Environmental Assessment
DRAFT FINAL

Environmental Assessment
Visiting Quarters and Temporary Lodging Facilities
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 00; July 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 Visiting Quarters and Temporary Lodging Facilities 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 16, 2018

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

Date

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

CERTIFICATION OF INDEPENDENT TECHNICAL REVIEW

Cynthia A. Hassan

July 5, 2018

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

Date

Draft Final
FINDING OF NO SIGNIFICANT IMPACT
VISITING QUARTERS AND TEMPORARY LODGING FACILITIES
WRIGHT-PATTERSON AIR FORCE BASE, OHIO
July 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) Civil Engineer Directorate, Installation Management Division, prepared an Environmental Assessment (EA) to construct Visiting Quarters and Temporary Lodging Facilities (VQs and TLFs) at Wright-Patterson Air Force Base (WPAFB, the Base), Ohio. The findings of the EA are incorporated by reference per 40 CFR 1508.13.

Purpose and Need

The purpose of the action is to construct reasonable and functional VQ and TLF housing service to assigned military personnel at WPAFB. The Base needs to replace its aging, degraded, and repurposed VQs and TLFs, which are sub-standard, nonfunctional, and do not meet the Americans with Disabilities Act (ADA) accessibility requirements.

Description of Proposed Action (Alternative A)

The Proposed Action (Alternative A) involves the construction of the VQs and TLFs adjacent to one another on an approximate 13.17-acre site. The VQs would be constructed as a single, slab-on-grade structure, would contain a total of 398 guestrooms plus a housekeeping area. The VQs structure would consist of 230,500 square feet (sf). The VQs would meet Leadership in Energy and Environmental Design (LEED) Silver certification and incorporate sustainable measures.

The TLFs would be constructed slab-on-grade adjacent and northeast of the VQs and would consist of four buildings containing a total of 36 individual units. Two of the four structures would contain 10 standard units each and two structures would contain 8 “pet friendly” standard units each. One of the eight unit structures would also contain a housekeeping area. In addition, two ADA-accessible units would be incorporated into the design. Total square footage for the proposed TLFs would consist of 39,407 sf.

The Proposed Action (Alternative A) includes all labor, site preparation, site improvements, communications, landscaping, and materials to construct the VQs and TLFs. Construction activities also include removing and/or upgrading site utilities, pavements, and sidewalks.

In addition to the primary construction, Alternative A would consist of three companion projects:

- Removing underground utilities that were abandoned-in-place during demolition of the Green Acres Housing Complex in 2009.
- Upgrading existing inadequate utilities, which include electric, natural gas, and stormwater. The existing sewer utility is adequate.
- Demolishing Estabrook Road, located adjacent and south of the proposed project site. In addition, five new entrances into the VQs/TLFs complex, a new roadway south of the complex, and sidewalks would also be constructed as part of the new VQs and TLFs.

The future use of the current VQs is to be determined. Two options are under consideration. One option is to re-purpose the facilities for a different use, such as administrative space. The other option is to demolish the facilities. For Alternative A, it is assumed that the VQs will be retained and repurposed. Potential demolition is evaluated under Alternative B.

It is noted that the existing TLFs are located in a former military housing area west of the WPAFB Medical Center. These TLFs are slated for demolition and will be addressed in an EA for a separate project. Therefore, demolition of the TLFs is not evaluated as part of this Alternative.

Alternative B

Alternative B involves completion of Alternative A with the addition of demolishing the existing VQs. The existing VQs are located in eight separate buildings containing a total of 413 guestrooms. Alternative B involves demolition of seven VQ buildings. The eighth building, referred to and used as the distinguished visitor's quarters, would not be demolished due to a recent renovation project that was completed on this structure. The demolition plan would vary for each building; however, general elements of demolition would include, where applicable:

- 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.
- Raze entire structure and systems by conventional demolition.
- Demolish associated parking areas.
- Restore pavement to match surrounding grade.
- Re-vegetate areas intended for green space.
- Sever and cap water and sanitary sewer lines.

No Action (Alternative C)

Under Alternative C (No Action), the VQs and TLFs would not be constructed. By not replacing the current sub-standard housing inventory at WPAFB, failure to provide the VQs and TLFs would maintain the status quo. With the VQ and TLF structures being significantly nonfunctional, maintaining the status quo would prevent WPAFB from providing reasonable housing services to assigned military personnel along with being susceptible to down time of several VQ and TLF units and/or the need for additional funds to repair and maintain the units in the buildings that have reached their life expectancy.

The No Action alternative does not satisfy the purpose and need of providing reasonable and functional VQ and TLF housing services to assigned military personnel at WPAFB; however, it is included in the environmental analysis to provide a baseline for comparison with Alternative A (Proposed Action) and Alternative B 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 Alternative A (Proposed Action) and Alternative B, the No Action alternative would not satisfy selection standards established for this project, resulting in continued use of aging VQs and TLFs and infrastructure.

Alternatives Considered but Eliminated from Further Study

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. One alternative considered but eliminated included refurbishing/renovating the existing VQs and TLFs. This alternative was eliminated because the cost to renovate the housing facilities to meet ADA requirements would be too expensive and because the VQs and TLFs, in their current locations, are not in close enough proximity to meet efficient housekeeping requirements. In addition, the estimated shutdown time of approximately 2 years for the existing VQs and TLFs to be refurbished/renovated would result in loss of revenue and was determined to not be economically feasible.

A second alternative considered but eliminated was to demolish the existing VQs and TLFs and construct the new facilities within the general area/footprint of the demolished units. In their existing location, the VQs and TLFs do not provide housekeeping efficiencies as if the units were side-by-side. For instance, six of the VQs are located approximately 0.25 mile from the remaining two VQ structures. In addition, the demolition and

construction of the VQs and TLFs at their existing location would result in the shutdown and loss of revenue for approximately 2 years. This alternative was eliminated because it was deemed too costly.

A third alternative considered but eliminated involved constructing the VQs and TLFs within the Kittyhawk Center. Although this location would provide ample sports, entertainment, and general services to military personnel within walking distance (banking, restaurants, bowling alley, gas station), this alternative was eliminated because the land development constraints would require the VQs and TLFs to be constructed at separate locations and not side-by-side. In addition, estimated traffic increases from military personnel living within or near the Kittyhawk Center was considered too great and would result in congestion for this high-traffic area of the Base. Therefore, for these reasons, the alternative to construct the VQs and TLFs at the Kittyhawk Center was eliminated.

Identification of Preferred Alternative

The AF has identified Alternative A (Proposed Action) as the preferred alternative.

Environmental Consequences

Noise (EA § 3.2): Alternatives A and B would result in minor short-term impacts on ambient noise generated from construction- and demolition-related activities during construction of the VQs and TLFs. Impacts would be minor because construction activities would be carried out during normal working hours and would be short in duration. Alternative A would result in no long-term adverse impacts to noise. Alternative C (No Action) would have no short- or long-term impacts over current conditions. Therefore, there would be no significant impacts to noise as a result of Alternatives A, B, or C.

Air Quality (EA § 3.3): Alternatives A and B would result in minor short-term construction- and demolition-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. No long-term adverse impact to air quality would be expected as a result of Alternatives A or B. Alternative C (No Action) 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 Alternatives A, B, or C.

Water Resources (EA § 3.4): Alternatives A and B would result in no short- or long-term impacts to groundwater or floodplains as the proposed VQs and TLFs construction and demolition sites are not located within the City of Dayton Source Water Protection Program boundary of within floodplains. Alternatives A and B 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. Long-term impacts to surface water would be negligible due to an increase in impervious surface area at the construction site. However, impacts would be minimized by addressing the increase in storm water flow in the design of the new facility. Alternative C (No Action) 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 Alternatives A, B, or C.

The Miami Conservancy District (MCD) was consulted regarding the Proposed Action. The MCD responded indicating the project site is located within the Huffman Retarding Basin and is subject to restrictions set forth by the MCD in Greene County Deed Book 129, Page 146 on December 16, 1922; however, proposed actions would not adversely affect the retarding basin.

Biological Resources (EA § 3.5): Alternatives A and B would result in minor short-term adverse impact to vegetation because the proposed VQ/TLF 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 historically contained 103 structures associated with the Green Acres housing complex, therefore, construction activities would take place on previously disturbed areas. Alternatives A and B would result in no long-term impacts to vegetation. In addition, upon completion of demolition of the seven VQs structures under Alternative B, the demolition sites would be returned to green space. Alternatives A and B 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 construction or demolition under Alternatives A or B. There would be no long-term impacts to wildlife or threatened an endangered species as a result of Alternatives A or B. Alternative C (No Action) 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 Alternatives A, B, or C.

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; 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 there are no federal wilderness areas, wildlife refuges or designated critical habitat within the vicinity of the project area. In addition, due to the project type, size, and location, the agency does not anticipate adverse effects to federally endangered, threatened, proposed, or candidate species. However, should the project design change, or 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 initiated to assess any potential impacts.

Earth Resources (EA § 3.6): Alternatives A and B would result in minor short-term impacts to existing soils during construction of the VQs and TLFs. However, impacts would be minimized by implementing BMPs for erosion and sedimentation controls (e.g., silt fencing, straw bales). In addition, upon completion of the demolition of the VQs, the demolition sites would be returned to green space. No long-term impacts are expected from Alternatives A or B. Alternative C (No Action) 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 Alternatives A, B, or C.

Hazardous Material/Waste (EA § 3.7): Alternatives A and B would result in minor short-term impacts because hazardous materials/waste used during construction activities would not be expected to increase over existing conditions. In addition, under Alternative B, minor impact due to hazardous materials/waste generated during demolition of the existing VQs would be expected. No adverse impact to ACM or LBP would be expected as surveys would be performed at all VQ structures prior to demolition activities and materials would be handled according to findings of the surveys. There would be no long-term impacts to hazardous materials/wastes as a result of Alternatives A or B. No environmental restoration program (ERP) sites have been identified within 300 ft of the construction or demolition project areas; therefore, no impacts to ERP sites would be expected as a result of Alternatives A or B. Alternative C (No Action) would have no short-or long-term impact to hazardous materials/waste. Therefore, there would be no significant impacts to hazardous materials/waste as a result of Alternatives A, B, or C.

Cultural Resources (EA § 3.8): Alternatives A and B would result in no short- or long-term impacts to cultural resources because no National Register of Historic Places (NRHP)-eligible buildings are located in proximity to the proposed VQ/TLF project site. In addition, none of the VQ structures that would be demolished under Alternative B are eligible for listing on the NRHP. Alternative C (No Action) would have no short- or long-term impacts over current conditions. Therefore, there would be no significant impacts to cultural resources as a result of Alternatives A, B, or C.

Since the VQ/TLF project site would be constructed in an area of previous ground disturbance, no consultation with Native American tribes was determined to be warranted by the WPAFB Cultural Resources Manager. Similar to consultation with Native American tribes, the WPAFB Cultural Resources Manager also determined that no consultation with the State Historic Preservation Office (SHPO) was warranted because the undertaking is not a type of action that has the potential to cause effects on historic properties and the proposed undertaking would be constructed on previously-disturbed ground. 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 five proposed projects, including the VQ and TLF 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 VQ and TLF proposal.

Infrastructure/Utilities (EA § 3.9): Alternatives A and B would result in no short- or long-term impacts to infrastructure or utilities because existing usage of public services (security forces and fire protection) and utilities would not be expected to increase significantly as compared to overall consumption. Minor impacts to traffic would be expected in the project area during construction activities; however, impacts would be temporary and would cease upon completion of construction activities and upon completion of new roadway construction connections. Alternative C (No Action) would have no short- or long-term impacts over current conditions. Therefore, there would be no significant impacts to infrastructure or utilities as a result of Alternatives A, B, or C.

Safety and Occupational Health (EA § 3.10): Alternatives A and B could result in potential impact to workers during construction and demolition activities. Impacts would be minimized by adherence to health and safety regulations and standards. Alternatives A and B would have no long-term adverse impact to the safety or occupational health of construction workers. Alternative C (No Action) would 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 Alternatives A, B, or C.

Socioeconomics (EA § 3.11): Alternatives A or B 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 and demolition activities. Alternative C (No Action) would have no short- or long-term impacts over current conditions. Therefore, there would be no significant impacts to socioeconomics as a result of Alternatives A, B, or C.

Environmental Justice (EA § 3.12): Alternatives A and B would have no short- or long-term impact on any disproportionate or low-income communities. Alternative C (No Action) would have no short- or long-term impacts over current conditions. Therefore, there would be no significant impacts to environmental justice as a result of Alternatives A, B, or C.

Cumulative Impacts (EA Section 4.0): When added to past, present, and reasonably foreseeable actions, implementation of Alternative A, B, or C 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 was posted in the *Dayton Daily News* and the *Fairborn Daily Herald* initiating a 30-day public comment period. Comments received during this period will be included in Appendix B of the EA.

Finding of No Significant Impact (FONSI)

Alternative A involves constructing the VQs and TLFs at WPAFB to replace the aging, degraded, and repurposed VQs and TLFs, which are sub-standard, nonfunctional, and do not meet ADA accessibility requirements. The construction of the VQs and TLFs would enable the AF to continue to provide reasonable housing services to assigned military personnel at WPAFB. 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 (Alternative A) 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: _____

DAVID A. PERKINS

Director, 88th Civil Engineer Group

COVER SHEET

ENVIRONMENTAL ASSESSMENT
VISITING QUARTERS AND TEMPORARY LODGING FACILITIES
WRIGHT-PATTERSON AIR FORCE BASE, OHIO

Responsible Agency: 88th Civil Engineer Group (88 CEG), Wright-Patterson Air Force Base (WPAFB), Ohio

Affected Location: WPAFB, Ohio

Proposed Action: Visiting Quarters and Temporary Lodging Facilities 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 Air Force is proposing to construct Visiting Quarters and Temporary Lodging Facilities (VQs and TLFs) to replace existing aging and degraded housing facilities at WPAFB. The construction of the VQs and TLFs would continue to provide reasonable housing services to assigned personnel without experiencing downtime and/or the need for additional funds for the repair and maintenance of the aging housing facilities. The analysis in the EA considers Alternative A (Proposed Action), Alternative B, and Alternative C (No Action), and will aid in determining whether a Finding of No Significant Impact can be prepared or whether an Environmental Impact Statement is needed.

