Water Rule remain in limbo. As such, the USEPA and USACE submitted a proposal to move the effective date of the Clean Water Rule from August 2015 to February 6, 2020.

The Clean Water Rule is currently stayed nationwide as the result of an order issued by the Sixth Circuit, which also ruled that jurisdiction to hear challenges to the Clean Water Rule lies with the federal appeals courts, not the federal district courts. An appeal of that jurisdictional determination is currently pending before the Supreme Court, where the administration argued in favor of affirming the decision. The USEPA and USACE proposed rule would delay the effective date of the Clean Water Rule until at least 2020 (USEPA 2018b).

Under the Endangered Species Act (ESA) (16 USC 1536), an "endangered species" is defined as any species in danger of extinction throughout all or a large portion of its range. A "threatened species" is defined as any species likely to become an endangered species in the foreseeable future.

The USFWS also maintains a list of species considered to be candidates for possible listing under the ESA. Although candidate species receive no statutory protection under the ESA, the USFWS has attempted to advise government agencies, industry, and the public that these species are at risk and might warrant protection under the Act.

The ODNR, Division of Wildlife may restrict the taking or possession of native wildlife threatened with statewide extirpation and maintains a list of endangered species (Ohio Revised Code [ORC] 1531.25). Additionally, ODNR maintains a list of plant species native to the state and in danger of extirpation or are threatened with becoming endangered. These plants are protected pursuant to ORC Chapter 1518.

3.5.2 Affected Environment

Vegetation

The Base contains four general types of natural vegetative communities: forest, old fields, prairie, and wetlands. Areas that may be impacted consist of previously-disturbed areas that are covered with gravel. Disturbed vegetation includes maintained areas that are frequently mowed such as right-of-ways, lawns, and recreational areas, and have been designated by the Base as turf and landscaped areas.

An existing fruit, nut, and vegetable garden is located on the east portion of the proposed project site. The garden was originally planted in 2009 by a Medical Center endocrinologist to focus on healthy eating/changing eating behavior by engaging clients in the production and preparation of healthy food. As the garden was being established, it became an open and welcoming place for Medical Center clients undergoing various treatments. As part of the Proposed Action, the garden would be relocated to an area approximately 800 ft south of its current location. Relocating the garden would include moving the following items to a new location: amended and improved soil, perennials, and small trees.

Wildlife

The Base is home to a variety of wildlife. Previously conducted surveys documented the presence of 23 mammals, 118 birds, 8 reptiles, and 6 amphibians on the Base (WPAFB 2015). Areas of the Base associated with the Proposed Action are located within previously disturbed areas and species occurring in such areas are common species to the Base.

Because birds as well as mammals pose a hazard to airfield and aircraft operations, the AF has established bird air strike hazard and wildlife management plans. The Base implements a comprehensive Bird/Wildlife Aircraft Strike Hazard (BASH) plan that involves prevention, monitoring, and reduction of bird/wildlife hazards (WPAFB 2015).

Threatened and Endangered Species

Endangered and threatened species on the Base are protected under the ESA. In addition, AFPD 32-70 and AFI 32-7064 require all Air Force installations to protect species classified as federally or state endangered or threatened. The Endangered Species Management Plan (BHE Environmental, Inc. [BHE] 2001), which has been incorporated into the Integrated Natural Resources Management Plan (INRMP), provides species-specific protection and conservation measures to protect known special status species occurring on the Base (WPAFB 2015). Protected wildlife species by the ODNR and the USFWS known to occur or known to have occurred on WPAFB are included in **Table 3-5**.

Table 3-5. State and Federal Listed Species Occurring at WPAFB

Common Name	Scientific Name	Status	
		Federal	State
Indiana Bat	*Myotis sodalis*	Endangered	Endangered
Northern Long-eared Bat	*Myotis septentrionalis*	Threatened	Threatened
Eastern Massasauga Rattlesnake	*Sistrurus catenatus*	Threatened	Threatened
Clubshell	*Pleurobema clava*	Endangered	Endangered
Rayed Bean	*Villosa fabalis*	Endangered	Endangered
Snuffbox	*Epioblasma triquetra*	Endangered	Endangered

Source: WPAFB 2015, ODNR 2017a, USFWS 2017

Wetlands/Streams/Jurisdictional Waters

Executive Order 11990, Protection of Wetlands, May 24, 1977, directs federal agencies to consider alternatives to avoid adverse effects on and incompatible development in wetlands. Federal agencies are directed to avoid new construction in wetlands, unless the agency finds there is no practicable alternative to construction in the wetland, and the proposed construction incorporates all possible measures to limit harm to the wetland.

The CWA sets the basic structure for regulating discharges of pollutants to U.S. waters. Section 404 of the CWA establishes a federal program to regulate the discharge of dredge and fill material into waters of the United States, including wetlands. The National Wetlands Inventory, a department within USWFS, USEPA, and the National Resource Conservation Service (NRCS) assist in identifying wetlands.

Twenty-three wetlands and 13 streams exist in Area A (WPAFB 2015). The nearest wetland is located at a distance greater than 1.5 miles southwest of the NRO project site and the nearest stream (SC1 Hebble Creek) is located approximately 3,000 ft northwest of the project site.

3.5.3 Environmental Consequences

Biological resources that could be impacted by the proposed project include vegetation, wildlife, threatened and endangered species, and wetlands. Evaluation criteria for impacts on biological resources are based on:

- Importance (i.e., legal, commercial, recreational, ecological, or scientific) of the resource;
- Proportion of the resource that would be affected relative to its occurrence in the region;
- Sensitivity of the resource to the proposed activities; and
- Duration of ecological ramifications.

The impacts on biological resources would be adverse if species or habitats of high concern are negatively affected over relatively large areas. Impacts are also considered adverse if disturbances cause reductions in population size or distribution of a species of high concern.

As a requirement under the ESA, federal agencies must provide documentation that ensures that agency actions do not adversely affect the existence of any threatened or endangered species. The ESA requires that all federal agencies avoid "taking" threatened or endangered species (which includes jeopardizing threatened or endangered species habitat). Section 7 of the ESA establishes a consultation process with USFWS that ends with USFWS concurrence or a determination of the risk of jeopardy from a federal agency project.

As part of this EA, consultation with the ODNR was conducted to request Ohio Natural Heritage Program information for state- and federally-listed threatened and endangered plants and animals on Base. The ODNR, Division of Wildlife (DOW) responded indicating the proposed project is within the vicinity of

records for the Indiana bat, a state and federally endangered species. Presence of the Indiana bat has been established in the area, and therefore, additional summer surveys would not constitute presence or absence in the area. The agency further recommended that if suitable bat habitat occurs within the project area, trees should be conserved and if trees must be cut, then cutting occur between October 1 and March 31 to avoid impacts to roosting bat habitat. The ODNR also reported several state- and federally-listed threatened and endangered mussels, fish, and a turtle species within the range of the project; however, since no in-water work is proposed within a perennial stream, the proposed project is not likely to impact these species. In addition, the ODNR identified the following species as benign within the range of the proposed project: smooth greensnake, Kirtland's snake, eastern massasauga, upland sandpiper, northern harrier; however, due to the location, type of work proposed, and the type of habitat present at the project site, the project is not likely to impact these species.

The USFWS was also contacted as part of this EA to request known presence or absence of federal- and state-listed species that may be located within the project vicinity (**Appendix B**). The USFWS responded indicating the project is not likely to adversely affect any federally listed species. The USFWS's determination was based on WPAFB's commitment to only cut trees on the project site that are greater than or equal to 3-inches diameter breast height only between the months of October 1 and March 31 or to perform emergence surveys to avoid adverse effects to the endangered Indiana bat and threatened northern long-eared bat.

The USFWS also stated that if during the term of the action, additional information on listed or proposed species or their critical habitat become available, or if new information reveals effects of the action that were not previously considered, consultation with the USFWS should be reinitiated to assess whether the determination is still valid.

According to WPAFB's Natural Resources Program Manager, all of the trees within the footprint of the project site would be considered "urban trees". Once the design would be completed and the specific trees identified for removal, the Natural Resources personnel would conduct a site visit to determine the specie of each tree and whether it may be a potential roost tree. If roost trees are identified, WPAFB would further coordinate with the USFWS.

3.5.3.1 Proposed Action

Vegetation

Land-disturbing activities associated with construction of the NRO facility would be limited to previously-disturbed Base property. Short-term minor adverse impacts and localized effects on vegetation would be expected. Due to the frequency of the vegetation types on Base, however, negligible long-term impacts on vegetation would be expected as a result of the implementation of the Proposed Action.

Wetlands/Streams/Jurisdictional Waters

No impacts to wetlands or streams would occur from implementation of the Proposed Action because these waters are not located within the project area and were identified at distances greater than 3,000 ft from the NRO project site. Therefore, no effects to wetlands, streams, or jurisdictional waters are expected as a result of the Proposed Action.

Wildlife

Wildlife habitat within the improved areas of the Base is limited due to fragmentation by the existing facilities, roads, and impervious surfaces at WPAFB. In addition, the current land use would not change and the proposed construction activities would not be in proximity to any threatened or endangered species identified on the Base. Therefore, noise-related impacts from proposed demolition and construction activities or from the emergency generators would be short-term and negligible. Furthermore, no long-term impacts on wildlife would be expected to result from the Proposed Action.

Threatened and Endangered Species

The proposed NRO project site is located in a previously-disturbed grass- and tree-covered lawn area. In addition, a portion of the project site contains TLFs. There would be a negligible impact on threatened and endangered species or species of concern, candidate species, and potentially threatened species as a result of demolition or construction activities associated with the Proposed Action.

3.5.3.2 No Action

The No Action alternative would have no impact on biological resources.

3.6 Earth Resources

3.6.1 Definition of the Resource

Geological resources consist of the earth's surface and subsurface materials. Topography pertains to the general shape and arrangement of a land surface, including its height and the position of its natural and human-made features.

Geology is the study of the earth's composition and provides information on the structure and configuration of surface and subsurface features. Hydrogeology extends the study of the subsurface to water-bearing structures. Hydrogeological information helps in the assessment of groundwater quality and quantity and its movement.

Soils are the unconsolidated materials overlying bedrock or other parent material. Soils typically are described in terms of their complex type, slope, and physical characteristics. Differences among soil types in terms of their structure, elasticity, strength, shrink-swell potential, and erosion potential affect their abilities to support certain applications or uses.

3.6.2 Affected Environment

Topography and Geology

The majority of the Base is on the broad alluvial plain of the Mad River Valley, which overlies Ordovician-age Richmond shale and limestone bedrock. The land surface elevation on Base ranges from approximately 760 to 980 ft above MSL (WPAFB 2015).

The Base is within the glaciated till plain region of southwestern Ohio, an area within the Central Lowlands Physiographic Province. The Central Lowlands province is characterized by low rolling hills, level plains, and flat alluvial valleys.

Natural Hazards

The state of Ohio is characterized by a low level of seismic activity (ODNR 2017b). The Dayton, Ohio, area does not typically experience earthquakes because of its location in relation to fault zones (Hansen 2015). Auglaize and Shelby counties located in northwest Ohio (approximately 45 miles from Greene County) had a series of historic earthquakes in the late 1800s to mid-1900s, with the greatest instrumented magnitude recorded between 5.0 and 5.4 (Hansen 2015). On July 23, 2010, a 5.0 magnitude earthquake originating along the Quebec-Ontario border was felt in Dayton and surrounding areas.

Soils

Surface soil at WPAFB formed on unconsolidated deposits, primarily alluvium, glacial outwash, glacial till, and loess (WPAFB 2015). Development and substantial earthmoving activities have altered the natural soil characteristics at WPAFB, making precise classifications difficult. The U.S. Department of Agriculture (USDA) NRCS mapped most of WPAFB as urban land complexes.

Forty soil mapping units occur on WPAFB. Warsaw-Fill land complex is the most common soil unit on Base and occurs on 1,326 acres. This soil is found in the northeast portions of the Base. The second most common soil occurring on the Base is the Sloan-Fill land complex. This soil is found in the northern portions of the Base and covers approximately 1,232 acres. Approximately one-half of the soils on Base have a moderate to high potential for erosion. The potential for erosion varies with topographic conditions and includes both disturbed urban land complex soils and natural loams. Bare soil leads to erosion, creation of gullies and rills, and increased sediment load in streams. Erosion can render land unsuitable for training and impassable by vehicles. Sediment in streams may affect water flow and the survival of aquatic organisms.

Sixteen soil types on WPAFB are designated as prime farmland soils. Most of these soils are loams located in the northeastern and southwestern portions of the Base. Soil type in the proposed project area consists of the Miamian-Urban land complex (USDA 1978). The Miamian-Urban land complex consists of gently sloping soils on uplands that formed in medium-textured glacial till. The Miamian-Urban series are mostly used for urban or industrial development with about 15 to 30 percent of this complex being

covered by buildings, driveways, and street; 25 to 50 percent is borrow and fill areas; and 20 to 60 percent is undisturbed areas of Miamian soils in undeveloped lots and parts of developed areas (USDA 1978).

3.6.3 Environmental Consequences

Protection of unique geological features, minimization of soil erosion, and the siting of facilities in relation to potential geologic hazards are considered when evaluating potential impacts of a proposed action on geological resources. Impacts can be avoided or minimized if proper construction techniques, erosion control measures, and structural engineering design are incorporated into project development. Effects on geology and soils would be adverse if the action alters the lithology, stratigraphy, and geological structure that control groundwater quality, distribution of aquifers and confining beds, and groundwater availability; or change the soil composition, structure or function within the environment.

3.6.3.1 Proposed Action

Land surface at the NRO project site is flat. Construction activities would involve demolition of existing Pine Estates housing units and digging for footings. Upon completion of excavation activities, leveling of the ground surface back to grade would be completed. Soil erosion would be minimized during construction activities using BMPs in accordance with the Phase I NPDES storm water discharge permit. Any spills of hazardous chemicals, materials entering sewers or drains, and/or releases of materials that have the potential to damage or pollute the environment would be reported to the Base Fire Department by calling 911 or calling the WPAFB Fire Dispatch.

In the short term, construction vehicles would disturb the surface and compaction could be altered. Minor, short-term impacts would be minimized because erosion controls would be implemented. There would be no long-term adverse impacts because disturbed vegetation would be re-established upon completion of construction activities.

3.6.3.2 No Action

The No Action alternative would have no impact on surface or earth resources.

3.7 Hazardous Materials / Waste

3.7.1 Definition of the Resource

The AFPD 32-70, *Environmental Quality*, establishes policy the AF is committed to, including:

- Cleaning up environmental damage resulting from its past activities
- Meeting all environmental standards applicable to its present operations
- Planning its future activities to minimize environmental impacts
- Managing responsibly the irreplaceable natural and cultural resources it holds in public trust
- Eliminating pollution from its activities wherever possible

Hazardous material is defined as any substance with physical properties of ignitability, corrosivity, reactivity, or toxicity that might cause an increase in mortality, serious irreversible illness, and incapacitating reversible illness, or that might pose a substantial threat to human health or the environment. Hazardous waste is defined as any solid, liquid, contained gaseous, or semi-solid waste; or any combination of wastes that pose a substantial present or potential hazard to human health or the environment.

Evaluation of hazardous materials and wastes focuses on underground storage tanks (USTs) and aboveground storage tanks (ASTs) and the storage, transport, and use of pesticides and herbicides, fuels, and petroleum, oils, and lubricants. Evaluation might also extend to generation, storage, transportation, and disposal of hazardous wastes when such activity occurs at or near the project site of a proposed action. In addition to being a threat to humans, the improper release of hazardous materials and wastes can threaten the health and well-being of wildlife species, botanical habitats, soil systems, and water resources. In the event of release of hazardous materials or wastes, the extent of contamination varies based on type of soil, topography, and water resources.

Special hazards are those substances that might pose a risk to human health, but are not regulated as contaminants under the hazardous waste statutes. Included in this category are ACM, radon, LBP, PCBs, and unexploded ordnance. The presence of special hazards or controls over them might affect, or be affected by, a proposed action. Information on special hazards describing their locations, quantities, and condition assists in determining the significance of a proposed action.

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended by the Superfund Amendments and Reauthorization Act (SARA) and the Toxic Substances Control Act (TSCA), defines hazardous materials. The Solid Waste Disposal Act as amended by the Resource Conservation and Recovery Act, which was further amended by the Hazardous and Solid Waste Amendments, defines hazardous wastes. In general, both hazardous materials and wastes include substances that, because of their quantity, concentration, physical, chemical, or infectious characteristics, might present substantial danger to public health or welfare or the environment when released or otherwise improperly managed.

Through its Environmental Restoration Program (ERP), the DoD evaluates and cleans up sites where hazardous wastes have been spilled or released to the environment. The ERP provides a uniform, thorough methodology to evaluate past disposal sites, to control the migration of contaminants, to minimize potential hazards to human health and the environment, and to clean up contamination.

Knowledge of past ERP activities provides a useful gauge of the condition of soils, water resources, and other resources that might be affected by contaminants. It also aids in identification of properties and

their usefulness for given purposes (e.g., activities dependent on groundwater usage might be foreclosed where a groundwater contaminant plume remains to complete remediation).

The Base's goal is to meet EO 13514, "Federal Leadership in Environmental, Energy, and Economic Performance" (replaced in 2015 by EO 13693, "Planning for Federal Sustainability in the Next Decade"). Executive Order 13514 requires WPAFB to meet a 60 percent construction and demolition debris (c&dd) diversion rate for construction and demolition projects that occur on Base. In order to achieve the 60 percent diversion goal, reclamation and recycling would have to be considered. Contractors who have experience with previous housing demolition projects on Base have worked with nonprofit organizations to divert items from the residential dwellings prior to demolition. Similar reclamation and recycling processes could be handled with the TLFs for this project.

The OEPA, Division of Materials and Waste Management (DMWM) ensures solid waste, infectious waste, scrap tires, and construction and demolition debris are managed in accordance with applicable regulations. The DMWM contains a current listing of licensed municipal solid waste facilities on its website (OEPA 2018). Any construction or demolition projects that would occur at WPAFB would be handled by contractors bidding on project(s) that would select a licensed municipal solid waste facility from the list and any c&dd would be diverted to one of the facilities on the list.

There are five licensed landfills within a 35-mile radius of WPAFB. The CEIE recently contacted the Greene County Demolition Landfill in Xenia, Ohio who verified the facility has an estimated millions of cubic feet of remaining capacity at their facility; the facility recently had a survey performed which would verify the exact cubic feet of remaining capacity at this facility; the results of this survey are pending. However, taking into consideration the requirement for diversion and the amount of landfills in the area for c&dd waste, there should be minor impacts to the capacities of the landfills in the area.

3.7.2 Affected Environment

Hazardous Materials

Air Force Instruction 32-7086, *Hazardous Materials Management*, establishes procedures and standards that govern management of hazardous materials throughout the AF. It applies to all AF personnel who authorize, procure, issue, use, or dispose of hazardous materials, and to those who manage, monitor, or track any of those activities. The Base utilizes a hazardous material management program (HMMP) through which hazardous materials are controlled from procurement through storage and issue to disposal. All hazardous material purchases are approved by the HAZMAT Cell. The HAZMAT Cell is a decentralized unit comprised of representatives from the Environmental Branch, Safety Division, Bioenvironmental Engineering Flight, and Logistics Readiness Division (LRS).

The Installation Management Division Environmental Branch supports and monitors environmental permits, hazardous material and hazardous waste storage, spill prevention and response, and participation

on the Environmental Safety and Occupational Health Council (ESOHC). The Environmental Management System Cross Functional Team (EMS CFT) is a network of safety, environmental and logistics experts who work with hazardous material Issue Point Managers, Unit Environmental Coordinators (UECs), and other hazardous material users to ensure safe and compliant hazardous material management throughout the Base (WPAFB 2017a).

Hazardous Waste

The 88 CEG maintains a Hazardous Waste Management Plan (WPAFB 2018a) as directed by AFI 32-7042, *Solid and Hazardous Waste Compliance*. This plan prescribes the roles and responsibilities of all members of WPAFB with respect to the waste stream inventory, waste analysis plan, hazardous waste management procedures, training, emergency response, and pollution prevention. The plan establishes the procedures to comply with applicable federal, state, and local standards for solid waste and hazardous waste management.

Wastes generated at WPAFB include waste flammable solvents, contaminated fuels and lubricants, paint/coating, stripping chemicals, waste oils, waste paint-related materials, mixed-solid waste (MSW), and other miscellaneous wastes. Management of hazardous waste is the responsibility of each waste-generating organization and the Environmental Branch Compliance Section (88 CEG/CEIEC). The Base produces more than 1,000 kilograms of hazardous waste per month and is considered a large quantity hazardous waste generator.

