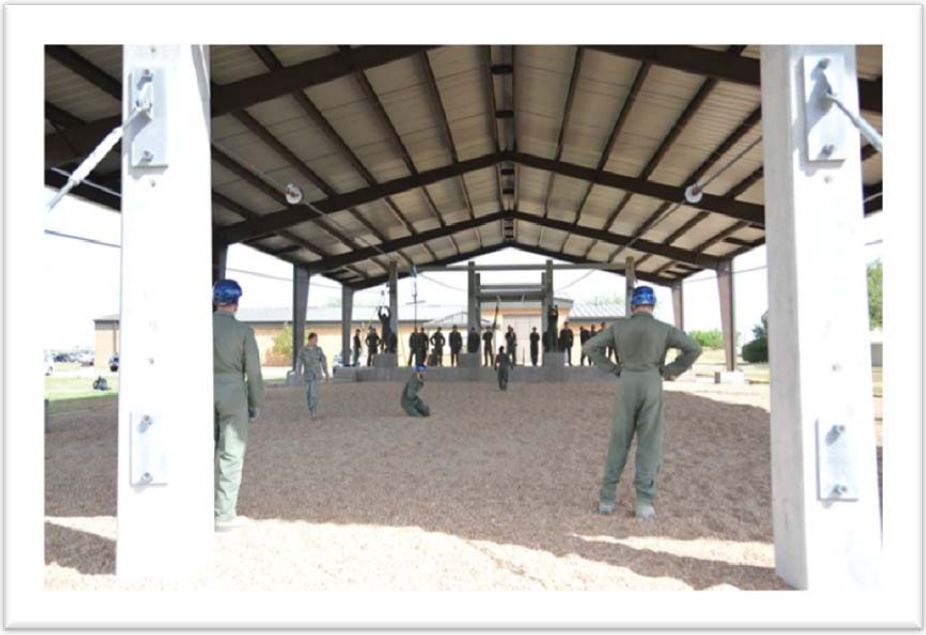
Draft-Final

ENVIRONMENTAL ASSESSMENT
WARFIGHTER TRAINING CENTER
LATERAL DRIFT TRAINING FACILITY

88th CIVIL ENGINEER GROUP



March 2017

Draft Final
Environmental Assessment
Warfighter Training Center – Lateral Drift Training Facility
Wright-Patterson Air Force Base, Ohio

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March 2017

Draft Final

FINDING OF NO SIGNIFICANT IMPACT / FINDING OF NO PRACTICABLE ALTERNATIVE WARFIGHTER TRAINING CENTER – LATERAL DRIFT TRAINING FACILITY WRIGHT-PATTERSON AIR FORCE BASE, OHIO

March 2017

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 a Lateral Drift Training (LDT) Facility in the Warfighter Training Center (WTC) at Wright-Patterson Air Force Base (WPAFB, the Base), Ohio. This EA is incorporated by reference into this finding per 40 CFR 1508.13.

Purpose and Need

The purpose of the action is to provide a locally-accessible academic LDT facility at WPAFB. The installation of a modular LDT facility is needed for students to fulfill their academic requirements. Students enrolled in the U.S. Air Force School of Aerospace Medicine (USAFSAM) are currently required to complete the LDT course on temporary duty (TDY) at Sheppard Air Force Base in Texas. The installation of an LDT facility would enable aerospace physiology instructors to conduct hands-on training at WPAFB that would be similar to that encountered during a military aircraft ejection.

Description of Proposed Action

The Proposed Action involves the installation of a 25 foot (ft) by 125 ft modular steel fabricated shelter to be utilized as an LDT facility. The LDT facility would be sited in an existing gravel parking lot at the WTC in Area A and would provide a safe, realistic military aircraft ejection scenario. Construction activities would involve excavation equipment (concrete and gravel delivery trucks) to dig footings required for the canopy structure, excavation for concrete footings and platforms, installation of support wires anchors, and trenching for on-site electrical. The concrete platform would be 50 ft wide and 7 ft deep; electricity would be run from an existing storage building located adjacent and south of the proposed LDT site. Construction activities would not include ground disturbance beyond the footings and gravel landing area being raked back smooth.

The LDT facility would include hanging harnesses to practice descent under a canopy, concrete platforms to conduct parachute landing falls, and zip lines to practice lateral drift. The proposed training facility would give USAFSAM students a realistic depiction of what it is like to be under canopy.

Students enrolled in the LDT course would be transported to the WTC training site by passenger vans and privately owned vehicles (POVs), would perform the training, then would be returned to USAFSAM in Area B. The frequency and duration of LDT training would be determined by enrollment class size; however, approximately four to five instructors (trainers) would be involved in training and the following number of students per fiscal year would be expected to complete the required training:

- Year 2017 – 48 trainees
- Year 2018 – 37 trainees
- Year 2019 – 36 trainees

The frequency of the LDT exercises is expected to be three times per fiscal year with a duration of 4 hours per training period. Training at the WTC would be conducted from approximately October through February for students enrolled in the fall training session and from approximately June through August for students enrolled in the summer training session.

No-Action Alternative

Under the No Action alternative, the modular LDT facility would not be installed and the deficiency in academic training would continue to be realized. Without the accessibility of an LDT at WPAFB, students would not be able to fulfill their academic requirements locally and would be required to continue the course requirements at Sheppard Air Force Base.

The No Action alternative does not satisfy the purpose and need to provide a locally-accessible academic training facility at WPAFB and would result in continued costs for students to complete the required LDT TDY at Sheppard Air Force Base.

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 involved siting an LDT facility in Area B adjacent to existing USAFSAM. This alternative was eliminated due to the type of training to be conducted at the LDT facility. The WTC is used for 711th Human Performance Wing contingency training and the training to be conducted at the LDT facility must be co-located with existing 711th Human Performance Wing training. Therefore, the alternative to site an LDT facility in Area B or elsewhere at WPAFB was eliminated from further analysis.

Identification of Preferred Alternative

The AF has identified the Proposed Action as the preferred alternative.

Environmental Consequences

Noise (EA Section 3.2): The Proposed Action would result in minor short-term impacts on ambient noise generated from construction-related activities (footing excavation, concrete and delivery trucks) during installation of the LDT facility. Impacts would be minor because construction activities would be carried out during normal working hours, would be short in duration, and would occur within the isolated WTC area at WPAFB. The Proposed Action would result in no long-term adverse impacts to noise. The No Action alternative would have no short- or long-term impacts over current conditions. Therefore, there would be no significant impacts to noise as a result of the Proposed Action or No Action.

Air Quality (EA Section 3.3): The Proposed Action would result in short-term construction-related emissions generated on Base (particulate matter and engine exhaust emissions) would be minor because emissions would be short in duration and would be negligible with respect to overall conditions for the region. In the long-term, emissions would increase over baseline due to student transportation; however, emissions would be negligible. Therefore, there would be no long-term impacts to air quality as a result of the Proposed Action. The No Action alternative would have no short- or long-term impacts over current conditions. Therefore, there would be no significant impacts to air quality as a result of the Proposed Action or No Action.

Water Resources (EA Section 3.4): The Proposed Action would result in no short- or long-term impacts to groundwater or surface water as Best Management Practices (BMPs) for erosion and sedimentation controls would be implemented for construction-related activities during installation of the LDT facility. In addition, the storage capacity of the retarding basin would not be affected; therefore, no impacts to floodplains would be expected as a result of constructing an LDT facility at the WTC. The Miami Conservancy District (MCD) was consulted regarding the Proposed Action. The MCD responded indicating that as the project is located within the Huffman Retarding Basin, it is subject to restrictions set forth by the MCD in Greene County Deed Book 129, Page 146 on December 16, 1922. In addition, the MCD indicated that the proposed project would not adversely affect the retarding basin. The No Action alternative would have no short- or long-term impacts over current conditions. Therefore, there would be no significant impacts to water resources as a result of the Proposed Action or No Action.

Biological Resources (EA Section 3.5): The Proposed Action would result in no short- or long-term adverse impact to vegetation because construction-related activities would take place in a gravel lot in a previously disturbed area with no naturally-occurring vegetation. In addition, the Proposed Action would result in negligible short-term impacts on wildlife and threatened and endangered species because the proposed location for the LDT facility is not located in an area that provides suitable wildlife habitat or any species actively managed at WPAFB, the current land use would not change, and the proposed location is not in close enough proximity to threatened and endangered species to generate noise-related effects from proposed construction activities. The project site is also not located in close proximity to wetlands; therefore, no impacts to wetlands would be expected as a result of the Proposed Action. The No Action alternative would have no short- or long-term impacts to biological resources over current conditions. Therefore, there would be no significant impacts to biological resources as a result of the Proposed Action or No Action.

The Ohio Department of Natural Resources (ODNR) and the U.S. Fish and Wildlife Service (USFWS) were consulted regarding the Proposed Action. The ODNR responded indicating the Natural Heritage Database has the following records at or within a one mile radius of the project area:

- Eastern massasauga, state endangered, federal threatened
- Indiana bat, state and federal endangered
- Dayton Aviation Heritage Park, National Park Service
- Huffman Metropark, Fiver Rivers MetroParks

The ODNR also responded indicating that the Division of Wildlife (DOW) had the following comments:

- *Streams, Wetlands, other Water Resources* – impacts should be avoided/minimized to the fullest possible and BMPs should be utilized to minimize erosion/sedimentation
- *Indiana Bat* – 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
- *Clubshell, Rayed Bean, Snuffbox, Black Sandshell, Fawnsfoot (mussels)* – 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
- *Tonguetied Minnow* – due to the location, and that there is no in-water work proposed in a perennial stream, this project is not likely to impact this or other aquatic species
- *Spotted Turtle* – due to the location, the type of habitat at the project site and within the vicinity of the project area, and the type of work proposed, this project is not likely to impact this species
- *Kirtland's Snake* – due to the location , the type of habitat at the project site and within the vicinity of the project area, and the type of work proposed, this project is not likely to impact this species
- *Eastern Massasauga* – due to the location, the type of habitat at the project site and within the project area, and the type of work proposed, this project is not likely to impact this species
- *Upland Sandpiper* – due to the location, the type of habitat at the project site, and the type of work proposed, this project is not likely to impact this species
- *Northern Harrier* – due to the location, the type of habitat at the project site, and the type of work proposed, this project is not likely to impact this 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 USFWS stated no adverse effects to federally endangered, threatened, proposed, or candidate species would be anticipated.

Earth Resources (EA Section 3.6): The Proposed Action would result in short-term minor impacts to existing soils during installation of the LDT facility. However, impacts would be minimized by implementing BMPs for erosion and sedimentation controls (e.g., silt fencing, straw bales). No long-term impacts are expected from the

Proposed Action. The No Action alternative would have no short- or long-term impacts over current conditions. Therefore, there would be no significant impacts to earth resources as a result of the Proposed Action or No Action.

Hazardous Material/Waste (EA Section 3.7): The Proposed Action would result in no short-or long-term impacts to hazardous materials/waste because no existing structures would be altered, demolished, or otherwise affected during installation of the LDT facility. The quantity of hazardous wastes generated from proposed construction activities would be negligible. In addition, there are no environmental restoration program (ERP) sites within 300 ft of the project area; therefore, no impacts to ERP sites would be expected as a result of the Proposed Action. The No Action alternative 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 the Proposed Action or No Action.

Cultural Resources (EA Section 3.8): The Proposed Action would result in no short- or long-term impacts to cultural resources because no National Register of Historic Places-eligible buildings would be altered, demolished, or otherwise affected. In addition, the proposed location of the LDT facility is located in an area at the WTC with previous ground disturbance. The No Action alternative 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 the Proposed Action or No Action.

The State Historic Preservation Office (SHPO) and the following Native American Tribes were consulted regarding the Proposed Action: Cherokee Nation, Keweenaw Bay Indian Community, Sac and Fox of the Mississippi in Iowa, Saginaw Chippewa Indian Tribe, Oklahoma Seneca Cayuga Nation, and Seneca Nation of Indians. The SHPO responded indicating the project would have no effect on historic properties because there are no known historic properties within the area of potential effect and because the project area has been previously surveyed and disturbed. The Seneca Nation of Indians responded indicating they concur with the findings that the proposed project would have no effect on historic properties. The WPAFB Cultural Resources Manager does not anticipate responses from the remaining Native American Tribes.

Infrastructure/Utilities (EA Section 3.9): The Proposed Action would result in no short- or long-term impacts to infrastructure or utilities because the LDT facility would occur within an isolated area at WPAFB. The No Action alternative would have no short- or long-term impacts over current conditions. Therefore, there would be no significant impacts to infrastructure/utilities as a result of the Proposed Action or No Action.

Safety and Occupational Health (EA Section 3.10): The Proposed Action could result in potential minor impact to workers during construction activities. Impacts would be minimized by adherence to health and safety regulations and standards. The Proposed Action would have no long-term adverse impact to the safety or occupational health of construction workers. The No Action alternative 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 the Proposed Action or No Action.

Socioeconomics (EA Section 3.11): The Proposed Action would result in a short-term negligible impact on the local workforce and a beneficial impact on the local economy from revenue generated by construction activities. The Proposed Action would have long-term beneficial impacts due to cost savings resulting from the ability to provide training locally. The No Action alternative would have no short-term impacts over current conditions. In the long-term, however, there would be minor adverse impacts due to continued costs associated with the training out-of-state. There would be no significant adverse impacts to socioeconomics as a result of the Proposed Action or No Action.

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

Agency Consultation

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

Public Notice

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

Finding of No Significant Impact (FONSI)

The Proposed Action involves installing a modular LDT facility at the WTC at WPAFB. The installation of an LDT facility at WPAFB would allow 711th Human Performance Wing/USAFSAM students to complete the required LDT course at a locally-accessible facility. Under the No Action alternative, 711th Human Performance Wing/USAFSAM students would be required to continue to complete the LDT TDY at Sheppard Air Force Base. Based upon my review of the facts and analysis contained in the EA, which is hereby incorporated by reference, I conclude that the Proposed Action would not have a significant impact on the natural or human environment. An environmental impact statement is not required for this action. This analysis fulfills the requirements of NEPA, the President's Council on Environmental Quality, and 32 CFR 989.

Finding of No Practicable Alternative (FONPA)

Taking the above information into consideration under authorization delegated by the Secretary of the AF, I find there is no practicable alternative to constructing the LDT facility at the WTC. The Proposed Action includes all practicable measures to minimize harm to the natural environment. This finding fulfills the requirement of the AF EA Process (32 CFR 989.14) for a FONPA.

_____ Date: _____

NAME

TITLE

COVER SHEET

ENVIRONMENTAL ASSESSMENT
WARFIGHTER TRAINING CENTER – LATERAL DRIFT TRAINING FACILITY
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: Install a modular lateral drift training facility in the Warfighter Training Center 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 install a modular lateral drift training facility within the Warfighter Training Center to provide a locally-accessible academic training facility at WPAFB. The analysis in the EA considers the Proposed Action (Preferred Alternative) and the No Action Alternative, and will aid in determining whether a Finding of No Significant Impact/Finding of No Practicable Alternative can be prepared or whether an Environmental Impact Statement is needed.

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3D	3D International
ABW	Air Base Wing
ACHP	Advisory Council on Historic Preservation
ACM	Asbestos-Containing Material
AFB	Air Force Base
AF	Air Force
AFCE	Air Force Civil Engineer
AFH	Air Force Handbook
AFI	Air Force Instruction
AFMAN	Air Force Manual
AFMC	Air Force Materiel Command
AFPD	Air Force Policy Directive
AHU	Air Handling Unit
AICUZ	Air Installation Compatible Use Zone
AIM	Architectural and Industrial Maintenance
APE	Area of Potential Effect
APZ	Accident Potential Zone
AQCR	Air Quality Control Region
AST	Above-ground Storage Tank
ATFP	Anti-Terrorism/Force Protection
AW	Airlift Wing
BGS	Below Ground Surface
BHE	BHE Environmental, Inc.
BMP	Best Management Practice
BMP/LTM	Basewide Monitoring Program/Long Term Monitoring
BS	Burial Site
BTU	British Thermal Unit
CAA	Clean Air Act
CATEX	Categorical Exclusion
CDA	Chemical Disposal Area
CDC	Centers for Disease Control and Prevention
CE	Civil Engineer
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
CENMP	Civil Engineer Project Management Branch
CEQ	Council on Environmental Quality
CES	Civil Engineer Squadron
CFR	Code of Federal Regulations
CO	Carbon Monoxide
CO_2e	Carbon Dioxide Equivalents
CWA	Clean Water Act
CZ	Clear Zone
DB	Decibel
DBA	A-weighted Sound Level Measurement
DDC	Direct Digital Control
DLSME	Defense Land Systems and Miscellaneous Equipment
DNL	Day-night Average A-weighted Sound Level
DoD	Department of Defense
DoE	Department of Energy
DOW	Division of Wildlife
EA	Environmental Assessment
ECM	Energy Conservation Measure
EFDZ	Earthfill Disposal Site
EIAP	Environmental Impact Analysis Process
EIFS	Economic Impact Forecast System
EIS	Environmental Impact Statement
EMR	Eastern Massasauga Rattlesnake
EO	Executive Order
ERP	Environmental Restoration Program
ESA	Endangered Species Act
ESCO	Energy Service Company
ESPC	Energy Savings Performance Contract
ESQD	Explosive Safety Quantity Distance
ESZ	Explosive Safety Zone
°F	Degrees Fahrenheit
FEMA	Federal Emergency Management Agency
FONSI	Finding of No Significant Impact
FT	Feet
FY	Fiscal Year
GHG	Greenhouse Gas
GPM	Gallons Per Minute
GSGS	Ground-Source Geothermal System
GWOU	Groundwater Operable Unit
GWP	Global Warming Potential
HAPs	Hazardous Air Pollutants
HAZMART	Hazardous Material Pharmacy
HPW	Human Performance Wing
HTHW	High Temperature Hot Water
HVAC	Heating Ventilation and Air-conditioning
ICRMP	Integrated Cultural Resources Management Plan
IDIQ	Indefinite Delivery/Indefinite Quantity
IGA	Investment Grade Audit
IICEP	Interagency and Intergovernmental Coordination for Environmental Planning
INRMP	Integrated Natural Resources Management Plan
IRP	Installation Restoration Program
IT	IT Corporation
LBP	Lead-based Paint

LDT	Lateral Drift Training/Trainer
LF	Landfill
LTM	Long-term Monitoring
LTHW	Low Temperature Hot Water
$\mu g/m^3$	Micrograms Per Cubic Meter
MA	Metropolitan Area
MACT	Maximum Achievable Control Technology
MBtu/yr	Thousand British Thermal Units per Year
MCD	Miami Conservancy District
mg/m^3	Milligrams Per Cubic Meter
MSL	Mean Sea Level
NAAQS	National Ambient Air Quality Standards
NASIC	National Air and Space Intelligence Center
NATO	North Atlantic Treaty Organization
NEPA	National Environmental Policy Act
NESHAP	National Emission Standards for Hazardous Air Pollutants
NGS	National Geodetic Survey
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
NSR	New Source Review
O_3	Ozone
O&M	Operation and Maintenance
OAC	Ohio Administrative Code
ODH	Ohio Department of Health
ODNR	Ohio Department of Natural Resources
OEPA	Ohio Environmental Protection Agency
OHI	Ohio Historic Inventory
ORC	Ohio Revised Code
OSHA	Occupational Safety and Health Administration
OU	Operable Unit
Pb	Lead
PBR	Permit-by-rule
$PM_{2.5}$	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
POVs	Privately-owned Vehicles
ppb	parts per billion
ppm	parts per million
PSD	Prevention of Significant Deterioration
RACM	Reasonably Available Control Measure
RI	Remedial Investigation
SARA	Superfund Amendments and Reauthorization Act
SEL	Sound Exposure Level
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 and Control and Countermeasures
SR	State Route
SWMP	Storm Water Management Plan
SWPPP	Storm Water Pollution Prevention Plan
TDY	Temporary Duty
TMDL	Total Maximum Daily Load
tpy	tons per year
UEC	Unit Environmental Coordinator
UFC	United Facilities Code
U.S.	United States
USAF	United States Air Force
USAFSAM	United States Air Force School of Aerospace Medicine
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
USGS	U.S. Geological Survey
UST	Underground Storage Tank
VOC	Volatile Organic Compound
WPAFB	Wright-Patterson Air Force Base
WTC	Warfighter Training Center

1.0 Purpose and Need for Action

1.1 Introduction

The United States (U.S.) Air Force (AF) proposes to install a modular lateral drift training (LDT) facility within the Warfighter Training Center (WTC) at Wright-Patterson Air Force Base (WPAFB, the Base), Ohio. 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.

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

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

This EA is organized into 7 sections, plus appendices. **Section 1** provides historical and background information, the project location, and the purpose of and need for the Proposed Action. **Section 2** contains a description of the Proposed Action and the No Action Alternative. **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 the preparers of 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** and **B** include agency coordination and air quality calculations, respectively.

1.2 Purpose of the Action

The purpose of the Proposed Action is to provide a locally-accessible academic LDT facility at WPAFB so that students can meet the Aerospace and Operational Physiology career field training requirement.

1.3 Need for the Action

The installation of a modular LDT facility is needed to provide enlisted initial skills students with the 12 hours of required hands-on training (e.g., hanging harness procedures, drag procedures, parachute landing falls) to fulfill their academic requirement. Without the installation of an LDT facility at WPAFB, students would be required to complete this course requirement at the nearest military base that provides the training, which is located at Sheppard Air Force Base in Texas. Students enrolled in the U.S. Air Force School of Aerospace Medicine (USAFSAM) at WPAFB (approximately 35 to 50 students per year) are required to complete the LDT course on temporary duty (TDY) at Sheppard Air Force Base (AF 2016). The installation of an LDT facility would enable aerospace physiology instructors to conduct hands-on training that would be similar to that encountered during a military aircraft ejection.

1.4 Decision to be Made

This EA presents the AF proposal to install a modular LDT facility within the WTC at WPAFB. The decision to install the LDT would enable WPAFB to provide a locally-accessible training facility to WPAFB students.

If the analyses presented in the EA indicate that implementation of the Proposed Action would not result in significant environmental impacts, a Finding of No Significant Impact/Finding of No Practicable Alternative (FONSI/FONPA) would be prepared. A federal action occurring within a flood zone requires a FONPA. A FONSI/FONPA briefly presents reasons why a Proposed Action would not have a significant effect on the human environment and why an EIS is unnecessary. If significant environmental issues would result that cannot be mitigated to insignificance, an EIS would be required, or the Proposed Action would be abandoned and no action would be taken.

1.5 Cooperating Agency and Intergovernmental Coordination / Consultations

The NEPA requirements help ensure environmental information is made available to the public during the decision-making process and prior to an action's implementation. The Intergovernmental Coordination Act and Executive Order (EO) 12372, *Intergovernmental Review of Federal Programs*, requires federal agencies to cooperate with and consider territorial and local views when implementing a federal proposal.

As mandated by 40 CFR 1501.4(b), "The agency shall involve environmental agencies, applicants, and the public, to the extent possible, in preparing assessments required by Section 1508.9(a)(1)", WPAFB is undertaking this EA, and public involvement is required as part of the analysis process. For this EA, public involvement includes notifying local, state, and federal agencies, elected officials, and the public about the Proposed Action and alternatives; soliciting agency and public comments and issues with 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 Proposed Action 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. Intergovernmental consultation was conducted with the following agencies: Miami Conservancy District (MCD), Ohio Department of Natural Resources (ODNR), U.S. Fish and Wildlife Service (USFWS), State Historic Preservation Office (SHPO), and Native American Tribes. The notification process provides these stakeholders with the opportunity to cooperate with WPAFB and provide comments on the Proposed Action. Coordination with these agencies is presented in **Appendix A** of the EA.

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

2.0 Description of the Proposed Action

The installation of an LDT facility at WPAFB would be used to provide enlisted initial skills students with the required hands on training completion of hanging harness procedures, drag procedures, and parachute landing falls. This would meet the Aerospace and Operational Physiology career fields' 3-level skills requirement for personnel assigned to units that perform undergraduate pilot training. The LDT would provide a safe, realistic military aircraft ejection scenario (Sheppard 2013).

An LDT facility includes hanging harnesses to practice descent under a canopy, concrete platforms to conduct parachute landing falls, and zip lines to practice LDT. The proposed training facility would give USAFSAM students a realistic depiction of what it is like to be under canopy.