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List of Acronyms

ABW	Air Base Wing
ACAM	Air Conformity Applicability Model
ACHP	Advisory Council on Historic Preservation
ACM	Asbestos-Containing Material
ACS	American Community Survey
ADA	Americans with Disabilities Act
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
APE	Area of Potential Effect
APTIM	Aptim Federal Services, LLC
APZ	Accident Potential Zone
AQCR	Air Quality Control Region
AST	Aboveground 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 and 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 Project Management Branch
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CHP4	Central Heating Plant 4
CO	Carbon Monoxide
CO_2e	Carbon Dioxide Equivalent
CWA	Clean Water Act
CZ	Clear Zone
dB	Decibel
dBA	A-weighted Sound Level Measurement
DLSME	Defense Land Systems and Miscellaneous Equipment
DMWM	Division of Materials and Waste Management
DNL	Day-night Average A-weighted Sound Level
DoD	Department of Defense
DOW	Division of Wildlife
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
HTHW	High-temperature Hot Water
HUD	U.S. Department of Housing and Urban Development
ICRMP	Integrated Cultural Resources Management Plan
IICEP	Interagency and Intergovernmental Coordination for Environmental Planning
INRMP	Integrated Natural Resources Management Plan
IRP	Installation Restoration Program
LBP	Lead-based Paint
LEED	Leadership in Energy and Environmental Design
LRS	Logistics Readiness Division
LTM	Long-term Monitoring
MA	Metropolitan Area
MACT	Maximum Achievable Control Technology
MCD	Miami Conservancy District

$\mu g/m^3$	microgram per cubic meter
mg/m^3	milligram per cubic meter
MSL	Mean Sea Level
MW	Megawatt
MSW	mixed-solid waste
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NESHAP	National Emission Standards for Hazardous Air Pollutants
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
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
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
RAPCA	Regional Air Pollution Control Agency
RICE	Reciprocating Internal Combustion Engines
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
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	Unified Facilities Code
USACE	U.S. Army Corps of Engineers
USAF	U.S. 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
VQ	Visiting Quarter
WPAFB	Wright-Patterson Air Force Base

1.0 Purpose and Need for Action

1.1 Introduction

Wright-Patterson Air Force Base (WPAFB, the Base) is proposing to construct Visiting Quarters and Temporary Lodging Facilities (VQs and TLFs) to replace existing aging and degraded housing facilities. The current VQs contain 413 rooms that were constructed beginning in 1954 and the TLFs were constructed in the mid-1970s (Department of Defense [DoD] 2017a, DoD 2017b). These aging housing facilities are not compliant with the Americans with Disabilities Act (ADA) and have reached the end of their service life. The Base plans to construct new VQs and TLFs to continue to provide reasonable housing services to assigned personnel without experiencing downtime and/or the need for additional funds for the repair and maintenance of the aging housing facilities.

This Environmental Assessment (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
- U.S. Air Force (USAF)-implementing regulations for NEPA, the Environmental Impact Analysis Process (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.

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. 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.

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.

This EA is organized into seven sections, plus appendices. **Section 1** provides historical and background information, the project location, and the purpose of and need for a Proposed Action. **Section 2** contains a description of the alternatives. **Section 3** describes the existing conditions of the potentially affected environment and identifies the environmental consequences of implementing all reasonable alternatives. **Section 4** describes cumulative effects. **Section 5** provides the names of those who prepared the EA. **Section 6** lists persons and agencies consulted and coordinated. **Section 7** lists the references used in the preparation of this document. **Appendices A**, **B**, and **C** include photographic documentation (photo log), agency coordination, and air quality calculations, respectively.

1.2 Purpose of the Action

The purpose of the Proposed Action is to construct reasonable and functional VQ and TLF housing service to assigned military personnel at WPAFB.

1.3 Need for the Action

The Base needs to replace its aging, degraded, and repurposed VQs and TLFs, which are sub-standard, nonfunctional, and do not meet ADA accessibility requirements.

1.4 Decision to be Made

This EA presents the proposal to construct new VQs and TLFs. The decision to construct new housing at WPAFB would enable the AF to continue to provide reasonable housing services to assigned military personnel.

If the analyses presented in the EA indicate that implementation of the preferred alternative would not result in significant environmental impacts, a Finding of No Significant Impact (FONSI) would be prepared. A FONSI briefly presents reasons why a preferred alternative 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 preferred alternative 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

No cooperating agencies were identified for the preferred alternative described in this EA.

1.5.2 Interagency and Intergovernmental Coordination and Consultations

In compliance with NEPA, WPAFB notified relevant stakeholders about the Proposed Action and alternatives. As part of the Interagency and Intergovernmental Coordination for Environmental Planning (IICEP) process for this EA, consultation was conducted with the following agencies: Miami Conservancy District (MCD), Ohio Department of Natural Resources (ODNR) and U.S. Fish and Wildlife Service (USFWS). 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.

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

2.0 Description of the Proposed Action and Alternatives

The construction of new VQs and TLFs would enable WPAFB to provide the most up-to-date housing features and services to military personnel. 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 and 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. The following sections describe the Proposed Action and alternatives.

2.1 Proposed Action (Preferred Alternative)

The Proposed Action (preferred alternative) involves the construction of one VQ facility that would contain 398 guestrooms and housekeeping spaces. The proposed VQ facility would meet Leadership in Energy and Environmental Design (LEED) Silver certification and incorporate sustainable measures. The new TLFs would consist of four buildings containing a total of 36 two-bedroom units, as well as housekeeping support areas. Two TLF buildings would contain 10 standard units each and two buildings would contain eight "pet friendly" standard units each. One of the eight unit buildings would also contain the housekeeping space. In addition, two ADA-accessible units would be incorporated into the design (DoD 2017a, DoD 2017b).

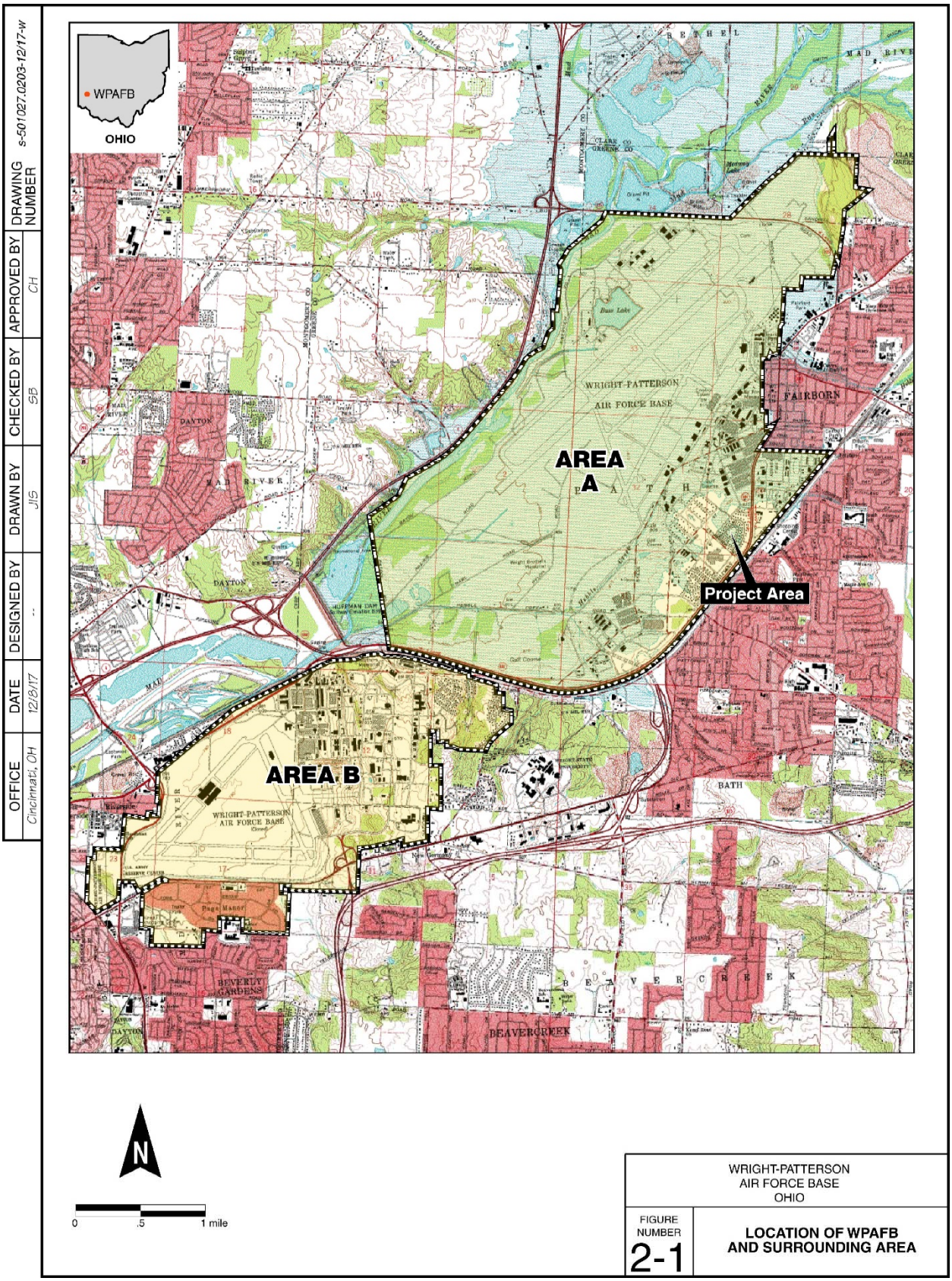
The Proposed Action includes all labor, site preparation, site improvements, communications, landscaping, equipment, and materials to construct the VQs and TLFs. Construction activities would also include removing and/or upgrading site utilities, pavements, and sidewalks.

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.

The following selection standards were used to determine whether or not alternatives were considered reasonable for the construction of new VQs and TLFs at WPAFB. In evaluating alternatives, the AF considered whether each alternative met the following standards:

- Collocation of the VQs and TLFs


WPAFB
OHIO
AREA A
AREA B
Project Area
WRIGHT-PATTERSON AIR FORCE BASE
FAIRBORN
DAYTON
BATH
BEAVERCREEK
BEVERLY GARDENS
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WRIGHT-PATTERSON
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2-1
LOCATION OF WPAFB
AND SURROUNDING AREA

- Proximity to commissary services
- Location along a major network of roads with proximity to a gate
- Economic feasibility
- Compliance with Unified Facilities Criteria (UFC) 1-200-02, *High Performance and Sustainable Building Requirements*
- Compliance with the USAF, *Temporary Lodging Facility Design Guide*
- Compliance with UFC 4-010-01, *DoD Minimum Antiterrorism Standards for Buildings*
    - Buildings with 10 or less units are exempt from Anti-Terrorism Force Protection (ATFP) requirements
    - Buildings over 10 units will comply with ATFP requirements; buildings 3-stories or more must be able to resist progressive collapse

2.3 Screening of Alternatives

Development of reasonable alternatives involved discussions with representatives of the 88th Civil Engineer Group (CEG) Environmental Assets Section (88 CEG/CEIEA) and the Civil Engineer Project Management Branch (88 CEG/CENP).

2.4 Detailed Description of the Alternatives

This section describes Alternative A (Proposed Action), Alternative B, and Alternative C (No Action). The Proposed Action (Alternative A) analyzed in this EA would meet the selection standards of providing safe and reasonable housing services to assigned military personnel at WPAFB.

2.4.1 Alternative A (Proposed Action)

Alternative A involves construction of the VQs and TLFs at WPAFB. The proposed project site consists of a 13.17-acre vacant parcel with a maintained lawn and numerous trees (Photographs 1 and 2, **Appendix A**). The proposed project site previously contained 103 duplex structures (206 total residences) referred to as the Green Acres Housing Complex. Due to a reduced demand for Base housing and rising maintenance costs, the decision to demolish excess housing at WPAFB resulted in the demolition of the Green Acres Housing Complex in 2009. Since the proposed project site is currently a vacant parcel, no demolition activities would be included as part of Alternative A.

2.4.1.1 Proposed Construction Activities

The proposed VQs and TLFs would be constructed adjacent to one another on the same 13.17-acre site, as presented in **Figure 2-2**. The VQs would be constructed on a 7.89-acre site as a single, slab-on-grade structure, would consist of five stories, and would contain a total of 398 guestrooms plus a housekeeping area. The VQ structure would consist of 230,500 square feet (sf). **Figure 2-3** presents a rendering of the VQs structure and a prototype of the first floor, which depicts the housekeeping area right of center.