Stored Fuels

Stored fuels present a potential threat to the environment, which is mitigated at WPAFB through spill prevention, control, and countermeasures (SPCC). The WPAFB SPCC Plan describes practices used to minimize the potential for stored fuel spills, prevent spilled materials from migrating off the base, and ensure that the cause of any spill is corrected. The WPAFB Facility Response Plan (FRP) describes emergency planning, notification, and spill response practices. Collectively, the SPCC Plan, with a focus on spill prevention, and the FRP, with a focus on spill response, provides a comprehensive strategy for preventing stored fuel releases to the environment. The SPCC and FRP have been combined into a single source document, which is identified at WPAFB as the Integrated Contingency Plan (ICP) (WPAFB 2018b).

The Spill Prevention Coordinator (SPC) is the primary point of contact for the SPCC Program. The SPC works closely with Tank Managers, UECs, and WPAFB emergency response personnel to implement the SPCC Plan. Required SPCC training, standard operating procedures (SOPs), inspections, and record keeping are coordinated by the SPC.

Each organization, shop, or activity at WPAFB that handles or stores petroleum, oil and lubricants, hazardous materials, or hazardous waste is required to have a Site-Specific Spill Plan (SSSP). These

SSSPs are filed with the 88 CEG/CEIEA SPC. The WPAFB Fire Department is the first responder if spilled materials present a fire hazard, may reach a waterway, or present a situation beyond the capability of the spilling activity to control and clean up the spilled material.

Pesticides

According to WPAFB's Pest Management Supervisor, standard herbicides had previously been applied to the proposed site of the NRO facility. These herbicides included 2,4-D, Dicamba, Glyophosphate, Bromacil, and Prodiamine. Insecticides applied over the past years were synthetic pyrethroids, Pyrethrins, Chlorfenapyr, and Cyfluthrin. Diazinon and termiticides were likely used in and around the housing area as well.

Asbestos-Containing Materials

Air Force Instruction 32-1052, *Facilities Asbestos Management,* provides the direction for asbestos management at AF installations. This instruction incorporates by reference applicable requirements of 29 CFR 669 et seq. 29 CFR 1910.1025, 29 CFR 1926.58, 40 CFR 61.3.80, Section 112 of the CAA, and other applicable AFIs and DoD Directives. Air Force Instruction 32-1052 requires bases to develop an Asbestos Management Plan to maintain a permanent record of the status and condition of ACM in installation facilities, as well as documenting asbestos-management efforts. In addition, the instruction requires installations to develop an asbestos operating plan detailing how the installation accomplishes asbestos-related projects. Asbestos is regulated by the USEPA with the authority promulgated under the Occupational Safety and Health Administration (OSHA), 29 USC 669, et seq. Section 112 of the CAA regulates emissions of asbestos fibers to ambient air. The USEPA policy is to leave asbestos in place if disturbance or removal could pose a health threat.

Twenty-one single- and two-story duplex residential dwellings would be demolished as part of the Proposed Action. General elements of demolition are presented in Section 2.4.1. An ACM survey for these and 63 additional Pine Estates Housing Complex units was conducted in 2008 (WPAFB 2008). A total of 84 units were included in the survey. A total of 53 samples of ACM were collected; asbestos (chrysotile) was detected in 13 samples. Remediation/removal of any ACM identified in these 21 housing units would be handled according to the findings of the survey.

Lead-Based Paint

The Residential Lead-Based Paint Hazard Reduction Act of 1992, Subtitle B, Section 408 (commonly called Title X), passed by Congress on October 28, 1992, regulates the use and disposal of LBP on federal facilities. Federal agencies are required to comply with applicable federal, state, and local laws relating to LBP activities and hazards.

The AF policy and guidance establishes LBP management at AF facilities. The policy incorporates, by reference, the requirements of 29 CFR 1910.120, 29 CFR 1926, 40 CFR 50.12, 40 CFR 240 through 280,

the CAA, and other applicable federal regulations. Additionally, the policy requires each installation to develop and implement a facility management plan for identifying, evaluating, managing, and abating LBP hazards.

The 21 Pine Estates residential dwellings would be demolished as part of the Proposed Action. General elements of demolition are presented in Section 2.4.1. An LBP survey would be conducted, documented, and if any discovered, would be remediated/removed from the dwellings prior to demolition.

Environmental Restoration Program

The ERP, formerly the Installation Restoration Program (IRP), is a subcomponent of the Defense Environmental Restoration Program that became law under SARA. The ERP requires each DoD installation to identify, investigate, and clean up hazardous waste disposal or release sites. The Base began its IRP in 1981 with the investigation of possible locations of hazardous waste contamination. In 1988, WPAFB entered into an Ohio Consent Order with the OEPA. In October 1989, WPAFB was placed on the USEPA's National Priorities List, a list of sites that are considered to be of special interest and require immediate attention (WPAFB 2014a).

The Base currently has identified 73 ERP sites, two regional groundwater sites, and several areas of concern per the Air Force Restoration Information Management System. The Base has grouped the majority of confirmed or suspected sites requiring investigation and characterization in 11 geographically-based OUs, designated as OUs 1 through 11 (IT 1999). In addition to the 11 OUs, WPAFB addressed base-wide issues of groundwater and surface water contamination by creating the GWOU under the Basewide Monitoring Program. The GWOU is monitored by agreement with the OEPA and USEPA under the LTM Program. Principal groundwater contaminants beneath WPAFB include benzene, toluene, ethylbenzene, xylene, trichloroethene, and tetrachloroethene (WPAFB 2007).

The proposed project site is not located within any operable units. The nearest ERP site, Central Heating Plant 2 (CHP2), is associated with OU4 and is located more than 3,000 ft southwest of the NRO project site.

3.7.3 Environmental Consequences

Impacts to hazardous material management would be considered adverse if the federal action resulted in noncompliance with applicable federal and state regulations, or increased the amounts generated or procured beyond current WPAFB waste management procedures and capacities.

Impacts on pollution prevention would be considered adverse if the federal action resulted in worker, resident, or visitor exposure to these materials, or if the action generated quantities of these materials beyond the capability of current management procedures. Impacts on the ERP would be considered

adverse if the federal action disturbed (or created) contaminated sites resulting in negative effects on human health or the environment.

3.7.3.1 Proposed Action

Hazardous Materials

Products containing hazardous materials would be procured and used during the proposed demolition/construction activities. It is anticipated that the quantity of products containing hazardous materials used during these activities would be minimal and their use would be of short duration. No hazardous materials, other than those typically associated with the construction and operation of an office/IT environment served by backup diesel power generation are expected as a result of the Proposed Action.

Contractors would be responsible for the management of hazardous materials, which would be handled in accordance with federal and state regulations. All original hazardous, toxic, recyclable, and otherwise regulated waste streams generated and identified by the Contractor would be managed through the Environmental Branch of Civil Engineering in accordance with the Hazardous Waste Management Plan. Therefore, hazardous materials management at WPAFB would not be impacted by construction of the NRO facility.

There are several positive aspects of using natural gas generators. No on-site fuel storage would be needed. The generators for the NRO facility could tie into the existing natural gas lines in Area A. There would be no need for transport, delivery, or disposal of fuel. In addition, there would be no air emissions and releases of fuel to water. The NRO team reported, however, that previous experience with dual fuel natural gas generators with reciprocating engines were unreliable and did not sync up properly.

Solid Oxide Fuel Cells have been used successfully as a fuel source for generators in some applications and in specific environments; however, negative experiences have also been reported. Due to the potential for technical difficulties, fuel cells were dismissed as an option. Similarly, battery power and nuclear power were also eliminated from further consideration.

Hazardous Wastes

It is anticipated that the quantity of hazardous wastes generated from proposed demolition/construction activities would be similar in nature with the baseline condition waste streams. Construction of the NRO facility would not impact the Base's hazardous waste management program. As mentioned above, the known hazardous wastes identified and encountered by contractors during construction would be managed through the Environmental Branch of Civil Engineering in accordance with the Hazardous Waste Management Plan.

If encountered, it is anticipated that the volume, type, classifications, and sources of hazardous wastes associated with the Proposed Action would be similar in nature with the baseline condition waste streams. Hazardous waste would be handled, stored, transported, disposed of, or recycled in accordance with the WPAFB Hazardous Waste Management Plan. Therefore, it is anticipated that the Proposed Action could result in potential adverse impacts to hazardous materials/wastes at WPAFB.

Asbestos-Containing Material and Lead-Based Paint

The Proposed Action would consist of demolition of 21 housing units constructed in the 1970s and construction of a new facility. An ACM survey was performed in 2008; any ACM/LBP identified in the survey for the 21 units would follow the protocol for remediation/removal according to findings of the report. Therefore, no adverse impact to ACM would be expected.

Surveys for LBP in the 21 housing units has not been documented. However, LBP would be documented prior to demolition of the housing units. Therefore, there would be no adverse impact to LBP as a result of the Proposed Action.

As part of the 2008 survey of the Pine Estates housing complex, the following hazardous materials were noted as existing within the residential units: PCB-containing light ballasts, mercury-containing tilt switch thermostats, electrical transformers (potentially PCB-containing), and chlorofluorocarbon (CFC)-containing compressed refrigerant gas associated with heating, ventilation and air conditioning units. As such, these items would require remediation/removal prior to demolition of the TLFs.

Environmental Restoration Program

The demolition and construction activities under the Proposed Action would result in no impact because there are no ERP sites within 3,000 ft of the proposed project site.

3.7.3.2 No Action

The No Action alternative does not involve any hazardous materials or hazardous wastes; therefore, there would be no impact on hazardous materials storage or waste generation.

3.8 Cultural Resources

3.8.1 Definition of the Resource

As defined by 36 CFR 800.16, historic property means any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion, the NRHP 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 a Native American tribe or Native Hawaiian organization and that meet the NRHP criteria. Several federal laws and regulations govern protection of cultural resources, including the National Historic Preservation Act (NHPA) (1966), the Archaeological and Historic Preservation Act (1974), the American Indian Religious

Freedom Act (1978), the Archaeological Resources Protection Act (1979), and the Native American Graves Protection and Repatriation Act (1990).

Native American tribes define cultural resources very broadly as the resources necessary for the survival and maintenance of their way of life. Ethnographic resources include plants and animals, ceremonial sites, tribal historic sites, and areas of sacred geography possessing mythic/spiritual significance. In 2008, WPAFB conducted a review of the on-line National Park Services National Native American Graves Protection and Repatriation Act (NAGPRA) Native American Consultation Database for federally recognized tribes in Greene and Montgomery counties of Ohio, in addition to, tribal response received from a public notice the U.S. Army Corps of Engineers issued for a 2007 project at the Base. A query of the tribes was made and only four tribes (Sac and Fox of the Mississippi in Iowa, Keweenaw Bay Indian Community, The Saginaw Chippewa Indian Tribe, and United Keetoowah Band of Cherokee Indians in Oklahoma) provided a written response with interest in WPAFB in regard to receiving Section 106 notifications.

In 2016, in preparation for a government-to-government meeting, specific meeting requirements of the present AFI, an affiliation study for WPAFB was conducted and identified three additional tribes (Cherokee Nation, Seneca Nation of Indians, and Seneca Cayuga Tribe of Oklahoma) that stated interest in WPAFB. The United Keetoowah Band of Cherokee Indians in Oklahoma stated, in consultation for that affiliation study, that they have no interest in WPAFB and requested no future consultation.

In May 2016, a government-to-government tribal meeting was held at WPAFB with six tribes participating. In March 2017, the Cherokee Nation requested no further consultation due to WPAFB being outside of their immediate historic interest. Therefore, the following five tribes have interest at WPAFB:

- Sac and Fox of the Mississippi in Iowa
- Keweenaw Bay Indian Community
- Saginaw Chippewa Indian Tribe
- Seneca Nation of Indians
- Seneca Cayuga Tribe of Oklahoma

An *Installation Tribal Relations Plan* (ITRP) was developed to outline the approach that WPAFB personnel will use to establish and maintain long-term relationships with federally-recognized tribes (WPAFB 2017b). The intention of AFI 90-2002, *Air Force Interaction with Federally-Recognized Tribes, 19 November 2014* as well as DoD Instruction 4710.02, *DoD Interactions with Federally-Recognized Tribes*, is to build relationships with tribes where Air Force activities might affect protected tribal resources, tribal rights, or Indian lands. The ITRP describes how WPAFB has identified federally-recognized tribes with interests/concerns on installation lands; specific details on how the installation plans to address areas of concern for tribes; how the installation plans to maintain tribal relationships,

communications, and meetings; a standard process for consultation whenever issues arise between tribes and the installation; and a standard process for conducting NHPA Section 106 consultations. The ITRP was signed on March 14, 2016 by the designated AF government-to-government points of contact for tribal affairs: the Installation Tribal Liaison Officer (Chief, Environmental Branch) and the Commander Designated Installation Representative (Director, 88th Civil Engineer Group).

Typically, cultural resources are subdivided into archeological resources (prehistoric or historic sites where human activity has left physical evidence of that activity but no structures remain standing) or architectural resources (buildings or other structures or groups of structures, or designed landscapes that are of historic or aesthetic significance). Archaeological resources comprise areas where human activity has measurably altered the earth or deposits of physical remains are found (e.g., arrowheads and bottles). Architectural resources include standing buildings, bridges, dams, and other structures of historic or aesthetic significance. Generally, architectural resources must be more than 50 years old to be considered for the NRHP. More recent structures might warrant protection if they have potential as Cold War-era resources. Structures less than 50 years in age, and particularly DoD structures in the category of Cold War-era, are evaluated under explicit guidance of the National Park Service Bulletin 22.

The Base is obliged to consider the effects of construction for alteration of any historic property. In doing so, WPAFB must first define the Area of Potential Effect (APE). According to 36 CFR § 800.16(d), the APE is defined as:

> *The geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist. The area of potential effects is influenced by the scale and nature of the undertaking and may be different for different kinds of effects caused by the undertaking.*

In accordance with Section 106 of the NHPA, determinations regarding potential effects of an undertaking on historic properties are presented to the SHPO.

3.8.2 Affected Environment

The AF proposed an undertaking to demolish 21 housing units and to construct a 270,000 sf one-story structure at WPAFB. The Base owns over 250 historic buildings, several that are individually eligible for inclusion on the NRHP and most of which are located in one of three NRHP-eligible historic districts. However, based on a review of the WPAFB Integrated Cultural Resources Management Plan (ICRMP), the NRO project site is not located in an area of known prehistoric archaeological resources and no historic facilities would be affected by the proposal to construct the NRO facility. The previous Pine Estates TLFs that were demolished were not part of a historic district. In addition, WPAFB contains no traditional cultural properties or sacred sites as defined by a federally recognized tribe or tribal leader.

3.8.3 Environmental Consequences

Adverse impacts on cultural resources might include physically altering, damaging, or destroying all or part of a resource; altering characteristics of the surrounding environment that contribute to the resource's significance; introducing visual or audible elements that are out of character with the property or alter its setting; neglecting the resource to the extent that it deteriorates or is destroyed; or the sale, transfer, or lease of the property out of agency ownership (or control) without adequate legally enforceable restrictions or conditions to ensure preservation of the property's historic significance.

3.8.3.1 Proposed Action

The most relevant impacts to cultural resources at WPAFB would be related to any potential alteration activities as a result of the Proposed Action. Activities under the Proposed Action involve demolishing 21 non-historic structures and constructing the NRO facility in an area with previous ground disturbance. The proposed project area is currently a grass- and tree-covered maintained lawn area with no known prehistoric archaeological resources identified in the project area or vicinity.

The SHPO was contacted regarding the undertaking's effects on historic properties (**Appendix B**). The SHPO responded indicating there are no known historic properties located within the APE. Therefore, the agency concurred that the proposed undertaking would have no effect on historic properties and no further coordination with the SHPO would be necessary unless there is a change in the proposed project or archaeological remains are discovered during project implementation. In the event of such changes, the SHPO should be contacted.

Additionally, according to the WPAFB Cultural Resources Manager (CRM), the Native American tribes typically consulted for EA's (Keweenaw Bay Indian Community, Sac and Fox of the Mississippi in Iowa, Saginaw Chippewa Indian Tribe, Oklahoma Seneca Cayuga Nation, and Seneca Nation of Indians) only request notification when an action involves ground disturbance or when construction on-Base involves areas of previously undisturbed ground. Since the NRO project area is considered to be located in an area of partial previous ground disturbance (the TLFs are located on a portion of the proposed NRO project site), consultation with the above-referenced Native American tribes was initiated. However, the WPAFB CRM does not anticipate responses from any of the Native American tribes due to the proximity of the development of the TLFs to the proposed NRO project site.

In addition, a *Memorandum for Record* dated May 2, 2018 indicates documentation efforts with five tribes (Keweenaw Bay Indian Community, Sac and Fox of the Mississippi in Iowa, Saginaw Chippewa Indian Tribe, Oklahoma Seneca Cayuga Nation, Seneca Nation of Indians) that have historically shown an interest in undertakings at WPAFB. The memo highlights three points:

1. Initial responses for all consultations with the tribes were no response and/or Tribal Historic Preservation Officer had no issue with the proposed project.

2. Two follow-up phone calls were made at various times, with the most recent on May 2, 2018, since several undertakings (memo includes a total of 5 proposed projects, including the NRO proposal) were initially sent to the Tribal Historic Preservation Officers a couple years ago.

3. The tribes reiterated that they have small staffs and an enormous amount of correspondence letters and would prefer consultation only on matters concerning the Adena Mounds or inadvertent discoveries as noted in the 2018 Installation Tribal Relations Plan.

As such, this concludes tribal consultation under Section 106 and no further consultation will be conducted for the NRO proposal. Copies of correspondence with the SHPO and consultation with the Native American Tribes are presented in **Appendix B**.

In addition, WPAFB has an ITRP in place with the following five tribes: Sac and Fox of the Mississippi in Iowa, Keweenaw Bay Indian Community, the Saginaw Chippewa Indian Tribe, Seneca Nation of Indians, and Seneca Cayuga Tribe of Oklahoma. A government-to-government tribal meeting was held in May 2016 with representatives of each of the five tribes plus a sixth tribe representative from Cherokee Nation, who on May 2017, requested in writing, that no future consultation was warranted due to WPAFB being out of their immediate historic interest. At that May 2016 meeting, the tribes all agreed that the Section 106 process would be completed by the WPAFB CRM by sending letters via a group email (**Appendix B**) to the tribal historic points of contact (this on page 2 of the ITRP). The ITRP also indicates that on or around May 11th of each year, WPAFB will conduct a conference call to maintain open communication with the tribes to address tribal issues and concerns, upcoming installation initiatives, and partnership opportunities.

As such, the Proposed Action would result in no adverse impact to cultural resources.

3.8.3.2 No Action

The No Action alternative would have no effect on cultural resources.

3.9 Infrastructure / Utilities

3.9.1 Definition of the Resource

Infrastructure consists of the systems and physical structures that enable a population in a specified area to function. Infrastructure is wholly human-made, with a high correlation between the type and extent of infrastructure and the degree to which an area is characterized as "urban" or developed. The availability of infrastructure and its capacity to support growth are generally regarded as essential to economic growth of an area.

The infrastructure components to be discussed in this section include utilities (electrical power, natural gas, liquid fuel, and water supply), pollution prevention, solid waste, sanitary and wastewater systems, heating and cooling, communications, and transportation.

Solid waste management primarily concerns itself with the availability of landfills to support a population's residential, commercial, and industrial needs. Alternative means of waste disposal might involve waste-to-energy programs or incineration. In some localities, landfills are designed specifically for, and are limited to, disposal of construction and demolition debris. Recycling programs for various waste categories (e.g., glass, metals, and papers) reduce reliance on landfills for disposal.

3.9.2 Affected Environment

The information contained in this section was obtained from the WPAFB Installation Development Plan (WPAFB 2014a) and provides a brief overview of each infrastructure/utilities component and comments on its existing general condition.

Electrical Power. Dayton Power & Light (DP&L) provides WPAFB with electrical power. The Base receives power via two substations, which is delivered by primary electrical lines on Base. The electrical distribution system on Base is designed to meet the needs of a much larger base population so the current demands of service are within the system's capacity. The overall condition of the system is adequate in providing the power to the current Base population.

Liquid Fuel. The liquid fuel system at WPAFB is delivered primarily by tank trucks with an alternate capability for pipeline delivery. Defense Logistics Agency-Energy is responsible for determining mode of delivery. The Base operates USTs and ASTs that store a variety of fuels.

Water Supply. The water supply and distribution system at WPAFB consists of water collection, treatment, storage, and distribution systems servicing Areas A and B. A portion of the privatized military housing at the Base currently receives water from the city of Dayton via the Montgomery County Environmental Services. The water system at WPAFB is in the process of privatization with conveyance/transfer to the System Owner projected for early January 2019.

Pollution Prevention. The Emergency Planning and Community Right-to-Know Act, Pollution Prevention Act of 1990 and several Executive Orders address regulatory mandates regarding pollution prevention, which include: EO 12856, *Federal Compliance with Right-to-Know Laws and Pollution Prevention Requirements*; EO 12873, *Federal Acquisition, Recycling, and Waste Prevention*; and EO 12902, *Energy Efficiency and Water Conservation at Federal Facilities*. The 88 CEG fulfills this requirement with the following plans:

- Integrated Solid Waste Management Plan
- Storm Water Pollution Prevention Plan
- Hazardous Waste Management Plan

These plans ensure that WPAFB maintains a waste reduction program and meets the requirements of the CWA; NPDES permit program; and federal, state, and local requirements for spill prevention control and countermeasures.