2.1 Proposed Action (Preferred Alternative)

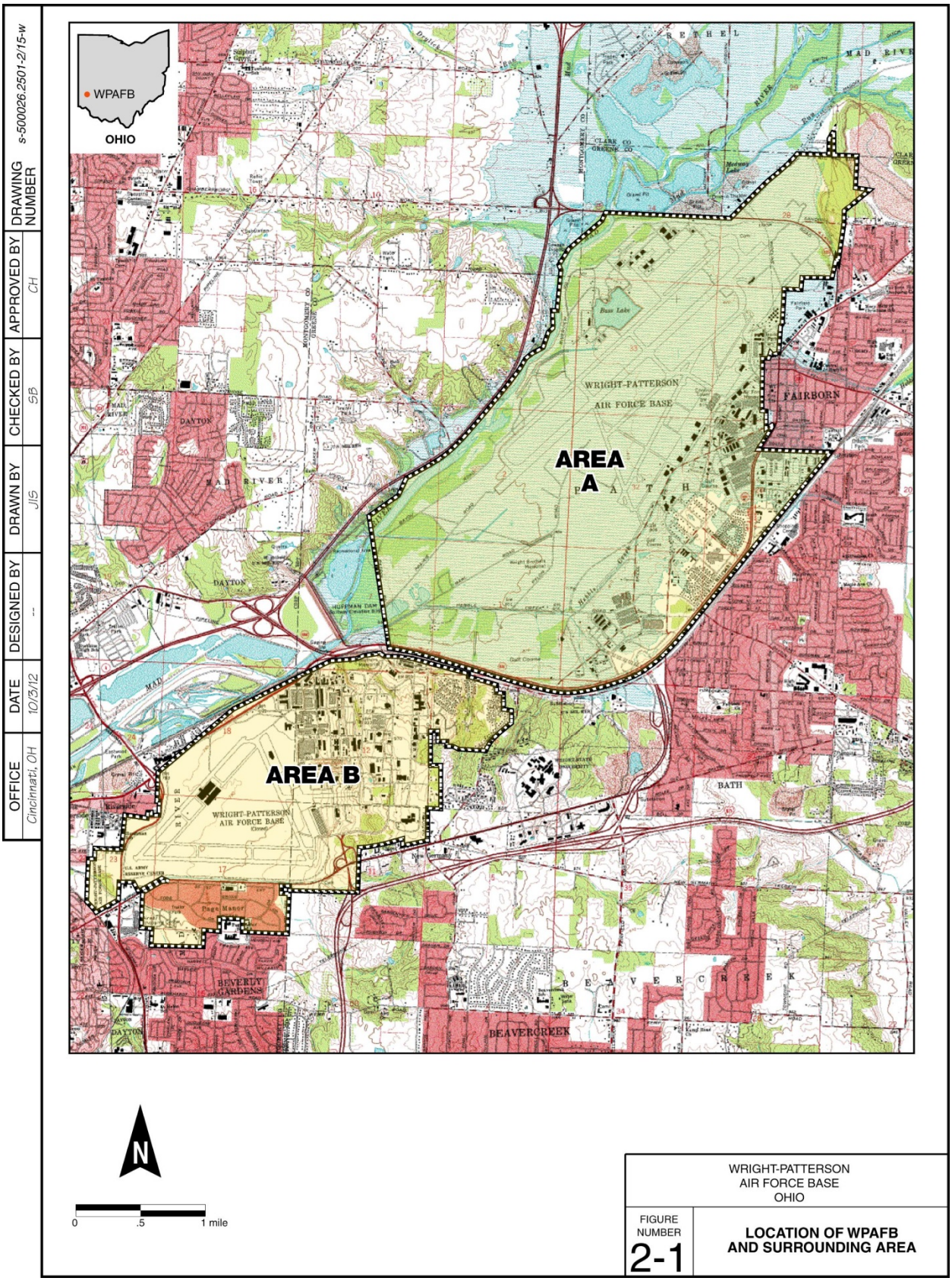
The Proposed Action involves the installation of a 25 foot (ft) by 125 ft modular LDT facility within the WTC located in Area A at WPAFB. **Figure 2-1** presents WPAFB and the surrounding area. **Figure 2-2** presents the proposed location for the LDT within the WTC.

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 two areas: Areas A and B. Area A consists primarily of administrative offices and contains an active airfield. Area B is located across State Route (SR) 444 to the southwest of Area A and consists primarily of research and development as well as educational functions.

2.2 Selection Standards

The standards used to determine potential sites were grounded primarily in the mission objectives of the training facility, the need or efficiency gained from locating this training facility in proximity to facilities with related or similar missions, and the avoidance of potential conflicts with adjacent facilities. Secondarily, siting considered the objectives of minimizing environmental impacts, reducing impacts to the existing population, such as not increasing traffic congestion, and site improvement costs, including necessary utilities.

An EA was performed in 1998 to address the cumulative impacts of training exercises at the WTC (WPAFB 2008a). The 1998 EA assessed placing restrictions on training activities at the WTC to approximately 20 acres of disturbed areas, which encompassed the WTC. The commitment to restrict training areas to 20 acres would allow military training exercises to continue while minimizing adverse impacts to aquatic, terrestrial, and wetland habitats and to archaeological sites. In accordance with this


WPAFB
OHIO
AREA A
AREA B
WRIGHT-PATTERSON AIR FORCE BASE
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BEAVERCREEK
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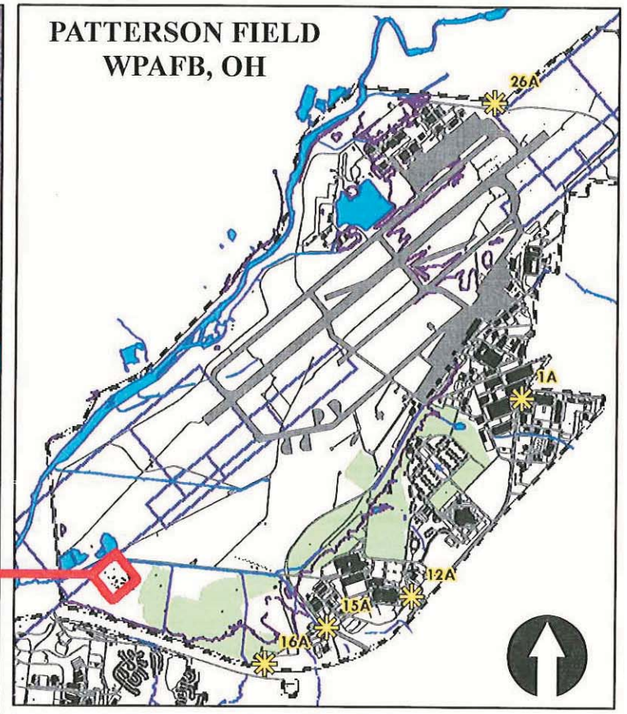
DESIGNED BY --
DRAWN BY JLS
CHECKED BY SB
APPROVED BY CH
DRAWING NUMBER s-500026.2501-2/15-w
WRIGHT-PATTERSON AIR FORCE BASE OHIO
FIGURE NUMBER 2-1
LOCATION OF WPAFB AND SURROUNDING AREA

1

OFFICE	DATE	DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY	DRAWING NUMBER
Cincinnati, OH	8/10/16	--	JIG	SB	CH	s-500026.0303-8/16-w



- Proposed Lateral Drift Trainer Facility Location
- Accident Potential Zones (APZs) & Clear Zones
- 100-Year Flood Plain
- Existing Facility
- Existing Fence
- Entry Control Points (ECPs)/Gates
- Water
- Golf Course
- Installation Boundary

WTC Warfighter Training Center

Source: 88CEG/CENPL

WRIGHT-PATTERSON
AIR FORCE BASE
OHIO

FIGURE NUMBER 2-2

LATERAL DRIFT TRAINING FACILITY LOCATION

commitment, training associated with the inbound missions being conducted at the WTC would be restricted to disturbed areas.

Project objectives are described below in more detail. In evaluating alternative sites for the Proposed Action, the AF considered whether each location met the following standards:

- **Using Organization Mission Requirements.** Building space to meet training needs is located in facilities dedicated or primarily used for training support for ease of use by military personnel as well as to provide a larger capacity in a consolidated location.

- **Planning and Environmental Requirements.** The WPAFB General Plan, the Integrated Natural Resources Management Plan (INRMP) (WPAFB 2015), and the Integrated Cultural Resources Management Plan (ICRMP) (WPAFB 2011a) were the primary sources for providing operational and natural, cultural, and environmental constraints: operational synergies; infrastructure capacity; compatible land use availability; and potential impact to current capital improvements plans.

2.3 Screening of Alternatives

Development of reasonable alternatives involved discussions with representatives of the 88th Civil Engineer Group (CEG) Installation Management Division, Environmental Assets Section in the Environmental Branch (88 CEG/CEIEA) and the Civil Engineer Project Management Branch (88 CEG/CENPL) to identify a Proposed Action. Several requirements were identified in order to fulfill the purpose of the Proposed Action at WPAFB.

2.4 Detailed Description of the Alternatives

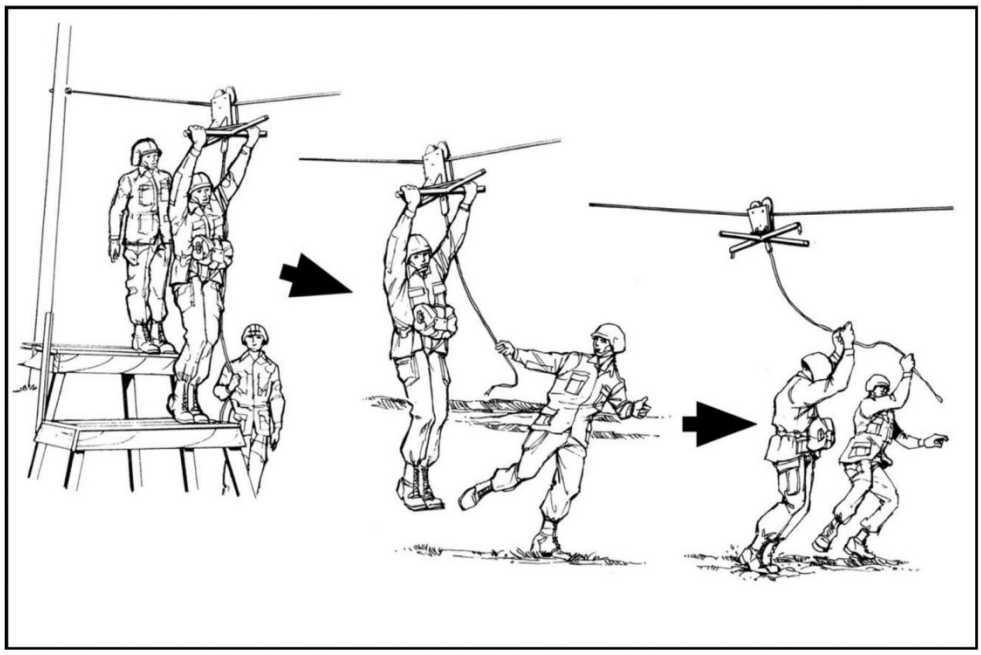
This section describes the Proposed Action and the No Action alternative.

2.4.1 Proposed Action

The Proposed Action (Preferred Alternative) involves the installation of a 25 ft x 125 ft modular steel fabricated building to be utilized as an LDT facility.

A lateral drift apparatus is utilized for parachute landing techniques education and training (**Figure 2-3**). A lateral drift apparatus requires a parachutist, a ropeman, and a safety officer. A safety officer is positioned on the top step of the platform to catch the trolley when it is returned by a ropeman, who is located at the base of the platform. A parachutist mounts the platform, grasps the bar with palms facing toward the face, and assumes a good landing attitude. On a command to clear the platform, the parachutist maintains a grasp on the trolley with both hands, picks up his feet, and drifts off the platform. On the command, "land", the parachutist releases the bar and executes (Army 2013).

OFFICE	DATE	DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY	DRAWING NUMBER
Cincinnati, OH	8/10/16	--	JLS	SB	CH	s-500026.0303-8/16-w



Source: Department of the Army

WRIGHT-PATTERSON
AIR FORCE BASE
OHIO

FIGURE NUMBER 2-3

LATERAL DRIFT TRAINING APPARATUS

1

The LDT would be constructed as a steel shelter and would be sited in an existing gravel parking lot. Construction activities would involve excavation equipment (concrete and gravel delivery trucks) to dig footings required for the canopy structure. Excavation would be conducted for concrete footings and platforms. Construction activities would also include the installation of support wires anchors and trenching for on-site electrical. The planned concrete platform is 50 ft wide and 7 ft deep. Electricity would be run from an existing storage building located adjacent and south of the proposed LDT site. No ground disturbance would occur other than raking the gravel landing area back to smooth after use.

The USAFSAM students would be transported via Base transportation to the WTC training area, would perform the approximate 4 hour LDT exercises, then would be returned to the USAFSAM facility in Area B or would be returned to non-prior service dorms.

Approximately four to five instructors (trainers) would be involved in training at the LDT facility. The following number of students per fiscal year would be expected to complete the required training at the LDT facility at WPAFB:

- Year 2017 – 48 trainees
- Year 2018 – 37 trainees
- Year 2019 – 36 trainees

The frequency of the LDT exercises is expected to be three times per fiscal year with a duration of four hours per training period. Training at the WTC would be conducted from approximately October through February for students enrolled in the fall training session and from approximately June through August for students enrolled in the summer training session.

2.4.2 No Action Alternative

Under the No Action Alternative, the modular LDT facility would not be installed at WPAFB and the deficiency in academic training would continue to be realized. Without the accessibility of an LDT at WPAFB, the students would not be able to fulfill their academic requirements locally and would be required to continue the course requirements at Sheppard Air Force Base in Texas.

Although the No Action Alternative does not satisfy the purpose and need to provide a locally-accessible academic training facility at WPAFB, it is included in the environmental analysis to provide a baseline for comparison with the Proposed Action and is analyzed in accordance with CEQ regulations for implementing NEPA.

Although the No Action Alternative would eliminate unavoidable adverse, short- and long-term impacts associated with the Preferred Alternative (Proposed Action), the No Action Alternative would not satisfy selection standards established for this project, resulting in continued costs for students to train on TDY at

Sheppard Air Force Base.

2.5 Alternatives Eliminated from Further Consideration

The AF initially considered a broad range of potential environmental impacts associated with the implementation of the Proposed Action and alternatives. The scope of the Proposed Action and alternatives is limited, however, and does not entail land use changes or other activities evaluated in NEPA analysis that routinely lead to environmental impacts. Because of the limited nature of activities being proposed, the potential for environmental impacts on many of the environmental resource areas normally evaluated in an EA in detail, does not exist for this proposal. In accordance with CEQ guidance, all environmental resources were initially considered, but some were subsequently eliminated from further consideration early in the EA if a determination was made that there was no potential for impacts.

In addition to the Proposed Action, other alternatives were evaluated to determine if they could meet the need of providing a locally-accessible training facility at WPAFB. This alternative was found to be infeasible or unreasonable and, therefore, eliminated from detailed consideration:

- Siting the LDT facility in Area B adjacent to existing USAFSAM was rejected due to the type of training to be conducted. The WTC is used for 711 Human Performance Wing (711 HPW) contingency training, and the training to be conducted at the LDT must be co-located with existing 711 HPW training.

2.6 Comparison of Environmental Consequences

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

Table 2-1. Comparison of Environmental Consequences

Affected Environment	Proposed Action	No Action
Noise	Short-Term: Minor impacts on ambient noise would be expected from construction-related activities during installation of the LDT facility. Impacts would be minor because construction activities would be carried out during normal working hours, would be short in duration, and would occur in the isolated WTC on Base.	Short-Term: No impact.
	Long-Term: No adverse impact.	Long-Term: No impact.
Air Quality	Short-Term: Construction-related air emissions generated on Base (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.	Short-Term: No impact.
	Long-Term: Although emissions would increase over baseline due to student transportation, emissions would be negligible. Therefore, no long-term impacts to air quality would be expected.	Long-Term: No impact.
Water Resources		
Groundwater	Short-Term: No adverse impact.	Short-Term: No impact.
	Long-Term: No adverse impact.	Long-Term: No impact.
Surface Water	Short-Term: No adverse impact as Best Management Practices (BMPs) for erosion and sedimentation controls would be implemented for construction-related activities during installation of the LDT facility.	Short-Term: No impact.
	Long-Term: No impact.	Long-Term: No impact.
Floodplains	Short-Term: No adverse impact. The storage capacity of the retarding basin would not be affected. The MCD has concurred that the proposed project would not adversely affect the retarding basin.	Short-Term: No impact.
	Long-Term: No adverse impact.	Long-Term: No impact.
Biological Resources		
Vegetation	Short-Term: No adverse impact because construction-related activities would take place on a gravel lot in a previously disturbed area with no naturally-occurring vegetation.	Short-Term: No impact.
	Long-Term: No adverse impact.	Long-Term: No impact.
Wildlife	Short-Term: Negligible impact on wildlife as the proposed location for the LDT facility is not located in an area that provides suitable wildlife habitat; the current land use would not change, and the proposed location is not in close enough proximity to any threatened or endangered species to generate noise-related effects from proposed construction activities.	Short-Term: No impact.
	Long-Term: No adverse impact.	Long-Term: No impact.
Threatened and Endangered Species	Short-Term: Negligible impact on threatened and endangered species because the proposed location for the LDT facility is not located in an area that provides suitable habitat for any threatened or endangered species actively managed at WPAFB.	Short-Term: No impact.
	Long-Term: No adverse impact.	Long-Term: No impact.
Wetlands	Short-Term: No impact as the proposed location for the installation of the LDT facility is not in close proximity to wetlands.	Short-Term: No impact.

Affected Environment	Proposed Action	No Action
Wetlands (cont.)	Long-Term: No impact.	Long-Term: No impact.
Earth Resources	Short-Term: Minor impact to existing soils during installation of the LDT facility; impacts would be minimized by implementing BMPs for erosion and sedimentation controls. Long-Term: No impact.	Short-Term: No impact. Long-Term: No impact.
Hazardous Materials/Waste Hazardous Materials/Waste Asbestos-Containing Material (ACM) and Lead-Based Paint (LBP) Environmental Restoration Program (ERP)	 Short-Term: No impact because no existing structures would be altered, demolished, or otherwise affected during installation of the LDT facility. The quantity of hazardous wastes generated from proposed construction activities would be negligible. Long-Term: No impact. Short-Term: No impact because no existing structures would be altered, demolished, or otherwise affected during installation of the LDT facility. Long-Term: No impact. Short-term: No impact because no Environmental Restoration Program (ERP) sites are located in proximity (within 300 ft) of the proposed location of the LDT facility. Long-term: No impact.	 Short-Term: No impact. Long-Term: No impact. Short-Term: No impact. Long-Term: No impact. Short-Term: No impact. Long-term: No impact.
Cultural Resources	Short-Term: No impact because no National Register of Historic Places (NRHP)-eligible buildings would be altered, demolished, or otherwise affected during installation of the LDT facility. In addition, the proposed location of the LDT facility is located in an area at the WTC with previous ground disturbance. Long-Term: Same as short-term.	Short-Term: No impact. Long-Term: No impact.
Infrastructure / Utilities	Short-Term: No adverse impact because the proposed location of the LDT facility would occur within an isolated area at the WTC and would not have an impact on existing infrastructure or utilities. Long-Term: No impact.	Short-Term: No impact. Long-Term: No impact.
Safety and Occupational Health	Short-Term: Potential minor impact to workers during construction activities. Impacts would be minimized by adherence to health and safety regulations and standards. Long-Term: No adverse impact.	Short-Term: No impact. Long-Term: No impact.
Socioeconomics	Short-Term: Negligible impact on local workforce. Beneficial impact on local economy from revenue generated by construction activities. Long-Term: Beneficial impact due to cost savings resulting from the ability to provide training locally.	Short-Term: No impact. Long-Term: Minor adverse impact due to continued costs associated with training in Texas.

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

3.0 Affected Environment and Environmental Consequences

3.1 Scope of the Analysis

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

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

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

Thresholds of change for the intensity of impacts are defined as follows:

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

3.1.1 Resources Analyzed

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

3.1.2 Resources Eliminated from Detailed Analysis

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

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

- *Land Use*. Proposed project activities would not result in any changes to existing land use designations at WPAFB. Therefore, there would be no impacts to land use.

- *Transportation.* Proposed project activities would not result in any changes to or overburden the existing transportation system at WPAFB.

- *Environmental Justice*. The EO 12898, *Federal Action 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 Proposed Action would not adversely change or impact any minority or low-income communities associated with the Base. Therefore, there would be no impacts to environmental justice.

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

- *Public Services*. The Proposed Action would not result in changes in the use of or demand from public services (e.g., schools, police, fire department, emergency medical services) on or adjacent to 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 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 (USDOT 1980). The DNL is the metric used by the AF in determining noise impacts of military airfield operations for land use planning.

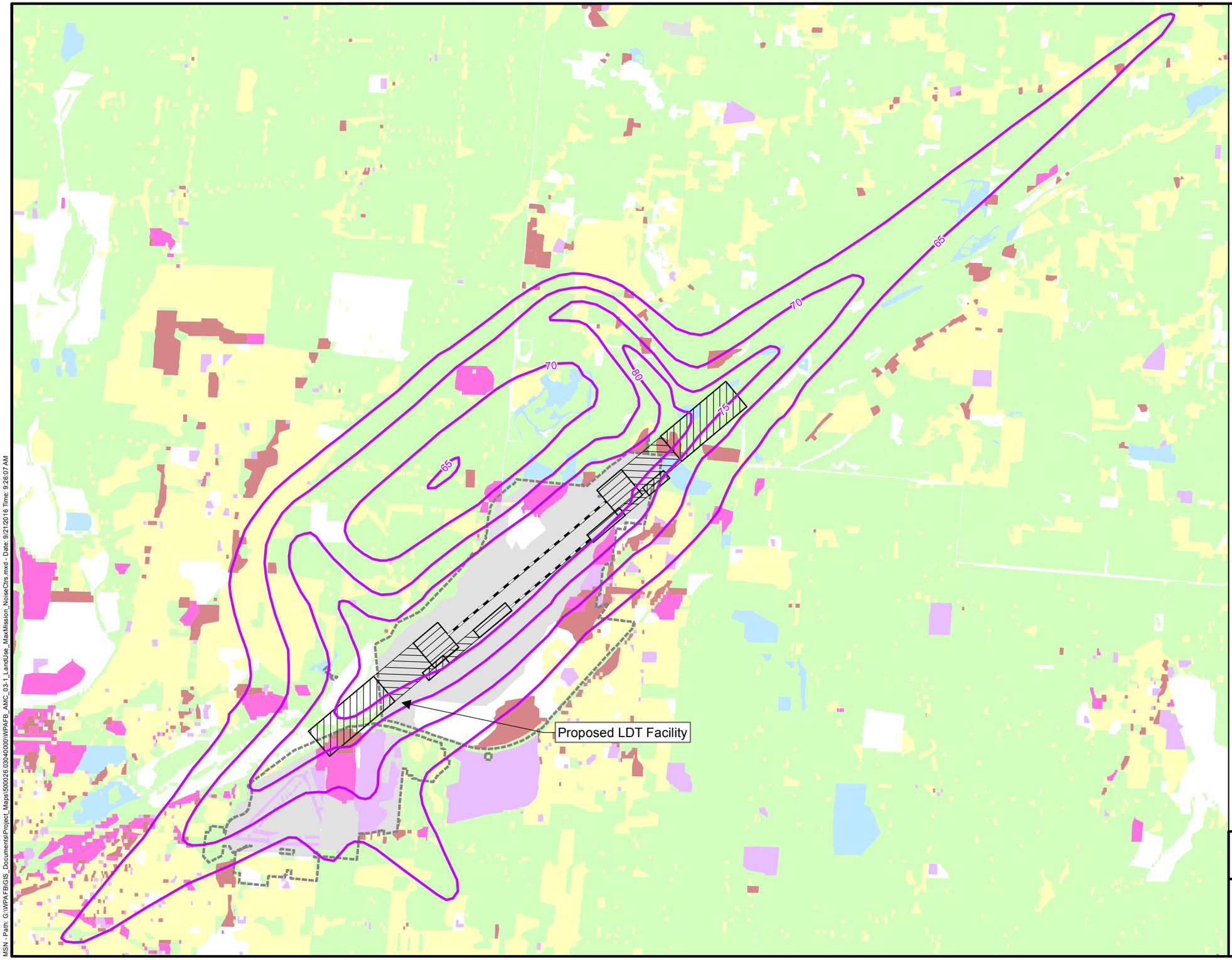
The AF land use compatibility guidelines (relative to DNL values) are documented in the *AICUZ Program Handbook* (USAF 1999). Four noise zones are used in the Air Installation Compatible Use Zone (AICUZ) studies to identify noise impacts from aircraft operations. These noise zones range from DNL of 65 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).

3.2.2 Affected Environment

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

Because the Maximum Mission Scenario noise contours have been, and are currently, used for noise compatibility planning around the Base, these contours are used as the baseline for the noise analysis in this EA. **Figure 3-1** depicts the baseline noise contours presented in the 1995 AICUZ Study (WPAFB 1995a).



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

LDT = Lateral Drift Training

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

Feet

0 3,000 6,000 12,000

WRIGHT-PATTERSON AIR FORCE BASE, OHIO

Figure 3-1
Existing Land Use and Maximum Mission Noise Contours at WPAFB

MSN - Path: G:\WPAFB\GIS_Documents\Project_Maps\500226.03040001\WPAFB_AMC_03-1_LandUse_MaxMission_NoiseCtrs.mxd - Date: 9/21/2016 Time: 9:26:07 AM

No noise-sensitive receptors were identified in the AICUZ. There have been no recent complaints regarding aircraft noise. According to the AICUZ study, the WTC project site is located within a 75 to 80 dB noise range (**Figure 3-1**).

This range represents existing conditions to which the potential noise levels from construction activities associated with constructing the LDT facility 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 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 Proposed Action

Implementation of the Proposed Action would have minor, temporary effects on the noise environment near the LDT project site. Noise impacts would result from the use of construction equipment and trucks.