PARKING TABULATION

PARKING STALLS REQ'D FOR VQ: 242
PARKING STALLS PROVIDED:
STANDARD: 204
ACCESSIBLE: 8
EMPLOYEE : 30

PARKING STALLS REQ'D FOR TLF: 82
PARKING STALLS PROVIDED:
STANDARD: 68
ACCESSIBLE: 4
EMPLOYEE : 10

N

200 100 200
Feet

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OHIO

FIGURE NUMBER
2-2

VISITING QUARTERS/ TEMPORARY LODGING FACILITIES (VQ/TLF) SITE PLAN

M. Najar - C:\CAD-GIS\WPAFB\GIS_Documents\Project_Maps\501027.0203\WPAFB_VQTLF_001_SitePlan.dwg - Mon, 6/18/2018 - 4:40 PM

OFFICE	DATE	DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY	DRAWING NUMBER
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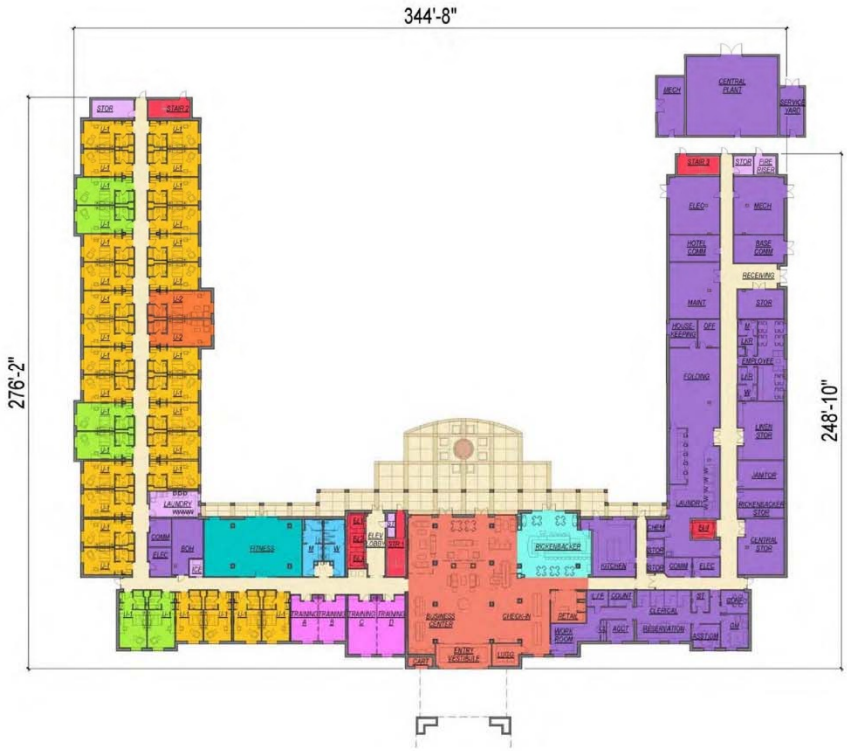

Source: WPAFB 2017

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FIGURE NUMBER 2-3

VISITING QUARTERS (VQ) RENDERING AND PROTOTYPE

The proposed TLFs would be constructed on a 5.28-acre site and would be constructed slab on grade adjacent and northeast of the VQs and would consist of four facilities containing a total of 36 individual units. Two of the four structures would contain 10 standard units each and two structures would contain 8 "pet friendly" standard units each. One of the eight-unit structures would also contain a housekeeping area. In addition, two ADA-accessible units would be incorporated into the design. Total square footage for the proposed TLFs would consist of 39,407 gross sf. **Figure 2-4** presents a rendering of the TLFs structures and a prototype floor plan for a typical 10-unit building, which would contain approximately 11,700 gross sf.

In addition to the primary construction, Alternative A would consist of three companion projects:

- Removing underground utilities that were abandoned-in-place during demolition of the Green Acres Housing Complex in 2009.
- Upgrading existing inadequate utilities, which include electric, natural gas, and stormwater. The existing sewer utility is adequate.
- Demolishing Estabrook Road, located adjacent and south of the proposed project site. In addition, five new entrances into the VQs/TLFs complex, a new roadway south of the complex, and sidewalks would also be constructed as part of the new VQs and TLFs (see **Figure 2-2**).

Low-occupancy family housing, defined as 12 units or fewer, are exempt from UFC 4-010-01, *DoD Minimum Antiterrorism Standards for Buildings* under Section 1-9.2 (DoD 2013). However, Section C-1.8 of the UFC recommends, "For new low occupancy family housing construction, standoff distances should be maintained in accordance with the controlled perimeter standoff distance in Table B-1 from installation perimeters and roads, streets, or highways external to housing areas". Therefore, the minimum standoff distance for construction of the VQs and TLFs should be maintained at a distance of at least 13 feet (ft) from Spruce Way (formerly State Route 444). According to design drawings for the VQs and TLFs, the UFC recommended standoff distance would be met.

The future use of the current VQs is to be determined. Two options are under consideration. One option is to re-purpose the facilities for a different use, such as administrative space. The other option is to demolish the facilities. For the Proposed Action, it is assumed that the VQs will be retained and re-purposed. Potential demolition is evaluated under Alternative B.

It is noted that the existing TLFs are located in a former military housing area west of the WPAFB Medical Center. These TLFs are slated for demolition and will be addressed in an EA for a separate project. Therefore, the demolition of the TLFs is not evaluated as part of this alternative.

2.4.2 Alternative B

Alternative B involves completion of Alternative A with the addition of demolishing the existing VQs. The existing VQs were constructed in 1954 through 1970 and are located in eight separate buildings

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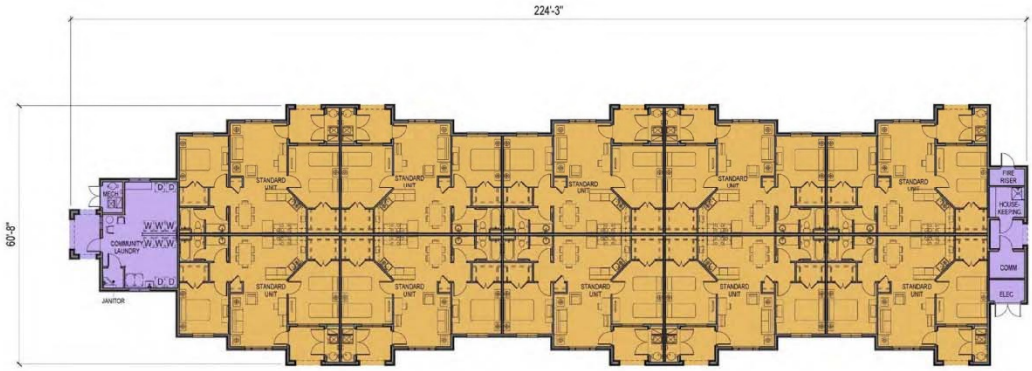

Source: WPAFB 2017

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FIGURE NUMBER 2-4

TEMPORARY LODGING FACILITIES (TLF) RENDERING AND PROTOTYPE

containing a total of 413 guestrooms. Alternative B involved demolition of seven existing VQ buildings. The eighth building, referred to and used as the distinguished visitor's quarters, would not be demolished due to a recent renovation project that was completed on this structure.

2.4.2.1 Proposed Demolition Activities

As part of Alternative B, seven existing VQ structures would be demolished. The demolition plan would vary for each building; however, general elements of demolition would include, if applicable:

- Conduct environmental surveys 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.
- Raze entire structure and system by conventional demolition.
- Demolish associated parking areas.
- Restore pavement to match surrounding grade.
- Re-vegetate areas intended for green space.
- Sever and cap water supply and sanitary sewer lines.

Five of the existing VQ structures are situated in a circular-type shape with a large parking area in the middle. Each of these VQ structures contain two-stories. A separate air-conditioning plant building is associated this group of VQs that is not included as part of demolition activities under Alternative B. The remaining two VQ structures are situated adjacent to one another and each contain four-stories.

2.4.3 Alternative C (No Action)

Under Alternative C (No Action), the VQs and TLFs would not be constructed at WPAFB. By not replacing the current sub-standard housing inventory at WPAFB, failure to provide the VQs and TLFs would maintain the status quo. With the VQ and TLF structures being significantly nonfunctional, maintaining the status quo would prevent WPAFB from providing reasonable housing services to assigned military personnel along with being susceptible to down time of several VQ and TLF units and/or the need for additional funds to repair and maintain the units in the buildings that have reached their life expectancy.

The No Action alternative does not satisfy the purpose and need of providing reasonable and functional VQ and TLF housing services to assigned military personnel at WPAFB; however, it is included in the environmental analysis to provide a baseline for comparison with Alternative A (Proposed Action) and Alternative B and is analyzed in accordance with CEQ regulations for implementing NEPA. Although the No Action (Alternative C) would eliminate unavoidable adverse, short- and long-term impacts associated with Alternative A (Proposed Action) and Alternative B, the No Action (Alternative C) would not satisfy selection standards established for this project, resulting in continued use of aging VQs and TLFs and infrastructure.

2.5 Alternatives Eliminated from Further Consideration

One alternative considered but eliminated from consideration early in the planning process included refurbishing/renovating the existing VQs and TLFs. This alternative was eliminated because the cost to renovate the housing facilities to meet ADA requirements would be too expensive and because the VQs and TLFs, in their current locations, are not in close enough proximity to meet efficient housekeeping requirements. In addition, the estimated shutdown time of approximately 2 years for the existing VQs and TLFs to be refurbished/renovated would result in loss of revenue and was determined not economically feasible.

A second alternative considered but eliminated was to demolish the existing VQs and TLFs and construct the new facilities within the general area/footprint of the demolished units. In their existing location, the VQs and TLFs do not provide the same housekeeping efficiencies that could be achieved if the units were side-by-side. For instance, six of the VQs are located approximately 0.25 mile from the remaining two VQ structures. In addition, the demolition and construction of the VQs and TLFs at their existing location would result in the shutdown and loss of revenue for approximately 2 years. This alternative was eliminated because it was deemed too lengthy and cost prohibitive.

A third alternative considered but eliminated involved constructing the VQs and TLFs within the Kittyhawk Center. Although this location would provide ample sports, entertainment, and general services to military personnel within walking distance (banking, restaurants, bowling alley, gas station), this alternative was eliminated because the land development constraints would require the VQs and TLFs to be constructed at separate locations and not side-by-side. In addition, estimated traffic increases from military personnel living within or near the Kittyhawk Center was considered too great and would result in congestion for this high-traffic area of the Base. Therefore, for these reasons, the alternative to construct the VQs and TLFs at the Kittyhawk Center was eliminated.

2.6 Comparison of Environmental Consequences

Alternatives A and B are reasonable alternatives that meet 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 Alternative A (Proposed Action), Alternative B, and Alternative C (No Action).

Table 2-1. Comparison of Environmental Consequences

Affected Environment	Alternative A Proposed Action	Alternative B	Alternative C No Action
Noise	Short-Term: Minor impacts on ambient noise from construction activities. Impacts would be minor because these activities would be carried out during normal working hours. Long-Term: No impact.	Short-Term: Similar to Alternative A. 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. Dust control measures would be implemented during construction. Long-Term: No adverse impact. Projected vehicle emissions should be similar to current conditions.	Short-Term: Similar to Alternative A except that particulate matter emissions would have an adverse impact is demolition was concurrent with construction. Impacts would be minimized by timing the execution of Alternative B. Long-Term: No adverse impact; similar to Alternative A.	Short-Term: No impact. Long-Term: No impact.
Water Resources			
Groundwater	Short-Term: No impact as the proposed VQ/TLF site is not located within the city of Dayton Source Water Protection Program (SWPP) boundary. Long-Term: No impact	Short-Term: Similar to Alternative A. Long-Term: No impact.	Short-Term: No impact. Long-Term: No impact.
Surface Water	Short-Term: 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. Long-Term: Minor adverse impacts due to increases in impervious surfaces would be minimized by upgrading the stormwater system part of Alternative A.	Short-Term: Same as Alternative A. Impacts to surface water would be minor because demolition and construction activities would implement BMPs for erosion and sedimentation controls. Long-Term: Minor adverse impact; similar to Alternative A.	Short-Term: No impact. Long-Term: No impact.

Affected Environment	Alternative A Proposed Action	Alternative B	Alternative C No Action
Floodplains	Short-Term: No impact because the proposed VQ/TLF site is not located within a floodplain. Long-Term: No impact.	Short-Term: No impact because the proposed VQ/TLF site and the existing VQs demolition site(s) are not located within a floodplain. Long-Term: No impact.	Short-Term: No impact. Long-Term: No impact.
Biological Resources			
Vegetation	Short-Term: Minor adverse impact because the VQ/TLF 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 historically contained 103 structures associated with the Green Acres housing complex, therefore, construction activities would take place on previously disturbed areas. Long-Term: No impact.	Short-Term: Same as Alternative A. In addition, upon completion of the demolition of the existing VQs and TLFs, the demolition site(s) would be returned to green space. Long-Term: No impact.	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 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 impacts from proposed construction activities. Long-Term: No impact.	Short-Term: Same as Alternative A. In addition, upon completion of the demolition of the existing VQs and TLFs, the demolition site(s) would be returned to green space. 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. The AF would coordinate with the USFWS prior to removing trees. Long-Term: No impact.	Short-Term: Same as Alternative A. In addition, upon completion of the demolition of the VQs and TLFs, the demolition site(s) would be returned to green space. Long-Term: No impact.	Short-Term: No impact. Long-Term: No impact.