***Solid Waste*.** Municipal solid waste at WPAFB is managed in accordance with the guidelines specified in AFI 32-7042, *Solid and Hazardous Waste Compliance*. This AFI incorporates by reference the requirements of Subtitle D, 40 CFR 240 through 244, 257, and 258, and other applicable federal regulations, AFIs, and DoD Directives. In general, AFI 32-7042 establishes the requirement for installations to have a solid waste management program that incorporates the following: a solid waste management plan; procedures for handling, storage, collection, and disposal of solid waste; recordkeeping and reporting; and pollution prevention.

The Base operates a Qualified Recycling Program that is run by 88 CEG/CEIEC. The recycling center is located on Patterson Field. The recycling program includes aluminum, glass, paper, plastics, oil, and ferrous and nonferrous materials. A contract for solid waste pick-up and disposal exists for all refuse on Base; the contractor removes refuse from military family housing and industrial areas on Base.

***Sanitary Sewer and Wastewater Systems*.** The sanitary sewer collection system at WPAFB is owned by the Base. The wastewater produced on the north side of Patterson Field is discharged to the Fairborn treatment plant, northwest of the Base. The wastewater produced on the remainder of Patterson Field, Wright Field, and Page Manor is served by the city of Dayton treatment system. The wastewater system is in the process of being privatized.

The overall condition of the system is adequate for the collection of wastewater. The average and peak wastewater effluent discharge flows in general are significantly below capacity of all treatment systems. The resource is capable of fully supporting the current missions at WPAFB and offers additional capacity to meet future mission requirements.

***Stormwater System*.** The stormwater conveyance system consists of 250,000 linear feet of sewer pipe, 45,000 linear feet of open ditches and streams, nine ponds and retention basins, and 2,500 catch basins. All stormwater flows to the Mad River. Although Huffman Dam/Mad River is considered an impaired waterway, this does not affect WPAFB's current ability to discharge based on its NPDES permit limits and historical monitoring results.

***Heating and Cooling using Natural Gas*.** Within the past five years, the Base has converted entirely to natural gas for installation wide heating and cooling purposes. The installation gets 80 percent of its annual heating requirements from two centralized heating plants that centralizes heat distribution throughout the Base. Each heating plant feeds a common distribution system for its portion of the Base.

Four small satellite heating sites serve small or remote installation areas constituting 4 percent of the Base heating requirements. The remaining 16 percent of the Base uses gas fired unique heating generation. The natural gas system is in the process of privatization with conveyance/transfer to Vectren to occur on January 1, 2019.

Communications. The communications system at WPAFB consists of telephone, local computer systems, long-haul communications, and land mobile radio systems. The Base's communications and information utility infrastructure is in good condition and there are improvements planned that would enable it to meet any known future communication requirements.

Transportation System. State highways provide direct access to WPAFB. State Route 844 provides a route from the Base to Interstate 675 (I-675), which is located east of the Base. Interstate 675 provides direct access to I-70, which is approximately 9 miles to the north; U.S. 35, which is approximately 5 miles to the south; and I-75, which is approximately 15 miles to the southwest (WPAFB 2014a). State Route 235 provides access from the Base to State Route 4 and I-70 (WPAFB 2014a). Traffic enters Area B from Springfield Street, National Road, and I-675.

3.9.3 Environmental Consequences

Impacts on infrastructure are evaluated for their potential to disrupt or improve existing levels of service and additional needs for energy and water consumption or sanitary sewer systems. Impacts might arise from energy needs created by either direct or indirect workforce and population changes related to Base activities.

3.9.3.1 Proposed Action

Utility lines that currently supply the 21 Pine Estates TLFs must be properly isolated and capped if being abandoned in place as part of the Proposed Action. In addition, any heating oil or other fuel lines that would be abandoned as part of the Proposed Action would also have to be drained prior to capping. Underground utilities (i.e., storm sewers) in areas to be excavated would be marked by each division of Base utilities. Proper excavation techniques would be used to ensure that existing underground utility lines are not damaged. Although the Base has maps that describe the location of the utilities, there would be a potential for unmarked utilities. In the event a utility line is cut or otherwise damaged, on-site personnel would need to implement emergency procedures.

Short- and long-term minor adverse impacts to existing infrastructure/utilities systems would be expected because the proposed NRO facility would increase the overall usage of public services provided by WPAFB (security forces and fire protection). In addition, long-term operation and maintenance of the NRO facility would be expected to impact existing utilities at the Base. Modifications to utility infrastructure would likely be needed over time to meet full capacity requirements.

Diesel Fuel. Approximately 300,000 gallons of diesel fuel would be required to meet the fuel capacity needed under the Proposed Action. Fuel storage would be needed for ultra-low sulfur diesel #2 fuel, which would be used for the backup generators at the facility. Several options were considered as sources of fuel for the emergency generators. Options included:

- Procure fuel from the fuel farm located in Area A on Skeel Road on an "as-needed" basis. The fuel farm is managed by the Defense Logistics Agency (DLA). Currently, only one 180,000-gallon diesel tank exists at the WPAFB fuel farm to service all of WPAFB. Additional tanks would be required to meet the NRO facility's need of up to 300,000 gallon of bulk fuel storage. The NRO would be required to pay for the installation and management of additional bulk tanks and the procurement of bulk transportation vehicles to deliver product to NRO's facility.

- Install smaller bulk tank(s) at the NRO facility to provide a limited supply of fuel. Establish a contract for a vendor to deliver fuel as required. This option would provide on-site backup fuel for a 7-day maximum consumption rate at which time an off-base vendor would provide backup fuel to the facility.

- Utilize natural gas generators. These generators could be tied into the gas lines in Area A that have been recently converted to natural gas.

- Utilize other fuel sources, such as solid oxide fuel cells, batteries, and nuclear power.

The primary concern with the first option was that WPAFB would need to work with the DLA fuel policies because fuel from one organization, such as the NRO, cannot commingle fuel that is owned by another organization. The ground-refueling trucks would not be available because they support WPAFB operations with DLA trucks. Furthermore, diesel fuel has a shelf life and it is not practical to hold such a large quantity of fuel in reserve. Diesel fuel would be classified as dormant stock if not used after six months of receipt.

The location of the fuel storage would need to comply with required setbacks from the NRO facility and nearby buildings as well as required distances from roadways. In addition, it is assumed that the diesel fuel storage would be aboveground and would be surrounded by secondary containment capable of holding the entire volume of the fuel, thus reducing the risk for leaks to reach the nearest storm water outfall. Since the fuel requirement for the emergency generators is 200,000 to 300,000 gallons, fuel tanks of this size would be required to meet the separation distance for occupied buildings per the National Fire Protection Association (NFPA) 30: Flammable and Combustible Liquids Code, which indicates a 300,000-gallon fuel tank would require a separation distance of 25 ft from an occupied building. A smaller tank, such as a 30,000-gallon diesel fuel tank for example, could be more easily accommodated at the proposed project area and replenished, as needed. The NFPA 30 indicates a tank this size would require a separation distance of 10 ft from an occupied building.

Electrical Power. Based on the anticipated loads from the proposed facility, there is not enough capacity with the current infrastructure. The current capacity for electrical power for the proposed project site is

10 MW. The additional load required by the NRO facility would be 60 MW. To support this load, a new transmission line and substation would need to be added. The size of the substation would be dependent upon the design and power requirements of the facility. The location of tie-ins and construction would be determined by the System Owner, DP&L. It is possible that DP&L would need to acquire easements and conduct a system load study prior to construction of a new electrical transmission line. If needed, a supplemental EA could be prepared when design information for the NRO facility is available. In addition, siting may be required for the generators.

Water Supply. Given that the site is in the proximity of a water treatment plant, there should be sufficient water supply/capacity to accommodate NRO requirements.

Sanitary Sewer and Wastewater Systems. The NRO facility would require 140,000 gallons of water per day for cooling purposes. The existing sanitary sewer lines located in the proposed project area consist of 8-inch lines, which would accommodate a maximum wastewater flow rate of 300 gpm. Calculations were based on the following assumptions and the on-line calculator for The Engineering ToolBox (ETB 2018):

- Minimum wastewater flow rate estimated at approximately 100 gpm (equipment cooling only based on 140,000 gallons per day for 24 hours per day);
- Maximum wastewater flow rate estimated to be 200 gpm to allow for peak cooling demand and incidental water usage;
- Based on topography, slope gradient for gravitational pipe drainage estimated at approximately 15 ft/1,000 ft (1.5 percent slope) from the southeast to the northwest through the site area (USGS 1992);
- Sewer pipe capacity is based on being 50 percent full; and
- The existing sanitary sewer system is in good working condition with minimal infiltration and inflow from other water sources.

An infiltration and inflow study is currently in progress with completion expected by mid-2018. Initial feedback indicates that groundwater infiltration into the sanitary sewer system is likely. Storms generally result in an increase flow through the sanitary lift station located along Skeel Avenue; therefore, infiltration is inferred. With regard to the wastewater system, the downstream wastewater lines are likely to be of sufficient size to accommodate the flow generated by the NRO facility given that the site previously supported a housing complex.

Stormwater System. As discussed in Section 3.4.3.1, the concrete-lined drainage ditch and downstream below-ground line would need to be evaluated to determine whether they could accommodate additional stormwater flow. During very lengthy and heavy rains, WPAFB's downstream storm channels have

overflowed. It is very likely that new detention ponds would need to be constructed and/or downstream ponds would need to be added to increase the capacity.

***Sanitary Sewer and Wastewater System*.** The bulk of the water consumed would be used for cooling. It is assumed that water would be conveyed via existing water utilities and any wastewater, including any cooling water blowdown, would be discharged as wastewater with no recirculation. Impacts would be expected to be minor because the current system is designed to accommodate a Base population that is approximately 50 percent larger.

***Heating and Cooling using Natural Gas*.** Plans to connect the natural gas system would need to be coordinated with Vectren, which will become the System Owner on January 1, 2019. Vectren would need to review the natural gas load of the facility to determine any required upgrades to the distribution main, if any. The meter point that serves this main is set at 45 pounds per square inch (psi). It is likely that the main would provide sufficient capacity, but it would not be certain until the NRO facility is designed. Once it has been designed, actual load calculations would be performed.

Transportation System. There would be a temporary increase in use of roadways in and around the construction site as a result of construction traffic. Increases in traffic volumes and adverse impacts to traffic flow on-site would be likely due to additional traffic entering, leaving, and cycling throughout the construction area as a result of contractors performing construction activities. In particular, there would be an overall increase in the volume of truck equipment traffic as a result of construction activities. Construction equipment would be driven to the project location and would be kept on site during the duration of the project. All damaged transportation infrastructure from construction activities would be repaired.

In addition to the construction traffic, the Proposed Action would affect routine traffic flow in the area of the project site because the portion of the roadway associated with the TLFs would be demolished and removed and the area would cease to have a residential street. The only existing road in the area that would be affected would be old State Route 444, which is in good condition. This road already has a fair amount of truck traffic as it a major connecting road from Gate 1A, the Kittyhawk Center, AFMC Headquarters, and NASIC. The new road that would be constructed to replace the connectivity would be designed appropriately. The part of the roadway that is within the footprint of the structure would be permanently covered by the structure itself. Impacts to traffic would be minor because the affected road is not heavily traveled and would be re-routed around the construction site.

In the long-term, the roadways around the NRO facility would be eventually be reconstructed if funding is available. There would be no adverse impacts to parking as there are no parking lots to be removed under the Proposed Action. The parking area to be constructed for the new facility would consist of 12 to 15 spaces.

3.9.3.2 No Action

The No Action alternative would have no effect on infrastructure or utilities.

3.10 Safety and Occupational Health

3.10.1 Definition of the Resource

A safe environment is one in which there is no, or an optimally reduced, potential for death, serious bodily injury or illness, or property damage. Safety and accident hazards can often be identified and reduced or eliminated. Necessary elements for an accident-prone situation or environment include the presence of the hazard itself together with the exposed (and possibly susceptible) population. The degree of exposure depends primarily on the proximity of the hazard to the population. Activities that can be hazardous include transportation, maintenance and repair activities, and the creation of highly noisy environs. The proper operation, maintenance, and repair of vehicles and equipment carry important safety implications. Any facility or human-use area with potential explosive or other rapid oxidation processes creates unsafe environments for nearby populations. Extremely noisy environments can also mask verbal or mechanical warning signals such as sirens, bells, or horns. The public would have no access to the construction activities associated with the Proposed Action.

Munitions and Explosive Safety

Explosives are classified based on their reactions to specific influences. The explosives hazard class is further subdivided into "division", based on the character and predominance of the associated hazards and their potential for causing personnel casualties or property damage. Explosives Hazard Class/Division 1.4 designates a moderate fire with no significant blast or fragment hazard (Sandia 2010). Explosive safety zones (ESZs) are required for areas where ordinance is stored or handled. The ESZs are typically determined based upon the net explosive weight of the ordinance to be stored or handled and the blast resistance properties of the magazine. Explosive Safety Quantity Distance (ESQD) arcs that delineate the extents of each ESZ are constructed. The ESZ and ESQD requirements are specified in Air Force Manual (AFMAN) 91-201, *Explosive Safety Standards*.

Construction Safety

Construction site safety consists primarily of adherence to regulatory requirements imposed for the benefit of employees and implementation of operational practices that reduce risks of illness, injury, death, and property damage. The health and safety of onsite military and civilian workers are safeguarded by DoD and AF regulations designed to comply with standards issued by OSHA and USEPA. These standards specify the amount and type of training required for industrial workers, the use of protective equipment and clothing, engineering controls, and maximum exposure limits for workplace stressors. In addition, health and safety plans are typically developed by the contractor on a project-specific basis.

3.10.2 Affected Environment

Munitions and Explosives Safety

Although there are munitions storage and ESZs in the vicinity of Patterson Field, the proposed location of the NRO facility is outside any ESZs. These areas would be identified prior to performing construction activities related to the NRO facility.

Construction Safety

All contractors performing demolition and construction activities are responsible for following ground safety regulations and worker compensation programs, and are required to conduct construction activities in a manner that does not pose any risk to workers or personnel. Industrial hygiene programs address exposure to hazardous materials, use of personal protective equipment, and availability of Safety Data Sheets. Industrial hygiene is the responsibility of contractors, as applicable. Contractor responsibilities are to review potentially hazardous workplace operations; to monitor exposure to workplace chemical (e.g., asbestos, lead, hazardous materials), physical (e.g., noise propagation), and biological (e.g., infectious waste) agents; to recommend and evaluate controls (e.g., ventilation, respirators) to ensure personnel are properly protected or unexposed; and to ensure a medical surveillance program is in place to perform occupational health physicals for those workers subject to any accidental chemical exposures.

Anti-Terrorism/Force Protection

The DoD seeks effective ways to minimize the likelihood of mass casualties from terrorist attacks against DoD personnel in the buildings in which they work and live. The intent of the United Facilities Criteria (UFC) 4-010-01 standard is to minimize the possibility of mass casualties in buildings or portions of buildings owned, leased, privatized, or otherwise occupied, managed, or controlled by or for DoD. The UFC standards provide appropriate, implementable, and enforceable measures to establish a level of protection against terrorist attacks for all inhabited DoD buildings where no known threat of terrorist activity currently exists.

The UFC mandates minimum standoff distances for new and existing buildings and for those buildings to exist within or outside of a controlled perimeter. Standoff distances are distances maintained between a building or portion thereof and the potential location for an explosive detonation, primarily an adjacent roadway, parking area, and/or trash cans. A controlled perimeter is a physical boundary at which vehicle access is controlled with sufficient means to channel vehicles to the access control points. At a minimum, access control at a controlled perimeter requires the demonstrated capability to search for and detect explosives.

3.10.3 Environmental Consequences

Impacts on health and safety are evaluated for their potential to jeopardize the health and safety of Base personnel as well as the surrounding public. Impacts might arise from physical changes in the work environment, demolition and construction activities, introduction of demolition and construction-related

risks, and risks created by either direct or indirect workforce and population changes related to proposed Base activities. The AF regulations and procedures promote a safe work environment and guard against hazards to the public. The WPAFB programs and day-to-day operations are accomplished according to applicable AF federal and state health and safety standards.

3.10.3.1 Proposed Action

Fire Hazards and Public Safety

No adverse effects regarding fire hazards or public safety would be expected to occur from constructing the NRO facility. The SOPs for demolition and construction projects would be in place to protect the public. Potential adverse long-term impacts would be associated with the transport, handling, and storage of diesel fuel. Contractors would be responsible for the management of the fuel supply. The WPAFB Fire Department would serve as first responders in the event of a fire or a spill.

Munitions and Explosives Safety

No adverse effects due to munitions or explosives safety would be expected to occur from constructing the NRO facility. According to the WPAFB Munitions and Explosives Safety Manager, the proposed NRO project area is clear of any munitions or explosives hazards as it was once used as Base housing.

Construction Safety

Potential short-term minor impacts to workers could be expected during demolition and construction activities. Implementation of the Proposed Action would slightly increase the short-term risk associated with contractors performing construction activities at WPAFB during the normal work day. Contractors would be required to establish and maintain safety programs, develop health and safety plans, and adhere to SOPs. Any potential adverse impacts to the health and safety of nearby personnel would be minimized by clearly identifying the work zone and prohibiting access to unauthorized individuals. Use of high-profile equipment would require a "spotter" when operating near any overhead hazards. To minimize vehicle accidents, contractors would direct heavy vehicles entering and exiting the demolition sites. The Base has also incorporated stringent safety standards and procedures into day-to-day operations. In addition, proper excavation techniques would be used to ensure that existing underground utility lines are not damaged; in the event a utility line is cut or otherwise damaged, on-site personnel would need to implement emergency procedures. Therefore, no adverse effects are anticipated as a result of the Proposed Action due to safeguards existing to protect personnel.

Anti-Terrorism/Force Protection

No adverse effects to anti-terrorism/force protection (ATFP) would be expected as a result of constructing the NRO facility because the facility would be constructed within a controlled perimeter on Base and an additional fence would be erected around the new facility. The minimum standoff distance for the new fence would meet the ATFP requirement of 86 ft from existing infrastructure.

The site of the proposed facility is also a relatively straight line and under 1,500 ft from the Base fence line. Design elements that might add exterior building security have not yet been developed. As an additional security precaution, however, natural or manmade obstacles such as trees, shrubbery, and/or a sloping earthen mound could be considered for placement at the southeast corner of the building and inside the fence line to further to obstruct the view.

3.10.3.2 No Action

The No Action alternative would have no effect on safety or occupational health.

3.11 Socioeconomics

3.11.1 Definition of the Resource

Socioeconomics is the relationship between economics and social elements such as population levels and economic activity. Factors that describe the socioeconomic environment represent a composite of several interrelated and nonrelated attributes. There are several factors that can be used as indicators of economic conditions for a geographic area, such as demographics, median household income, unemployment rates, percentage of families living below the poverty level, employment, and housing data. Data on employment identify gross numbers of employees, employment by industry or trade, and unemployment trends. Data on industrial, commercial, and other sectors of the economy provide baseline information about the economic health of a region.

3.11.2 Affected Environment

Demographics. Metropolitan statistical areas are geographic entities defined by the Office of Management and Budget for use by federal statistical agencies in collecting, tabulating, and publishing federal statistics. A metro area contains a core urban area of 50,000 or more of a population. Each metro area consists of one or more counties and includes the counties containing the core urban area, as well as any adjacent counties that have a high degree of social and economic integration (as measured by commuting to work) with the urban core (Census 2017).

The Base is located 10 miles outside of Dayton, Ohio. According to the 2010 Census data, the city of Fairborn had a population of 32,352; the city of Dayton had a population of 141,527; and the Dayton Metropolitan Area (MA) (consisting of Clarke, Greene, Miami, Montgomery, and Preble counties) had a population of 979,835 residents. Based on the 2010 Census data, the Dayton MA was the fourth largest metropolitan area in Ohio.

Employment Characteristics. The Base provides a major source of employment in the five-county area. In addition, WPAFB awards numerous contracts every year to local businesses. For Fiscal Year (FY) 14 (October 1, 2013 through September 30, 2014), the total number of jobs provided by WPAFB was over 27,000. This number includes military active duty, trainees and reservists, DoD civilians, and other civilians, such as contractors. This number of indirect jobs supported by the Base, such as restaurants,

dry cleaners, and others is estimated at 34,560. The total economic impact to the local Dayton MA was $4.3 billion (WPAFB 2017c). A large portion of residents in the Dayton MA are employed in education, health and social services; a lower percentage of residents are employed in retail trade, finance, insurance, real estate, and rental and leasing.

Recent unemployment rates indicate the unemployment rate for the Dayton MA was 4.4 percent in September 2017 (Bureau of Labor Statistics [BLS] 2017a), which was reported to be lower than the state average of 5.3 percent in September 2017 (BLS 2017b). The Dayton MA unemployment rate was slightly higher than the U.S. average of 4.2 percent in September 2017 (BLS 2017c).