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. Noise associated with construction equipment would be comparatively minor and would be isolated (i.e., the WTC is not located near any regularly occupied/inhabited buildings). The proposed LDT project site is located in a noise zone ranging from 75 dB to 80 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 2012).

Workers involved in construction activities would likely be affected by construction-related noise. 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). The nearest structures to the proposed LDT project site would be those within the WTC and adjacent to the construction site, which are located at distances greater than 50 ft from the project site. In addition, none of the existing WTC structures are inhabited/occupied on a regular basis and are only used for training purposes. Thus, there would be minor short-term adverse impacts from noise in the construction work area for workers. Noise levels would be expected to be more intense in the immediate construction work area; however, effects would be minimized because workers would be responsible for adhering to health and safety regulations. No long-term adverse noise impacts would result from the Proposed Action.

3.2.3.2 No Action

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

3.3 Air Quality

3.3.1 Definition of the Resource

In accordance with federal Clean Air Act (CAA) requirements, the air quality in a given region is measured by the concentration of various pollutants in the atmosphere. The measured levels of these "criteria pollutants" found in ambient air are expressed in units of parts per million (ppm) or in units of 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 pollutant sources in an area, but also the surface topography, size of the "air basin," and prevailing meteorological conditions.

The CAA directed the USEPA to develop, implement, and enforce strong environmental regulations that would ensure clean and healthy ambient air quality. To protect public health and welfare, the USEPA developed numerical concentration-based standards, known as National Ambient Air Quality Standards (NAAQS), for pollutants that have been determined to impact human health and the environment. The USEPA established both primary and secondary NAAQS under the provisions of the CAA. The NAAQS are currently established for six criteria air pollutants: ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), particulate matter (including 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 $\mu g/m^3$)	Primary and Secondary
1-hour average[1]	0.100 ppm	(188 $\mu g/m^3$)	Primary
Ozone (O_3)			
8-hour average[2]	0.070 ppm	(137 $\mu g/m^3$)	Primary and Secondary
Lead (Pb)			
3-month average[3]		0.15 $\mu g/m^3$	Primary and Secondary
Particulate < 10 micrometers (PM_{10})			
24-hour average[4]		150 $\mu g/m^3$	Primary and Secondary

Pollutant	Standard Value [6]		Standard Type
Particulate < 2.5 micrometers ($PM_{2.5}$)			
Annual arithmetic mean[4]		12 µg/m³	Primary
Annual arithmetic mean[4]		15 µg/m³	Secondary
24-hour average[4]		35 µg/m³	Primary and Secondary
Sulfur Dioxide (SO_2)			
1-hour average[5]	0.075 ppm	(196 µg/m³)	Primary
3-hour average[5]	0.50 ppm	(1,307 µg/m³)	Secondary

Notes:

1 In February 2010, USEPA established a new 1-hr standard at a level of 0.100 ppm, based on the 3-year average of the 98th percentile of the yearly distribution concentration, to supplement the existing annual standard.

2 Final rule signed October 1, 2015. And effective December 28, 2015. The previous (2008) O_3 standards additionally remain in effect in some areas. Revocation of the previous (2008) O_3 standards and transitioning to the current (2015) standards will be addressed in the implementation rule for the current standards. In March 2008, the USEPA revised the level of the 8-hour standard to 0.075 ppm based on the 3-year average of the annual fourth-highest daily maximum 8-hour concentration.

3 In November 2008, USEPA revised the primary lead standard to 0.15 µg/m³. USEPA revised the averaging time to a rolling 3-month average, not to be exceeded.

4 In December 2012, USEPA revised the level of the annual $PM_{2.5}$ primary standards to 12 µg/m³ and retained the secondary level of the annual $PM_{2.5}$ standard at 15 µg/m³ and retained the level of the existing 24-hour $PM_{2.5}$ standard. With regard to primary standards for particle generally less than or equal to 10 µm in diameter (PM_{10}), USEPA retained the 24-hour standard and revoked the annual PM_{10} standard.

5 In June 2010, USEPA established a new 1-hr SO_2 standard at a level of 75 parts per billion (ppb), based on the 3-year average of the annual 99th percentile of 1-hour daily maximum concentrations. The USEPA also revoked both the existing 24-hour and annual primary SO_2 standards.

6 Parenthetical value is an approximately equivalent concentration for CO, NO_2, O_3 and SO_2.

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

The 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, nitrogen oxides (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 must 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 require USEPA approval. 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 draft general conformity regulations. These regulations are designed to ensure that federal actions do not impede local efforts to achieve or maintain attainment with the

NAAQS. The General Conformity Rule found in 40 CFR 93 exempt certain federal actions from conformity determinations (e.g., contaminated site cleanup and natural disaster response activities). Other federal actions are 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 status that USEPA has assigned to a region for each NAAQS. Once the net change in nonattainment pollutants is 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, or 25 tpy of any combination of hazardous air pollutants. 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 USEPA modified the definition of major stationary sources beginning in 2011 to include sources with the potential to emit greenhouse gases (GHG) in excess of 100,000 tpy carbon dioxide equivalents (CO_2e); however, the U.S. Supreme Court vacated GHG applicability under the Title V program on June 23, 2014. 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

The GHGs are gases that trap heat in the atmosphere. These emissions are generated by natural processed and human activities. The accumulation of GHGs in the atmosphere helps regulate the earth's temperature and is believed to contribute to global climate change. The GHGs include water vapor, CO_2, methane, nitrous oxide, O_3, and several hydrocarbons and chlorofluorocarbons. Each GHG has an estimated global warming potential (GWP), 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 a particular gas

provides a relative basis for calculating its CO_2e or 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.

Executive Order 13514, *Federal Leadership in Environmental, Energy, and Economic Performance* provides strategic guidance to federal agencies in the management of GHG emissions. On February 18, 2010, the CEQ released *Draft NEPA Guidance on Consideration of the Effects of Climate Change and Greenhouse Gas Emissions*. This guidance advises federal agencies to consider, in scoping their NEPA analysis, whether analysis of the direct and indirect GHG emissions from their proposed actions may provide meaningful information to decision makers and the public. If a proposed action would be reasonably anticipated to cause direct emissions of 25,000 metric tons or more of CO_2e GHG emissions on an annual basis, agencies should consider this an indicator that a quantitative and qualitative assessment may be meaningful to decision makers and the public. The CEQ does not propose this as an indicator of a threshold of significant effects, but rather as an indicator of a minimum level of GHG emission that may warrant some description in the appropriate NEPA analysis for agency actions involving direct emissions of GHGs. The CEQ also notes this indicator serves as a minimum standard for reporting emissions under the CAA. Specific sources are required to report certain GHG annual emission levels to the USEPA under 40 CFR Part 98 mandating GHG reporting regulations.

3.3.2 Affected Environment

Regional Climate

The climate of this 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

Under the authority of the CAA and subsequent regulations, the USEPA has divided the country into geographical regions known as Air Quality Control Regions (AQCRs) to evaluate compliance 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.

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The Base is located in Greene and Montgomery counties, which are located in 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 was formerly classified as an attainment/maintenance area for the 2008 8-hour O_3 standard (USEPA 2012a) and is proposed to be

attainment/maintenance for the 2015 8-hour O_3 (OEPA 2016); attainment for the NO_2 annual standard and unclassifiable/attainment for the new 1-hour standard NO_2 (USEPA 2012b); attainment for the SO_2 3-hour standard and unclassifiable/attainment for the new 1-hour standard (USEPA 2013); and attainment for the Pb and CO standards.

The ambient air quality for $PM_{2.5}$ is classified as attainment for the 24-hour standard and re-designated to attainment/maintenance for the annual standard. For the new annual $PM_{2.5}$ NAAQS, the OEPA submitted a report in December 2013 recommending that Montgomery and Greene counties be designated as "unclassified/attainment" (OEPA 2013). This designation was approved by the USEPA effective April 15, 2015 (USEPA 2015).

Air quality is typically good in the vicinity of 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 jurisdiction 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. Of these, approximately 1,050 are included in the Base's Title V permit application, which was originally submitted to the OEPA in February 1996 in accordance with CAA requirements. Many of the Title V sources are categorized as insignificant, including emergency generators, small boilers, and laboratory fume hoods. There were 29 permitted significant emissions units identified in the original application, most of which were boilers and paint spray booths. The OEPA finalized the Title V Operating Permit for WPAFB in January 2004 with an effective date of February 17, 2004 (OEPA 2004). A Title V renewal permit application was submitted to the OEPA in May 2008 and is currently under review. The Title V renewal application notified OEPA that the number of permitted significant emission units was reduced from 29 to 26. A revision to the Title V renewal application was submitted to OEPA on September 11, 2013 to include the coal-to-gas fuel conversion project at the Base central heating plants and again in 2015 to remove GHG emission operational requirements. A preliminary proposed Title V renewal permit was issued on November 30, 2016. It is anticipated that the final permit would be issued after 45 days.

Lateral Drift Training Facility

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 Hazardous Air Pollutant and not more than 20 percent of an applicable major source threshold. The addition of insignificant sources are handled as routine administrational changes to the Title V permit through air profile updates submitted through Air Services to the OEPA, Division of Air Pollution Control. Newly constructed buildings are not typically identified as insignificant activities, but may contain stationary sources that qualify as insignificant activities, such as heating boilers or emergency generators. The proposed LDT facility does not include insignificant activities. Should this change, all air sources associated with the project must be identified by the Base 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.

3.3.3 Environmental Consequences

The environmental consequences to local and regional air quality conditions near a proposed federal action are determined based upon 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 3.2, the area including WPAFB is classified as a moderate maintenance area for O_3 and $PM_{2.5}$, and is designated as an unclassified/attainment area for all other criteria pollutants.

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

The primary tool used to evaluate air impacts from federal actions is the application of the Air Conformity Rule. Because WPAFB is located in an area designated as attainment/ maintenance for O_3 and $PM_{2.5}$, a conformity applicability analysis is required to determine whether the Proposed Action is subject to the Air Conformity Rule. The AF has developed an Air Conformity Applicability Model (ACAM) to assist with this determination. The results from the ACAM for the Proposed Action can be found in **Appendix B**.

Effects on air quality would be considered insignificant and, therefore, subject to an evaluation to determine compliance with the General Conformity Rule, if:

- The proposed federal action does not relate to transportation plans, programs, and projects developed, funded, or approved under Title 23 U.S.C. or the Federal Transit Act, and
- The Proposed Action-related direct and indirect emissions exceed *de minimis* threshold levels established in 40 CFR 93.153(b) for individual nonattainment pollutants or for pollutants for which the area has been re-designated as a maintenance area.

The *de minimis* threshold emission rates were established by the USEPA in the General Conformity Rule to focus analysis requirements on those federal actions with the potential to have "significant" air quality impacts. **Table 3-2** presents these thresholds, by regulated pollutant. These *de minimis* thresholds are similar, in most cases, to the definitions for major stationary sources of criteria and precursors to criteria pollutants under the CAA's NSR Program (CAA Title I). As shown in **Table 3-2**, *de minimis* thresholds vary depending on the severity of the nonattainment area classification.

Table 3-2. Conformity *de minimis* Emission Thresholds

Pollutant	Status	Classification	*de minimis* Limit (tpy)
Ozone (measured as NO_x or VOCs)	Nonattainment	Extreme	10
		Severe	25
		Serious	50
		Moderate/marginal (inside ozone transport region)	50 (VOCs)/100 (NO_x)
		All others	100
	Maintenance	Inside ozone transport region	50 (VOCs)/100 (NO_x)
		Outside ozone transport region	100
Carbon Monoxide (CO)	Nonattainment/ maintenance	All	100
Particulate Matter (PM_{10})	Nonattainment/ maintenance	Serious	70
		Moderate	100
		Not applicable	100
Particulate Matter ($PM_{2.5}$)	Nonattainment/ maintenance	Direct Emissions	100
		SO_2 precursors	100
		NO_x precursors	100
Sulfur Dioxide (SO_2)	Nonattainment/ maintenance	Not applicable	100
Nitrogen Oxides (NO_x)	Nonattainment/ maintenance	Not applicable	100

Source: 40 CFR 93.153 (b)
tpy: tons per year

In addition to the *de minimis* emission thresholds, 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)]. Although PSD rules apply only to stationary sources of emissions, for the purposes of this EA, such an impact to a Class I area would be considered adverse.

Air Quality Regulations Applicable to the Proposed Action

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 may include grading and trenching activities that have the potential to generate noticeable amounts of dust particles larger in size than PM_{10}, reasonably available control measures (RACM) should be employed by the general contractor to minimize the impact to the neighboring community. The RACM can include, but are not limited to:

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

Architectural and Industrial Maintenance Coating Regulations. The OAC rule 3745-113, Architectural and Industrial Maintenance (AIM) Coatings, applies to any person who supplies, sells, offers for sale, or manufactures any AIM coating for use within the state of Ohio, as well as any person who applies or solicits the application of any AIM coating within the state of Ohio. At a minimum, the coating specifications for construction activities 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 information and comparison purposes. As previously indicated, the CEQ guidance indicates the reference point of 25,000 metric tons of direct CO_2 equivalent (CO_2e) GHG emissions provides agencies with a useful indicator. The GHG emissions were estimated using CO_2e off-road equipment and on-road vehicle emission factors provided in the ACAM. Under the Proposed Action, the temporary CO_2e emission levels were estimated at approximately 122 metric tons (134 long tons) during construction and 21 metric tons (23 long tons) annually for the Proposed Action. These GHG emission levels fall below the CEQ guidance reference point for warranting further consideration.

Conformity. Because a maintenance area for two criteria pollutants are affected by the Proposed Action, the AF must comply with the federal General Conformity Rule. An analysis has been completed to ensure that, given the changes in direct and indirect emissions of the O_3 precursors (NO_x and volatile organic compounds [VOCs]), direct $PM_{2.5}$, and $PM_{2.5}$ precursors (SO_2 and NO_x), the Proposed Action would be in conformity with CAA requirements. The Conformity Determination requirements specified in this rule can be avoided if the project nonattainment pollutant rate increase resulting from the Proposed Action is below *de minimis* threshold levels for each nonattainment pollutant. For purposes of determining conformity in these attainment/maintenance areas, projected regulated pollutant emissions associated with the Proposed Action were estimated using ACAM. The emissions calculations and *de minimis* threshold comparisons are presented in the ACAM report provided in **Appendix B**.

Based on a review of the proposed construction of the LDT facility at WPAFB, it has been determined that the potential sources of $PM_{2.5}$, SO_2, NO_x and VOC pollutant emissions associated with the Proposed Action include (1) construction, grading, and trenching activities and (2) vehicular traffic emissions from worker commuter motor vehicles, material deliveries by truck, and student transportation services. Worst case emissions were based on very conservative construction activity estimates derived from engineering judgment. In order to prepare the most conservative emission estimates, these calculations assume that all project construction activities would be completed within one year, while all future student transportation would be from the highest volume possible. The scope of the analysis was limited to those operations or activities that result in emissions that would be directly or indirectly attributable to the implementation of the Proposed Action. The General Conformity Rule 40 CFR 93.153(d)(1) does not require a conformity determination for the portion of an action that includes major or minor new or modified stationary sources that require a permit.

3.3.3.1 Proposed Action

Direct and Indirect Emissions

Construction Activities. Under the Proposed Action, a canopy type building would be constructed in an existing gravel lot and would include a poured concrete foundation and a concrete pad covering a portion of the canopy floor. The interior of the facility would include a constructed wooden platform and electrical service would be supplied from an existing nearby building via an underground trench. Assumptions used for each activity as inputs to the ACAM emission estimation modules are identified in **Appendix B**.

Construction activities would result in emissions of criteria pollutants from the equipment engine exhaust and particulate matter emitted as fugitive dust from trenching/grading activities and the movement of material and equipment. Additionally, vehicle emissions from the delivery trucks are included along with worker commuter emissions. Because each module in the ACAM only includes the number of workers operating the equipment, a separate category for transient worker commuting was included to account for those contractors providing miscellaneous services. Additionally, VOC emissions may result from any

painting or surface coating needed for the project. All the criteria pollutant emissions from the construction activities would be temporary.

Transportation Services. The Proposed Action also includes future permanent emission of criteria pollutants from vehicles transporting students from facilities in Area B to the LDT facility in Area A. The total emissions for the Proposed Action are summarized for each project in **Table 3-3**.

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

Air Pollutant Emissions Source	VOC Emissions (tpy)	NO_x Emissions (tpy)	CO Emissions (tpy)	PM_{10} Emissions (tpy)	$PM_{2.5}$ Emissions (tpy)	SO_2 Emissions (tpy)
Proposed Action (Preferred Alternative)						
Calendar Year 2017	0.221	0.643	0.774	0.090	0.029	0.001
Calendar Year 2018 and Annual	0.028	0.027	0.290	0.001	0.001	0.000
General Conformity *de minimis* Levels	100	100	N/A	N/A	100	100
Exceeds *de minimis* Level	No	No	N/A	N/A	No	No

Note: Tpy = tons per year

Analysis. The information presented in **Table 3-3** shows that NO_x, VOC, SO_2, $PM_{2.5}$ and other criteria pollutant emissions are projected to temporarily increase for project construction activities in the first year of implementation of the Proposed Action. The second year and each year thereafter, emissions would increase from baseline due to student transportation, however, emissions would be negligible. Comparing **Table 3-3** to the *de minimis* levels in **Table 3-2**, the Proposed Action would not exceed *de minimis* levels, the General Conformity Rule does not apply, and the Proposed Action would be deemed to be in conformity with the Ohio SIP. **Appendix B** details the Proposed Action estimated emissions factors, calculations, and estimates used in the ACAM.

According to 40 CFR 81 Subpart D, no Class I visibility areas are located within 10 kilometers of WPAFB. The closest federal Class I area is Mammoth Cave National Park in Kentucky, 320 kilometers to the south. Therefore, air emissions from the Proposed Action would not affect any Class I area. As a result of the Proposed Action, air quality impacts would be negligible compared to current conditions. The result of this general conformity applicability determination is contingent upon the accuracy of assumptions made in deriving the emission calculation. If the actual project plans were to change substantially, then a General Conformity Analysis may be required.

3.3.3.2 No Action

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

3.4 Water Resources

3.4.1 Definition of the Resource

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

Groundwater

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

Surface Water

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

Floodplains

Floodplains are areas of low-level ground present along rivers, stream channels, or coastal waters and might be subject to periodic or infrequent inundation due to rain or melting snow. Flood potential is evaluated by the Federal Emergency Management Agency (FEMA), which defines the 100-year floodplain for this section of the Mad River as 813.4 ft, above mean sea level (MSL). The 100-year floodplain is the area that has a one percent chance of inundation by a flood event in a given year.

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

Executive Order 13690 (January 2015), *Establishing a Federal Flood Risk Management Standard and a Process for Further Soliciting and Considering Input*, amends EO 11988 and provides three approaches that federal agencies can use to establish flood elevation and hazard area for consideration in their decision-making: climate-informed science approach, adding 2-3 ft of elevation to the 100-year floodplain, and using the 500-year floodplain.

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 WTC LDT project site is located within Operable Unit (OU) 5 (**Figure 3-2**). General groundwater flow through OU5 is topographically downgradient and north toward Hebble Creek; flow direction in the vicinity of Hebble Creek changes west toward the Mad River.

Surface Water

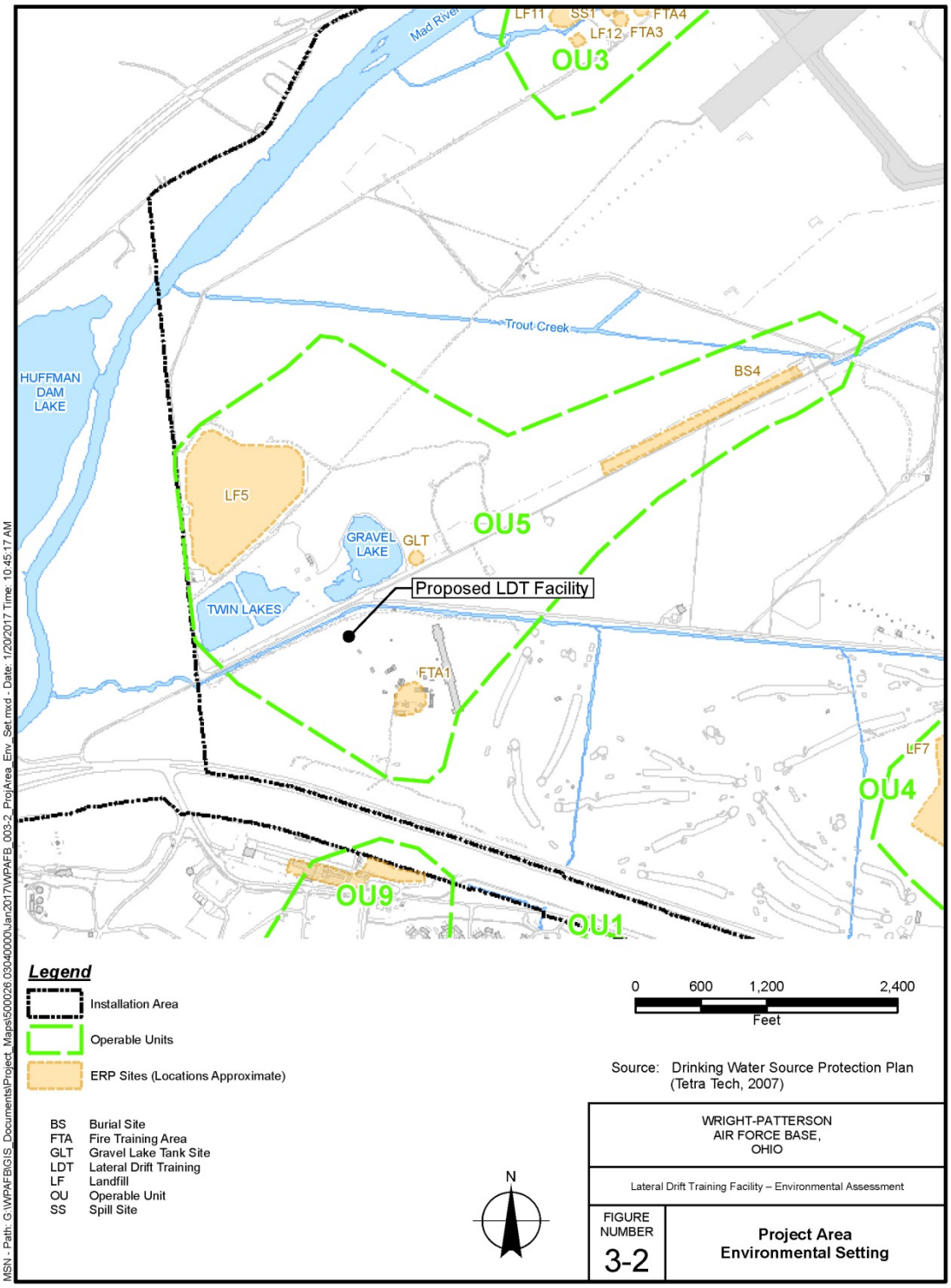
The Base is in the Mad River Valley. The Mad River originates approximately 40 miles north of Springfield, Ohio, flows south and southwest past WPAFB to its confluence with the Great Miami River in Dayton, Ohio, and flows into the Ohio River. Sustained flow of the Mad River originates from groundwater 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 SR 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 of effluent (TMDL) 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 2011b).

The SWPPP was last updated in September 2011 while the SWMP was last updated in April 2011. An OEPA industrial permit (National Pollutant Discharge Elimination System [NPDES] 1IO00001) and a


Mad River
LF11
SS1
FTA4
LF12
FTA3
OU3
Trout Creek
BS4
HUFFMAN DAM LAKE
LF5
OU5
GRAVEL LAKE
GLT
Proposed LDT Facility
TWIN LAKES
FTA1
LF7
OU4
OU9
OU1
Legend
Installation Area
Operable Units
ERP Sites (Locations Approximate)
BS Burial Site
FTA Fire Training Area
GLT Gravel Lake Tank Site
LDT Lateral Drift Training
LF Landfill
OU Operable Unit
SS Spill Site
N
0 600 1,200 2,400
Feet
Source: Drinking Water Source Protection Plan (Tetra Tech, 2007)
WRIGHT-PATTERSON AIR FORCE BASE, OHIO
Lateral Drift Training Facility – Environmental Assessment
FIGURE NUMBER
3-2
Project Area Environmental Setting
MSN - Path: G:\WPAFB\GIS_Documents\Project_Maps\500026.03040000\Jan2017\WPAFB_003-2_ProjArea_Env_Set.mxd - Date: 1/20/2017 Time: 10:45:17 AM

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municipal NPDES General Permit (OHQ000002) cover the WPAFB storm water program (WPAFB 2011c).

The SWPPP and SWMP provide specific best management practices (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 24 NPDES discharge monitoring points on Base that are addressed under the NPDES permit (WPAFB 2011b). 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 in OU5. 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] 2016).

The proposed LDT facility at the WTC is located within a 100-year flood hazard (Zone A) as established by FEMA (FEMA 2016a). Zone A is defined by the FEMA as an area with a 1-percent-annual-chance flood event (FEMA 2016b).

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.