Affected Environment	Alternative A Proposed Action	Alternative B	Alternative C No Action
Wetlands	Short-Term: No impact as there are no wetlands on or near the proposed project site. Long-Term: No impact.	Short-Term: Same as Alternative A. Long-Term: No impact.	Short-Term: No impact. Long-Term: No impact.
Earth Resources	Short-Term: Minor impact to existing soils during construction of VQs and TLFs. Impacts would be minimized by implementing BMPs for erosion and sedimentation controls. Long-Term: No impact.	Short-Term: Same as Alternative A. In addition, upon completion of the demolition of the VQs and TLFs, the demolition site(s) would be returned to green space. Long-Term: No impact.	Short-Term: No impact. Long-Term: No impact.
Hazardous Materials/Waste	Short-Term: Minor impact because hazardous materials/wastes used during construction activities would not be expected to increase over existing conditions. Long-Term: No impact.	Short-Term: Same as Alternative A. In addition, minor impact due to hazardous materials/waste generated during demolition of the existing VQs. These materials/wastes would be identified and removed in accordance with WPAFB procedures. Long-Term: No impact.	Short-Term: No impact. Long-Term: No impact.
ACM and LBP	Short-Term: No impact as there are no structures that would be demolished as part of this alternative. Long-Term: No impact.	Short-Term: No adverse impact to ACM or LBP as surveys would be performed at all VQ structures prior to demolition and materials would be handled according to findings of the survey(s). Long-Term: No impact.	Short-Term: No impact. Long-Term: No impact.
Environmental Restoration Program (ERP)	Short-term: No impacts because no ERP sites are located in proximity to the proposed VQ/TLF project site. Long-term: No impact.	Short-Term: Same as Alternative A. In addition, no ERP sites were identified in proximity to the VQs that would be demolished under this alternative. Long-Term: No impact.	Short-Term: No impact. Long-Term: No impact

Affected Environment	Alternative A Proposed Action	Alternative B	Alternative C No Action
Cultural Resources	Short-Term: No impact because no National Register of Historic Places (NRHP) eligible buildings are located in proximity to the proposed VQ/TLF project site. In addition, the proposed site would be located in an area that was previously disturbed (former Green Acres Housing Complex). Long-Term: No impact.	Short-Term: Same as Alternative A. In addition, none of the VQ structures that would be demolished under this alternative are eligible for listing on the NRHP. Long-Term: No impact.	Short-Term: No impact. Long-Term: No impact.
Infrastructure / Utilities	Short-Term: No adverse impact because existing usage of public services (security forces and fire protection) and utilities would not be expected to increase significantly as compared to overall consumption. Minor impacts to traffic during construction activities. Long-Term: No impact. Electric, natural gas, and stormwater utilities would be upgraded as part of Alternative A.	Short-Term: Same as Alternative A. Minor impacts to traffic during construction and demolition activities. Long-Term: No impact; similar to Alternative A.	Short-Term: No impact. Long-Term: No impact.
Safety and Occupational Health	Short-Term: Potential adverse impact to workers during construction activities. Impacts would be minimized by adherence to health and safety regulations and standards. Long-Term: No impact.	Short-Term: Same as Alternative A. In addition, potential impact to workers during demolition of existing VQs. Long-Term: No impact.	Short-Term: No impact. Long-Term: No impact.
Socioeconomic Resources	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 personnel living and working at the VQs and TLFs.	Short-Term: Same as Alternative A. In addition, beneficial impact resulting from demolition activities. Long-Term: Same as Alternative A.	Short-Term: No impact. Long-Term: No impact.
Environmental Justice	Short-Term: No impact. Long-Term: No impact.	Short-Term: No impact. Long-Term: No impact.	Short-Term: No impact. Long-Term: No impact.

Affected Environment	Alternative A Proposed Action	Alternative B	Alternative C No Action
Cumulative Impacts	When added to past, present, and reasonably foreseeable actions, the activities under Alternative A would have no significant adverse cumulative impacts on any resource.	Same as Alternative A.	Same as Alternative A.

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 alternatives and provides a baseline from which to identify and evaluate environmental and socioeconomic changes likely to result from implementation of the alternatives.

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, and socioeconomics.

This section also describes the potential environmental consequences associated with implementing the Alternative A (Proposed Action/Preferred Alternative), Alternative B, or Alternative C (No Action). 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 adverse 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; and
- *Major*, the impact is severely adverse or highly noticeable and considered to be significant.

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 alternatives.

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 alternatives, 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 VQs and TLFs, land use would be considered residential. However, there would be no impacts to land use.

- *Visual Resources*. Implementation of the alternatives 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.

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.

The AF land use compatibility guidelines (relative to DNL values) are documented in the *AICUZ Program Handbook* (USAF 1999). Four noise zones are used in the Air Installation Compatible Use Zone (AICUZ) studies 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.

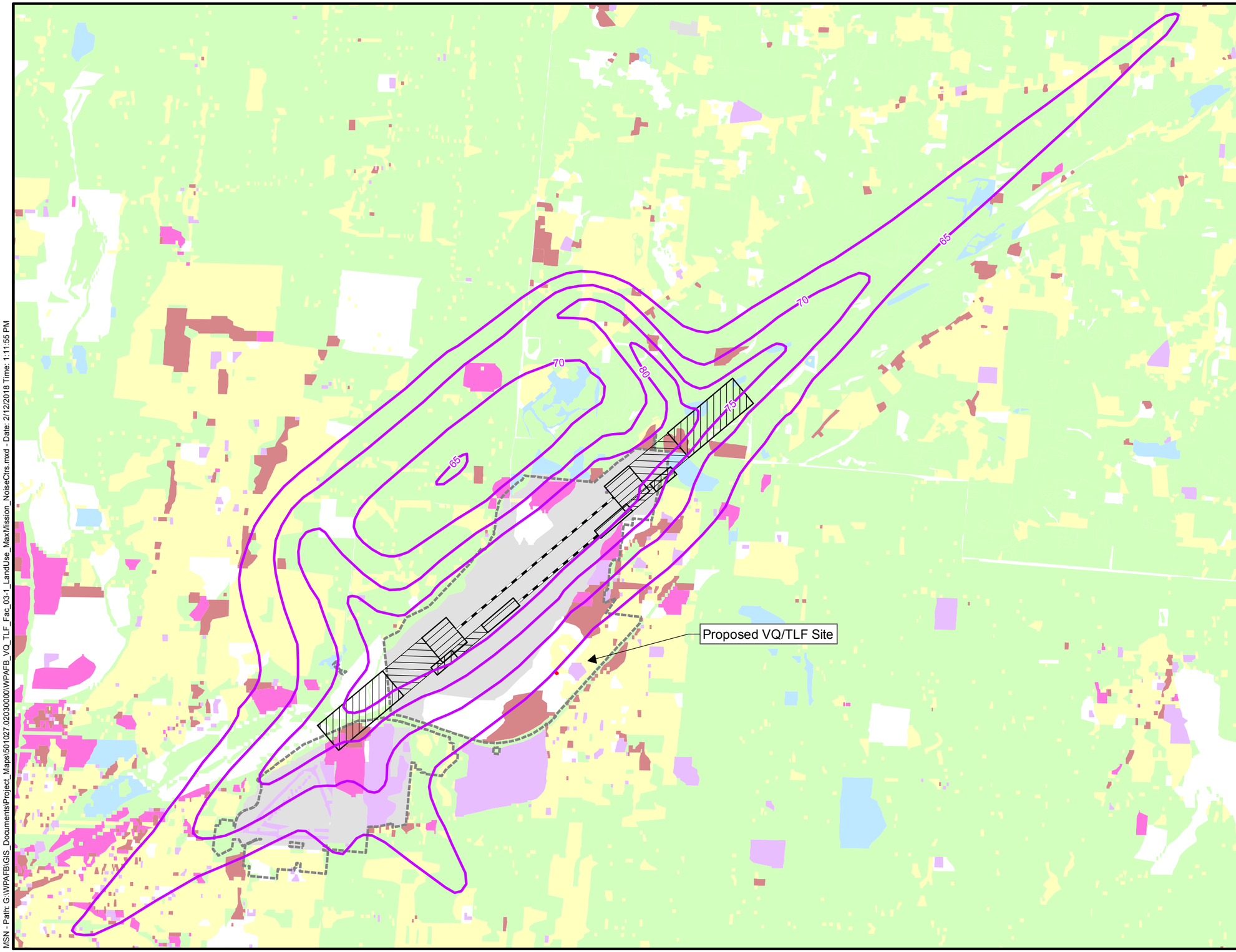
If sensitive structures are located in areas within a DNL of 65 to 75 dBA, noise-sensitive structures should be designed to achieve a DNL of 25 to 30 dBA interior noise reduction. Noise-sensitive structures might include schools, concert halls, hospitals, and nursing homes. Elevated noise levels in these 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 the protection of the public. Compatible land uses are specified for these zones. According to Air Force Instruction (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-*



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

VQ/TLF = Visiting Quarter/Temporary Lodging Facility

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
AIR FORCE BASE,
OHIO

Visiting Quarters/Temporary Lodging Facilities (VQ/TLF)

FIGURE NUMBER 3-1

Existing Land Use and Maximum Mission Noise Contours at WPAFB

MSN - Path: G:\WPAFB\GIS_Documents\Project_Maps\501027.02030000\WPAFB_VQ_TLF_Fac_03-1_LandUse_MaxMission_NoiseCtrs.mxd - Date: 2/12/2018 Time: 1:11:55 PM

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).

No noise-sensitive receptors were identified in the AICUZ. There have been no recent complaints regarding aircraft noise. According to the AICUZ study, the VQ/TLF project site is located outside the AICUZ noise contours at less than 65 dB (**Figure 3-1**). This contour value represents existing conditions to which the potential noise levels from construction activities associated with constructing the VQs and TLFs can be compared.

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 (if changes reduce the number of sensitive receptors exposed to unacceptable noise levels), negligible (if the total area exposed to unacceptable noise levels is essentially unchanged), or adverse (if changes result in increased noise exposure to unacceptable noise levels).

3.2.3.1 Alternative A, Proposed Action

Implementation of Alternative A would have minor, short-term impacts on the noise environment near the project site. 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, impacts to workers would be minimized because workers would be responsible for adhering to health and safety regulations.

The nearest structures to the proposed project site would be those adjacent to the construction site, which is located at a distance greater than 500 ft from the project site. Personnel in occupied buildings near the proposed project site would experience short-term intermittent noise impacts; however, construction related noise would occur during normal working hours, would be temporary, short in duration and comparatively minor. No long-term noise impacts would result from Alternative A to either construction workers or personnel in the vicinity of the proposed 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 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). Alternative A is also not located within the CZ, APZ I, or APZ II (**Figure 3-1**).

3.2.3.2 Alternative B

Impacts resulting from implementation of Alternative B would be the same as Alternative A with the addition of noise resulting from demolition of the existing VQ and TLF structures. However, similar to Alternative A, impacts would have minor, short-term impacts on the noise environment near the construction and demolition project sites. No long-term adverse noise impacts would be expected from Alternative B to either construction workers or personnel in the vicinity of the proposed project site. In addition, Alternative B is also not located within the CZ, APZ I or APZ II (**Figure 3-1**).

3.2.3.3 Alternative C, 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 ($\mu g/m^3$). 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 enforces 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 3-1** presents the primary and secondary NAAQS.

Table 3-1. 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 $\mu g/m^3$. 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 $\mu g/m^3$ and retained the secondary level of the annual $PM_{2.5}$ standard at 15 $\mu g/m^3$ 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; $\mu g/m^3$ (micrograms per cubic meter)

ppm = parts per million; mg/m^3 (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 is 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 an area that was designated as nonattainment and has been re-designated in 40 CFR Part 81 to attainment, meeting the provisions of Section 107(d)(3)(E) of the CAA and has 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 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, 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 others 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. The USEPA regulatory areas lie within the AQCRs and are designated by the USEPA as attainment or nonattainment. These areas 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 are part of the Metropolitan Dayton Intrastate AQCR (40 CFR 81.34). Each AQCR is classified as an attainment area or nonattainment area for each of the criteria pollutants depending on whether it meets or fails to meet the NAAQS for the pollutant. Ambient air quality for the Metropolitan Dayton Intrastate AQCR is currently in an attainment/maintenance area for ozone per a recent strategic basing site survey review and attainment for all current NAAQS identified in **Table 3-1**. It is noted as a warning that General Conformity requirements for the 1997 Ozone NAAQS may be reinstated at this location in the near future and possibly before this action starts. If the General Conformity requirements for the 1997 Ozone NAAQS are reinstated, a General Conformity assessment specific to the 1997 Ozone NAAQS will be required.

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 categorizes 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 area including WPAFB is 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 in an area that is 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 not 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 may include the addition of heating boilers and perhaps backup emergency power. It is not anticipated that these sources would trigger PSD applicability, but may require a PTI or PBR application and inclusion on the insignificant list 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 for 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 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 standards are in place prior to boiler and generator startup to ensure all air quality standards are met.

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 will include construction and demolition 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 any construction or renovation activity associated with the Proposed Action 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.

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 Air Conformity Applicability Model (ACAM). CO_2e emission level calculations reported in **Appendix C** show 12,000 tons from construction and demolition activities spread over a three-year period. This is not considered to be a substantial amount to warrant any remedial action.

3.3.3.1 Alternative A, Proposed Action

Direct and Indirect Emissions

Construction and Demolition Activities. Under Alternative A, the construction of the VQs and TLFs include typical construction activities for site preparation, building erection, parking lot and roadway pavement, landscaping, and irrigation system installation. Alternative A also includes preliminary site

clearing, roadway demolition and removal of abandoned utilities from the project site. Assumptions used for each activity as inputs to the ACAM emission estimation modules are identified in **Appendix C**.

Installation and demolition activities would result in emissions of criteria pollutants from the equipment engine exhaust and particulate matter emitted as fugitive dust from trenching activities and the movement of material and equipment. Additionally, vehicle emissions from the delivery trucks are included along with worker commuter emissions. The VOC emissions may result from painting or surface coating required for the project. Because each module in the ACAM only includes the number of workers operating equipment, a separate category for transient workers commuting was included to account for contractors performing specific equipment installation, testing, and project supervision. All criteria pollutant emissions from construction activities would be temporary. Emissions resulting from Alternative A are summarized for each activity in **Table 3-2**.

Table 3-2. Annual Criteria Pollutant Emissions at WPAFB Associated with Alternatives A and B

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)
Alternative A						
Calendar Year 2018	1.63	10.11	9.66	52.33	0.45	0.02
Calendar Year 2019	8.66	30.38	30.73	42.92	1.41	0.07
Alternative B						
Calendar Year 2020	2.19	14.27	13.37	73.25	0.62	0.03
Alternative A Totals	10.29	40.49	40.39	95.25	1.86	0.09
Alternative B Totals	12.48	54.76	53.76	168.50	2.48	0.12
Significant Impact Rates (ACAM)	100	100	100	100	100	100
Any Annual Emission Levels Exceeds Impact Rates	No	No	No	No	No	No

Note: Tpy = tons per year

Analysis. The timeline assumed in the air emission analysis for the execution of Alternative A identified site preparation activities for the first year and building construction activities primarily for the second year. In accordance with AF 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. The information presented in **Table 3-2** shows that for Alternative A, whether the emissions are categorized by calendar year or compared in aggregate to the significant impact rates, neither method exceeds the impact rates for any criteria pollutant. The projected increases are temporary for project installation and demolition activities for Alternative A.