3.11.3 Environmental Consequences

This section identifies potential economic and social impacts that might result from the proposed project. The methodology for the economic impact assessment is based on the Economic Impact Forecast System (EIFS) developed by the DoD in the 1970s to efficiently identify and address the regional economic effects of proposed military actions (EIFS 2001). The EIFS provides a standardized system to quantify the impact of military actions, and to compare various options or alternatives in a standard, non-arbitrary approach.

The EIFS assesses potential impacts on four principal indicators of regional economic impact: business volume, employment, personal income, and population. As a "first tier" approximation of effects and their significance, these four indicators have proven very effective. The methodology for social impacts is based on the Guidelines and Principles for Social Impact Assessment, developed by an inter-organizational committee of experts in their field (National Oceanic and Atmospheric Administration [NOAA] 1994).

The proposed project at WPAFB would have an adverse impact with respect to the socioeconomic conditions in the surrounding MA if it would:

- Change the local business volume, employment, personal income, or population that exceeds the MA's historical annual change; and/or
- Negatively affect social services or social conditions, including property values, school enrollment, county or municipal expenditures, or crime rates.

3.11.3.1 Proposed Action

The Proposed Action would have a negligible impact on the local workforce. A short-term beneficial impact would be expected on the local economy from revenue generated by demolition and construction activities. The Proposed Action does not involve changes in off-Base land use; therefore, no impacts on social conditions are expected. Long-term beneficial impacts would be anticipated to the IC due to NRO's ability to provide a critical asset regionally. The long-term beneficial impact would also be realized by WPAFB due to the additional mission being located on Base.

3.11.3.2 No Action

The No Action alternative would have no effect on socioeconomics.

3.12 Environmental Justice

3.12.1 Definition of the Resource

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.

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, requires that all federal agencies address the effects of policies on minorities and low-income populations and communities, and to ensure that there would be no disproportionately high and adverse human health or environmental effects to minority or low-income populations or communities in the area.

The CEQ guidance states that "minority populations should be identified where either (a) the minority population of the affected area exceeds 50 percent or (b) the population percentage of the affected area is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographical analysis."

Minority populations are defined as: Alaskan Native, American Indian, Black, Native Hawaiian, Pacific Islander, or persons of Hispanic origin. A low-income population is defined as persons living below the poverty threshold as determined by the Census Bureau. A youth population is defined as children under 18 years.

Low-income status was based upon comparing the income of the proposed project site and larger study area residential population to the U.S. Census Bureau Poverty Threshold. The CEQ guidelines do not specifically state the percentage considered meaningful in the case of low-income populations. The definition of "low income populations" is defined by HUD as populations where "50 percent or greater are low-income individuals".

3.12.2 Affected Environment

A screening analysis using U.S. Census Bureau racial and economic information catalogued by Demographic Profile 5-Year Estimates for the years 2012 through 2016 was reviewed using the American Community Survey [ACS] economic and demographic and housing estimates to identify low income and minority populations living in the vicinity of Areas A and B of WPAFB and in the geographic region.

Wright-Patterson Air Force Base and surrounding areas are included in Census Tracts 903.02, 906, 911, 9800 and 2803. Montgomery County Tract 9800 includes the west portion of Area B of WPAFB;

however, no data is reported for Tract 9800. Demographics for Tract 9800 are included within Tract 2803, which includes the entirety of WPAFB (Census 2018). Census Tract 2803 represents the on-Base population. Off-Base Census Tract relevant to this EA are included in the following Tracts: 2001.01, 2001.04, 2003, 2004, 2005, and 2007.

Table 3-6 presents a comparison of WPAFB economic and demographic characteristics to surrounding off-Base communities using the most-recent 5-Year ACS Census Tract estimates.

Table 3-6. WPAFB Economic and Demographic Characteristics Compared to the Surrounding Communities Using Census Bureau 5-Year Estimates

Census Tract	Area	Subject	Estimates and Percentages	
			Estimate	Percent
2803	WPAFB – Areas A and B	Total Population	2,596	
		Male	1,602	61.7%
		Female	994	38.3%
		Employed	571	28.3%
		Unemployed	30	1.5%
		White	2,192	84.4%
		Black	306	11.8%
		Hispanic	319	12.3%
		Mexican	249	9.6%
		Median Age	22.8	(X)
		Under Poverty Threshold – Families	(X)	1.1%
		Total Household Income $75,000 to $99,999	146	24.5%
		Median Household Income (dollars)	82,763	(X)
Surrounding Areas				
2001.01	South of Area B	Total Population	2,912	
		Male	1,381	47.4%
		Female	1,531	52.6%
		Employed	1,387	61.5%
		Unemployed	97	4.3%
		White	2,611	89.7%
		Black	256	8.8%
		Hispanic	247	8.5%
		Mexican	166	5.7%
		Median Age	36.6	(X)
		Under Poverty Threshold – Families	(X)	20.1%
		Total Household Income $75,000 to $99,999	134	11.7%
		Median Household Income (dollars)	42,862	(X)
2001.04	West of Area A	Total Population	5,924	
		Male	2,567	43.3%
		Female	3,357	56.7%
		Employed	3,052	53.8%
		Unemployed	347	6.1%
		White	4,119	69.5%
		Black	1,325	22.4%
		Hispanic	168	2.8%
		Mexican	19	0.3%
		Median Age	21.2	(X)
		Under Poverty Threshold – Families	(X)	18.2%

Census Tract	Area	Subject	Estimates and Percentages	
			Estimate	Percent
		Total Household Income $75,000 to $99,999	118	6.9%
		Median Household Income (dollars)	27,568	(X)
2003	East of Area A (northeastern section)	Total Population	3,578	
		Male	1,798	47.8%
		Female	1,960	52.2%
		Employed	1,562	54.4%
		Unemployed	134	4.7%
		White	3,619	96.3%
		Black	153	4.1%
		Hispanic	27	0.7%
		Mexican	27	0.7%
		Median Age	38.0	(X)
		Under Poverty Threshold – Families	(X)	23.8%
		Total Household Income $75,000 to $99,999	131	8.9%
		Median Household Income (dollars)	44,795	(X)
2004	East of Area A (mid-section)	Total Population	2,300	
		Male	1,158	50.3%
		Female	1,142	49.7%
		Employed	1,044	54.6%
		Unemployed	249	13.0%
		White	2,052	89.2%
		Black	202	8.8%
		Hispanic	21	0.9%
		Mexican	14	0.6%
		Median Age	36.1	(X)
		Under Poverty Threshold – Families	(X)	14.2%
		Total Household Income $75,000 to $99,999	51	5.0%
		Median Household Income (dollars)	26,307	(X)
2005	East of Area A	Total Population	5,446	
		Male	2,948	54.1%
		Female	2,498	45.9%
		Employed	2,416	58.0%
		Unemployed	242	5.8%
		White	4,900	90.0%
		Black	357	6.6%
		Hispanic	223	4.1%
		Mexican	192	3.5%
		Median Age	34.9	(X)
		Under Poverty Threshold – Families	(X)	24.7%
		Total Household Income $75,000 to $99,999	136	6.8%
		Median Household Income (dollars)	37,143	(X)
2007	South of Area A	Total Population	3,925	
		Male	2,023	51.5%
		Female	1,902	48.5%
		Employed	1,831	58.5%
		Unemployed	233	7.4%
		White	3,127	79.7%
		Black	909	23.2%
		Hispanic	214	5.5%
		Mexican	78	2.0%
		Median Age	30.2	(X)
		Under Poverty Threshold – Families	(X)	40.4%

Census Tract	Area	Subject	Estimates and Percentages	
			Estimate	Percent
		Total Household Income $75,000 to $99,999	147	7.3%
		Median Household Income (dollars)	22,691	(X)

(X) = Not applicable
Source: Census 2018

Tract 2001.04 had the largest total population (5,924 persons) of the comparison geographies as compared to the on-Base population (2,596 persons). Census Tract 2007 had the highest percentage of the population (40.4%) with income below the Census Bureau Poverty Threshold than the on-Base population (1.1%) [NOTE: poverty threshold was set at $25,086 in 2018 by the Census Bureau for a household of four persons]. Census Tract 2007 had a total household income range of $75,000 to $99,999 that was estimated slightly higher (one point) than the same range for the on-Base population but had a considerably lower median household income ($22,691) than that compared with the median household income of the on-Base population ($82,763).

Children are present at WPAFB as residents and visitors. The protection of children area for the NRO facility would primarily be focused on military housing located in Area A at WPAFB. There is one full-day Child Development Center (CDC) in Area A that provides day care for children 6 weeks to 5 years old. Hourly care is also offered for children 6 months to 12 years old (WPAFB 2014a). In addition, children might visit the Medical Center and the recreational areas, such as lakes and golf courses. Precautions are taken for child safety through a number of means, including using fencing, limiting access to certain areas, and requiring adult supervision.

3.12.3 Environmental Consequences

This section evaluates environmental justice concerns to include disproportionate impacts on low-income or minority populations. The construction of the NRO facility at WPAFB would have an adverse impact with respect to environmental justice in the surrounding metropolitan area if it would disproportionately impact minority populations or low-income populations. Impacts on identified environmental justice (minority and low-income) communities and the protection of children would be considered significant if one or more of the following would occur:

- Activities or operations substantially altering lifestyles or quality of life of WPAFB employees and their families or civilian households living near WPAFB.

- Disproportionately high and adverse environmental or human health impacts on an identified minority or low-income population, which appreciably exceed those of the general population around the project area.

- Disproportionately high and adverse environmental health or safety risks to an identified population of children.

3.12.3.1 Proposed Action

To comply with EO 12898, ethnicity and poverty status in the study area have been examined and compared to state and national statistics to determine if minority or low-income groups could be disproportionately affected by the Proposed Action. It is noted that the Proposed Action would only involve construction of the NRO facility and demolition of the TLFs. Only on-Base properties would be affected; none of these properties would be used by the surrounding community.

Potential effects from construction activities for the Proposed Action could occur on Base, with no off-Base adverse effects. The environment around WPAFB is influenced by AF operations, land management practices, vehicle traffic, and emissions sources outside the Base. Site preparation and construction activities included as part of the Proposed Action would cause short-term increases in air emissions and noise, but effects would be less than significant and would not disproportionately affect a single population. Additionally, the Proposed Action would not disproportionately impact children.

There are no residential or recreational areas adjacent to the project area. The closest residential area is approximately 900 ft; the CDC in Area A is approximately 3,500 ft. Access to the proposed site would be limited during construction and the facility would ultimately be secured by fencing once in operation. Therefore, there would be no adverse effects on environmental justice communities, and no significant impacts would occur from the Proposed Action.

No short- or long-term impacts would be expected from the Proposed Action because the project site is located within WPAFB's secured perimeter boundary.

3.12.3.2 No Action

The No Action alternative would have no impact over current conditions with respect to environmental justice.

4.0 Cumulative Effects

Increasing evidence suggests the most adverse environmental effects may result not from the direct effects of a particular action, but from the combination of individually minor effects of multiple actions over time (CEQ 1997). The CEQ regulations implementing NEPA require that cumulative impacts of a proposed action be assessed. A cumulative impact is defined 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 action (40 CFR § 1508.7).*

The CEQ's guidance for considering cumulative effects states NEPA documents should compare cumulative effects of multiple actions with appropriate national, regional, state, or community goals to determine whether the total effect is significant. The first step in assessing cumulative effects involves identifying and defining the scope of other actions and determining their interrelationship with the proposed action. Identifying and defining scope must consider whether other projects coincide with the location and timing of the proposed action. Past, present, and reasonably foreseeable future actions are examined, including military actions in the region as well as other federal and non-federal actions to determine if there is an interaction with the proposed action or alternative.

Cumulative effects result from special (geographic) and temporal (time) crowding of environmental perturbation. The effects of human activities will accumulate when a second perturbation occurs at a site before the ecosystem can fully rebound from the effect of the first perturbation (CEQ 1997). Cumulative effects may arise from single or multiple actions and may result in additive or interactive effects. Analyzing cumulative effects differs from the traditional approach to environmental impact assessment because it requires the analyst to expand the geographic boundaries and extend the timeframe to encompass additional effects on the resources, ecosystems, and human communities of concern.

As WPAFB is an active military installation that undergoes changes in missions and training requirements in response to defense policies, current threats, and tactical and technological advances, it requires new construction, facility improvements, infrastructure upgrades, and maintenance and repairs on an on-going basis. In addition, tenant organizations occupy portions of the Base, conduct aircraft operations, and maintain select facilities. All these on-Base actions would continue to occur before, during, and after the Proposed Action would be implemented.

4.1 Past and Present Actions Relevant to the Proposed Action

The AF has identified actions in the vicinity of the project area that are under consideration and in the planning stage. These actions are included in the cumulative effects analysis to the extent that details regarding such actions exist and the actions have a potential to interact with the Proposed Action or

alternatives outlined in this EA. No applicable non-federal or off-Base potential future projects were identified. **Table 4-1** presents potential future projects that have been identified in the NRO project area:

Table 4-1. DoD Past, Present, and Reasonably Foreseeable Actions

Project Name	Description	Planned Year of Implementation / Frequency	Resources Potentially Affected	Magnitude of Impact
Entry Control Reconfiguration and Base Perimeter Fence Relocation, EIS	Reconfigure/relocate nine Area A entry control facilities (gates) (WPAFB 2012).	2012 – 2020	Air Quality, Noise, Earth Resources, Water Resources, Biological Resources, Occupational Health and Safety, Infrastructure, Traffic/Transportation	Not Significant
Housing Program, Draft EIS	Disposition of 100 government-owned homes, including 89 Brick Quarters housing units constructed between 1935 and 1937, which are eligible for listing on the NRHP both individually and as a Historic District. Eleven alternatives are currently being analyzed (WPAFB 2017d).	2019 – 2036	Noise, Cultural Resources, Socioeconomics, Infrastructure	Potential impact to overall air quality emissions if alternative selected includes demolition/renovation; impacts to existing traffic/transportation during same programmed year.
Demolish Multiple Buildings, EA	Demolish 7 buildings programmed for 2018 through 2020 as part of an AF initiative to reduce the amount of physical plant that WPAFB spends money on by 20 percent by the year 2020 (WPAFB 2014b).	2018 – 2020 and possibly beyond	Air Quality, Noise, Earth Resources, Water Resources, Cultural Resources, Occupational Health and Safety	Not Significant
Fire Structural / Rescue Station on the West Ramp, EA	Demolish existing Area A facility and re-using existing concrete foundation slab for new construction of a fire structural / rescue station on the West Ramp.	2018	Air Quality, Noise, Earth Resources, Cultural Resources, Occupational Health and Safety	Not Significant
Implement the Integrated Natural Resources Management Plan (INRMP), EA	Implement the 2015 INRMP to integrate natural resources management plans and practices described in the 2015 INRMP; includes planting native tree species for Indiana bat wooded habitat in Area A.	2016 – 2020	Air Quality, Earth Resources, Water Resources, Biological Resources, Occupational Health and Safety, ERP	Not Significant

Project Name	Description	Planned Year of Implementation / Frequency	Resources Potentially Affected	Magnitude of Impact
Primary Runway Pavement Replacement, EA	Provide long-term replacement of pavement for the existing primary runway and taxiways, enabling aircraft to continue to operate in a safe manner.	2018 – 2020	Air Quality, Noise, Water Resources, Occupational Health and Safety, ERP	Potential impact to overall air quality emissions.
Decentralization of Line C – Area A Heating System	Repair degraded/failing heating distribution system by replacing it with localized natural gas-fired decentralized boilers.	2018 – 2019	Noise, Air Quality, Biological Resources (Vegetation), Earth Resources, Occupational Safety and Health	Potential impacts to overall air quality emissions and existing traffic/transportation in the project area.
Visiting Quarters/ Temporary Lodging Facilities, EA	Construction of a 398-room, five-story hotel as the new visiting quarters and 36 units to be used as temporary lodging facilities	2018 – 2020	Noise, Air Quality, Biological Resources, Earth Resources, Occupational Safety and Health, Utilities and /Infrastructure	Potential impacts to overall air quality emissions, traffic/ transportation in the project area, and increased demand for utilities. The electrical loads for these facilities are minimal in comparison with the NRO facility.
F/10266	Repair/Renovate HQ AFMC Basement 1st Floor	2020	Noise, Air Quality, Occupational Safety and Health	Not Significant
F/10262	Repair/Renovate HQ AFMC Basement 1st & 2nd Floors	2020	Noise, Air Quality, Occupational Safety and Health	Not Significant
AFIT	Repair Chilled Water Systems	2020	Noise, Air Quality, Water Resources, Occupational Safety and Health	Not Significant
Area B	Repair Road Retaining Wall Cooling Tower Foundation	2020	Noise, Air Quality, Earth Resources, Water Resources, Occupational Safety and Health	Not Significant
F/20045	Renovate/Consolidate/Repair Basement & Penthouse	2020	Noise, Air Quality, Occupational Safety and Health	Not Significant
F/20019	Repair Exterior AFRL/RQ	2020	Noise, Air Quality, Biological Resources (Vegetation), Occupational Safety and Health	Not Significant
F/30093	Repair Building Structure RAC-3 LRS Age	2020	Noise, Air Quality, Earth Resources, Occupational Safety and Health	Not Significant

Project Name	Description	Planned Year of Implementation / Frequency	Resources Potentially Affected	Magnitude of Impact
F/30110	Renovate/Consolidate Office Space	2020	Noise, Air Quality, Occupational Safety and Health	Not Significant
Building 262	Repair/Renovate – Phase 2	2020	Noise, Air Quality, Occupational Safety and Health	Not Significant
F/20064	Demo R&D Storage	2020	Noise, Air Quality, Earth Resources, Occupational Safety and Health	Not Significant
F/20062	Demo AFRL Propulsion Lab	2020	Noise, Air Quality, Earth Resources, Occupational Safety and Health	Not Significant
F/20196	Demo R&D Storage	2020	Noise, Air Quality, Earth Resources, Occupational Safety and Health	Not Significant
Basewide	Repair Failed Roads	2020	Noise, Air Quality, Earth Resources, Occupational Safety and Health	Potential impacts to overall air quality emissions and existing traffic/transportation in the project area.
Basewide	Repair Failed Roofs	2020	Noise, Air Quality, Occupational Safety and Health	Not Significant
F/20655	Replace AFRL Chilled Plant	2020	Noise, Air Quality, Earth Resources, Occupational Safety and Health	Not Significant
F/30256	Engine Test Cell	2019	Noise, Air Quality, Earth Resources, Occupational Safety and Health	Not Significant

4.2 Analysis of Cumulative Effects

The following analysis first considered whether the actions could affect, or be affected by those resulting from the Proposed Action. Second, an evaluation was made to determine whether such a relationship would result in potentially additive impacts not identified when the Proposed Action is considered alone.

The additive or interactive cumulative effects of the Proposed Action, when considered together with the effects of other past, present, and reasonably foreseeable future actions in the WPAFB region, are presented below by resource category. Please note that only those resources that were identified in **Table 4-1** were carried forward for cumulative analysis. Other resource categories, analyzed for the Proposed Action, would not be cumulatively affected by these past, present, or reasonably foreseeable actions.

4.2.1 Cumulative Effects on Resources

The following examines cumulative effects on the environment that would result from incremental impacts of implementation of the Proposed Action, in addition to other past, present, and reasonably foreseeable future actions. This analysis assesses potential for an overlap of impacts with respect to project schedules or affected areas. This section presents a qualitative analysis of the cumulative effects. Projects proposed for the reasonably foreseeable future that are relevant to the NRO project area include the Area A Heating System Decentralization project due to the proximity. However, this project would be temporary in nature and would not be a recurring event.

In addition, the timeframes and budgets for each proposed project listed in **Table 4-1** can only be estimated or are uncertain. Short-term adverse effects could be possible if this project were to occur in conjunction with the Proposed Action. Long-term cumulative impacts are not expected to result from this reasonably foreseeable future action; however, upgrades to the natural gas distribution system have not yet been identified. Once the facility has been designed, actual load calculations would be performed to determine whether existing capacity along the distribution main is sufficient.

Under the No Action alternative, there would be no change to baseline conditions for any resource areas and existing conditions would continue as described in Sections 3.2 through 3.12 for resources analyzed. No new cumulative impacts would be expected as a result of the No Action alternative.

Air Quality. The state of Ohio accounts for all significant stationary, area, and mobile emission sources under the CAA and USEPA in the development of a SIP. Because the SIP is a compilation of regulations, strategies, schedules, and enforcement actions designed for a state to achieve and maintain compliance with all NAAQS, no significant cumulative impacts on air quality are anticipated. Estimated emissions generated by the Proposed Action would require a PTI application, modification to the Title V operating permit, and potentially a PSD permit if a PSD avoidance strategy is not developed and approved by OEPA. Having the air permits in place prior to construction that are in conformance with the Ohio SIP is protective of public health and welfare and this mitigates cumulative impacts on air quality. For the fugitive emissions generated from activities, is it understood that activities of this limited size and nature would not contribute appreciably to adverse cumulative impacts to air quality.