3.4.3.1 Proposed Action

Proposed building construction would have minimal to no impact on groundwater at the project site. The proposed project site is currently a gravel-covered lot located within the WTC. Based on the relatively brief amount of time the soil would be exposed from construction to re-vegetation of the site, infiltration or precipitation may increase slightly and the impact of the release of construction-related materials (i.e., in the event of a minor spill) would be minimal to the upper water bearing zone below the surficial layer.

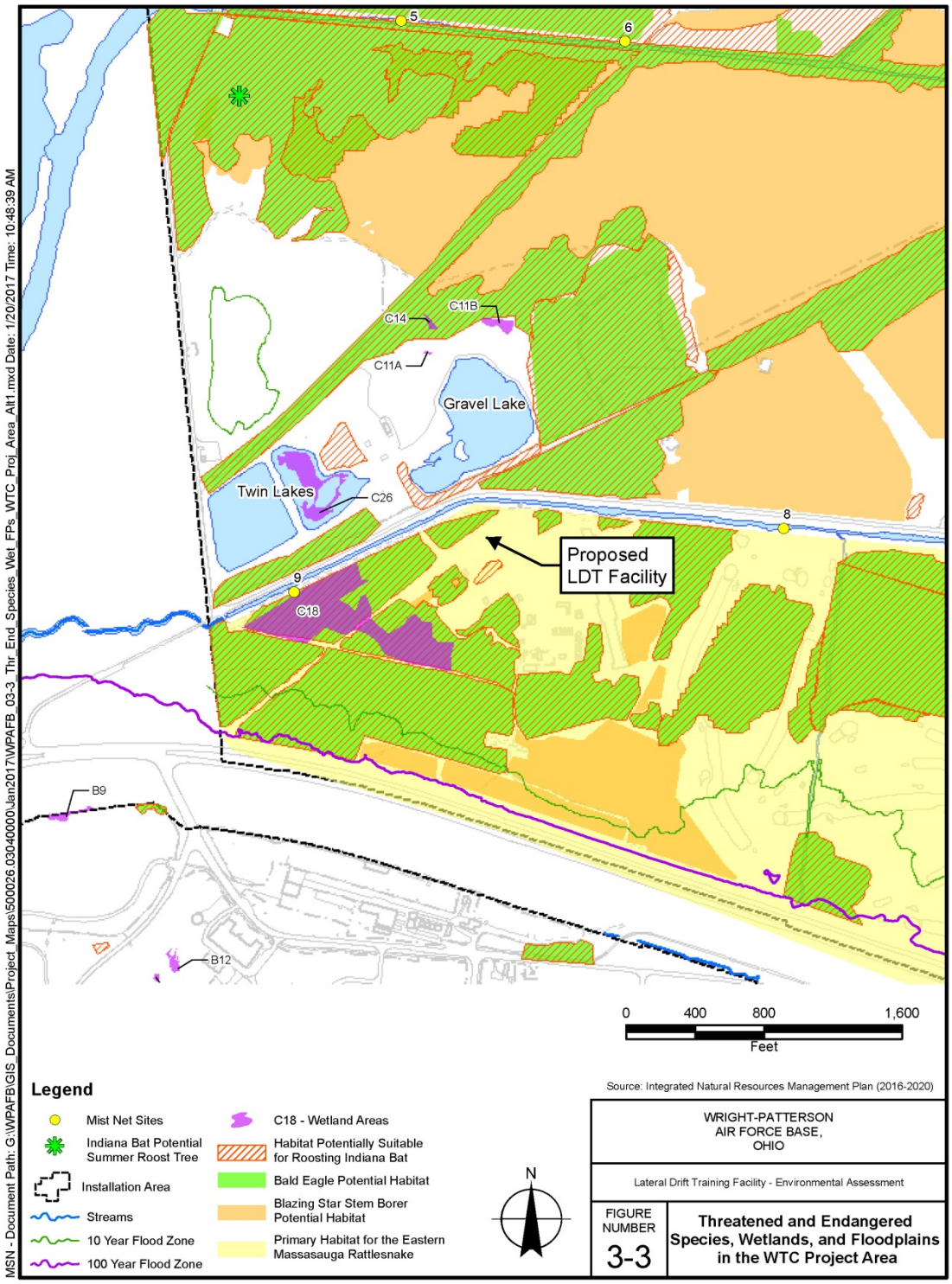
Construction activities would have minimal impact on surface water quality in the vicinity of the project site. Best management practices would be implemented during construction activities to prevent excessive soil erosion, runoff, and minor spills from the project site.

According to EO 11988, *Floodplain Management*, any new construction in the regulatory floodplain must apply accepted flood protection to reduce the risk of flood-associated damages; minimize the impacts of floods on human safety, health, and welfare; and restore and preserve the natural and beneficial values served by floodplains. The WTC LDT project site is located within the Mad River 100-year floodplain elevation of 813.4 ft above MSL (**Figure 3-3**). However, excavation for the LDT footings are not expected to significantly increase the flood control capacity of the Huffman Dam Retarding Basin that consists of the Huffman Dam located upstream and within the spillway elevation of 835 ft above MSL.

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

3.4.3.2 No Action

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


5
6
C14
C11B
C11A
Gravel Lake
Twin Lakes
C26
8
Proposed
LDT Facility
9
C18
B9
B12
0
400
800
1,600
Feet
Legend
Mist Net Sites
Indiana Bat Potential Summer Roost Tree
Installation Area
Streams
10 Year Flood Zone
100 Year Flood Zone
C18 - Wetland Areas
Habitat Potentially Suitable for Roosting Indiana Bat
Bald Eagle Potential Habitat
Blazing Star Stem Borer Potential Habitat
Primary Habitat for the Eastern Massasauga Rattlesnake
N
Source: Integrated Natural Resources Management Plan (2016-2020)
WRIGHT-PATTERSON AIR FORCE BASE, OHIO
Lateral Drift Training Facility - Environmental Assessment
FIGURE NUMBER
3-3
Threatened and Endangered Species, Wetlands, and Floodplains in the WTC Project Area
MSN - Document Path: G:\WPAFB\GIS_Documents\Project_Maps\500026.03040000\Jan2017\WPAFB_03-3_Thr_End_Species_Wet_FPs_WTC_Proj_Area_Alt1.mxd Date: 1/20/2017 Time: 10:48:39 AM

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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 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.

3.5.2 Affected Environment

Vegetation

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

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 2001), which has been incorporated into the 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 3-4**.

Table 3-4. State and Federal Listed Species Occurring at WPAFB

Common Name	Scientific Name	Status	
		Federal	State
Indiana Bat	*Myotis sodalis*	Endangered	Endangered
Clubshell	*Pleurobema clava*	Endangered	Endangered
Eastern Massasauga Rattlesnake (EMR)*	*Sistrurus catenatus*	Threatened	Endangered
Rayed Bean	*Villosa fabalis*	Endangered	Endangered
Snuffbox	*Epioblasma triquetra*	Endangered	Endangered

Source: WPAFB 2015, ODNR 2016a, USFWS 2016a, *the USFWS listed the EMR as a threatened species under the Endangered Species Act in the *Federal Register* on 30Sep16 (USFWS 2016b)

The eastern massasauga rattlesnake (EMR) is usually found in wet areas including wet prairies, marshes, and low-lying areas adjacent to higher foraging ground. Reports of EMR sightings at WPAFB are limited to the WTC and Twin Base Golf Course in Area A at WPAFB. There was previously no requirement to survey the proposed project areas for potential habitat because the EMR was a federal candidate species prior to September 30, 2016; however, surveys have been conducted on Base and within the WTC since 1993.

As part of this EA, consultation with the ODNR was conducted to request Ohio Natural Heritage Program information for state- and federally-listed threatened and endangered plants and animals on Base. The ODNR responded indicating the Natural Heritage Database has the following records at or within a one mile radius of the project area (**Appendix A**):

- Eastern massasauga, state endangered, federal threatened
- Indiana bat, state and federal endangered
- Dayton Aviation Heritage Park, National Park Service
- Huffman Metropark, Fiver Rivers MetroParks

The ODNR also responded indicating that the Division of Wildlife (DOW) had the following comments:

- *Streams, Wetlands, other Water Resources* – impacts should be avoided/minimized to the fullest possible and BMPs should be utilized to minimize erosion/sedimentation
- *Indiana Bat* – 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
- *Clubshell, Rayed Bean, Snuffbox, Black Sandshell, Fawnsfoot (mussels)* – 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
- *Tonguetied Minnow* – due to the location, and that there is no in-water work proposed in a perennial stream, this project is not likely to impact this or other aquatic species
- *Spotted Turtle* – due to the location, the type of habitat at the project site and within the vicinity of the project area, and the type of work proposed, this project is not likely to impact this species
- *Kirtland's Snake* – due to the location , the type of habitat at the project site and within the vicinity of the project area, and the type of work proposed, this project is not likely to impact this species
- *Eastern Massasauga* – due to the location, the type of habitat at the project site and within the project area, and the type of work proposed, this project is not likely to impact this species
- *Upland Sandpiper* – due to the location, the type of habitat at the project site, and the type of work proposed, this project is not likely to impact this species
- *Northern Harrier* – due to the location, the type of habitat at the project site, and the type of work proposed, this project is not likely to impact this 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. 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 USFWS stated no adverse effects to federally endangered, threatened, proposed, or candidate species would be anticipated.

Wetlands/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.

Forty wetlands covering approximately 19.8 acres were identified within the limits of WPAFB in 2009; twenty-three wetlands are located in Area A (WPAFB 2015), however, none are located in the immediate vicinity of the proposed project area.

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.

3.5.3.1 Proposed Action

Vegetation

Construction activities would occur within areas previously disturbed and in a gravel-covered parking area. Land-disturbing activities associated with construction of an LDT facility would be limited to previously-disturbed Base property. Short-term localized effects on vegetation would be expected; however, due to the frequency of the vegetation types on Base, negligible long-term or adverse effects on vegetation would be expected as a result of the implementation of the Proposed Action.

Wetlands

The nearest wetland to the WTC project area, identified as C18, is the largest wetland on Base and consists of 6.02 acres (**Figure 3-3**). This wetland is seasonally flooded by Hebble Creek. No impact to wetland C18 is expected because this wetland is located at a distance of approximately 800 ft southeast of the proposed project site. Therefore, no effects to wetlands are expected as a result of the Proposed Action.

Wildlife

Wildlife habitat within the improved areas of the Base is limited due to fragmentation by the existing facilities, roads, and impervious surfaces at WPAFB. Although the Proposed Action is located in an area identified as primary habitat suitable for the EMR, none have been sited within the WTC area since 1993 (WPAFB 2012). In addition, the current land use would not change and the proposed construction activities would not be in close enough proximity to any threatened or endangered species; therefore, noise-related effects from proposed construction activities would not be expected. Additionally, this assessment is based on the limited extent of areas that would be affected by the Proposed Action and the frequency of occurrence of the terrestrial species known to occur at WPAFB. Therefore, no long-term or adverse effects on wildlife would be expected to result from the Proposed Action.

Threatened and Endangered Species

Although construction activities would occur in an area identified as primary habitat suitable for the EMR, no EMRs have been captured in the WTC area in over 23 years (WPAFB 2012). Surveys for EMR have continually been conducted on Base and within the WTC area to determine the presence of EMR; however, surveys conducted in 2009, 2010, 2011, and 2012 have produced no EMR captures (WPAFB 2012). In addition, the proposed project site is located in a previously-disturbed gravel parking lot. Therefore, 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 the Proposed Action.

3.5.3.2 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 2001).

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 (WPAFB 2015).

Natural Hazards

The state of Ohio is characterized by a low level of seismic activity (ODNR 2016b). The Dayton, Ohio, area does not typically experience earthquakes because of its location in relation to fault zones (Hansen 2002). 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 (Hansen 2002), with the greatest instrumented magnitude recorded between 5.0 and 5.4 (USGS 1993). 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 erosions. 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 Sloan-Fill land complex (USDA 1978). The Sloan-Fill land complex is made up of nearly level soil on floodplains where as much as 50 percent of the original soil has been covered by fill. The Sloan series are on floodplains along Little Miami River, Mad River, and their tributaries.

3.6.3 Environmental Consequences

Protection of unique geological features, minimization of soil erosion, and the siting of facilities in relation to potential geologic hazards are considered when evaluating potential impacts of a proposed action on geological resources. Impacts can be avoided or minimized if proper construction techniques, erosion control measures, and structural engineering design are incorporated into project development.

Effects on geology and soils would be adverse if the action alters the lithology, stratigraphy, and geological structure that control groundwater quality, distribution of aquifers and confining beds, and groundwater availability; or change the soil composition, structure or function within the environment.

3.6.3.1 Proposed Action

Land surface at the proposed project site is flat. Construction activities would involve digging for footings. Upon completion of excavation activities, leveling of the ground surface back to grade would be completed. Soil erosion would be minimized during construction activities using BMPs in accordance with the Phase I NPDES 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. 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 No Action

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

3.7 Hazardous Materials / Waste

3.7.1 Definition of the Resource

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

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

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

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

Special hazards are those substances that might pose a risk to human health, but are not regulated as contaminants under the hazardous waste statutes. Included in this category are asbestos-containing material (ACM), radon, lead-based paint (LBP), polychlorinated biphenyls (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 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.

Hazardous and toxic material procurements at WPAFB are approved and tracked by the Bio-environmental Engineering Office. The Installation Management Division supports and monitors environmental permits, hazardous material and hazardous waste storage, spill prevention and response, and participation on the Base Environmental Protection Committee. The Hazardous Substance Steering Committee 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 2006).

Hazardous Waste

The 88 CEG maintains a Hazardous Waste Management Plan (WPAFB 2009) 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 Compliance Section of the Environmental Branch of the Installation Management Division (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 and control and countermeasures (SPCC). The WPAFB SPCC Plan (WPAFB 2008b) 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 Oil and Hazardous Substance Integrated Contingency Plan (WPAFB 2005) describes emergency planning, notification and spill response practices. Collectively, the SPCC Plan, with a focus on spill prevention, and the Integrated Contingency Plan, with a focus on spill response, provides a comprehensive strategy for preventing stored fuel releases to the environment.

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.

No structures would require renovation/demolition as part of the Proposed Action; therefore, ACM would not be affected.

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.

No structures would require renovation/demolition as part of the Proposed Action; therefore, LBP would not be affected.

Environmental Restoration Program

The ERP is a subcomponent of the Defense Environmental Restoration Program that became law under SARA (formerly the Installation Restoration Program [IRP]). 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 2001).

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 Groundwater Operable Unit (GWOU) under the Basewide Monitoring Program (BMP). The GWOU is monitored by agreement with the OEPA and USEPA under the Long-Term Groundwater Monitoring (LTM) Program. Principal groundwater contaminants beneath WPAFB include benzene, toluene, ethylbenzene, xylene, trichloroethene, and tetrachloroethene (WPAFB 2007).

The proposed project site is located within OU5 (**Figure 3-2**). **Table 3-5** describes four ERP sites that are associated with OU5.

Table 3-5. ERP Sites in the Vicinity of the Project Area

Project Area	OU	ERP Site	ERP Distance from Project Area	ERP Description
WTC	OU5	Landfill (LF) 5	1,200 ft Northwest	LF5 is a 23-acre site that reportedly accepted general refuse from 1945 to 1991. There is one active groundwater pump and treat system in operation at LF5, located adjacent and north of the Twin Lakes/Gravel Lake that was installed in 1991. The treatment system discharges treated groundwater into West Twin Lake. Routine effluent sampling indicates discharged groundwater is below regulatory maximum contaminant levels (MCLs). A newer, more efficient treatment system is being constructed that will replace the current pump and treat system. The new system, located in the vicinity of the existing system, will treat approximately 800 gallons of groundwater per minute and will discharge treated groundwater into West Twin Lake; the system began operation in December 2016.
		Gravel Lake Tank (GLT)	850 ft Northeast	The GLT, FTA1, and BS4 ERP sites were included in the Record of Decision (ROD) for 21 No Action sites in 1996 (WPAFB 1996). The nearest ERP site to the project area is FTA1; this site is fenced and gated at Riverview Road with access controlled by Civil Engineering.
		Fire Training Area (FTA) 1	600 ft Southeast	
		Burial Site (BS) 4	2,400 ft Northeast	

3.7.3 Environmental Consequences

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

Impacts on pollution prevention would be considered adverse if the federal action resulted in worker, resident, or visitor exposure to these materials, or if the action generated quantities of these materials beyond the capability of current management procedures. Impacts on the ERP would be considered adverse if the federal action disturbed (or created) contaminated sites resulting in negative effects on human health or the environment.

3.7.3.1 Proposed Action

Hazardous Materials

Products containing hazardous materials would be procured and used during the proposed construction activities. It is anticipated that the quantity of products containing hazardous materials used during these activities would be minimal and their use would be of short duration. 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 LDT facility at the WTC project area.

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 LDT facility would not impact the Base's hazardous waste management program. As mentioned above, the known hazardous wastes identified and encountered in 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 the Proposed Action would be similar in nature with the baseline condition waste streams. Hazardous waste would be handled, stored, transported, disposed of, or recycled in accordance with the WPAFB Hazardous Waste Management Plan. Therefore, it is anticipated that the Proposed Action would result in negligible adverse impacts to hazardous materials at WPAFB.

Asbestos-Containing Material and Lead-Based Paint

The Proposed Action would consist of constructing a new facility and would not involve renovation or demolition of an existing structure. Therefore, ACM and LBP would not be expected to be encountered. As such, no impact to ACM or LBP would result from implementation of the Proposed Action.

Environmental Restoration Program

There would be minimal ground disturbance associated with construction activities. Additionally, the building construction activities under the Proposed Action would not impact ERP sites within 300 ft of the proposed location of the LDT facility. Therefore, the Proposed Action would result in no impact to ERP sites.

3.7.3.2 No Action

The No Action alternative would have no impact on hazardous materials storage or waste generation.

3.8 Cultural Resources

3.8.1 Definition of the Resource

As defined by 36 CFR 800.16, historic property means any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion, the National Register of Historic Places (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 SHPO.

3.8.2 Affected Environment

The AF proposed an undertaking to construct a 25 ft by 125 ft modular LDT facility at WPAFB. The Base owns over 250 historic buildings, several that are individually eligible for inclusion on the NRHP and most of which are located in one of three NRHP-eligible historic districts. However, based on a review of the WPAFB ICRMP, the WTC project site is not located in areas of known prehistoric

archaeological resources and no facilities would be renovated or demolished as part of the proposal to construct an LDT facility.

The SHPO was contacted regarding the undertaking's effects on historic properties. The SHPO responded indicating the project would have no effect on historic properties because no known historic properties exist within the APE and because the project area has been previously surveyed and disturbed.

Additionally, according to the WPAFB Cultural Resources Manager, the 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) request notification/consultation when an action involves ground disturbance or construction in an area previously undisturbed. Consultation with Native American Tribes was initiated by WPAFB. The Seneca Nation of Indians responded indicating they concur with the findings that the proposed project would have no effect on historic properties. The WPAFB Cultural Resources Manager does not anticipate responses from the remaining Native American Tribes. Copies of correspondence with the SHPO and Native American Tribes are presented in **Appendix A**.

3.8.3 Environmental Consequences

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

3.8.3.1 Proposed Action

The most relevant impacts to cultural resources at WPAFB would be related to any potential alteration activities as a result of the Proposed Action. Activities under the Proposed Action involve constructing an LDT facility in an area with previous ground disturbance. The proposed project area is currently a gravel-covered parking lot and no known prehistoric archaeological resources have been identified in the project area or vicinity. As such, the Proposed Action would result in no adverse impact to cultural resources.

3.8.3.2 No Action

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

3.9 Infrastructure / Utilities

3.9.1 Definition of the Resource

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

The infrastructure components to be discussed in this section include utilities (electrical power, natural gas, liquid fuel, and water supply), pollution prevention, solid waste, sanitary and wastewater systems, heating and cooling, and communications. Transportation systems are excluded from discussion in this section as impacts to transportation systems from any of the alternatives are considered minor and will not be discussed further in this EA.

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 2001) and provides a brief overview of each infrastructure/utilities component and comments on its existing general condition.

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.

Natural Gas. Natural gas at WPAFB is supplied by Vectren. The on-Base natural gas system contains piping and distribution subsystems. The natural gas system on Base is the principal heating option for housing areas and outlying areas of the Base. It feeds individual buildings and four satellite heating plants.

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 and a portion of the Base receives water from the Montgomery County Sanitary Sewer District.

Pollution Prevention. Air Force Instruction 32-7080, *Pollution Prevention Program*, implements the regulatory mandates in the Emergency Planning and Community Right-to-Know Act, Pollution Prevention Act of 1990; 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*. Air Force Instruction 32-7080 prescribes the establishment of Pollution Prevention Management Plans. The 88 CEG fulfills this requirement with the following plans:

- Integrated Solid Waste Management Plan
- Storm Water Pollution Prevention Plan
- Hazardous Waste Management Plan
- Hazardous Material Emergency Planning and Response Plan
- The Spill Prevention Control and Countermeasure Plan

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

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

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

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

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

Heating and Cooling. Coal operations have been discontinued at the Base and former coal plants have been converted to natural gas. The Base is heated with several natural gas-fired central heating plants. The two largest central heating plants provide approximately 80 percent of the annual heating requirements for WPAFB; one of these plants serves Area A and the other serves Area B. Several satellite heating plants serve smaller areas on the Base. These plants operate on natural gas and provide approximately four percent of the Base's overall heating needs. The remaining 16 percent of the Base's overall heating is met by natural gas furnaces in individual buildings.

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.

3.9.3 Environmental Consequences

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

3.9.3.1 Proposed Action

Equipment required for the construction of an LDT facility 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 upon completion of the LDT facility.

No short- or long-term adverse impacts to existing infrastructure/utilities systems would be expected because the proposed LDT facility would be constructed in an isolated location in Area A. In addition, the frequency of the LDT exercises would be approximately three times per fiscal year. Therefore, negligible effects on existing systems and physical structures would be expected under the Proposed Action.

3.9.3.2 No Action

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

3.10 Safety and Occupational Health

3.10.1 Definition of the Resource

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

Construction Safety

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

Anti-Terrorism/Force Protection

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

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

3.10.3 Environmental Consequences

Impacts on health and safety are evaluated for their potential to jeopardize the health and safety of Base personnel as well as the surrounding public. Impacts might arise from physical changes in the work environment, demolition and construction activities, introduction of demolition and construction-related risks, and risks created by either direct or indirect workforce and population changes related to proposed Base activities. The AF regulations and procedures promote a safe work environment and guard against hazards to the public. The WPAFB programs and day-to-day operations are accomplished according to applicable AF federal and state health and safety standards.

3.10.3.1 Proposed Action

Fire Hazards and Public Safety

No adverse effects regarding fire hazards or public safety would be expected to occur from constructing a new training facility in the WTC area. The SOPs for 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 a new training facility in the WTC area. The WTC 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 the Proposed Action would slightly increase the short-term risk associated with contractors performing construction activities at WPAFB during the normal work day.

Contractors would be required to establish and maintain safety programs, 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. Therefore, no adverse effects are anticipated as a result of the Proposed Action due to safeguards existing to protect personnel.

Anti-Terrorism/Force Protection

No adverse effects to ATFP would be expected as a result of constructing the LDT training facility because the facility would be constructed within a controlled perimeter on Base.

3.10.3.2 No Action

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

3.11 Socioeconomics

3.11.1 Definition of the Resource

Socioeconomics is the relationship between economics and social elements such as population levels and economic activity. Factors that describe the socioeconomic environment represent a composite of several interrelated and nonrelated attributes. There are several factors that can be used as indicators of economic conditions for a geographic area, such as demographics, median household income, unemployment rates, percentage of families living below the poverty level, employment, and housing data. Data on

employment identify gross numbers of employees, employment by industry or trade, and unemployment trends. Data on industrial, commercial, and other sectors of the economy provide baseline information about the economic health of a region.

3.11.2 Affected Environment

Demographics. Metropolitan statistical areas are geographic entities defined by the Office of Management and Budget for use by federal statistical agencies in collecting, tabulating, and publishing federal statistics. A metro area contains a core urban area of 50,000 or more 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 2016).

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 2016). 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.

The 2010 unemployment rate for the Dayton MA was 10.7 percent, almost double than the statewide average of 5.6 percent (Bureau of Labor Statistics [BLS] 2011). The 2010 unemployment rate in the city of Riverside, the city of Fairborn, around WPAFB and within Greene County was 8.0, 8.8, and 6.2 percent, respectively, which was slightly higher than the state average of 5.6 percent. Recent unemployment rates indicate the unemployment rate for the Dayton MA was 5.0 percent in March 2016, which was reported to be the same as the U.S. average in March and April 2016 (BLS 2016a, BLS 2016b).

3.11.3 Environmental Consequences

This section identifies potential economic and social impacts that might result from the proposed project. The methodology for the economic impact assessment is based on the Economic Impact Forecast System

(EIFS) developed by the DoD in the 1970s to efficiently identify and address the regional economic effects of proposed military actions (EIFS 2001). The EIFS provides a standardized system to quantify the impact of military actions, and to compare various options or alternatives in a standard, non-arbitrary approach.