3.3.3.2 Alternative B

Alternative B (**Table 3-2**) includes demolition of seven existing VQ structures and includes emissions from Alternative A plus adds emissions from demolition of seven structures. The emissions from Alternative B using calendar year totals do not exceed the significant impact rates. However, the aggregate totals for PM_{10} do exceed the significant impact rates. Given the timing for the execution of the demolition project, it is not likely that the demolition of the seven VQ structures would proceed concurrently with the construction of the new VQs and TLFs. Therefore, deliberately planning the execution timing of Alternative B can help mitigate PM_{10} emissions. In addition, the results also demonstrate that WPAFB must ensure contractors develop and implement a dust control plan for the duration of each Alternative as another way to mitigate PM_{10} emissions. **Appendix C** details emissions factors, calculations, and estimates used in the ACAM to estimate emissions for each Alternative.

3.3.3.3 Alternative C, No Action

Because the No Action alternative would not result in an increase in emissions over baseline conditions, no adverse impact on air quality would occur.

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 et al. 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 VQ/TLF project site is not located within any OUs. Operable Unit 10 (OU10) is the nearest OU, which is located approximately 1,500 ft north of the VQ/TLF project site. General groundwater flow through OU10 is to the west/southwest and parallel to the Mad River. Groundwater at OU10 is monitored under the Groundwater Operable Unit (GWOU) and the Long-Term Monitoring (LTM) Program. The VQ/TLF project site is also not located within the 1- or 5-year travel time wellhead protection area for the Area A water supply wells and is not located with the city of Dayton SWPP boundary (Dayton 2018).

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 SWPPP was last updated in September 2016 while the SWMP was last updated in July 2016. An OEPA industrial permit (National Pollutant Discharge Elimination System [NPDES] 1IO00001) and a municipal NPDES General Permit (OHQ000002) cover the WPAFB storm water program (WPAFB 2016b).

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.

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 feet 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

VQ/TLF project site is located at an elevation of 832 ft above MSL and is not located within a flood hazard as established by FEMA (FEMA 2018).

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.

Stormwater runoff in urban areas is one of the leading sources of water pollution in the U.S (USEPA 2018a). Under Section 438 of the Energy Independence and Security Act (EISA) of 2007, federal agencies are required to reduce stormwater runoff from federal development and redevelopment projects to protect water resources. Federal agencies can comply using a variety of stormwater 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 Alternative A, Proposed Action

Proposed construction would have no impact on groundwater. The project site is a vacant partial grass and tree-covered lawn. Based on the relatively brief amount of time the soil would be exposed from construction to re-vegetation, 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 minimal 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. Long-term minor 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/stormwater systems to flow away from the VQs and TLFs.

A *Technical Drainage Study* and *Drainage Assessment* (Slater Hanifan Group, Inc. [Slater]) was prepared in November 2017. This assessment included surveys of the general vicinity of the VQ/TLF project site. The study and assessment included an analysis of the historic, proposed, and existing storm drainage system, hydrologic modeling, hydraulic modeling, analysis of flow rates, and an analysis of retention basins located within the study area. The study and assessment concluded with the following design notes and/or recommendations (Slater 2017a, 2017b):

- The 100-year and 10-year flow generated by the onsite area increases from the historic existing condition (Green Acres Housing) to the proposed condition in which the VQ and parking areas are in place. Therefore, additional area is required to mitigate the increase in flow rates and meet EISA requirements or this requirement will need to be waived based on the site constraints.

- The existing downstream infrastructure is not adequate to convey the 100-year storm flows from the project site and upstream developments. It appears that the existing storm drain was designed to convey 10-year flows only. It is recommended that the existing downstream infrastructure be upsized to accommodate the 100-year flows in order to flood protect the proposed TLF and VQ improvements and to avoid negative impacts to the adjacent and downstream properties. As an alternative, additional detention could be provided southeast of the project site in order to reduce the flows to the existing storm drain system.

- A berm is proposed with the project site in order to route offsite flows around the project site. The proposed VQ storm drain has been designed to collect and convey 100-year flows from both onsite and offsite, but the existing downstream infrastructure is not adequate to convey the 100-year flows.

- Onsite retention basins with a minimum volume of 0.97 acre-ft are required to retain the 95th percentile storm to meet EISA requirements for the VQ proposed condition with a total of 1.59 acre-ft required in the ultimate condition with both the TLF and VQ improvements in place.

- The onsite driveways should be elevated to at least the 100-year flow depth in the adjacent roadway to ensure that offsite flows do not enter the project site.

- The proposed buildings should be elevated to at least twice the 100-year flow or at least 6-inches above the adjacent flowline elevation, whichever is higher. The proposed buildings should be elevated to at least twice the 100-year flow in the adjacent street.

It is noted that the construction of the NRO facility has been proposed in the general vicinity of the VQ/TLF project area, which is located approximately 1,200 ft southwest of the VQ/TLF project area. The proximity of the proposed NRO site and the proposed size of the facility (270,000 sf) may have the potential to affect or alter the VQs and TLFs stormwater design from that indicated above.

As part of the 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 restrictions set forth by the MCD in Greene County Deed Book 129, Page 146 on December 16, 1922. However, the MCD indicated that based on their review, it appeared the proposed actions would not adversely affect the retarding basin.

3.4.3.2 Alternative B

Similar to Alternative A, Alternative B would have no impact on groundwater. Although Alternative B includes demolition of seven existing VQ structures, the structures are located at different locations and are not grouped together. Therefore, minimal short-term impact to surface water quality in the vicinity of the demolition sites would occur but implemented BMPs would reduce or prevent excessive soil erosion, runoff, or minor spills prior to the demolition sites being re-vegetated.

3.4.3.3 Alternative C, 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).

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.

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 an unspecified date. 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 challenge 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).

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 ground that is grass, pavement, and/or gravel covered. 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.

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 Air Force Instruction (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 3-3**.

Table 3-3. 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 2018, USFWS 2018

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 2 miles southwest of the VQ/TLF project site and the nearest stream (SC6) is located approximately 2,250 ft northwest of the project site. Stream SC6 is a perennial headwater stream, which originates from a pond/basin located in the golf course and residential area. Stream SC6 is located in the vicinity of Hebble Creek Road and the golf course and consists of a concrete-lined channel that receives runoff from adjacent areas (WPAFB 2015).

3.5.3 Environmental Consequences

Biological resources that could be impacted by the proposed project include vegetation, wildlife, threatened and endangered species, and wetlands; water availability, quality and use; existence of floodplains; and associated regulations. 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.

Consultation with the ODNR was conducted as part of this EA 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; 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 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 (**Appendix B**). The project area consists of residential areas with existing grassy lawns and scattered trees and pavement (parking lot) areas. Therefore, the type of habitat present at the project site is not conducive or not likely to support threatened or endangered 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 there are no federal wilderness areas, wildlife refuges or designated critical habitat within the vicinity of the project area. In addition, due to the project, type, size, and location, the agency does not anticipate adverse effects to federally endangered, threatened, proposed, or candidate species. However, 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 USFWS should be initiated to assess any potential impacts.

3.5.3.1 Alternative A, Proposed Action

Vegetation

Land-disturbing activities associated with construction of the VQs and TLFs 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 or adverse effects on vegetation would be expected as a result of the implementation of Alternative A.

Wetlands/Streams/Jurisdictional Waters

No impacts to wetlands or streams would occur from implementation of Alternative A because these waters are not located within the project area and were identified at distances greater than 2,500 ft from the project site. Therefore, no effects to wetlands, streams, or jurisdictional waters are expected as a result of Alternative A.

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 effects from proposed construction activities would be negligible and no long-term or adverse effects on wildlife would be expected to result from Alternative A.

Threatened and Endangered Species

The proposed VQ/TLF project site is located in a previously-disturbed grass- and tree-covered lawn area. 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 construction activities associated with Alternative A. However, if trees are determined to be suitable for cutting in the project area, then cutting would only occur between October 1 and March 31 to avoid potential bat roosting habitat impacts.

3.5.3.2 Alternative B

Similar to Alternative A, Alternative B would have short-term minor adverse impacts and localized effects on vegetation as demolition and construction activities would be conducted on previously-disturbed areas. No impacts to wetlands or streams would expected from Alternative B because these waters are located at distances greater than 2,000 ft from the demolition and construction sites. Although land use would change from open space/residential to residential, overall land use would not change and current land use would remain the same. Proposed demolition/construction activities would not be in proximity to any threatened or endangered species; therefore, noise-related effects from proposed demolition/construction activities would be negligible and no long-term or adverse effects on wildlife would be expected to result from Alternative B. In addition, 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/construction activities associated with Alternative B.

3.5.3.3 Alternative C, No Action

The No Action alternative would have no adverse 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 2014a).

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.

A geotechnical study was conducted at the proposed TLF site in 2017 that included test borings and a geophysical survey (Terracon Consulting, Inc. [Terracon] 2017). Based on information obtained from the subsurface exploration, the report concluded the site could be developed for the proposed project. The following geotechnical considerations were identified:

- Test borings/pits encountered variable depths of existing (uncontrolled) fill likely associated with the previous housing development. Maximum depth of fill encountered was about 7.5 ft below existing grade.
- Soils encountered (fine-grained) in the borings/test pits had high silt and sand content. These types of soils can also be difficult to work with during the wetter periods of the year, which are historically winter, spring and possibly early summer seasons.
- Existing fill is not suitable for direct support of foundations, floor slabs or pavements.
- If all undocumented existing fill is undercut and replaced with new engineered fill within and at least 5 ft beyond the TLFs perimeters, the TLFs floor slabs-on-grade can be supported on either firm natural soil or new engineered fill overlying firm natural soils.
- If it is decided to support the TLFs on spread footings supported by rammed aggregate columns elements, the TLF Building floor slab-on-grade subgrade should consist of either firm natural soil or a minimum thickness of engineered fill overlying the undocumented fill soils. Where existing undocumented fill soils are encountered within the TLFs footprint, recommend at least 3 ft of new engineered fill be provided beginning at the floor slab subgrade elevation. The partial undercut approach can be considered, provided the risk of "some" long-term settlement of uncontrolled fill left in-place is acceptable.

3.6.3.1 Alternative A, Proposed Action

Land surface at the VQ/TLF project site is flat. Soil erosion would be minimized during construction activities using BMPs in accordance with the Phase I NPDES stormwater 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 effects because disturbed vegetation would be re-established upon completion of construction activities.

3.6.3.2 Alternative B

Similar to Alternative A, Alternative B would result in short-term minor impacts to existing soils during construction. In addition, upon completion of demolition of the seven VQs, the demolition sites would be returned to green space. Alternative B would have no long-term impact on earth resources.

3.6.3.3 Alternative C, No Action

The No Action alternative would have no impact on 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).

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 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.

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 U.S.C. 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.

Seven VQ structures would be demolished under Alternative B. General elements of demolition are presented in Section 2.4.2.1. An ACM survey for each structure would be conducted prior to demolition. Remediation/removal of any ACM identified in these structures would be handled according to the findings of the surveys.

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.

Seven VQ structures would be demolished under Alternative B. General elements of demolition are presented in Section 2.4.2.1. A LBP survey would be conducted, documented, and if discovered, would be remediated/removed from the structure(s) 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 67 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 4 (CHP4), is associated with OU10 and is located more than 1,500 ft northeast of the VQ/TLF 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 Alternative A, Proposed Action

Hazardous Materials

Products containing hazardous materials would be procured and used during construction activities. It is anticipated that the quantity of products containing hazardous materials used during construction would be minimal and use would be of short duration. 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 VQs and TLFs.

Hazardous Wastes

It is anticipated that the quantity of hazardous wastes generated from proposed construction activities would be similar in nature with the baseline condition waste streams. Construction of the VQs and TLFs would not impact the Base's hazardous waste management program. As mentioned above, the known

hazardous wastes identified and encountered by the contractor 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 Alternative A 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 Alternative A would result in minor adverse impacts to hazardous materials/wastes at WPAFB.

Asbestos-Containing Material and Lead-Based Paint

Alternative A would consist of construction activities only. Therefore, no impact to ACM would be expected as no structures would be demolished.

Environmental Restoration Program

Construction activities under Alternative A would result in no impact because there are no ERP sites within 1,500 ft of the proposed project site.

3.7.3.2 Alternative B

Similar to Alternative A, Alternative B would result in minor short-term impacts to hazardous waste and hazardous materials because materials used during construction would not be expected to increase over existing conditions. In addition, minor short-term impact due to hazardous materials/waste generation during demolition of the existing VQs could occur. These materials/wastes would be identified and removed in accordance with WPAFB procedures. No ERP sites are in proximity to the VQ demolition sites. Therefore, there would be no short- or long-term impacts to ERP sites. No short-term impact to ACM or LBP would be expected from Alternative B because surveys would be performed at all VQ structures prior to demolition and materials would be handled according to findings of the survey(s). No long-term impact to hazardous materials storage or waste generation, ACM, or LBP would be expected as a result of implementation of Alternative B.

3.7.3.3 Alternative C, No Action

The No Action alternative would have no impact on hazardous materials storage, waste generation, ACM, LBP, or ERP sites.

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. 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 State Historic Preservation Office (SHPO). Conversely, the Advisory Council on Historic Preservation (ACHP) states that if the "Agency Official determines that there is no undertaking as defined in Section 800.16(y), or there is an undertaking but it is not a type of action that has the potential to cause effects on historic properties, there are no further obligations under Section 106 of the Council's regulations".