Noise. Demolition and construction activities associated with the Proposed Action and other cumulative projects would cause short- and long-term, minor and adverse, cumulative, impacts on WPAFB. No noise-producing activity or project has been identified that, when combined with the Proposed Action, would have greater than minor adverse impacts on sensitive noise receptors at WPAFB due to the NRO demolition and construction project. There is the potential for adverse impacts due to noise from the emergency generators; however, these generators would only operate in the event of a power failure. Such occurrences would be expected to be infrequent and of short duration (approximately 7 days).

Earth Resources. Past development in various locations of WPAFB have likely contributed to erosion and soil loss. However, the extent to which this has occurred is difficult to determine. The Proposed Action and other cumulative projects involving demolitions and construction would result in temporary disturbed ground surfaces and short-term, minor, adverse impacts on earth resources. Although soils would be disturbed by earthmoving and other construction activities, any effects would not be expected to exceed individual project boundaries and would not result in significant impacts on earth resources since BMPs, erosion and sediment controls and other management measures would be implemented.

Water Resources. Short-term, minor, cumulative adverse impacts on groundwater and surface water would be expected from implementation of the Proposed Action and other cumulative projects involving demolition or construction. The cumulative increase in impervious surfaces from the proposed cumulative projects in the area would be considered a minor contribution in the context of the whole watershed but could be noticeable on a more localized level. In accordance with federal and state stormwater regulations, the post-development hydrologic condition of the areas where the proposed natural gas conversion facilities and other cumulative project facilities would be developed must be maintained as it was pre-development. For these projects, preservation of pre-development hydrologic condition would be ensured through adherence to BMPs and appropriate low-impact development strategies that would be expected to attenuate potentially long-term, adverse impacts on water resources.

Cultural Resources. The Proposed Action would not likely have any effect on cultural resources. In the event of an unanticipated discovery of archaeological resources during any project at WPAFB, actions detailed in the ICRMP and summarized in Section 3.8 would be initiated to minimize impacts. Therefore, no significant impacts to cultural resources would be anticipated.

Biological Resources. The Proposed Action is not expected to adversely affect biological resources. All of the past and planned projects are located within areas that have or would take place in developed areas; therefore, impacts to biological resources would not be expected. Any potential impacts to threatened, endangered, or sensitive species would require consultation with the USFWS and the ODNR and potential mitigation. Therefore, no significant cumulative impacts to biological resources would be anticipated.

Infrastructure/Utilities. While there is capacity for growth, the potential exists for cumulative impacts on utilities. However, as newly constructed infrastructure would replace older facilities, the newer, more energy-efficient construction methods would likely contribute to cumulative, long-term, minor, beneficial impacts on electrical consumption. Short- and long-term, negligible, cumulative impacts on the communications, sewer and wastewater, stormwater drainage, traffic/transportation, and solid waste generation systems would be expected from accommodation of the operations and personnel associated with the NRO facility when combined with other actions.

Safety and Occupational Health. Short-term negligible cumulative adverse impacts on health and safety (e.g., slips, falls, heat exposure, exposure to mechanical, electrical, vision, or chemical hazards) would be expected as a result of construction activities associated with the Proposed Action and other cumulative projects. Implementation of appropriate safety methods during these activities would be expected to minimize the potential for such impacts. Workers at construction sites would be required to adhere to site specific health and safety plans; construction areas would be secured to prevent unauthorized personnel from entering the work sites; and in accordance with the Occupational Safety and Health Act, all workers would be provided with appropriate personal protective equipment. Therefore, no significant cumulative impacts to safety and occupational health would be anticipated.

Hazardous Materials/Waste. The Proposed Action could have a negligible effect on hazardous materials and waste associated with construction equipment and debris. In addition, the building demolition could have the potential for generation of ACM, LBP, or other hazardous waste, but effects would be minimized by following proper protocols for abatement and/or disposal. Therefore, no significant cumulative impacts to hazardous materials and waste would be anticipated.

4.2.2 Irreversible and Irretrievable Commitment of Resources

The NEPA requires that EAs include identification of any irreversible and irretrievable commitment of resources that would be involved in the implementation of the Proposed Action. Irreversible and irretrievable resource commitments are related to the use of nonrenewable resources and the effects that the uses of these resources could have on future generations. Irreversible and irretrievable resource commitments are related to the use of nonrenewable resources and the effects that use of these resources will have on future generations. Irreversible effects primarily result from use or destruction of a specific resource that cannot be replaced within a reasonable time frame (e.g., energy and minerals).

Environmental consequences as a result of the Proposed Action are considered short-term and temporary. Construction would require consumption of materials typically associated with construction (e.g., concrete, wiring, piping). The AF does not expect the amount of these materials used to significantly decrease the availability of the resources. Small amounts of nonrenewable resources would be used; however, these amounts would not be appreciable and are not expected to affect the availability of these resources. Irretrievable effects to vegetation/green space at the project site would occur as a result of construction of the NRO facility. However, there are other areas scattered throughout the Base that contain naturally-occurring vegetation and areas that previously contained structures that were demolished with those sites being turned into green space. Therefore, the irretrievable loss of vegetation/green space as a result of constructing the NRO facility could be a retrievable resource elsewhere on the Base and is not a significant loss when compared to the overall green space existing at WPAFB.

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5.0 List of Preparers

This EA has been prepared under the direction of the 88 CEG/CEIEA. The individuals who contributed to the preparation of this document are listed below.

Stephanie Burns
Aptim Federal Services, LLC
NEPA Specialist
M.P.A. Environmental Management
B.S. Natural Resources and Environmental Science
Years of Experience: 20

Cynthia Hassan
Aptim Federal Services, LLC
Project Manager, Sr. NEPA Specialist
M.P.H. Epidemiology
B.S. Medical Technology
Years of Experience: 32

Gregory Plamondon
Aptim Federal Services, LLC
Geology, Soils, Water Resources
Installation Restoration Program
Bachelor of Engineering, Hydrology
Years of Experience: 26

Timothy Rust
Independent Consultant
Air Quality
B.S. Electrical Engineering
Years of Experience: 30

William Scoville
Aptim Federal Services, LLC
Program Manager, Senior Review
M.S. Civil Engineering
B.S. Earth and Engineering Sciences
Years of Experience: 28

Larry Verdier, CIH
Aptim Federal Services, LLC
Noise Analysis
M.P.H., Industrial Hygiene
B.S. Biology
Years of Experience: 40

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6.0 List of Persons Contacted

Several persons were contacted or consulted during the preparation of the EA. The persons contacted are listed below:

Name	Role	Affiliation
Jo Lynn Anderson	Civil Engineering Planning	88 CEG/CENPL
John Banford	EIAP Program Manager	88 CEG/CEIEA
David Dalton	Reclamation and Recycling, Construction and Demolition Debris	88 CEG/CEIEC
Dan Everson	Environmental Services Administrator, Field Supervisor, Threatened and Endangered Species	U.S. Fish and Wildlife Service; Columbus, Ohio
Roxanne Farrier	Floodplain Issues	Miami Conservancy District; Dayton, Ohio
John Kessler	Natural Resources	Ohio Department of Natural Resources; Office of Real Estate; Columbus, Ohio
Jeffrey Kitzmiller	Deputy Chief Fire and Emergency Services	788 CES/CEXFP
Ken Medearis	Environmental Health & Safety	NRO
Jon Ostertag	Chief, Project Management Center	NRO
Mike Rath	Data Center Management	NRO
Matt Riester	Chief, Environmental Health & Safety	NRO
Kurt Rinehart	Floodplain Issues	Miami Conservancy District; Dayton, Ohio
Gary Stevens	Project Manager	88 CEG/CENMP
Darryl Thomas	Electrical Power	88 CES/CEOER
Darryn Warner	Natural Resources Program Manager	88 CEG/CEIEA
Diana Welling	Department Head & Deputy State Historic Preservation Officer, Resource Protection & Review	Ohio Historic Preservation Office; Columbus, Ohio
Bill Williams	Supervisor, Pest Management	88 CES/CEOIE
Joy Williams	Project Reviews Manager, Resource Protection and Review	Ohio Historic Preservation Office; Columbus, Ohio
Paul Woodruff	Cultural Resources Program Manager	88 CEG/CEIEA

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Appendix A

Photo Log

APTIM

Photographic Documentation

Client:	Wright-Patterson Air Force Base	**Project Number:**	501027
Project Name:	NRO Facility	**Photographer**:	S. Burns

Photograph No. 1

Date: October 3, 2017

Direction: North

Description: Looking north toward Pine Estates Housing Complex one- and two-story duplex residential dwellings.

Photograph No. 2

Date: October 3, 2017

Direction: West

Description: Looking west along the roadway adjacent and south of the Pine Estates Housing Complex.

APTIM

Photographic Documentation

Client:	Wright-Patterson Air Force Base	**Project Number:**	501027
Project Name:	NRO Facility	**Photographer**:	S. Burns

Photograph No. 3

Date: October 3, 2017

Direction: Northeast

Description: Looking west across the southern portion of the project site.

Photograph No. 4

Date: October 3, 2017

Direction: Northeast

Description: Looking toward the fruit and vegetable garden located on the east portion of the project site.

Appendix B

Interagency and Intergovernmental Coordination for Environmental Planning Correspondence and Notice of Availability

Miami Conservancy District Consultation Letters:

1. WPAFB Request – 13Nov17
2. MCD Response – 27Feb18

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 88TH AIR BASE WING (AFMC)
WRIGHT-PATTERSON AIR FORCE BASE, OHIO

November 13, 2017

88 CEG/CEIEA
1450 Littrell Road, Building 22
Wright-Patterson AFB OH 45433-5209

Mr. Kurt Rinehart
Miami Conservancy District
38 E. Monument Avenue
Dayton, OH 45402

Dear Mr. Rinehart:

Wright-Patterson Air Force Base (WPAFB, Base) is preparing an Environmental Assessment (EA) to evaluate the potential impacts of constructing a data center in Area A at WPAFB (Figure 1). The decision to construct this facility would enable WPAFB to house a safe and secure data center for the National Reconnaissance Office (NRO). The NRO develops and operates unique and innovative overhead reconnaissance systems and conducts intelligence-related activities for U.S. national security.

The NRO needs to replace and consolidate its aging facilities and infrastructure, which cannot meet federal data center consolidation mandates. A safe and secure site is needed for the construction and operation of a new data center in the eastern region of the U.S., which would be a new mission critical resource for WPAFB and the Intelligence Community (IC).

Proposed Action

The Proposed Action includes the construction and operation of a new data center in Area A at WPAFB. Twenty-one housing units are currently located on the northern portion of the proposed construction site that were constructed in the 1970s and were historically utilized as temporary lodging facilities (TLFs). The 21 units were part of the larger Pine Estates housing complex that consisted of 84 one- and two-story duplexes. An existing roadway is located along the south portion of the TLFs.

In preparation for construction, the 21 housing units would be demolished. The demolition plan would vary for each building but in general would include the following: environmental surveys; razing entire structures and systems; demolishing associated parking areas (if applicable); restoring pavement to match surrounding grade; re-vegetating areas intended for green space (if applicable); and severing/capping water supply and sanitary sewer lines.

In addition to the Pine Estates housing units, the southern portion of the project site consists of a maintained grassy lawn area with several mature trees scattered throughout the area that was the former location of the 63 Pine Estates housing units that were demolished in 2008. A fruit, nut, and vegetable garden also exists along the eastern side of the project area that was originally planted in 2009. Several of the trees and the garden would be removed as part of preparation for construction of the project site. The garden would be re-located approximately 800 ft south of its current location for continued use by the WPAFB Medical Center.

The proposed NRO facility would be constructed as a one-story warehouse-style structure and would consist of approximately 270,000 sf. A secure perimeter fence would be installed around the data center. Additional

requirements for the data center would include the utilities and generators to power the facility for at least seven days in the event of a power failure and adequate water retention, fuel storage, and heating/air-conditioning. Other features of the proposed site would include 12 to 15 parking spaces and a loading dock with adequate space for a vehicle turn-around during deliveries.

Under the No Action alternative, the NRO facility would not be constructed at WPAFB and would result in the NRO being unable to provide a critical asset to the IC. The NRO would continue to use aging facilities and infrastructure in the eastern region. Wright-Patterson Air Force Base provides a unique siting location for the NRO mission in that it is already a host to an IC tenant, the National Air and Space Intelligence Center (NASIC). No other military base would provide a suitable siting location for the NRO that would meet the location criteria that WPAFB provides.

The project site is located at an elevation of 832 feet above mean sea level. The project site is not located within the 100-year floodplain and no impacts to the floodplain or the Huffman Retarding Basin would be expected from construction of the NRO facility at this location. The project would be constructed in an area of previous disturbance and the storage capacity of the retarding basin would not change. Impacts to surface water runoff during construction activities resulting from construction of the NRO facility would be minimized by implementing Best Management Practices for erosion and sedimentation controls during construction.

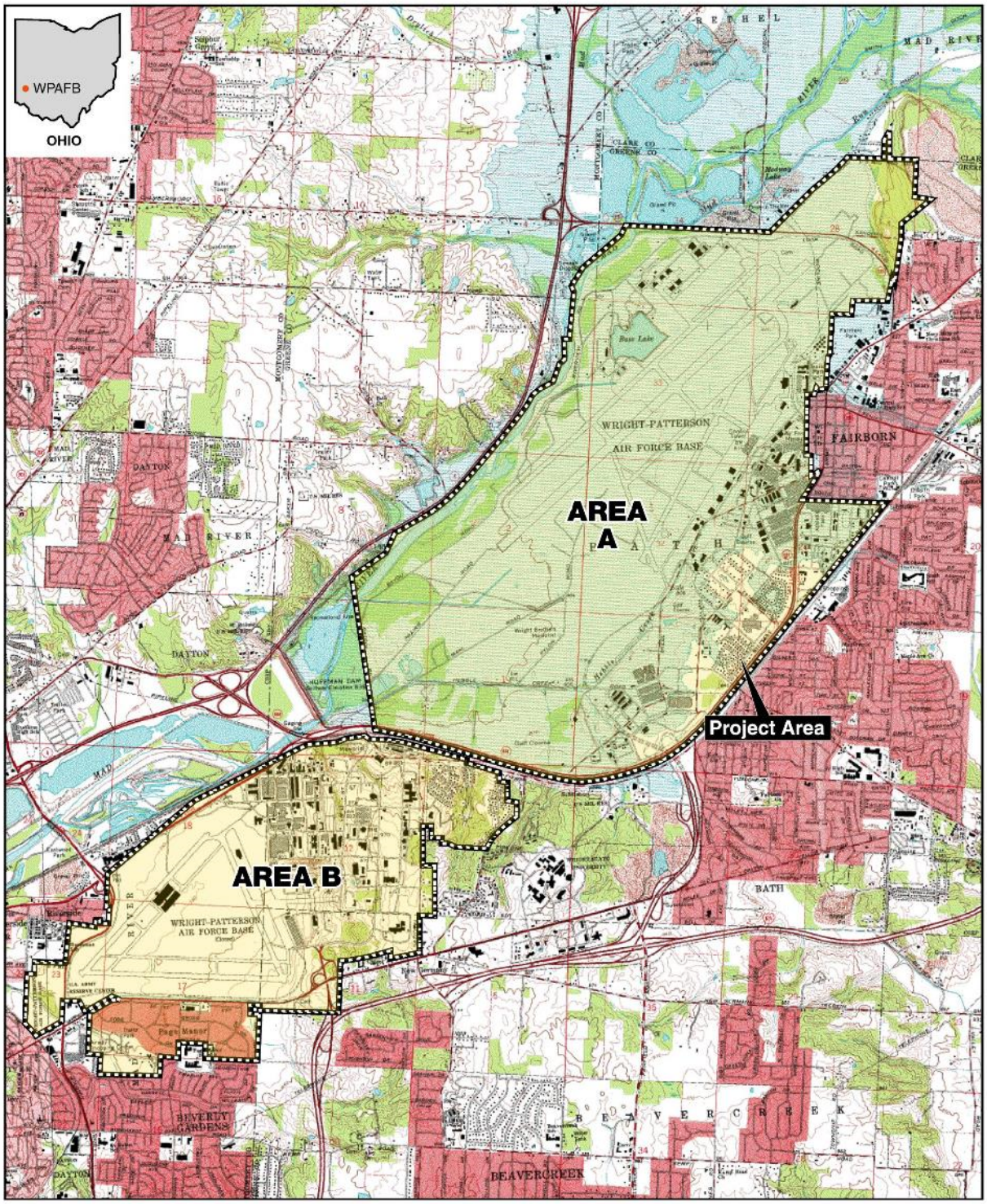
Thank you for your consideration. Please return your comments to me at the above address. If you have questions, please contact me at 937/257-4857 or by email at Darryn.Warner@us.af.mil.

Sincerely,

Darryn M. Warner
Natural Resources Program Manager
Environmental Assets Section
Environmental Branch

cc: John Banford (88 CEG/CEIEA, WPAFB)
Cynthia A. Hassan (APTIM)

Attachment: Figure 1 – Location of WPAFB and Surrounding Area



OFFICE	DATE	DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY	DRAWING NUMBER
Cincinnati, OH	10/19/17	--	JIS	SB	CH	s-501027.0103-10/17-w

WRIGHT-PATTERSON
AIR FORCE BASE
OHIO

FIGURE NUMBER 1

LOCATION OF WPAFB AND SURROUNDING AREA

MCD
MIAMI CONSERVANCY DISTRICT

38 E. Monument Ave.
Dayton, OH 45402
(937) 223-1271

February 27, 2018

Mr. Darryn Warner
88 ABW/CEIEA
1450 Littrell Road, Building 22
Wright-Patterson AFB, OH 45433-5209

Re: Huffman Retarding Basin, WPAFB, EA for Data Center

Dear Mr. Warner:

We have reviewed the Environmental Assessment (EA) to evaluate impacts associated with constructing a data center for the National Reconnaissance Office in Area A at WPAFB.

As the proposed project is located within the Huffman Retarding Basin, it is subject to those restrictions as set forth by the Miami Conservancy District (MCD) in Greene County Deed Book 129, Page 146 on December 16, 1922.

Based on our review it appears the proposed project would not adversely affect the retarding basin.

Thank you for the opportunity to review and provide comments. If you have any further questions please contact me at (937) 223-1278, ext. 3230 or by email at rfarrier@mcdwater.org.

Sincerely,

Roxanne H. Farrier
Property Administrator

cc: Kurt Rinehart

Ohio Department of Natural Resources Consultation Letters:

1. **WPAFB Request – 13Nov17**
2. **ODNR Response – 22Feb18**

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 88TH AIR BASE WING (AFMC)
WRIGHT-PATTERSON AIR FORCE BASE, OHIO

November 13, 2017

88 CEG/CEIEA
1450 Littrell Road, Building 22
Wright-Patterson AFB OH 45433-5209

Mr. John Kessler
john.kessler@dnr.state.oh.us
ODNR Office of Real Estate
2045 Morse Road, Building E-2
Columbus, OH 43229-6693
P: 614/265-6621

Dear Mr. Kessler:

The purpose of this letter is to request an environmental review and information from the Natural Heritage Program for State and Federally-listed threatened or endangered plants and animals in the vicinity of a proposed new facility in Area A at Wright-Patterson Air Force Base (WPAFB, Base). The Base is preparing an Environmental Assessment (EA) to evaluate the potential impacts of constructing a data center in Area A (Figure 1). The decision to construct this facility would enable WPAFB to house a safe and secure data center for the National Reconnaissance Office (NRO). The NRO develops and operates unique and innovative overhead reconnaissance systems and conducts intelligence-related activities for U.S. national security.

The NRO needs to replace and consolidate its aging facilities and infrastructure, which cannot meet federal data center consolidation mandates. A safe and secure site is needed for the construction and operation of a new data center in the eastern region of the U.S., which would be a new mission critical resource for WPAFB and the Intelligence Community (IC).

Proposed Action

The Proposed Action includes the construction and operation of a new data center in Area A at WPAFB. Twenty-one housing units are currently located on the northern portion of the proposed construction site that were constructed in the 1970s and were historically utilized as temporary lodging facilities (TLFs). The 21 units were part of the larger Pine Estates housing complex that consisted of 84 one- and two-story duplexes. An existing roadway is located along the south portion of the TLFs.

In preparation for construction, the 21 housing units would be demolished. The demolition plan would vary for each building but in general would include the following: environmental surveys; razing entire structures and systems; demolishing associated parking areas (if applicable); restoring pavement to match surrounding grade; re-vegetating areas intended for green space (if applicable); and severing/capping water supply and sanitary sewer lines.

In addition to the Pine Estates housing units, the southern portion of the project site consists of a maintained grassy lawn area with several mature trees scattered throughout the area that was the former location of the 63 Pine Estates housing units that were demolished in 2008. A fruit, nut, and vegetable garden also exists along the eastern side of the project area that was originally planted in 2009. Several of the trees and the garden would be removed as part of preparation for construction of the project site. The garden would be re-located approximately 800 ft south of its current location for continued use by the WPAFB Medical Center.