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

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

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

3.11.3.1 Proposed Action

The Proposed Action would have a negligible impact on the local workforce. A short-term beneficial impact would be expected on the local economy from revenue generated by construction activities. The Proposed Action does not involve changes in off-Base land use; therefore, no impacts on social conditions are expected. Long-term beneficial impacts would be anticipated due to cost savings resulting from the ability to provide training locally.

3.11.3.2 No Action

The No Action alternative would have minor adverse impacts due to the continued costs associated with out-of-state training at Sheppard AFB in Texas.

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 timeframe spans from 2018 when the Line C natural gas conversion project would begin and ends in 2019 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 and/or training have been identified in the WTC 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
Explosive Ordnance Disposal (EOD) Centric and Tactics Training	788 EOD flight utilizes WTC for EOD training; 3 to 22 trainees/trainers required per session; training lasts 2 to 8 hours and occurs weekly if WTC is available. Specific exercises require emplacing training aids in the ground for retrieval.	On-going / Year-round	Noise, Earth Resources	Not Significant
Bivouac/Training Exercise	Annual 3 to 4 day camping in hootches and performing hands-on training and exercises at the WTC.	On-going	Earth Resources	Not Significant
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
Demolish Multiple Buildings, EA	Demolish 53 buildings 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 2014).	2014 – 2020 and possibly beyond	Air Quality, Noise, Earth Resources, Water Resources, Cultural Resources, Occupational Health and Safety	Not Significant
Fire Structural / Rescue Station on the West Ramp, EA	Demolish existing Area A facility and re-using existing concrete foundation slab for new construction of a fire structural / rescue station on the West Ramp.	2018	Air Quality, Noise, Earth Resources, Cultural Resources, Occupational Health and Safety	Not Significant
Implement the Integrated Natural Resources Management Plan (INRMP), EA	Implement the 2015 INRMP to integrate natural resources management plans and practices described in the 2015 INRMP; includes planting native tree species for Indiana bat wooded habitat in Area A.	2016 – 2020	Air Quality, Earth Resources, Water Resources, Biological Resources, Occupational Health and Safety, ERP	Not Significant

Project Name	Description	Planned Year of Implementation / Frequency	Resources Potentially Affected	Magnitude of Impact
Area A Drinking Water Treatment Facility	Install a treatment system in the Area A for removal of perfluorooctanoic acid (PFOA) and perfluorooctyl sulfonate (PFOS) from a water supply.	Future	Water Resources, Earth Resources	Not Significant

4.2 Analysis of Cumulative Effects

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

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

4.2.1 Cumulative Effects on Resources

The following examines cumulative effects on the environment that would result from incremental impacts of implementation of the Proposed Action, in addition to other past, present, and reasonably foreseeable future actions. This analysis assesses potential for an overlap of impacts with respect to project schedules or affected areas. This section presents a qualitative analysis of the cumulative effects.

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 *de minimis* and it is understood that activities of this limited size and nature would not contribute appreciably to adverse cumulative impacts to air quality.

Noise. 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 LDT facility construction 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 ground 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, transportation, and solid waste generation

systems would be expected from accommodation of the operations and personnel associated with the LDT facility when combined with other actions such as the construction of a new fire station on the West Ramp.

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 project 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.

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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	EIAP Program Manager	88 CEG/CEIEA
Sheila Bird	Tribal Historic Preservation Officer	Cherokee Nation
Rebecca Bower	LDT Course Coordinator	AFMC/USAFSAM/EDM
Johnathan L. Buffalo	Historic Preservation Director	Sac & Fox Tribe of the Mississippi in Iowa
William Curtis II	Munitions and Explosives Safety	88 CEG/SEW
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Dan Everson	Threatened and Endangered Species	U.S. Fish and Wildlife Service; Columbus, Ohio
Roxanne Farrier	Floodplain Issues	Miami Conservancy District; Dayton, Ohio
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Kurtis Stadsvold, TSgt	EOD Team Leader	AFMC/788 CES/CEXD
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Amanda Schraner Terrell	Deputy State Historic Preservation Officer	Ohio Historic Preservation Office; Columbus, Ohio
Jay Toth	Tribal Archaeologist	Seneca Nation of Indians
Darryn Warner	Natural Resources Program Manager	88 CEG/CEIEA
Joy Williams	Resource Protection and Review	Ohio Historic Preservation Office; Columbus, Ohio
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Paul Woodruff	Cultural Resources Program Manager	88 CEG/CEIEA

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Appendix A

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

Miami Conservancy District Consultation Letters:

1. WPAFB Request – 07Dec16
2. **MCD Response –13Dec16**

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

7 December 2016

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 impacts of installing a modular lateral drift training (LDT) facility at the Warfighter Training Center (WTC) in Area A at WPAFB (Figures 1 and 2). The decision to install a modular lateral drift trainer would enable WPAFB to provide a locally-accessible training facility to United States Air Force School of Aerospace Medicine (USAFSAM) students.

The installation of a modular LDT facility is needed to provide enlisted initial skills students with the required hands-on training (hanging harness procedures, drag procedures, parachute landing falls) to fulfill their academic requirement. The installation of an LDT facility would enable aerospace physiology instructors to conduct hands-on training that would be similar to that encountered during a military aircraft ejection. An LDT facility includes hanging harnesses to practice descent under a canopy, concrete platforms to conduct parachute landing falls, and zip lines to practice lateral drifting.

Proposed Action

The Proposed Action involves the installation of a 25 foot (ft) by 125 ft modular steel fabricated shelter/canopy structure that would be sited in an existing gravel parking lot at the WTC. Construction activities would involve excavation equipment (concrete and gravel delivery trucks) to dig footings required for the canopy structure. Excavation would be conducted for concrete footings and platforms and would also include installation of support wire anchors and trenching for on-site electrical. The planned concrete platform would be 50 ft wide and 7 ft deep. Electricity would be run from an existing storage building located adjacent and south of the proposed LDT site. Training exercises at the LDT facility would involve no ground disturbance other than raking the gravel landing back to smooth after use.

The USAFSAM students would be transported via Base transportation to the WTC training area where they would perform the four hour LDT training exercises, then would be returned to the USAFSAM classroom facility in Area B or would be returned to non-prior service dorms.

The number of trainers and trainees would vary and depend upon the number of students enrolled; however, approximately four to five instructors (trainers) would be involved in training at the LDT facility and approximately 36 to 48 trainees per year would be expected to complete the required training at the LDT facility over the next three years.

Under the No Action alternative, an LDT facility would not be installed at WPAFB and the deficiency in academic training would continue to be realized. Without the accessibility of an LDT at WPAFB, students would not be able

to fulfill their academic requirements locally and would be required to continue the course requirements on temporary duty (TDY) at Sheppard Air Force Base in Texas, resulting in continued travel/lodging costs.

The WTC project site is located at an elevation of 791 feet above mean sea level (MSL). The project site is located within the 100-year floodplain; however, no impacts to the floodplain or the Huffman Retarding Basin would be expected from construction of an LDT facility at this location. The project would be constructed in an area of previous disturbance and the storage capacity of the retarding basin would not change. Impacts to surface water runoff during construction activities resulting from construction of the LDT facility would be minimized by implementing Best Management Practices (BMPs) 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

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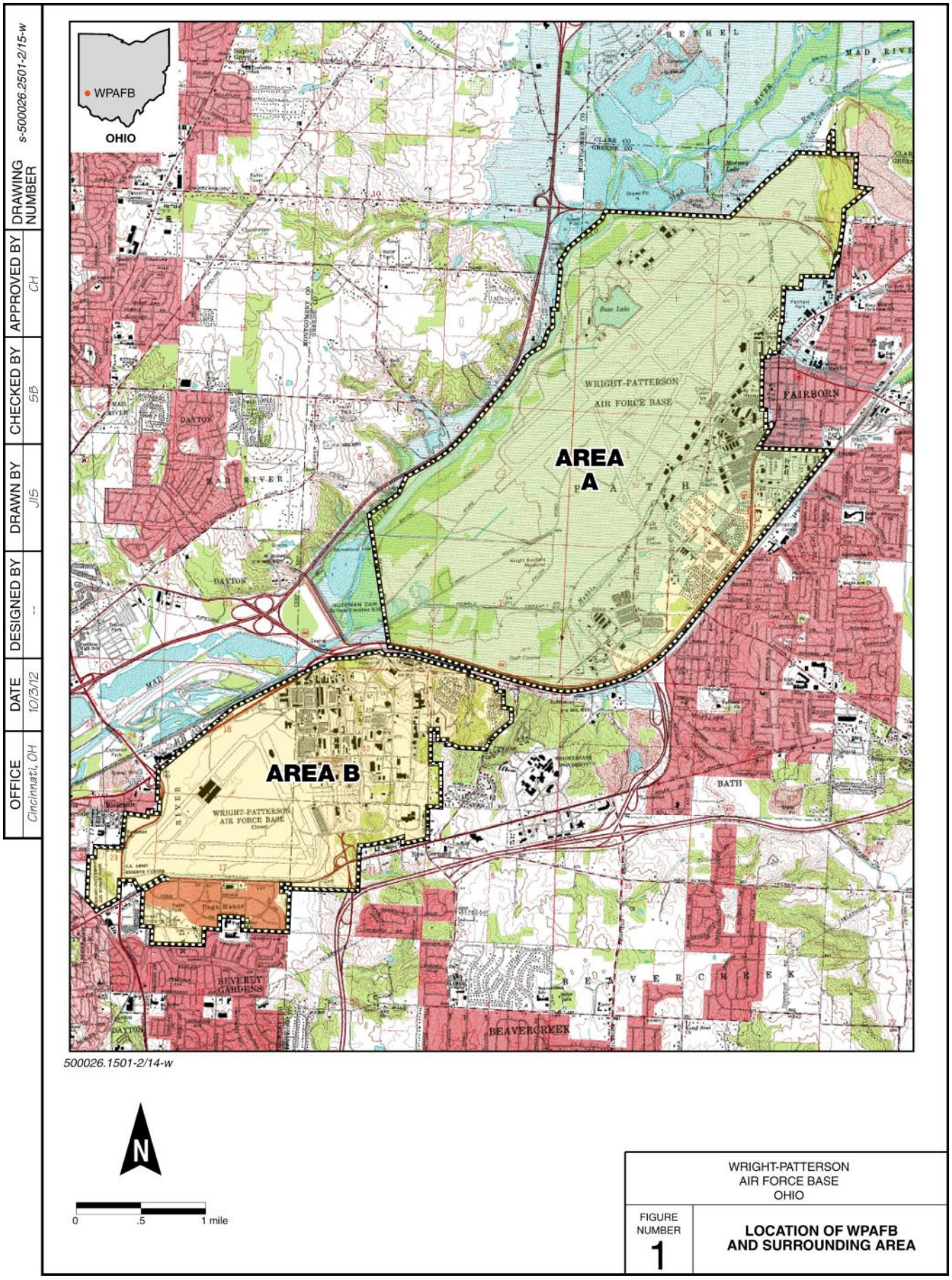
DN: c=US, o=U.S. Government, ou=DoD, ou=PKI, ou=USAF, cn=WARNER.DARRYN.M.1386410808
Date: 2016.12.07 08:30:13 -05'00'

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

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

Attachments: Figure 1 – Location of WPAFB and Surrounding Area
Figure 2 – Proposed Lateral Drift Training Facility Location



OFFICE	DATE	DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY	DRAWING NUMBER
Cincinnati, OH	10/3/12	--	JIS	SB	CH	s-500026.2501-2/15-w

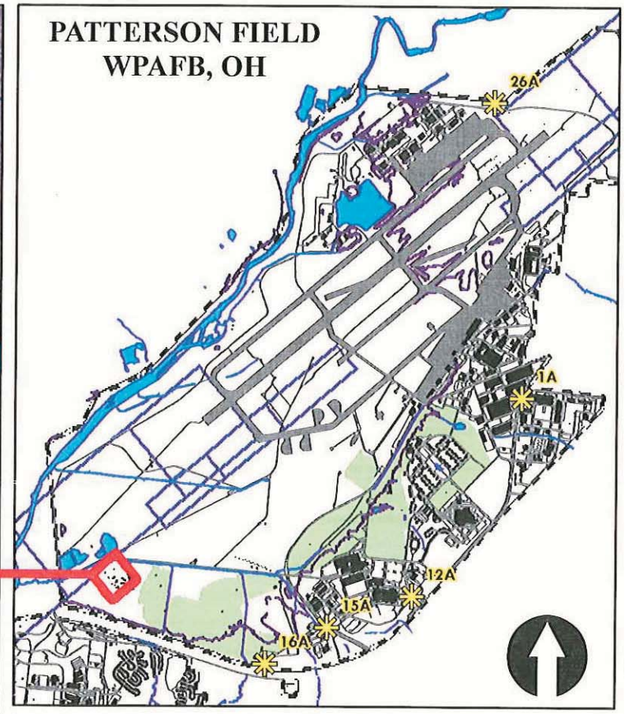
500026.1501-2/14-w

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	8/10/16	--	JIG	SB	CH	s-500026.0303-8/16-w



- Proposed Lateral Drift Trainer Facility Location
- Accident Potential Zones (APZs) & Clear Zones
- 100-Year Flood Plain
- Existing Facility
- Existing Fence
- Entry Control Points (ECPs)/Gates
- Water
- Golf Course
- Installation Boundary

WTC Warfighter Training Center

Source: 88CEG/CENPL

WRIGHT-PATTERSON
AIR FORCE BASE
OHIO

FIGURE NUMBER 2

LATERAL DRIFT TRAINING FACILITY LOCATION

MCD
MIAMI CONSERVANCY DISTRICT

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

December 13, 2016

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

Re: Huffman Retarding Basin, WPAFB, Modular Lateral Drift Training Facility

Dear Mr. Warner:

We have reviewed the proposed action involving installing a modular lateral drift training (LDT) facility at the Warfighter Training Center (WTC) in Area A of WPAFB.

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

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

Thank you for the opportunity to review your project and 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

U.S. Fish and Wildlife Service Consultation Letters:

1. **WPAFB Request – 07Dec16**
2. USFWS Response – 20Mar17

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

7 December 2016

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 impacts of installing a modular lateral drift training (LDT) facility at the Warfighter Training Center (WTC) in Area A at the Base (Figures 1 and 2). The decision to install a modular lateral drift trainer would enable WPAFB to provide a locally-accessible training facility to United States Air Force School of Aerospace Medicine (USAFSAM) students.

The installation of a modular LDT facility is needed to provide enlisted initial skills students with the required hands-on training (hanging harness procedures, drag procedures, parachute landing falls) to fulfill their academic requirement. The installation of an LDT facility would enable aerospace physiology instructors to conduct hands-on training that would be similar to that encountered during a military aircraft ejection. An LDT facility includes hanging harnesses to practice descent under a canopy, concrete platforms to conduct parachute landing falls, and zip lines to practice lateral drifting.

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, Bath Township (Latitude North 39° 47’ 59.3055”, Longitude West 84° 4’ 45.0353”).

Proposed Action

The Proposed Action involves the installation of a 25 foot (ft) by 125 ft modular steel fabricated shelter/canopy structure that would be sited in an existing gravel parking lot at the WTC. Construction activities would involve excavation equipment (concrete and gravel delivery trucks) to dig footings required for the canopy structure. Excavation would be conducted for concrete footings and platforms and would also include installation of support wire anchors and trenching for on-site electrical. The planned concrete platform would be 50 ft wide and 7 ft deep. Electricity would be run from an existing storage building located adjacent and south of the proposed LDT site. Training exercises at the LDT facility would involve no ground disturbance other than raking the gravel landing back to smooth after use.

The USAFSAM students would be transported via Base transportation to the WTC training area where they would perform the four hour LDT training exercises, then would be returned to the USAFSAM classroom facility in Area B or would be returned to non-prior service dorms.

The number of trainers and trainees would vary and depend upon the number of students enrolled; however, approximately four to five instructors (trainers) would be involved in training at the LDT facility and approximately 36 to 48 trainees per year would be expected to complete the required training at the LDT facility over the next three years.

Under the No Action alternative, an LDT facility would not be installed at WPAFB and the deficiency in academic training would continue to be realized. Without the accessibility of an LDT at WPAFB, students would not be able to fulfill their academic requirements locally and would be required to continue the course requirements on temporary duty (TDY) at Sheppard Air Force Base in Texas, resulting in continued travel/lodging costs.

The Base actively manages for two federally-listed endangered species (Indiana bat and clubshell mussel), one federally-listed threatened species [eastern massasauga rattlesnake (EMR)], and four species listed as endangered by the state of Ohio (smooth green snake, upland sandpiper, king rail, and blazing star stem borer) (Figure 3). However, WPAFB has determined that the installation of an LDT facility at the WTC location would not affect the EMR because no EMRs have been captured in the WTC area in over 23 years. Surveys for EMR have continually been conducted on Base and within the WTC area to determine the presence of EMR; however, most-recent surveys conducted in 2009, 2010, 2011, and 2012 have produced no EMR captures. In addition, the WTC project site is located in a previously-disturbed gravel parking lot; therefore, there would be no impact to this species or other threatened or endangered species known to occur or have occurred at WPAFB. This determination is based on extensive surveys and studies that have been conducted over the years in the WTC area.

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 WTC project area. Further, no critical habitat has been designated or proposed for WPAFB.

Because no potential habitat would be disturbed from installing an LDT facility at the WTC, no listed species would be directly or indirectly impacted. Furthermore, there are no proposed impacts to trees, wetlands/streams or other native habitat that supports species actively managed for at WPAFB. The WPAFB has, therefore, determined that the Proposed Action will have no effect on listed species and further consultation with your office is not necessary. Your written concurrence with this determination of no effect is, however, requested.

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

Sincerely

WARNER.DARRYN.M.1386410808

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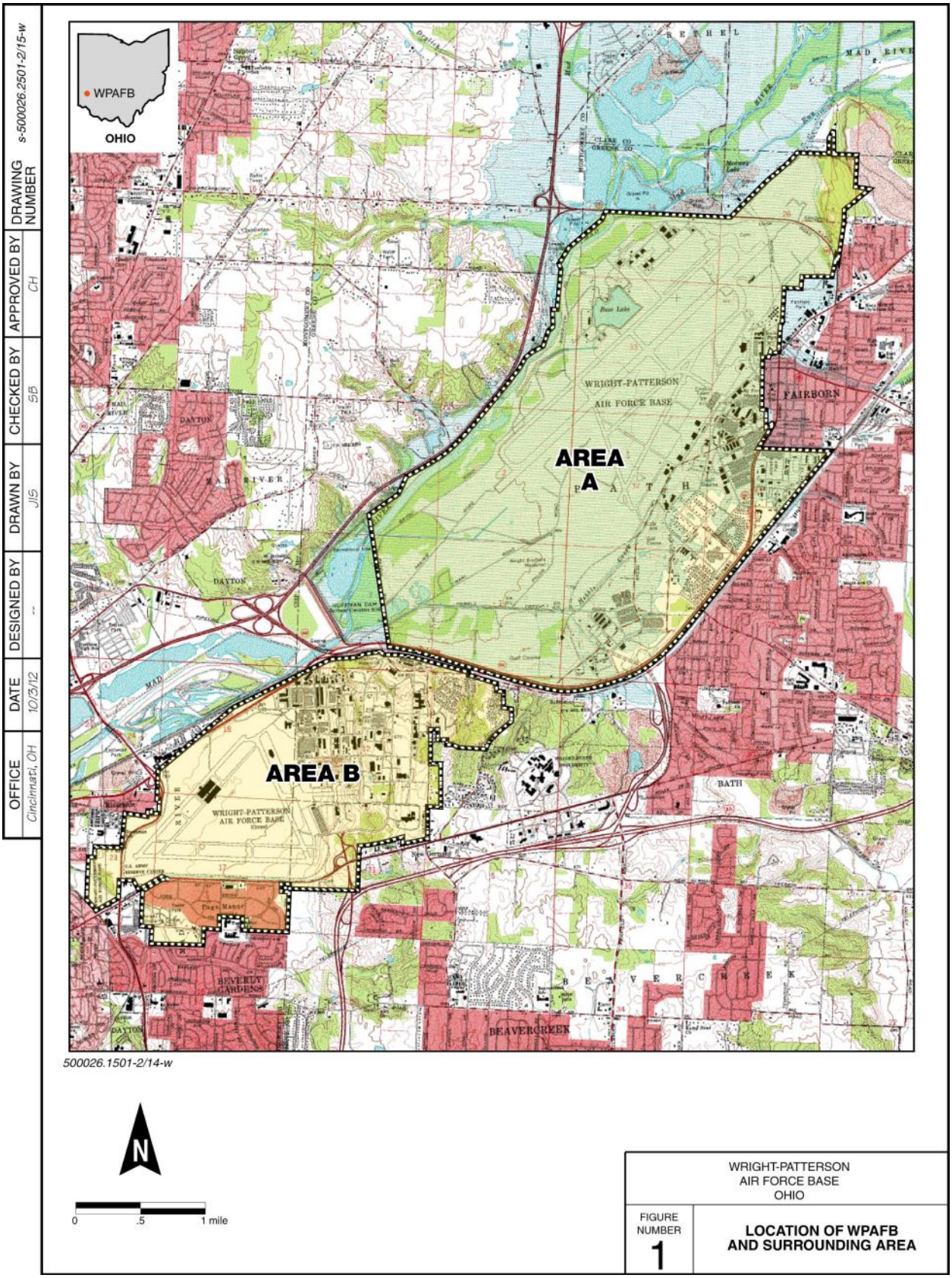
Date: 2016.12.07 08:48:40 -05'00'

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

cc:

John Banford (88 CEG/CEIEA, WPAFB)
Cynthia A. Hassan (CB&I Federal Services, LLC)

Attachments:
Figure 1 – Location of WPAFB and Surrounding Area
Figure 2 – Proposed Lateral Drift Training Facility Location
Figure 3 – Threatened and Endangered Species, Wetlands, and Floodplains in the Project Area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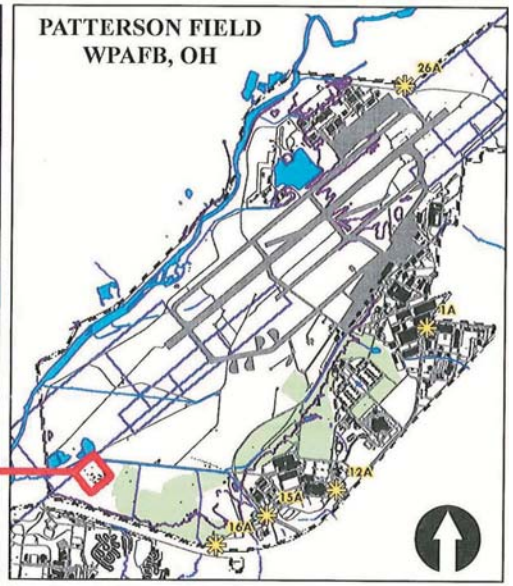
LOCATION OF WPAFB
AND SURROUNDING AREA

OFFICE	DATE	DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY	DRAWING NUMBER
Cincinnati, OH	8/10/16	--	JIS	SB	CH	s-500026.0303-8/16-w



- Proposed Lateral Drift Trainer Facility Location
- Accident Potential Zones (APZs) & Clear Zones
- 100-Year Flood Plain
- Existing Facility
- Existing Fence
- Entry Control Points (ECPs)/Gates
- Water
- Golf Course
- Installation Boundary

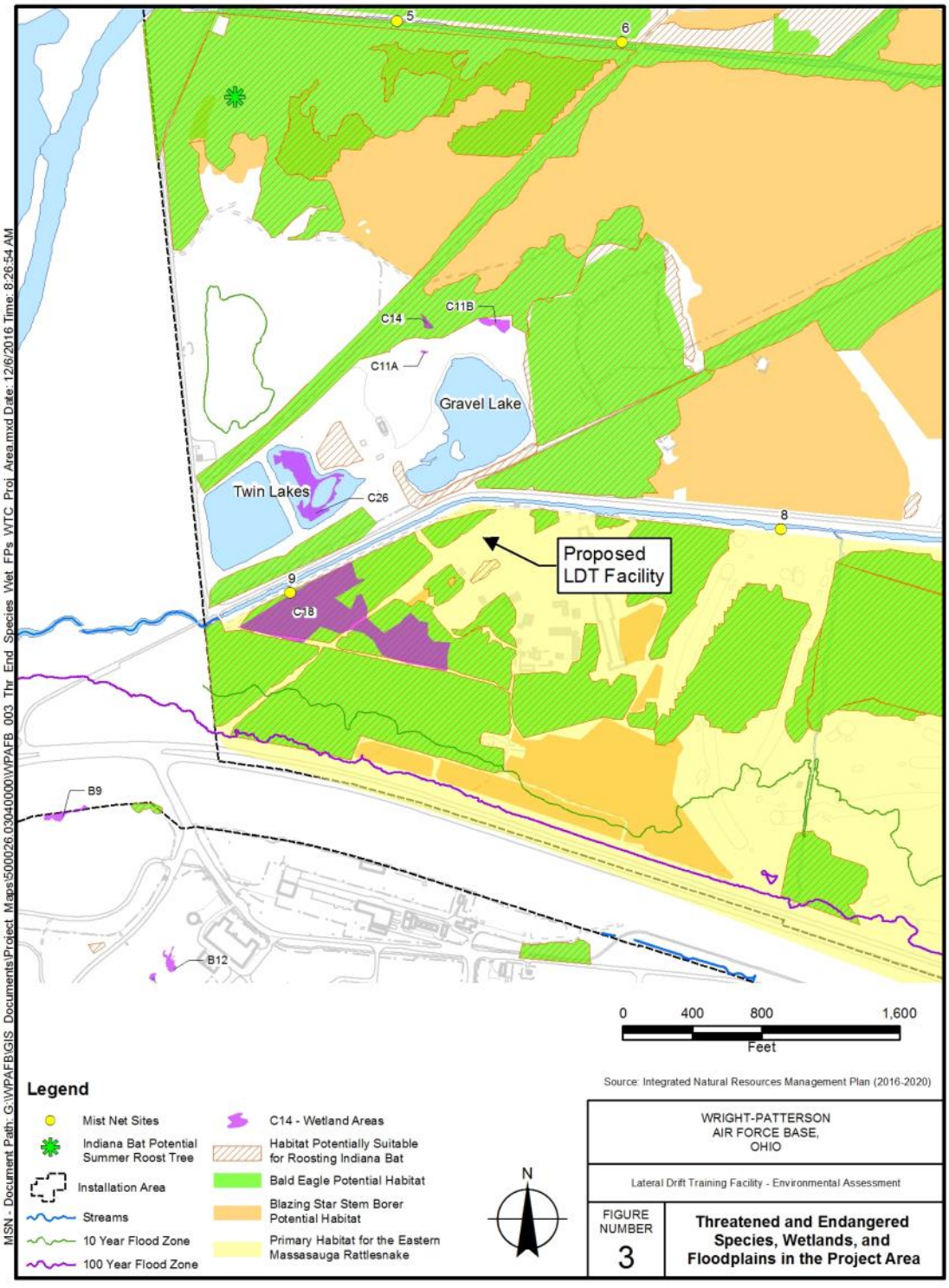
WTC Warfighter Training Center

Source: 88CEG/CENPL

WRIGHT-PATTERSON
AIR FORCE BASE
OHIO

FIGURE NUMBER 2

LATERAL DRIFT TRAINING FACILITY LOCATION


5
6
C14
C11B
C11A
Gravel Lake
Twin Lakes
C26
8
Proposed
LDT Facility
9
C18
B9
B12
0
400
800
1,600
Feet
Legend
Mist Net Sites
Indiana Bat Potential Summer Roost Tree
Installation Area
Streams
10 Year Flood Zone
100 Year Flood Zone
C14 - Wetland Areas
Habitat Potentially Suitable for Roosting Indiana Bat
Bald Eagle Potential Habitat
Blazing Star Stem Borer Potential Habitat
Primary Habitat for the Eastern Massasauga Rattlesnake
N
Source: Integrated Natural Resources Management Plan (2016-2020)
WRIGHT-PATTERSON AIR FORCE BASE, OHIO
Lateral Drift Training Facility - Environmental Assessment
FIGURE NUMBER 3
Threatened and Endangered Species, Wetlands, and Floodplains in the Project Area
MSN - Document Path: G:\WPAFB\GIS_Documents\Project_Maps\500026.03040000\WPAFB_003_Thr_End_Species_Wet_FPs_WTC_Proj_Area.mxd Date: 12/6/2016 Time: 8:26:54 AM

From: susan_zimmermann@fws.gov [mailto:susan_zimmermann@fws.gov] **On Behalf Of** Ohio, FW3
Sent: Monday, March 20, 2017 2:17 PM
To: WARNER, DARRYN M NH-03 USAF AFMC 88 CEG/CEIEA <darryn.warner@us.af.mil>
Subject: Area 'A' Warfighter Training Center, Lateral Drift Trainer, Greene Co.