3.8.2 Affected Environment

The AF proposes an undertaking to construct a 398 guestroom, 230,500 sf, five-story VQ structure and four TLFs (36 individual units) that would total 39,407 sf. 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 project site is located in an area of previous ground disturbance, is not located in an area of known prehistoric archaeological resources, and no historic facilities would be affected by the proposal to construct the VQs and TLFs. In addition, the previous Green Acres Housing Complex that was demolished in 2009 was not part of a historic district.

According to the WPAFB Cultural Resources Manager, Native American tribes typically notified/consulted for EA's (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) only request notification/consultation when an action involves ground disturbance in areas on-Base that have not been previously disturbed. Since the VQ/TLF project site would be constructed in an area of previous ground disturbance, no consultation with Native American tribes was determined to be warranted. Similar to consultation with Native American tribes, the WPAFB Cultural Resources Manager also determined that no consultation with the SHPO was warranted because the undertaking is not a type of action that has the potential to cause effects on historic properties and the proposed undertaking would be constructed on previously-disturbed ground. 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 five proposed projects, including the VQs and TLFs 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 VQs and TLFs proposal.

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 Alternative A, 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 Alternative A involve construction activities in an area of 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. As such, Alternative A would result in no adverse impact to cultural resources.

3.8.3.2 Alternative B

Similar to Alternative A, Alternative B involves construction activities on land previously disturbed. In addition, seven VQ structures would be demolished; however, none of these structures are identified as eligible for inclusion in the NRHP. Therefore, implementation of Alternative B would have no effect on cultural resources.

3.8.3.3 Alternative C, 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 General Plan (WPAFB 2014a) and provides a brief overview of each infrastructure/utilities component and comments on its existing general condition.

The Air Force made the decision to privatize the drinking water system at WPAFB in August 2017. Privatization of the WPAFB drinking water system will convey the existing drinking water infrastructure as an 'as-is' sale with the awardee (system owner) assuming responsibility for the system. The system owner will be required to follow local, state, and federal laws and regulations. The WPAFB water and wastewater systems are currently undergoing transition but actual privatization is targeted for conveyance to the system owner on December 1, 2018. The natural gas system is targeted for conveyance to the system owner on January 1, 2019.

Electrical Power. Dayton Power & Light 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 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 receives water from the city of Dayton via the Montgomery County Environmental Services.

Pollution Prevention. The Emergency Planning and Community Right-to-Know Act, Pollution Prevention Act of 1990 and several EO's 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 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 construction and demolition debris (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 estimate of 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.

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 Base produces an average of 3.5 million gallons per day of sewage. The overall condition of the system is adequate for the collection of wastewater. The current system is designed to accommodate a Base population that is approximately 50 percent larger.

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 use gas fired unique heating generation.

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. 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 Alternative A, Proposed Action

Utilities were abandoned-in-place at the project site in 2009 when the Green Acres Housing Complex was demolished. The removal of existing underground utilities would be required prior to construction of the VQs and TLFs. Short-term minor impacts would occur due to ground disturbance during trenching. Existing water, sewer, storm sewer, natural gas, power, and/or high-temperature hot water (HTHW) lines would be identified and removed, areas would be backfilled, and any disturbed surfaces would be restored during site preparation. These utility lines would be replaced by new, properly-sized infrastructure.

No long-term adverse impact to existing infrastructure/utilities systems would be expected because the existing usage of public services provided by WPAFB (security forces/fire protection) and utilities would not be expected to increase as compared to overall consumption.

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 and 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, Alternative A would affect routine traffic flow in the area of the project site because portions of the roadway(s) associated with the project site would be removed and new roadways paved. Short-term impacts to traffic in the area of the project site would be minor because the affected roads are not heavily traveled, the majority of traffic in the vicinity is primarily to and from the Medical Center, which would not be directly impacted. Traffic would be re-routed around the construction site with most of the new road being built without affecting existing roadways. It may be necessary to close the road for a short period when the final connections occur. There would be no long-term impact to infrastructure or utilities as a result of Alternative A. In addition, there is no plan to increase assigned military personal as a result of Alternative A since existing VQs and TLFs are in the general vicinity of the proposed location of the new VQs and TLFs. There should be no additional traffic generated on the surrounding roadways network due to the new buildings.

3.9.3.2 Alternative B

Similar to Alternative A, implementation of Alternative B would result in minor impacts to traffic during construction and demolition activities. There would be a negligible long-term impact in traffic in the area of the existing TLFs if they were to be demolished. No long-term impacts to infrastructure or utilities would be expected as a result of Alternative B.

3.9.3.3 Alternative C, 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 or Alternatives.

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 are 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.

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 VQs and TLFs is outside any ESZs. These areas would be identified prior to performing construction activities related to the VQs and TLFs.

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 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 Alternative A, Proposed Action

Fire Hazards and Public Safety

No adverse effects regarding fire hazards or public safety would be expected to occur from constructing the VQs and TLFs. The SOPs for demolition and construction projects would be in place to protect the public.

Munitions and Explosives Safety

No adverse effects due to munitions or explosives safety would be expected to occur from constructing

the VQs and TLFs. The project area is located at safe distances required in the ESZ and ESQD requirements specified in AFMAN 91-201, *Explosive Safety Standards*.

Construction Safety

Potential short-term minor impacts to workers could be expected during construction activities. Implementation of Alternative A 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, 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 Alternative A due to safeguards existing to protect personnel.

Anti-Terrorism/Force Protection

No adverse effects to ATFP would be expected as a result of constructing the VQs and TLFs because the facilities would be constructed within a controlled perimeter on Base. The minimum standoff distance for the new fence would meet ATFP requirements.

3.10.3.2 Alternative B

Similar to Alternative A, implementation of Alternative B would result in potential impact to workers during demolition and construction activities; however, impacts would be minimized by adherence to health and safety regulations and standards.

3.10.3.3 Alternative C, 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 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 2017b). 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 Alternative A, Proposed Action

Alternative A 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 construction activities. Alternative A does not involve changes in off-Base land use; therefore, no impacts on social conditions are expected. No long-term impacts to socioeconomics would be expected as a result of Alternative A.

3.11.3.2 Alternative B

Similar to Alternative A, Alternative B would have a negligible impact on the local workforce and a short-term beneficial impact on the local economy from revenue generated by demolition and construction activities. Alternative B also does not involve changes to off-Base land use and would not impact social conditions. No long-term impacts to socioeconomics would be expected as a result of Alternative B.

3.11.3.3 Alternative C, 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 3-4 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 3-4. 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%
		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%

Census Tract	Area	Subject	Estimates and Percentages	
			Estimate	Percent
		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%
		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 VQs and TLFs project area would 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 VQs and TLFs 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 Alternative A, 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 Alternative A. It is noted that this alternative would only involve construction of the VQs and TLFs on WPAFB property and would only affect on-Base residents and would not affect or be used by the surrounding community.

Potential adverse effects from construction activities for Alternative A would 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 Alternative A 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. Therefore, there would be no adverse effects on environmental justice communities, and no significant impacts would occur from Alternative A.

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

3.12.3.2 Alternative B

Similar to Alternative A, Alternative B would result in no short- or long-term impacts to environmental justice as the proposed demolition and construction activities would occur on-Base and would not impact any disproportionate or low-income communities.

3.12.3.3 Alternative C, 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 CEQs 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 (preferred alternative) would be implemented.

For purposes of the cumulative effects analysis, the approximate timeframe spans from 2020 when project construction would begin and end in 2022 with the completion of the project.

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. The following potential future projects have been identified in the VQ/TLFs 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 2017c).	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
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 (WPAFB 2016c).	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, EA	Repair degraded/failing heating distribution system by replacing it with localized natural gas-fired decentralized boilers (WPAFB 2017d).	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
National Reconnaissance Office, EA	Construction of a 270,000 sf data center facility in Area A.	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 (electrical, water, and sewer).

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 VQ/TLF project area include the construction of a facility for the National Reconnaissance Office (NRO) and Area A Heating

System Decentralization projects due to the proximity. However, the construction projects would be temporary in nature and would not be recurring events. In addition, the timeframes and budgets for each proposed project listed in **Table 4-1** can only be estimated or are uncertain. Although 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 from the decentralization of the heating system. Long-term cumulative impacts from the NRO facility are possible due to the large volume of water needed for cooling (estimated 140,000 gallons per day) and electrical requirements for 60 megawatts of electrical power. Additional capacity would be needed to meet these demands. Therefore, long-term cumulative impacts would not be expected.

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 3.11 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 be below thresholds and it is 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. No long-term cumulative impacts are expected to be contributed by the VQs and TLFs project.

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.

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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
John Banford	WPAFB, EIAP Program Manager	88 CEG/CEIEA
Matthew Craig	WPAFB, Civil Engineering Planning	88 CEG/CENPL
Dan Everson	Ohio Ecological Services Field Office Supervisor, Threatened and Endangered Species	U.S. Fish and Wildlife Service; Columbus, Ohio
Roxanne Farrier	Property Administrator, Huffman Retarding Basin, Floodplain Issues	Miami Conservancy District; Dayton, Ohio
John Kessler	Natural Resources	Ohio Department of Natural Resources; Office of Real Estate; Columbus, Ohio
Christopher A. Pleiman	WPAFB, Utility Systems Engineer	88 CES/CEOER
Kurt Rinehart	Floodplain Issues	Miami Conservancy District; Dayton, Ohio
Sarah Tebbe	Natural Resources	Ohio Department of Natural Resources; Office of Real Estate; Columbus, Ohio
Frederick Tito	WPAFB, Roadways and Traffic	88 CEG/CENMP
Chris Tumbusch	WPAFB, Air Quality Program Manager	88 CEG/CEIEA
Darryn Warner	WPAFB, Natural Resources Program Manager	88 CEG/CEIEA
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Susan Zimmermann	Ohio Ecological Services Field Office	U.S. Fish and Wildlife Service; Columbus, Ohio

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WPAFB 2018b Integrated Contingency Plan. February 2018.

Appendix A

Photo Log

Photographic Documentation

Client:	Wright-Patterson Air Force Base	**Project Number:**	501027
Project Name:	VQ/TLF Construction	**Photographer**:	S. Burns

Photograph No. 1

Date: November 17, 2017

Direction: Northwest

Description: Looking northwest across the project site.

Photograph No. 2

Date: November 17, 2017

Direction: East

Description: Looking east across 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 – 18Jan18
2. MCD Response – 1Feb18

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

January 18, 2018

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 new military personnel housing in Area A at WPAFB (Figure 1). The decision to construct Visiting Quarters and Temporary Lodging Facilities (VQ/TLF) would replace existing aging and degraded housing facilities at WPAFB and would enable the Air Force to continue to provide reasonable housing services to assigned military personnel.

The Base needs to replace its aging, degraded, and repurposed VQ/TLFs, which are sub-standard, nonfunctional, and do not meet the Americans with Disabilities Act (ADA) requirements. Without the new housing, reasonable and functional housing services could not be provided to assigned military personnel at WPAFB.

Proposed Action

The Proposed Action (Alternative A) involves construction of the VQs and TLFs on a 6-acre vacant maintained lawn with numerous trees (Figure 2). The project site previously contained 103 duplex structures referred to as the Green Acres Housing Complex that was demolished in 2009 due to a reduced demand for Base housing and rising maintenance costs. Since the proposed project site is currently a vacant parcel, no demolition activities would be included as part of the Proposed Action (Alternative A).

The VQs would be constructed as a single, slab-on-grade structure, would consist of five stories, would contain a total of 400 guestrooms plus a housekeeping area, and would consist of 230,500 square feet (sf). The proposed TLFs would be constructed slab-on-grade adjacent and northeast of the VQs and would consist of four facilities containing a total of 36 individual units plus a housekeeping area. In addition, two ADA-accessible units would be incorporated into the design of the TLFs. Total square footage for the proposed TLFs would consist of 39,407 sf.

In addition, the following activities would be included as part of the Proposed Action (Alternative A):

- Remove underground utilities that were abandoned-in-place during demolition of the Green Acres Housing Complex.
- Upgrade existing inadequate utilities, including water, steam, electric, natural gas, and stormwater; sewer is adequate.
- Demolish Estabrook Road, located adjacent and south of the proposed project site. In addition, five new entrances into the VQ/TLFs complex, a new roadway south of the complex, and sidewalks would also be constructed.

Alternative B involves completion of Alternative A with the addition of demolishing seven of eight existing VQ structures. The VQs were constructed in 1954 through 1970 with the distinguished visitor's quarters, the most recently upgraded, undergoing a renovation project; this eighth VQ structure would not be demolished as part of Alternative B. Demolition of the VQs would include: environmental surveys prior to demolition to identify and handle hazardous substances, if present, in accordance with WPAFB guidelines; raze structures and systems by conventional demolition; demolish associated parking areas; restore pavement; re-vegetate areas intended for green space; and sever and cap water supply and sanitary sewer lines.

Under the No Action (Alternative C), the VQ/TLFs would not be constructed, which would result in a sub-standard housing inventory at WPAFB. Maintaining the status quo would prevent WPAFB from providing reasonable housing services to assigned military personnel along with being susceptible to down time of several VQ/TLF units and/or the need for additional funds to repair and maintain the units in the buildings that have reached their life expectancy.

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 VQ/TLFs. 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 demolition of the existing VQs or construction activities resulting from construction of the VQ/TLFs 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.