The proposed NRO facility would be constructed as a one-story warehouse-style structure and would consist of approximately 270,000 sf. A secure perimeter fence would be installed around the data center. Additional requirements for the data center would include the utilities and generators to power the facility for at least seven days in the event of a power failure and adequate water retention, fuel storage, and heating/air-conditioning. Other features of the proposed site would include 12 to 15 parking spaces and a loading dock with adequate space for a vehicle turn-around during deliveries.

Under the No Action alternative, the NRO facility would not be constructed at WPAFB and would result in the NRO being unable to provide a critical asset to the IC. The NRO would continue to use aging facilities and infrastructure in the eastern region. Wright-Patterson Air Force Base provides a unique siting location for the NRO mission in that it is already a host to an IC tenant, the National Air and Space Intelligence Center (NASIC). No other military base would provide a suitable siting location for the NRO that would meet the location criteria that WPAFB provides.

The Base has determined that construction of the NRO facility would not affect threatened or endangered species known to occur or have occurred at WPAFB (Figure 2). This determination is based on significant development having previously occurred in the project area.

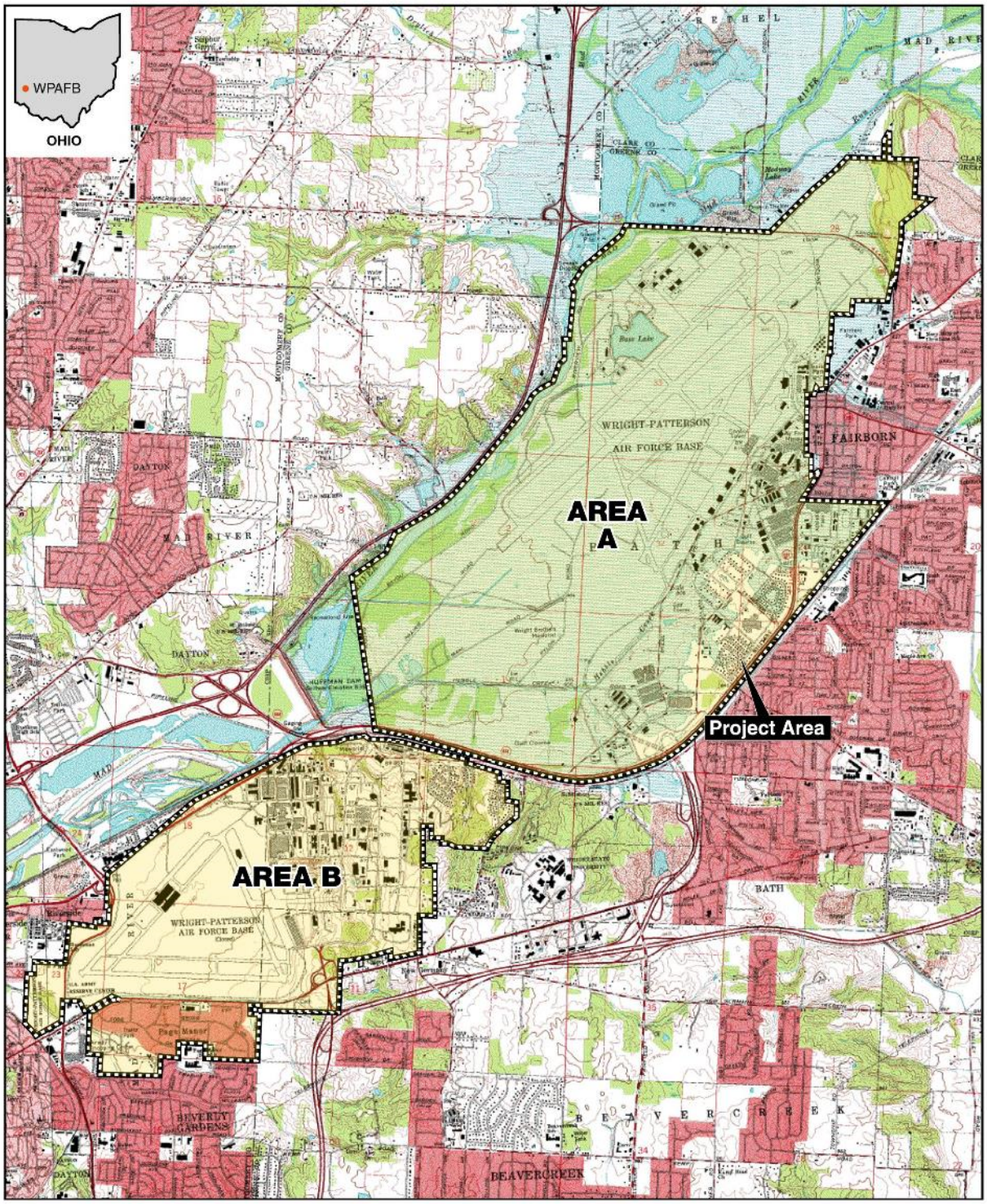
The Natural Heritage Data Request Form is attached. We would appreciate any information from your database that applies to our project area. Please let us know if you concur with the no effect determination. Please contact me at 937/257-4857 or by email at Darryn.Warner@us.af.mil if you have questions. Thank you for your consideration.

Sincerely,

Darryn Warner
Natural Resources Program Manager
Environmental Assets Section
Environmental Branch

cc: John Banford (88 CEG/CEIEA, WPAFB)
Cynthia A. Hassan (APTIM)

Attachment: Natural Heritage Data Request Form
Figure 1 – Location of WPAFB and Surrounding Area
Figure 2 – Threatened and Endangered Species and Wetlands and Streams in the Project Area

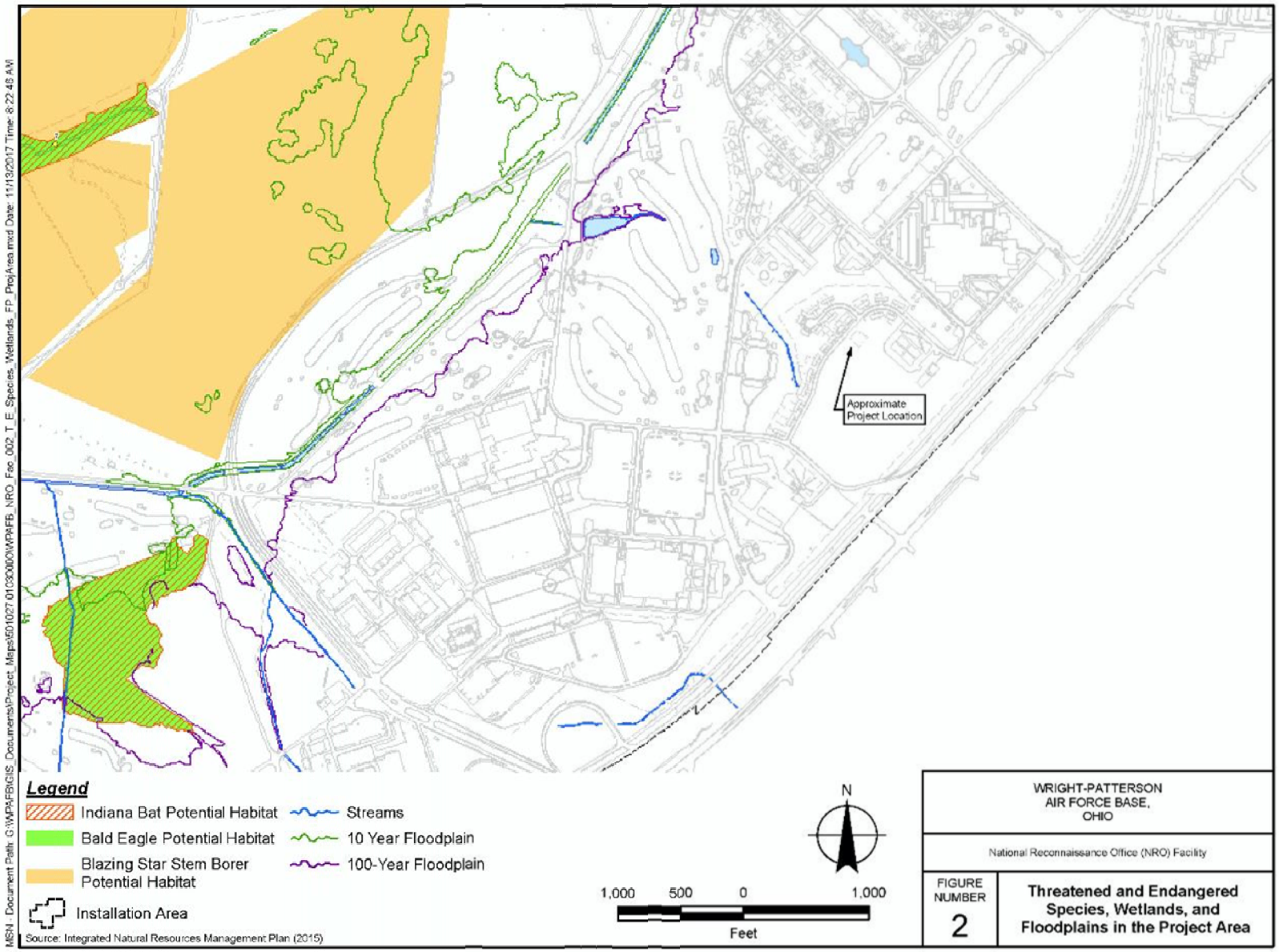


OFFICE	DATE	DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY	DRAWING NUMBER
Cincinnati, OH	10/19/17	--	JIS	SB	CH	s-501027.0103-10/17-w

WRIGHT-PATTERSON
AIR FORCE BASE
OHIO

FIGURE NUMBER 1

LOCATION OF WPAFB AND SURROUNDING AREA


Approximate Project Location
Legend
Indiana Bat Potential Habitat
Bald Eagle Potential Habitat
Blazing Star Stem Borer Potential Habitat
Installation Area
Streams
10 Year Floodplain
100-Year Floodplain
Source: Integrated Natural Resources Management Plan (2015)
N
1,000 500 0 1,000
Feet
WRIGHT-PATTERSON AIR FORCE BASE, OHIO
National Reconnaissance Office (NRO) Facility
FIGURE NUMBER 2
Threatened and Endangered Species, Wetlands, and Floodplains in the Project Area
MSN - Document Path: G:\WP&FB\GIS_Documents\Project_Maps\601027.01\300000\WPAFB_NRO_Fac_002_T_E_Species_Wetlands_FP_ProjArea.mxd Date: 11/13/2017 Time: 8:22:46 AM

Ohio Department of Natural Resources
DIVISION OF WILDLIFE

DNR 5203 (R0915)

NATURAL HERITAGE DATA REQUEST FORM

ODNR Division of Wildlife
Ohio Natural Heritage Program
2045 Morse Rd., Bldg. G-3
Columbus, OH 43229-6693
Phone: 614-265-6818
Email: obdrequest@dnr.state.oh.us

INSTRUCTIONS:

Please complete all the information on both sides of this form, sign (required) and email it to the address given above. Please provide a description of the work to be performed at the project site, and a map detailing your project site boundaries. If you have GIS capabilities or request a GIS response, please also submit a shapefile of your project site (unbuffered). Data requests will be completed within approximately 30 days, usually sooner. There is currently no charge to process requests.

WHAT WE PROVIDE:

As applicable to your project, the Ohio Natural Heritage Database (ONHD) will provide records for state and federally listed plants and animals, high quality plant communities, geologic features, breeding animal concentrations, scenic rivers, protected natural areas (managed areas), and significant unprotected natural areas (conservation sites). A one mile radius around the project site will automatically be searched. Because the ONHD contains sensitive information, it is our policy to provide only the data needed to complete your project.

Please note that this information is provided without comment on potential impacts to the species and their habitats, and therefore does not constitute coordination with ODNR under NEPA, the Fish & Wildlife Coordination Act, the Federal Water Pollution Control Act and other laws. If your project requires ODNR coordination, please submit it for a more extensive environmental review to environmentalreviewrequest@dnr.state.oh.us. Additional information on the environmental review process is available at http://realestate.ohiodnr.gov/environmental-review. If you have questions, please contact John Kessler at 614-265-6621 or john.kessler@dnr.state.oh.us. A ONHD search is included as part of the environmental review process.

Date: XXNov2017 **Company name:** Wright-Patterson Air Force Base

Name of person response letter should be addressed to:
Mr. ☑ **Ms.** ☐ Darryn Warner / Natural Resources Program Manager

Address: 1450 Littrell Road, Building 22

City/State/Zip: WPAFB, Ohio 45433-5209

Phone: 937-257-4857

E-mail address: *darryn.warner@us.af.mil*

Project Name: National Reconnaissance Office (NRO) Facility

Project Site Address: Area A, Wright-Patterson Air Force Base

Project County: Greene

Project City or Township: Fairborn

Project site is located on the following USGS 7.5 minute topographic quad(s):

Fairborn, OH

Project latitude and longitude: Latitude: North 39 48' 6.749" / Longitude: West 84 2' 24.2288"

Description of work to be performed at the project site:

The project would involve demolishing 21 duplex houses in preparation for construction of a 270,000 square foot, one-story, warehouse-style data center. General demolition elements would include: environmental surveys, raze structures; demolish parking; restore pavement to surrounding grade; re-vegetate areas intended for green space; sever and cap water supply/sanitary sewer lines. The new facility would be constructed slab on grade with the installation of a secure perimeter fence around the new facility.

How do you want your data reported? (Both formats provide the same data. The manual search is most appropriate for small scale projects or for those without GIS capabilities. With this option we will send you a list of records and a map showing their location. If you request a GIS shapefile, we will send you a shapefile of data layers. You will then need to make your own map and list of data for your report. You must have GIS capabilities. If you choose this option, please email your project shapefile with your request. If you do not make a selection, a manual search will be performed. Please choose only one option below.)

☑ **Printed list and map (manual search)** **OR** ☐ **GIS shapefile (computer search)**

Other than the standard data (see "what we provide" at top of form), additional information you require:

N/A

How will the information be used?

The name, status, and location of each species will be published in an environmental assessment (EA) that is being performed to satisfy requirements under the National Environmental Policy Act (NEPA).

The chief of the Division of Wildlife has determined that the release of the ONHD information you have requested could be detrimental to the conservation of a species or unique natural feature. Pursuant to section 1531.04 of the Ohio Revised Code, this information is not subject to section 149.43 of the Revised Code. By signing below, you certify that the data provided will not be disclosed, published, or distributed beyond the scope of your specific project.

Signature _____ **Date:** XXNov2017

Ohio Department of Natural Resources

JOHN R. KASICH, GOVERNOR JAMES ZEHRINGER, DIRECTOR

Office of Real Estate
Paul R. Baldridge, Chief
2045 Morse Road – Bldg. E-2
Columbus, OH 43229
Phone: (614) 265-6649
Fax: (614) 267-4764

February 22, 2018

Darryn M. Warner
Department of the Air Force
88 CEG/CEIEA
1450 Littrell Rd. Bldg. 22
WPAFB, OH 45433

Re: 18-101; National Reconnaissance Office (NRO) Facility

Project: The project would involve demolishing 21 duplex houses in preparation for construction of a 270,000-square foot, one-story, warehouse-style data center.

Location: The proposed project is located at the Wright-Patterson Air Force Base, Greene County, Ohio.

The Ohio Department of Natural Resources (ODNR) has completed a review of the above referenced project. These comments were generated by an inter-disciplinary review within the Department. These comments have been prepared under the authority of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.), the National Environmental Policy Act, the Coastal Zone Management Act, Ohio Revised Code and other applicable laws and regulations. These comments are also based on ODNR's experience as the state natural resource management agency and do not supersede or replace the regulatory authority of any local, state or federal agency nor relieve the applicant of the obligation to comply with any local, state or federal laws or regulations.

Natural Heritage Database: The Natural Heritage Database has the following records at or within a one-mile radius of the project area:

Sedge wren (*Cistothorus platensis*), State species of concern
Beer's noctuid (*Papaipema beeriana*), State endangered
Dayton Aviation Heritage – National Park Service

The review was performed on the project area you specified in your request as well as an additional one-mile radius. Records searched date from 1980. This information is provided to inform you of features present within your project area and vicinity.

Please note that Ohio has not been completely surveyed and we rely on receiving information from many sources. Therefore, a lack of records for any particular area is not a statement that rare species or unique features are absent from that area. Although all types of plant communities have been surveyed, we only maintain records on the highest quality areas.

Fish and Wildlife: The Division of Wildlife (DOW) has the following comments.

The DOW recommends that impacts to streams, wetlands and other water resources be avoided and minimized to the fullest extent possible, and that best management practices be utilized to minimize erosion and sedimentation.

The project is within the vicinity of records for the Indiana bat (*Myotis sodalis*), a state endangered and federally endangered species. Presence of the Indiana bat has been established in the area, and therefore additional summer surveys would not constitute presence/absence in the area. The following species of trees have relatively high value as potential Indiana bat roost trees: shagbark hickory (*Carya ovata*), shellbark hickory (*Carya laciniosa*), bitternut hickory (*Carya cordiformis*), black ash (*Fraxinus nigra*), green ash (*Fraxinus pennsylvanica*), white ash (*Fraxinus americana*), shingle oak (*Quercus imbricaria*), northern red oak (*Quercus rubra*), slippery elm (*Ulmus rubra*), American elm (*Ulmus americana*), eastern cottonwood (*Populus deltoides*), silver maple (*Acer saccharinum*), sassafras (*Sassafras albidum*), post oak (*Quercus stellata*), and white oak (*Quercus alba*). Indiana bat roost trees consists of trees that include dead and dying trees with exfoliating bark, crevices, or cavities in upland areas or riparian corridors and living trees with exfoliating bark, cavities, or hollow areas formed from broken branches or tops. However, Indiana bats are also dependent on the forest structure surrounding roost trees. If suitable habitat occurs within the project area, the DOW recommends trees be conserved. If suitable habitat occurs within the project area and trees must be cut, the DOW recommends cutting occur between October 1 and March 31. If no tree removal is proposed, this project is not likely to impact this species.

The project is within the range of the clubshell (*Pleurobema clava*), a state endangered and federally endangered mussel, the rayed bean (*Villosa fabalis*), a state endangered and federally endangered mussel, and the snuffbox (*Epioblasma triquetra*), a state endangered and federally endangered mussel, the black sandshell (*Ligumia recta*), a state threatened mussel, and the fawnsfoot (*Truncilla donaciformis*), a state threatened mussel. Due to the location, and that there is no in-water work proposed in a perennial stream, this project is not likely to impact these species.

The project is within the range of the tonguetied minnow (*Exoglossum laurae*), a state threatened fish. Due to the location, and that there is no in-water work proposed in a perennial stream, this project is not likely to impact these species.

The project is within the range of the spotted turtle (*Clemmys guttata*), a state threatened species. This species prefers fens, bogs and marshes, but also is known to inhabit wet prairies, meadows, pond edges, wet woods, and the shallow sluggish waters of small streams and ditches. Due to the location, the type of work proposed, and the type of habitat present at the project site, this project is not likely to impact this species.

Multiple records exist at Wright-Patterson Air Force Base for the smooth greensnake (*Opheodrys vernalis*), a state endangered species. This species is primarily a prairie inhabitant, but also found in marshy meadows and roadside ditches. Due to the location, the type of work proposed, and the type of habitat present at the project site, this project is not likely to impact this species.

The project is within the range of the Kirtland's snake (*Clonophis kirtlandii*), a state threatened species. This secretive species prefers wet fields and meadows. Due to the location, the type of

work proposed, and the type of habitat present at the project site, this project is not likely to impact this species.

The project is within the range of the eastern massasauga (*Sistrurus catenatus*), a state endangered and a federally threatened snake species. The eastern massasauga uses a range of habitats including wet prairies, fens, and other wetlands, as well as adjacent drier upland habitat. Due to the location, the type of work proposed, and the type of habitat present at the project site, this project is not likely to impact this species.

The project is within the range of the upland sandpiper (*Bartramia longicauda*), a state endangered bird. Nesting upland sandpipers utilize dry grasslands including native grasslands, seeded grasslands, grazed and ungrazed pasture, hayfields, and grasslands established through the Conservation Reserve Program (CRP). If this type of habitat will be impacted, construction should be avoided in this habitat during the species' nesting period of April 15 to July 31. If this type of habitat will not be impacted, activities associated with the drinking water system upgrades are not likely to impact this species.

The project is within the range of the northern harrier (*Circus cyaneus*), a state endangered bird. This is a common migrant and winter species. Nesters are much rarer, although they occasionally breed in large marshes and grasslands. Harriers often nest in loose colonies. The female builds a nest out of sticks on the ground, often on top of a mound. Harriers hunt over grasslands. If this type of habitat will be impacted, construction should be avoided in this habitat during the species' nesting period of May 15 to August 1. If this habitat will not be impacted, activities associated with the drinking water system upgrades are not likely to impact this species.

Due to the potential of impacts to federally listed species, as well as to state listed species, we recommend that this project be coordinated with the U.S. Fish & Wildlife Service.