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

TAILS# 03E15000-2017-TA-0978

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.

Sincerely,

Dan Everson

Field Office Supervisor

Ohio Department of Natural Resources Consultation Letters:

1. **WPAFB Request – 07Dec16**
2. **ODNR Response – 31Jan17**

From:	WARNER, DARRYN M NH-03 USAF AFMC 88 CEG/CEIEA
To:	EnvironmentalReviewRequest@dnr.state.oh.us
Cc:	Hassan, Cindy; BANFORD, JOHN R CIV USAF AFMC 88 CEG/CEIEC; TREVINO, DANIELLE E GS-09 USAF AFMC 88 CEG/CEIEA; Burns, Stephanie A
Subject:	Lateral Drift Training Facility EA- WPAFB
Date:	Wednesday, December 07, 2016 10:41:14 AM
Attachments:	4a LDT Facility EA_ODNR Request_7Dec16.pdf 4b LDT Facility EA_ODNR ONHD Request Form_7Dec16.pdf

---

Please let me know if there are any questions/concerns or if additional information is needed!

Darryn M. Warner
Natural Resources Program Manager
Wildland Fire Program Manager
Environmental Emergency Response
88 CEG/CEIEA
Com. Ph. (937)257-4857 DSN 787-4857
Fax (937) 656-1534
Darryn.Warner@us.af.mil

"A Veteran is someone who, at one point in his/her life, wrote a blank check made payable to the United States of America for an amount up to and including his/her life." ~ Unknown

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

7 December 2016

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 the Warfighter Training Center (WTC) Area A at Wright-Patterson Air Force Base (WPAFB, Base). The Base is preparing an Environmental Assessment (EA) to evaluate impacts of installing a modular lateral drift training (LDT) facility at the WTC (Figures 1 and 2). The decision to install a modular lateral drift trainer would enable WPAFB to provide a locally-accessible training facility to United States Air Force School of Aerospace Medicine (USAFSAM) students.

The installation of a modular LDT facility is needed to provide enlisted initial skills students with the required hands-on training (hanging harness procedures, drag procedures, parachute landing falls) to fulfill their academic requirement. The installation of an LDT facility would enable aerospace physiology instructors to conduct hands-on training that would be similar to that encountered during a military aircraft ejection. An LDT facility includes hanging harnesses to practice descent under a canopy, concrete platforms to conduct parachute landing falls, and zip lines to practice lateral drifting.

Proposed Action

The Proposed Action involves the installation of a 25 foot (ft) by 125 ft modular steel fabricated shelter/canopy structure that would be sited in an existing gravel parking lot at the WTC. Construction activities would involve excavation equipment (concrete and gravel delivery trucks) to dig footings required for the canopy structure. Excavation would be conducted for concrete footings and platforms and would also include installation of support wire anchors and trenching for on-site electrical. The planned concrete platform would be 50 ft wide and 7 ft deep. Electricity would be run from an existing storage building located adjacent and south of the proposed LDT site. Training exercises at the LDT facility would involve no ground disturbance other than raking the gravel landing back to smooth after use.

The USAFSAM students would be transported via Base transportation to the WTC training area where they would perform the four hour LDT training exercises, then would be returned to the USAFSAM classroom facility in Area B or would be returned to non-prior service dorms.

The number of trainers and trainees would vary and depend upon the number of students enrolled; however, approximately four to five instructors (trainers) would be involved in training at the LDT facility and approximately

36 to 48 trainees per year would be expected to complete the required training at the LDT facility over the next three years.

Under the No Action alternative, an LDT facility would not be installed at WPAFB and the deficiency in academic training would continue to be realized. Without the accessibility of an LDT at WPAFB, students would not be able to fulfill their academic requirements locally and would be required to continue the course requirements on temporary duty (TDY) at Sheppard Air Force Base in Texas, resulting in continued travel/lodging costs.

The proposed project site at the WTC is located in an area identified as suitable habitat for the federal-listed threatened and state-listed endangered Eastern Massasauga Rattlesnake (EMR) (Figure 3). However, WPAFB has determined that the installation of the LDT facility at this location would not affect the EMR because no EMRs have been captured in the WTC area in over 23 years. Surveys for EMR have continually been conducted on Base and within the WTC area to determine the presence of EMR; however, most-recent surveys conducted in 2009, 2010, 2011, and 2012 have produced no EMR captures. In addition, the WTC proposed project site is located in a previously-disturbed gravel parking lot; therefore, there would be no impact to this species or other threatened or endangered species known to occur or have occurred at WPAFB. This determination is based on extensive surveys and studies that have been conducted over the years in the WTC 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,

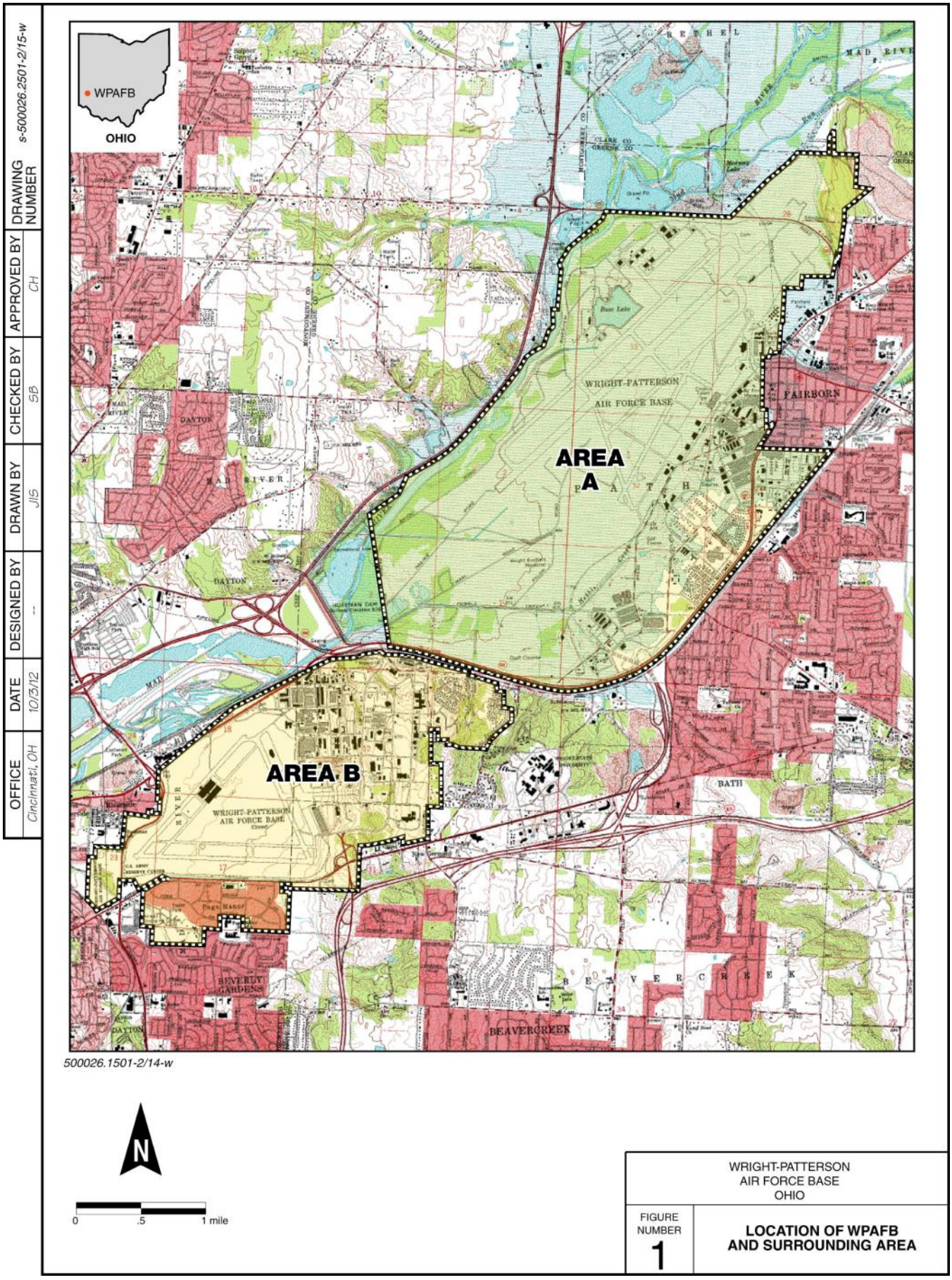
WARNER.DARRYN.M.1386410808

Digitally signed by WARNER.DARRYN.M.1386410808
DN: c=US, o=U.S. Government, ou=DoD, ou=PKI, ou=USAF, cn=WARNER.DARRYN.M.1386410808
Date: 2016.12.07 08:52:43 -05'00'

Darryn Warner
Natural Resources Program Manager
Environmental Assets Section
Environmental Branch

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

Attachments: Natural Heritage Data Request Form
Figure 1 – Location of WPAFB and Surrounding Area
Figure 2 – Proposed Lateral Drift Training Facility Location
Figure 3 – Threatened and Endangered Species, Wetlands, and Floodplains in the Project Area



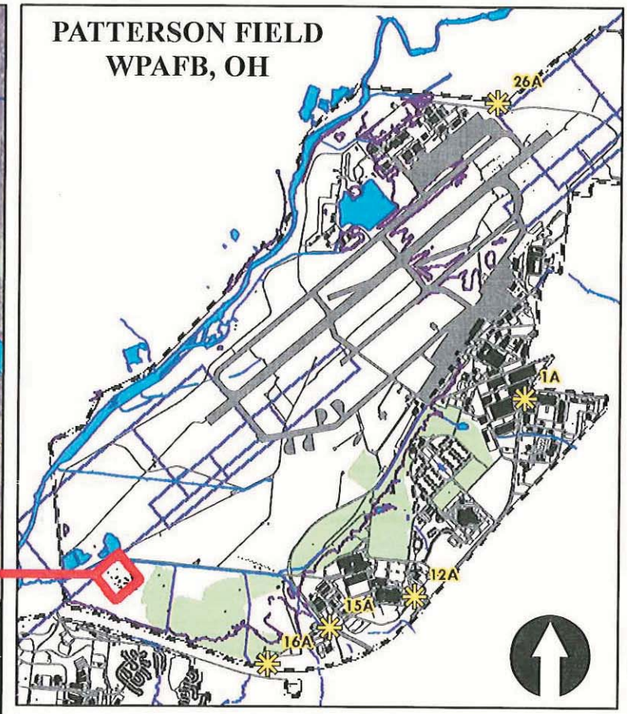
500026.1501-2/14-w

OFFICE	DATE	DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY	DRAWING NUMBER
Cincinnati, OH	10/3/12	--	JIS	SB	CH	s-500026.2501-2/15-w

WRIGHT-PATTERSON
AIR FORCE BASE
OHIO

FIGURE NUMBER 1

LOCATION OF WPAFB AND SURROUNDING AREA



Proposed Lateral Drift Trainer Facility Location
Accident Potential Zones (APZs) & Clear Zones
100-Year Flood Plain
Existing Facility
Existing Fence
Water
Golf Course
Installation Boundary
WTC Warfighter Training Center

Source: 88CEG/CENPL

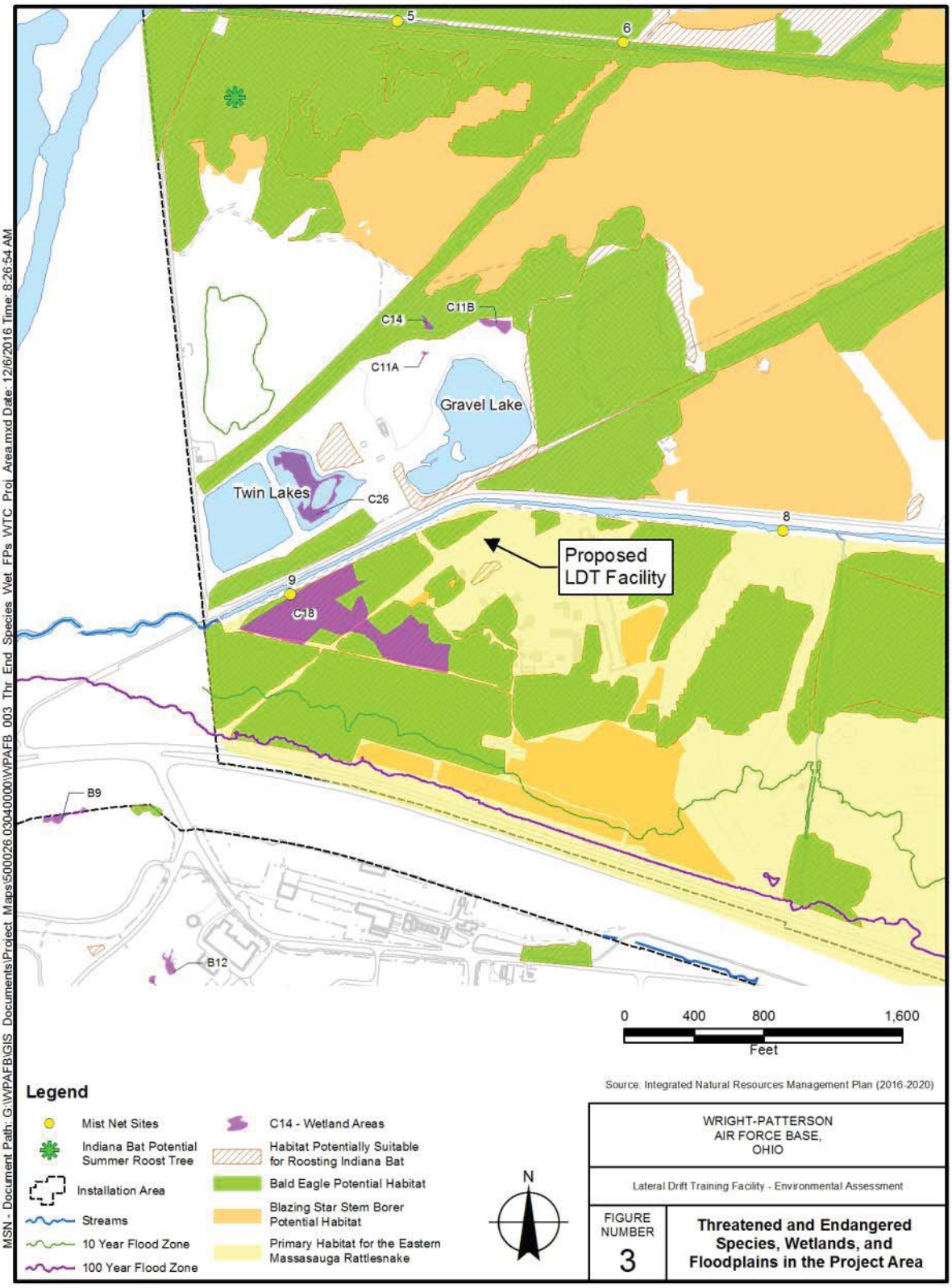
WRIGHT-PATTERSON
AIR FORCE BASE
OHIO

FIGURE NUMBER 2

LATERAL DRIFT TRAINING FACILITY LOCATION

DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY	DRAWING NUMBER
--	JIG	SB	CH	s-500026.0303-8/16-w

OFFICE	DATE
Cincinnati, OH	8/10/16


MSN - Document Path: G:\WPAFB\GIS Documents\Project Maps\500026.03040000\WPAFB 003 Thr End Species Wet FPs WTC Proi Area.mxd Date: 12/6/2016 Time: 8:26:54 AM
5
6
C14
C11B
C11A
Gravel Lake
Twin Lakes
C26
8
Proposed
LDT Facility
9
C18
B9
B12
0
400
800
1,600
Feet
Legend
Mist Net Sites
Indiana Bat Potential Summer Roost Tree
Installation Area
Streams
10 Year Flood Zone
100 Year Flood Zone
C14 - Wetland Areas
Habitat Potentially Suitable for Roosting Indiana Bat
Bald Eagle Potential Habitat
Blazing Star Stem Borer Potential Habitat
Primary Habitat for the Eastern Massasauga Rattlesnake
N
Source: Integrated Natural Resources Management Plan (2016-2020)
WRIGHT-PATTERSON
AIR FORCE BASE,
OHIO
Lateral Drift Training Facility - Environmental Assessment
FIGURE NUMBER
3
Threatened and Endangered Species, Wetlands, and Floodplains in the Project Area

Ohio Department of Natural Resources
DIVISION OF WILDLIFE

DNR 5203 (R0915)

NATURAL HERITAGE DATA REQUEST FORM

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

INSTRUCTIONS:

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

WHAT WE PROVIDE:

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

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

Date: 6Dec2016 **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: Warfighter Training Center (WTC) - Lateral Drift Training (LDT) Facility

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

Project County: Greene

Project City or Township: Bath Township

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

Fairborn, OH

Project latitude and longitude: Latitude: North 39 47' 59.3055" / Longitude: West 84 4' 45.0353"

Description of work to be performed at the project site:

The Proposed Action involves installing a 25 foot (ft) by 125 ft modular steel fabricated shelter/canopy that would be sited in an existing gravel parking lot at the WTC in Area A at WPAFB. Construction activities would involve excavation equipment to dig footings required for the canopy. The concrete platform would be 50 ft wide and 7 ft deep. Electricity would be run from an existing structure located adjacent to the proposed site. Training exercises would involve no ground disturbance other than raking the gravel landing back to smooth after use.

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 DN: c=US, o=U.S. Government, ou=DoD, ou=PKI, ou=USAF, cn=WARNER.DARRYN.M.1386410808 Date: 2016.12.07 08:55:35 -05'00' **Date:** 7Dec2016

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

January 31, 2017

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

Re: 16-910; Warfighter Training Center (WTC) - Lateral Drift Training (LDT) Facility

Project: he Proposed Action involves installing a 25 foot (ft.) by 125 ft. modular steel fabricated shelter/canopy that would be sited in an existing gravel parking lot at the WTC in Area A at WPAFB.

Location: The proposed project is located in Bath Township, 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 record at or within a one-mile radius of the project area:

Eastern massasauga (*Sistrurus catenatus*), E, FT
Indiana bat (*Myotis sodalis*), E, FE
Dayton Aviation Heritage Park – National Park Service
Huffman Metropark – Five Rivers MetroParks

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. Additional comments on some of the features may be found in pertinent sections below.

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.

Statuses are defined as: E = state endangered; T = state threatened; P = state potentially threatened; SC = state species of concern; SI = state special interest; A = species recently added to state inventory, status not yet determined; X = presumed extirpated in Ohio; FE = federal endangered, FT = federal threatened, FSC = federal species of concern, FC = federal candidate species.

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 to include: 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 this or other aquatic 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 habitat at the project site and within the vicinity of the project area, and the type of work proposed, 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 habitat at the project site and within the vicinity of the project area, and the type of work proposed, 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 habitat at the project site and within the vicinity of the project area, and the type of work proposed, 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). Due to the location, the type of habitat at the project site, and the type of work proposed, this project is 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. Due to the location, the type of habitat at the project site, and the type of work proposed, this project is 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/water-use-planning/floodplain-management#PUB

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

State Historic Preservation Office Consultation Letter:

1. **WPAFB Request – 23Jan17**
2. **SHPO Response – 21Feb17**

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

23 January 2017

Mr. Paul F. Woodruff, CRM
88 CEG/CEIEA
1450 Littrell Road
Wright-Patterson AFB OH 45433-5209

Ms. Amanda Schraner Terrell
Deputy State Historic Preservation Officer
Ohio Historic Preservation Office
800 East 17th Avenue
Columbus OH 43211-2497

Dear Ms. Terrell

Wright-Patterson Air Force Base (WPAFB) is proposing to install a modular lateral drift training (LDT) facility within the Warfighter Training Center (WTC) at Wright-Patterson Air Force Base, Ohio. There are no identified properties eligible for listing on the National Register of Historic Places located within the project area. (see Attachment 1). It is our opinion that this proposed action will have no adverse effects on historic properties. In accordance with 36 CFR 800.11(e), we are submitting the following documentation:

Description of the undertaking. WPAFB Proposes to install a 25 foot ft. by 125 ft. modular LDT facility within the WTC located in Area A at WPAFB. Attachment 1 presents WPAFB and the surrounding area along with the proposed location for the LDT within the WTC. The LDT facility would include hanging harnesses to practice descent under a canopy, concrete platforms to conduct parachute landing falls, and zip lines to practice LDT. The proposed training facility would give U.S. Air Force School of Aerospace Medicine (USAFSAM) students a realistic experience of what it is like to be under canopy. The installation of a modular LDT facility is needed to provide enlisted initial skills students with the 12 hours of required hands-on training (e.g., hanging harness procedures, drag procedures, parachute landing falls) to fulfill their academic requirement. Refer to Attachment 2 for drawings and photos of a typical LDT facility built at Sheppard AFB. The one propose for WPAFB would be the same design.

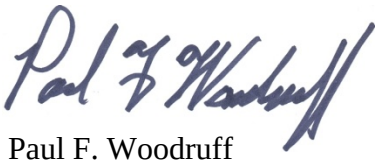
Description of steps taken to identify historic properties. In accordance with 36 CFR 800.4(c) WPAFB has evaluated the historic significance of base facilities applying the National Register criteria. WPAFB has assessed all buildings on the installation that are 50 years old or older, and has additionally assessed buildings for exceptional significance relating to the Cold War. There are no know historic properties within the APE as shown in Attachment 1.