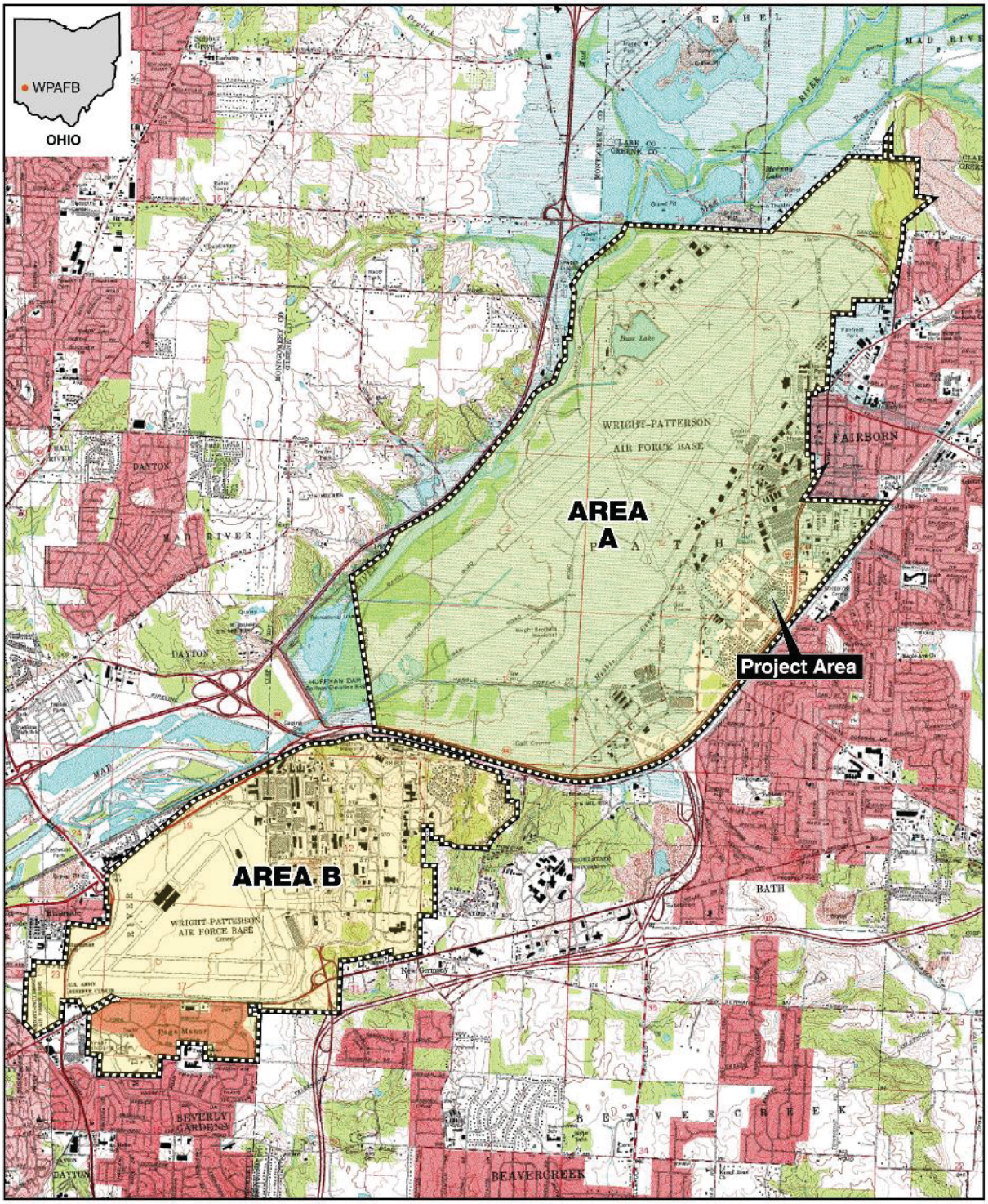
Sincerely,

WARNER.DARRYN.M.1386410808 Digitally signed by WARNER.DARRYN.M.1386410808 Date: 2018.01.24 07:12:34 -05'00'

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 – Visiting Quarters/Temporary Lodging Facilities (VQ/TLF) Site Plan



OFFICE	DATE	DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY	DRAWING NUMBER
Cincinnati, OH	12/8/17	--	JIG	SB	CH	s-501027.0203-12/17-w

WRIGHT-PATTERSON
AIR FORCE BASE
OHIO

FIGURE NUMBER 1

LOCATION OF WPAFB AND SURROUNDING AREA

OFFICE	DATE	DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY	DRAWING NUMBER
Cincinnati, OH	10/3/17	--	JIS	SB	CH	s-501027.0203-12/17-w

WRIGHT-PATTERSON
AIR FORCE BASE
OHIO

FIGURE NUMBER 2

VISITING QUARTERS/ TEMPORARY LODGING FACILITIES (VQ/TLF) SITE PLAN

MCD
MIAMI CONSERVANCY DISTRICT

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

February 1, 2018

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

Re: Huffman Retarding Basin, WPAFB, EA for New Military housing

Dear Mr. Warner:

We have reviewed the Environmental Assessment (EA) to evaluate impacts associated with constructing new military personnel housing 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 actions 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 – 18Jan18**
2. **ODNR Response – 15Mar18**

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

January 18, 2018

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 new military housing in Area A (Figure 1). The decision to construct Visiting Quarters and Temporary Lodging Facilities (VQ/TLF) would replace existing aging and degraded housing facilities at WPAFB and would enable the Air Force to continue to provide reasonable housing services to assigned military personnel.

The Base needs to replace its aging, degraded, and repurposed VQ/TLFs, which are sub-standard, nonfunctional, and do not meet the Americans with Disabilities Act (ADA) requirements. Without the new housing, reasonable and functional housing services could not be provided to assigned military personnel at WPAFB.

Proposed Action

The Proposed Action (Alternative A) involves construction of the VQs and TLFs on a 6-acre vacant maintained lawn with numerous trees (Figure 2). The project site previously contained 103 duplex structures referred to as the Green Acres Housing Complex that was demolished in 2009 due to a reduced demand for Base housing and rising maintenance costs. Since the proposed project site is currently a vacant parcel, no demolition activities would be included as part of the Proposed Action (Alternative A).

The VQs would be constructed as a single, slab-on-grade structure, would consist of five stories, would contain a total of 400 guestrooms plus a housekeeping area, and would consist of 230,500 square feet (sf). The proposed TLFs would be constructed slab-on-grade adjacent and northeast of the VQs and would consist of four facilities containing a total of 36 individual units plus a housekeeping area. In addition, two ADA-accessible units would be incorporated into the design of the TLFs. Total square footage for the proposed TLFs would consist of 39,407 sf.

In addition, the following activities would be included as part of the Proposed Action (Alternative A):

- Remove underground utilities that were abandoned-in-place during demolition of the Green Acres Housing Complex.
- Upgrade existing inadequate utilities, including water, steam, electric, natural gas, and stormwater; sewer is adequate.

- Demolish Estabrook Road, located adjacent and south of the proposed project site. In addition, five new entrances into the VQ/TLFs complex, a new roadway south of the complex, and sidewalks would also be constructed.

Alternative B involves completion of Alternative A with the addition of demolishing seven of eight existing VQ structures. The VQs were constructed in 1954 through 1970 with the distinguished visitor's quarters, the most recently upgraded, undergoing a renovation project; this eighth VQ structure would not be demolished as part of Alternative B. Demolition of the VQs would include: environmental surveys prior to demolition to identify and handle hazardous substances, if present, in accordance with WPAFB guidelines; raze structures and systems by conventional demolition; demolish associated parking areas; restore pavement; re-vegetate areas intended for green space; and sever and cap water supply and sanitary sewer lines.

Under the No Action (Alternative C), the VQ/TLFs would not be constructed, which would result in a sub-standard housing inventory at WPAFB. Maintaining the status quo would prevent WPAFB from providing reasonable housing services to assigned military personnel along with being susceptible to down time of several VQ/TLF units and/or the need for additional funds to repair and maintain the units in the buildings that have reached their life expectancy.

The project is located at an elevation of 832 feet above sea level. The project would be constructed in an area of previous disturbance and tree clearance would be required during site preparation.

The Base has determined that construction of the VQ/TLFs would not affect threatened or endangered species known to occur or to have occurred at WPAFB. This determination is based on significant development having previously occurred (103-unit residential Green Acres Housing Complex) 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,

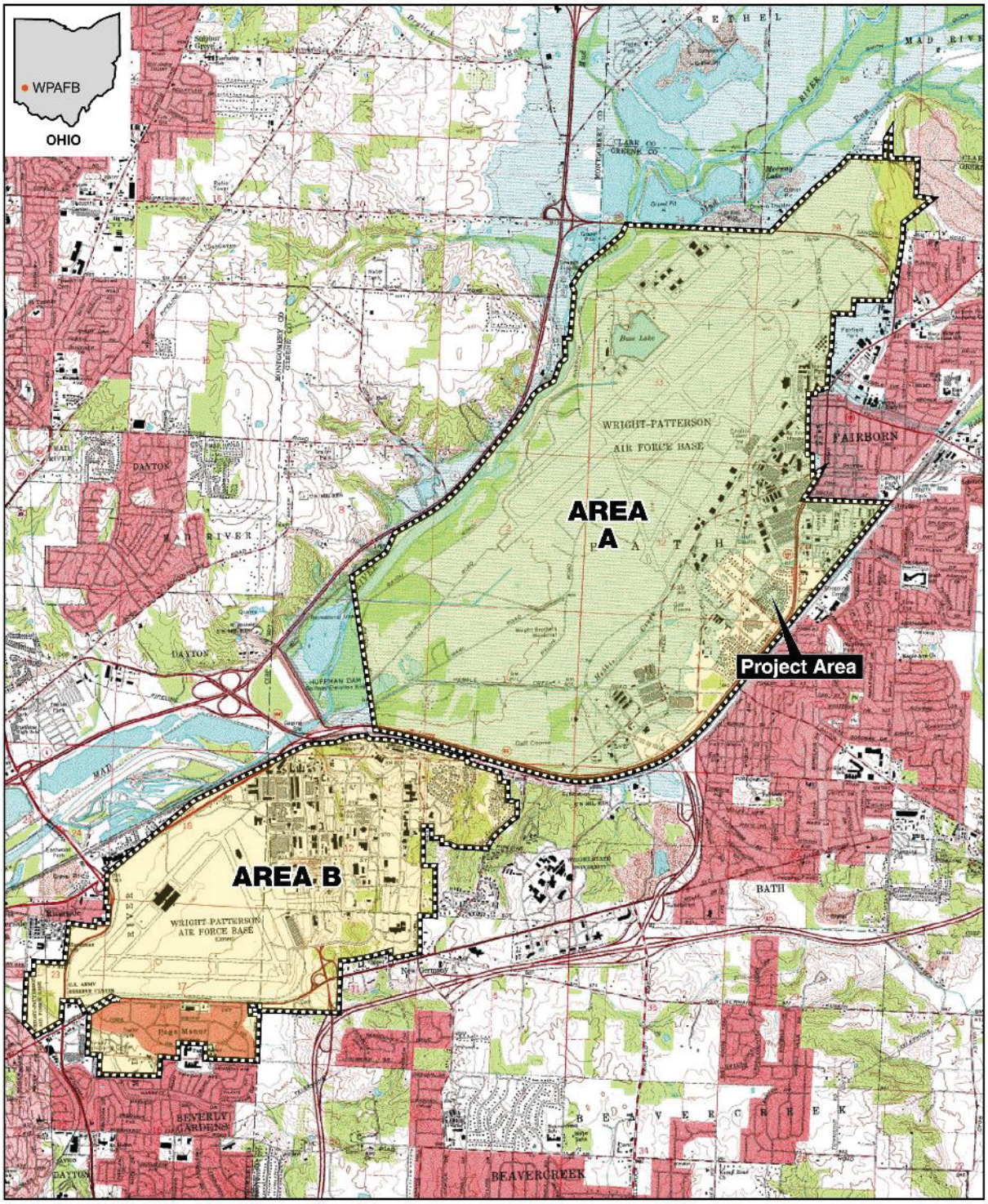
WARNER.DARRYN.M.1386410808

Digitally signed by WARNER.DARRYN.M.1386410808
Date: 2018.01.24 07:28:43 -05'00'

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 – Visiting Quarters/Temporary Lodging Facilities (VQ/TLF) Site Plan



OFFICE	DATE	DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY	DRAWING NUMBER
Cincinnati, OH	12/8/17	--	JIG	SB	CH	s-501027.0203-12/17-w

WRIGHT-PATTERSON
AIR FORCE BASE
OHIO

FIGURE NUMBER 1

LOCATION OF WPAFB AND SURROUNDING AREA

OFFICE	DATE	DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY	DRAWING NUMBER
Cincinnati, OH	10/3/17	--	JIS	SB	CH	s-501027.0203-12/17-w

WRIGHT-PATTERSON
AIR FORCE BASE
OHIO

FIGURE NUMBER 2

VISITING QUARTERS/ TEMPORARY LODGING FACILITIES (VQ/TLF) SITE PLAN

Ohio Department of Natural Resources
DIVISION OF WILDLIFE

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: 18Jan2018 **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: Visiting Quarters / Temporary Lodging Facility (VQ/TLF)

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' 27.9348" / Longitude: West 84 2' 4.4279"

Description of work to be performed at the project site:

Proposed project would include construction of VQs (single structure, five stories, 400 guestrooms, 230,500 total square feet) and TLFs (four structures, 36 individual units, 39,407 total square feet). Both facilities would be constructed slab-on-grade and would include minor utility upgrades (see accompanying letter for additional project details).

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 WARNER.DARRYN.M.1386410808 Digitally signed by WARNER.DARRYN.M.1386410808 Date: 2018.01.24 07:31:39 -05'00' **Date:** 24Jan2018

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

March 15, 2018

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

Re: 18-268; Visiting Quarters and Temporary Lodging Facilities

Project: The proposed project involves construction of Visiting Quarters and temporary lodging facilities to replace existing aging and degraded housing services to assigned military personnel.

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:

Midland sedge (*Carex mesochorea*), State threatened
Upland sandpiper (*Bartramia longicauda*), State endangered

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 – 18Jan18**
2. **USFWS Response – 12Feb18**

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

January 18, 2018

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 new military personnel housing in Area A at WPAFB (Figure 1). The decision to construct Visiting Quarters and Temporary Lodging Facilities (VQ/TLF) would replace existing aging and degraded housing facilities at WPAFB and would enable the Air Force to continue to provide reasonable housing services to assigned military personnel.