Water Resources: The Division of Water Resources has the following comment.

The local floodplain administrator should be contacted concerning the possible need for any floodplain permits or approvals for this project. Your local floodplain administrator contact information can be found at the website below.

http://water.ohiodnr.gov/portals/soilwater/pdf/floodplain/Floodplain%20Manager%20Community%20Contact%20List_8_16.pdf

ODNR appreciates the opportunity to provide these comments. Please contact John Kessler at (614) 265-6621 if you have questions about these comments or need additional information.

John Kessler
ODNR Office of Real Estate
2045 Morse Road, Building E-2
Columbus, Ohio 43229-6693
John.Kessler@dnr.state.oh.us

U.S. Fish and Wildlife Service Consultation Letters:

1. **WPAFB Request – 13Nov17**
2. **USFWS Response – 30Nov17, 9Mar18**

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 88TH AIR BASE WING (AFMC)
WRIGHT-PATTERSON AIR FORCE BASE, OHIO

November 13, 2017

88 CEG/CEIEA
1450 Littrell Road, Building 22
Wright-Patterson AFB OH 45433-5209

Mr. Dan Everson
Field Office Supervisor
U.S. Fish and Wildlife Service
Ohio Ecological Services Field Office
4625 Morse Road, Suite 104
Columbus, OH 43230

Dear Mr. Everson:

Wright-Patterson Air Force Base (WPAFB, Base) is preparing an Environmental Assessment (EA) to evaluate the potential impacts of constructing a data center in Area A at WPAFB (Figure 1). The decision to construct this facility would enable WPAFB to house a safe and secure data center for the National Reconnaissance Office (NRO). The NRO develops and operates unique and innovative overhead reconnaissance systems and conducts intelligence-related activities for U.S. national security.

The NRO needs to replace and consolidate its aging facilities and infrastructure, which cannot meet federal data center consolidation mandates. A safe and secure site is needed for the construction and operation of a new data center in the eastern region of the U.S., which would be a new mission critical resource for WPAFB and the Intelligence Community (IC).

By way of this letter, WPAFB is seeking informal consultation with the U.S. Fish and Wildlife Service in compliance with Section 7 of the Endangered Species Act regarding the proposal. The geographic location of the proposed project area is Greene County (Latitude North 39° 48' 6.749", Longitude West 84° 2' 24.2288").

Proposed Action

The Proposed Action includes the construction and operation of a new data center in Area A at WPAFB. Twenty-one housing units are currently located on the northern portion of the proposed construction site that were constructed in the 1970s and were historically utilized as temporary lodging facilities (TLFs). The 21 units were part of the larger Pine Estates housing complex that consisted of 84 one- and two-story duplexes. An existing roadway is located along the south portion of the TLFs.

In preparation for construction, the 21 housing units would be demolished. The demolition plan would vary for each building but in general would include the following: environmental surveys; razing entire structures and systems; demolishing associated parking areas (if applicable); restoring pavement to match surrounding grade; re-vegetating areas intended for green space (if applicable); and severing/capping water supply and sanitary sewer lines.

In addition to the Pine Estates housing units, the southern portion of the project site consists of a maintained grassy lawn area with several mature trees scattered throughout the area that was the former location of the 63 Pine Estates housing units that were demolished in 2008. A fruit, nut, and vegetable garden also exists along the eastern side of the project area that was originally planted in 2009. Several of the trees and the garden would be removed as part of preparation for construction of the project site. The garden would be re-located approximately 800 ft south of its current location for continued use by the WPAFB Medical Center.

The proposed NRO facility would be constructed as a one-story warehouse-style structure and would consist of approximately 270,000 sf. A secure perimeter fence would be installed around the data center. Additional requirements for the data center would include the utilities and generators to power the facility for at least seven days in the event of a power failure and adequate water retention, fuel storage, and heating/air-conditioning.

Under the No Action alternative, the NRO facility would not be constructed at WPAFB and would result in the NRO being unable to provide a critical asset to the IC. The NRO would continue to use aging facilities and infrastructure in the eastern region. Wright-Patterson Air Force Base provides a unique siting location for the NRO mission in that it is already a host to an IC tenant, the National Air and Space Intelligence Center (NASIC). No other military base would provide a suitable siting location for the NRO that would meet the location criteria that WPAFB provides. Other features of the proposed site would include 12 to 15 parking spaces and a loading dock with adequate space for a vehicle turn-around during deliveries.

The Base has determined that construction of the NRO facility would not affect threatened or endangered species known to occur or have occurred at WPAFB (Figure 2). This determination is based on significant development having previously occurred in the project area.

The Base actively manages for four federally-listed endangered species (Indiana bat, Clubshell mussel, Rayed bean mussel, Snuffbox mussel) and two federally-listed threatened species (Northern long-eared bat, eastern massasauga rattlesnake [EMR). However, WPAFB has determined the construction of the NRO facility would have no impact on these species or other threatened or endangered species known to occur or have occurred at WPAFB because the proposed project site is located in an area of previous disturbance (historically contained 63 residential duplex housing units) and is currently a maintained grassy lawn area with scattered trees.

In addition, based on our review of the USFWS *Ohio Federally-Listed Threatened, Endangered, Proposed, and Candidate Species' County Distribution* list (https://www.fws.gov/midwest/endangered/lists/ohio-cty.html), no other threatened, endangered, proposed, or candidate species are known to or may occur in the NRO project area. Further, no critical habitat has been designated or proposed for WPAFB.

Because no potential habitat would be disturbed from construction of the NRO facility, no listed species would be directly or indirectly impacted. Furthermore, the trees that would be removed from the proposed project site have not been identified as bat habitat. No wetlands/streams or other native habitat that supports species actively managed for at WPAFB would be impacted. The WPAFB has, therefore, determined that the Proposed Action will have no effect on listed species and further consultation with your office is not necessary. Your written concurrence with this determination of no effect is, however, requested.

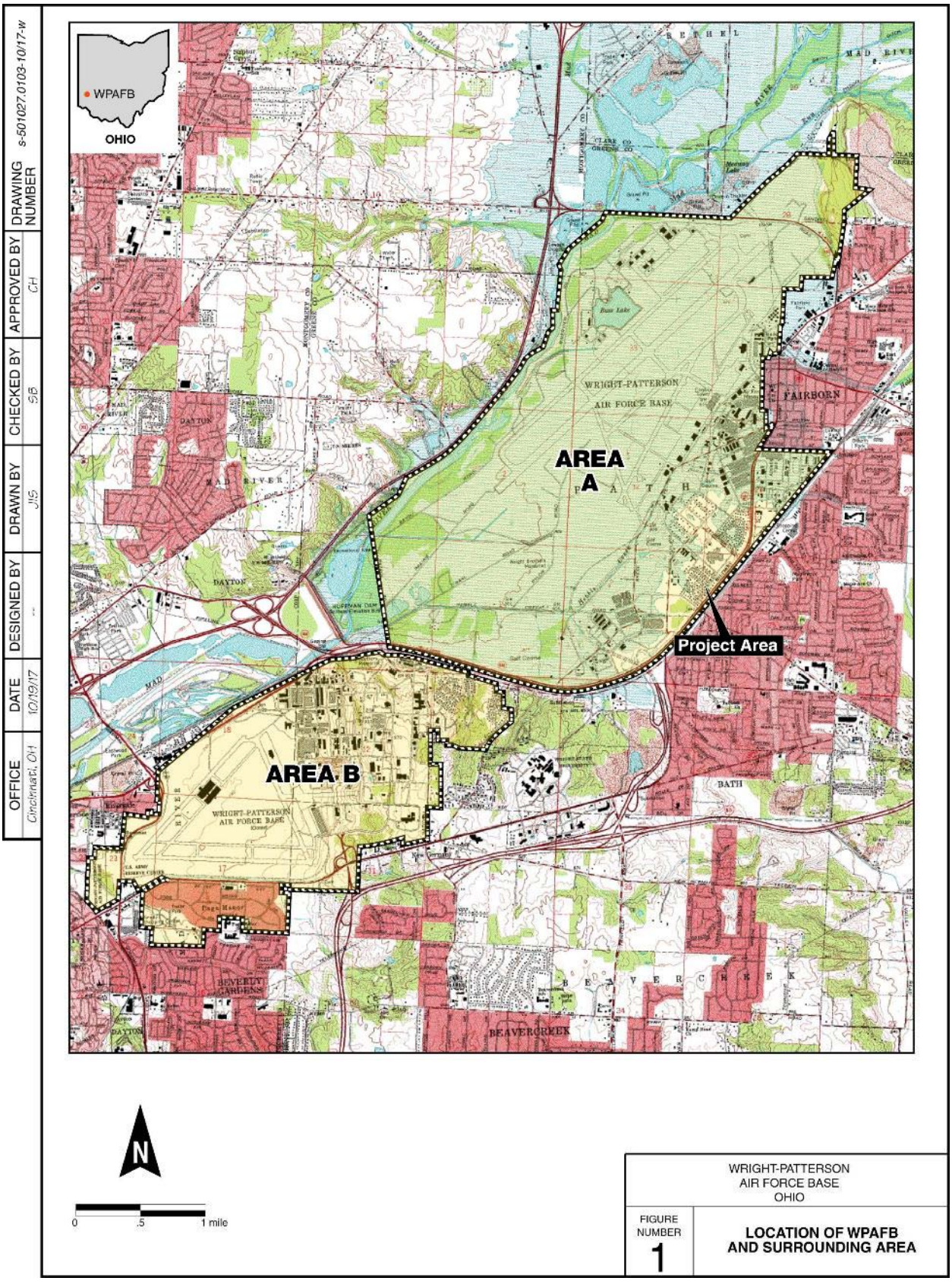
Thank you for your assistance. If there are any questions or additional detail is needed, please contact me by telephone at 937/257-4857 or by email at Darryn.Warner@us.af.mil.

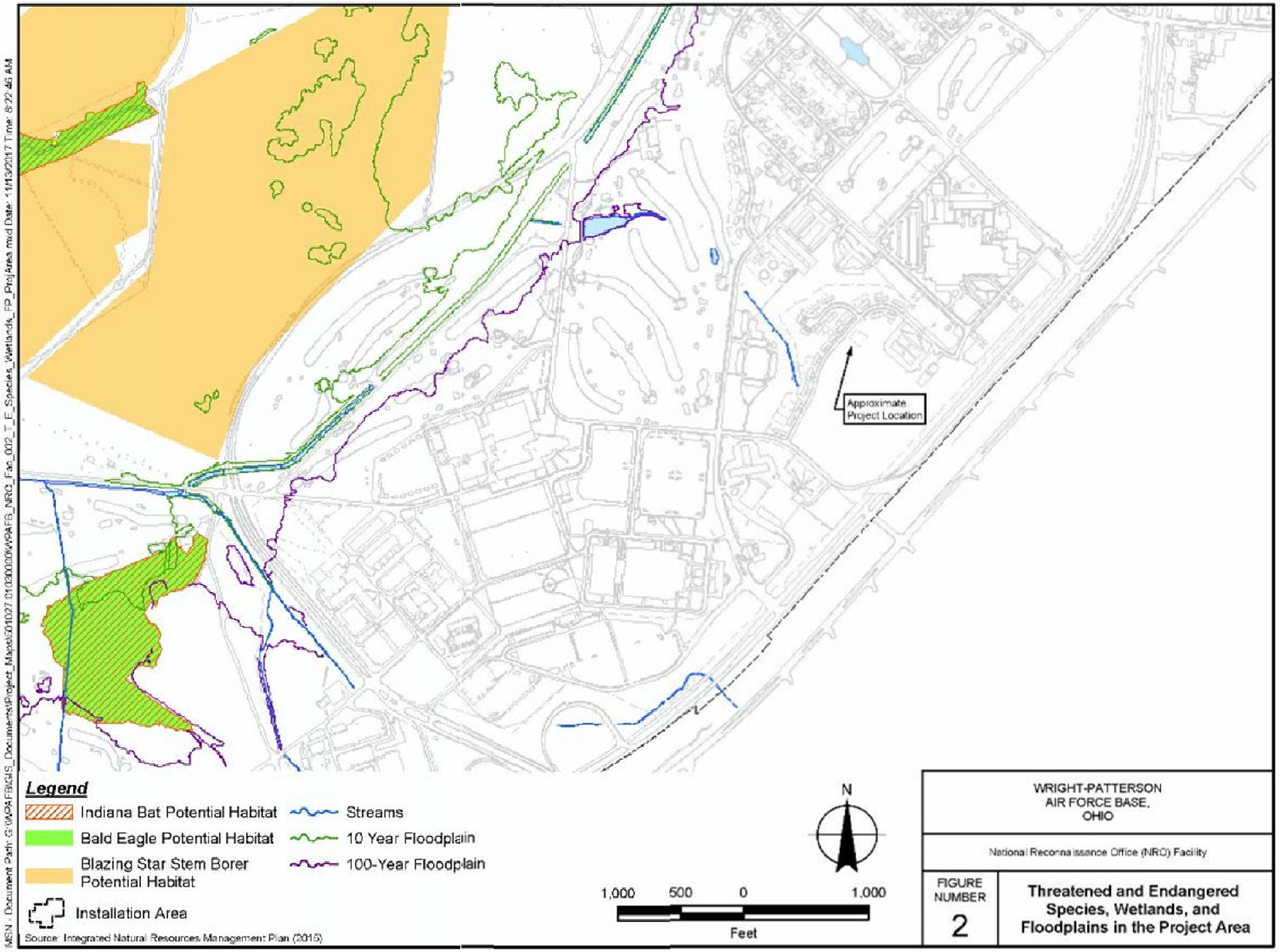
Sincerely

Darryn M. Warner
Natural Resources Program Manager
Environmental Assets Section
Environmental Branch

cc:
John Banford (88 CEG/CEIEA, WPAFB)
Cynthia A. Hassan (APTIM)

Attachment: Figure 1 – Location of WPAFB and Surrounding Area
Figure 2 – Threatened and Endangered Species and Wetlands and Streams in the Project Area


WPAFB
OHIO
AREA A
AREA B
Project Area
WRIGHT-PATTERSON AIR FORCE BASE
FAIRBORN
DAYTON
BATH
BEAVERCREEK
BEVERLY GARDENS
N
0
.5
1 mile
OFFICE Cincinnati, OH
DATE 10/19/17
DESIGNED BY --
DRAWN BY JJS
CHECKED BY SB
APPROVED BY CH
DRAWING NUMBER s-501027.0103-10/17-w
WRIGHT-PATTERSON AIR FORCE BASE OHIO
FIGURE NUMBER 1
LOCATION OF WPAFB AND SURROUNDING AREA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Bald Eagle Potential Habitat
Blazing Star Stem Borer Potential Habitat
Installation Area
Streams
10 Year Floodplain
100-Year Floodplain
Source: Integrated Natural Resources Management Plan (2015)
N
1,000 500 0 1,000
Feet
WRIGHT-PATTERSON AIR FORCE BASE, OHIO
National Reconnaissance Office (NRO) Facility
FIGURE NUMBER 2
Threatened and Endangered Species, Wetlands, and Floodplains in the Project Area

Burns, Stephanie A

From: susan_zimmermann@fws.gov on behalf of Ohio, FW3 <ohio@fws.gov>
Sent: Thursday, November 30, 2017 1:42 PM
To: WARNER, DARRYN M NH-03 USAF AFMC 88 CEG/CEIEA
Cc: nathan.reardon@dnr.state.oh.us; kate.parsons@dnr.state.oh.us
Subject: [Non-DoD Source] Area 'A' Data Center for National Reconnaissance Office (NRO), Greene Co.

UNITED STATES DEPARTMENT OF THE INTERIOR
U.S. Fish and Wildlife Service
Ecological Services Office
4625 Morse Road, Suite 104
Columbus, Ohio 43230
(614) 416-8993 / Fax (614) 416-8994

TAILS# 03E15000-2018-TA-0275

Dear Mr. Warner,

We have received your recent correspondence requesting information about the subject proposal. There are no federal wilderness areas, wildlife refuges or designated critical habitat within the vicinity of the project area. The following comments and recommendations will assist you in fulfilling the requirements for consultation under section 7 of the Endangered Species Act of 1973, as amended (ESA).

The U.S. Fish and Wildlife Service (Service) recommends that proposed developments avoid and minimize water quality impacts and impacts to high quality fish and wildlife habitat (e.g., forests, streams, wetlands). Additionally, natural buffers around streams and wetlands should be preserved to enhance beneficial functions. If streams or wetlands will be impacted, the Corps of Engineers should be contacted to determine whether a Clean Water Act section 404 permit is required. Best management practices should be used to minimize erosion, especially on slopes. All disturbed areas should be mulched and revegetated with native plant species. Prevention of non-native, invasive plant establishment is critical in maintaining high quality habitats.

FEDERALLY LISTED SPECIES COMMENTS: All projects in the State of Ohio lie within the range of the federally endangered **Indiana bat** (*Myotis sodalis*) and the federally threatened **northern long-eared bat** (*Myotis septentrionalis*). In Ohio, presence of the Indiana bat and northern long-eared bat is assumed wherever suitable habitat occurs unless a presence/absence survey has been performed to document absence. Suitable summer habitat for Indiana bats and northern long-eared bats consists of a wide variety of forested/wooded habitats where they roost, forage, and travel and may also include some adjacent and interspersed non-forested habitats such as emergent wetlands and adjacent edges of agricultural fields, old fields and pastures. This includes forests and woodlots containing potential roosts (i.e., live trees and/or snags ≥3 inches diameter at breast height (dbh) that have any exfoliating bark, cracks, crevices, hollows and/or cavities), as well as linear features

such as fencerows, riparian forests, and other wooded corridors. These wooded areas may be dense or loose aggregates of trees with variable amounts of canopy closure. Individual trees may be considered suitable habitat when they exhibit the characteristics of a potential roost tree and are located within 1,000 feet (305 meters) of other forested/wooded habitat. Northern long-eared bats have also been observed roosting in human-made structures, such as buildings, barns, bridges, and bat houses; therefore, these structures should also be considered potential summer habitat. In the winter, Indiana bats and northern long-eared bats hibernate in caves and abandoned mines.

The proposed project is in the vicinity of one or more confirmed records of Indiana bats. Therefore, we recommend that trees ≥3 inches dbh be saved wherever possible. Because the project will result in a small amount of forest clearing relative to the available habitat in the immediately surrounding area, habitat removal is unlikely to result in significant impacts to these species. Since Indiana bat presence in the vicinity of the project has been confirmed, clearing of trees ≥3 inches dbh during the summer roosting season may result in direct take of individuals. If any caves or abandoned mines may be disturbed, further coordination with this office is requested to determine if fall or spring portal surveys are warranted. If no caves or abandoned mines are present and tree removal is unavoidable, we recommend that removal of any trees ≥3 inches dbh only occur between October 1 and March 31. Following this seasonal tree clearing recommendation should ensure that any effects to Indiana bats and northern long-eared bats are insignificant or discountable. **Please note that, because Indiana bat presence has already been confirmed in the project vicinity, any additional summer surveys would not constitute presence/absence surveys for this species.**

If there is a federal nexus for the project (e.g., federal funding provided, federal permits required to construct), no tree clearing should occur on any portion of the project area until consultation under section 7 of the ESA, between the Service and the federal action agency, is completed. We recommend that the federal action agency submit a determination of effects to this office, relative to the Indiana bat and northern long-eared bat, for our review and concurrence.

Due to the project type, size, and location, we do not anticipate adverse effects to any other federally endangered, threatened, proposed, or candidate species. Should the project design change, or during the term of this action, additional information on listed or proposed species or their critical habitat become available, or if new information reveals effects of the action that were not previously considered, consultation with the Service should be initiated to assess any potential impacts.

These comments have been prepared under the authority of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.), the ESA, and are consistent with the intent of the National Environmental Policy Act of 1969 and the Service's Mitigation Policy. This letter provides technical assistance only and does not serve as a completed section 7 consultation document. We recommend that the project be coordinated with the Ohio Department of Natural Resources due to the potential for the project to affect state listed species and/or state lands. Contact John Kessler,

Environmental Services Administrator, at (614) 265-6621 or at john.kessler@dnr.state.oh.us.

If you have questions, or if we can be of further assistance in this matter, please contact our office at (614) 416-8993 or ohio@fws.gov.