Description of the potentially affected properties. There are no know historic properties located within the APE. All of the proposed undertaking is outside of any known eligible historic districts of WPAFB. There are no know archaeological resource in the area that could be affected by construction of this LDT Facilitly. However, in the event of a discovery of any archaeological resources including any Native American human remains or cultural objects, the WPAFB agency official will ensure compliance with Native American Graves Protection and Repatriation Act of 1995 (NAGRPA) [25 U.S.C. 3001- 3013, 43 CFR 10] and any applicable statutory and regulatory requirements of the American Indian Religious Freedom Act (AIRFA) [42 U.S.C.1996-1996a], Archaeological Resources Protection Act (ARPA) [16 U.S.C. 470aa-470ll], National Environmental Policy Act (NEPA) [42 U.S.C. 4321-4370c], and National Historic Preservation Act (NHPA) [16 U.S.C. 470-470w] as well as E.O. 13007 and White House Memorandum, April 29, 1994.

Description of the undertaking's effects on historic properties. It is our opinion that the undertaking as proposed will not affect any historic properties or historic areas of the base depicted in the attached mapping. This determination was made for the following reasons. There are no known historic properties identified that are located within the APE, therefore there would be no effects to any historic properties. All work to install the LDT would occur in an area already disturbed in the past and the area has previously been surveyed without identifying any potential archaeoloigical resources. A recent survey of the area related to installation of a fiber optic cable line found little potential for archaeological in this area. Therefore, it is our opinion that, in accordance with 36 CFR 800.5(b), the proposed undertaking would have no effect on historic properties.

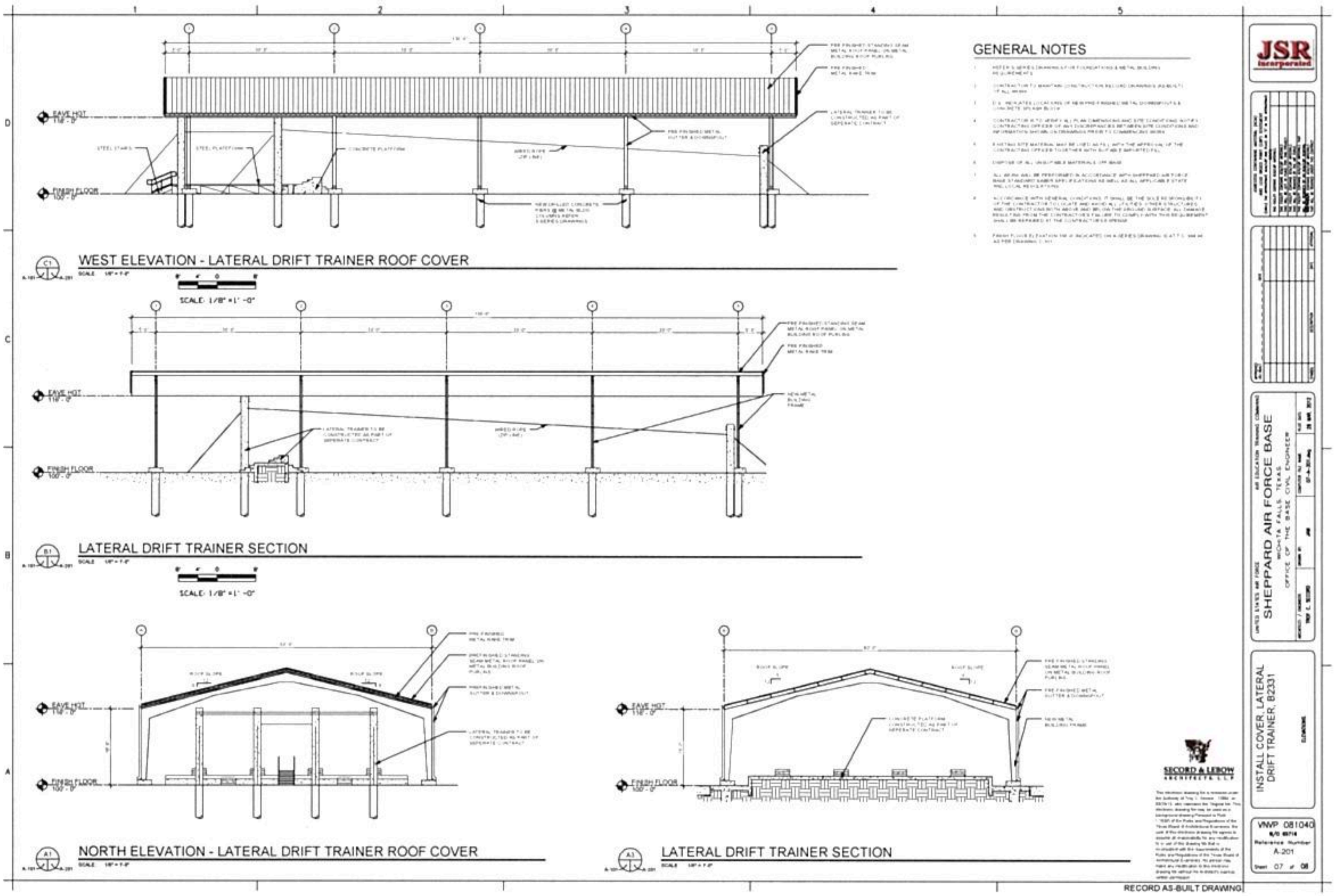
Please review the information and inform us of your concurrence with our determination that there would be no adverse effect to historic properties. Should you have questions, I can be reached at 937-257-1374 or via email at paul.woodruff@us.af.mil.

Sincerely

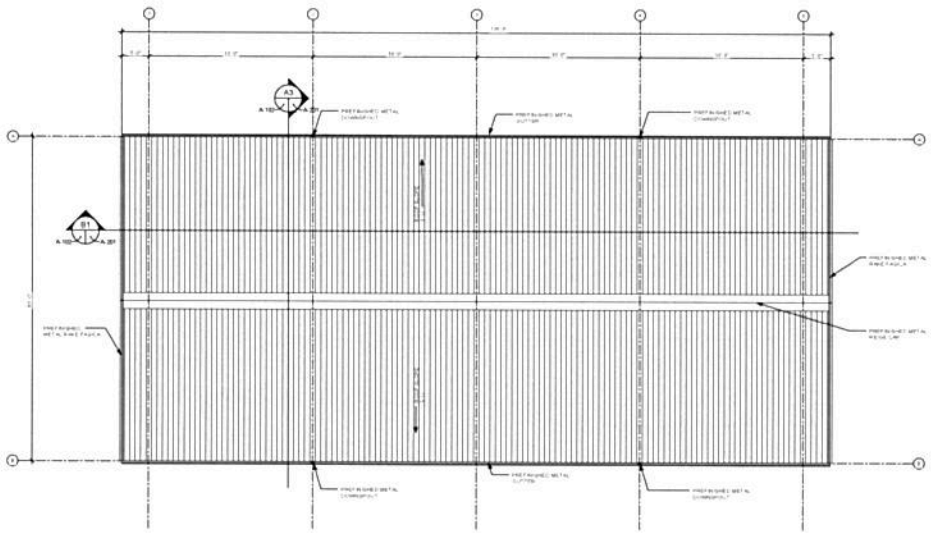


Paul F. Woodruff
Cultural Resources Manager
Environmental Branch

Attachments:
1. Area A Mapping
2. LDT Drawings
3. Identified Arch Sites at WPAFB



EAVE HGT
FINISH FLOOR
WEST ELEVATION - LATERAL DRIFT TRAINER ROOF COVER
SCALE: 1/8" = 1'-0"
LATERAL DRIFT TRAINER SECTION
SCALE: 1/8" = 1'-0"
NORTH ELEVATION - LATERAL DRIFT TRAINER ROOF COVER
LATERAL DRIFT TRAINER SECTION
GENERAL NOTES
JSR incorporated
SHEPPARD AIR FORCE BASE
WICHITA FALLS, TEXAS
OFFICE OF THE BASE CIVIL ENGINEER
INSTALL COVER, LATERAL DRIFT TRAINER, B2331
SECORD & LEBOW
VNVP 081040
A-201
RECORD AS-BUILT DRAWING



ROOF PLAN - ROOF COVER OVER LATERAL DRIFT TRAINER

SCALE: 1/8" = 1'-0"

NORTH

SECORD & LEBOW ARCHITECTS, LLP

JSR Incorporated

SHEPPARD AIR FORCE BASE
WICHITA FALLS, TEXAS
OFFICE OF THE BASE CIVIL ENGINEER

INSTALL COVER, LATERAL DRIFT TRAINER, 82331

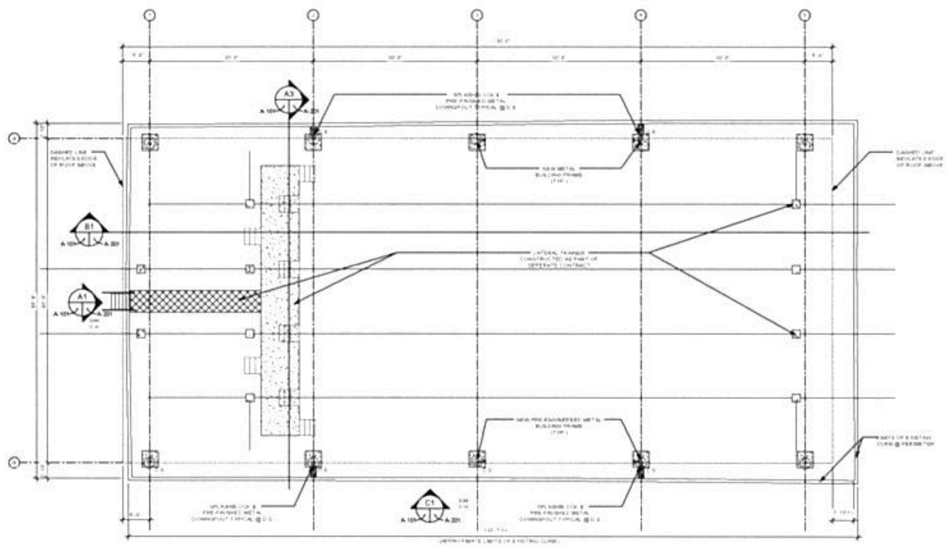
ROOF PLAN

VWP 08104G
Reference Number
A-102

Sheet 06 of 08

RECORD AS-BUILT DRAWING

GENERAL NOTES



FLOOR PLAN - ROOF COVER OVER LATERAL DRIFT TRAINER

SCALE: 1/8" = 1'-0"

JSR incorporated

SHEPPARD AIR FORCE BASE

WICHITA FALLS, TEXAS

OFFICE OF THE BASE CIVIL ENGINEER

INSTALL COVER, LATERAL DRIFT TRAINER, B2331

FLOOR PLAN

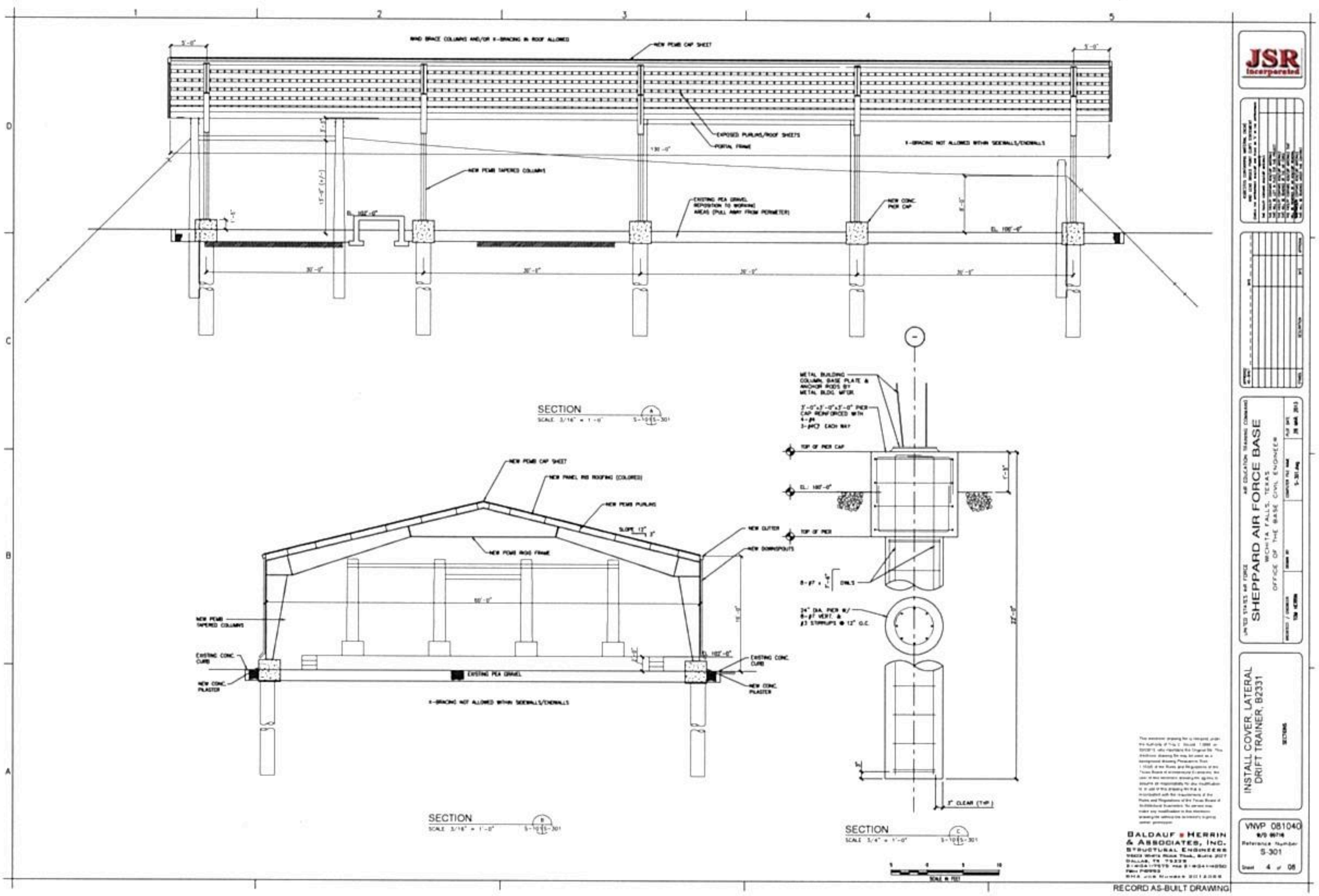
SECORD & LEBOW ARCHITECTS L.L.P.

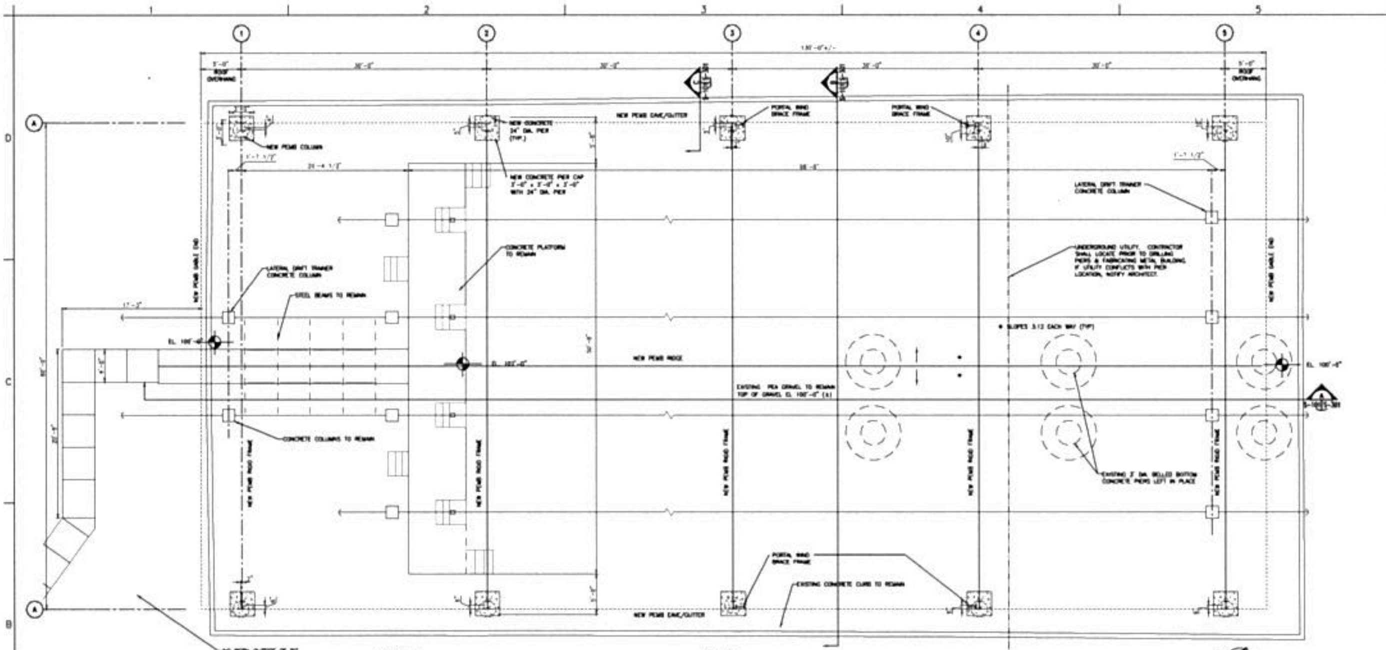
VNVP 081040

Reference Number A-101

Sheet 05 of 08

RECORD AS-BUILT DRAWING


NEW PEMB CAP SHEET
EXPOSED PURLINS/ROOF SHEETS
PORTAL FRAME
X-BRACING NOT ALLOWED WITHIN SIDEWALLS/ENDWALLS
NEW PEMB TAPERED COLUMNS
EXISTING PEA GRAVEL REPOSITION TO WORKING AREAS (PULL AWAY FROM PERIMETER)
NEW CONC. PIER CAP
EL. 100'-0"
30'-0"
SECTION
SCALE: 3/16" = 1'-0"
NEW PEMB CAP SHEET
NEW PANEL RIB ROOFING (COLORED)
NEW PEMB PURLINS
NEW PEMB RIGID FRAME
NEW GUTTER
NEW DOWNSPOUTS
NEW PEMB TAPERED COLUMNS
EXISTING CONC. CURB
NEW CONC. PILASTER
EXISTING PEA GRAVEL
X-BRACING NOT ALLOWED WITHIN SIDEWALLS/ENDWALLS
SECTION
SCALE: 3/16" = 1'-0"
METAL BUILDING COLUMN BASE PLATE & ANCHOR RODS BY METAL BLDG. MFGR.
TOP OF PIER CAP
EL. 100'-0"
TOP OF PIER
24" DIA. PIER W/ 8-#7 VERT. & #3 STIRRUPS @ 12" O.C.
3" CLEAR (TYP.)
SECTION
SCALE: 3/4" = 1'-0"
SCALE IN FEET
UNITED STATES AIR FORCE
AIR EDUCATION TRAINING COMMAND
SHEPPARD AIR FORCE BASE
WICHITA FALLS, TEXAS
OFFICE OF THE BASE CIVIL ENGINEER
INSTALL COVER, LATERAL
DRIFT TRAINER, B2331
SECTIONS
BALDAUF & HERRIN
& ASSOCIATES, INC.
STRUCTURAL ENGINEERS
DALLAS, TX 75229
VNVP 081040
Reference Number
S-301
Sheet 4 of 08
RECORD AS-BUILT DRAWING



NO WORK OUTSIDE OF PIT

GENERAL NOTES

DESIGN CRITERIA FOR PRIMARY STRUCTURAL SYSTEM

1. BUILDING CODE: 2009 INTERNATIONAL BUILDING CODE
2. DESIGN LIVE LOADS

A. ROOF	20 PSF

3. WIND LOAD DESIGN CRITERIA

A. BASIC WIND SPEED	90 MPH
B. EXPOSURE	C
C. IMPORTANCE FACTOR	1.00
D. INTERNAL PRESSURE COEFFICIENT	OPEN BLDG
E. OCCUPANCY CATEGORY	II

4. SEISMIC DESIGN CRITERIA

A. OCCUPANCY CATEGORY	I
B. IMPORTANCE FACTOR	1.0
C. SPECTRAL RESPONSE ACCELERATIONS	
Ss	0.17 G
S1	0.06 G
D. SPECTRAL RESPONSE COEFFICIENTS	
Sds	0.13
Sd1	0.066
E. SITE CLASS PER SWD-ADM	C
F. SEISMIC DESIGN CATEGORY	B
G. BASIC SEISMIC-FORCE-RESISTING SYSTEM	BY METAL BLDG MFGR
H. SEISMIC RESPONSE COEFFICIENT Cs	BY METAL BLDG MFGR
I. RESPONSE MODIFICATION FACTOR, R	BY METAL BLDG MFGR
J. BASE SHEAR, N/S, E/W	BY METAL BLDG MFGR
K. ANALYSIS METHOD	BY METAL BLDG MFGR

5. GROUND SNOW LOAD — 5 PSF

FOUNDATIONS

1. THE SUBSURFACE INFORMATION AND FOUNDATION DESIGN ARE BASED ON REPORT NO. 112-128 PREPARED BY APEX GEOSCIENCES, INC. DATED AUGUST 6, 2012.

DRILLED PIERS

1. PIER DESIGN IS BASED ON THE FOLLOWING:
   - A. ALLOWABLE END BEARING: 5.3 KSF
   - B. ALLOWABLE SKIN FRICTION: 0.28 KSF
   - C. ALLOWABLE NEGATIVE SKIN FRICTION: 0.132 KSF
   - D. BEARING STRATA IS LEAN CLAY
2. LONGITUDINAL PIER REINFORCING SHALL BE DELIVERED TO SITE IN STANDARD 60' LENGTHS. PIER CAGES SHALL BE CUT TO PROPER LENGTHS AFTER PIER DEPTH IS FIELD VERIFIED.
3. UNLESS SHOWN OR NOTED OTHERWISE, SPLICES IN VERTICAL REINFORCING SHALL BE 72 BAR DIAMETERS.
4. PENETRATION SHALL BE DRILLED FULL DEPTH IN A CONTINUOUS OPERATION. CONCRETE SHALL BE PLACED IN PIER WITHIN 4 HOURS OF COMPLETED DRILLING.
5. PIER SHAFTS ABOVE GRADE SHALL BE FORMED TO SCHEDULED SHAFT DIAMETER.
6. PIER SHAFT DIAMETERS SHALL NOT EXCEED THE SCHEDULED DIAMETERS WITHOUT APPROVAL OF THE ENGINEER.
7. PROVIDE ADDITIONAL REINFORCING AND ACCESSORIES AS REQUIRED TO HANDLE AND PLACE CAGE.

CONCRETE REINFORCING

1. ALL CONCRETE REINFORCEMENT SHALL BE OF DOMESTIC MANUFACTURE AND SHALL CONFORM TO ASTM A 615, GRADE 60.
2. DETAILING OF CONCRETE REINFORCEMENT AND ACCESSORIES SHALL BE PER ACI 315.
3. REINFORCING SHOWN IN SECTIONS AND DETAILS IS SCHEMATIC AND INDICATES THAT REINFORCING EXISTS. PROVIDE REINFORCING AS REQUIRED BY SCHEDULE, NOTE, GENERAL NOTES, AND SPECIFICATIONS.
4. WHEN PERMITTED, WELDING OF REINFORCEMENT SHALL BE PER AWS D1.4.

CONCRETE

1. CONCRETE PROPORTIONING, MIXING, TRANSPORTING, PLACING, AND CURING SHALL BE PER ACI 301.
2. CONCRETE SURFACES SHALL CONFORM TO TOLERANCE LIMITS PER ACI 117 U.N.O.
3. CONCRETE SHALL HAVE SAND, COARSE AGGREGATES PER ASTM C-33, TYPE I OR II PORTLAND CEMENT PER ASTM C-150, AND SHALL COMPLY WITH THE FOLLOWING:

CLASS	28 DAY STRENGTH	COARSE AGGR.	SLUMP	AGG SIZE	USAGE
A	3000	0.50	7" +/-1"	1.5"	PIERS
B	3000	0.50	4" +/-1"	1"	PIER CAPS

4. U.N.O. OR AS INDICATED ON ARCHITECTURAL DRAWINGS, PROVIDE CHAMFERS AT EXPOSED EDGES OF CONCRETE.

METAL BUILDING

1. METAL BUILDING SHALL BE DESIGN TO ACCOMMODATE LATERAL MOVEMENTS AT THE TOP OF EACH FOUNDATION OF 0.75 INCHES ALONG THE AXIS OF EACH RIGID FRAME.
2. METAL BUILDING SHALL BE DESIGNED AND CONSTRUCTED TO MEET ALL REQUIREMENTS OF THE BUILDING CODE.
3. METAL BUILDING DESIGN CALCULATIONS SHALL BE SEALED AND SIGNED BY THE ENGINEER IN RESPONSIBLE CHARGE OF THE METAL BUILDING AND SUBMITTED TO THE CONTRACTOR.
4. METAL BUILDING SHOP AND ERECTION DRAWINGS SHALL BE SEALED AND SIGNED BY THE ENGINEER IN RESPONSIBLE CHARGE OF THE METAL BUILDING AND SUBMITTED TO THE CONTRACTOR.

AS-BUILT NOTE:

1. DIMENSION SHOWN AT EACH BUILDING FRAME COLUMN INDICATES THE LOCATION OF THE DRILLED CONCRETE PIER IN RELATION TO THE CONCRETE PIER CAP. DRILLED PIERS WERE MISALIGNED DURING CONSTRUCTION. CONCRETE PIER CAPS WERE RESIZED AND ADDITIONAL STEEL REINFORCING WAS PLACED IN PIER CAP AND CONNECTED TO DRILLED CONCRETE PIER.