The Base needs to replace its aging, degraded, and repurposed VQ/TLFs, which are sub-standard, nonfunctional, and do not meet the Americans with Disabilities Act (ADA) requirements. Without the new housing, reasonable and functional housing services could not be provided to assigned military personnel at WPAFB.

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’ 27.9348”, Longitude West 84° 2’ 4.4279”).

Proposed Action

The Proposed Action (Alternative A) involves construction of the VQs and TLFs on a 6-acre vacant maintained lawn with numerous trees (Figure 2). The project site previously contained 103 duplex structures referred to as Green Acres Housing Complex that was demolished in 2009 due to a reduced demand for Base housing and rising maintenance costs. Since the proposed project site is currently a vacant parcel, no demolition activities would be included as part of the Proposed Action (Alternative A).

The VQs would be constructed as a single, slab-on-grade structure, would consist of five stories, would contain a total of 400 guestrooms plus a housekeeping area, and would consist of 230,500 square feet (sf). The proposed TLFs would be constructed slab-on-grade adjacent and northeast of the VQs and would consist of four facilities containing a total of 36 individual units plus a housekeeping area. In addition, two ADA-accessible units would be incorporated into the design of the TLFs. Total square footage for the proposed TLFs would consist of 39,407 sf.

In addition, the following activities would be included as part of the Proposed Action (Alternative A):

- Remove underground utilities that were abandoned-in-place during demolition of the Green Acres Housing Complex;
- Upgrade existing inadequate utilities, including water, steam, electric, natural gas, and stormwater; sewer is adequate; and
- Demolish Estabrook Road, located adjacent and south of the proposed project site. In addition, five new entrances into the VQ/TLFs complex, a new roadway south of the complex, and sidewalks would also be constructed.

Alternative B involves completion of Alternative A with the addition of demolishing seven of eight existing VQ structures. The VQs were constructed in 1954 through 1970 with the distinguished visitor's quarters, the most recently upgraded, undergoing a renovation project; this eighth VQ structure would not be demolished as part of Alternative B. Demolition of the VQs would include: environmental surveys prior to demolition to identify and handle hazardous substances, if present, in accordance with WPAFB guidelines; raze structures and systems by conventional demolition; demolish associated parking areas; restore pavement; re-vegetate areas intended for green space; and sever and cap water supply and sanitary sewer lines.

Under the No Action (Alternative C), the VQ/TLFs would not be constructed, which would result in a sub-standard housing inventory at WPAFB. Maintaining the status quo would prevent WPAFB from providing reasonable housing services to assigned military personnel along with being susceptible to down time of several VQ/TLF units and/or the need for additional funds to repair and maintain the units in the buildings that have reached their life expectancy.

The project is located at an elevation of 832 feet above sea level. The project would be constructed in an area of previous disturbance and tree clearance would be required during site preparation.

The Base has determined that construction of the VQ/TLFs would not affect threatened or endangered species known to occur or to have occurred at WPAFB. This determination is based on significant development having previously occurred (103-unit residential Green Acres Housing Complex) 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 and eastern massasauga rattlesnake [EMR). However, WPAFB has determined the construction of the VQ/TLFs would have no impact on these species or other threatened or endangered species known to occur or to have occurred at WPAFB because the proposed project site is located in an area of previous disturbance and is currently a maintained grassy lawn 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 VQ/TLF project area. Further, no critical habitat has been designated or proposed for WPAFB.

Because no potential habitat would be disturbed from construction of the VQ/TLFs, no listed species would be directly or indirectly impacted. The trees that would be removed from the proposed project site have not been identified as bat habitat; however, the Air Force will coordinate with the USFWS prior to removing any trees. 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

(Alternative A) 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.

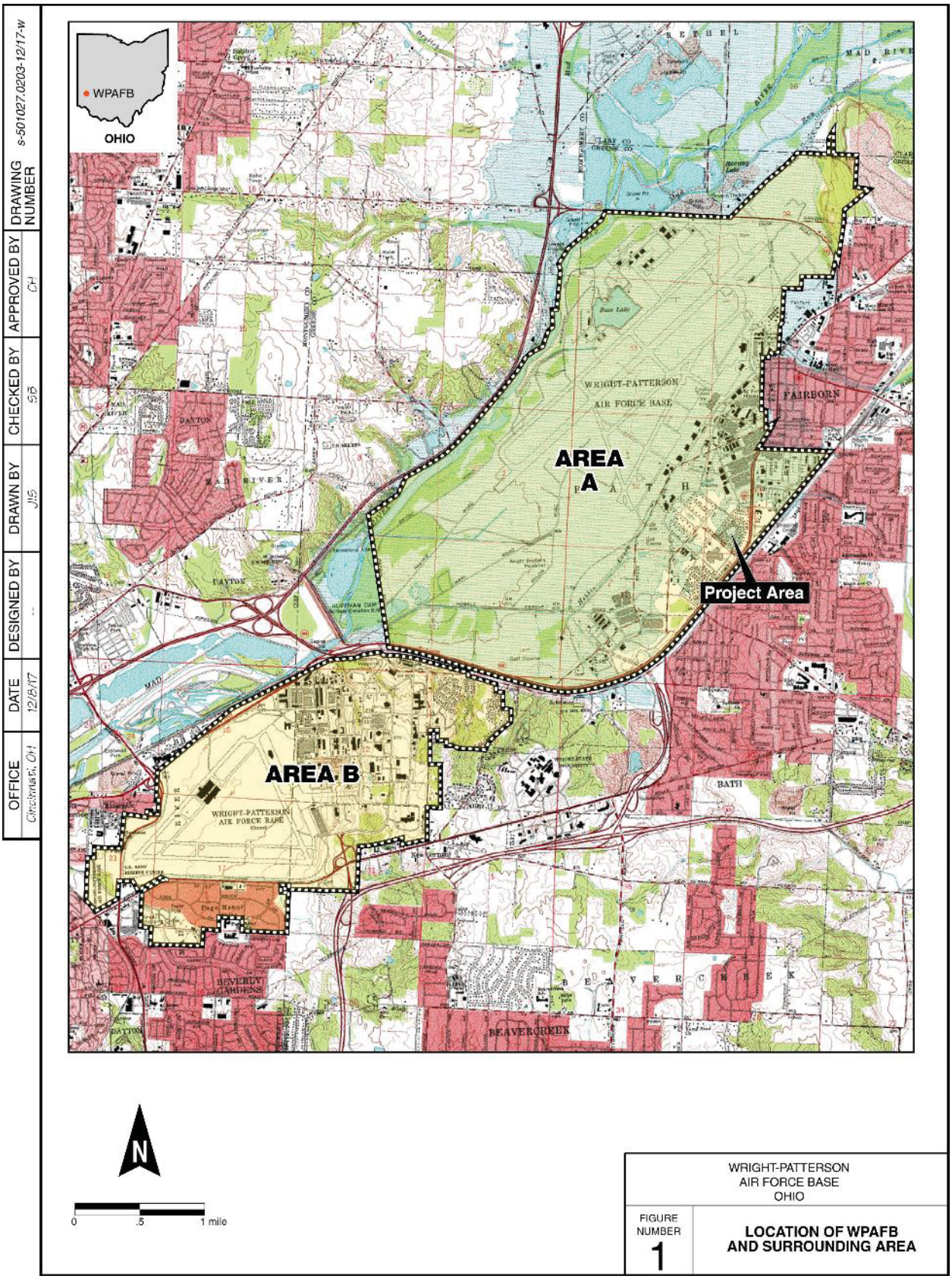
Sincerely

WARNER.DARRYN.M.1386410808 Digitally signed by WARNER.DARRYN.M.1386410808 Date: 2018.01.24 07:16:59 -05'00'

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 – Visiting Quarters/Temporary Lodging Facilities (VQ/TLF) Site Plan


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
12/15/17
DESIGNED BY
DRAWN BY
JLS
CHECKED BY
SB
APPROVED BY
CH
DRAWING NUMBER
s-501027.0203-12/17-w
WRIGHT-PATTERSON
AIR FORCE BASE
OHIO
FIGURE NUMBER
1
LOCATION OF WPAFB
AND SURROUNDING AREA

OFFICE	DATE	DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY	DRAWING NUMBER
Cincinnati, OH	12/18/17	--	JLS	SB	CH	s-501027.0203-12/17-w

WRIGHT-PATTERSON
AIR FORCE BASE
OHIO

FIGURE NUMBER 2

VISITING QUARTERS/ TEMPORARY LODGING FACILITIES (VQ/TLF) SITE PLAN

_____

From: susan_zimmermann@fws.gov [susan_zimmermann@fws.gov] on behalf of Ohio, FW3 [ohio@fws.gov]
Sent: Monday, February 12, 2018 1:36 PM
To: WARNER, DARRYN M NH-03 USAF AFMC 88 CEG/CEIEA
Subject: [Non-DoD Source] Visiting Quarters and Temporary Lodging Facilities WPAFB Area "A"

TAILS# 03E15000-2018-I-0649

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.

FEDERALLY LISTED, PROPOSED, AND CANDIDATE SPECIES COMMENTS: Due to the project, type, size, and location, we do not anticipate adverse effects to 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.

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 Office Supervisor

Native American Tribal Section 106 Consultation:

1. **WPAFB Memorandum for Record – 2May18**

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

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: Visiting Quarters & Temporary Lodging Facility Environmental Assessment

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

d. Projected Action Start Date: 7 / 2018

e. Action Description:

Alternative A (Preferred Alternative): Alternative A involves construction of the VQs and TLFs at WPAFB. The proposed project site consists 25 of a 6-acre vacant parcel with a maintained lawn and numerous trees. The proposed VQ/TLFs would be constructed adjacent to one another on the same 6-acre site. The VQs would be constructed as a single, slab-on-grade structure, would consist of five stories, and would contain a total of 400 guestrooms plus a housekeeping area. The VQs structure would consist of 230,500 square feet (sf). The proposed TLFs would be constructed slab on grade adjacent and northeast of the VQs and would consist of four facilities containing a total of 36 individual units. Two of the four structures would contain 10 standard units each and two structures would contain 8 "pet friendly" standard units each. One of the eight unit structures would also contain a housekeeping area. In addition, two ADA-accessible units would be incorporated into the design. Total square footage for the proposed TLFs would consist of 5 39,407 gross sf.

Alternative B: Alternative B involves completion of Alternative A with the addition of demolishing the existing VQs. Alternative B involves demolition of seven existing VQ buildings. The eighth building, referred to and used as the distinguished visitor's quarters, would not be demolished due to a recent renovation project that was completed on this structure.

Alternative C: No Action Alternative. Under Alternative C (No Action), the VQ/TLFs would not be constructed at WPAFB. By not replacing the current sub-standard housing inventory at WPAFB, failure to provide the VQ/TLFs would maintain the status quo.

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:

2018

Pollutant	Action Emissions (ton/yr)	GENERAL CONFORMITY	
		Threshold (ton/yr)	Exceedance (Yes or No)
Dayton-Springfield, OH			
VOC	1.626	100	No
NOx	10.111	100	No
CO	9.660		
SOx	0.021	100	No
PM 10	52.327		
PM 2.5	0.447	100	No
Pb	0.000		
NH3	0.016	100	No
CO2e	2126.2		

2019

Pollutant	Action Emissions (ton/yr)	GENERAL CONFORMITY	
		Threshold (ton/yr)	Exceedance (Yes or No)
Dayton-Springfield, OH			
VOC	8.658	100	No
NOx	30.379	100	No
CO	30.731		
SOx	0.066	100	No
PM 10	42.920		
PM 2.5	1.412	100	No
Pb	0.000		
NH3	0.040	100	No
CO2e	6589.5		

2020 - (Steady State)

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		

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.

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: Visiting Quarters & Temporary Lodging Facility Environmental Assessment

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

d. Projected Action Start Date: 1 / 2020

e. Action Description:

Alternative A (Preferred Alternative): Alternative A involves construction of the VQs and TLFs at WPAFB. The proposed project site consists 25 of a 6-acre vacant parcel with a maintained lawn and numerous trees. The proposed VQ/TLFs would be constructed adjacent to one another on the same 6-acre site. The VQs would be constructed as a single, slab-on-grade structure, would consist of five stories, and would contain a total of 400 guestrooms plus a housekeeping area. The VQs structure would consist of 230,500 square feet (sf). The proposed TLFs would be constructed slab on grade adjacent and northeast of the VQs and would consist of four facilities containing a total of 36 individual units. Two of the four structures would contain 10 standard units each and two structures would contain 8 "pet friendly" standard units each. One of the eight unit structures would also contain a housekeeping area. In addition, two ADA-accessible units would be incorporated into the design. Total square footage for the proposed TLFs would consist of 5 39,407 gross sf.

Alternative B: Alternative B involves completion of Alternative A with the addition of demolishing the existing VQs. Alternative B involves demolition of seven existing VQ buildings. The eighth building, referred to and used as the distinguished visitor's quarters, would not be demolished due to a recent renovation project that was completed on this structure.

Alternative C: No Action Alternative. Under Alternative C (No Action), the VQ/TLFs would not be constructed at WPAFB. By not replacing the current sub-standard housing inventory at WPAFB, failure to provide the VQ/TLFs would maintain the status quo.

f. Point of Contact:

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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:

2020

Pollutant	Action Emissions (ton/yr)	GENERAL CONFORMITY	
		Threshold (ton/yr)	Exceedance (Yes or No)
Dayton-Springfield, OH			
VOC	2.192	100	No
NOx	14.273	100	No
CO	13.371		
SOx	0.034	100	No
PM 10	73.253		
PM 2.5	0.615	100	No
Pb	0.000		
NH3	0.012	100	No
CO2e	3344.5		

2021 - (Steady State)

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		

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.