Sincerely,

Dan Everson

Field Supervisor

cc: Nathan Reardon, ODNR-DOW

Kate Parsons, ODNR-DOW

Burns, Stephanie A

From: BANFORD, JOHN R CIV USAF AFMC 88 CEG/CEIEC <john.banford@us.af.mil>
Sent: Friday, March 09, 2018 9:19 AM
To: Hassan, Cindy; Burns, Stephanie A
Cc: WARNER, DARRYN M NH-03 USAF AFMC 88 CEG/CEIEA
Subject: FW: [Non-DoD Source] Area 'A' Data Center for National Reconnaissance Office (NRO), Greene Co.
Attachments: image.png; Dans Signature.png

FYI

JOHN BANFORD, EIAP PM
Environmental Assets Section
Environmental Branch
Civil Engineer Group
Phone (937) 257-6482
Cell (937) 477-2512

-----Original Message-----
From: Korfel, Lindsey [mailto:lindsey_korfel@fws.gov]
Sent: Friday, March 9, 2018 8:50 AM
To: WARNER, DARRYN M NH-03 USAF AFMC 88 CEG/CEIEA <darryn.warner@us.af.mil>
Cc: susan_zimmermann@fws.gov; Hassan, Cindy <Cindy.Hassan@aptim.com>; BANFORD, JOHN R CIV USAF AFMC 88 CEG/CEIEC <john.banford@us.af.mil>
Subject: Re: [Non-DoD Source] Area 'A' Data Center for National Reconnaissance Office (NRO), Greene Co.

Dear Mr. Warner,

We have received your recent correspondence regarding the above-referenced project. You have requested concurrence with your determination of effects to federally listed species, pursuant to section 7(a)(2) of the Endangered Species Act of 1973, as amended (ESA).

The U.S. Fish and Wildlife Service (Service) has reviewed your project description and concurs with your determination that the project, as proposed, is not likely to adversely affect any federally listed species. This is based on the commitment to cut all trees ≥3 inches dbh only between October 1 and March 31 or to perform emergence surveys (guidelines attached from Appendix E of the 2017 Rangewide Indiana Bat Summer Survey Guidelines) to avoid adverse effects to the endangered Indiana bat (Myotis sodalis) and threatened northern long-eared bat (Myotis septentrionalis).

This concludes consultation on this action as required by section 7(a)(2) of the ESA. Should, during the term of this action, additional information on listed or proposed species or their critical habitat become available, or if new information reveals effects of the action that were not previously considered, consultation with the Service should be reinitiated to assess whether the determinations are still valid.

If you have questions, or if we can be of further assistance in this matter, please contact our office at (614) 416-8993 or ohio@fws.gov <mailto:ohio@fws.gov> .

Sincerely,

Dan Everson

Field Supervisor

On Thu, Mar 8, 2018 at 5:09 PM, WARNER, DARRYN M NH-03 USAF AFMC 88 CEG/CEIEA <darryn.warner@us.af.mil <mailto:darryn.warner@us.af.mil> > wrote:

Thanks for the info Lindsey and I apologize for not catching that error concerning the affect determination.

Please find attached the amended coordination letter.

Please let me know if we need to put a hard copy in the mail for in order to fulfill official coordination requirements!

Darryn

-----Original Message-----
From: Korfel, Lindsey [mailto:lindsey_korfel@fws.gov <mailto:lindsey_korfel@fws.gov>]
Sent: Thursday, March 8, 2018 9:12 AM
To: WARNER, DARRYN M NH-03 USAF AFMC 88 CEG/CEIEA <darryn.warner@us.af.mil <mailto:darryn.warner@us.af.mil> >
Cc: Zimmermann, Susan <susan_zimmermann@fws.gov <mailto:susan_zimmermann@fws.gov> >
Subject: Re: [Non-DoD Source] Area 'A' Data Center for National Reconnaissance Office (NRO), Greene Co.

Hi Darryn,

I responded with a technical assistance letter because I could not concur with your determinations, the reasons being two-fold. The Service's policy is to not provide concurrence on "no effect" determinations. If the project is not expected to impact T&E species, then consultation is not necessary. More importantly, however, is that that your project involves tree clearing. I understand that the amount of clearing in minimal and the trees are not ideal bat habitat trees, however, there is still a non-zero chance that bats could use those trees, especially since the area falls within known Indiana bat habitat buffer. Therefore, I made the recommendations to clear those trees prior to March 31st. By doing so, you are even further minimizing the chance of impacting T&E species.

I encourage you to re-coordinate your project with a may affect, not likely to adversely affect determination and commitment to clear the trees prior to March 31st or after September 30th. I am happy to review your project as quickly as possible if you choose to recoordinate the project. If you have any questions regarding my comments do not hesitate to call. I look forward to hearing from you soon!

Best Regards,
Lindsey

Lindsey M. Korfel

Wildlife Biologist
U.S. Fish and Wildlife Service
Ohio Field Office
4625 Morse Road, Suite 104
Columbus, OH 43230
614.416.8993 x. 29

On Wed, Mar 7, 2018 at 2:16 PM, Zimmermann, Susan <susan_zimmermann@fws.gov <mailto:susan_zimmermann@fws.gov> <mailto:susan_zimmermann@fws.gov <mailto:susan_zimmermann@fws.gov> > > wrote:

A request for a concurrence letter. Thanks

---------- Forwarded message ----------

From: WARNER, DARRYN M NH-03 USAF AFMC 88 CEG/CEIEA <darryn.warner@us.af.mil <mailto:darryn.warner@us.af.mil> <mailto:darryn.warner@us.af.mil <mailto:darryn.warner@us.af.mil> > >

Date: Wed, Mar 7, 2018 at 1:19 PM

Subject: RE: [Non-DoD Source] Area 'A' Data Center for National Reconnaissance Office (NRO), Greene Co.

To: "susan_zimmermann@fws.gov <mailto:susan_zimmermann@fws.gov> <mailto:susan_zimmermann@fws.gov <mailto:susan_zimmermann@fws.gov> > " <susan_zimmermann@fws.gov <mailto:susan_zimmermann@fws.gov> <mailto:susan_zimmermann@fws.gov <mailto:susan_zimmermann@fws.gov> > >

Cc: "megan_seymour@fws.gov <mailto:megan_seymour@fws.gov> <mailto:megan_seymour@fws.gov <mailto:megan_seymour@fws.gov> > " <megan_seymour@fws.gov <mailto:megan_seymour@fws.gov> <mailto:megan_seymour@fws.gov <mailto:megan_seymour@fws.gov> > >, "BANFORD, JOHN R CIV USAF AFMC 88 CEG/CEIEC" <john.banford@us.af.mil <mailto:john.banford@us.af.mil> <mailto:john.banford@us.af.mil <mailto:john.banford@us.af.mil> > >

Ma'am,

I apologize for not getting in touch sooner! The response below is not adequate for our NEPA needs. Our letter, originally dated 13 Nov 2017 and attached, specifically requests informal consultation. (3rd paragraph-highlighted). Further , at the end of the letter, a 'no effect' determination was made and we requested written concurrence. (highlighted).

The Environmental Assessment for this project is at the draft final stage and I simply did not read your correspondence thoroughly. If there is any way that getting your written concurrence on our determination can be expedited, I would greatly appreciate it!

Darryn

From: susan_zimmermann@fws.gov <mailto:susan_zimmermann@fws.gov> <mailto:susan_zimmermann@fws.gov <mailto:susan_zimmermann@fws.gov> > [mailto:susan_zimmermann@fws.gov <mailto:susan_zimmermann@fws.gov> <mailto:susan_zimmermann@fws.gov <mailto:susan_zimmermann@fws.gov> >] On Behalf Of Ohio, FW3

Sent: Thursday, November 30, 2017 1:42 PM

To: WARNER, DARRYN M NH-03 USAF AFMC 88 CEG/CEIEA <darryn.warner@us.af.mil <mailto:darryn.warner@us.af.mil> <mailto:darryn.warner@us.af.mil <mailto:darryn.warner@us.af.mil> > >

Cc: nathan.reardon@dnr.state.oh.us <mailto:nathan.reardon@dnr.state.oh.us> <mailto:nathan.reardon@dnr.state.oh.us <mailto:nathan.reardon@dnr.state.oh.us> > ; kate.parsons@dnr.state.oh.us <mailto:kate.parsons@dnr.state.oh.us> <mailto:kate.parsons@dnr.state.oh.us <mailto:kate.parsons@dnr.state.oh.us> > >

Subject: [Non-DoD Source] Area 'A' Data Center for National Reconnaissance Office (NRO), Greene Co.

TAILS# 03E15000-2018-TA-0275

Dear Mr. Warner,

We have received your recent correspondence requesting information about the subject proposal. There are no federal wilderness areas, wildlife refuges or designated critical habitat within the vicinity of the project area. The following comments and recommendations will assist you in fulfilling the requirements for consultation under section 7 of the Endangered Species Act of 1973, as amended (ESA).

The U.S. Fish and Wildlife Service (Service) recommends that proposed developments avoid and minimize water quality impacts and impacts to high quality fish and wildlife habitat (e.g., forests, streams, wetlands). Additionally, natural buffers around streams and wetlands should be preserved to enhance beneficial functions. If streams or wetlands will be impacted, the Corps of Engineers should be contacted to determine whether a Clean Water Act section 404 permit is required. Best management practices should be used to minimize erosion, especially on slopes. All disturbed areas should be mulched and revegetated with native plant species. Prevention of non-native, invasive plant establishment is critical in maintaining high quality habitats.

FEDERALLY LISTED SPECIES COMMENTS: All projects in the State of Ohio lie within the range of the federally endangered Indiana bat (Myotis sodalis) and the federally threatened northern long-eared bat (Myotis septentrionalis). In Ohio, presence of the Indiana bat and northern long-eared bat is assumed wherever suitable habitat occurs unless a presence/absence survey has been performed to document absence. Suitable summer habitat for Indiana bats and northern long-eared bats consists of a wide variety of forested/wooded habitats where they roost, forage, and travel and may also include some adjacent and interspersed non-forested habitats such as emergent wetlands and adjacent edges of agricultural fields, old fields and pastures. This includes forests and woodlots containing potential roosts (i.e., live trees and/or snags ≥3 inches diameter at breast height (dbh) that have any exfoliating bark, cracks, crevices, hollows

and/or cavities), as well as linear features such as fencerows, riparian forests, and other wooded corridors. These wooded areas may be dense or loose aggregates of trees with variable amounts of canopy closure. Individual trees may be considered suitable habitat when they exhibit the characteristics of a potential roost tree and are located within 1,000 feet (305 meters) of other forested/wooded habitat. Northern long-eared bats have also been observed roosting in human-made structures, such as buildings, barns, bridges, and bat houses; therefore, these structures should also be considered potential summer habitat. In the winter, Indiana bats and northern long-eared bats hibernate in caves and abandoned mines.

The proposed project is in the vicinity of one or more confirmed records of Indiana bats. Therefore, we recommend that trees ≥3 inches dbh be saved wherever possible. Because the project will result in a small amount of forest clearing relative to the available habitat in the immediately surrounding area, habitat removal is unlikely to result in significant impacts to these species. Since Indiana bat presence in the vicinity of the project has been confirmed, clearing of trees ≥3 inches dbh during the summer roosting season may result in direct take of individuals. If any caves or abandoned mines may be disturbed, further coordination with this office is requested to determine if fall or spring portal surveys are warranted. If no caves or abandoned mines are present and tree removal is unavoidable, we recommend that removal of any trees ≥3 inches dbh only occur between October 1 and March 31. Following this seasonal tree clearing recommendation should ensure that any effects to Indiana bats and northern long-eared bats are insignificant or discountable. Please note that, because Indiana bat presence has already been confirmed in the project vicinity, any additional summer surveys would not constitute presence/absence surveys for this species.

If there is a federal nexus for the project (e.g., federal funding provided, federal permits required to construct), no tree clearing should occur on any portion of the project area until consultation under section 7 of the ESA, between the Service and the federal action agency, is completed. We recommend that the federal action agency submit a determination of effects to this office, relative to the Indiana bat and northern long-eared bat, for our review and concurrence.

Due to the project type, size, and location, we do not anticipate adverse effects to any other federally endangered, threatened, proposed, or candidate species. Should the project design change, or during the term of this action, additional information on listed or proposed species or their critical habitat become available, or if new information reveals effects of the action that were not previously considered, consultation with the Service should be initiated to assess any potential impacts.

These comments have been prepared under the authority of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.), the ESA, and are consistent with the intent of the National Environmental Policy Act of 1969 and the Service's Mitigation Policy. This letter provides technical assistance only and does not serve as a completed section 7 consultation document. We recommend that the project be coordinated with the Ohio Department of Natural Resources due to the potential for the project to affect state listed species and/or state lands. Contact John Kessler, Environmental Services Administrator, at (614) 265-6621 or at john.kessler@dnr.state.oh.us <mailto:john.kessler@dnr.state.oh.us> <mailto:john.kessler@dnr.state.oh.us <mailto:john.kessler@dnr.state.oh.us> > .

If you have questions, or if we can be of further assistance in this matter, please contact our office at (614) 416-8993 or ohio@fws.gov <mailto:ohio@fws.gov> <mailto:ohio@fws.gov <mailto:ohio@fws.gov> > .

Sincerely,

Dan Everson

Field Supervisor

cc: Nathan Reardon, ODNR-DOW

Kate Parsons, ODNR-DOW

--

Susan C. Zimmermann
U.S. Fish and Wildlife Service

Ecological Services Office
4625 Morse Road, Suite 104
Columbus, OH 43230
(614) 416-8993 ext. 10
(614) 416-8994 fax
http://www.fws.gov/midwest/Ohio/ <http://www.fws.gov/midwest/Ohio/>
<http://www.fws.gov/midwest/Ohio/ <http://www.fws.gov/midwest/Ohio/> >

Ohio Historic Preservation Office (SHPO) and Native American Tribal Consultation Letters:

1. **Memorandum of Record to Native American Tribes – 2May18**
2. **SHPO Response – 10Jan18**

WPAFB Request Letters to SHPO may be available upon request, please contact:

88 ABW / Public Affairs
5135 Pearson Road
Building 10, Room 252
Wright-Patterson AFB, OH 45433
88abw.pa@us.af.mil

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 88TH AIR BASE WING
WRIGHT-PATTERSON AIR FORCE BASE OHIO

2 May 2018

MEMORANDUM FOR RECORD

FROM: 88 CEG/CEIEA
1450 Littrell Road
WPAFB, 45433

SUBJECT: WPAFB Section 106 consultation with the 5 Tribes that have shown interest in WPAFB undertakings

The purpose of this memo is to document the Section 106 consultation efforts with the five Tribes that have shown an interest in undertaking at WPAFB. This memo documents efforts for the following project EAs:

NRO EA
TLF EA
Fuel Tank Removal EA
Drinking Water EA
Runway EA

1. Initial responses for all these consultation letters were either no response at all or Tribal Historic Preservation Officer has no issues with the proposed project.

2. Two follow up phone calls were made obviously at various times, most recently on 2 May 2018, since several of these undertakings were sent a couple of years ago with the same responses.

3. The Tribes reiterated that they have small staffs and an enourmous amount of these letters and would prefer consultation only on matters concerning the Adena Mounds or inadvertent discoveries as noted in the 2018 Installation Tribal Relations Plan.

WOODRUFF.PAUL.FRANCIS.1206257500
Digitally signed by WOODRUFF.PAUL.FRANCIS.1206257500
Date: 2018.05.02 11:19:18 -04'00'

PAUL F. WOODRUFF
Cultural Resources Manager
Environmental Branch

OHIO HISTORY CONNECTION

January 10, 2018

In reply, please refer to:
2017-MOT-40632

Paul F. Woodruff, CRM
88 CEG/CEIEA
1450 Littrell Road
Wright-Patterson Air Force Base, Ohio 45433-5209

RE: National Reconnaissance Office Data Center Construction
Wright-Patterson Air Force Base Area A, Montgomery County, Ohio

Dear Mr. Woodruff:

This letter is in response to correspondence received on December 12, 2017. Our comments are made pursuant to Section 106 of the National Historic Preservation Act of 1966, as amended, and the associated regulations at 36 CFR Part 800.

Wright-Patterson Air Force Base (WPAFB) is preparing an Environmental Assessment (EA) to evaluate the impacts of constructing a data center in Area A that would enable WPAFB to house a safe and secure data center for the National Reconnaissance Office (NRO). Twenty-one housing units are currently located on the northern portion of the proposed construction site that were constructed in the 1970s and historically utilized as temporary lodging facilities (TLFs). In preparation for construction, the twenty-one housing units will be demolished. The proposed undertaking is located outside of any known eligible historic districts at WPAFB.

We have reviewed the project submission. Based on the information provided, we agree that there are no known historic properties located within the undertaking's Area of Potential Effects. Therefore, we concur that the proposed undertaking will have no effect on historic properties. No further coordination with this office is necessary, unless there is a change in the proposed project or archaeological remains are discovered during project implementation. In such a situation, our office should be contacted as per 36 CFR 800.13.

If you have any questions, please contact me at jwilliams@ohiohistory.org or (614) 298-2000. Thank you for your cooperation.

Sincerely,

Joy Williams

Joy Williams, Project Reviews Manager
Resource Protection and Review

"Please be advised that this is a Section 106 decision. This review decision may not extend to other SHPO programs."

RPR Serial No: 1071588

Appendix C

Air Conformity Applicability Model Report

AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF CONFORMITY ANALYSIS (ROCA)

1. General Information: The Air Force's Air Conformity Applicability Model (ACAM) was used to perform an analysis to assess the potential air quality impact/s associated with the action in accordance with the Air Force Instruction 32-7040, Air Quality Compliance And Resource Management; the Environmental Impact Analysis Process (EIAP, 32 CFR 989); and the General Conformity Rule (GCR, 40 CFR 93 Subpart B). This report provides a summary of the ACAM analysis.

a. Action Location:

Base: WRIGHT-PATTERSON AFB
County(s): Greene
Regulatory Area(s): Dayton-Springfield, OH

b. Action Title: Environmental Assessment Construction of National Reconnaissance Office Facility

c. Project Number/s (if applicable): USACE Contract: W912QR-16-D-0008; Delivery Order: F0221

d. Projected Action Start Date: 3 / 2017

e. Action Description:

The Proposed Action (preferred alternative) involves the demolition of 21 temporary lodging housing facilities (TLFs) located in the Pine Estates Housing Complex in Area A at WPAFB. The duplex housing units would be demolished to prepare the project site for construction of an approximately 270,000 square foot (sf), one-story warehouse-style facility that would be the site of the NRO data center. The siting of the NRO facility (and accompanying new mission) at WPAFB would provide a safe and secure location for the NRO's mission. The Proposed Action also includes the operation and maintenance of the NRO facility.

Under the No Action alternative, the NRO facility would not be constructed at WPAFB and would result in the NRO being unable to provide a critical asset to the IC. Wright-Patterson Air Force Base provides a unique siting location for the NRO mission in that it is already a host to an IC tenant, NASIC. No other military base would provide a suitable siting location for the NRO facility that would meet the location criteria that WPAFB provides.

f. Point of Contact:

Name: Cindy Hassan
Title: Senior Risk Assessor
Organization: APTIM Federal Services
Email: Cindy.Hassan@aptim.com
Phone Number: 513-782-4967

2. Analysis: Total combined direct and indirect emissions associated with the action were estimated through ACAM on a calendar-year basis for the "worst-case" and "steady state" (net gain/loss upon action fully implemented) emissions. General Conformity under the Clean Air Act, Section 1.76 has been evaluated for the action described above according to the requirements of 40 CFR 93, Subpart B.

Based on the analysis, the requirements of this rule are: _____ applicable
__X__ not applicable

AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF CONFORMITY ANALYSIS (ROCA)

Conformity Analysis Summary:

2017

Pollutant	Action Emissions (ton/yr)	GENERAL CONFORMITY	
		Threshold (ton/yr)	Exceedance (Yes or No)
Dayton-Springfield, OH			
VOC	0.000	100	No
NOx	0.000	100	No
CO	0.000		
SOx	0.000	100	No
PM 10	0.000		
PM 2.5	0.000	100	No
Pb	0.000		
NH3	0.000	100	No
CO2e	0.0		

2018

Pollutant	Action Emissions (ton/yr)	GENERAL CONFORMITY	
		Threshold (ton/yr)	Exceedance (Yes or No)
Dayton-Springfield, OH			
VOC	11.306	100	No
NOx	26.450	100	No
CO	30.410		
SOx	0.056	100	No
PM 10	55.283		
PM 2.5	1.183	100	No
Pb	0.000		
NH3	0.071	100	No
CO2e	5828.2		

2019

Pollutant	Action Emissions (ton/yr)	GENERAL CONFORMITY	
		Threshold (ton/yr)	Exceedance (Yes or No)
Dayton-Springfield, OH			
VOC	0.926	100	No
NOx	0.873	100	No
CO	10.056		
SOx	0.005	100	No
PM 10	0.024		
PM 2.5	0.022	100	No
Pb	0.000		
NH3	0.054	100	No
CO2e	839.6		

AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF CONFORMITY ANALYSIS (ROCA)

2020 - (Steady State)

Pollutant	Action Emissions (ton/yr)	GENERAL CONFORMITY	
		Threshold (ton/yr)	Exceedance (Yes or No)
Dayton-Springfield, OH			
VOC	0.053	100	No
NOx	0.048	100	No
CO	0.589		
SOx	0.000	100	No
PM 10	0.001		
PM 2.5	0.001	100	No
Pb	0.000		
NH3	0.003	100	No
CO2e	51.3		

None of estimated emissions associated with this action are above the conformity threshold values established at 40 CFR 93.153 (b); Therefore, the requirements of the General Conformity Rule are not applicable.