SCALE IN FEET

BALDAUF • HERRIN & ASSOCIATES, INC.
STRUCTURAL ENGINEERS

JSR Incorporated

UNITED STATES AIR FORCE
AIR EDUCATION TRAINING COMMAND
SHEPPARD AIR FORCE BASE
WICHITA FALLS, TEXAS
OFFICE OF THE BASE CIVIL ENGINEER

INSTALL COVER, LATERAL DRIFT TRAINER, B2331
PARACHUTE TRAINING AREA-PLAN

VNVP 081040
Reference Number
S-101
Sheet 3 of 08

RECORD AS-BUILT DRAWING

OHIO HISTORY CONNECTION

February 21, 2017

In reply, please refer to:
2017-GRE-37655

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

RE: Modular Lateral Drift Training (LDT) Facility Installation
Wright-Patterson Air Force Base Area A, Greene County, Ohio

Dear Mr. Woodruff:

This letter is in response to correspondence received on January 24, 2017. Our comments are made pursuant to Section 106 of the National Historic Preservation Act of 1966, as amended, and the associated regulations at 36 CFR Part 800.

Wright-Patterson Air Force Base (WPAFB) is proposing to install a modular lateral drift training (LDT) facility within the Warfighter Training Center (WTC). The LDT facility will be 25' x 125'.

No known historic properties exist within the APE. There should be no effects to any potential archaeological resources since the project areas have been previously surveyed and disturbed. Therefore, we agree with your determination that the project as proposed will have no effect on historic properties. No further coordination with this office is necessary, unless there is a change in the proposed project or an unanticipated discovery of archaeological remains occurs during project construction. In such a situation, our office should be contacted as per 36 CFR Section 800.13.

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

Sincerely,

Joy Williams

Joy Williams, Project Reviews Manager
Resource Protection and Review

RPR Serial No: 1067046

Native American Tribal Consultation Letters:

1. **WPAFB Request – 06Feb17**
   a. **Sac and Fox Tribe of the Mississippi in Iowa**
      i. **Response – No response**
   b. **Keweenaw Bay Indian Community**
      i. **Response – No response**
   c. **Saginaw Chippewa Indian Tribe of Michigan**
      i. **Response – No response**
   d. **Cherokee Nation**
      i. **Response – No response**
   e. **Seneca Nation of Indians**
      i. **Response – 06Feb17**
   f. **Seneca-Cayuga Nation**
      i. **Response – No response**

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

February 6, 2017

Mr. Paul F. Woodruff
Cultural Resources Manager
88 CEG/CEIEA
1450 Littrell Road
Wright-Patterson AFB OH 45433-5209

Mr. Johnathan L. Buffalo
Historic Preservation Director
Sac & Fox Tribe of the Mississippi in Iowa
349 Meskwaki Road
Tama IA 52339-9634

Dear Mr. Buffalo

Wright-Patterson Air Force Base (WPAFB) is proposing to install a modular lateral drift training (LDT) facility within the Warfighter Training Center (WTC) at Wright-Patterson Air Force Base, Ohio. There are no identified properties eligible for listing on the National Register of Historic Places located within the project area. (see Attachment 1). It is our opinion that this proposed action will have no adverse effects on historic properties. In accordance with 36 CFR 800.11(e), we are submitting the following documentation:

Description of the undertaking. WPAFB Proposes to install a 25 foot ft. by 125 ft. modular LDT facility within the WTC located in Area A at WPAFB. Attachment 1 presents WPAFB and the surrounding area along with the proposed location for the LDT within the WTC. The LDT facility would include hanging harnesses to practice descent under a canopy, concrete platforms to conduct parachute landing falls, and zip lines to practice LDT. The proposed training facility would give U.S. Air Force School of Aerospace Medicine (USAFSAM) students a realistic experience of what it is like to be under canopy. The installation of a modular LDT facility is needed to provide enlisted initial skills students with the 12 hours of required hands-on training (e.g., hanging harness procedures, drag procedures, parachute landing falls) to fulfill their academic requirement. Refer to Attachment 2 for drawings and photos of a typical LDT facility built at Sheppard AFB. The one propose for WPAFB would be the same design.

Description of steps taken to identify historic properties. In accordance with 36 CFR 800.4(c) WPAFB has evaluated the historic significance of base facilities applying the National Register criteria. WPAFB has assessed all buildings on the installation that are 50 years old or older, and has additionally assessed buildings for exceptional significance relating to the Cold War. There are no know historic properties within the APE as shown in Attachment 1.

Description of the potentially affected properties. There are no know historic properties located within the APE. All of the proposed undertaking is outside of any known eligible historic districts of WPAFB. There are no know archaeological resource in the area that could be affected by construction of this LDT Facilitly. However, in the event of a discovery of any archaeological resources including any Native American human remains or cultural objects, the WPAFB agency official will ensure compliance

with Native American Graves Protection and Repatriation Act of 1995 (NAGRPA) [25 U.S.C. 3001-3013, 43 CFR 10] and any applicable statutory and regulatory requirements of the American Indian Religious Freedom Act (AIRFA) [42 U.S.C.1996-1996a], Archaeological Resources Protection Act (ARPA) [16 U.S.C. 470aa-470ll], National Environmental Policy Act (NEPA) [42 U.S.C. 4321-4370c], and National Historic Preservation Act (NHPA) [16 U.S.C. 470-470w] as well as E.O. 13007 and White House Memorandum, April 29, 1994.

Description of the undertaking's effects on historic properties. It is our opinion that the undertaking as proposed will not affect any historic properties or historic areas of the base depicted in the attached mapping. This determination was made for the following reasons. There are no known historic properties identified that are located within the APE, therefore there would be no effects to any historic properties. All work to install the LDT would occur in an area already disturbed in the past and the area has previously been surveyed without identifying any potential archaeoloigical resources. A recent survey of the area related to installation of a fiber optic cable line found little potential for archaeological in this area. Therefore, it is our opinion that, in accordance with 36 CFR 800.5(b), the proposed undertaking would have no effect on historic properties.

Please review the information and inform us of your concurrence with our determination that there would be no adverse effect to historic properties. Should you have questions, I can be reached at 937-257-1374 or via email at paul.woodruff@us.af.mil.

Sincerely

Paul F. Woodruff
Cultural Resources Manager
Environmental Branch

Attachments:
1. Area A Mapping
2. LDT Drawings
3. Identified Arch Sites at WPAFB

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

February 6, 2017

Mr. Paul F. Woodruff
Cultural Resources Manager
88 CEG/CEIEA
1450 Littrell Road
Wright-Patterson AFB OH 45433-5209

Mr. Gary Loonsfoot, Jr.
Tribal Historic Preservation Officer
Keweenaw Bay Indian Community
16429 Beartown Road
Baraga MI 49908

Dear Mr. Loonsfoot

Wright-Patterson Air Force Base (WPAFB) is proposing to install a modular lateral drift training (LDT) facility within the Warfighter Training Center (WTC) at Wright-Patterson Air Force Base, Ohio. There are no identified properties eligible for listing on the National Register of Historic Places located within the project area. (see Attachment 1). It is our opinion that this proposed action will have no adverse effects on historic properties. In accordance with 36 CFR 800.11(e), we are submitting the following documentation:

Description of the undertaking. WPAFB Proposes to install a 25 foot ft. by 125 ft. modular LDT facility within the WTC located in Area A at WPAFB. Attachment 1 presents WPAFB and the surrounding area along with the proposed location for the LDT within the WTC. The LDT facility would include hanging harnesses to practice descent under a canopy, concrete platforms to conduct parachute landing falls, and zip lines to practice LDT. The proposed training facility would give U.S. Air Force School of Aerospace Medicine (USAFSAM) students a realistic experience of what it is like to be under canopy. The installation of a modular LDT facility is needed to provide enlisted initial skills students with the 12 hours of required hands-on training (e.g., hanging harness procedures, drag procedures, parachute landing falls) to fulfill their academic requirement. Refer to Attachment 2 for drawings and photos of a typical LDT facility built at Sheppard AFB. The one propose for WPAFB would be the same design.

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Description of the potentially affected properties. There are no know historic properties located within the APE. All of the proposed undertaking is outside of any known eligible historic districts of WPAFB. There are no know archaeological resource in the area that could be affected by construction of this LDT Facilitly. However, in the event of a discovery of any archaeological resources including any Native American human remains or cultural objects, the WPAFB agency official will ensure compliance

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Please review the information and inform us of your concurrence with our determination that there would be no adverse effect to historic properties. Should you have questions, I can be reached at 937-257-1374 or via email at paul.woodruff@us.af.mil.

Sincerely

Paul F. Woodruff
Cultural Resources Manager
Environmental Branch

Attachments:
1. Area A Mapping
2. LDT Drawings
3. Identified Arch Sites at WPAFB

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

February 6, 2017

Mr. Paul F. Woodruff
Cultural Resources Manager
88 CEG/CEIEA
1450 Littrell Road
Wright-Patterson AFB OH 45433-5209

Mr. William Johnson
Tribal Historic Preservation Officer
Saginaw Chippewa Indian Tribe of Michigan
6650 East Broadway
Mt Pleasant MI 48858

Dear Mr. Johnson

Wright-Patterson Air Force Base (WPAFB) is proposing to install a modular lateral drift training (LDT) facility within the Warfighter Training Center (WTC) at Wright-Patterson Air Force Base, Ohio. There are no identified properties eligible for listing on the National Register of Historic Places located within the project area. (see Attachment 1). It is our opinion that this proposed action will have no adverse effects on historic properties. In accordance with 36 CFR 800.11(e), we are submitting the following documentation:

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Please review the information and inform us of your concurrence with our determination that there would be no adverse effect to historic properties. Should you have questions, I can be reached at 937-257-1374 or via email at paul.woodruff@us.af.mil.

Sincerely

Paul F. Woodruff
Cultural Resources Manager
Environmental Branch

Attachments:
1. Area A Mapping
2. LDT Drawings
3. Identified Arch Sites at WPAFB

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

February 6, 2017

Mr. Paul F. Woodruff
Cultural Resources Manager
88 CEG/CEIEA
1450 Littrell Road
Wright-Patterson AFB OH 45433-5209

Ms. Sheila Bird
Tribal Historic Preservation Officer
Cherokee Nation
P.O. Box 948
Tahlequah OK 74465-0948

Dear Ms. Bird

Wright-Patterson Air Force Base (WPAFB) is proposing to install a modular lateral drift training (LDT) facility within the Warfighter Training Center (WTC) at Wright-Patterson Air Force Base, Ohio. There are no identified properties eligible for listing on the National Register of Historic Places located within the project area. (see Attachment 1). It is our opinion that this proposed action will have no adverse effects on historic properties. In accordance with 36 CFR 800.11(e), we are submitting the following documentation:

Description of the undertaking. WPAFB Proposes to install a 25 foot ft. by 125 ft. modular LDT facility within the WTC located in Area A at WPAFB. Attachment 1 presents WPAFB and the surrounding area along with the proposed location for the LDT within the WTC. The LDT facility would include hanging harnesses to practice descent under a canopy, concrete platforms to conduct parachute landing falls, and zip lines to practice LDT. The proposed training facility would give U.S. Air Force School of Aerospace Medicine (USAFSAM) students a realistic experience of what it is like to be under canopy. The installation of a modular LDT facility is needed to provide enlisted initial skills students with the 12 hours of required hands-on training (e.g., hanging harness procedures, drag procedures, parachute landing falls) to fulfill their academic requirement. Refer to Attachment 2 for drawings and photos of a typical LDT facility built at Sheppard AFB. The one propose for WPAFB would be the same design.

Description of steps taken to identify historic properties. In accordance with 36 CFR 800.4(c) WPAFB has evaluated the historic significance of base facilities applying the National Register criteria. WPAFB has assessed all buildings on the installation that are 50 years old or older, and has additionally assessed buildings for exceptional significance relating to the Cold War. There are no know historic properties within the APE as shown in Attachment 1.

Description of the potentially affected properties. There are no know historic properties located within the APE. All of the proposed undertaking is outside of any known eligible historic districts of WPAFB. There are no know archaeological resource in the area that could be affected by construction of this LDT Facilitly. However, in the event of a discovery of any archaeological resources including any Native American human remains or cultural objects, the WPAFB agency official will ensure compliance

with Native American Graves Protection and Repatriation Act of 1995 (NAGRPA) [25 U.S.C. 3001-3013, 43 CFR 10] and any applicable statutory and regulatory requirements of the American Indian Religious Freedom Act (AIRFA) [42 U.S.C.1996-1996a], Archaeological Resources Protection Act (ARPA) [16 U.S.C. 470aa-470ll], National Environmental Policy Act (NEPA) [42 U.S.C. 4321-4370c], and National Historic Preservation Act (NHPA) [16 U.S.C. 470-470w] as well as E.O. 13007 and White House Memorandum, April 29, 1994.

Description of the undertaking's effects on historic properties. It is our opinion that the undertaking as proposed will not affect any historic properties or historic areas of the base depicted in the attached mapping. This determination was made for the following reasons. There are no known historic properties identified that are located within the APE, therefore there would be no effects to any historic properties. All work to install the LDT would occur in an area already disturbed in the past and the area has previously been surveyed without identifying any potential archaeoloigical resources. A recent survey of the area related to installation of a fiber optic cable line found little potential for archaeological in this area. Therefore, it is our opinion that, in accordance with 36 CFR 800.5(b), the proposed undertaking would have no effect on historic properties.

Please review the information and inform us of your concurrence with our determination that there would be no adverse effect to historic properties. Should you have questions, I can be reached at 937-257-1374 or via email at paul.woodruff@us.af.mil.

Sincerely

Paul F. Woodruff
Cultural Resources Manager
Environmental Branch

Attachments:
1. Area A Mapping
2. LDT Drawings
3. Identified Arch Sites at WPAFB

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

February 6, 2017

Mr. Paul F. Woodruff
Cultural Resources Manager
88 CEG/CEIEA
1450 Littrell Road
Wright-Patterson AFB OH 45433-5209

Mr. Jay Toth
Tribal Archaeologist
Seneca Nation of Indians
90 Ohiyo Way
Salamanca NY 14779

Dear Mr. Toth

Wright-Patterson Air Force Base (WPAFB) is proposing to install a modular lateral drift training (LDT) facility within the Warfighter Training Center (WTC) at Wright-Patterson Air Force Base, Ohio. There are no identified properties eligible for listing on the National Register of Historic Places located within the project area. (see Attachment 1). It is our opinion that this proposed action will have no adverse effects on historic properties. In accordance with 36 CFR 800.11(e), we are submitting the following documentation:

Description of the undertaking. WPAFB Proposes to install a 25 foot ft. by 125 ft. modular LDT facility within the WTC located in Area A at WPAFB. Attachment 1 presents WPAFB and the surrounding area along with the proposed location for the LDT within the WTC. The LDT facility would include hanging harnesses to practice descent under a canopy, concrete platforms to conduct parachute landing falls, and zip lines to practice LDT. The proposed training facility would give U.S. Air Force School of Aerospace Medicine (USAFSAM) students a realistic experience of what it is like to be under canopy. The installation of a modular LDT facility is needed to provide enlisted initial skills students with the 12 hours of required hands-on training (e.g., hanging harness procedures, drag procedures, parachute landing falls) to fulfill their academic requirement. Refer to Attachment 2 for drawings and photos of a typical LDT facility built at Sheppard AFB. The one propose for WPAFB would be the same design.

Description of steps taken to identify historic properties. In accordance with 36 CFR 800.4(c) WPAFB has evaluated the historic significance of base facilities applying the National Register criteria. WPAFB has assessed all buildings on the installation that are 50 years old or older, and has additionally assessed buildings for exceptional significance relating to the Cold War. There are no know historic properties within the APE as shown in Attachment 1.

Description of the potentially affected properties. There are no know historic properties located within the APE. All of the proposed undertaking is outside of any known eligible historic districts of WPAFB. There are no know archaeological resource in the area that could be affected by construction of this LDT Facilitly. However, in the event of a discovery of any archaeological resources including any Native American human remains or cultural objects, the WPAFB agency official will ensure compliance

with Native American Graves Protection and Repatriation Act of 1995 (NAGRPA) [25 U.S.C. 3001-3013, 43 CFR 10] and any applicable statutory and regulatory requirements of the American Indian Religious Freedom Act (AIRFA) [42 U.S.C.1996-1996a], Archaeological Resources Protection Act (ARPA) [16 U.S.C. 470aa-470ll], National Environmental Policy Act (NEPA) [42 U.S.C. 4321-4370c], and National Historic Preservation Act (NHPA) [16 U.S.C. 470-470w] as well as E.O. 13007 and White House Memorandum, April 29, 1994.

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Please review the information and inform us of your concurrence with our determination that there would be no adverse effect to historic properties. Should you have questions, I can be reached at 937-257-1374 or via email at paul.woodruff@us.af.mil.

Sincerely

Paul F. Woodruff
Cultural Resources Manager
Environmental Branch

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

February 6, 2017

Mr. Paul F. Woodruff
Cultural Resources Manager
88 CEG/CEIEA
1450 Littrell Road
Wright-Patterson AFB OH 45433-5209

Mr. William Tarrant
Tribal Historic Preservation Officer
Seneca-Cayuga Nation
P.O. Box 453220
Grove OK 74345

Dear Mr. Tarrant

Wright-Patterson Air Force Base (WPAFB) is proposing to install a modular lateral drift training (LDT) facility within the Warfighter Training Center (WTC) at Wright-Patterson Air Force Base, Ohio. There are no identified properties eligible for listing on the National Register of Historic Places located within the project area. (see Attachment 1). It is our opinion that this proposed action will have no adverse effects on historic properties. In accordance with 36 CFR 800.11(e), we are submitting the following documentation:

Description of the undertaking. WPAFB Proposes to install a 25 foot ft. by 125 ft. modular LDT facility within the WTC located in Area A at WPAFB. Attachment 1 presents WPAFB and the surrounding area along with the proposed location for the LDT within the WTC. The LDT facility would include hanging harnesses to practice descent under a canopy, concrete platforms to conduct parachute landing falls, and zip lines to practice LDT. The proposed training facility would give U.S. Air Force School of Aerospace Medicine (USAFSAM) students a realistic experience of what it is like to be under canopy. The installation of a modular LDT facility is needed to provide enlisted initial skills students with the 12 hours of required hands-on training (e.g., hanging harness procedures, drag procedures, parachute landing falls) to fulfill their academic requirement. Refer to Attachment 2 for drawings and photos of a typical LDT facility built at Sheppard AFB. The one propose for WPAFB would be the same design.

Description of steps taken to identify historic properties. In accordance with 36 CFR 800.4(c) WPAFB has evaluated the historic significance of base facilities applying the National Register criteria. WPAFB has assessed all buildings on the installation that are 50 years old or older, and has additionally assessed buildings for exceptional significance relating to the Cold War. There are no know historic properties within the APE as shown in Attachment 1.

Description of the potentially affected properties. There are no know historic properties located within the APE. All of the proposed undertaking is outside of any known eligible historic districts of WPAFB. There are no know archaeological resource in the area that could be affected by construction of this LDT Facilitly. However, in the event of a discovery of any archaeological resources including any Native American human remains or cultural objects, the WPAFB agency official will ensure compliance

with Native American Graves Protection and Repatriation Act of 1995 (NAGRPA) [25 U.S.C. 3001-3013, 43 CFR 10] and any applicable statutory and regulatory requirements of the American Indian Religious Freedom Act (AIRFA) [42 U.S.C.1996-1996a], Archaeological Resources Protection Act (ARPA) [16 U.S.C. 470aa-470ll], National Environmental Policy Act (NEPA) [42 U.S.C. 4321-4370c], and National Historic Preservation Act (NHPA) [16 U.S.C. 470-470w] as well as E.O. 13007 and White House Memorandum, April 29, 1994.

Description of the undertaking's effects on historic properties. It is our opinion that the undertaking as proposed will not affect any historic properties or historic areas of the base depicted in the attached mapping. This determination was made for the following reasons. There are no known historic properties identified that are located within the APE, therefore there would be no effects to any historic properties. All work to install the LDT would occur in an area already disturbed in the past and the area has previously been surveyed without identifying any potential archaeoloigical resources. A recent survey of the area related to installation of a fiber optic cable line found little potential for archaeological in this area. Therefore, it is our opinion that, in accordance with 36 CFR 800.5(b), the proposed undertaking would have no effect on historic properties.

Please review the information and inform us of your concurrence with our determination that there would be no adverse effect to historic properties. Should you have questions, I can be reached at 937-257-1374 or via email at paul.woodruff@us.af.mil.

Sincerely

Paul F. Woodruff
Cultural Resources Manager
Environmental Branch

Attachments:
1. Area A Mapping
2. LDT Drawings
3. Identified Arch Sites at WPAFB

From: Jay Toth
To: WOODRUFF, PAUL F CIV USAF AFMC 88 CEG/CEIEA
Subject: RE: WPAFB Section 106 Coordination Letter - Installation of Lateral Drift Trainer
Date: Monday, February 06, 2017 2:38:38 PM

SNI-THPO concurs with the findings of no effect regarding this project.

JAY toth, MA, MS

Seneca Nation
Tribal Archeologist
90 OHI:YO WAY
Salamanca,NY 14779

(716)-945-1790
Ext. 3582

https://sni.org/

-----Original Message-----
From: WOODRUFF, PAUL F CIV USAF AFMC 88 CEG/CEIEA [mailto:paul.woodruff@us.af.mil]
Sent: Monday, February 06, 2017 2:28 PM
To: Jay Toth
Subject: WPAFB Section 106 Coordination Letter - Installation of Lateral Drift Trainer

Jay,

Attached is a standard Section 106 consultation letter for the subject proposed project here at Wright-Patterson Air Force Base. Please review the information and provide any comments or concurrence with our finding in the letter. Your time is very much appreciated.

Thanks,
Paul

Paul F. Woodruff, Architect
Cultural Resources Manager
88 CEG/CEIEA
1450 Littrell Road
WPAFB, Ohio 45433
937-257-1374

History is that certainty produced at the point where the imperfections of memory meet the inadequacies of documentation. ― Julian Barnes

Appendix B

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: Warfighter Training Center (WTC) – Lateral Drift Training (LDT) Facility Environmental Assessment

c. Project Number/s (if applicable): Contract No. FA8601-11-D-0002; Task Order 0024

d. Projected Action Start Date: 4 / 2017

e. Action Description:

The Proposed Action (Preferred Alternative) involves the installation of a 25 foot (ft) by 125 ft modular LDT facility within the WTC located in Area A at WPAFB. The LDT would be constructed as a steel shelter and would be sited in an existing gravel parking lot. Construction activities would involve excavation equipment (concrete and gravel delivery trucks) to dig footings required for the canopy structure. Excavation would be conducted for concrete footings and platforms. Construction activities would also include the installation of support wire anchors and trenching for on-site electrical. Planned concrete platform is 50 ft wide and 7 ft deep. Electricity would be run from an existing storage building located adjacent and south of the proposed LDT site. No ground disturbance would occur other than raking the gravel landing area back to smooth after use. The U.S. Air Force School of Aerospace Medicine (USAFSAM) students would be transported via Base transportation to the WTC training area, would perform the approximate 4 hour LDT exercises, then would be returned to the USAFSAM facility in Area B or would be returned to non-prior service dorms. Approximately four to five instructors (trainers) would be involved in training at the LDT facility. The frequency of the LDT exercises is expected to be three times per fiscal year with a duration of 4 hours per training period. Training at the WTC would be conducted from approximately October through February for students enrolled in the fall training session and from approximately June through August for students enrolled in the summer training session.

Under the No Action Alternative, the modular LDT facility would not be installed at WPAFB and the deficiency in academic training would continue to be realized. Without the accessibility of an LDT at WPAFB, the students would not be able to fulfill their academic requirements locally and would be required to continue the course requirements at Sheppard Air Force Base in Texas.

f. Point of Contact:

Name: Cindy Hassan
Title: Senior Risk Assessor
Organization: CB&I Federal Services
Email: cindy.hassan@cbifederalservices.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.

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

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

Conformity Analysis Summary:

2017

Pollutant	Action Emissions (ton/yr)	GENERAL CONFORMITY	
		Threshold (ton/yr)	Exceedance (Yes or No)
Dayton-Springfield, OH			
VOC	0.221	100	No
NOx	0.643	100	No
CO	0.774	N/A	N/A
SOx	0.001	100	No
PM 10	0.090	N/A	N/A
PM 2.5	0.029	100	No
Pb	0.000	N/A	N/A
NH3	0.002	N/A	N/A
CO2e	134.4	N/A	N/A

2018 - (Steady State)

Pollutant	Action Emissions (ton/yr)	GENERAL CONFORMITY	
		Threshold (ton/yr)	Exceedance (Yes or No)
Dayton-Springfield, OH			
VOC	0.028	100	No
NOx	0.027	100	No
CO	0.290	N/A	N/A
SOx	0.000	100	No
PM 10	0.001	N/A	N/A
PM 2.5	0.001	100	No
Pb	0.000	N/A	N/A
NH3	0.002	N/A	N/A
CO2e	23.0	N/A	N/A

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.

The detailed ACAM report may be available upon request, please contact:

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